The Role of Gender and Mindfulness in Teaching in the Relationship between Self-Efficacy and Work Engagement among Teachers

Biljana Trifunović Marinković[*]
University of Kragujevac, Faculty of Education in Užice
Dušan J. Ranđelović[*]
University of Kragujevac, Faculty of Education in Užice

A B S T R A C T

The study examines the mediating role of mindfulness in teaching in the relationship between teachers' self-efficacy and work engagement, as well as the moderating role of gender in the interplay of these variables. The convenience sample consisted of 250 teachers from Serbia (176 women, 74 men). Data were collected through online surveys and direct administration. The Teacher Mindfulness Scale, measuring teacher intrapersonal and interpersonal mindfulness, the short form of the Teacher Self-Efficacy Scale, and the Work Engagement Scale were used. Parallel mediation and moderated parallel mediation analyses were applied. The results confirm a significant direct effect of teachers' self-efficacy on intrapersonal and interpersonal mindfulness, as well as on work engagement. Intrapersonal mindfulness was a significant mediator of the relationship between self-efficacy and work engagement. Gender moderated the relationship between self-efficacy and work engagement, with this effect being stronger among men. The indirect effect of self-efficacy on work engagement through interpersonal mindfulness was significant only among female participants. The findings suggest the need for gender-specific teacher professional development programs.

Keywords: *self-efficacy, intrapersonal mindfulness, interpersonal mindfulness, professional wellbeing.*

Introduction

Teachers are now universally recognized as the most important component of educational systems (Cheng & Wu, 2016; Derakhshan et al., 2020). However, the attractiveness of the teaching profession has been steadily declining due to increasing social, economic and technological demands (Dotta et al., 2025; OECD, 2022). As a result, teacher shortages have been reported in 35 education systems across Europe, including Serbia (Eurydice Report, 2021). Particularly concerning is the finding that

[*] trifunovic_biljana@yahoo.com, https://orcid.org/0009-0009-5572-7868
[*] dusan.randjelovic@pr.ac.rs, https://orcid.org/0000-0001-8925-4231

more than 80% of teachers worldwide report low levels of well-being and consider leaving the profession (Education Support, 2024; Falecki & Mann, 2020).

Maintaining and enhancing teacher well-being represents an important and valuable goal, as teacher well-being has been associated with increased professional commitment and reduced levels of stress (Dreer, 2023; Kern et al., 2014). At the same time, teacher well-being is linked to a range of positive outcomes for students, schools and educational systems. Research consistently shows that teacher well-being directly affects the development of harmonious relationships with students, student engagement, achievement and students' own well-being (Dreer, 2023; Granziera et al., 2023; Turner & Theilking, 2019). Accordingly, improving teacher well-being may be essential for achieving positive student outcomes, maintaining the quality of education and addressing challenges related to the sustainability of the teaching profession (OECD, 2022).

Previous research on teacher well-being has most often focused on the negative aspects of the teaching profession, such as burnout, stress, anxiety and leaving the profession (Agyapong et al., 2022; Li & Yao, 2022; Thomas & Reyes, 2024). This approach stems from the traditional psychological perspective aimed at identifying and addressing psychological problems. However, although resolving psychological difficulties may indirectly contribute to teacher well-being, more recent studies suggest that a strengths-based approach may be more suitable for enhancing teacher well-being. Such an approach is offered by positive psychology which focuses on optimal functioning through positive subjective experiences, individual strengths and a positive organizational environment (Seligman & Csikszentmihalyi, 2014). In this context, research on teacher well-being increasingly examines the concept of work engagement (Yu et al., 2024), which is considered a dimension of job-related well-being (Rothmann, 2008) and has been found to contribute to teachers' physical and psychological health (Sarath & Manikandan, 2014; Tsuchie et al., 2025).

Theoretical Framework

Work engagement

Despite the challenges of the teaching profession, such as heavy workload, complex interpersonal relationships and students' academic and behavioral difficulties (Burić & Macuka, 2018), it is important for teachers to remain engaged in their work. According to work engagement theory, an engaged individual maintains a positive attitude toward work, reflected in sustained vitality, energy and determination to invest time and effort in completing tasks (Schaufeli, 2012). Schaufeli (2012; Schaufeli & Bakker, 2013) defines work engagement as a constructive, fulfilling and career-relevant mental state. This state is characterized by absorption (a state of deep concentration and full immersion in work tasks), vigor (a high level of energy and mental resilience while performing job duties, even when facing difficulties), and dedication (a strong involvement in work accompanied by a sense of significance and enthusiasm).

Findings from previous research indicate that teacher work engagement is associated with job satisfaction, willingness to assume additional responsibilities beyond classroom duties and the quality of instruction (Balbes & Quines, 2022; Rahmadani & Kurniawati, 2021). High levels of engagement reduce the likelihood of mental health problems, absenteeism and job turnover (Johnson, 2021; Tsuchie et al., 2025). When students are taught by engaged teachers they tend to show greater interest in school activities and tasks, achieve better academic outcomes and experience more positive emotions at school (Vujčić et al., 2022; Xiong & Yuan, 2024).

