EFFECTS OF AN INTERVENTION PROGRAM BASED ON JOB CRAFTING BEHAVIORS ON THE WORK ENGAGEMENT OF TEACHERS

EFECTOS DE UN PROGRAMA DE INTERVENCIÓN BASADO EN LOS COMPORTAMIENTOS DE REDISEÑO DEL TRABAJO SOBRE EL ENGAGEMENT LABORAL DE PROFESORES

DOMINGOS ISIDÓRIO DA SILVA JÚNIOR¹, ², MARÍA CRISTINA FERREIRA¹ Y CLARISA PINTO PIZARRO DE FREITAS¹

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Resumen

Los estudios han puesto de relieve que es posible potenciar el engagement en el trabajo mediante intervenciones que buscan aumentar los recursos que el empleado posee y disminuir sus demandas laborales. El objetivo es evaluar la eficacia de un programa de intervención basado en los comportamientos de rediseño del trabajo en el engagement laboral de profesores. La muestra estaba integrada por 82 profesores brasileños de educación pública dividida en dos grupos. El grupo de intervención se realizó con 41 profesores de ambos sexos (81% femenino) y el grupo de comparación también con 41 profesores de ambos sexos (79.1% del sexo femenino). Al final de la intervención, las puntuaciones de los participantes del grupo de intervención, en las escalas de engagement en el trabajo y de comportamientos de rediseño, excedieron significativamente las puntuaciones del grupo de comparación. Los hallazgos encontrados recomiendan la

Correspondence address [Dirección para correspondencia]: Domingos Isidório da Silva Júnior Graduate Program in Psychology at Universidade Salgado de Oliveira Alameda Etelvino Gomes, 130, ap 801, Riviera Fluminense, Macaé-RJ. Email: domingosisjunior@hotmail.com

ORCID: Domingo Isidório da Silva Júnior (http://orcid.org/0000-0001-6515-8181), Maria Cristina Ferreira (http://orcid.org/0000-0003-0752-6710) y Clarissa Pinto Pizarro de Freitas (https://orcid.org/ 0000-0002-2274-8728).

¹ Universidade Salgado de Oliveira, Niterói-RJ, Brazil.
² Universidade Estácio de Sá, Macaé-RJ, Brazil.

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As a result, these individuals need to become increasingly efficient (Ouweneel, le Blanc, & Schaufeli, 2013). In addition, they have caused physical and psychological health problems that probably interfere with work performance (Bakker & Woerkom, 2018).

In the attempt to find solutions to these problems, organizational scholars have argued that work engagement is a construct that can contribute to the improvement of employee and organizational outcomes (van Wingerden, Derks, & Bakker, 2016). It corresponds to a positive and fulfilling work-related state of mind that manifests itself through employees’ vigor, dedication to and absorption in their work activities (Schaufeli, Salanova, Romá-González, & Bakker, 2002). Vigor is associated with high energy level, persistence, and effort in developing one’s tasks. Dedication refers to enthusiasm, inspiration, and a sense of meaning in relation to work. Absorption involves the employees’ involvement, concentration, and immersion in performing their tasks.

According to the Job Demands and Resources Model (JD-R), work characteristics can be classified into job resources and demands (Bakker, Demerouti, & Sanz-Vergel, 2014). Resources are aspects of work that help the employee achieve his goals in accomplishing the tasks, reducing the work demands and stimulating personal growth. Therefore, they are associated with a motivational process that increases employee willingness to invest efforts in the execution of their work.

The job demands, in turn, concern physical, psychological, social or organizational aspects that result in physical and psychological costs (Bakker & Demerouti, 2014). They are related to a process of illness that drains the employees’ energy, that is, it consumes their energy resources and demands increasing efforts to perform their work activities.

Thus, when employees have sufficient resources to cope with the job demands, they feel more motivated and engaged in their work activities (Mäkikangas, Bakker, & Schaufeli, 2017). In other words, more engaged employees are more active and develop more positive emotions at work than the less engaged ones (Bakker & Albrecht, 2018), as they combine increased resources with minimized demands, which increases their levels of motivation (Bakker et al., 2014).

