



Psychometric properties of the mindfulness in teaching scale among Spanish teachers

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Abstract

Mindfulness in the educational field provides several benefits. The assessment of mindfulness is a fundamental previous step for evidence-based interventions. Therefore, the present study aimed to adapt and validate the Mindfulness in Teaching Scale (MTS) among Spanish teachers. This scale comprises 14 items on two dimensions: intrapersonal and interpersonal. The sample comprised 398 teachers (31% males, 68% females) whose ages ranged from 25 to 69 years ($M = 44.14$; $SD = 10.16$). Once the scale was adapted in Spanish, we examined its psychometric properties. To do so, we conducted a Confirmatory Factor analysis (CFA), which supported the two-factor structure. As evidence for validity, the MTS scores correlated with perceived teaching self-efficacy. The reliability values using Cronbach's alpha were good. This scale has adequate psychometric properties and is useful for assessing mindfulness among Spanish teachers. We discuss its implications for the education field.

Keywords Mindfulness · Validation · Reliability · Teaching · Education

Introduction

Mindfulness is frequently defined as the ability to pay attention to the present moment intentionally and without judging experience (Kabat-Zinn, 1994). In recent years, the scientific literature has described the benefits of mindfulness-based interventions (MBI) for some mental and physical disorders, such as anxiety, depression, stress, clinical pain, etc. (Chiesa & Serretti, 2009; Hofmann et al., 2010).

In the education field, different reviews indicate the potential that MBI have to improve academic performance, obtain psychosocial and cognitive benefits, reduce stress in children and adolescents, diminish school violence, and improve coping strategies and resilience (Felver et al., 2016; Gallego et al., 2016; Meiklejohn et al., 2012; Pinazo et al., 2020; Zenner et al., 2014). To date most research has focused on students,

and has often neglected teachers (Heineberg, 2016), despite them playing a crucial role in students' learning and their social-emotional well-being (Flook et al., 2013; Roeser et al., 2013). Some teacher challenges imply important social demands and high pressure in education according to students' high diversity and an increasingly complex competitive world (Kyriacou, 2001; Roeser et al., 2013). Therefore, it is not surprising that a high prevalence of stress, burnout, depression, anxiety or low self-esteem appears among teachers which can, in turn, affect students (Gold et al., 2010; Meiklejohn et al., 2012; Napoli, 2004; Roeser et al., 2012).

Several studies have shown that MBI seem to have a positive impact on teacher self-efficacy levels (Killion, 2019). Self-efficacy is the belief that teachers have about their own abilities to influence satisfactory academic results among their students (Tschannen-Moran & Woolfolk Hoy, 2001). Therefore, teachers with high self-efficacy levels show higher job satisfaction (Caprara et al., 2003; Judge et al., 2001), are better inclined to implement new learning methods and strategies (Stein & Wang, 1988), display greater engagement and enthusiasm to teach with their students (Allinder, 1994; Coladarci, 1992), and spend more time planning and organizing their classes (Allinder, 1994). So improving teacher self-efficacy is vitally important for schools to become more efficient (Savas et al., 2014).

Nowadays, there are different self-reported measures that empirically assess mindfulness (Cebolla et al., 2012; García-

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Campayo et al., 2014; Shapiro et al., 2006), and they focus on the intrapersonal dimensions of mindfulness by prioritizing own experience over interpersonal experience (Frank et al., 2016). However in the education field, it would be particularly relevant to evaluate the interpersonal aspects that teachers establish in their teaching context and in relation to their students.