Given the recognized importance of work engagement for effective teaching and positive educational outcomes the present study aims to achieve a better understanding of teachers' psychological resources, such as self-efficacy beliefs and mindfulness in teaching, which may contribute to their optimal professional functioning.

Self-efficacy and work engagement

First introduced within the framework of social cognitive theory (Bandura, 1986, 1997), the concept of self-efficacy refers to an individual's belief in their own ability to perform a specific task. This belief influences their thoughts, actions, behavior, motivation, effort investment and judgment (Bandura, 1997, 2006).

More specifically, teacher self-efficacy refers to teachers' beliefs in their own capacity to manage and maintain order and organization in the classroom, motivate and engage students in the instructional process, and successfully accomplish assigned teaching tasks (Tschannen-Moran & Woolfolk Hoy, 2001).

Teachers with high levels of self-efficacy demonstrate greater professional commitment, job satisfaction and work engagement (Han & Wang, 2021; Skaalvik & Skaalvik, 2014; Waweru et al., 2021), as well as lower levels of emotional exhaustion, fatigue, hopelessness and anger toward students (Burić & Macuka, 2018; Fathi et al., 2021). They create a positive classroom climate by planning motivating lessons that enhance students' abilities, effectively managing problematic behavior, regulating negative emotions and overcoming professional challenges (Fathi et al., 2021; Tsouloupas et al., 2010). Such teachers are more likely to use innovative instructional strategies and experience higher levels of professional fulfillment, as well as stronger feelings of pride, love and joy in their work (Burić & Macuka, 2018; Thurlings et al., 2015). In addition, teachers with high self-efficacy collaborate more successfully with colleagues in achieving shared educational goals (Goddard & Kim, 2018). These findings clearly indicate that developing and enhancing self-efficacy not only brings personal benefits to teachers but also substantially contributes to improving the overall quality of the educational system.

Mindfulness in teaching and work engagement

Given the importance of self-efficacy in predicting numerous positive outcomes in teaching, including work engagement, it is important to understand the factors underlying the relationship between these constructs. In recent years, mindfulness has been recognized as a significant psychological resource that effectively alleviates negative emotions, reduces stress and promotes teachers' resilience and psychological well-being (Barata-Goncalves et al., 2025; Moyano et al., 2023; Nurshadrina et al., 2025). Mindfulness is commonly conceptualized as a state that arises from intentionally paying attention to the present moment while approaching experiences in a non-judgmental manner (Williams & Kabat-Zinn, 2013). It involves being fully present in the here and now, observing thoughts and emotions without judgment and accepting them rather than avoiding, suppressing or over-engaging with them. The attentional and awareness mechanisms underlying different definitions of mindfulness integrate internal processes, such as bodily sensations, with external stimuli arising from social and interpersonal interactions, suggesting that mindfulness can be understood both as an intrapersonal and an interpersonal process (Gordesli et al., 2019). However, most existing instruments for assessing mindfulness operationalize this construct as a dispositional characteristic and therefore primarily focus on the intrapersonal dimension of awareness. Intrapersonal mindfulness mainly emphasizes awareness of one's own internal sensations, while placing less emphasis on the role of mindfulness in interpersonal relationships (Pratscher et al., 2018). Contrary to dispositional, intrapersonal mindfulness, interpersonal mindfulness refers to an individual's ability to maintain open and receptive awareness of what occurs during interactions, including one's own and others' thoughts, emotions, feelings, bodily sensations, experiences, and intentions, while sustaining an attitude of openness, acceptance and non-judgment toward both oneself and others (Pratscher et al., 2026). Specifically, regarding attentional focus, intrapersonal mindfulness is directed toward awareness of one's internal states, whereas interpersonal mindfulness extends this awareness to the emotional and behavioral cues of others during interactions (Pratscher et al., 2018). Research indicates that individuals with higher levels of intrapersonal mindfulness also tend to demonstrate higher levels of emotional intelligence, meaning they are better able to recognize, understand, and regulate their own emotions (Mesmer-Magnus et al., 2017; Miao et al., 2018), while higher levels of interpersonal mindfulness are associated with greater empathy, better communication quality and higher resilience (Hoseininezhad et al., 2025).

Mindfulness in teaching refers to teachers' awareness of their own emotions and behavior, as well as the emotions and behavior of their students during the teaching-learning process (Frank et al., 2016). Mindful teachers cope more effectively with job demands by focusing their attention on the present moment rather than on problems and consequences beyond their control, which enables them to reduce stress and enhance both their well-being and the quality of their instructional practice (Braun et al., 2019; Gabel-Shemueli et al., 2023). This approach fosters empathy and mental

flexibility, allowing teachers to direct their energy toward proactive classroom management, increase awareness of students' needs and cultivate meaningful teacher-student relationships (Braun et al., 2019; Moyano et al., 2023).