**Keywords:** Intervention program; Job crafting behaviors; Work engagement; JD-R model; Teachers.
Different studies have shown that work engagement can be enhanced through interventions aimed at increasing the resources available to the employees and at reducing their job demands (Bakker, Rodriguez-Munóz, & Vergel, 2016). These include interventions that are based on a specific type of proactive behavior called job crafting behaviors. These behaviors refer to behavioral changes designed to adjust the way the tasks are performed to their own preferences and motivations (Tims, Bakker, & Derks, 2012). Therefore, they facilitate the adjustment of individual needs, abilities, and passions to work activities (Berg, Dutton, Wrzesniewski & Bakker, 2013). In this sense, they have proven to be effective and have brought promising results for individuals and organizations (Tims et al., 2012), by encouraging employees to have control over the performance of their tasks as a way of building a healthy environment (Grant & Parker, 2009).

With the support of the JD-R theory, Tims et al. (2012) classify the job crafting behaviors into resource-seeking behaviors, challenge-seeking behaviors, and demand-reducing behaviors. The search for resources is defined by actions that seek help at work, such as feedback and the search for learning opportunities and autonomy. Challenge seeking, then, consists in motivating behaviors that lead to coping with the work demands and, at the same time, allow the employee to have control over these demands when looking for new tasks at work or assuming new responsibilities. The reduction of demands, finally, refers to the behaviors aimed at minimizing the emotional or physical aspects, such as the burden in work activities and the pressure to perform tasks (Bakker et al., 2016). Interventions based on job crafting behaviors thus aim to facilitate the balance between work resources and work demands (Tims et al., 2012; Bakker et al., 2004; Wang, Lu, Du, & Bakker, 2014), and follow the guiding principles of goal proactivity (Parker, Bindl, & Strauss, 2010).

According to Parker et al. (2010), the awareness of a desirable future work situation, the setting of concrete and realistic, that is, achievable goals, the planning of the ways and means to reach the goals and the proactive quest for those goals are steps necessary to goal achievement. In this sense, interventions based on job crafting behaviors stimulate participants to set proactive, short-term, achievable goals by adjusting their work. In other words, by adopting group discussion techniques, the training sessions lead individuals to refine their goals, to devise the means necessary to reach them and to put into practice the actions for that purpose (van Wingerden, Bakker & Derks, 2017).

The effectiveness of interventions based on job crafting behaviors has been evaluated in studies in which the findings have shown that they make employees feel more confident and more committed to the organization (van Wingerden, Derks, Bakker & Dorenbosch 2013) and improve their work performance (Tims et al., 2012). They also tend to increase job crafting behaviors (Bipp & Demerouti, 2015).

In other words, interventions based on job crafting behaviors lead the employee to make cognitive changes in their task accomplishment strategies and in their work relationships by changing their social environment (increased resources, autonomy, and diminished demands, such as, for example, the work overload; van Wingerden et al., 2017). In addition, they have also contributed to improving the employee's cognitive ability, self-esteem, and perceived level of task control (Lyons, 2008), as well as to increasing their resilience levels regardless of adversities at work (Leana, Appelbaum, & Shevchuk, 2009; Lyons, 2008; van Wingerden et al., 2017).

Specifically what work engagement is concerned, research has shown that interventions based on job crafting behaviors tend to increase the work resources and reduce the demands, which leads the employees to be more engaged in the performance of their work activities and become more proactive in carrying out their work activities (Beer, Tims, & Bakker, 2016). In this sense, the intervention study carried out by van Wingerden et al. (2017), involving 75 primary school teachers from two Dutch schools, showed that the intervention group had higher rates of engagement compared to the control group after the training. van Wingerden et al. (2016) also obtained similar findings in 67 health professionals from the Netherlands when they took part in an experimental intervention to increase their levels of work engagement. Corroborating these findings, systematic reviews of interventions based on job crafting behaviors also found their effects on work engagement (Gordon, Demerouti, Le Blanc, Bakker, Bipp, & Verhagen, 2018; Rai, 2018).
Although some studies already exist that look at the effects of intervention programs based on job crafting behavior on work engagement (Beer et al., 2016, Demerouti, Bakker, & Gevers, 2015, Gordon et al., 2015, Petrout, Bakker, & Heuvel, 2017), none of them were carried out with teachers, except for the study by van Wingerden et al. (2017), whose sample consisted of special education teachers, nor did it involve Brazilian samples. The educational field is characterized by a high workload and tension though, making teachers become particularly vulnerable to mental illness (Garrick, Mak, Cathcart, Winwood, Bakker, & Lushington, 2017). Thus, intervention research based on job crafting behaviors may contribute to the reduction or elimination of these and other demands and, consequently, to the increase in teachers’ wellbeing.

