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## **Relationship between a training program and level of engagement in university teachers**

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### Abstract

*This study aimed to identify if the level of participation in a pedagogical innovation training program influenced work engagement of a Brazilian University and verify relationships between engagement and sociodemographic variables in a multi-group sample of teachers: T1=39 (teachers who participated in the program); T2=58 (teachers who were selected to participate in the program); CG=80 (university teachers). The Utrecht Work Engagement Scale-UWES and a sociodemographic questionnaire were used. The UWES results revealed that all groups presented high levels of work engagement, and there were no significant differences among the groups or regarding. The sociodemographic variables in relation to the UWES results, no significant differences were found in relation to the UWES results. This study expects to contribute to new research on work engagement in higher education contexts.*

**Keywords** work engagement; education; university; pedagogical innovation.

### Resumo

Este estudo teve como objetivo identificar se o nível de participação em um programa de treinamento em inovação pedagógica influenciou o nível de engajamento no trabalho em uma universidade brasileira e verificar as relações entre o engajamento e variáveis sociodemográficas em uma amostra multigrupo de professores: T1=39 (professores que participaram do programa); T2=58 (professores selecionados para participar do programa); GC=80 (professores universitários). Foram utilizados o Utrecht Work Engagement Scale-UWES e um questionário sociodemográfico. Os resultados do UWES revelaram que todos os grupos apresentaram altos níveis de engajamento no trabalho, não havendo diferenças significativas entre os grupos ou em relação a eles. Nas variáveis sociodemográficas em relação aos resultados do UWES, não foram encontradas diferenças significativas em relação aos resultados do UWES. Este estudo espera contribuir para novas pesquisas sobre engajamento no trabalho em contextos de ensino superior.

**Palavras-chave:** engajamento no trabalho; educação; universidades; inovação pedagógica.

### Resumen

*Este estudio tuvo como objetivo identificar si el nivel de participación en un programa de formación en innovación pedagógica influyó en el nivel de compromiso laboral en una universidad brasileña, así como verificar las relaciones entre el compromiso y las variables sociodemográficas en una muestra multigrupo de docentes: T1 =39 (docentes que participó en el programa); T2=58 (docentes seleccionados para participar en el programa); GC=80 (profesores universitarios). Se utilizó la Escala de Work Engagement de Utrecht-UWES y un cuestionario sociodemográfico. Los resultados del UWES revelaron que todos los grupos tenían altos niveles de compromiso laboral, sin diferencias entre los grupos o en relación con ellos. En las variables sociodemográficas en relación a los resultados del UWES no hubo diferencias en diferencias y diferencias en relación a los resultados del UWES. Este estudio espera contribuir a futuras investigaciones sobre el compromiso laboral en contextos de educación superior.*

**Palabras-chave:** compromiso en el trabajo; educación; universidades; innovación

*pedagógica.*

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### **Introduction**

Globally, undergraduate institutions are facing challenging transformations in their teaching and learning processes. Worldwide, educational systems are making efforts to change their structures and modifying didactic and pedagogical approaches influenced by complex political, societal and economic factors (Riveta et al., 2018). Higher education needs to respond to global trends such as changes in the labor market, the emergence of new educational technologies, the development of artificial intelligence, alternative paths of education and democratization of access to higher education, just to name a few (Brown et al., 2020). Regarding the labour market, employers report gaps in skills supposed to be in rise up to 2025, such as problem solving, critical thinking and analysis, as well as self-management (World Economic Forum, 2020), and higher education systems must address that.

This context leads universities to turn a large part of their attention, normally focused on research, to teaching (Barbato et al., 2019). It is no longer enough to have a scientific reputation and publication results. Consequently, in order to develop more complex skills, teachers need to rethink their teaching-oriented approach to a learning-oriented one, what requires their engagement in professional development initiatives (Pocinho & Perestrelo, 2011).

The changing nature of the teaching activity has a significant influence in the innovation initiatives in higher education (Barbato et al., 2019) and institutional support is fundamental to engage teachers in innovative practices (Auerbach & Andrews, 2018; Barbato et al., 2019). With focus on better learning, higher education institutions are emphasizing faculty development, especially regarding student-centered approaches of teaching, which implies that teachers need to constantly research about their own teaching practice, as well as develop socio-emotional skills (Riveta et al., 2018; Ödalen et al., 2018; Shaaruddin & Mohamad, 2017). Therefore preparing for teaching as a profession, in the context of changes in teaching paradigms, may be doubly challenging (Vilppu, Södervik, Postareff and Murtonen, 2019).