Previous research indicates a significant association between self-efficacy and mindfulness (Bekirler & Bilaloglu, 2022; Waldman & Carmel, 2019). Mediating effects of mindfulness in teaching have also been identified in the relationship between self-efficacy and work engagement (Moyano et al., 2023). Findings by Moyano and colleagues (2023) suggest that teachers with higher levels of self-efficacy demonstrate greater presence, attention and focus on the present moment, as well as a more open, accepting and receptive approach to interactions with students. Consequently, teachers with higher levels of intrapersonal and interpersonal mindfulness tend to exhibit greater work engagement. By strengthening attentional focus and present-moment awareness, mindfulness may support deeper task engagement and reduce teachers' tendency to respond automatically to classroom demands (Malinowski & Lim, 2015). Moreover, higher levels of mindfulness in teaching may facilitate the development of skills and self-regulatory resources that can be used for effective classroom management, further increasing teachers' work engagement (Roeser et al., 2012).

The role of gender in the relationship between self-efficacy, mindfulness and work engagement

Previous research suggests that female teachers are more likely to construct their professional roles around emotional and relational aspects, placing greater value on connectedness with students and their active engagement in the learning process (Ahmad et al., 2015; Lamote & Engels, 2010). Students often perceive female teachers as more caring and approachable, which facilitates the development of stronger emotional bonds (Jony, 2025). For female teachers such relationships may represent an important source of professional meaning and motivation. Accordingly, their sense of professional efficacy is often linked not only to instructional organization but also to the quality of interactions with students and students' active engagement in learning (Ahmad et al., 2015; Lamote & Engels, 2010). In this context, empathy, sensitivity to students' needs, communication quality and perceived closeness with students may play a significant role in shaping their professional identity and work engagement.

In contrast, male teachers more often base their sense of professional efficacy on aspects related to the control of the teaching process, classroom discipline and organizational management (Ahmad et al., 2015; Lamote & Engels, 2010). Accordingly, their work engagement may derive to a greater extent from cognitive evaluations of their own professional competencies, particularly their perceived ability to manage instruction effectively, maintain discipline, and organize classroom activities. Compared with female teachers, students are more likely to perceive male teachers as figures of authority and discipline in the classroom (Jony, 2025). Therefore, male teachers' involvement in the teaching process may be shaped less by the quality of emotional

interactions with students and more by their perceived efficacy and classroom management capabilities.

Method

Research problem, aim and objectives

Drawing on the theoretical frameworks of positive psychology and findings from previous research, the problem addressed in this study arises from the need to examine how teachers' psychological resources, such as self-efficacy beliefs and mindfulness in teaching, contribute to their work engagement as an important aspect of professional functioning and well-being. Although earlier studies have confirmed that self-efficacy positively predicts teachers' work engagement (Han & Wang, 2021; Skaalvik & Skaalvik, 2014) and that mindfulness may mediate this relationship (Moyano et al., 2023), the distinct roles of intrapersonal and interpersonal mindfulness in shaping this relationship among teachers remain underexplored. The extent to which teachers' gender may influence the strength and direction of the relationships among these constructs also remains unclear. Considering evidence indicating gender differences in professional identity as well as emotional and relational competencies (Ahmad et al., 2015; Lamote & Engels, 2010), gender may act as a moderator of both the direct and indirect pathways through which self-efficacy affects work engagement.

Given that the education system in Serbia faces significant challenges regarding teacher well-being and retention, understanding the factors that shape work engagement is of considerable practical importance. Accordingly, the aim of this study is to examine the role of mindfulness in teaching in the relationship between self-efficacy and work engagement, while also considering the potential moderating role of gender in the relationships among these variables.

In line with the stated aim, the following research objectives were defined:

1) To examine the relationship between teachers' self-efficacy and work engagement.

2) To investigate the mediating role of intrapersonal and interpersonal mindfulness in teaching in the relationship between self-efficacy and teachers' work engagement.

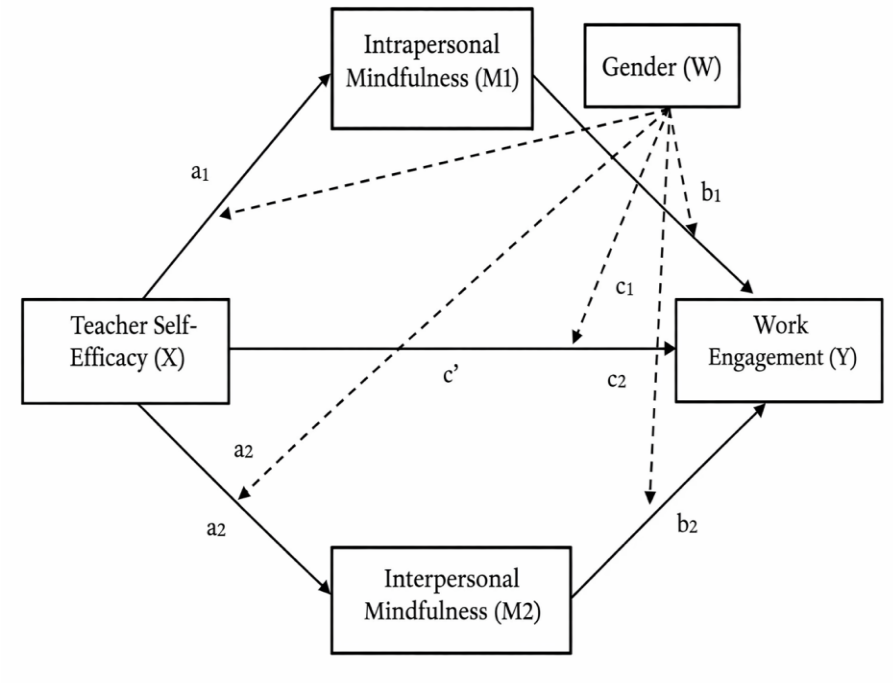
3) To examine the moderating role of gender in the relationships among self-efficacy, intrapersonal and interpersonal mindfulness in teaching and teachers' work engagement.

