PART III

THE DYNAMICS AND REGULATION OF EMPLOYEE ENGAGEMENT: FLUCTUATIONS, CYCLES, AFFECT AND FLOW

19 Engagement and "job crafting": engaged employees create their own great place to work

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Introduction

Each year, the Great Place to Work Institute produces a list with the best companies to work for, representing workplaces in 40 countries around the world. The selection of companies is based upon employee and management surveys regarding the relationships employees have with management, colleagues, and with their own jobs. Companies that take good care of their employees receive the highest rankings.

The question how companies can design great places to work has stimulated organizational psychology research for several decades. This has resulted in job design theories that can explain employee motivation and retention. The central assumption in these theories is that job characteristics with motivational potential (for example, job resources like autonomy, feedback, task identity) will lead to meaningful work and high productivity (Hackman & Oldham, 1980; Fried & Ferris, 1987). Research has indeed shown that job resources are important facilitators of employee engagement, particularly under conditions of high job demands (Bakker & Demerouti, 2008), and that engagement, in turn, has a positive impact on job performance (Bakker, 2009).

However, engaged employees are by no means passive actors in their work organizations. Instead, I shall argue that they are proactive job crafters who mobilize their own job challenges and job resources. Thus, this chapter proposes a proactive perspective of employee engagement in which engaged employees craft their own jobs to sustain their own engagement. Proactive perspectives "capture the growing importance of employees taking initiative to anticipate and create changes in how work is performed" (Grant & Parker, 2009, p. 317).

Work engagement

Work engagement is defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p. 74; Schaufeli & Bakker, 2010). In essence, work engagement captures how workers experience their work: as stimulating and energetic

and something to which they really want to devote time and effort (the *vigor* component); as a significant and meaningful pursuit (*dedication*); and as engrossing and something on which they are fully concentrated (*absorption*; Bakker et al., 2008). Qualitative research has revealed that engaged employees are highly energetic, self-efficacious individuals who exercise influence over events that affect their lives (Schaufeli et al., 2001). Because of their positive attitude and activity level, engaged employees create their own positive feedback, in terms of appreciation, recognition, and success. Many interviewees indicated that their enthusiasm and energy also appears outside work, for example in physical exercise, creative hobbies, and volunteer work. Engaged employees are no supermen – they do feel tired after a long day of hard work. However, they describe their tiredness as a rather pleasant state because it is associated with positive accomplishments. Finally, engaged employees are not addicted to their work. They enjoy other things outside work. Unlike workaholics, engaged employees do not work hard because of a strong and irresistible inner drive, but because for them working is fun (Schaufeli et al., 2006b).

The most often used instrument to measure engagement is the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2002; Schaufeli & Bakker, 2003, 2010) that includes a subscale for each of the three engagement dimensions: vigor, dedication and absorption. The UWES has been validated in several countries in Europe, but also in North America, Africa, Asia, and Australia (Bakker, 2009). Confirmatory factor analyses have repeatedly shown that the fit of the hypothesized three-factor structure to the data is superior to that of alternative factor models. In addition, the internal consistencies of the three subscales are sufficient in each study. Schaufeli et al. (2006a) developed a short nine-item version of the UWES, and provided evidence for its cross-national validity. They showed that the three engagement dimensions are moderately strong related.

Drivers of engagement

Job resources
Previous studies have consistently shown that job resources are positively associated with work engagement (Bakker & Demerouti, 2007; Bakker & Leiter, 2010). "Job resources" refer to those physical, social, or organizational aspects of the job that may: (a) reduce job demands and the associated physiological and psychological costs; (b) be functional in achieving work goals; or (c) stimulate personal growth, learning, and development (Schaufeli & Bakker, 2004; Bakker & Demerouti, 2007).

Job resources are assumed to play either an intrinsic motivational role because they foster employees' growth, learning and development, or an

extrinsic motivational role because they are instrumental in achieving work goals. In the former case, job resources fulfill basic human needs, such as the needs for autonomy, relatedness and competence (Ryan & Frederick, 1997; Van den Broeck et al., 2008). For instance, proper feedback fosters learning, thereby increasing job competence, whereas decision latitude and social support satisfy the need for autonomy and the need to belong, respectively.

