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Psychometric Properties of the Emotional Skills and Competence Questionnaire for Teachers

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The Emotional Skills and Competence Questionnaire, as an emotional intelligence self-report measure, is based on the theoretical framework of the Mayer-Salovey emotional intelligence model and presents good psychometric properties in a cross-cultural setting. Different studies showed that emotional intelligence has a positive impact on teachers' work. So, the present study aimed to analyze the psychometric proprieties of the Emotional Skills and Competence Questionnaire adapted for teachers. A sample of 843 teachers from Portuguese schools (1st to 12th grades) was used. The scale was back-translated, adapt and participants completed a battery of questionnaires: The Emotional Skills and Competence Questionnaire for Teachers (ESCQ-T), and the Teacher Sense of Efficacy Scale. Statistical analysis included structural equation modeling, and results showed a good fit with the original factor structure, a robust reliability coefficient, and good psychometric validity for ESCQ-T. Also, relationships with teacher efficacy were found. So, the results suggested that it is a valid measure for assessing teachers' emotional skills and emotional competence. In conclusion, the ESCQ-T demonstrated adequate psychometric properties and can be used to assess teachers' emotional skills and emotional competence.

Keywords: emotional skills, competence, intelligence, teachers, psychometric properties

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INTRODUCTION

Emotional intelligence (EI) is an emotional competence (Mayer & Salovey, 1997) that complements the teachers' skills (Valente et al., 2022). In this sense, a growing number of studies show that teachers' EI is essential to personal and professional well-being (Mérida-López & Extremera, 2020), to resolve conflict in the classroom (Assalihee and Boonsuk, 2023; Valente & Lourenço, 2020), professional performance (Méndez et al., 2021), and student academic achievement (Wang, 2022). However, despite different studies showing that EI has a positive impact on teaching work, in Portugal few scales assess this teacher's emotional competence.

Considering the benefits of teachers' EI, it is necessary to develop measures to assess the perception of EI (Extremera et al., 2004) or, in their lack, adapt those that exist for teachers. Takšić et al. (2009) developed the Emotional Skills and Competence Questionnaire (ESCQ) to evaluate EI, with three dimensions. The ESCQ has proven to be a valid measure of emotional competence with construct validity in varied contexts (Takšić et al., 2009). So, taking in consideration that ESCQ is a multidimensional instrument for measuring the perception of EI, with good psychometric qualities (Faria & Santos, 2017; Santos & Faria, 2005; Takšić et al., 2009), this study aims to adapt the ESCQ for teachers and analyze its psychometric properties.

REVIEW OF LITERATURE

Teachers' Emotional Competence

Emotional intelligence, as a set of skills that allow understanding emotional patterns and solving problems in contexts involving emotions, is also known as emotional competence (Faria & Santos, 2017). Research on emotional competence takes a major step forward with the EI definition by Salovey and Mayer (1990). Since then, different EI models were developed. Among them, stands out the ability model of Mayer and Salovey (1997), the mixed model of Bar-On (1997), the trait model of Petrides (2009), and the emotional competencies approach of Mikolajczak et al. (2009).

According to Mayer and Salovey's (1997) model, EI is an emotional competence that is defined as a set of emotional capacities: the capacity to perceive, evaluate, and express emotions accurately; the capacity to generate feelings that facilitate thinking; the ability to understand emotions; and the capacity to regulate emotions and thus promote emotional and intellectual growth. Furthermore, Mayer and Salovey's (1997) model has been indicated as the most effective to evaluate and understand EI, both in terms of definition and measurement methods (Extremera & Fernández-Berrocal, 2005), and also because their theory is not intended to base on unsustainable promises about the EI potential (Woyciekoski & Hutz, 2009). Therefore, it should be noted that Mayer and Salovey's conceptualization continues to be the most widely used and accepted definition (Cartwright & Pappas, 2008).

The classroom represents a social context where teachers and students continually interact (Mallik, 2023). In this sense, is important to study the meaning of teachers' emotional competence, since their work is intrinsically an emotional practice (Gobena,

2022), given the centrality of emotions in the teaching and learning process (Suharno et al., 2023; Valente et al., 2022), including an emotional leadership for the students through their ability to perceive, understand and regulate students' emotions and their emotions (Fernández-Berrocal & Extremera, 2002).

EI presents a positive relationship with a large number of variables related to teachers, such as professional performance (Cejudo & López-Delgado, 2017; Extremera et al., 2019), teaching and learning process (Allen et al., 2014), work satisfaction (Cejudo & López-Delgado, 2017), stress and burnout (Subalakshmi et al., 2019), classroom management (Valente et al., 2020), and for students to learn emotional skills (Costa-Rodríguez et al., 2021; Martínez-Saura et al., 2022). Also, the Agbaria (2021) study shows that the response of teachers with EI to student behaviors and needs provides sufficient opportunities and guidelines to handle and control teacher-student relationships within the classroom, and contributes to greater classroom management efficacy (Hen & Sharabi-Nov, 2014).