Figure 1 presents the conceptual research model in which teachers' self-efficacy (X) represents the independent variable, intrapersonal mindfulness (M1) and interpersonal mindfulness (M2) serve as parallel mediators, the dependent variable is work engagement (Y), and gender (W) functions as a moderating variable of the

following paths: a_1 (the direct effect of teachers' self-efficacy on intrapersonal mindfulness), a_2 (the direct effect of teachers' self-efficacy on interpersonal mindfulness), b_1 (the direct effect of intrapersonal mindfulness on work engagement), b_2 (the direct effect of interpersonal mindfulness on work engagement), c' (the direct effect of self-efficacy on work engagement), c_1 (the indirect effect of self-efficacy on work engagement through intrapersonal mindfulness), and c_2 (the indirect effect of self-efficacy on work engagement through interpersonal mindfulness).

Figure 1

Conceptual Research Model



Sample and procedure

The sample was convenient and included a total of 250 teachers (176 female and 74 male participants), aged between 23 and 64 years (*M* = 41.33, *SD* = 9.90). The participants' average length of teaching experience was 13.54 years (*SD* = 10.25). The sample comprised 64 primary school teachers, 79 lower secondary school teachers and 107 high school teachers.

Data were collected using an online survey platform (13%) and through direct administration (paper-and-pencil format; 87%) during December 2024 and January

2025. The study was approved by the Ethics Committee of the Department of Psychology, Faculty of Philosophy, University of Kosovska Mitrovica. Participation was entirely voluntary, with guaranteed anonymity. All participants provided informed consent and received no compensation for their participation in the study.

Instruments

Teacher self-efficacy was assessed using the short form of the *Teachers' Sense of Efficacy Scale* (Tschannen-Moran & Hoy, 2001) was used. The scale assesses three aspects of teacher self-efficacy: 1) Student engagement (e.g., "*How much can you do to help students believe they can succeed in their schoolwork*?"); 2) Instructional strategies (e.g., "*To what extent can you provide an alternative explanation or example when students are confused*?"); and 3) Classroom management (e.g., "*How much can you do to control disruptive behavior in the classroom*?"). The instrument consists of 12 items rated on a nine-point Likert-type scale (from 1 = "nothing" to 9 = "a great deal"), with higher scores indicating higher levels of self-efficacy. Exploratory factor analysis confirmed a one-factor structure of the scale (with item factor loadings ranging from .59 to .80). The reliability of the scale estimated using Cronbach's alpha coefficient was .89.

Mindfulness in teaching was assessed using the *Mindfulness in Teaching Scale* (MTS; Frank et al., 2016). The scale assesses two dimensions of mindfulness in teaching: 1) Intrapersonal mindfulness, referring to awareness directed toward one's own experience (e.g., "*When I am teaching, it seems I am operating on 'automatic pilot' without much awareness of what I am doing*"); and 2) Interpersonal mindfulness, referring to the capacity for empathy and receptivity in relationships with students (e.g., "*I allow my students to express their feelings, even when this makes me uncomfortable*"). The instrument consists of 14 items rated on a five-point Likert-type scale (from 1 = "never" to 5 = "always"). The translation into Serbian was conducted using the back-translation method, with the consent of and consultation with the scale authors. In line with previous validation studies (Gordesli et al., 2019; Li et al., 2019; Zahirinia et al., 2025), exploratory factor analysis yielded a two-factor solution (with item factor loadings for the Intrapersonal mindfulness ranging from .61 to .81, and for the Interpersonal mindfulness from .58 to .69), with a low correlation between the extracted factors ($r = .22$, $p < .01$). In the present study, the reliability of the instrument, estimated using Cronbach's alpha coefficient, was .84 for the Intrapersonal mindfulness and .69 for the Interpersonal mindfulness. These results are consistent with previous research (Gordesli et al., 2019; Li et al., 2019; Zahirinia et al., 2025), which has consistently indicated lower reliability for the Interpersonal mindfulness. This has been explained by the smaller number of items (five items) comprising this dimension and is considered acceptable by some authors (Tavakol & Dennick, 2011).