Therefore, based on these considerations, the objective of this study was to evaluate the effectiveness of an intervention program based on job crafting behaviors on the work engagement of Brazilian teachers. In order to do so, the hypothesis was raised that the group submitted to the intervention program based on the job crafting behaviors would present, after the intervention, significantly higher scores for job crafting behaviors (H1) and work engagement (H2) when compared to the comparison group.

Method

Participants

A convenience sample of 82 teachers was randomly distributed between the intervention group (N = 41) and the comparison group (N = 41). To be included in the sample, the respondents should be willing to participate in the study and be working as teachers, at the time of the intervention, for at least one year. As an exclusion criterion, participants who missed more than one session or who were not present at any instrument application session would be excluded from the sample.

The intervention group was composed of 41 public education teachers, male and female (81 % female), ranging from 23 to 63 years old (M = 40.87, SD = 9.79) and active in basic education (44 %) and secondary (56 %). As for the education level, the majority held a higher education degree. Teaching time ranged from 1 to 29 years (M = 10.03, SD = 7.13) and total time of service from 1 to 36 years (M = 14.42, SD = 7.06).

The comparison group consisted of 41 public education teachers, male and female (79.1 % female), with ages varying between 25 and 65 years (M = 41.46, SD = 10.10). With regard to the education level, most held a higher education degree. Teaching time ranged from 1 to 30 years (M = 10.83, SD = 7.54) and total time of service from 1 to 37 years (M = 15.05, SD = 7.73).

Instruments

The teachers' work engagement was evaluated by the Engaged Teachers Scale (ETS; Klassen, Yederlen, & Durksen, 2013). The scale consists of 16 items, to be answered on seven-point Likert scales, ranging from 1 (never) to 7 (always). Example item: While teaching, I work intensely. These items are divided into four dimensions: cognitive engagement (four items), emotional engagement (four items), social engagement with students (four items) and social engagement with colleagues (four items). The internal consistency coefficients of these dimensions corresponded to 0.66, 0.82, 0.71 and 0.66, respectively, in this study.

The job crafting behaviors were measured using the Job Crafting Behavior Scale (Petrou et al., 2012). The scale contains 11 items, to be answered on five-point Likert scales, ranging from never (1) to always (5). Example item: I try to learn new things. The items are distributed in three dimensions: increasing social resources (four items); increasing challenging demands (three items); reducing demands (four items). Example item: I ask my colleagues for advice. In this study, these dimensions presented Cronbach's alpha coefficients equal to 0.79, 0.63 and 0.90, respectively.

Procedure

The participants were randomly assigned to the intervention and comparison groups. The intervention group answered all instruments on the first day before the inter-
vención (T1), durante la intervención (T2), y en el último día (T3), después de haber sido totalmente sometidos a la intervención. El grupo de comparación respondió los mismos instrumentos en las mismas ocasiones pero no participaron en la intervención. Todos los participantes firmaron el Formulario de Consentimiento Informado.

La intervención basada en los comportamientos de trabajo adoptó los principios del Michigan Job Crafting Exercise (JCE; Berg et al., 2013) y la JD-R teoría (Bakker et al., 2014). Así, se realizó ejercicio y establecieron metas para aumentar los recursos del trabajo y reducir las demandas para que se reconozcan y necesiten ser minimizadas.

La intervención se realizó una vez a la semana, totalizando ocho sesiones, durando dos horas cada una. El intervalo entre la pre-prueba (T1) y la post-prueba 1 (T2), así como entre post-prueba 1 y post-prueba 2 (T3) fue un mes. Cada grupo tuvo un mínimo de ocho y un máximo de 12 miembros.

