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ENGAGEMENT AND PERCEIVED SELF-EFFICACY OF TEACHERS OF DENTISTRY COURSES IN CHILE

NIVEL DE ENGAGEMENT Y DE AUTOEFICACIA PERCIBIDA POR LOS DOCENTES DE LAS CARRERAS DE ODONTOLOGÍA EN CHILE

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ABSTRACT

Introduction. There is limited information on the level of engagement and the perceived teaching self-efficacy of tutors in Health Sciences programs in Chile, specifically those in the field of dentistry. The aim of this study is to identify the levels of engagement and perceived self-efficacy among dentistry educators in Chile. Methodology. A quantitative and descriptive study with a non-experimental design was conducted. The sample consisted of 285 educators selected through non-probabilistic convenience sampling. Three instruments were applied: a demographic questionnaire, the Utrecht Work Engagement Scale (UWES-17), and the University Teaching Self-Efficacy Scale (ESCADU). Results. The results indicated that educators exhibited moderate levels of engagement and self-efficacy. The Dedication and Vigor dimensions showed the highest engagement scores. Regarding self-efficacy, significant differences were observed in the dimensions of academic management and social responsibility, with higher scores for educators with postgraduate training. Discussion and Conclusions. These findings highlight the need to implement continuous teacher training programs to strengthen pedagogical skills and improve the quality of dental education. It is concluded that engagement and teaching self-efficacy are key factors for optimizing tutor performance and, consequently, enhancing student learning outcomes.

Palabras clave:
engagement, autoeficacia docente, odontología, educación superior.

RESUMEN

Introducción. Existe escasa información acerca del nivel de engagement y la percepción de autoeficacia docente de los profesores que son tutores en las carreras de Ciencias de la Salud en Chile, específicamente de aquellos que pertenecen a la carrera de odontología. El objetivo de este estudio es identificar los niveles de engagement y autoeficacia percibida en docentes de odontología en Chile. Metodología. El estudio es de tipo descriptivo-transversal, con un diseño no experimental y una metodología cuantitativa. La muestra estuvo compuesta por 285 docentes seleccionados mediante muestreo no probabilístico por conveniencia. Se aplicaron tres instrumentos: un cuestionario demográfico, la Escala Utrecht de Engagement en el Trabajo (UWES-17) y la Escala de

Autoeficacia del Docente Universitario (ESCADU). Resultados. Los resultados indicaron que los docentes presentan niveles moderados de engagement y autoeficacia. Las dimensiones dedicación y vigor mostraron los puntajes más altos de engagement. En cuanto a la autoeficacia, se observaron diferencias significativas en las dimensiones de gestión académica y responsabilidad social, siendo más altas en docentes con formación de posgrado. Discusión y Conclusiones. Estos hallazgos subrayan la necesidad de implementar programas de formación docente continua para fortalecer las competencias pedagógicas y mejorar la calidad de la enseñanza en odontología. Se concluye que el engagement y la autoeficacia docente son factores clave para optimizar el desempeño de los tutores y, por ende, el aprendizaje de los estudiantes.

Introduction

In the field of higher education, the quality of teaching is closely related to the training and competencies of the teaching staff. In health careers this relationship is more critical due to the complexity of the teaching processes that integrate theoretical knowledge with clinical skills.

The didactic training of teachers, has been recognized as a key factor in improving learning outcomes (García-Martínez & Martín-Romera, 2018). In the health area, educational institutions and regulatory bodies are increasingly interested in the continuing education of teachers, stressing the importance of having Departments of Medical Education that promote research, teaching and transferable continuing professional development, both for the undergraduate and graduate cycle (Fenoll-Brunet, 2021). Professional specialization is, however, the most relevant aspect when evaluating the curriculum of teacher applicants, to the detriment of pedagogical practice rather than pedagogical practice and research training.

At present, it is not known what the higher education qualifications of current dental teachers are. In general, older teachers occupy the highest academic positions, were trained under a traditional model of education, and teach in line with their own experiences as a student (Enriquez et al, 2021; Falcón-Torres and Mouré-Miró, 2020).

The practice of university teaching in health careers is substantially different from other areas of knowledge (Millán Núñez-Cortés, 2018; Orsini et al., 2019). Teaching and learning are focused not only on the students as the main actors in this process, but also on the patients and their health needs. The decision-making involved in a diagnosis or treatment is often defined without having the disciplinary training or considering the need for teaching competencies and skills required to be a clinical tutor (Fenoll-Brunet, 2021).

In Chile, dentistry is one of the health sciences careers with the greatest presence in higher education, being offered by 19 universities (Subsecretaría de Educación Superior, 2023). Despite the emphasis placed on learning based on clinical competencies, the strengthening of the teaching profession among those who work in these facilities is still in a process of construction and development.

La falta de estudios específicos que describan el *work engagement* y la autoeficacia percibida por los docentes de odontología en Chile, justifica la pertinencia de estudios actuales y futuras investigaciones para el desarrollo de programas de capacitación docente.