Emotional Skills and Competence Questionnaire

Considering Mayer and Salovey's (1997) model different measures were developed to evaluate EI: based on performance, and based on self-report. The results of Mikulic et al. (2022) in a instruments systematic review constructed, adapted, and validated to assess the EI perception, support the international trend of using instruments based on the ability model. Thus, based on the theoretical framework of Mayer and Salovey's (1997) EI ability model, Takšić et al. (2009) developed the ESCQ, a self-report measure that evaluates EI perception, with three emotional abilities: Perceive and understand emotions (assesses the ability to identify and discriminate emotions in one's own feelings, thoughts, and behaviors); Express and label emotions (measures the ability to express one's own emotional states adequately and name them correctly); and Manage and regulate emotions (refers to the ability for effectively readjust one's own emotions to attain a desired outcome). The ESCQ has 45 items distributed by three dimensions with decent reliability (Takšić et al., 2009): Perceive and understand emotions (15 items); Express and label emotions (14 items); and Manage and regulate emotions (16 items).

The ESCQ has been used in different countries, for example: Portugal (Costa & Faria, 2022), Slovenia (Gabrijelčič et al., 2021), Spain (Schoeps et al., 2021), and Japan (Toyota et al., 2007). And, in different studies with ESCQ, the Cronbach alphas α were between .81 and .90 for the Perception and understanding; for the Express and label emotions α was between .78 and .88; and for the Manage and regulate emotions internal consistency measured with α ranged from .67 to .78.

The studies in different countries confirmed the ESCQ potential and, despite concerns about the discriminating validity of self-report measures (Conte, 2005), there is evidence that ESCQ is measure with solid psychometric properties that shows convergence, and predictive validity in different cultures (Faria et al., 2006) and varied contexts, evidencing construct, convergent, divergent, and concurrent validity (Takšić et al., 2009, p. 16). For that, was used in this study with teachers.

METHOD

The study has an instrumental design (Ato et al., 2013), as the psychometric properties of the ESCQ-T were explored in the sample. Specifically, the validity evidence based on internal structure, the validity evidence based on relations to other variables, and reliability were analyzed.

Participants

The sample was composed of 843 teachers (61.2% women) from Portuguese public schools, from basic (1st to 9th grades; 43 %) and secondary (10th to12th grades; 57 %) education. This is a convenience sample, collected based on teachers' availability, and teachers were recruited from schools in the north of Portugal. A high percentage of our sample has between 21 and 30 years of teaching experience: 9.7% (less than 10 years), 27% (11 to 20 years), 42.7% (21 to 30 years), and 20.6% (over 30 years).

Instruments

Emotional Skills and Competence Questionnaire for Teachers (ESCQ-T), an adaptation of ESCQ (Takšić et al., 2009), consists of 45 items in a Likert-type response format, ranging from 1 (*never*) to 5 (*always*), and is a self-report measure of teachers' EI, distributed in three dimensions: Perceive and understand emotions (15 items; e.g., I can easily see the mood swings in my students); Express and label emotions (14 items; e.g., I express my emotions well during classes); and Manage and regulate emotions (16 items; e.g., I can keep in a good mood, even when something unpleasant happens during class).

Teacher Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001). TSES (short form) consists of 12 items in a Likert-type response format, ranging from 1 (*nothing*) to 9 (*a great deal*), distributed into three dimensions: Efficacy in instructional strategies (4 items; e.g., How much can you use a variety of assessment strategies?); Efficacy in classroom management (4 items; e.g., How much can you do to control disruptive behavior in the classroom?); and Efficacy in student engagement (4 items; e.g., How much can you do to motivate students who show low interest in school work?). The internal consistency α coefficient for each dimension of the TSES, in this study, was adequate for efficacy in instructional strategies (α = .77; CI 95% .74 - .80), efficacy in classroom management (α = .83; CI 95% .81 - .85), and efficacy in student engagement (α = .75; CI 95% .72 - .78), and the internal consistency α coefficient for the TSES was .89 (CI 95% .888 - .909).

Procedure

All procedures implemented in the ESCQ adaptation and validation for teachers were in accordance with the ethical standards of the institutional and/or national research committee, and approved by the ESCQ author (Takšić et al., 2009), schools directors, and teachers' participants. This study considered the ITC Guidelines for translating and adapting tests, so the contents were adapted to the teachers and cultural context to preserve semantic equivalence by ITC Guidelines (Bartram et al., 2018). After translation and adaptation, the ESCQ-T pre-test was applied (n = 10 [1st to 9th grades], and n= 5 [10th to12th grades]), to record assessments about the teacher's items

interpretation, all measures were applied by the researchers in a teachers' group session, in a school context. The inclusion criterion for this study was that the participating teachers teach in public schools. The study was conducted in accordance with the Declaration of Helsinki (2013), ethical guidelines of the American Psychological Association, and all teachers participated in the study voluntarily.

Data analysis

For data analysis, to confirm the ESCQ-T original factorial structure, a confirmatory factor analysis (CFA) with the maximum likelihood estimation method was used in the AMOS program (Arbuckle, 2014) was used. Previously, all cases with missing values were eliminated. It was also an option to maintain moderate outliers since the descriptive statistics of the sample were still adequate. Modification indices were not considered in order not to make the model more complex.