En la primera sesión, los participantes fueron explicados el propósito de la intervención y el formulario de consentimiento informado y se completaron los instrumentos utilizados en el estudio. En la segunda reunión, se presentaron los conceptos de recursos del trabajo, demandas del trabajo, compromiso, y el ejercicio de talleres para aumentar los recursos (experiencias de cambio de comportamiento en búsqueda de recursos) y el plan de actividad para la semana.

En la tercera sesión, se presentó un resumen de la sesión anterior. Luego, se realizaron ejercicios para aumentar los recursos en pares (experiencia de éxito que ayudaría a los participantes a aumentar los recursos), así como el plan de la semana. Durante la cuarta reunión, ambas grupos completaron los instrumentos (Time 2), se realizaron ejercicios para reducir las demandas del trabajo al identificar los requerimientos en el trabajo y el plan de actividad se preparó. En la quinta sesión, se utilizaron ejercicios para aumentar los recursos y reducir las demandas (reflexión sobre situaciones pasadas que podrían contribuir como un estímulo para el desarrollo de tareas y cambios de comportamiento), y el plan de actividad para la semana fue elaborado.

### Tabla 1.

<table>
<thead>
<tr>
<th></th>
<th>Intervención</th>
<th>Comparación</th>
<th>Interacción (Time x Condition)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
</tr>
<tr>
<td>Cognitive Engagement</td>
<td>5.7 (0.5)</td>
<td>6.0 (0.8)</td>
<td>6.5 (0.2)</td>
</tr>
<tr>
<td>Emotional Engagement</td>
<td>5.4 (0.6)</td>
<td>6.2 (0.6)</td>
<td>6.5 (0.3)</td>
</tr>
<tr>
<td>Students Social Engagement</td>
<td>5.3 (1.0)</td>
<td>5.6 (0.8)</td>
<td>6.4 (0.2)</td>
</tr>
<tr>
<td>Colleagues Social Engagement</td>
<td>5.2 (1.0)</td>
<td>5.5 (0.8)</td>
<td>6.3 (0.4)</td>
</tr>
<tr>
<td>Increasing Social Resources</td>
<td>3.3 (0.5)</td>
<td>3.4 (0.7)</td>
<td>4.7 (0.4)</td>
</tr>
<tr>
<td>Increasing Challenging Demands</td>
<td>2.0 (0.9)</td>
<td>2.3 (0.9)</td>
<td>3.3 (0.6)</td>
</tr>
<tr>
<td>Reducing Demands</td>
<td>3.5 (1.0)</td>
<td>3.0 (0.9)</td>
<td>4.7 (0.7)</td>
</tr>
</tbody>
</table>

Nota: * = p < 0.001.
During the sixth meeting, the participants reported on the difficulties and advantages of setting goals. They received feedback from the instructor and planned their activities. The seventh weekly session was similar to the previous week. Finally, at the eighth meeting, the two groups completed the data collection instruments.

**Data Analysis**

The effectiveness of the intervention based on the job crafting behaviors on work engagement was evaluated by comparing the participants' mean scores on the Work Engagement and Job Crafting Behavior scales in the intervention group and in the comparison group, at three times. The comparative analyses of the mean scores before (T1), during (T2) and after the intervention (T3) between the intervention and comparison groups were developed using Repeated Measures Analysis of Variance (ANOVA).

**Results**

Initially, the means and standard deviations of the intervention and comparison groups were calculated, in the pre-test (T1), post-test 1 (T2) and post-test 2 (T3), according to Table 1. Then, repeated measures ANOVA analyses were used to evaluate whether the indices of the four dimensions of engagement and the three dimensions of job crafting behaviors in the intervention group would show a significant increase after the intervention (T3) compared to the scores of this group at T1 and the scores of the comparison group at T3. Mauchly's test indicated that the seven dimensions fulfilled the sphericity assumptions.

The interaction of time (T1, T2, and T3) and the participants' condition (Intervention, Comparison) was significant for the seven dimensions investigated (See Table 1 and Figure 1). Therefore, we performed contrast analyses using Bonferroni's correction.

