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Measuring Spanish students' perception of teachers' emotionally intelligent behavior: Relationships to academic and individual outcomes



Natalio Extremera^{a,*}, Manuel Pulido-Martos^b, Sergio Mérida-López^a,
 Lourdes Rey^c, and Zorana Ivcevic^d

^a Department of Social Psychology, Social Work and Social Services, and Social Anthropology, University of Malaga, Malaga, Spain

^b Department of Psychology, University of Jaen, Jaen, Spain

^c Department of Personality, Evaluation, and Psychological Treatment, University of Malaga, Malaga, Spain

^d Yale Center for Emotional Intelligence, Yale University, New Haven, CT, United States

ARTICLE INFO

Article history:

Received 18 November 2024

Accepted 26 March 2025

Available online 11 April 2025

Keywords:

Teacher emotionally intelligent behavior
 Spanish validation
 school context
 emotional intelligence

ABSTRACT

The aim of the present investigation was to analyze the psychometric properties of the Spanish version of the *Teacher Emotionally Intelligent Behavior Scale* (TEIBS-S) in two independent studies with secondary students. In Study 1, a cross-sectional design was used and 1850 secondary students (52.3% girls; $M_{age} = 14.2$ years) completed the TEIBS-S and other self-report measures of theoretically relevant constructs, including life satisfaction, negative emotional states, the quality of teacher-student relationships, and support in the classroom. In Study 2, a prospective design was used in which 409 secondary school students (60% girls; $M_{age} = 13.4$ years) completed the TEIBS-S at time 1 and different self-report measures of academic engagement, satisfaction with life, positive and negative emotional states, anxiety and depression symptomatology, and somatic symptoms over an average five-month prospective interval. The results revealed preliminary evidence of adequate internal consistency. Also, the factor analyses supported a one-factor solution as original English version and was invariant across gender and expected significant relationships with the well-being and academic variables analyzed. Finally, Study 2 indicated that the TEIBS-S was positively related to academic engagement dimensions, positive affect and life satisfaction and negatively linked to somatic symptoms five months later. Our findings provide preliminary evidence that the TEIBS-S is a useful and valid instrument to assess teacher emotional intelligence-related behaviors that are linked to students' affective and academic outcomes. Finally, practical recommendations and future lines of research using the TEIBS-S in school context are suggested.

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Midiendo la percepción de estudiantes españoles de los comportamientos emocionalmente inteligentes de sus docentes: Relaciones con resultados académicos y personales

RESUMEN

El objetivo de esta investigación es analizar las propiedades psicométricas de la versión española de la Escala de Comportamientos Emocionalmente Inteligentes del Docente (TEIBS-S) en dos estudios independientes con estudiantes de secundaria. En el Estudio 1, se ha utilizado un diseño transversal con 1850 estudiantes de secundaria (52.3% chicas; $M_{edad} = 14.2$ años) que han completado la TEIBS-S y otras medidas que evalúan satisfacción vital, estados emocionales negativos, calidad de las relaciones profesorado-alumnado y apoyo en el aula. En el Estudio 2, se ha utilizado un diseño prospectivo donde 409 estudiantes

Palabras clave:

Comportamientos emocionalmente inteligentes del docente
 validación española
 contexto escolar
 inteligencia emocional

DOI of original article: <https://doi.org/10.1016/j.psicod.2025.500167>

* Corresponding author.

E-mail address: nextremera@uma.es (N. Extremera).

<https://doi.org/10.1016/j.psicoe.2025.500167>

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de secundaria (60% chicas; $M_{edad} = 13.4$ años) han completado la TEIBS-S en tiempo 1 y, tras unos cinco meses de media, han cumplimentado diferentes medidas de *engagement* académico, satisfacción vital, estados emocionales positivos y negativos, sintomatología ansiosa y depresiva y quejas somáticas. Los resultados han revelado una consistencia interna adecuada. Además, los análisis factoriales han apoyado una solución de un factor similar a la versión en inglés e invariante a través del género, así como relaciones significativas esperadas con las variables de bienestar y académicas analizadas. Por último, el Estudio 2 ha indicado que la TEIBS-S se ha relacionado positivamente con el compromiso académico, el afecto positivo y la satisfacción con la vida y negativamente con los síntomas somáticos del alumnado unos cinco meses como media después. Nuestros hallazgos proporcionan evidencias preliminares de que la TEIBS-S es un instrumento útil y válido para evaluar comportamientos docentes emocionalmente inteligentes y que se relacionan con resultados afectivos y académicos significativos de sus estudiantes. Finalmente, se sugieren algunas recomendaciones prácticas y futuras líneas del uso de la TEIBS-S en el contexto escolar.

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Introduction

Different theoretical approaches have proposed that teachers' social and emotional resources may exert a significant impact on adolescents' learning and well-being at school (Frenzel et al., 2021; Floman et al., 2024). Teachers' effective abilities to manage the social demands of the classroom are considered to play a significant role in how well adolescents cope with emotional distress (Collie, 2017). Consequently, the Prosocial Classroom Model posited that teachers' social and emotional competences and their well-being levels contribute to the development and maintenance of the supportive classroom climate and desired student academic and affective outcomes (Baumsteiger et al., 2022; Jennings & Greenberg, 2009). Contrarily, when teachers lack these socio-emotional competences to manage the demands of teaching, their well-being erodes and leads to an inability to effectively respond to students' needs and, therefore, a deterioration of the classroom climate, and decreased learning and affective outcomes for their students (Collie, 2017; Floman et al., 2024). Emotional intelligence (EI) has been recognized as a key personal resource with significant benefits for teacher well-being and the creation of positive classroom climates (Aldrup et al., 2020; Brackett et al., 2019).