Job resources may also play an *extrinsic* motivational role, because resourceful work environments foster the willingness to dedicate one's efforts and abilities to the work task (Meijman & Mulder, 1998). In such environments it is likely that the task will be completed successfully and that the work goal will be attained. For instance, performance feedback and a supportive supervisor increase the likelihood of being successful in achieving one's work goals. In either case, be it through the satisfaction of basic needs or through the achievement of work goals, the outcome is positive and engagement is likely to occur (Schaufeli & Bakker, 2004).

Consistent with these notions about the motivational role of job resources, several studies have shown a positive relationship between job resources and work engagement (for a meta-analysis, see Halbesleben, 2010). For example, in their study among Dutch dentists, Gorter et al. (2008) found that higher scores on idealism, pride, aesthetics, and patient care coincided with higher scores on work engagement. Koyuncu et al. (2006) examined potential antecedents and consequences of work engagement in a sample of women managers and professionals employed by a large Turkish bank. Results showed that worklife experiences, particularly control, rewards and recognition and value fit, were significant predictors of all engagement dimensions. Further, in their study among managers and executives of a Dutch telecom company, Schaufeli et al. (2009) found that *changes* in job resources were predictive of work engagement over a period of one year. Specifically, results showed that increases in social support, autonomy, opportunities to learn and to develop, and performance feedback were positive predictors of time 2 (T2) work engagement after controlling for baseline engagement.

Active jobs
According to the job demands–resources model (Bakker & Demerouti, 2007), job resources become more salient and gain their motivational potential when employees are confronted with high job demands. Such conditions represent so-called 'active jobs' (Karasek, 1979), in which employees become motivated to actively learn and develop their skills. Hakanen et al. (2005) tested this interaction hypothesis in a sample of Finnish dentists employed in the public sector. It was hypothesized that

job resources (for example, variability in the required professional skills, peer contacts) are most predictive of work engagement under conditions of high job demands (for example, workload, unfavorable physical environment). The results largely confirmed the hypothesis by showing, for example, that variability in professional skills boosted work engagement when qualitative workload was high.

Bakker et al. (2007) reported conceptually similar findings. In their study among Finnish teachers working in elementary, secondary, and vocational schools, they found that job resources particularly influence work engagement when teachers are confronted with high levels of pupil misconduct. In particular, supervisor support, innovativeness, appreciation, and organizational climate were important job resources for teachers that turned demanding interactions with students into a challenge.

Finally, Tuckey et al. (2009) expanded these findings in their study among Australian volunteer fire fighters. Using a multilevel framework, they examined the role of empowering leadership by fire brigade captains in facilitating the motivational processes that underpin work engagement in volunteer fire fighters. Anonymous mail surveys were completed by 540 volunteer fire fighters from 68 fire brigades and, separately, by 68 brigade captains. In addition to directly inspiring engagement, empowering leadership had the effect of optimizing working conditions for engagement in two ways: (i) via increased levels of cognitive demands and cognitive resources in a partially mediated pathway; and (ii) by strengthening the positive effect of 'active' working conditions, in which job demands and resources are both high. These findings shed light on one process through which leaders can empower workers and enhance work engagement: via their influence on and interaction with the work environment.

Personal resources as psychological capital
   Psychological capital (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 beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success. (Luthans et al., 2007, p. 3)

Sweetman and Luthans (2010) have outlined why PsyCap should be related to work engagement. Employees high in PsyCap are characterized by their tenacity and persistence, driven by their belief in future success. Additionally, they continue to provide hope for goal achievement, even in the face of new challenges, and expect good things to happen to them.

In their study among highly skilled Dutch technicians, Xanthopoulou et al. (2007) examined the role of a slightly different operationalization of PsyCap (self-efficacy, self-esteem, and optimism – these elements are called "personal resources") in predicting work engagement. Results showed that engaged employees are highly self-efficacious; they believe that they are able to meet the demands they face in a broad array of contexts. In addition, engaged workers have the tendency to believe that they will generally experience good outcomes in life (optimistic), and can satisfy their needs by participating in roles within the organization (organizational-based self-esteem).

These findings were replicated and expanded in a two-year follow-up study (Xanthopoulou et al., 2009a). The findings indicated that self-efficacy, organizational-based self-esteem, and optimism make a unique contribution to explaining variance in work engagement over time, over and above the impact of job resources and previous levels of engagement. In short, engaged workers have psychological capital that helps them to control and impact upon their work environment successfully (see also Luthans et al., 2008).