Regard the preliminary items descriptive analysis, it was assumed maximum values for asymmetry (< 2) and kurtosis (< 7) as an approach to normality (Finney & DiStefano, 2013).

The model fit was evaluated using the more popular fit indices like the χ^2, χ^2/gl, GFI (≥ .90), AGFI (≥ .90), CFI (≥ .95; Hu & Bentler, 1999), TLI (≥ 0.95; Hair et al., 2018), RMSEA (<.05; Byrne, 2016), and the Critical N (CN > 200; Hoelter, 1983) indicating that the value adequately represents the sample size.

To examine the ESCQ-T score reliability, Cronbach's α coefficient with confidence interval (CI) was used (> .70; Streiner, 2003), and the construct reliability was testing by omega coefficient (> .70; Hunsley & Marsh, 2008).

The relationship with external variables (teacher self-efficacy) was testing through the Pearson's coefficient, it is assumed that: less than .200 indicates a very low value, between .200-.399 low, between .400-.699 moderate, between .700-.899 high, and between .900-1 very high (Marôco, 2018).

FINDINGS

In general, the asymmetry and kurtosis values were adequate in all cases (Table 1).

Table 1
Descriptive analysis of the ESCQ-T items for 1st to12th grades teachers

Items	M	SD	Asymmetry	Kurtosis
1. I can keep in a good mood, even when something unpleasant happens during class.	4.16	1.28	-0.91	0.42
2. I can express my feelings and emotions in words.	4.47	1.39	-1.22	0.96
3. When I meet a student, I immediately notice his disposition.	4.73	1.09	-1.02	1.39
4. I can stay in a good mood, even when my students are in a bad mood.	4.29	1.36	-0.99	0.57
5. During the class, when I dislike something, I immediately demonstrate it.	4.31	1.14	-0.65	0.33
6. When I see how a student feels, I usually know what happened to him.	4.00	1.30	-0.27	-0.25
7. The unpleasant experiences in class teach me what I should not do.	4.67	1.18	-1.08	1.16
8. I can easily captivate my students.	4.47	1.22	-0.77	1.11
9. I can perceive when my students are sad or disappointed.	4.50	1.18	-1.06	2.21
10. When a student praises me, I work with greater enthusiasm.	4.65	1.19	-1.31	1.84
11. I can easily describe the emotions I feel.	4.64	0.99	-0.79	1.41
12. I can easily see the mood swings in my students.	4.37	1.36	-1.25	0.92
13. When I don't like someone, I show them how I feel.	3.99	1.66	-0.63	-0.80
14. I express my emotions well during classes.	4.33	1.11	-0.60	0.36
15. I can easily cheer up a student when he is sad.	4.55	1.19	-1.01	1.09
16. When I'm in a good mood, it's hard to be upset.	4.51	1.13	-1.13	1.67
17. I can easily express what I feel.	4.53	1.11	-1.02	1.28
18. By observing a student with others, I can describe his emotions well.	4.18	1.26	-0.93	0.68
19. When I'm in a good mood, all the problems that arise during class seem to have a solution.	4.46	1.17	-1.21	1.63
20. I can describe my current emotional state.	4.57	1.07	-0.74	0.85
21. I can perceive when a student feels discouraged.	4.55	1.07	-1.08	1.86
22. When I am with my students, I am careful with how I behave.	4.35	1.32	-0.99	0.41
23. I can say that I know my emotional state well.	4.68	1.11	-1.16	1.70
24. I can describe a student's feelings from his facial expression.	4.41	1.11	-0.95	1.60
25. When I'm happy and in a good mood, I work better.	4.27	1.50	-0.80	-0.18
26. My behavior reflects my deepest feelings.	4.63	1.00	-0.80	1.19
27. I can detect envy in disguise in others.	4.14	1.24	-0.65	0.19
28. If I want, I can solve problems that seem unsolved.	4.15	1.20	-0.87	0.59
29. Students are always able to describe my mood.	3.98	1.07	-0.43	0.40
30. I notice when a student tries to hide his bad mood.	4.06	1.25	-0.56	0.32
31. I can easily persuade a student that there is no reason to worry.	4.05	1.03	-0.69	1.19
32. I usually know the reasons why I feel bad.	4.53	1.22	-1.20	1.58
33. I realize when a student feels guilty.	4.24	1.24	-0.84	0.74
34. During classes, I try to moderate unpleasant emotions and reinforce positive ones.	4.56	1.12	-1.09	1.61
35. I easily express affection to my students.	4.45	1.07	-0.94	1.45
36. I perceive when a student tries to hide his true feelings. [Percebo quando um aluno tenta esconder os seus verdadeiros sentimentos.]	4.05	1.29	-0.77	0.44
37. Usually what I feel there's nothing wrong.	4.37	1.18	-0.68	0.06
38. I can name and describe most of my emotions.	4.59	1.09	-1.28	1.99
39. I realize when a student is sad.	4.49	1.03	-1.00	1.99
40. I perform my duties and obligations readily, instead of thinking about them.	4.70	1.29	-1.39	0.29
41. I can recognize most of my feelings.	4.58	1.32	-1.30	1.16
42. I notice when a student's behavior varies according to his mood.	4.54	1.00	-1.13	1.98
43. I try to maintain a good mood during classes.	4.70	1.11	-0.98	1.17
44. I know how to pleasantly surprise my students.	4.64	1.13	-1.14	1.66
45. As for my feelings, it is normal to feel what I feel right now.	4.53	1.15	-1.29	1.87

Note. M = mean; SD = standard deviation.