In the present research, we focus on EI. Originally, Mayer and Salovey (1997) defined EI as a set of four related mental abilities, including: (1) accurately perceiving emotions in oneself and others, (2) using emotions to facilitate problem solving and decision making, (3) understanding typical causes, consequences, and transitions between emotions, and (4) regulating emotions toward desired goals, both related to performance/achievement and well-being. This conceptualization of EI, referred to in the literature as the ability model, argues that these abilities are a form of hot intelligence and that it should be assessed using performance-based tests, similar to tests of general intelligence (Mayer et al., 2016). Another stream of EI research focused on self-evaluations of ability and developed self-report measures, which are similar in nature to measures of self-efficacy (Law et al., 2004). Although both ability and self-report measures predict theoretically relevant outcomes, such as well-being, relationship quality, and achievement at school and at work (e.g., MacCann et al., 2020; Sánchez-Álvarez et al., 2016), neither describe actual behavior. Mental abilities and self-concept of ability can be best described as constituting potential for emotionally intelligent behavior, but behavior itself is likely to be also influenced by other factors, such as personality and social context (Ivcevic et al., 2025; Matthews et al., 2021). Although emotionally intelligent behavior has been theoretically defined as distinct from EI ability and self-efficacy, research specifically focusing on such behavior as observed by others who closely interact with targets has remained scarce.

Here, we focus on emotionally intelligent behavior and a novel approach to measure it using observer reports. The construct of teacher emotionally intelligent behavior (TEIB) is based on research on interpersonal perception (Kenny, 2020) and describes teachers' behavior characteristic of EI as perceived by students in school settings. Boyatzis (2018) argued that enacted emotionally intelligent behavior affects individual outcomes and that this behavior is best assessed through informant-reports. Using this approach in the context of education, a study in an adolescent sample found that teacher-observed emotion regulation predicted student achievement and interpersonal outcomes independently of student performance tested emotion regulation ability, even when controlling for personality traits and gender (Ivcevic & Eggers, 2021). Similarly, Floman et al. (2024) found that educator ratings of school leaders' emotion regulation predicted educator well-being, including both higher positive affect and job satisfaction and less emotional exhaustion.

Elfenbein et al. (2015) solicited EI ability ratings from adult participants' supervisors and work colleagues, as well as team members in undergraduate course projects. Although they did not directly measure behavior, but informant-reports of ability, we can assume that informants could only make judgements of ability based on behavior they observe (as they do not have insight into other's self-concept or their capacity to perform well on psychometric tests). These studies showed that multiple informants significantly agreed in their descriptions of supervisor EI and that these informant-report measures predicted relevant outcomes such as transformational leadership and performance (Elfenbein et al., 2015). Moreover, these predictions have incremental validity over self-report and performance-based EI measures and remain significant after controlling for other relevant variables (e.g., general intelligence, personality traits, liking). Ivcevic et al. (2021) developed a scale aims to be used specifically for observer-reports of supervisor emotionally intelligent behavior (EIB). Based on the Mayer and Salovey's EI model (Mayer & Salovey 1997; Mayer et al., 2016), items on this scale explicitly address behavior indicating perceiving emotions (e.g., if someone is feeling upset about a decision, my supervisor will notice), using emotions to aid problem solving (e.g., my supervisor generates enthusiasm to motivate others), understanding emotions (e.g., my supervisor understands the reasons why employees become upset), and managing emotions (e.g., my supervisor is good at helping others feel better when they are disappointed or upset). The scale showed unidimensional structure (Ivcevic et al., 2021). Levitats et al. (2022) tested structural validity in a confirmatory factor analysis (CFA) along with theoretically relevant measures assessing organizational culture (employee perceptions of human resource practices supportive of EI and low organizational regard for EI values), relationship quality (supervisor misbehavior, including harshness toward employees and emotion mismanagement), and individual

employee variables (engagement, emotional exhaustion). Results provided support for supervisor emotionally intelligent behavior as correlated, but distinct from these theoretically relevant variables. In a large-scale study of employees across industries, [Ivcevic et al. \(2021\)](#) found that these informant-reports predict employee self-reported opportunity to grow and positive emotions at work, which in turn was associated with work-related creative behavior. Employing the same measure, [Levitats et al. \(2022\)](#) showed that employee-reported supervisor emotionally intelligent behavior was positively associated with employee engagement at work and negatively with employee emotional exhaustion and that it mediated the relationship between EI supportive human resource practices and these individual outcomes.

In the present studies, we have adapted the *Supervisor Emotionally Intelligent Behavior* to the school context. Instead of asking employees to describe behavior of their supervisor, we have asked students about behaviors showing that their teachers successfully perceive emotions, use emotions to help thinking and inspire or assist problem-solving, understand the causes and consequences of emotions, and manage emotions in themselves and their classrooms. Supervisors in the work context and teachers in the context of schools have much in common. In both cases they set the emotional tone for the groups they oversee, they establish norms of what is acceptable behavior, which behavior (including emotional expressions) will be tolerated or supported, and which behavior will be discouraged or sanctioned, and they determine important individual outcomes (such as promotions at work and grades and other evaluations at school). Similar to supervisors in workplace settings, teachers act in relation to others in their classroom (primarily students) and their explicit goal is to influence their behavior – they instruct and explain, motivate students, establish and maintain classroom climate and enforce norms of acceptable behavior. The organizational behavior literature provides ample evidence that leader behavior influences behavior and outcomes of their followers ([Burke et al., 2006](#)) and that leadership is to a significant extent an emotional process ([Dasborough et al., 2022](#)). In educational contexts, teachers contribute to building emotional and motivational resources among students ([Baumsteiger et al., 2022](#)) and their EI plays a significant role in accounting for differences in student learning, attitudes, and well-being at school ([Collie, 2017](#)).