Conceptualization of Engagement

Dental education has joined the concern for strengthening teacher training, highlighting the importance of motivation for training, both in the discipline itself and in pedagogical skills. A close link between student academic achievement, teaching quality and the overall performance of an educational system is recognized, and is related to teacher engagement and perceived self-efficacy (Gal et al., 2021).

Increasing work stress has been identified by the World Health Organization (WHO) as a potential "epidemic", which generates a challenging environment for teachers and affects their well-being and productivity (Rodríguez et al., 2017). In this context, engagement emerges in the first decade of the 21st century as a protective element against burnout (Ávila Dávila et al., 2018).

Teacher training and educational quality have a direct impact on job stability, the level of *engagement* and self-efficacy of teachers, with repercussions on student academic performance (Zabalza, 2016). However, there is little research that explores these variables, particularly in health careers and, specifically, in dentistry.

In the workplace, *engagement* is defined as a positive and sustained motivational construct, characterized by energy, dedication and commitment to work (Bakker et al., 2012; Schaufeli et al., 2002). This state is associated with the perception of competence to respond to teaching demands, collaboration with the team and enjoyment of the work, thus favoring a positive attitude towards educational practice.

Engagementin the Educational Context

Organizations are increasingly recognizing people as their most valuable asset, focusing on the motivation, safety and well-being of their employees, especially on engagement. Educational institutions should not be oblivious to this new trend, as it has been demonstrated the relationship between the physical and psychological well-being of employees, as well as the economic and social performance of the institutions. Engagement, which implies vigor, dedication and absorption at work, contributes to the creation of healthy organizations, differentiating them from toxic ones. This approach represents a key challenge for positive organizational psychology, underlining the importance of the integral well-being of workers in order to achieve optimal professional performance.

The field of teaching has been recognized as a space of high vulnerability, where professionals have a greater propensity to experience emotional exhaustion in the exercise of their work. This phenomenon is considered a manifestation of stress related to the work environment. In addition, current educational approaches have increased teaching responsibilities, incorporating administrative tasks that can reduce collaboration among colleagues, which significantly contributes to the appearance of this state of burnout (Ordóñez-Balladares et al., 2021).Professional burnout syndrome or burnout syndrome (SB), appears when the demands of the environment exceed the individual's ability to handle them, leading to negative effects such as frequent change of teachers, resignations, non-compliance, absences due to illness and family problems, thus affecting the achievement of the objectives established by the organization. Several studies, such as Rodriguez et al., (2017), directly address the issue of job stress among teachers by showing that job stress and burnout affect teachers due to adverse working conditions and the high pressure they are subjected to on a daily basis in their educational institutions. It is mentioned that work-related stress is emerging as a significant concern for the 21st century, to the point of being considered by the World Health Organization as a potential "epidemic". This context creates a challenging environment for teachers, impacting their well-being and productivity (Rodriguez et al., 2017).

However, the concept of “engagement” is introduced as a mitigating factor against the risk of developing SB. Engagement is characterized by a high level of energy, mental stamina, enjoyment of work, and a deep connection to work activities, leading to a positive attitude towards work. This condition is described as a positive state of mind associated with work, which manifests itself through vigor, dedication, and absorption. Studies by Montoya and Moreno (2012) and Contreras (2015), cited by Ordóñez et al., in 2021, explore the concept of engagement and how it can act as a counterbalance to burnout among education professionals. They highlight how a high level of engagement and job satisfaction can improve resilience in the face of work pressures. Engagement is a state of

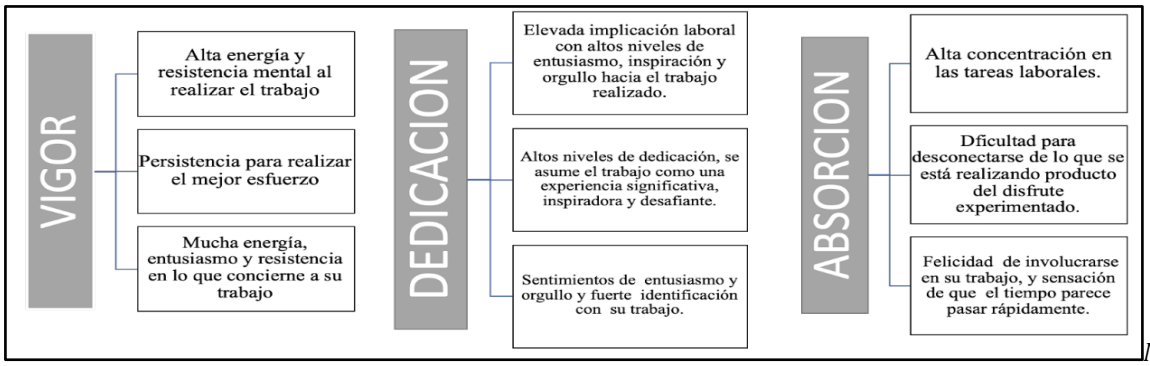
mind positively related to work and characterized by vigor, dedication and absorption. This study suggests that engagement not only protects against burnout, but also promotes greater well-being and productivity among teachers (Ordóñez et al, 2021). Also, the studies mentioned by Rodriguez et al. in 2017 provide a framework for understanding how work adversities affect teachers and highlight the importance of engagement as a protective factor. The implication is clear: educational institutions and policy makers should strive to improve teachers' working conditions and foster engagement to prevent burnout and its detrimental effects (Rodriguez et al., 2017).