Engagement and behavioral outcomes
There are at least four reasons why engaged workers perform better than non-engaged workers (Bakker, 2009). First, engaged employees often experience positive emotions, including happiness, joy, and enthusiasm. These positive emotions seem to broaden people's thought–action repertoire, implying that they constantly work on their personal resources (Fredrickson, 2001). Second, engaged workers experience better health. This means that they can focus and dedicate all their energy resources and skills to their work. Third, as will be illustrated later in more detail, engaged employees create their own job and personal resources (PsyCap). Finally, engaged workers transfer their engagement to others in their immediate environment (Bakker & Demerouti, 2009a; Bakker & Xanthopoulou, 2009). Since in most organizations performance is the result of collaborative effort, the engagement of one person may transfer to others and indirectly improve team performance.

Job performance
The number of studies showing a positive relationship between employee engagement and job performance is increasing (Demerouti & Cropanzano, 2010). For example, Bakker et al. (2004) showed that engaged Dutch employees received higher ratings from their colleagues on in-role and extra-role performance, indicating that engaged employees perform well and are willing to go the extra mile. In addition, Halbesleben and Wheeler

(2008) in their study among American employees, their supervisors, and their closest co-workers from a wide variety of industries and occupations showed that work engagement made a unique contribution (after controlling for job embeddedness) to explaining variance in job performance.

Salanova et al. (2005) conducted an interesting study among personnel working in Spanish restaurants and hotels. Contact employees ($N = 342$) from 58 hotel front desks and 56 restaurants provided information about organizational resources, engagement, and service climate. Furthermore, customers ($N = 1,140$) from these units provided information on employee performance and customer loyalty. Structural equation modeling analyses were consistent with a full mediation model in which organizational resources and work engagement predicted service climate, which in turn predicted employee performance and then customer loyalty.

Bakker and Demerouti (2009a) examined the crossover of work engagement in a study among 175 Dutch couples working in different occupational sectors. The results of moderated structural equation modeling analyses showed that the crossover of work engagement from wives to their husbands was strongest when men were high (versus low) in perspective taking (the spontaneous tendency of a person to adopt the psychological perspective of other people). In addition, work engagement was positively related to colleague ratings of performance.

As a final example, in their recent study among Greek employees working in a fast-food restaurant, Xanthopoulou et al. (2009b) expanded this research, and made a compelling case of the predictive value of work engagement for performance, on a daily basis. Participants were asked to fill in a survey and a diary booklet for five consecutive days. Consistent with hypotheses, results showed that employees were more engaged on days that were characterized by many job resources. Daily job resources, like supervisor coaching and team atmosphere, contributed to employees' PsyCap (day levels of optimism, self-efficacy, and self-esteem), which, in turn, explained daily engagement. Importantly, this study clearly showed that engaged employees performed better on a daily basis. Employees with higher levels of daily engagement produced higher objective daily financial returns.

Other positive behaviors
Recent studies show that it is not only job performance in which engaged employees differ from others and excel. Engaged employees show a variety of behaviors that may be good for themselves and the organization at large. For example, in an unpublished study among a heterogeneous group of Dutch employees, Bakker and Demerouti (2009b) showed that engagement is positively related to active learning behavior. Employees who scored high on vigor, dedication, and absorption also scored high on

supervisor ratings of active learning. Engaged workers were more likely to learn new things through their work activities, and to search for task-related challenges. They were also more likely to ask their colleagues for feedback about their performance.

In a longitudinal study among Finnish dentists, Hakanen et al. (2008) found a positive link between engagement on the one hand, and personal initiative and innovation on the other. They found that engaged dentists were more likely to do more than they are asked to do, and tried to be actively involved in organizational matters. In addition, engaged dentists constantly made improvements in their work and gathered feedback and ideas for improvements from clients.

Consistent with these findings, Schaufeli et al. (2006b) in their survey among Dutch employees from a wide range of occupations, reported a positive relationship between engagement on the one hand, and organizational citizenship behavior and innovativeness on the other. Engaged employees were more willing than workaholics to attend functions not required by the organization, but which help in its overall image. Additionally, the higher employees' levels of engagement, the more they were inclined to invent new solutions for problems at work.

Furthermore, Sonnentag (2003) conducted a diary study to examine the relationship between *recovery* during leisure time and work engagement, and to test the impact of daily engagement on proactive behavior. German employees completed a questionnaire and a daily survey over a period of five consecutive workdays. Multilevel analyses showed that day-level recovery was positively related to day-level work engagement. Daily engagement was, in turn, positively related to day-level proactive behavior (personal initiative and pursuit of learning) during the workday.