We hypothesize that students who see their teachers act in emotionally intelligent ways are likely to: (1) feel supported because teachers acknowledge student feelings; (2) vicariously learn about how to understand and manage emotions, and (3) indirectly become better able to successfully learn and have higher well-being at school ([Braun et al., 2020](#); [Jennings & Greenberg, 2009](#); [MacCann et al., 2020](#)). Adolescents perceiving high TEIB may identify their teachers as positive role models who value students' emotions and might feel more confident and willing to seek support ([Frenzel et al., 2021](#)). Moreover, students identifying their teachers as acting in emotionally intelligent ways may trust their educators' competences more, experience higher academic engagement, and more positive emotions at school ([Divecha & Brackett, 2020](#); [Jennings & Greenberg, 2009](#)). Although there is evidence about the relationship between supervisor emotionally intelligent behavior and both affective and performance outcomes among workers in organizational settings ([Elfenbein et al., 2015](#); [Ivcevic et al., 2021](#); [Law et al., 2004](#); [Levitats et al., 2022](#)), the assessment of TEIB in educational context using a social perception approach needs to be further explored ([Floman et al., 2024](#)). Typical EI assessment, both through self-report measures or via performance-based EI tests, ask teachers to either evaluate their emotional self-efficacy or identify specific emotions in different scenarios or facial expressions, respectively. However, such EI measures do not provide information about the extent to which teachers apply their abilities and self-concept in the classroom. By contrast, when ado-

lescents repeatedly interact with teachers, they continually make judgments of their teachers' socio-emotional skills and these judgments implicitly and explicitly influence their own emotion states, their attitudes, and later consequential academic decisions or actions.

In sum, this study examines the students' perception of teachers' emotionally intelligent behavior through observer ratings, aiming to understand the reliability and validity of such assessments in school settings. Students frequently judge teachers' emotional abilities, and these judgments have meaningful academic and personal implications ([Telli, 2016](#)). Understanding the accuracy and impact of these perceptions is crucial for improving teacher-student interactions, professional development and instructional decision making decision-making in school contexts. This research is significant for school leaders, guidance counselors, and school psychologists who rely on assessments of EI for recruitment, improving quality of teaching and professional development. The study builds upon existing literature on EI by focusing on observer assessments in applied context rather than self-reports or ability tests ([Bru-Luna et al., 2021](#)). It expands the empirical evidence on the reliability and predictive validity of observer-rated EI, contributing to a more comprehensive understanding of how emotional abilities are perceived by students. By focusing on a Spanish-speaking sample, this study adds to the existing literature by confirming the applicability of the TEIBS in different cultural contexts and exploring the connections between perception of teachers' emotionally intelligent behavior and their impact on academic and individual outcomes.

The present study

Based on the reviewed research and using an observer rating of emotionally intelligent behavior approach, we adapted the original version of supervisor emotionally intelligent behavior scale ([Ivcevic et al., 2021](#)) to the school context. The aim of the present study was to evaluate the factor structure, invariance by gender, internal consistency, and convergent and divergent validity of the Spanish TEIBS in a large sample of Spanish secondary students. This validation study of the TEIBS within the Spanish context is essential to ensure its reliability and validity for assessing social perception of teachers' EI among Spanish-speaking students. Cultural and linguistic differences can influence how adolescents interpret and respond to assessment items, potentially affecting the accuracy of the instrument. Therefore, this study might provide preliminary evidence that the TEIBS accurately reflects the social perception of Spanish students on teachers' emotionally intelligence behaviors, ensuring that academic leaders, teacher trainers and scholars have a useful tool for evaluation, professional development and recruitment.

Given the above considerations, the purpose of the present study was twofold. The first purpose was to examine the psychometric properties of TEIBS-S and its relations with different social and personal outcomes (study 1). We expected that TEIBS-S was a remarkably valid and reliable instrument for Spanish student samples which was significantly and positively correlated with life satisfaction, teacher and classmate support, teacher-student communication, and teacher-student trust, while negatively related to depressive symptomatology and perceived stress. Also, the prospective predictive validity of TEIBS-S for different personal and academic outcomes was also examined (study 2). In short, it was expected to find significant positive effects on academic engagement, positive affect, and satisfaction with life, along with negative effects on negative affect, anxiety, depression, and somatic complaints.

Table 1
Exploratory factor analysis of the items of the TEIBS-S (n = 898)

Item	Factor
1. If someone is feeling upset about a decision, my teacher will notice.	.69
2. My teacher realizes when his/her students are dissatisfied at classroom.	.70
3. My teacher is good at reading his/her students' emotions.	.78
4. My teacher helps his/her students find ways to channel their dissatisfaction into making a productive change.	.77
5. My teacher encourages his/her students to use their curiosity to learn and come up with ideas.	.74
6. My teacher generates enthusiasm to motivate his/her students.	.75
7. My teacher learns from both disappointments and successes when planning his/her lessons for the future.	.75
8. My teacher understands the reasons why his/her students become upset.	.75
9. My teacher understands how their decisions and behaviors affect how students feel at school.	.62
10. My teacher keeps calm in difficult situations.	.73
11. My teacher is good at helping students feel better when they are disappointed or upset.	.78

Study 1

Method

Participants

The sample comprised 1850 Spanish secondary school students from a southern region of Spain (Málaga), with the participation of nine different high school centers (52.3% girls) ranging in age from 12 to 18 years ($M = 14.2, SD = 1.42$). This was a cross-sectional study and students completed TEIBS-S at one time, along with several different academic and affective outcomes scales.

Instruments

All the participants provided basic sociodemographic data about their age and gender.

Spanish version of the Teacher Emotionally Intelligent Behavior Scale. The TEIBS-S was adapted to the academic context from the original supervisor emotionally intelligent behavior scale (Ivcevic et al., 2021) by changing the words “supervisor” for “teacher/tutor”, “employees” for “students” and “at work” for “in the classroom” and translated into Spanish by the first author of this work and back-translated by a bilingual assistant. Then, both researchers compared these versions of the TEIBS-S and agreed on the final forward translation of the instrument. This 11-item Likert-type scale asked students the extent to which teachers exhibited behavior characteristic of the four abilities in the classroom: *perceiving emotion* (three items, e.g., “my teacher realizes when his/her students are dissatisfied in the classroom”), *using emotions* to help thinking and problem-solving (four items, e.g., “my teacher helps his/her students find ways to channel their dissatisfaction into making a productive change”), *understanding emotions* (two items, e.g., “my teacher understands how their decisions and behaviors affect how students feel in the classroom”), and *managing emotions* (two items, e.g., “my teacher is good at helping his/her students feel better when they are disappointed or upset”). Students responded on a 6-point Likert scale ranging from 1 = strongly disagree to 6 = strongly agree (see Table 1).