Academic *engagement* represents a determining factor in the motivation to acquire or complement teacher training (Sarmiento Martínez et al., 2022). It has been proposed that its positive influence lies in the control of burnout and in the improvement of professional resilience, promoting well-being and increased productivity (Montoya and Moreno, 2012; Contreras, 2015; Ordóñez-Balladares et al., 2021). This confers a protective effect on them in the face of adversity in the workplace (Westphal et al., 2022).

Although there is no exact translation into English, *engagement* is conceived as a construct composed of three dimensions: vigor, dedication and absorption (Schaufeli and Bakker, 2004; Delgado-Abella, 2020).

Figure 1

Dimensions of teacher engagement



Notes: own elaboration, extracted from Schaufeli and Bakker, 2003

Impact of Engagement in the Educational Environment

Most research on *engagement* has focused on students and their academic performance, leaving aside the study of this concept as a motivational process that reinforces various aspects of teaching (Parra, 2017). However, the academic literature recognizes that *engagemen*t improves the well-being and job satisfaction of teachers, positively impacting their performance and teaching effectiveness.

Arriagada (2015) highlights the influence of seniority and academic rank in raising *engagement* levels, suggesting that experience and higher professional status could reinforce teaching commitment. On the other hand, stress at different educational levels is a latent problem (Alvites-Huamaní, 2019), aggravated by the demand for intellectual competencies and the intense emotional and affective load inherent to the teacher-student relationship (Bocanegra Rodríguez and Sánchez Ospina, 2021). In this context, it becomes necessary for the State and institutions to pay attention to the working conditions of teachers to promote the quality of education (Rodríguez et al., 2017).

Research indicates that teachers with a high level of *engagement* achieve higher levels of job satisfaction and a better identification with their work, showing greater

willingness to face new professional challenges and to opt for advanced academic training and/or training activities in teaching.

Conceptualization of Teacher Self-Efficacy

Teaching self-efficacy is defined by feelings of competence and personal efficacy, i.e., the ability to successfully perform a specific teaching task in a particular context. The self-efficacy theory attempts to demonstrate the influence of cognitive, behavioral, contextual and affective aspects of people in the world of work, using social learning as a frame of reference. It is based on the theory that self-referential thinking influences people's behavior and motivation (Cabanillas and Biancato, 2016; Prieto Navarro, 2016).

Teaching self-efficacy refers to the perception of personal competence and the ability to successfully perform teaching tasks in a specific context. Framed within social learning, this perspective considers the influence of cognitive, behavioral, contextual and affective factors in the workplace, highlighting how self-referent thinking impacts behavior and motivation (Cabanillas and Biancato, 2016; Prieto Navarro, 2016).

In education, Rodriguez (2017) highlights the relevance of self-efficacy in teachers' beliefs about their competencies to perform their work and obtain valuable achievements, always mediated by contextual factors. In summary, self-efficacy integrates interrelated beliefs that influence the regulation of thinking, motivation, and emotional and physiologicalstates (Sarmiento Peralta, 2020).

Self-efficacy in the Educational Context

The concept of teacher self-efficacy emerged in the late 1970s, understood as teachers' confidence in their ability to positively influence student achievement (Covarrubias, 2014). Research indicates its importance in three key areas:

- Academic motivation and student achievement: experimental, longitudinal and causal studies show that self-efficacy beliefs influence motivation, self-regulation and academic performance of students (Avilés-Canché and Marbán, 2023).
- Career choice: how self-efficacy beliefs influence vocational decision making has been examined, highlighting its relevance in career counseling and career psychology (Romero et al., 2022).
- Teaching practice and academic success: teacher self-efficacy beliefs affect teaching method and student achievement, impacting pedagogical strategies and educational perspective (Del Río et al., 2018).

In relation to teaching style, it has been found that teachers with low self-efficacy tend to adopt a more authoritarian approach and rigid control, with a negative view of student motivation. On the contrary, those who present high self-efficacy generate dynamics that promote students' personal interests and self-regulation. Likewise, teacher self-efficacy acts as a predictor of both academic performance and students' beliefs about their own success in different educational areas and levels (Del Río et al., 2018; Milicic, 2017).

Impact of Teacher Self-Efficacy in the Educational Context

The teaching self-efficacy model focuses on the perceived abilities to successfully perform specific tasks in a given context, so that teachers see themselves as capable of delivering effective teaching that stimulates learning (Covarrubias and Mendoza, 2015). Thus, self-efficacy is conceived as a mediator between teachers' knowledge and their

practices, implying that it is not enough to possess skills and abilities: it is essential that teachers have the conviction of their own potential in order to ensure quality education.

For more than three decades, studies have been developed that evidence how teachers' beliefs about their ability influence students' learning and motivation (Covarrubias and Mendoza, 2015). A high sense of self-efficacy is associated with greater dedication, persistence in the face of difficulties and a perspective of challenges as opportunities, which contrasts with those who present low self-efficacy and, consequently, tend to show less effort and perseverance (Zimmerman et al., 2005).