Work engagement was assessed using the *Utrecht Work Engagement Scale* (UWES; Schaufeli et al., 2006). The scale assesses the level of dedication to work, that is the degree of work engagement. It consists of nine items rated on a seven-point Likert-type scale (from 0 = "never" to 6 = "always/every day"), with higher scores indicating higher levels of work engagement. The scale measures three aspects of work

engagement: 1) Vigor (e.g., "*At my work, I feel strong and energetic*"); 2) Dedication (e.g., "*I am proud of the work that I do*"); and 3) Absorption (e.g., "*When I am working, I get carried away by my work*"). Exploratory factor analysis confirmed a one-factor structure of the scale (with item factor loadings ranging from .71 to .88). Reliability of the scale estimated using Cronbach's alpha coefficient was .93.

Statistical analysis

In accordance with the research objectives, parallel mediation analyses (Model 4) and moderated parallel mediation analyses (Model 59) were conducted using IBM SPSS (version 28) and PROCESS Macro version 4.2 (Hayes, 2022). Given findings suggesting that teaching experience may play a significant role in both teacher self-efficacy and work engagement (Tschannen-Moran & Woolfolk Hoy, 2007; Skaalvik & Skaalvik, 2007), teaching experience was included in the models as a control variable. Effects were considered significant if the confidence interval did not include the value 0, while standard errors of the effects were estimated using the bootstrap method with a 95% confidence interval (5,000 samples).

Results

Descriptive statistics and correlation among the study variables

Table 1 indicates that all variables included in the study show a normal distribution based on the values of skewness and kurtosis coefficients (-1.5 < Sk, Ku < 1.5; Tabachnick & Fidell, 2013). According to Cohen's (1988) criteria, the values of Pearson correlation coefficients suggest that teacher self-efficacy is significantly and moderately to strongly positively correlated with intrapersonal mindfulness, interpersonal mindfulness and work engagement. Furthermore, work engagement is significantly and moderately to strongly positively correlated with both intrapersonal and interpersonal mindfulness. Intrapersonal mindfulness shows a significant low positive correlation with interpersonal mindfulness.

Table 1

Descriptive statistics and intercorrelations

	Theoretical Range	*M*	*SD*	Sk	Ku	2	3	4
1. Teacher self efficacy	1–9	6.92	1.13	-0.68	0.81	.53**	.40**	.67**
2. Intrapersonal mindfulness	1–5	4.07	0.70	-0.96	0.94	-	.22**	.59**
3. Interpersonal mindfulness	1–5	3.95	0.72	-0.87	1.47		-	.34**
4. Work engagement	0–6	4.49	1.17	-.91	0.14			-

Note. *M* – mean; *SD* – standard deviation; Sk – skewness; Ku – kurtosis; $^{**}p < .01$.

Relationship between teacher self-efficacy and work engagement: The mediating effect of intrapersonal and interpersonal mindfulness

A parallel mediation analysis was conducted to examine the mediating effect of intrapersonal and interpersonal mindfulness on the relationship between teacher self-efficacy and work engagement. The results of the analysis (Table 2) indicated a significant direct effect of teacher self-efficacy on both intrapersonal and interpersonal mindfulness. In addition, significant direct effects of teacher self-efficacy and intrapersonal mindfulness on work engagement were identified. In contrast, interpersonal mindfulness did not show a significant direct effect on work engagement.

The total indirect effect of self-efficacy on work engagement was significant, with intrapersonal mindfulness emerging as a significant mediator in the relationship between teacher self-efficacy and work engagement. Interpersonal mindfulness did not demonstrate a significant mediating effect. These findings suggest that teachers with higher levels of self-efficacy have a greater capacity to remain present in the moment and to accept their own emotional experiences, which in turn enables a higher level of dedication and engagement in their work.

Table 2

Parallel mediation analysis

		Dependent variable				
		Intrapersonal mindfulness				
Independent variable		B	SE	*t*	*p*	CI (LLCI, ULCI)
Teacher self-efficacy	a_1	0.33	0.03	9.75	.00	0.26, 0.39
Teaching experience		0.00	0.00	0.73	.46	-0.00, 0.01
		R^2 = .29, F(2, 247) = 48.15, p = .00				
		Interpersonal mindfulness				
Teacher self-efficacy	a_2	0.25	0.04	6.77	.00	0.17, 0.32
Teaching experience		-0.00	0.00	-0.40	.69	-0.00, 0.01
		R^2 = .16, F(2, 247) = 22.99, p = .00				
		Work engagement				
Teacher self-efficacy	c’	0.46	0.06	8.05	.00	0.35, 0.57
Intrapersonal mindfulness	b_1	0.54	0.09	6.16	.00	0.37, 0.72
Interpersonal mindfulness	b_2	0.12	0.08	1.46	.14	-0.04, 0.28
Teaching experience		0.01	0.00	1.51	.13	-0.00, 0.01
		R^2 = .53, F(4, 245) = 65.49, p = .00				
Total indirect effect		0.21	0.04	-		0.13, 0.28
Teacher self-efficacy → Intrapersonal mindfulness → Work engagement	c_1	0.18	0.04	-		0.11, 0.25
Teacher self-efficacy → Interpersonal mindfulness → Work engagement	c_2	0.03	0.02	-		-0.01, 0.08

Note. B – unstandardized effects; SE – standard error; CI – 95% confidence interval; LLCI – lower limit of the confidence interval; ULCI – upper limit of the confidence interval.