The *Satisfaction with Life Scale* (SWLS; Diener et al., 1985; Spanish version, Atienza et al., 2003) was used. The scale consists of five self-referencing statements on perceptions of global life satisfaction. Cronbach’s alpha, omega, average variance extracted (AVE) and composite reliability (CR) in this study were .82, .83, .50, and .83, respectively.

The *depression* subscale from the *Depression, Anxiety, and Stress Scale-21* (DASS-21; Lovibond & Lovibond, 1995; Spanish version, Bados et al., 2005) was used to assess symptoms characteristic of depression in daily life. Students provided responses on a 7-point scale. Ordinal Cronbach’s alpha, omega, AVE and CR in this study were .92, .89, .63, and .92, respectively.

Teacher-student relationship quality was measured using the *trust and communication* subscales from the *Inventory of Teacher-*

Student Relationships (ITSR; Murray & Zvoch, 2011). Students responded on a 4-point scale ranging from 1 = never to 4 = always. Ordinal Cronbach’s alpha, omega, AVE and CR in this study were .88, .84, .60 and .88 (trust), respectively, and .91, .89, .57, and .91 (communication). The Spanish version has shown satisfactory properties in previous studies with Spanish adolescents (Chamizo et al., 2021).

Teacher and classmate support were assessed with two subscales by the *Teacher and Classmate Support Scale* (TCSS; Torsheim et al., 2000; Spanish version, García-Moya et al., 2013) composed of four items each with answers ranging from 1 = completely disagree to 5 = completely agree. Participants reported their satisfaction with support from teachers and peers in the classroom, as well as the availability of support and helpfulness. Cronbach’s alpha in this study, omega, AVE and CR were .76, .76, .44 and .76 for *teachers*, and for *peers* were .74, .74, .43, and .74.

The *Perceived Stress Scale* (PSS-4; Cohen et al., 1983; Spanish version Vallejo et al., 2018) was used to measure the extent to which students perceive life as uncontrollable or unpredictable. The scale is composed of four items that are answered on a scale ranging from 1 = never to 5 = always. The reliability of the PSS-4 was .70 (alpha), .76 (omega), .31 (AVE), and .73 (CR).

Procedure

We selected the sample using a convenience sampling method after principals were informed about the study’s objectives and voluntarily agreed to participate. Families or legal guardians provided informed consent before students participated. Participants completed the questionnaires in classrooms during regular school hours in the presence of a research assistant. The study adhered to the *Declaration of Helsinki* (2013) and was approved by the Ethical Committee of the hosting university (169-2023-H).

Data analyses

For the study of the psychometric properties of TEIBS-S, we divided the sample randomly into two subsamples to separate exploratory from confirmatory analyses (Worthington & Whittaker, 2006). We carried out an exploratory factor analysis (EFA; n = 898) with the first extracted subsample (1a) and used two criteria to test whether it was justified to extract factors: Bartlett’s sphericity test and the Kaiser-Meyer-Olkin (KMO) sample adequacy index. Values greater than .80 and .90 are considered excellent (Hair et al., 2019; Kim & Mueller, 1978). Then, we applied the principal axis factoring method with oblique rotation (oblimin). To determine the number of factors to extract, we conducted a parallel analysis (PA) based on minimum rank factor analysis (Timmerman & Lorenzo-Seva, 2011) using the FACTOR program. Additionally, we calculated one dimensionality/multidimensionality indices: unidimensional congruence (UNICO; recommended value > .95), explained common variance (ECV > .80) and mean of item residual absolute loadings (MIREAL < .30) (Ferrando & Lorenzo-Seva, 2018). We considered

Table 2
Goodness of fit indices for the models assessed of the TEIBS-S (n=952)

	YB χ^2	df	CFI	TLI	RMSEA (90% CI of RMSEA)	SRMR	Δ YB χ^2
One-factor model	353***	44	.92	.90	.105 (.095, .115)	.043	-
One-factor modified model ^a	209***	41	.96	.94	.080 (.069, .090)	.034	127.91***, ^b

Note. CFI = comparative fit index; CI = confidence interval; df = degrees of freedom; RMSEA = root mean-square error of approximation; SRMR = standardized root mean residual; TLI = Tucker-Lewis index; YB χ^2 = Yuan-Bentler scaled χ^2 statistic.

*** $p < .001$.

^a Three pairs of error terms were permitted to correlate (2-3, 1-2, and 5-6).

^b Although the comparison between the nested models assessed by YB χ^2 is not distributed as it is with χ^2 , a scaled difference χ^2 can be used to compare YB χ^2 in more and less restricted models.

Table 3
Correlations among variables (n = 952)

	1	2	3	4	5	6	7
Spanish version of the Teacher Emotionally Intelligent Behavior (1)	-						
Satisfaction with life (2)	.24***	-					
Teacher support (3)	.56***	.29***	-				
Classmate support (4)	.30***	.33***	.33***	-			
Teacher-student communication (5)	.58***	.18***	.45***	.22***	-		
Teacher-student trust (6)	.63***	.24***	.57***	.25***	.71***	-	
Depression (7)	-.13***	-.46***	-.14***	-.17***	.01	-.15***	-
Perceived stress (8)	-.17***	-.50***	-.16***	-.23***	-.10**	-.17***	.64***

Note: *** $p < .001$. ** $p < .01$.

only items with factor loadings over .40 and no cross-loadings for assignment, following Fabrigar et al. (1999) guidelines.