The following adjustment indices was adequate: $\chi^2_{(942)}$ = 1208.922; p <0.001; χ^2/g.l. = 1.283; GFI = 0.938; AGFI = 0.931; TLI = 0.961; CFI = 0.963; RMSEA = 0.018 (IC: 0.015 - 0.021); CN = 707 (0.05) - 729 (0.01).

Table 2 indicates there are no parameters that present inadequate estimates (e.g., negative variances or estimation errors greater than one). There is also an absence of very high standard deviations or small indicators that the respective parameters cannot be accurately estimated. From Table 2 and Figure 1 analysis, it appears that the model sample is based on the following assumptions: (a) ESCQ-T can be explained by three dimensions, namely perceive and understand emotions, express and label emotions, and manage and regulate emotions; (b) the factor load displayed by each item is associated only with the dimension it is supposed to measure (target factor load) and has significant factor loading ($p <$ .01); (c) there is no correlation between the estimation errors associated with each item; and (d) according to the theoretical rationale on which the measure is based, the three dimensions are correlated, with statistically significant values between them ($p <$.001).

Table 2
ESCQ-T covariance structure

Items/ Dimensions	VnS	SEV	EE	*p*
03 → PUE	1.00	---	---	---
06 → PUE	1.21	0.36	0.16	***
09 → PUE	1.88	0.62	0.20	***
12 → PUE	1.24	0.36	0.17	***
15 → PUE	1.34	0.44	0.16	***
18 → PUE	1.91	0.59	0.21	***
21 → PUE	2.05	0.75	0.21	***
24 → PUE	2.25	0.78	0.22	***
27 → PUE	1.69	0.53	0.19	***
30 → PUE	1.43	0.45	0.17	***
33 → PUE	2.27	0.71	0.23	***
36 → PUE	1.83	0.55	0.20	***
39 → PUE	2.05	0.78	0.25	***
42 → PUE	1.44	0.56	0.16	***
44 → PUE	0.95	0.33	0.14	***
02 → ELE	1.00	---	---	---
05 → ELE	0.50	0.21	0.10	***
08 → ELE	1.21	0.47	0.15	***
11 → ELE	1.21	0.58	0.14	***
14 → ELE	1.34	0.57	0.16	***
17 → ELE	1.63	0.70	0.18	***
20 → ELE	0.85	0.38	0.12	***
23 → ELE	1.01	0.43	0.13	***
26 → ELE	0.95	0.45	0.12	***
29 → ELE	1.03	0.46	0.13	***
32 → ELE	0.96	0.37	0.14	***
35 → ELE	1.00	0.44	0.13	***
38 → ELE	1.37	0.60	0.16	***
41 → ELE	1.40	0.51	0.17	***

01 → MRE	1.00	---	---	---
04 → MRE	0.84	0.32	0.12	***
07 → MRE	0.84	0.37	0.11	***
10 → MRE	0.75	0.32	0.11	***
13 → MRE	0.93	0.29	0.14	***
16 → MRE	1.08	0.49	0.12	***
19 → MRE	1.15	0.51	0.13	***
22 → MRE	1.11	0.40	0.13	***
25 → MRE	0.99	0.34	0.14	***
28 → MRE	1.06	0.45	0.12	***
31 → MRE	0.96	0.48	0.11	***
34 → MRE	1.13	0.52	0.12	***
37 → MRE	1.04	0.45	0.12	***
40 → MRE	1.19	0.48	0.14	***
43 → MRE	1.36	0.63	0.14	***
45 → MRE	1.05	0.47	0.12	***
Covariance				
PUE ↔ ELE	0.07	0.36	0.12	***
PUE ↔ MRE	0.07	0.36	0.12	***
MRE ↔ ELE	0.13	0.55	0.02	***

Note. EVnS = estimated values no standardized; SEV = standardized estimated values; EE = estimated errors; ***= p ≤ .001; PUE = perceive and understand emotions; ELE = express and label emotions; MRE = manage and regulate emotions.