The *Mindfulness in Teaching Scale* (MTS) has been recently developed (Frank et al., 2016). It measures teachers' full attention in the school environment and consists of 14 items grouped into two factors: *intrapersonal* and *interpersonal*. The first factor is aligned with the present moment to reach complete consciousness, and includes items that reflect awareness, attention and being in the present moment. The interpersonal factor includes items that represent an open disposition and approach with acceptance and receptiveness between student-teacher interactions. The reliability of both factors was good with Cronbach's alpha values equaling .87 and .71, respectively, and these factors moderately correlated with one another ($r = .35$). Validations of this scale have been made in different countries: Korea (Kim & Singh, 2018), Turkey (Gördesli et al., 2019), China (Li et al., 2019). However, there is still no adaptation into Spanish. From previous validation studies, all three versions supported a two-factor structure. The Turkish validation also suggested an acceptable single-factor structure. Reliability (Cronbach's alpha values) for the intrapersonal dimension was: .80 for all three versions, while for the interpersonal subscale it was: .64, .61 and .71–.74 for the Turkish, Korean and Chinese versions. Therefore, all versions suggest a robust intrapersonal dimension in comparison to the interpersonal dimension. Test-retest reliability was also shown for the Turkish and Chinese versions in a 3-week interval. Regarding evidence of validity, the Turkish version indicated associations between the MTS and the Mindful Attention Awareness Scale (MAAS). The Chinese version showed correlations with the measures regarding attitudes, self-esteem, self-efficacy, and life satisfaction, and the Korean version found associations between the data from the MTS and other measures, such as dispositional mindfulness, teacher efficacy, and job satisfaction, and negatively with job stress and teacher burnout.

Considering the relevance of mindfulness in the education field, and specifically among teachers given its many benefits, it is necessary to have measures with adequate psychometric properties in the specific culture where they are used. Therefore, the goal of the present study was to adapt and validate the MTS among Spanish teachers. We examined the MTS' factorial structure and its internal consistency. Subsequently as evidence for validity, the relation between

its intrapersonal and interpersonal dimensions to self-efficacy was tested.

The following hypotheses were tested:

H1. We expected to provide structural validity for the two-factor structure previously proposed by Frank et al. (2016), with adequate reliability. To do so, two models were compared: a) a one-factor model, and b) the originally proposed two-factor model (Frank et al., 2016), in which mindfulness comprises these two factors: intrapersonal and interpersonal.

H2. As evidence for validity, we expected: the higher the level of intrapersonal and interpersonal mindfulness, the greater the self-efficacy reported by teachers in all its dimensions, that is, better use of strategies, classroom management, and greater student engagement. Although no other previous studies have directly addressed how teacher mindfulness is related to student engagement, this being a line still to be developed, as recently indicated by Guidetti et al. (2019), previous studies using the MTS suggest that both dimensions of the MTS are associated with greater teacher self-efficacy ("Li et al., 2019; Tschannen-Moran & Woolfolk Hoy, 2001), which would therefore have a positive influence with respect to their students' well-being (Romano et al., 2020)

Method

Participants

Data from 425 teachers were recruited. Data of 27 individuals were eliminated because information was missing in more than 25% of the survey (6.35%). Therefore, the final sample was made up of 398 data from teachers (31% males, 68% females, 1% other). They were all of Spanish nationality and their age range was 25–69 years ($M = 44.14$; $SD = 10.16$). The participants were actively enrolled in teaching activities at the different stages of education that they taught: infant, primary, secondary, bachelor and university education. They came from public and concerted institutions in several Spanish Autonomous Communities, including Aragon, Catalonia, Madrid and the Valencian Community. Table 1 shows the sample's socio-demographic characteristics in detail.

Instruments

Socio-Demographic Questionnaire It was developed for the purpose of this study. The participants were asked about their gender, age (in years), nationality, current city of residence, marital status (single, married, cohabiting couple, separated/divorced, widowed, other), if they had children (yes/no),

Table 1 The sample's socio-demographic characteristics ($N = 398$)

	N	%
Gender		
Males	124	31
Females	270	68
Other	4	1
Age		
M	44.14	–
SD	10.16	–
Teaching years		
M	15.89	–
SD	10.52	–
Civil status		
Single	108	27.1
Married	218	54.8
Cohabiting couple	29	7.3
Separated/Divorced	30	7.5
Widowed	13	3.3
Siblings		
Yes	263	66.6
No	132	33.4
Education		
Bachelor's degree	230	57.9
Master's degree	87	21.9
Ph.d.	75	18.9
Others	5	1.3
Stage of education taught		
Nursery school	81	20.4
Primary school	119	29.9
Secondary school	143	35.9
University	108	21.7
Vocational training	36	9
Others	14	3.5
Type of contract		
Temporary	144	33.9
Permanent	276	64.9
Job occupancy		
Part-time	68	17.2
Full-time	327	82.9
Activities		
Teaching	246	64.2
Teaching and management	57	16
Teaching, management and research	25	8
Teaching and research	48	11.3
Management	1	.2

maximum level of completed studies (graduate/bachelor's/diploma, master's, doctorate, others), stage of education that they taught (infant, primary, secondary/bachelor,

intermediate/higher training cycles, university, other), years of experience in the teaching field, job occupancy (part-/full-time), type of contract (temporary/permanent) and tasks performed (teaching, management/administration, research, other).