We used the second sample (1b) for a CFA (CFA, n = 952) to validate the data fit from the model obtained through the EFA. We used the MLR estimation method (from Mplus software; Muthén & Muthén, 1998-2017) or Yuan-Bentler scaled ML (Yuan & Bentler, 2000) to address biases due to the lack of normality in skewness and especially in kurtosis. We evaluated the fit of the models to the data by the Yuan-Bentler scaled χ^2 (YB χ^2), where a significant test indicates a poor fit (although this is affected by large sample sizes), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean residual (SRMR). For CFI and TLI, values $\geq .95$ have been suggested as the criterion for adequate fit (Hu & Bentler, 1999). For RMSEA, a value $\leq .05$ indicates a close fit and $\leq .08$ an adequate fit (Browne & Cudeck, 1992). For SRMR, a value $\leq .08$ indicates a good fit (Hu & Bentler, 1999).

We evaluated the internal consistency of TEIBS-S (the model with the best fit obtained through CFA) using Cronbach's alpha and McDonald's omega (Doval et al., 2023; Peters, 2014). Next, we examined convergent and divergent validity of the TEIBS-S were examined using the Pearson correlation analysis in relation to theoretically relevant outcomes.

Lastly, we examined metric invariance by gender. First, we evaluate the fit of the measurement model for the two genders separately using CFA. Then, in each analysis, we examined nested models with progressively more stringent criteria (Vandenberg & Lance, 2000). We assessed factor loading equivalence for both genders (weak or metric invariance) and item intercept equivalence (strong or scalar invariance). We compared the different nested models based on differences in fit indices CFI, TLI, and RMSEA (Δ CFI, Δ TLI, and Δ RMSEA). Decreases in CFI and TLI of less than .01, and an increase in RMSEA of less than .015, are considered indicators of non-invariance (Cheung & Rensvold, 2002).

Results

In line with our first objective, the psychometric properties of the TEIBS-S were examined. In sample 1a, both the Bartlett's Test of Sphericity ($\chi^2 = 5719, p < .001$) and the KMO value (.95) indicated the appropriateness of conducting the EFA. The results of

the PA showed empirical eigenvalues for the first two factors of 63.19 and 8.38, and corresponding random eigenvalues at the 95th percentile of 22.87 and 19.33, confirming a one-factor solution. Unidimensionality was confirmed by the values of UNICO (.99), ECV (.91), and MIREAL (.19). Factor loadings ranged between .63 and .78 (Table 1), thus all items were retained. This factorial structure, which also coincides with that of the original scale, was compared to the results of the CFA in sample 1b (Table 2). We found support for the hypothesized one-factor model. However, particularly high values for RMSEA and the analysis of modification indices suggested the establishment of covariances between the error terms of the following items (2-3, 1-2, and 5-6). Review of these item pairs shows content similarities that might explain these correlations (e.g., items 1 and 2 refer to negative emotions and items 5 and 6 refer to high activation positive emotions). This model, with the introduced changes, exhibits a good fit with the data: YB $\chi^2 = 209, p < .001, df = 41; CFI = .96, TLI = .94, RMSEA = .080, 90\% CI of RMSEA = .069-.090, SRMR = .034$ (see Table 2). All loading values were statistically significant and of a reasonable magnitude (.64-.80).

Considering the model with the best factorial fit, the internal consistency Cronbach's alpha and omega global score were .92 and .91, respectively.

Associations between TEIBS-S and individual outcomes are presented in Table 3. The correlations of TEIBS-S scores with life satisfaction ($r = .25$), teacher support ($r = .56$), classmate support ($r = .30$), teacher-student communication ($r = .58$), and teacher-student trust ($r = .63$) were positive and significant. As expected, correlations were highest for outcomes describing the quality of teacher-student relationship, but not so high to suggest that the TEIBS-S is assessing only the extent to which students experience positive interactions with their teachers. In contrast, TEIBS-S scores correlated negatively and significantly (but in a modest way) with depressive symptomatology and perceived stress ($r = -.13$ and $-.17$, respectively).

Independent CFA models specified for male and female students demonstrated a good fit to the data, indicating that a metric invariance analysis was appropriate (males: YB $\chi^2 = 110, p < .001, df = 41; CFI = .96, TLI = .95, RMSEA = .073, 90\% CI of RMSEA = .056-.090, SRMR = .035$; and females: YB $\chi^2 = 149, p < .001, df = 41; CFI = .95, TLI = .94, RMSEA = .087, 90\% CI of RMSEA = .073-.090, SRMR = .103$).

Table 4
Summary of fit statistics for testing measurement invariance by gender

	YB χ^2	df	CFI	TLI	RMSEA (90% CI of RMSEA)	Models	Δ CFI	Δ TLI	Δ RMSEA
Male students	110***	41	.96	.95	.073 [.056, .090]				
Female students	149***	41	.95	.94	.087 [.073, .103]				
Configural (M1)	260***	82	.96	.94	.081 (.070, .092)				
Metric (M2)	279***	92	.96	.95	.077 (.067, .087)	M2 vs. M1	.00	.00	.004
Scalar (M3)	309***	102	.95	.95	.076 (.066, .086)	M3 vs. M2	.01	.00	.001

Note. CFI = comparative fit index; CI = confidence interval; df = degrees of freedom; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index; YB χ^2 = Yuan-Bentler scaled χ^2 statistic.

*** $p < .001$.

All parameters estimated were statistically significant for both gender groups. The results of the metric invariance analyses are presented in Table 4. The test of configural (baseline model) and metric invariances (factor loadings were constrained to be equal across gender groups) revealed good levels of fit. The changes in the CFI, TLI and RMSEA ($\Delta\text{CFI} = .00$; $\Delta\text{TLI} = .00$; $\Delta\text{RMSEA} = .004$) were lower than the criterion recommended, signifying that full metric invariance was achieved. The same was true for scalar invariance ($\Delta\text{CFI} = .01$; $\Delta\text{TLI} = .00$; $\Delta\text{RMSEA} = .001$). In sum, results supported our hypothesis by demonstrating that the TEIBS-S exhibits a good model fit and significant associations with individual well-being and educational indicators.