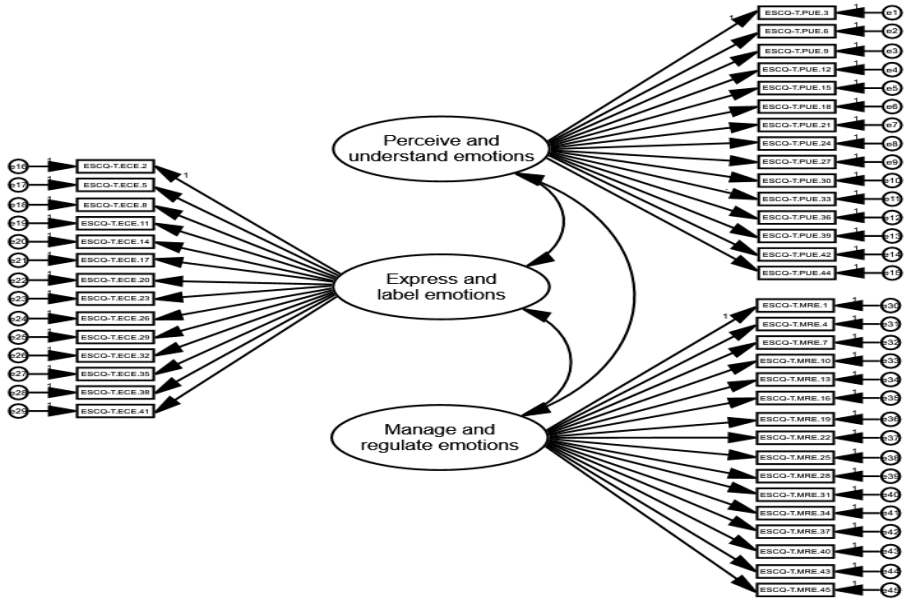

Figure 1
Confirmatory factor analysis of the ESCQ-T (N = 843)

It was also verified that the reliability coefficients were adequate for the dimensions perceive and understand emotions (α = .86 [CI 95% .84 - .88]; ω = .87), express and

label emotions (α = .79 [CI 95% .76 - .81]; ω = .80), and manage and regulate emotions (α = .77 [CI 95% .74 - .80]; ω = .79), which showed a high convergence between the items that make up the different dimensions.

Regarding internal validity, the correlations between the three ESCQ-T dimensions showed the existence of moderate, positive, and statistically relevant associations. The most consistent association was found between the ability to express and label emotions and the ability to manage and regulate emotions (r = .423; p < .001). It was also possible to observe an association between the ability to perceive and understand emotions with the ability to manage and regulate emotions (r = .354; p < .001) and with the ability to express and label emotions (r = .327; p <.001). Although with weak values, it is worth noting that in each dimension there were positive and statistically significant associations between all items that, as before, thus demonstrate the homogeneity and cohesion of the ESCQ-T dimensions.

Regarding confirming the ESCQ-T validity and the evidence of its operability with other variables, its three dimensions were associated with teachers' perception of professional self-efficacy, with all these associations being statistically significant (c.f. Table 3). Although the associations are considered weak, it was observed that the association with the highest value is between the dimension manage and regulate emotions with the teacher's perception of self-efficacy (r = .128; p < .01). It was also observed that on the ESCQ-T, the dimension that presented the highest average score was manage regulate and emotions (M = 70.79; SD = 9.37), followed by perceive and understand emotions (M = 66.23; SD = 9.31) and expression and label emotions (M = 63.24; SD = 8.25).

Table 3
Relationship between the ESCQ-T and the TSES

	PUE	ELE	MRE	TSES	M	SD
Perceive and understand emotions (PUE)	1				66.23	9.31
Express and label emotions (ELE)	.327**	1			63.24	8.25
Manage and regulate emotions (MRE)	.354**	.423**	1		70.79	9.37
TSES	.073*	.071*	.128**	1	77.77	18.11

Note. TSES = teacher sense of efficacy scale; M = mean; SD = standard deviation; *= p < .05; ** = p < .01

DISCUSSION

The study's purpose was to adapt the ESCQ for teachers and analyzed the psychometric properties. After adaptation and validation, the instrument was entitled ESCQ-T, and the results show that the ESCQ-T factor structure reproduces ESCQ three original dimensions (Takšić et al., 2009). The various psychometric indicators have demonstrated the instrument validity.

Regard the internal structure, when considering the respective theoretical rationales on which it is based, the global adjustment indexes, and the estimated parameters, it can be concluded that the ESCQ-T fits the sample results and confirms the original internal structural in the study purpose. In general, the three-factor structure received favorable

evidence, i.e., the factor loadings are significant, indicating that, even in a sample different from the one used as the basis for creating the instrument, the items reflect the emotional experience in this new sample efficiently. However, within each dimension there are marked differences in factor loadings (R_{ELE} = .21 - .60), indicating that the items do not homogeneously represent the construct being assessed or, in other words, some items are better than others at capturing the essence of the construct, which has implications for reliability estimation.

The correlations between the three dimensions are moderate and significant, indicating that they are not independent of each other and that they converge in the evaluation of the EI construct. Verifying that for adequate emotional management, a good emotional understanding is necessary which, in turn, needs an appropriate emotional perception. So, this makes it possible to interpret each dimension independently and, consequently, to intervene separately according to the area that needs to be strengthened. This is an advantage, given that many theoretically multidimensional constructs are shown to be unidimensional after empirical examination of the data (Dominguez-Lara et al., 2019).

Thus, the results obtained for teachers, were consistent with the factor structure proposed in other studies (Costa & Faria, 2022; Gabrijelčič et al., 2021; Schoeps et al., 2021; Takšić et al., 2009) and support the validity regard the internal structure of the ESCQ-T.