Mindfulness in Teaching Scale (MTS; Frank et al., 2016) A self-reported measure that assesses how teachers focus during their daily school activities, and also for emotional activities, sensitization, self-regulation and responsibility during student-teacher interactions. It consists of 14 items, such as “When I am teaching, I find myself doing things without paying attention”, “I rush through activities with my class without being really attentive to them”, “I am aware of how my moods affect the way I treat my students”. Items are answered on a 5-point Likert scale (from 1 = *never*, to 5 = *always*). It has two dimensions: the *intrapersonal* dimension, which is related to attentional experience directed at oneself, such as “When I am teaching it seems I am running on automatically without being well aware of what I am doing” and the *interpersonal* dimension which is related to qualities such as “listening and fully paying attention to others” or “being receptive to others' demands”, among others, which require the capacity of empathy and receptivity in relationships with students. The intrapersonal dimension items were inverted insofar as higher scores indicated higher levels of mindfulness, similarly to the interpersonal dimension.

Teacher Self-efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) These authors developed a 24-item scale, and later demonstrated adequate psychometric properties for a shorter 12-item version. Reliability values equaled 0.86, 0.86 and 0.81 for the use of strategies in the classroom, classroom management and student engagement, respectively. This version has been widely used. In the present study, the Spanish version adapted by Burgueño et al. (2019) was administered. Although these authors also supported an 11-item version, the 12-item version, which comes closer to the original version, was administered. Therefore, comparisons with other international studies can be assured. Furthermore, we also revised the scale's psychometric adequacy in the present study. According to our second hypothesis and to further provide evidence for validity, Pearson correlations were carried out between the MTS dimensions, intrapersonal and interpersonal, and teacher self-efficacy: use of classroom strategies, classroom management and student engagement. The TSES allows teachers' perception of self-efficacy to be evaluated; that is, the degree to which teachers believe they are qualified to maintain control over students in the classroom. Specifically, it distinguishes three dimensions and each one combines four items: 1) Use of strategies in the classroom (e.g., “To what extent could you use a variety of assessment strategies?; 2) Classroom management (e.g., “To what extent

could you control misbehavior in class?"; 3) Student engagement (e.g., "To what extent do you feel able to motivate those students who show little interest in school work?"). Items are answered on a 9-point Likert scale (from 1 = *not at all*, to 9 = *absolutely*). In the present study, Cronbach's alpha values were 0.74; 0.76 and 0.74 for use of classroom strategies, classroom management and student commitment, respectively.

Procedure

A research team of bilingual psychologists and psychometric experts, together with one of the original authors of the MTS, carried out the translation and adaptation of the scale from English to Spanish. For this purpose, the guidelines of Muñiz et al. (2013), Elosua et al. (2014) and the standards of the *American Educational Research Association* (AERA), the *American Psychological Association* (APA) and the *National Council on Measurement in Education* (NCME) (2015) were followed. First, the adaptation of the MTS items to Spanish was carried out by a bilingual psychologist. This initial translation was evaluated individually by a bilingual expert and one of the study researchers with mindfulness knowledge. After obtaining a first version in Spanish, one of the authors of the study on the original MTS scale was contacted to do a back translation. This translation was compared to the original version by the Spanish authors, and modifications were made to some items. However no change involved making any substantial change to the content of items, but aimed to avoid literal translations and to improve its understanding in Spanish. Subsequently, a pilot study was carried out. This pilot study included 12 subjects similar to those who would form part of the final sample. These subjects were asked to indicate whether they correctly understood each item, any terms that were ambiguous and, if applicable, an alternative statement. As all the items achieved 85% agreement as to their clarity, no changes were made in this phase.