Study 2

Method

Participants

The second sample comprised 409 Spanish secondary school students (60% girls), ranging in age from 12 to 18 years ($M = 13.4$, $SD = 1.15$). A prospective design was used in two different secondary schools in which students completed TEIBS-S at time 1 and different outcomes measures between 4-6 months later.

Instruments

All participants provided basic sociodemographic data about their age and gender. Similar instruments as for Study 1 were used: TEIBS-S (Cronbach's alpha, omega global score, AVE, and CR were .92, .90, .49, and .91, respectively); *depression* and *anxiety* subscales from the DASS-21 (Lovibond & Lovibond, 1995; Spanish version, Bados et al., 2005), *anxiety*: Cronbach's alpha, omega, AVE, and CR were .88, .88, .52, and .88, respectively and for *depression*: .84, .84, .42, and .84; and SWLS (Diener et al., 1985; Spanish version, Atienza et al., 2003): Cronbach's alpha, omega, AVE, and CR in this study were .88, .88, .60, and .88, respectively.

Positive and negative affect were measured with the *Positive and Negative Affect Schedule* (PANAS; Watson et al., 1988; Spanish version Sandín et al., 1999), which is a 20-item self-report measure, with 10 items for *positive affect* and 10 items for *negative affect*. Respondents were asked to rate how they felt in the previous week using a 5-point Likert-type response scale. In this study, Cronbach's alpha, omega, AVE, and CR for positive affect were both .89, .89, .45, and .89, respectively and for negative affect were both .86, .86, .39, and .86.

Academic engagement was assessed using the short version of the *Utrecht Work Engagement Scale for Students* (UWES-9S; Schaufeli et al., 2002; Spanish version: Serrano et al., 2019). The UWES-9S measures the levels of *vigor*, *absorption*, and *dedication* that students experience in relation to their academic activities. It includes nine items that are answered on a scale from 0 = never to 6 = always; thus, higher scores indicate greater levels of engagement. Cronbach's alpha, omega, AVE, and CR in this study were .93, .93, .60, and .93, respectively.

The *Somatic Complaints List* (SCL; Jellesma et al., 2007; Spanish version Rieffe et al., 2009) assessed the frequency with which students experienced certain physical complaints (e.g., pain). The scale comprises 11 items and it has a three-point response scale. Cronbach's alpha, omega, AVE, and CR were .87, .87, .39, and .87, respectively.

Procedure

We follow a similar procedure to collect data as in Study 1. Similarly, the study adhered to the Declaration of Helsinki (2013) and was approved by the Ethical Committee of the hosting university (169-2023-H).

Data analyses

Following prior meta-analytic studies showing the link between teacher's affective and emotional facets and student outcomes (Emslander et al., in 2025; Wang et al., 2023), we conducted different structural models to examine criterion validity. These models investigated the relationship between the TEIBS-S at time 1 and different outcomes after a 4-6-month prospective interval. The indices used to evaluate the fit of the models were the same as those used in the previously reported CFAs. All analyses were conducted using the Mplus 8 software, version 1.8.6. (Muthén & Muthén, 1998-2017).

Results

Consistent with our second objective, the psychometric properties of the TEIBS-S were examined using a prospective design. The nomological validity of the TEIBS-S was supported by the results of different structural models in which the TEIBS-S had significant positive effects on *academic engagement* ($\beta = .30$, $p < .001$), *positive affect* ($\beta = .25$, $p < .05$) and *satisfaction with life* ($\beta = .21$, $p < .01$); and negative effects on *negative affect* ($\beta = -.15$, $p < .001$) and *somatic complaints* ($\beta = -.15$, $p < .05$). No significant predictive relationships were found for *anxiety* and *depression* symptomatology. The results of this analysis (Figure 1) account for percentages of variance of the criterion variables ranging between 2% and 9%. In conclusion, the findings indicated that the TEIBS-S prospectively explains a significant amount of variance in both well-being and educational outcomes.

General discussion

The present work was conducted to expand our knowledge about the potential impact of students' perception of teachers' EI behavior on different personal and academic outcomes. Specifically, we examined the validity of newly adapted scale (TEIBS-S), a Spanish adapted version of supervisor emotionally intelligent behavior (Ivcevic et al., 2021) applied to the educational context in a relatively large sample of Spanish secondary students. Using a random sample extraction in Study 1, EFA revealed that the TEIBS-S is a unidimensional measure that describes students' overall perception of teacher emotionally intelligent behavior. These results were confirmed using CFA with the rest of sample from Study 1. However, the modification indices suggested establishing some covariances between the error terms of several items. After reviewing the content, it is plausible that these items show some communality as they refer to the development of positive attitudes toward learning in the classroom (e.g., items 5-6 reference teachers generating enthusiasm and supporting curiosity) or to detecting negative reactions among students (e.g., items 1, 2 and 3 reference teachers reading students emotions, such as being upset or dissatisfied). In this way, the inclusion of these covariances was justified and sufficiently interpreted (Jöreskog, 1967). Further tests showed good internal consistency reliability, as well as metric invariance for students of two genders. In sum, findings from study 1 supported the proposed hypothesis showing that the TEIBS-S may be used as a reliable instrument to measure emotionally intelligent behaviors displayed by teachers.