The relevance of self-efficacy in education can be seen in the influence it exerts on the choice of activities, the level of commitment and the overcoming of challenges. Thus, a teacher with high self-efficacy tends to use innovative teaching methods and to persevere in complicated situations, benefiting the learning of his or her students (Rodríguez-Rey and Cantero-García, 2020). Likewise, the study by Reaves and Cozzens (2018) highlights the importance of a safe and supportive classroom climate to enhance the teacher's intrinsic motivation and self-efficacy beliefs, favoring the implementation of effective pedagogical strategies and adequate classroom management (Reaves and Cozzens, 2018).

Figure 2

Factors related to perceived self-efficacy

Notes: Own elaboration, adapted from Schunk and DiBenedetto, 2021.

Objective of the Study

To describe the demographic and academic profile, as well as the levels of *engagement* and perceived self-efficacy of dental teachers in Chile.

Method

Research Design

The present study is a descriptive cross-sectional research with a non-experimental design and a quantitative methodology.

Population and Sample

Dental teachers who teach in the 16 faculties and schools of dentistry in Chile, belonging to the Council of Rectors of Chilean Universities (CRUCH) and members of the Chilean Association of Dental Education (ACHEO), were invited by means of an informed

consent form. Seventy-six percent of the universities that teach dentistry are part of ACHEO, and 91% of the students of this career are enrolled in them (CRUCH, 2024; ACHEO, 2024).

For data collection, the teachers of the careers were contacted and sent the questionnaire together with the informed consent form.

A sample of 285 teachers from both public and private universities was obtained. The sample was selected by non-probabilistic convenience sampling.

Techniques and Instruments for Data Collection

For the present study, IBM SPSS Statistics version 29 software was used to perform the statistical analyses. Several tests are applied in order to evaluate the distribution of the data and to determine the appropriate tests for the analysis of *engagement* and perceived self-efficacy in dental teachers in Chile.

The questionnaire to be used was confidential and has a coding system that allows the identification of gender, teacher training and years of teaching experience.

The data to be collected include: demographic aspects of interest for the development of the study; level of Engagement according to the Utrecht Engagement Scale (UWES-17): Utrecht Work Engagement Scale-Teachers) by Schaufeli and Bakker (2003): english version and Valdez and Ron (2011): Spanish version; level of perceived self-efficacy according to the university teacher self-efficacy scale (Escadu) validated by Sarmiento Peralta (2020).

In order to determine the most appropriate statistical procedure, an evaluation of the normality of the variables was carried out using the Kolmogorov-Smirnov test. This analysis made it possible to identify the distribution of the data and, consequently, to select the statistical test that best suited the characteristics of each variable. The results indicate that all dimensions of *engagement* and self-efficacy, both in men and women, present non-normal distributions. Therefore, the Mann-Whitney statistical test was used as the method of analysis to evaluate the differences in the variables according to gender (male and female).

Similarly, the Kolmogorov-Smirnov test revealed that the dimensions of *engagement* and self-efficacy, according to teaching experience and according to type of teacher training do not comply with normality ($p \leq 0.05$). Therefore, the Kruskal-Wallis nonparametric test was used to compare the groups.

Results

The results obtained allow us to identify the main characteristics of the participating teachers and to establish a solid basis for the analysis of *engagement* and perceived self-efficacy.

According to the normality test applied, the statistical results of engagement and perceived self-efficacy are analyzed according to gender, teaching experience and teacher training

The results show the main characteristics of the faculty in terms of gender, teaching experience and pedagogical training, providing an overview of the levels of engagement and self-efficacy in the field of dental education.

Results of the Scenario and Stakeholder Analysis

In Chile, dentistry is taught in 18 universities, of which 8 are public and 10 are private. For this study, 16 faculties and schools of dentistry belonging to the CRUCH and members of ACHEO were included. The analysis begins with a description of the distribution of teachers in these institutions, considering the particularities of each type of university.

Table 1
Overall results for categorical (gender) and numerical variables (teacher training and teaching experience)

Categorical Variable	Category	Frequency
GENRE	Male	118 (41,4%)
	Female	167 (58,6%)
TEACHER TRAINING	O. General	16 (5,6%)
	O. Specialist	115 (40,4%)
	O. Postgraduate	154 (54%)
TEACHING EXPERIENCE	Less than 2 years	14 (4,9%)
	Between 2 and 5 years	49 (17,2%)
	Between 2 and 10 years	53 (18,6%)
	More than 10 years	169 (59,3%)

The sample is characterized by a higher representation of female teachers (58.6%), who constitute the majority group. In terms of training, the majority of teachers have postgraduate studies (54%), followed by those with specialist training (40.4%) and a minority with general training (5.6%). In terms of teaching experience, 59.3% have more than 10 years of experience, reflecting a predominance of professionals with extensive experience in the educational field.

These results provide an overview of the profile of dental teachers in Chile and served as a basis for the detailed analysis of the level of engagement and perceived self-efficacy.