After preparing the definitive MTS version in Spanish and prior to the dissemination of the online survey, a search was made for publicly accessible emails from schools, colleges, blogs and existing Facebook pages related to the education environment and to teachers' work. In this way, many centers and subjects were contacted to obtain an adequate response rate. Previous studies indicate that the response rate approximately, and usually, fluctuates by around 20% (Nulty, 2008). Questionnaires were sent by a link allowing access to it. When the participants clicked on the link, it allowed them to access the study's information and informed consent. Subsequently, they were asked if they wished to participate. They had to indicate "yes" to go to all the questionnaires. Questionnaires had to be completed in the same session. Therefore, no code or identification system was required of the participants, which favored their anonymity. In addition, questionnaires were not

disseminated until the research was approved by the Research Ethics Committee of the Spanish Autonomous Community of Aragon: CEICA (No. 08/2019; April 24, 2019). This committee is in charge of evaluating all research projects with people or personal data from the University of Zaragoza.

Data Analysis

A descriptive statistics of the MTS items was first examined. Subsequently, a confirmatory factor analysis (CFA) was carried out to confirm the scale's factorial structure in which the original 14-item version was tested: Factor 1: *intrapersonal* (items 1, 2, 3, 4, 5, 6, 7, 8 and 9) and Factor 2: *interpersonal* (items 10, 11, 12, 13 and 14). For the analysis, the recommendations of Byrne (2013) were followed and version 24 of the AMOS software was used. The *Maximum Likelihood* (ML) method was followed. The reliability values were obtained through Cronbach's alpha. Finally, Pearson correlations were carried out between the scores obtained with the dimensions of the MTS scale and self-efficacy.

Results

Descriptive Statistics of Items

Table 2 shows the descriptive statistics of the MTS items. Considering the response range which oscillated from 1 to 5, high means were observed. This meant that mean values were higher than the theoretical center of the scale. The items with the lowest means were 5, 13 and 14, whose values came close to 3.5. A slight trend to skewness and kurtosis was observed in

Table 2 Descriptive statistics of the MTS items

Items	<i>M</i> (<i>SD</i>)	Skewness	Kurtosis
1.	4.26(.71)	-.58	-.27
2.	4.38(.65)	-.79	.49
3.	4.43(.64)	-1.09	2.11
4.	4.06(.85)	-.78	.36
5.	3.50(1.16)	-.36	-.77
6.	4.16(.76)	-.52	-.38
7.	4.03(.95)	-.95	.68
8.	4.36(.69)	-1.07	2.02
9.	3.97(1.03)	-.90	.26
10.	4.28(.88)	-1.47	2.48
11.	4.40(.75)	-1.49	2.97
12.	4.01(1.02)	-.88	.14
13.	3.68(1.01)	-.44	-.44
14.	3.40(1.10)	-.34	-.59

items 3, 8, 10 and 11, with skewness values over -1 and kurtosis values above 2.

Confirmatory Factor Analysis (CFA)

We conducted a Confirmatory Factor Analysis (CFA) with the scores from both the *intrapersonal* and *interpersonal* dimensions. The employed method was *Maximum Likelihood (ML)*. The goodness-of-fit indices were: (i) the *Root Mean Square Error of Approximation (RMSEA)* index; (ii) the *Comparative Fit Index (CFI)*; (iii) the *Tucker-Lewis Index (TLI)*. RMSEA values less than 0.06 indicated a good fit, and values below 0.10 were considered acceptable (Browne & Cudeck, 1993). Both the CFI and TLI values above .90, and can be interpreted as indicators of acceptable fit (Kline, 2011). The χ^2 values and their corresponding degrees of freedom were also reported, for which lower values indicated a better fit.