Finally, a recent study among almost 750 young Finnish managers (Hyvönen et al., 2009) showed that engaged managers were most eager to develop themselves in the job and increase their occupational knowledge. They were also most likely to have positive attitudes towards modernization and increased productivity. They tried to get their teams to function better towards achieving jointly agreed goals, and endorsed the strongest drive to strive. Taken together, these findings imply that engaged employees are not passive actors in work environments, but instead actively change their work environment if needed.

Engaged employees are active job crafters

Conservation of resources
According to Hobfoll (2002) the accumulation of resources is a pivotal drive that initiates and maintains people's behavior. The basic tenet of his

conservation of resources (COR) theory is that people are motivated to obtain, retain, foster and protect resources, defined as "those entities that either are centrally valued in their own right, or act as means to obtain centrally valued ends" (ibid., p. 307). A first assumption in COR theory is that people have to invest their resources in order to deal with stressful conditions and protect themselves from negative outcomes. For instance, employees may use social support from their colleagues in the form of hands-on assistance in order to deal with temporary work overload. Consequently, COR theory predicts that those with greater resources (for example, more-supportive colleagues) are less vulnerable to stress, whereas those with fewer resources (for example, less-supportive colleagues) are more vulnerable to stress.

A second assumption is that people must invest resources in order to protect against future resource loss, recover their resources, and gain new resources. Moreover, individuals not only strive to protect their current resources, but also to *accumulate* them. For instance, employees learn new skills and competencies in order to increase their employability and reduce the risk of being laid off. COR theory predicts that those who possess more resources are also more capable of resource gain. In other words, initial resource gain begets future gain, thus constituting so-called "gain spirals" (Salanova et al., 2010). For example, increased employability not only reduces the risk of unemployment but also augments the possibility of landing in a better job that offers additional opportunities for learning and development, which enhance engagement at work. Hence, gaining resources increases the resource pool, which makes it more likely that additional resources will be subsequently acquired.

According to COR theory, this accumulation and linking of resources creates "resource caravans". That is, resources tend not to exist in isolation, but rather they aggregate such that, for instance, employees working in a resourceful work environment (that is, have task discretion, or receive high-quality coaching) are likely to reinforce their beliefs in their capabilities and resilience, to feel valued, and be optimistic about meeting their goals. COR theory predicts that in the long run such resource caravans result in positive personal outcomes such as better coping, adaptation, and engagement. Recently, scholars have started to test this idea of resource caravans and cycles of employee engagement.

Cycles of engagement
In recent studies, researchers in the domain of work engagement have started to test the hypothesis that resources are reciprocally related to engagement. Do job resources positively affect work engagement, which, in turn, positively affects job resources? Is there evidence for the existence

of "resources caravans" or gain processes? I shall discuss longitudinal and diary studies that are suggestive of gain spirals.

First, in their three-year panel study among 2,555 Finnish dentists, Hakanen et al. (2008) examined how job resources and work engagement may start a gain spiral. Drawing on COR theory, a reciprocal process was predicted: (i) job resources lead to work engagement and work engagement leads to personal initiative (PI), which, in turn, has a positive impact on work-unit innovativeness, and (ii) work-unit innovativeness leads to PI, which has a positive impact on work engagement, which finally predicts future job resources. The results generally confirmed these hypotheses. Positive and reciprocal cross-lagged associations were found between job resources and work engagement and between work engagement and PI. In addition, PI had a positive impact on work-unit innovativeness over time. This suggests that job resources fueled engagement and initiative, but also that engagement and personal initiative led to more resources over time.

Second, Xanthopoulou et al. (2009a) examined the role of personal resources (that is, self-efficacy, self-esteem, and optimism) and job resources (that is, job autonomy, supervisory coaching, performance feedback, and opportunities for professional development) in explaining work engagement. They carried out a two-wave longitudinal study among technical specialists with a two-year time interval. It was hypothesized that job and personal resources, and work engagement are reciprocal over time. Results showed that not only resources and work engagement but also job and personal resources were mutually related. These findings support the assumption of COR theory that various types of resources and well-being evolve into a cycle that determines employees' successful adaptation to their work environments. Since all causal and reversed-causal effects were equally strong, the findings suggest that neither resources nor engagement may be considered as the most important initiator of this cyclical process.