Analysis of Engagement and Perceived Self-Efficacy

Table 2 shows the descriptive statistics of the dimensions of engagement and perceived self-efficacy in dental teachers in Chile.

Table 2
Average of the dimensions of engagement and perceived self-efficacy

Descriptive statistics	**Media**	**Standard deviation**
ENGAGEMENT	5,89	0,24
Vigor	5,88	0,82
Dedication	6,14	0,89
Absorption	5,69	0,91
SELF-EFFICIENCY	3,37	0,42
Academic management	3,40	0,47
Educational strategies	3,31	0,47
Continuous improvement	3,57	0,48
Social responsibility	3,21	0,61

Overall *engagement* showed a mean of 5.892 (±0.24), indicating a high level of commitment.

Some relevant results stand out in the analysis of the *specific* dimensions of engagement. The "vigor" dimension reflects that teachers experience energy and mental stamina when performing their work. The "dedication" dimension is the highest, which shows a high level of enthusiasm and a sense of challenge in the development of their work. Finally, the "absorption" dimension indicates that teachers tend to be deeply concentrated and absorbed in their tasks (5.69± 0.91).

Overall self-efficacy has a mean of 3.370 (±0.4256), reflecting a moderate perception of competence.

Specific dimensions of self-efficacy reflect different levels of teachers' perceived competence. The "academic management" dimension indicates a moderate capacity to manage academic activities. The dimension corresponding to "educational strategies" reflects a moderate competence in its application. The "continuous improvement" dimension suggests confidence in the ability to improve skills and knowledge on an ongoing basis. Finally, "social responsibility" is the lowest dimension, indicating a reduced perception of influence on their social and community environment.

In general, teachers show greater engagement than self-efficacy, highlighting a high level of dedication and commitment to their work.

Comparative Results on Engagement and Perceived Self-Efficacy According to Gender

Table 3

Engagement and teacher effectiveness results by gender

GENRE	DIMENSION	MEDIA	STANDARD DEVIATION
Male (n=118)	ENGAGEMENT	5,87	0,86
	Vigor	5,84	0,87
	Dedication	6,15	0,90
	Absorption	5,62	0,96
	SELF-EFFICIENCY	3,34	0,50
	Academic management	3,34	0,55
	Educational strategies	3,28	0,52
	Continuous improvement	3,57	0,54
	Social responsibility	3,10	0,70
Female (n=167)	ENGAGEMENT	5,97	0,79
	Vigor	5,89	0,79
	Dedication	6,13	0,87
	Absorption	5,72	0,88
	SELF-EFFICIENCY	3,35	0,35
	Academic management	3,40	0,41
	Educational strategies	3,31	0,42
	Continuous improvement	3,60	0,43
	Social responsibility	3,24	0,53

Since the dimensions of *engagement* and perceived self-efficacy according to gender have non-normal distributions, the Mann-Whitney test was used.

Table 4

Results of the Mann-Whitney test for the dimensions of teacher engagement and self-efficacy according to gender

Dimension	Mann-Whitney U	Sig. Asin. (bilateral)
ENGAGEMENT	9514,5	0,62
Vigor	9676	0,79
Dedication	9483,5	0,58
Absorption	9487	0,68
SELF-EFFICIENCY	9578	0,68
Academic management	9797,5	0,93
Educational strategies	9351	0,46
Continuous improvement	9335,5	0,43
Social Resp	9780,5	0,91

The analysis shows that there are no significant differences between men and women in the dimensions of *engagement* and self-efficacy ($p > 0.05$), indicating similar perceptions between both genders. The dimensions highlighted are “continuous improvent” and “academic management” with the highest scores, while “social rresponsiblity” obtained the lowest scores, indicating an area of improvement for teachers.

Comparative Results for Engagement and Perceived Self-Efficacy According to Teaching Experience.

Figures 3 and 4 present the results of *engagemen*t and perceived self-efficacy broken down by four levels of teaching experience.

Figure 3

Levels of engagement and its dimensions according to years of teaching experience in dentistry