Initially, two models were tested: a) Model 1: a one-factor model, which was compared to b) Model 2: the two-factor model, originally proposed by its authors (Frank et al., 2016). As seen in Table 3, Model 1 did not show a good fit. The goodness-of-fit indices were below the cut-off, with the TLI and CFI values equaling .56 and .62, respectively, which is lower than the minimum of .90. Therefore, Model 2 was tested. This model did not obtain an optimal fit because its goodness-of-fit indices did not reach the previously defined minimums. By examining the modification rates, we verified that the errors in items 12 and 13 could correlate. When considering the content of both items, the two referred to being aware of one’s own state of mind and how this could affect dealing with students. By both statistical and content criteria, their errors correlated and the model was retested (Model 2b). This improved, but no adequate adjustment was obtained: TLI equaled .87 and CFI equaled .895. The modification indices suggested that the errors from items 5 and 6 (Model 2c) and from items 5 and 7 (Model 2d) should correlate. Each of these

two models was re-examined when making these changes. A considerable improvement was made by both models. At this point, we examined items 5, 6 and 7 was examined to consider whether their content was similar and sufficiently different to the other factors in order to form an isolated independent dimension. The three items indicated that certain hasty behaviors were displayed at school, and they also oversized some concerns that affected the education center. In addition, none of the three items indicated contextualized situations in either the classroom or a direct relationship with students, such as intra- and interpersonal dimensions. In conceptual terms, item 7, which proposed “*When something painful happens at school, I tend to blow the incident out of proportion*”, was an item that conceptually differed from the previous two. Statistically, this item showed some weakness as it yielded low values for: a) *squared multiple correlation* (.137), b) *standardized regression weight* in the intrapersonal dimension (.350); c) the item-total correlation in the intrapersonal dimension (.40). Item 7 also explained a very low percentage of the variance of intrapersonal mindfulness. For all the above reasons, item 7 was discarded. Therefore, we tested Model 2e without item 7, which showed a better goodness of fit index.

Therefore, the global *Squared Multiple Correlations (SMC)* index was .472, which indicated that 47.2% of variance was explained by latent factors. Figure 1 shows the path diagram of the final two-factor structure. The correlation between the two factors was .29, which indicates the relation between both and their relative independence. Standardized weights ranged from .27 (item 12) to .82 (items 10 and 11), both from the interpersonal dimension. Although item 12 showed a low standardized regression weight, according to other statistical criteria, this item did not appear to be weak. Additionally, no conceptual or theoretical reason was found to discard this item.

Reliability

Adequate levels of internal consistency were observed through Cronbach’s alpha for each dimension, which were *intrapersonal* ($\alpha = .79$) and *interpersonal* ($\alpha = .70$).

Relation between the MTS Dimensions and the Teacher Self-Efficacy Dimensions

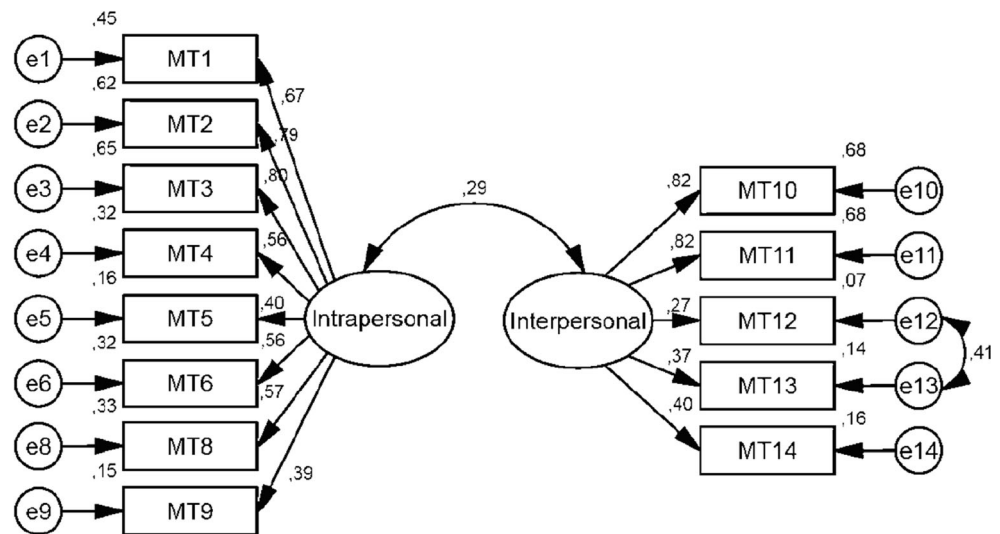
Pearson correlations were carried out between the MTS dimensions intrapersonal and Interpersonal and teacher self-efficacy: *use of classroom strategies*, *classroom management* and *student engagement*. As shown in Table 4, significant and positive correlations were obtained between the two mindfulness and teacher self-efficacy dimensions, which indicated that the more the intrapersonal and interpersonal mindfulness, the greater the perception of being able to manage both the situations occurring in classrooms and classrooms,