Relationship between teacher self-efficacy, intrapersonal and interpersonal mindfulness in teaching and work engagement: The moderating effect of gender

A moderated parallel mediation analysis was conducted to examine the moderating effect of gender on the relationships among the study variables (Table 3).

Table 3

Moderated parallel mediation analysis

	Dependent variable				
	Intrapersonal mindfulness				
Independent variable	B	SE	*t*	*p*	CI (LLCI,ULCI)
Teacher self-efficacy	0.38	0.13	3.05	.00	0.13, 0.63
Gender	0.40	0.49	0.83	.41	-0.56, 1.37
Teacher self-efficacy x Gender	-0.04	0.07	-0.52	.60	-0.18, 0.10
	R^2 = .32, F(3, 246)=36.45, p = .00				
	Interpersonal mindfulness				
Teacher self-efficacy	0.27	0.14	1.89	.05	0.01, 0.55
Gender	-0.04	0.55	-0.06	.94	-1.12, 1.05
Teacher self-efficacy x Gender	0.18	0.07	2.57	.01	0.05, 0.31
	R^2 = .16, F(3, 246) = 16.56, p = .00				
	Work engagement				
Teacher self-efficacy	0.96	0.20	4.80	.00	0.56, 1.36
Intrapersonal mindfulness	0.46	0.22	2.09	.04	0.03, 0.89
Interpersonal mindfulness	0.20	0.37	0.54	.58	-0.52 0.92
Gender	0.25	0.83	0.30	.76	-1.37, 1.87
Teacher self-efficacy x Gender	-0.33	0.12	-2.64	.01	-0.58, -0.08
Intrapersonal mindfulness x Gender	0.11	0.21	0.51	.61	-0.30, 0.52
Interpersonal mindfulness x Gender	0.25	0.09	2.78	.01	0.08, 0.42
	R^2 = .54, F(7, 242) = 38.28, p = .00				

Note. B – unstandardized effects; SE – standard error; CI – 95% confidence interval; LLCI – lower limit of the confidence interval; ULCI – upper limit of the confidence interval.

The results indicate a significant interaction effect between gender and teacher self-efficacy in predicting work engagement, suggesting that gender moderates the relationship between teacher self-efficacy and work engagement. Although teacher self-efficacy demonstrated significant direct effects on work engagement among participants of both genders, this effect was more pronounced among male participants (Table 4). A significant indirect effect of teacher self-efficacy on work engagement through interpersonal mindfulness was also identified but only among female participants. Among male participants, this indirect effect was not statistically

significant (Table 4). These findings suggest that for female teachers interpersonal mindfulness plays an important role in the relationship between self-efficacy and work engagement. In contrast, for male teachers, beliefs in their own capabilities exert a stronger direct effect on work engagement.

Table 4

Conditional indirect effects of teacher self-efficacy on work engagement through intrapersonal and interpersonal mindfulness for male and female teachers

	Conditional direct effects of X on Y			Conditional indirect effects of X on Y through M1 and M2					
Moderated parallel mediation	Teacher self-efficacy → Work engagement			Teacher self-efficacy → Intrapersonal mindfulness → Work engagement			Teacher self-efficacy → Interpersonal mindfulness → Work engagement		
	B	SE	CI (LLCI, ULCI)	B	SE	CI (LLCI, ULCI)	B	SE	CI (LLCI, ULCI)
Male	0.66	0.09	0.47, 0.85	0.14	0.06	0.02, 0.27	-.01	.05	0.11, 0.09
Female	0.36	0.07	0.22, 0.50	0.17	0.05	0.07, 0.26	.15	.03	0.07, 0.23

Note. X – Teacher self-efficacy; Y – Work engagement; M1 – Intrapersonal mindfulness; M2 – Interpersonal mindfulness

Discussion

The present study aimed to examine the role of intrapersonal and interpersonal mindfulness in teaching in the relationship between teacher self-efficacy and work engagement, as well as whether and to what extent teachers' gender moderates the strength and direction of these relationships.

Confirming the initial assumptions and the findings of previous research (Cetin et al., 2025; Moyano et al., 2023), self-efficacy which reflects teachers' perceptions of their own capabilities in managing instructional processes and classroom challenges, shows significant associations with both dimensions of mindfulness in teaching – namely, intrapersonal and interpersonal mindfulness. Previous studies consistently indicate that a high level of perceived self-efficacy facilitates better emotional regulation and cognitive flexibility, thereby contributing to greater intrapersonal mindfulness, that is, teachers' ability to consciously identify and manage their own emotions, thoughts and reactions in the professional context (Frank et al., 2016; Yan et al., 2025). Teachers with higher levels of self-efficacy also demonstrate a greater capacity for classroom management and for maintaining positive interpersonal relationships (Zeb et al., 2024). High self-efficacy is associated with increased openness, a non-judgmental approach in interactions with students, as well as greater attentiveness and receptivity in communication with students (Moyano et al., 2023), which represents key components of interpersonal mindfulness.