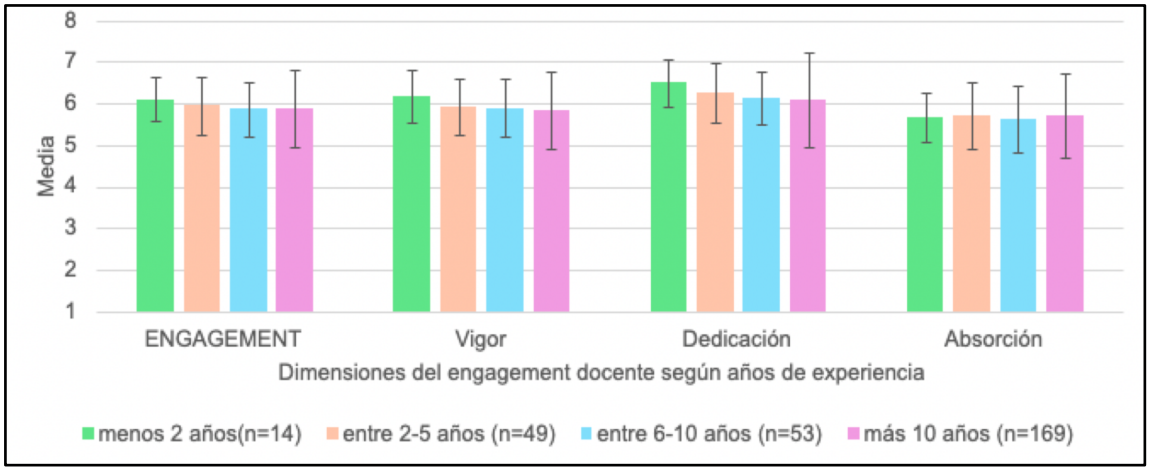


Figure 3 presents the mean total *engagement* scores and its three dimensions (vigor, dedication and absorption), classified into four ranges of teaching experience. Dental teachers in Chile show high and stable levels of *engagement* in all dimensions, regardless of their experience. This suggests that commitment to teaching does not diminish over the years and that motivation remains a key factor in their professional performance.

Figure 4

Perception of self-efficacy and its dimensions according to years of teaching experience in dentistry

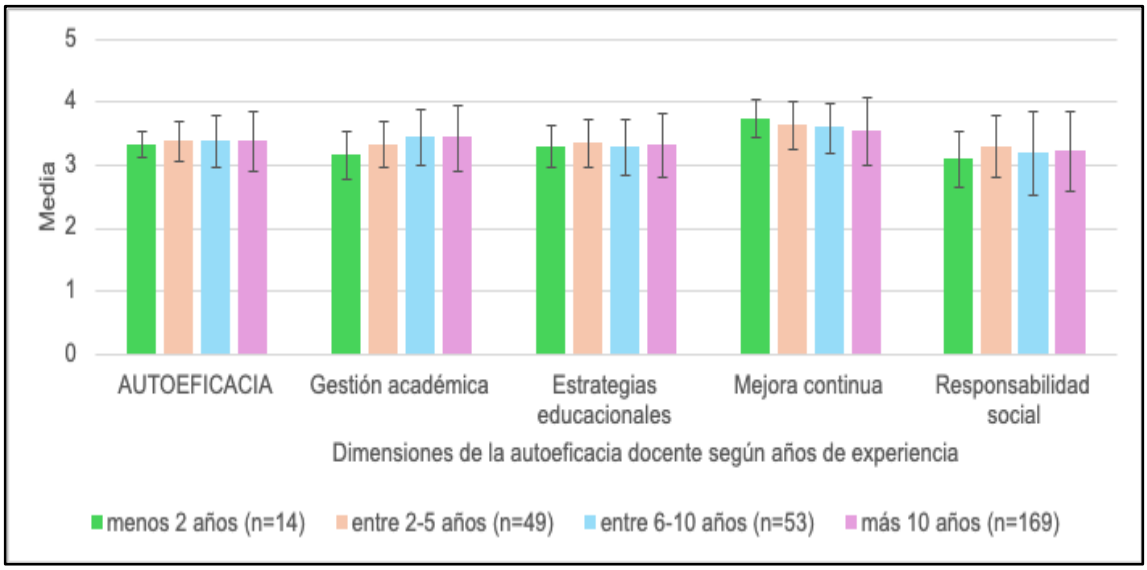


Figure 4 shows the mean self-efficacy scores and its four dimensions (academic management, educational strategies, continuous improvement, and social responsibility) as a function of teaching experience. Dental teachers in Chile show relatively homogeneous levels of self-efficacy regardless of their experience. However, newer teachers tend to feel more competent in continuous improvement, while social responsibility is an area of lower perceived self-efficacy in all groups.

Since the dimensions of perceived self-efficacy according to teaching experience present non-normal distributions, the Kruskal-Wallis statistical test is used to compare the groups.

Table 5

Results of the Kruskal-Wallis test for the dimensions of engagement and perceived self-efficacy according to teaching experience

Dimension	Kruskal-Wallis H	Asymptotic sig. (p-value)
ENGAGEMENT	1,87	0,59
Vigor	2,54	0,46
Dedication	4,32	0,22
Absorption	2,54	0,46
SELF-EFFICIENCY	1,4	0,69
Academic Management	11,88	0,00
Educational Strategies	1,12	0,75
Continuous Improvement	1,54	0,68
Social Responsibility	2,04	0,56

The Kruskal-Wallis test showed statistically significant differences only in the "academic management" dimension of self-efficacy, where perception varies according to factors such as teaching experience. In the other dimensions of engagement and self-efficacy, no significant differences were found between the groups, indicating a more homogeneous perception.

Comparative Results for Engagement and Perceived Self-Efficacy by Level of Teacher Education.

Figures 5 and 6 present the results of engagement and self-efficacy broken down by three levels of teacher training.