Table 3 Goodness-of-fit indices for the CFA in the MTS items

	χ^2	df	RMSEA	TLI	CFI
Model 1: One factor	645.11	77	.136	.560	.628
Model 2: Two-factor	305.11	76	.087	.820	.850
Model 2b items 12–13	235.25	75	.073	.873	.895
Model 2c items 5–6	208.58	74	.068	.891	.912
Model 2d items 5–7	200.46	74	.066	.898	.917
Model 2e without item 7	179.59	63	.068	.900	.919

Model 1: one-factor model; Model 2: two-factor model; Model 2b: two-factor model in which errors from items 12 and 13 correlated; Model 2c: two-factor model in which errors from items 5 and 6 correlated; Model 2d: two-factor model in which errors from items 5 and 7 correlated; Model 2e: two-factor model in which item 7 was discarded

Fig. 1 Flowchart with standardized weights of the MTS items



and to promote student engagement in class. The highest correlation was found between intrapersonal mindfulness and better classroom management ($r = .39$).

Discussion

The objective of the present study was to adapt and validate in Spain the MTS, a self-reported measure that assesses the degree of teacher mindfulness. Specifically, the factorial structure was examined by testing the two-dimension proposal, internal consistency and the concurrent validity of the scale with a sample of Spanish teachers. The results generally showed that the MTS-S (Mindfulness Teaching Scale – Spanish version) is a valid and reliable measure.

According to the first hypothesis, the CFA confirmed a two-factor structure of the scale, similarly to the original proposal by Frank et al. (2016), by distinguishing two dimensions: intrapersonal and interpersonal Mindfulness. These findings fall in line with what was found in previous validation studies into the MTS in countries like China (MTS-C),

Turkey (MTS-T) and South Korea (MTS-K), where the same two-factor structure was found (Gördesli et al., 2019; Kim & Singh, 2018; Li et al., 2019). On the one hand, the intrapersonal dimension was made up of eight items (1, 2, 3, 4, 5, 6, 8, 9) as item 7 was eliminated for statistical and conceptual reasons, as indicated in the Results section. On the other hand, the interpersonal dimension was made up of five items (10, 11, 12, 13 and 14), as observed in the original version. The *intrapersonal* dimension refers to teachers paying attention while teaching, and also includes reactivity and judgment regarding the task or activity being performed. The *interpersonal* dimension includes the teacher’s interaction with students, as well as listening qualities, openness and receptivity. Both dimensions positively correlated with one another to support the construct validity ($r = .29$). This result is similar to the original scale, and other versions from Chinese, Turkish and South Korean validations with values of around .30.

The two MTS-S scale dimensions presented adequate internal consistency, which was comparable to the original MTS and its corresponding validations. For the intrapersonal dimension, the obtained score was similar to other validations, but was slightly lower than that from the original scale. For the interpersonal dimension, scores came closer to those of the original Chinese version. The values from the Spanish MTS version were adequate as the internal consistency values ranged from .70 and .80 in confirmatory studies (George & Mallery, 2003; Huh et al., 2006; Kaplan & Saccuzzo, 1982).