Overall, our findings underscored that different teacher emotionally intelligent behavior as perceived by students comprises a unique construct that is relevant in predicting student affective, motivational, social-relational, and achievement outcomes. In line with prior research using observer rating of EI in workplace settings (Elfenbein et al., 2015; Ivcevic et al., 2021; Levitass et al., 2022), TEIBS scores were positively and moderately highly correlated with several outcomes indicating positive

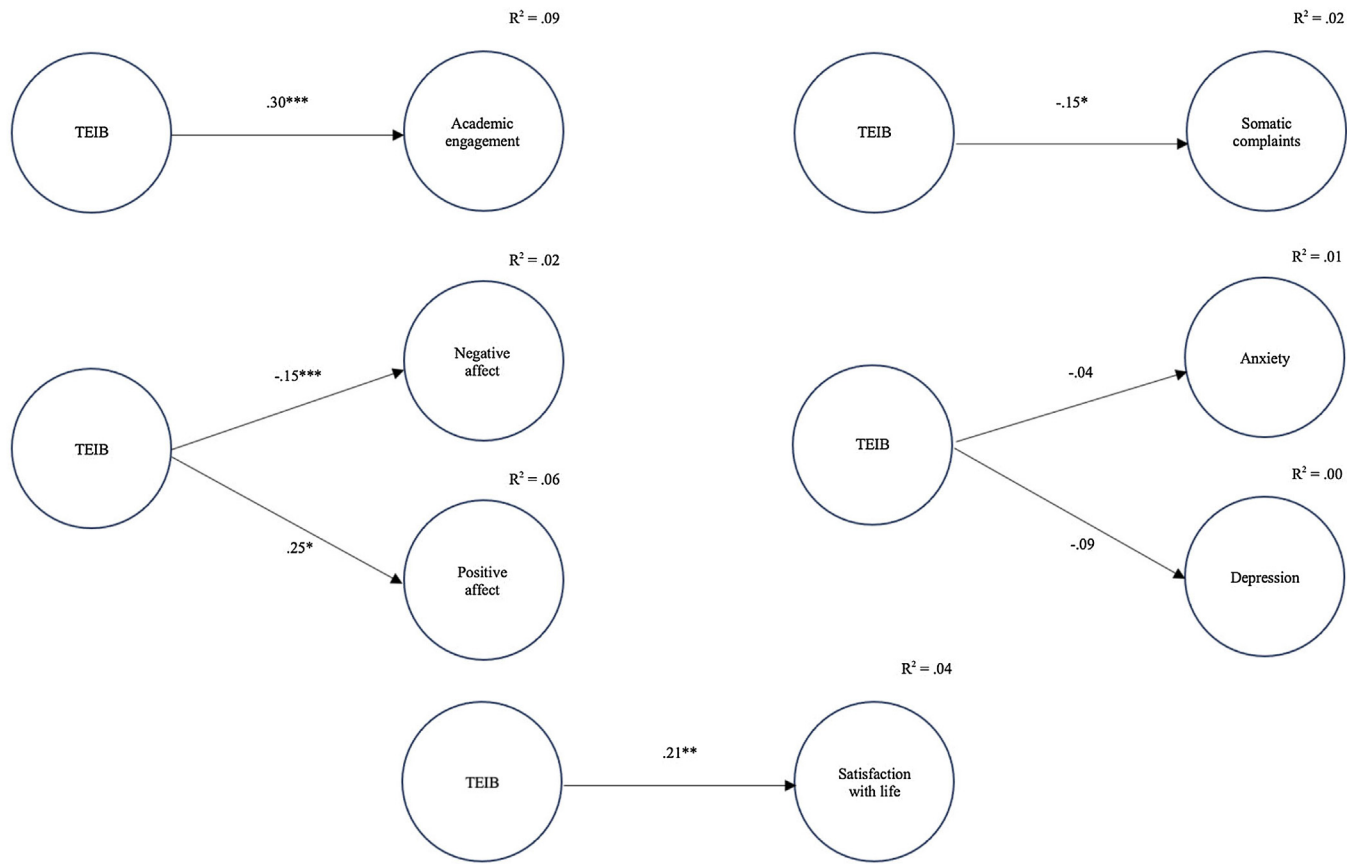


Figure 1. Effects on different criterion variables of the students (temporal difference of 4-6 months).

Note. To simplify the models, observable indicators were not included. The overall fit of the models was adequate in all cases. *TEIB* = teacher emotionally intelligent behavior.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

teacher-student relationships, namely teacher support. Our findings lend credence to the proposition by the Prosocial Classroom Model (Jenning & Greenberg, 2009) that teachers who understand students' emotions can use this information to manage problems and recognize their own role in students' behavior, and therefore, they can more effectively respond to the students' needs and build a climate of trust. The results of the present studies are also in line with research using the original instrument to assess supervisor emotionally intelligent behavior by their employees (Ivcevic et al., 2021). Specifically, workers who rated that their supervisor tended to show highly emotionally intelligent behavior were more likely to describe their experience of work using terms indicating liking and loving work and finding it both challenging and fulfilling. Similarly, Levitats et al. (2022) showed that supervisor emotionally intelligent behavior was related to higher employee engagement and lower emotional exhaustion. Results from the two studies of Spanish secondary school students show similar relationships of TEIBL with student affective and motivational outcomes.

In Study 2, our prospective findings support the proposed hypothesis, offering promising evidence in support of the predictive validity of the TEIBS-S for different interpersonal and personal outcomes. That is, the TEIBS-S showed prospective predictive validity for academic engagement and affective and well-being outcomes (positive and negative affect, life satisfaction, and somatic complaints). Thus, in our study TEIBS-S accounts for only 2% to 9% of the variance in certain students' outcomes. Although this percentage is common in prospective studies, it indicates that additional factors are likely influential in determining student well-being and engagement. Future research could incorporate some moderating variables (i.e., parental support and socioeconomic background, among others) to provide a more comprehensive analysis of the results. However, no significant predictive validity of TEIBS-S was found for anxiety and depressive symptomatology. Although further research is needed, it is plausible that TEIB will be more predictive of more proximal academic outcomes such as engagement and some dimensions related to personal well-being (i.e., positive and negative mood or life satisfaction), but less predictive of other more complex phenomena such as mental health symptoms that might be associated with adolescent challenges, or personal and family vulnerability factors (i.e., distal factors; Lämmle et al., 2013). This assumption is consistent with findings in Study 1, in which TEIBS-S showed lower correlation with the two mental health outcomes (i.e., depression and perceived stress) compared to other academic and interpersonal criteria. Also, it is possible that the range of scores was more restricted in these clinical variables, given that our data were collected from non-clinical students' sample. Undoubtedly, additional research is required to delve into the outcomes and mechanisms through which TEIB acts as a protective factor for adolescent academic achievement outcomes and personal well-being during high school. Additionally, our study did not address the potential impact of individual teacher characteristics (i.e., experience, training, or teaching style). It is conceivable that more experienced teachers might naturally being perceived by students as more emotionally skilled in the classroom. Further research should therefore consider including these variables to better elucidate their influence on the development of social perception of teachers' EI via students' ratings. Thus, further research should use longitudinal design with longer follow-up to assess the long-term stability of the TEIBS-S across different academic years.