Figure 5

Comparison of teacher engagement by educational level

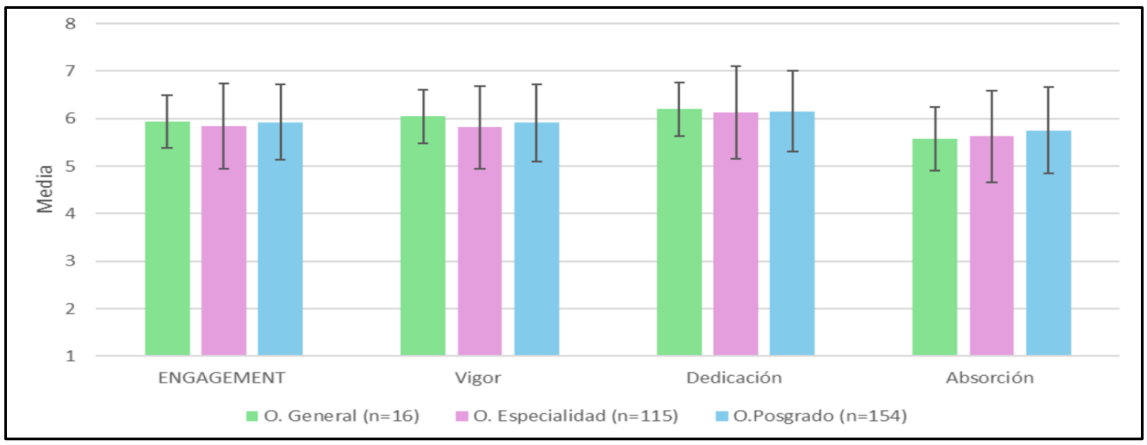
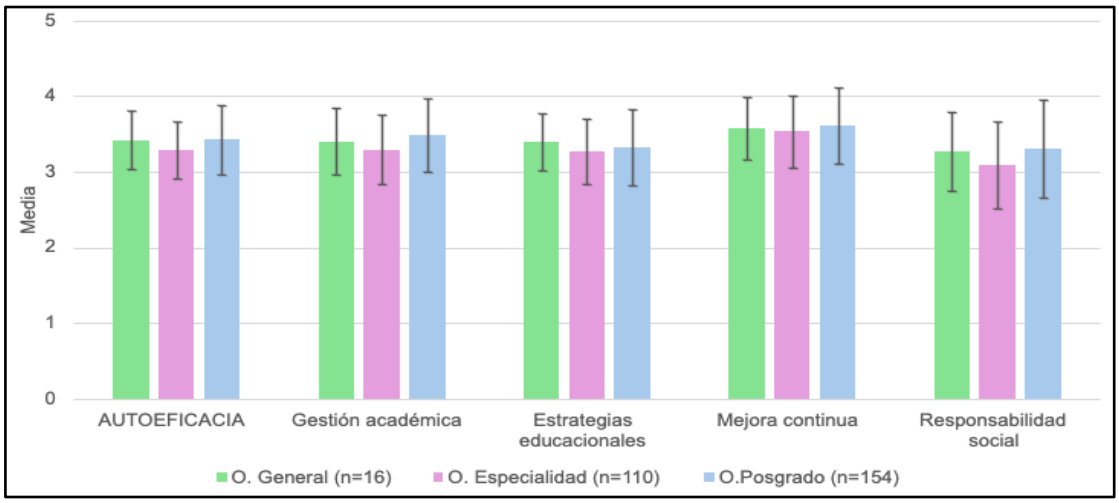


Figure 5 shows the averages of *engagement* and its three dimensions (vigor, dedication, and absorption) in dental teachers, classified according to their level of training.

Figure 6
Perception of self-efficacy in dental teachers according to their level of training



Fibure 6 shows the mean of general self-efficacy and its four dimensions (academic management, educational strategies, continuous improvement and responsibility) in three groups of dental teachers, organized according to their level of training.

In relation to *engagement*, teachers with general training show a high level of commitment to their educational work. Those with specialty training also show high levels of *engagement*, although with greater variability in their responses. On the other hand, teachers with postgraduate training show similar levels of *engagement*, with an intermediate dispersion compared to the other groups. Specifically, teachers with general education stand out in the dimensions of "vigor" and "dedication", while those with postgraduate studies present greater "absorption" in their work.

Regarding self-efficacy, teachers with postgraduate training report the highest levels in all dimensions, with special emphasis on academic management, educational strategies and continuous improvement.

In general, *engagement* remains high in all teacher education groups, with general education teachers excelling in vigor and dedication. On the other hand, self-efficacy is higher among teachers with postgraduate training, especially in the areas of academic management and continuous improvement.

These results suggest that advanced training positively influences the perception of teacher self-efficacy, while *engagemen*t remains high regardless of the level of training.

Since the dimensions of *engagement* and perceived self-efficacy according to the level of teacher training present non-normal distributions, the Kruskal-Wallis statistical test was used to compare the groups.

Table 6
Results of the Kruskal-Wallis test for the dimensions of engagement and perceived self-efficacy according to the level of teacher training

Dimension	Kruskal-Wallis	Asymptotic sig. (p-value)
ENGAGEMENT	0,443	0,801
Vigor	1,128	0,569
Dedication	0,307	0,858
Absorption	2,318	0,314
SELF-EFFICIENCY	**11,954**	**0,003**
Academic management	14,786	0.001
Educational strategies	2,219	0,33
Continuous improvement	3,712	0,156
Social responsibility	10,811	0,004

Table 7 shows the values of the Kruskal-Wallis test showing statistically significant differences in engagement and self-efficacy according to the level of teacher training.