Third, Schaufeli et al. (2009) in their study among Dutch managers of a telecom company hypothesized that work engagement would have a positive impact on changes in job resources over a one-year time period. The results showed that changes in job resources predicted engagement, and that engagement was predictive of increases in social support, autonomy, opportunities for development, and performance feedback. Finally, in their study among starting teachers, Bakker and Bal (2010) found that weekly changes in work-related resources (autonomy, supervisory coaching, performance feedback, and opportunities for development) predicted week-levels of engagement. In addition, they found a reversed causal effect: engaged teachers were best able to mobilize their own job resources.

Taken together, these results show that employee engagement and behavior can have a positive effect on the available resources. Engaged

employees seem to create or mobilize their own personal and job resources – they engage in job crafting (Wrzesniewski & Dutton, 2001). In this way, engaged employees seem to sustain and manage their own vigor and dedication (Bakker & Bal, 2010; Salanova et al., 2010). This dynamic, reciprocal relationship between resources and engagement as described by COR theory is compatible with and partly supports the notion of gain cycles.

Active job crafters

Employees may actively change the design of their jobs by choosing tasks, negotiating different job content, and assigning meaning to their tasks or jobs (Parker & Ohly, 2008). This process of employees shaping their jobs has been referred to as "job crafting" (Wrzesniewski & Dutton, 2001). It is defined as the physical and cognitive changes individuals make in their task or relational boundaries. Physical changes refer to changes in the form, scope or number of job tasks, whereas cognitive changes refer to changing how one sees the job. Changing relational boundaries means that individuals have discretion over whom they interact with while doing the job. As a consequence of job crafting, employees may be able to increase their person–job fit. According to Wrzesniewski and Dutton, job crafting focuses on the processes by which employees change elements of their jobs and relationships with others to revise the meaning of the work and the social environment at work. Thus, job crafting is about *changing* the job in order to experience enhanced meaning of it.

However, before employees can start crafting their job, they must perceive that they have the opportunity to make changes. This refers to the sense of autonomy employees have in what they do in their job and how they do it. For example, when employees perform tasks that are interdependent, there is not much room for changing how and when to perform the tasks and relational boundaries. Also, support from supervisors seems very important in perceiving opportunities to craft. A supervisor who understands the employee may offer the employee autonomy and thereby encourages self-initiation (Baard et al., 2004).

Tims and Bakker (in press) adopt the view that employees are active in changing their job tasks and relational boundaries. However, they argue that not every employee may have room for changing the job. Wrzesniewski et al. (1997) suggested that employees who view their work as a calling (that is, focus on enjoyment or fulfillment) are more likely to engage in job crafting, because work is more central in their lives. Consistent with this view, Tims et al. (in press) showed in three independent samples of Dutch employees that engagement has a positive relationship with job crafting. Engaged employees were most likely to increase their job resources, for

example, ask for feedback from their supervisor and mobilize their social network. Additionally, engaged employees were most likely to increase their own job demands in order to create a challenging work environment. For example, they proactively volunteer to be involved in a project if possible. Additionally, if it is quiet at work they see this as an opportunity to start new projects.

Overall model of work engagement

The evidence regarding the antecedents and consequences of work engagement can be organized in an overall model of work engagement. This model is based on the job demands–resources (JD–R) model (Demerouti et al., 2001; Bakker & Demerouti, 2007). The first assumption is that job resources such as social support from colleagues and supervisors, performance feedback, skill variety, and autonomy, start a motivational process that leads to work engagement, and consequently to higher performance. The second assumption is that job resources become more salient and gain their motivational potential when employees are confronted with high job demands (for example, workload, and emotional and mental demands). Further, the model is based on the work of Xanthopoulou et al. (2007, 2009a, 2009b), who expanded the JD–R model and showed that job and personal resources are mutually related, and that personal resources can be independent predictors of work engagement. Thus employees who score high on optimism, self-efficacy, resilience and self-esteem are well able to mobilize their job resources, and generally are more engaged in their work.

The JD–R model of work engagement is graphically depicted in Figure 19.1. As can be seen, I assume that job resources and personal resources independently or combined predict work engagement. Further, job and personal resources particularly have a positive impact on engagement when job demands are high. Work engagement, in turn, has a positive impact on job performance. Finally, employees who are engaged and perform well are able to create their own resources, which then foster engagement again over time. They are active job crafters who change their job demands and resources if necessary.