In this context, engagement in their teaching activities has become increasingly important to improve teaching and learning processes (Abío et al., 2019; Bryson & Hand, 2007; Pocinho & Perestrelo, 2011). However, similar to what occurs in Italian universities, culturally, the Brazilian university professor exercises his teaching functions based on individual interpretations. Therefore, institutional actions that propose changes encounter great resistance, as those are seen as an attack on professional autonomy (Barbato et al., 2019). However, the institutional development of faculty programs could foster faculty work engagement (Lima, 2016). It appears that teacher training programs are important factors, perhaps not exclusive, to generate positive results, such as engagement at work and meeting social and educational demands (Riveta et al., 2018).

Work engagement is a work-related positive fulfilling state of mind (Schaufeli, 2017) related to specific activities, persistent over time, of motivational and social nature, not focused on a single objective or situation (Schaufeli & Bakker, 2004). It is characterized by a behavioural and energetic factor represented by high levels of energy and resilience (vigor dimension); an emotional factor of sense of significance and challenge (dedication dimension); and a cognitive factor of high concentration and abstraction in activities (absorption dimension) (Schaufeli, 2017).

Among psychological constructs, engagement at work has received attention due to its positive association with improved job performance (Pocinho & Perestrelo, 2011), encouraging employees to be innovative and connecting them to their organization, whether emotionally, cognitively or physically (Han et al., 2020, Schaufeli, 2017). Work engagement is a critical factor for the success of organizations (Schaufeli, 2017).

In the university scenario, regarding teaching activity, it is worth mentioning that the psychological state emerges as a fundamental factor in the educational process. In this context, engagement at work is associated with high levels of care and commitment with academic activities, so that teachers who have a high level of engagement are able to meet the demands of their profession (Pocinho & Perestrelo, 2011). Furthermore, involvement in the academic context provides an "upward spiral" that stimulates processes of creativity and innovation (Koch et al., 2015), which improves the effectiveness of teachers at work (Han et al., 2020), and engaged teachers collaborate to increase student engagement levels (Bryson & Hand, 2007).

Work Engagement can be considered a recent concept, with limited research in the Brazilian context (Gonzalez et al., 2017), especially related to the activities of teachers (Han et al., 2020). There is a growing interest about the construct in literature (Kulikowski, 2017). These factors indicate the need to explore work engagement processes with university professors (Abío et al., 2019; Han, Yin, Wang & Baia; 2020).

The present study took place at a university located in the south of Brazil, which started in 2012 a path of cultural and pragmatic change involving its teaching and learning processes, from a teacher-centered to a student-centered approach. In addition to the regular teacher training program, whose participation was voluntary, the institution created a special program for selected teachers. This special faculty development program, focus of this article, lasted 18 months divided in three stages and the participants were selected accordingly with their willingness to change their own practice characteristics, so they could act as promoters of curricular and pedagogical changes. Generally, the program consisted of planning and implementing controlled experiments in pedagogical innovation courses and its stages are described below.

First stage: faculty participated in workshops and received individual guidance on course design and active learning methodologies. As a conclusion of this stage, the teachers delivered the teaching plan to be implemented in the following semester, receiving a financial bonus.

Second stage: before the beginning of the classes, the teachers participated in a workshop on the preparation of logbooks and were instructed to prepare them during the execution of the teaching plan. With the delivery of the complete logbook the teachers received the second financial bonus.

Third stage: a final workshop was offered to support teachers in the last stage of the program: the preparation of the scientific article based on the analysis of their pedagogical practice. Whoever sent the articles to scientific journals received the last financial bonus.

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### **Objective**

The aim of this study was to identify, if the level of participation in a pedagogical innovation training program influenced work engagement in a Brazilian University and verify relationships between engagement and sociodemographic variables in a multi-group sample of teachers comparing participants of the program with two other groups, one that had just concluded the program and other that had just been selected for it. It is hypothesized that the involvement of teachers in pedagogical innovation training programs is associated with high levels of engagement.

### **Method**

This is an exploratory, transversal and quantitative study, submitted and approved by the Research Ethics Committee of a Brazilian University.

Teacher engagement was assessed using the Utrecht Work Engagement Scale (UWES), a standard international instrument with versions in more than 19 languages. It is the most popular measurement instrument of work engagement (Kulikowski, 2017). Its Global scale is composed of 17 items grouped into three dimensions: Vigour (VI - six items), Dedication (DE - five items) and Absorption (AB - six items). The items are answered on a 7-point Likert scale, ranging from 'never/not once' (0) to 'always/every day' (6), and the results are categorized as follows: very low, low, medium, high and very high. The engagement indexes for the groups were assessed according to the standards of the UWES manual for international multi-occupational sample of 12.161 workers (Schaufeli & Bakker, 2004). The UWES Manual (Schaufeli & Bakker, 2004) presented good psychometric properties in a 1-factor and a 3-factor structure which allows to analyse the engagement as a whole, considering all items and also the three-factor model, observing its three dimensions. The Porto-Martins and Benevides-Pereira (2008) translation for Portuguese was used.