Besides, students' rating was the only source to measure teacher's emotionally intelligent behaviors. It has been questioned whether students can be a reliable source of information on teacher behavior (e.g., Fauth et al., 2014). Even if ratings are not accurate, they can be valid because they reflect true perceptions of those students making them and these perceptions affect their behavior and

academic outcomes (Elfenbein et al., 2015). Nevertheless, further studies might include observers training to interpret the meaning of these teachers' behaviors similarly, as a potential method in reducing bias (Hoyt, 2000). Also, to provide greater richness of information on teacher's EI behavior, along with students' perception, work colleagues' ratings, and classroom observations may provide additional insight into this field.

Main findings of this study suggest several practical and educational policy implications. First, since recent meta-analytic research showed that EI skills can be trained (Hodžic et al., 2018), further effective teacher development programs should focus on the importance of displaying emotionally intelligent behaviors. Theoretically, scholars arguing for a whole school system approach to development of EI proposed that emotionally intelligent behavior in preservice and service teachers can be strengthened using situated learning and classroom interaction in specific educational settings as well as daily practices and routines (Brackett et al., 2019; Hoffmann et al., 2020). The downstream consequence of such teacher training are significant benefits for student academic success, quality of teacher-student relationships, and decreasing disruptive behaviors, among other key outcomes.

We propose that the TEIBS-S assesses a construct distinct from other commonly studied aspects of EI. Instead of self-concept of emotion skills (as measured by self-report EI questionnaires, e.g., Brackett et al., 2006) or performance assessed abilities (e.g. Mayer et al., 2012), the TEIBS measures enacted behavior. TEIB is largely directed toward students, thus making students best positioned to judge it and their perceptions highly relevant for their social-emotional and academic outcomes. Further research might use this tool to investigate how TEIB might act as intervening dimension involved in the effectiveness of secondary school students' EI development programs. Similarly, as a parallel with research in the workplace (Levitats et al., 2022), we can hypothesize that TEIB mediates the relationship between variables of school climate and culture and individual student outcomes.

Although the present studies provide evidence of factorial and construct validity of the TEIBS-S and contribute to the literature on teacher EI and its effect in the classroom, there are some noteworthy limitations. This investigation was limited by its cross-sectional assessment and its reliance on a single source of data assessed (secondary school students) in Study 1. Although perceptions of others' emotionally intelligent behavior may be less subject to biases than self-reports and are more ecologically valid in shared environments (Elfenbein et al., 2015), it is possible that common method bias may have inflated observed correlations. Study 2 included assessments at two time points separated by (on average) five months, largely replicating and extending results of Study 1 and thus giving it additional credence.

Future research should also include ability EI measures to examine the degree of association of the TEIB perceived by students with teacher performance on a test of maximal capacity to reason about and solve emotion-laden problem (Aldrup et al., 2020; Ivcevic & Brackett, 2014). Furthermore, although there is empirical evidence that adult observers tend to agree in their judgments of EIB (Elfenbein et al., 2015), the issue of observer agreement has not been examined in secondary school students rating their teachers' behavior. Although any individual student perceptions of TEIB can influence how they experience school and how they respond to it (thus giving it validity), it is important to understand the extent of agreement among adolescents when describing their teachers' behavior. Research on judging personality traits, for instance, shows that some traits are more observable in behavior and thus judged by others with more accuracy than others (Beer & Vazier, 2017) We could ask whether emotionally intelligent behavior shows inter-rater agreement more similar to most expressive traits (e.g., extraversion) or less expressive and readable traits (e.g.,

emotional sensitivity). It could also be the case that there are moderators of how well students agree in describing teacher behavior (e.g., their trait emotionality or different attributes of their teaching styles). Additionally, in future studies should control for some potential moderating conditions to maximize validity and reliability such as the length of time students know the evaluated teacher. It is plausible that students who are more familiar with the teachers rated would have a greater basis of personal experience from which to draw in making their judgments, potentially making them more valid.

In sum, the present research presented two studies adapting the Supervisor emotionally intelligent behavior scale to use in education. Secondary students provided their observations of teacher EI behavior, which captures actions indicative of the ways teachers demonstrate their ability to perceive emotions, use them to enhance motivation and support learning, understand, and effectively manage their own and others' (primarily students') emotions. The studies provide preliminary evidence of the reliability, one-factor structure, convergent and discriminant validity of the instrument. Additionally, predictive validity of TEIBS-S was prospectively demonstrated for different affective and academic student outcomes. Although more research is needed to confirm our initial findings, the TEIBS-S may prove to be a short and novel tool available in the field of teacher EI with potential utility for researchers and practitioners.

Credit authorship contribution statement

Conceptualization: Natalio Extremera; Lourdes Rey; **methodology & investigation:** Manuel Pulido-Martos Sergio Mérida-López; **formal analysis:** Manuel Pulido-Martos, Natalio Extremera; **writing - original draft preparation:** Natalio Extremera, Lourdes Rey, Manuel Pulido-Martos; **writing - review & editing:** Sergio Mérida-López, Lourdes Rey, Zorana Ivcevic; **supervision:** Natalio Extremera, Zorana Ivcevic.

Funding

This work was part of the R+D+I project PID2020-117006RB-I00, funded by MCIN/AEI/10.13039/501100011033/ and PAIDI Group CTS-1048G-FEDER (Junta de Andalucía). Zorana Ivcevic was funded by Fundación Botín (Creativity, Emotion, and the Arts grant).

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