Future research

Most previous studies on work engagement used a between-person design and cannot explain why even highly engaged employees may have an off-day and sometimes show below-average or poor performance. Researchers have therefore begun to examine *daily changes* in work engagement. An important advantage of diary research is that it relies less on retrospective recall than regular surveys, since the questions
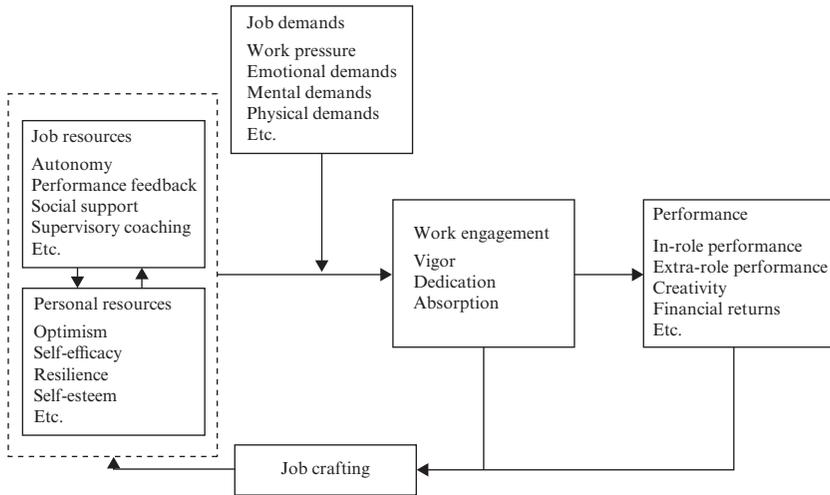
Source: Based on Bakker & Demerouti (2007, 2008).

Figure 19.1   The work engagement model

relate to individuals' perceptions and feelings on a specific day. In addition, when daily changes in work engagement are temporarily separated from daily changes in outcomes such as performance and job crafting, state work engagement could be causally related to such outcomes. Diary research may also reveal what the day-to-day triggers are of state engagement.

Sonnentag et al. (2010) suggest intensifying conceptual development on day-specific (or even momentary) work engagement in order to arrive at a better understanding of how day-specific engagement corresponds to enduring engagement in experienced quality and configuration. In addition, they argue that it is an open question whether the scales used to assess enduring work engagement (see Schaufeli & Bakker, 2003, 2010) are valid for the measurement of state work engagement. Clearly, the time anchors on the UWES and the Maslach Burnout Inventory-General Survey (MBI–GS) (for example, "a few times a month") do not fit with a daily reporting schedule. The appropriateness of item wording to capture the day-to-day variations in energy and dedication remains an open question. Expanding existing measures with new items or alternative response formats would help to refine critical instruments.

Additionally, it would be interesting to examine gain cycles of job resources and engagement at the day or week level. According to the work engagement model presented in this chapter, active job crafting would be

an important mediator of the relationship between state engagement and (job and personal) resources. Engaged employees are expected to actively change their job demands and resources in order to stay engaged in their work.

Practical implications

Organizations have become increasingly interested in how to develop engagement in employees. The model of work engagement proposed in this chapter holds straightforward and valuable implications for practice. It suggests that job and personal resources play an important role in engagement. Redesigning jobs in order to promote engagement boils down to increasing job resources. Developing social support, and changing work procedures to enhance feedback and autonomy may create a structural basis for work engagement. Also, job rotation and changing jobs might result in higher engagement levels because they challenge employees, increase their motivation, and stimulate learning and professional development.

Furthermore, since engagement seems to be contagious and may spread across members of work teams (Bakker et al., 2006), leaders have a special role in fostering work engagement among their followers. It is to be expected that considerate leadership, and more particularly transformational leadership, is successful in accomplishing this. Indeed, research suggests that transformational leaders are key social resources for the development of employee engagement (Tims et al., in press; Tuckey et al., submitted). Finally, training programs in organizations that aim at increasing work engagement could focus on building personal resources or psychological capital (for example, efficacy beliefs, optimism, hope, and resiliency).

Conclusion

The overview in this chapter supports the contention that focusing on work engagement offers organizations a competitive advantage. Moreover, engaged employees create their own great place to work. They are active job crafters looking for possibilities to optimize their work environment. This takes the form of increasing job resources, or changing job demands so that work becomes more challenging. By proactively changing their work environment, engaged employees can sustain their own work engagement. This has positive consequences for employees and for organizations at large, since engagement leads to creativity, active learning, and optimal performance. I hope that the work engagement model stimulates future research on engagement and will be an important resource for scientists and practitioners alike.

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