The dimensions have an adequate internal consistency regard the scores (α > .70) and construct (ω > .70), being close to the values obtained in previous studies (α > .80; Faria & Lima-Santos, 2012; Schoeps et al., 2021; Takšić et al., 2009). In this sequence, the alpha values suggest that the items are consistent with the dimensions to which they belong. Thus, the results were consistent with the factorial and conceptual structure proposed in the initial study by Takšić et al. (2009) and support the construct validity of this instrument. However, the amplitude of the range of factor loadings within each dimension affects the tau-equivalence principle, which negatively impacts the estimation of the alpha coefficient (Dunn et al., 2014). So, in these cases, it is advisable to consider the omega coefficient as a better source of information, as it is not affected by these limitations.

The results also confirm the relationship between the ESCQ-T and the TSES (teachers' efficacy in instructional strategies, classroom management, and student engagement). Also, the Agbaria (2021) study show that the reaction of teachers with more EI to student behaviors provides opportunities for greater classroom management efficacy. So, learning to manage their emotional state can improve the teacher's efficacy and the adjustment of their students. In this way, improving teacher's EI will have positive implications for teacher's efficacy in instructional strategies, classroom management, and student engagement.

Therefore, it is important to have an EI measure with evidence of validity in terms of its internal structure and its relationship with other variables, since it will help both in basic research through the study of its association with other constructs associated with teaching (Suyatno et al., 2022), as well as in applied research due to the possibility of

implementing it as a measure of efficacy in designing intervention programs that focus on teachers' emotional skills and emotional competence development (e.g., Fernández-Gavira et al., 2022; Zain et al., 2022), which would indirectly favor the students' academic performance (Wang, 2022). These arguments receive support considering that it is a large sample, and two educational levels in public schools because the evidence that can be obtained regarding the influence of teachers' emotional competence in different variables could influence the design of politics related to education and the teacher's educative process.

Along these lines, the Martínez-Saura et al. (2022) work demonstrated that emotional education is effective in improving teachers' emotional skills, and is also a primary requirement for students to learn emotional skills since teaching teachers has indirect advantages in the acquisition of emotional skills by students. Other studies refer to the significance of teachers' emotional education as part of their initial training, since teachers are the ideal agent to teach emotional skills to students since they transmit their own emotions and feelings in their pedagogical practice and are taken as models by students (Costa-Rodríguez et al., 2021; Valente & Lourenço, 2020). For Extremera et al. (2019) emotional skills are also a key factor in the educational system, with both teachers and students, agreeing that improving emotional skills has a positive impact on their profession and, indirectly, on the educational community.

Another ESCQ-T advantage is the acquisition of these skills in teachers to help them in their work activities. As mentioned in the review carried out by Méndez et al. (2021), teachers with a higher level of EI will be more capable of managing daily work demands, which translates into greater self-efficacy and, additionally, they will be more appropriately related to people in their environment, both professionally and personally, improve your quality of life and prevent problems such as burnout. Likewise, the data in the Hen and Sharabi-Nov (2014) study show that teachers after a training program in EI were able to be more effective in teaching. These arguments can be considered part of the practical implications, as they represent the instrument's potential use (diagnostic support and measure of intervention effectiveness).

For limitations, it is mentioned that there was no analysis of measurement invariance between men and women. On the other hand, the present study is based on non-probabilistic sampling procedures with teachers from basic (1st to 9th grades) and secondary (10th to12th grades) school teachers. Thus, the generalization of the results to other teachers (e.g., higher education teachers) should be the focus of future research.

CONCLUSION

It is concluded that the ESCQ-T has a structure with three dimensions, as the original instrument presented by Takšić et al. (2009). Thus, the ESCQ-T demonstrated adequate psychometric properties, contributing to the existence of a measure for the evaluation of teachers' emotional skills and emotional competence, in the Portuguese context. Mikulic et al. (2022) study also indicate greater use of self-report measures about performance tests, a phenomenon that is repeated in all reviews on EI and which, as the authors indicate, is probably due to the advantages of this type of measure due to its practicality,

cost and short application time. In addition, it can be used with other instruments (e.g., TSES). On the other hand, making some recommendations for future work is also pertinent. Firstly, future studies should consider longitudinal designs that allow the evaluation of the stability and temporal invariance of the ESCQ-T results, and study the invariance of the factor structure in different cultures. Second, it would be desirable to obtain more evidence of validity, particularly in terms of its relationship with other variables. In third place, is necessary to appoint that the coefficient alpha values depend on the items' number and the equivalence of factor loadings within a dimension. For this reason, is suggested to make a brief version with the most representative and homogenous items.

REFERENCES

Agbaria, Q. (2021). Classroom management skills among kindergarten teachers as related to emotional intelligence and self-efficacy. *International Journal of Instruction, 14*(1), 1019-1034. https://doi.org/10.29333/iji.2021.14160a

Allen, V. D., MacCann, C., Matthews, G., & Roberts, R. D. (2014). Emotional intelligence in education: From pop to emerging science. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International Handbook of Emotions in Education* (pp. 162-182). Routledge.

Arbuckle, J. L. (2014). *IBM SPSS AMOS 23.0. User's Guide*. FL.