A specific questionnaire was formulated to identify sociodemographic variables and to characterize the faculty sample. Both the sociodemographic questionnaire and the UWES were voluntarily answered online by faculty.

The definition of the study groups considered whether the faculty member had participated in the special program and for how long, as follows:

- (1) Group completing the program (T1): teachers who experienced the three stages (planning, execution and scientific production), and who responded to the protocol sent via email. The number of respondents equalled 39 (N= 39); all 60 teachers who participated in the program had been invited (the response rate was 65%).
- (2) Group starting out on the program (T2): teachers selected for the second cohort of the project, but who had not yet started the training, and had filled out the instrument by email. The response rate was 96.7% (N = 58 out of 60 teachers). The survey was conducted right after the selection of these faculty, but before starting the program.
- (3) Control Group (CG): teachers who had no contact with the special program and answered the instrument via email. They were selected from the same undergraduate programs as groups T1 and T2; N=80 was obtained as a sample. The survey was applied at the same time of T1 and T2 in order to standardize the application period.
- (4) Total Group (TG): it considers teachers from all groups (N=177).

### ***Statistical Analysis***

The frequencies in each dimension among the groups (T1, T2 and CG) were compared using the Chi<sup>2</sup> test (p=0.05). The frequencies were weighted according to the total number of individuals in each group.

The means for the TG group were weighted according to the sample intensity in each group. The difference in the average work engagement index between sociodemographic factors and groups was compared using the Kruskal-Wallis test.

### **Results**

Regarding sociodemographic variables, the Total Group (GT) was mostly composed of women (62.7%; N = 111). Most had a master's degree (55.9%; N = 99), followed by a doctorate (41.8%; N = 74) and specialization (2.3%; N = 4). In addition, 40.1% (N = 71) had full-time dedication, followed by teachers paid for teaching hours (37.9%; N = 67) and part-time teachers (22%; N = 39), who refers to teachers who work 12 to 39 hours a week, both in teaching, in service or in research. Regarding teaching

experience, the highest percentage (39%; N = 69) was of those with experience between 10 and 19 years, followed by teachers with 5 to 9 years of experience (24.9%; N = 44), 20 years or more (24.3%; N = 43) and the minority with experience of up to 5 years (11.9%; N = 21). When segmented by working time at the educational institution where the research was conducted, the highest percentage was of teachers with up to 5 years of work (30.5%; N = 54), followed by 10 to 19 years (28.8% ; N = 51), 5 to 9 years (27.7%; N = 49) and lowest percentage in the category of 20 years or older (13%; N = 23). Finally, most of the respondents (51.4%; N = 91) performed other professional activities besides teaching.

Regarding the results of UWES, Table 1 shows the levels of engagement for each dimension, categories and groups.

**Table 1**

*Assessment results of the UWES dimensions to each group.*

| Category                  | Vigour |      |      | Dedication |      |      | Absorption |      |      | Global |      |       |
|---------------------------|--------|------|------|------------|------|------|------------|------|------|--------|------|-------|
|                           | T1     | T2   | CG   | T1         | T2   | CG   | T1         | T2   | CG   | T1     | T2   | CG    |
| Very high (%)             | 23.0   | 24.1 | 20.0 | 35.9       | 36.2 | 33.7 | 38.4       | 27.5 | 32.5 | 28.2   | 17.2 | 20.0  |
|                           | 8      | 4    | 0    | 0          | 1    | 5    | 6          | 9    | 0    | 1      | 4    | 0     |
| High (%)                  | 61.5   | 60.3 | 58.7 | 51.2       | 43.1 | 40.0 | 38.4       | 46.5 | 48.7 | 58.9   | 65.5 | 58.7  |
|                           | 4      | 4    | 5    | 8          | 0    | 0    | 6          | 5    | 5    | 7      | 2    | 5     |
| Medium (%)                | 15.3   | 15.5 | 16.2 | 12.8       | 20.6 | 18.7 | 23.0       | 25.8 | 13.7 | 12.8   | 17.2 | 17.5  |
|                           | 8      | 2    | 5    | 2          | 9    | 5    | 8          | 6    | 5    | 2      | 4    | 0     |
| Low (%)                   | 0.00   | 0.00 | 3.75 | 0.00       | 0.00 | 7.50 | 0.00       | 0.00 | 3.75 | 0.00   | 0.00 | 2.50  |
| Very low (%)              | 0.00   | 0.00 | 1.25 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 1.25 | 0.00   | 0.00 | 1.25  |
| <b>Mean</b>               | 31.3   | 31.1 | 30.2 | 27.1       | 26.9 | 25.8 | 30.4       | 29.5 | 29.5 | 88.9   | 87.6 | 85.5  |
|                           | 1      | 5    | 3    | 8          | 0    | 0    | 1          | 7    | 0    | 0      | 2    | 4     |
| <b>Standard Deviation</b> | 2.83   | 2.99 | 4.75 | 2.41       | 3.05 | 4.46 | 4.07       | 4.31 | 5.58 | 8.03   | 8.70 | 14.00 |

Note: T1= teachers who participated in the special program; T2 = teachers who were selected to participate in the special program; CG = teacher that not participate of the special program.