Teacher self-efficacy has repeatedly been confirmed in previous research as a strong predictor of positive educational outcomes and teachers' professional functioning (Han & Wang, 2021; Thurlings et al., 2015). Theoretical explanations for the relationship between self-efficacy and work engagement can be found in Bandura's (1977) social cognitive theory, which suggests that higher levels of self-efficacy reduce stress and increase individuals' engagement in their tasks. This proposition is further supported by research findings demonstrating a strong positive association between teacher self-efficacy and work engagement (Shu, 2022; Xiao et al., 2022). Teachers who believe they can cope with job demands experience greater enthusiasm, higher resilience and lower emotional exhaustion (Skaalvik & Skaalvik, 2014). Xiao et al. (2022) showed that self-efficacy predicts engagement more strongly than enjoyment of teaching, as it fosters a stable sense of competence that sustains energy, dedication and full immersion in work tasks. Teachers with higher levels of self-efficacy invest more energy in their work, which results in greater professional commitment and persistence (Wang & Pan, 2023).

The research findings also point to the significant role of intrapersonal mindfulness, both directly and as a mediator, in explaining teachers' work engagement (Moyano et al., 2023), thereby confirming earlier evidence that intrapersonal mindfulness exerts the strongest effects on teachers' overall well-being and work engagement (Guidetti et al., 2019; Lomas et al., 2017). Intrapersonal mindfulness, that is, teachers' ability to be aware of their own thoughts, emotions and bodily sensations in the present moment (Frank et al., 2016), enables teachers to regulate stress more effectively, recognize and respond constructively to emotional challenges at work and consequently achieve greater emotional stability, dedication and resilience, as well as higher levels of work engagement (Moyano et al., 2023).

The identified mediating role of intrapersonal mindfulness in the relationship between teacher self-efficacy and work engagement deepens the understanding of the process through which beliefs in one's professional capabilities foster higher levels of engagement, highlighting the importance of psychological resources in overcoming professional challenges and maintaining professional well-being. Intrapersonal mindfulness, understood as teachers' capacity to observe their internal emotional states without judgment and to act consciously in accordance with their personal and professional values, facilitates more effective internalization of professional goals and their more consistent implementation. Teachers with higher levels of intrapersonal mindfulness manage stress more effectively, regulate their emotions more efficiently and maintain higher levels of professional commitment and satisfaction (Yin et al., 2024). Thus, intrapersonal mindfulness enables teachers to mobilize their internal resources more effectively and consequently achieve higher levels of professional engagement. In other words, teachers with pronounced intrapersonal mindfulness are better able to transform strong beliefs in their own competence into high work engagement as they are more capable of understanding their emotional needs, identifying sources of stress more quickly and applying emotional regulation strategies in a timely manner.

An additional moderated parallel mediation analysis provides a more detailed insight into the mechanisms through which self-efficacy contributes to teachers' work engagement, while also pointing to the specific role of interpersonal mindfulness as a mediator that is evident exclusively among female participants. This finding may be interpreted considering gender-specific patterns in the construction of professional identity within the educational context. According to research (Lamote & Engels, 2010), female teachers tend to place greater value than their male counterparts on emotional connectedness and students' active involvement in the teaching process, suggesting that interpersonal and relational competencies represent a more prominent foundation of their professional functioning. As female teachers often construct their professional identity through relationships with students, interpersonal mindfulness may serve as an important resource for achieving more effective teaching. Their capacity to consciously monitor their emotional states, to recognize how their moods influence their communication with students and their willingness to listen attentively and understand students' needs – even in situations of disagreement or conflict – facilitates the development of higher-quality teacher-student relationships and contributes to a more positive emotional climate in the classroom (Moyano et al., 2023). This, in turn, promotes more effective classroom management and greater student motivation for learning (Reyes et al., 2012). Female teachers who perceive themselves as more capable of managing instructional processes and classroom challenges (i.e., higher self-efficacy) and who are better able to recognize and understand students' emotional states and needs while showing compassion toward both themselves and their students (i.e., higher interpersonal mindfulness) are more likely to establish stronger emotional and pedagogical connections with students. Consequently, they experience greater meaning and satisfaction in their professional work which ultimately enhances their work engagement.

In contrast, male teachers more often construct their professional role around principles of control, discipline and classroom organization rather than emotional and relational aspects (Lamote & Engels, 2010). They tend to demonstrate higher levels of self-efficacy in domains related to student engagement and classroom management which may contribute to a stronger association between self-efficacy and professional outcomes, including work engagement. Female teachers, on the other hand, may exhibit higher levels of self-efficacy in the emotional and interpersonal dimensions of their work, with their perceptions of efficacy being more context-dependent and influenced by external validation (Ahmad et al., 2015). In this context, male teachers are more likely to base their professional engagement on cognitive evaluations of their own capabilities and less on the emotional and relational dimensions of teaching practice. Conversely, among female teachers, engagement is more often shaped by interpersonal and emotional factors and self-efficacy may exert its influence indirectly through an open, accepting and receptive approach toward students during classroom interactions.