Assalihee, M., & Boonsuk, Y. (2023). Teaching management strategies on 21st century Islamic education for southernmost Thai private Islamic schools. *Anatolian Journal of Education, 8*(1), 13-28. https://doi.org/10.29333/aje.2023.812a

Ato, M., López, J., & Benavente, A. (2013). A classification system for research designs in psychology. *Annals of Psychology, 29*(3), 1038-1059. https://doi.org/10.6018/analesps.29.3.178511

Bar-On, R. (1997). *Bar-On Emotional Quotient Inventory: A measure of emotional intelligence.* Multi-Health Systems.

Bartram, D., Grégoire, J., Hambleton, R., Muñiz, J., & Van de Vijver, F. (2018). ITC guidelines for translating and adapting tests (2th ed.). *International Journal of Testing, 18*(2), 101-134. http://dx.doi.org/10.1080/15305058.2017.1398166

Byrne, B. (2016). *Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming*. Routledge.

Cartwright, S., & Pappas, C. (2008). Emotional intelligence, its measurement and implications for the workplace. *International Journal of Management Reviews, 10*(2), 149-171. https://doi.org/10.1111/j.1468-2370.2007.00220.x

Cejudo, J., & López-Delgado, M. L. (2017). Importancia de la inteligencia emocional en la práctica docente: Un estudio con maestros. *Psicología Educativa, 23*, 29-36. https://doi.org/10.1016/j.pse.2016.11.001

Conte, J. M. (2005). A review and critique of emotional intelligence measures. *Journal of Organizational Behavior, 26*, 433-440. https://doi.org/10.1002/job.319

Costa Rodriguez, C., Palma Leal, X., & Salgado Farías, C. (2021). Docentes emocionalmente inteligentes. Importancia de la inteligencia emocional para la aplicación de la educación emocional en la práctica pedagógica de aula. *Estudios Pedagógicos, 47*(1), 219-233. https://doi.org/10.4067/s0718-07052021000100219

Costa, A., & Faria, L. (2022). The impact of implicit theories on students' emotional outcomes. *Current Psychology, 41*, 2354-2363. https://doi.org/10.1007/s12144-020-00750-z

Declaration of Helsinki (2013). Ethical principles for medical research involving human subjects. *JAMA, 310*(20), 2191-2194. https://doi.org/10.1001/jama.2013.281053

Dominguez-Lara, S., Gravini-Donado, M., & Torres-Villalobos, G. (2019). Análisis psicométrico de dos versiones de la Connor-Davidson Resilience Scale en estudiantes universitarios peruanos: propuesta del CD-RISC-7. *Revista Argentina De Ciencias Del Comportamiento*, *11*(2), 36-51. https://doi.org/10.32348/1852.4206.v11.n2.23774

Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: a practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology, 105*, 399-412. https://doi.org/10.1111/bjop.12046.

Extremera, N., Fernández-Berrocal, P, Mestre, J.M., & Guil, R. (2004). Medidas de evaluación de la inteligencia emocional. *Revista Latinoamericana de Psicología, 36*(2), 209-228. https://www.redalyc.org/pdf/805/80536203.pdf

Extremera, N., & Fernández-Berrocal, P. (2005). Perceived emotional intelligence and life satisfaction: Predictive and incremental validity using the Trait Meta-Mood Scale. *Personality and Individual Differences, 39*, 937-948. https://doi.org/10.1016/j.paid.2005.03.012

Extremera, N., Mérida López, S., & Sánchez Gómez, M. (2019). La importancia de la inteligencia emocional del profesorado en la misión educativa: impacto en el aula y recomendaciones de buenas prácticas para su entrenamiento. *Voces de la educación, 2*, 74-97.

Faria, L., & Lima-Santos, N. (2012). Emotional Intelligence in the Portuguese academic context validation studies of the emotional skills and competence questionnaire (ESCQ). *Behavioral Psychology/Psicología Conductual, 20*(1), 91-102. https://www.behavioralpsycho.com/wp-content/uploads/2019/08/06.Faria_20-1.pdf

Faria, L., & Santos, N. L. (2017). Questıonárıo de competência emocıonal revısıtado. In L. S. Almeida, M. R. Simões & M. M. Gonçalves (Coord.), *Adaptação, Desenvolvimento e Sucesso Académico dos Estudantes do Ensino Superior: Instrumentos de avaliação* (pp. 70-79). Associação para o Desenvolvimento da Investigação em Psicologia da Educação.

Faria, L., Santos, N. L., Takšić, V., Räty, H., Molander, B., Holmström, S., Jansson, J., Avsec A., Extremera, N., Fernández-Berrocal, P, & Toyota, H. (2006). Cross-cultural validation of the emotional skills and competence questionnaire (ESCQ). *Psicologia, XX*(2), 95-127. https://doi.org/10.17575/rpsicol.v20i2.390

Fernández-Berrocal, P., & Extremera, N. (2002). La Inteligencia Emocional como una habilidad esencial en las escuelas. *Revista Iberoamericana de Educación, 29*, 1-6. https://doi:org/10.35362/rie2912869

Fernández-Gavira, J., Castro-Donado, S., Medina-Rebollo, D., & Bohórquez, M. R., (2022). Development of emotional competencies as a teaching innovation for higher education students of physical education. *Sustainability, 14*, 300. https://doi.org/10.3390/su14010300

Finney, S., & DiStefano, C. (2013). Non-normal and categorical data in structural equation models. In G. Hancock and R. Mueller (Eds.), *A second course in structural equation modeling* (pp. 439-492). Information Age.