Following the second hypothesis, our findings showed a positive relation between mindfulness and self-efficacy; that is, the higher the intrapersonal and interpersonal mindfulness levels, the higher the self-efficacy scores reported by teachers on all its dimensions, and vice versa. It is noteworthy that the closest association occurred between intrapersonal mindfulness and classroom management. So it would seem that the

Table 4 Pearson correlations among the factors from the MTS and teacher self-efficacy

	1	2	3	4
1. Intrapersonal Mindfulness	–	–	–	–
2. Interpersonal Mindfulness	–	–	–	–
3. Use of strategies	.28***	.20***	–	–
4. Classroom management	.39***	.22***	.64***	–
5. Student engagement	.28***	.25***	.59***	.75***

*** $p < .001$ The effect size for a correlation is represented by its absolute value (Cohen, 1992)

greater capacity for own attention could facilitate classroom management and, therefore, the classroom climate. This is a relevant aspect because some studies have indicated the influence of social climate in the classroom on teachers' burnout syndrome. Hence it can be stated that the classroom climate leads to this syndrome to a greater or lesser extent (Grayson, 2008; Schaufeli & Bakker, 2003). Furthermore, previous research has shown how mindfulness has an effect in the educational context, specifically for reducing stress, promoting psychological well-being, building a more positive climate in the classroom and regulating teachers' emotions (García-Campayo et al., 2017). So based on our findings, we suggest that the capacity of intrapersonal mindfulness can be a protective factor for teachers by acting on teachers' emotional management and improving classroom management.

When we took a closer look at the relation between mindfulness and self-efficacy, we noted that previous works have indicated how teachers' self-efficacy is related to, on the one hand, the expectations they have of their students and, on the other hand, to greater openness to new ideas, better class organization, and more enthusiasm and motivation during the teaching process (Bamburg, 2004; Tschannen-Moran & Woolfolk Hoy, 2001). According to the literature, both constructs (mindfulness and self-efficacy) appear to be closely linked as far as their effects on teachers and improved classroom management are concerned. However, very few studies have explored the mechanisms underlying this relation.

The present study validates the first self-reported measure to evaluate mindfulness among Spanish teachers. Therefore, having a specific measure for a given group of professionals from the education field allowed us to better assess the quality of teachers' presence in the classroom and shed light as to how this is related to other variables, such as self-efficacy. The two-dimensional structure is considered a strong aspect because it facilitates a more in-depth examination of the capacity to pay full attention by distinguishing intra- and interpersonal dimensions with adequate levels of internal consistency.

This study has its limitations. On the one hand, its sample size does not allow generalizations to be made with the general population of Spanish teachers because no random sampling was done. On the other hand, given its correlational nature, this study established no cause-effect relations. Therefore, prospective and longitudinal studies are needed to test some of the herein provided interpretations. Finally, we are unaware if our findings could be extrapolated to other jobs or work groups, in which perceived self-efficacy to perform given tasks, activities or work could be favored by certain levels of mindfulness. However, this study emphasizes the need to examine the structure and psychometric properties of measures when they are applied to a new context or culture.

For future research purposes, it would be interesting to show the psychometric properties of this scale among specific samples in the teaching field by distinguishing each stage of

education taught (e.g., university teachers, secondary primary, preschool education, etc.) and, second, to see if the MTS-S is a useful measure to know more about teachers' psychological well-being and burnout. Therefore, further evidence for validity, e.g. discriminant validity, to distinguish between teachers with psychological problems and those with psychological well-being would be very interesting to adopt preventive strategies. Another possible research line could aim to study some factors that could emphasize or reduce teachers' mindfulness, such as the number of students in their classroom, overwhelming tasks, specific student behaviors or, even from a work viewpoint, their work being vocational or the degree of passion they display in their work. Finally, it should be investigated whether levels of mindfulness on the intra- and interpersonal scales could influence students; that is, whether they would affect their academic achievement, their motivation for learning, their anxiety levels, their expectations, etc.

To conclude, the MTS-S can be considered an adequate self-reported measure to evaluate mindfulness among Spanish teachers. We hope that the present findings lead to future studies on mindfulness in the education field.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s12144-021-01600-2>.

Data Availability The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics Approval The research was approved by the Research Ethics Committee of the Spanish Autonomous Community of Aragon: CEICA (No. 08/2019; April 24, 2019). This committee is in charge of evaluating all research projects with people or personal data from the University of Zaragoza.

Consent to Participate Informed consent was obtained from all individual participants included in the study.

Consent for Publication Not applicable.

Conflicts of Interest/Competing Interests The authors declare that they have no conflict of interest.

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