The practical implications of this study highlight the importance of integrating training and professional development programs aimed at developing and strengthening teachers' self-efficacy as well as their intrapersonal and interpersonal mindfulness. In

the context of high demands and stress associated with the teaching profession, teachers' beliefs in their own ability to successfully plan, organize and implement activities necessary for achieving desired educational goals, as well as their capacity for mental presence and attentional focus during instruction, recognition and understanding of students' emotions and responding to students in a non-judgmental and accepting manner, represent important psychological resources for maintaining vigor and dedication to work. In practical terms, this suggests that teacher professional development programs should include training focused on developing strategies for coping with classroom challenges, enhancing attention directed toward one's own thoughts, feelings and bodily sensations and fostering emotional receptivity in everyday interactions. Schools should implement strategies aimed at providing clearer feedback on teachers' competencies, creating opportunities for self-reflection on classroom management abilities and instructional challenges, as well as supporting teachers in practicing daily mindfulness activities (e.g., body scan, mindful movement, cultivating care and compassion) and integrating mindfulness techniques into everyday classroom practice. Such an approach may contribute to higher-quality instructional interactions, a more positive emotional climate in the classroom and greater student motivation for learning, which in turn enhances the meaningfulness and satisfaction derived from teachers' professional work.

A particular value of the present study lies in examining the moderating role of gender in the relationship among self-efficacy, mindfulness in teaching and work engagement. To the best of the authors' knowledge this study is the first to address this issue, offering a foundation for future research on individual differences in the mediating effects of mindfulness in the relationship between personal resources and teachers' professional well-being. The obtained findings emphasize the need to recognize and consider gender-specific characteristics in teachers' professional functioning when designing professional development policies and human resource management practices in schools. Educational institutions should acknowledge differences in the ways male and female teachers approach professional challenges and construct their professional identities. For male and female teachers, systematic strengthening of self-efficacy and intrapersonal mindfulness is recommended, whereas for female teachers, it is necessary to design targeted interventions aimed at developing interpersonal mindfulness. Such interventions may include specialized workshops focused on effective communication, non-judgmental listening, emotional regulation in interactions with students and the development of empathy and compassion in working with students. These differentiated approaches enable the adaptation of professional development programs to the specific mechanisms underlying teachers' work engagement, thereby increasing the likelihood that newly acquired skills will be transferred into everyday classroom practice. In this way, educational institutions can not only contribute to enhancing teachers' work engagement but also support the long-term improvement of the overall quality of the educational process and employee well-being.

Finally, it is important to highlight several limitations of the present study. First, the sample size and its convenient nature may limit the generalizability of the findings

to the broader population of teachers across the country. A second limitation concerns the unequal gender distribution of participants, which may have affected the precision of the estimated moderating effects of gender. Furthermore, the study employed a correlational design to test the mediation and moderation models. Although this approach allows for the identification of relationships among variables and indirect effects, the correlational nature of the study prevents drawing conclusions about causal relationships among the examined variables. These limitations point to the need for future research involving larger, more geographically diverse and gender-balanced samples, as well as the application of longitudinal research designs.

Conclusion

Examining the psychological correlates of teachers' work engagement may be of considerable importance for enhancing teachers' overall well-being as well as the quality of their educational practice. The present study confirmed that self-efficacy plays an important role in teachers' work engagement, while intrapersonal and interpersonal mindfulness were identified as significant mediators of this relationship. The main findings can be summarized as follows:

– Teachers with higher levels of self-efficacy demonstrate a greater ability to remain present in the moment and accept their own emotional experiences (intrapersonal mindfulness), a higher capacity for empathy and receptivity in relationships with students (interpersonal mindfulness), as well as stronger dedication and engagement in their work.

– Teachers' beliefs in their own professional capabilities (self-efficacy) foster greater awareness of their own thoughts and emotions (intrapersonal mindfulness), which in turn leads to higher work engagement.

– Among female participants, interpersonal mindfulness plays an important role in the relationship between self-efficacy and work engagement. This finding can be interpreted considering gender-specific patterns in the construction of professional identity, whereby female teachers tend to place greater value on emotional connectedness and relational competencies in interactions with students compared to male teachers.

– Self-efficacy exerts a significant direct effect on work engagement in both genders; however, this effect is more pronounced among male participants. For male teachers, work engagement is more strongly associated with beliefs in their own capabilities, whereas female teachers' engagement is more often shaped by interpersonal and emotional factors.

The obtained results indicate the need to integrate training and professional development programs aimed at strengthening teachers' self-efficacy as well as their intrapersonal and interpersonal mindfulness. At the same ime, the findings highlight the importance of considering gender-specific characteristics when designing professional development approaches, as such consideration may contribute to enhancing teachers' work engagement and improving the overall quality of the educational process.

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