In relation to *engagement*, no significant differences were found between the teacher training groups in any of its dimensions. The type of teacher training, then, does not significantly influence the level of *engagement*. Teachers, regardless of their background, show similar levels of commitment to their work.

For the self-efficacy variable, there are significant differences in the perception of general self-efficacy and in the dimensions of academic management and ssocial responsibility. Therefore, teacher training influences these specific areas of self-efficacy. It is also observed that teachers with more training (postgraduate) tend to perceive themselves as more competent in these dimensions.

These results suggest that advanced training positively influences the perception of self-efficacy in areas related to management and social responsibility, whereas the level of *engagement* remains constant regardless of the type of training.

Discussion

The results obtained in this study show that the variables gender, professional experience and teacher training have an impact on *engagement* and perceived self-efficacy

In line with previous research (Arvidsson et al., 2019; Aguilera Fierro, 2017; Peralta et al., 2023), it was corroborated that continuous training, both disciplinary and pedagogical, favors engagement and self-efficacy.

Likewise, the "academic management" dimension of teacher self-efficacy was shown to vary substantially according to experience and professional preparation, reinforcing the importance of specialization in the perception of specific competencies.

The relatively low score in the "social responsibility" dimension of perceived self-efficacy suggests the need to design specific programs to strengthen it and the achievement of competencies in teachers.

This aspect coincides with the proposal of Vega Rodríguez and Vizcaíno Escobar (2023) on the relevance of adapting self-efficacy to current educational demands, including practice experiences in real scenarios or undergraduate residencies.

According to Venegas Traverso (2021), individuals with a weak sense of self-efficacy lack commitment, are discouraged in the face of difficulties, avoid complex challenges and lack confidence in their own abilities. In contrast, those with a high sense of self-efficacy show curiosity, persevere in the face of problems and perceive adversity as an opportunity to learn and develop their skills. In this sense, the research by Hernández Jácquez and Ceniceros Cázares (2018), focused on higher education faculty in Mexico, concluded that a high level of teacher self-efficacy is closely related to better educational performance. This underscores the relevance of fostering self-efficacy to optimize the quality of higher education.

In contrast to Emeljanovas (2023), who relates emotional load with lower teacher engagement, the findings of this study indicate that high levels of engagement, mainly in "dedicationn" and "vigor", can function as a protective factor against stress, favoring more innovative and effective teaching practices (Lozano-Paz and Reyes-Bossio, 2017). In addition, values such as resilience and ethical commitment (Barni et al., 2020; Galindo-Domínguez et al., 2020), together with professional experience and advanced training (Idrogo Mori, 2020), strengthen self-efficacy and benefit both teaching quality and teacher well-being.

The following recommendations are proposed to enhance teacher training, improve educational quality and strengthen the well-being and commitment of dental teachers in Chile, with the aim of promoting more effective and motivating teaching:

- Promote the development of continuing education programs that integrate both pedagogical and disciplinary competencies, with special emphasis on academic management and social responsibility.
- Implement training strategies based on practice, such as pedagogical residencies, mentoring and simulations in real scenarios, in order to strengthen teachers' confidence and improve their professional performance.
- Encourage *engagement* as a protective factor against stress, promoting spaces for teacher wellbeing, learning communities and support networks that reinforce dedication and vigor, thus minimizing the emotional burden of teaching.
- Reinforce the dimension of social responsibility through outreach programs and training in educational leadership, in order to strengthen the perception of social impact and commitment to the community.
- Evaluate and monitor the impact of teacher training through periodic measurements of *engagement* and self-efficacy, complemented with longitudinal and qualitative studies, which will allow adjusting and optimizing training strategies according to teachers' needs.

Conclusions

Engagement and teacher self-efficacy emerge as key variables for the effectiveness and job satisfaction of dental teachers in Chile. The "dedication" of *engagement* stands out for reflecting high commitment and enthusiasm, while "academic management" shows improvements linked to advanced training. On the other hand, "university social

responsibility" presents the lowest scores, evidencing the need to reinforce this aspect in teacher development programs.

Likewise, advanced education contributes positively to the perception of self-efficacy, while *engagement* remains high regardless of the level of education attained. However, the study has some limitations, such as the absence of qualitative analysis and the use of self-reports, which prevents a more in-depth approach to the subjective perspective of teachers.

Future projections include:

- Expand research to other Health Sciences disciplines.
- Incorporate qualitative methodologies and longitudinal designs.
- Evaluate programs that strengthen specific competencies, especially in academic management and social responsability.
- To explore the relationship between engagement, self-efficacy and academic results, as well as work climate.

In conclusion, this study evidences the importance of aligning teacher education programs with the contemporary needs of higher education in order to promote both the professional development and occupational well-being of faculty. Future research could delve deeper into the interactions between Engagement, self-efficacy and students' academic outcomes, thus contributing to the improvement of university educational quality.

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