For the Vigour dimension, the proportion of responses in each category did not show any significant difference between the groups. The same was observed for the Dedication dimension. For Absorption, groups T1 and T2 showed equal proportions, but different from the control group (T1:  $p = 0.01$ ; T2:  $p = 0.02$ ). In the CG group there were fewer people at a medium level of engagement, with greater variability in this group, with more people at the extremes. In the global dimension, groups T1 and T2 were different from each other ( $p = 0.03$ ), but both were equal to the control. The T1 group had a higher proportion of responses in the Very High category than the T2 group, and the control group had a greater dispersion than T1 and T2 in the categories. The groups had different amounts of people, so a weighting was carried out so that the  $\text{Chi}^2$  comparison could be made. Despite the differences pointed out in the proportion of responses by categories in the Absorption and Global dimensions, there was no significant difference between the groups' average engagement rates in any of the dimensions. It is noteworthy that all the teachers involved in this study were working in an environment that was institutionally influenced by a pedagogical innovation, which included ongoing faculty development on pedagogical innovation which may have influenced the engagement levels in a positive direction.

As shown by the proportion of responses in each category in Table 1, all groups presented more than 50% of responses in High or Very High categories in all dimensions on the UWES Scale, considering the manual by Schaufeli and Bakker (2004). This means: high levels of energy, mental resilience, willingness and ability to invest effort in teaching activities (Vigour); a sense of meaning, enthusiasm, inspiration, pride and challenge (Dedication), as well as compenetrated at the activities (Absorption) (Schaufeli, 2017).

Observed weighted means of engagement were calculated at the total group (TG). The means (Vigour 5.13; Dedication= 5.29; Absorption= 4.95; Global= 5.11) were higher than the ones found in the UWES manual (Vigour 4.24; Dedication= 4.33; Absorption= 3.77 and Global= 4.10) and when compared to a national study with 714 teachers from different regions of Brazil (Vigour= 2.72; Dedication= 2.98; Absorption= 2.72; Global= versus 2.79) (Nascimento, 2017). Those are observed differences, not statistically tested.

There was no influence of the sociodemographic variables analyzed in the UWES dimensions, including the Global Scale. The participants levels of engagement in the research were high, regardless of qualification, teaching experience, years of experience in higher education, work regime or if they had other professional activities in addition to teaching.

The high global engagement index found in this study is a desirable aspect when teachers is constantly dealing with challenges and the commitment to activities can help in the success of teaching and learning innovation efforts. The results suggest that the special training program, or the concession that came from it, has had no influence on the levels of engagement, as even as teachers in the control group were highly engaged, according to the UWES Global Scale. So the engagement levels would not be an obstacle to the implementation of pedagogical innovations. The occurrence of high engagement, if it reflects the reality of the institution's teachers, indicates a desirable situation, since, accordingly with Schaufeli (2016), high engagement levels constitute an important resource for the promotion of organizational strategies, modulating positive organizational effects and results and impacting on the workers' well-being and quality of life.

Higher engagement tends to increase motivation to learn (Abío et al., 2019), and learning processes (Bryson & Hand, 2007). Furthermore, the processes resulting from engagement generate positive consequences for the employee and for the organization, and result in individual, collective and social effects, in connection with organizational development (Schaufeli, 2017).

In brief, high engagement levels constitute an important resource for the promotion of organizational strategies, modulating positive organizational effects/results and impacting on the well-being and quality of life of workers.

### **Considerações finais**

The aim of this study was achieved since, it was identified the work engagement in professors of a Brazilian University and as well verified relationships between engagement and sociodemographic variables in a multi-group sample of teachers. All the professor groups presented high levels of engagement in all UWES dimensions. The

levels of those who participated in the program were higher than the other groups, however not significantly, nor did social-demographic variables since. Hence, it is inferred that participation in training programs can be one of the factors that helps in promoting and maintaining levels of engagement, which is a positive, multi-determined and desirable aspect for both Universities and teachers.

The limitations of this study were, among other possible aspects, the sample size and distribution, since it was conducted in a single educational institution, the fact that measurements were not collected longitudinally, no antecedent factors were identified that explain the high levels of engagement, nor was it investigated whether there was any influence of payment on the engagement levels of the participants who completed the program. Another point of attention is that the control group had only those who answered the protocol by email, not considering who did not do so, which may have influenced the engagement rates.

A future work can investigate what factors lead to this high engagement of the institution's teachers, regardless of participation in special teacher training programs or the sociodemographic variables studied.

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