When comparing times T1 and T3, it was observed that the interaction between the collection time and the condition was significant for all dimensions (Cognitive Engagement, $F(2) = 51.3, p < .001, \eta^2 = 0.39$; Emotional Engagement, $F(1) = 51.6, p < .001, \eta^2 = 0.39$; Students Social Engagement, $F(1) = 27.3, p < .001, \eta^2 = 0.25$; Colleagues Social Engagement, $F(1) = 46.8, \eta^2 = 0.37, p < .001$; Increasing Social Resources, $F(2) = 52.2, p < .001, \eta^2 = 0.39$; Increasing Challenging Demands, $F(2) = 28.6,$...
p < .001, $\eta^2 = .26$; Reducing Demands, $F(2) = 41.8$, $p < .001, \eta^2 = 0.34$ (See Figure 1). The results of the contrast analyses showed that the interaction of the condition (Intervention x Comparison) with the collection moments T2 and T3 were significant for the dimensions Cognitive Engagement, $F(2) = 18.2, p < .001, \eta^2 = 0.18$; Colleagues Social Engagement, $F(1) = 29.6, \eta^2 = .26, p < .001$; Increasing Social Resources, $F(1) = 25.2, p < .001, \eta^2 = 0.24$; Increasing Challenging Demands, $F(2) = 11.4, p < .001, \eta^2 = 0.12$; Reducing Demands, $F(2) = 83.6, p < .001, \eta^2 = 0.51$ (See Figure 1).

The findings showed that the scores of all dimensions under investigation gradually increased over time for the intervention group, and no significant differences were observed over time for the comparison group (See Table 1 and Figure 1). In addition, it can be observed that the scores of the intervention group in all dimensions are significantly higher than the comparison group, suggesting the effectiveness of the training.

**Discusión**

The objective of this study was to evaluate the effectiveness of an intervention program based on job crafting behaviors on work engagement of teachers. The expectation was that, after training, the group submitted to the intervention program would obtain significantly higher job crafting scores (H1), as well as significantly higher work engagement scores (H2), when compared to the comparison group.

The results showed that there was a significant difference between the intervention and comparison groups' job crafting behavior scores after the intervention, which confirmed hypothesis 1. These results are similar to those reported in a study by van Wingerden et al. (2016) in health professionals in the Netherlands. The impact that the training provoked may have been due to the fact that, as a result of the intervention, the teachers gained a more global vision of their work, which enhanced their awareness of their difficulties to cope with the demands of the school context and the need to reduce them. Therefore, they attempted to change their relationships with colleagues and students, and also alter their perceptions about their own work activities (van Wingerden et al., 2017).

The findings also showed that there was a significant difference between the work engagement scores of the comparison and intervention groups obtained after the intervention, which confirmed hypothesis 2. These results converge with the evidence van Wingerden et al. (2016) found in a study of health professionals from the Netherlands and with the research by van Wingerden et al. (2017), in a sample of special education teachers in Christian schools. The increase in engagement after the intervention may have been due to the fact that teachers were more motivated and inspired to perform their work tasks as they became aware that they could use resources that would make them fight the work demands (Bakker et al., 2014). In other words, when they realize that adopting proactive behaviors leads them to fight demands and obtain the resources needed to reach their work goals, the teachers feel more energetic, inspired, and involved in their work (van Wingerden et al., 2017).

The results also showed that there was a progressive increase in emotional engagement during the whole intervention in the intervention group. This finding may be due to the fact that they felt more valued, supported and motivated to develop work resources and, consequently, to better cope with the demands in the accomplishment of their tasks, and to execute their school activities more willing and readily (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009), which facilitates the achievement of their work goals (van Wingerden et al., 2017).

Although the hypotheses have been confirmed, some limitations need to be mentioned. The first one concerns the sample, as it included only basic and secondary public school teachers, which is why these results should be generalized with caution. It would be interesting, therefore, for future studies to also include university and private school teachers. The second limitation refers to the research method, as only the quantitative method was used. Future studies should therefore also use qualitative research methods, such as structured interviews, as the combined use of quantitative and qualitative methods could provide more in-depth knowledge of participants' experiences of the aspects inherent in their own work that have
improved, after the intervention. Nevertheless, the results obtained here recommend the implementation of intervention programs based on job crafting behaviors that enhance teachers’ awareness of their demands and resources, as a way to increase their inspiration, enthusiasm, and involvement with work, which can undoubtedly contribute to the better performance of students and educational institutions.

**Referencias**