Gabrijelčič, M. K., Antolin, U., & Istenič, A. (2021). Teacher's social and emotional competences: A study among student teachers and students in education science in Slovenia. *European Journal of Educational Research, 10*(4), 2033-2044. https://doi.org/10.12973/eu-jer.10.4.2033

Gobena, G. A. (2022). Teaching stress on in-service teachers' motivation: Its implication for qualityeducation in Ethiopian secondary schools. *Anatolian Journal of Education, 7*(2), 143-156. https://doi.org/10.29333/aje.2022.7212a

Hair, J. F., Black, W, C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate Data Analysis* (8th ed.). Cengage Learning EMEA.

Hen, M., & Sharabi-Nov, A. (2014). Teaching the teachers: emotional intelligence training for teachers. *Teaching Education, 25*(4), 375-390. https://doi.org/10.1080/10476210.2014.908838

Hoelter, J.W. (1983). The analysis of covariance structures: Goodness-of-fit indices. *Sociological Methods and Research, 11*, 325-344. https://doi.org/10.1177/0049124183011003003

Hunsley, J., & Marsh, E.J. (2008). Developing criteria for evidence-based assessment: An introduction to assessment that work. In J. Hunsley & E. J. Marsh (Eds.) *A guide to assessments that work* (pp. 3-14). Oxford University Press.

Lowe, B., Winzar, H., & Ward, S. (2007). *Essentials of SPSS for Windows versions 14 & 15: A business approach.* Thomson Learning Australia.

Mallik, B. (2023). Teacher-student relationship and its influence on college student engagement and academic achievement. *Anatolian Journal of Education, 8*(1), 93-112. https://doi.org/10.29333/aje.2023.817a

Marôco, J. (2018). *Análise estatística com o SPSS statistics* (7ª ed). Report Number.

Martínez-Saura, H. F., Sánchez-López, M. C., & Pérez-González, J. C. (2022). Competencia emocional en docentes de infantil y primaria y estudiantes universitarios de los grados de educación infantil y primaria. *Estudios Sobre Educación, 42*, 9-33. https://hdl.handle.net/11162/224404

Mayer, J. D., & Salovey, P. (1997). What is Emotional Intelligence? In P. Salovey & J. Sluyter (Ed.), *Emotional development and emotional intelligence: Educational implications* (pp. 3-31). Basic Books.

Méndez, E. A. H., Caycho, H. E. C., & Macazana, L. A. A. (2021). "Inteligencia emocional en la práctica educativa": una revisión de la literatura científica. *TecnoHumanismo, 1*(8), 180-196. https://doi.org/10.53673/th.v1i8.49

Mérida-López, S., & Extremera, N. (2020). The interplay of emotional intelligence abilities and work engagement on job and life satisfaction: Which emotional abilities matter most for secondary school teachers? *Frontiers in Psychology, 11*, 563634. https://doi.org/10.3389/fpsyg.2020.563634

Mikolajczak, M., Quoidbach, J., Kotsou, I., & Nelis, D. (2009). *Les compétences émotionnelles*. Dunod.

Mikulic, I. M., Crespi, M., Caballero, R., Vizioli, N. A. y Deleersnyder, G. (2022). Medidas de evaluación de la ınteligencia emocional en Argentina. Una revisión sistemática. *Escritos de Psicología – Psychological Writings, 15*(2), 159-170. https://doi.org/10.24310/espsiescpsi.v15i2.15127

Petrides, K. V. (2009). Psychometric properties of the trait emotional intelligence questionnaire (TEIQue). In C. Stough, D. H. Saklofske, & J. D. A. Parker (Eds.), *Assessing Emotional Intelligence.Theory, Research, and Applications* (pp. 85-101). Springer.

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*, 185-211. https://doi.org/10.2190/dugg-p24e-52wk-6cdg

Santos, N. L., & Faria, L. (2005). Inteligência emocional: Adaptação do "Emotional Skills and Competence Questionnaire" (ESCQ) ao contexto português. *Revista da Faculdade de Ciências Humanas e Sociais, 2*, 275-289. http://hdl.handle.net/10284/668

Schoeps, K., Tamarit, A., Zegarra, S. P., & Montoya-Castilla, I. (2021). Los efectos a largo plazo de las competencias emocionales y la autoestima en los síntomas internalizantes en la adolescencia. *Revista de Psicodidáctica, 26*(2), 113-122. https://doi.org/10.1016/j.psicod.2020.12.001

Streiner, D. L. (2003). Being inconsistent about consistency: When coefficient alpha does and doesn't matter. *Journal of Personality Assessment, 80*(3), 217-222. https://doi.org/10.1207/S15327752JPA8003_01

Subalakshmi, S., Sunderaraj, R., & Manikandan, M. (2019). Impact of emotional intelligence on stress: With special reference to government school teachers. *Journal of Entrepreneurship and Management, 8*(1), 7-21.

Suharno., Suherdi, D., & Gunawan, W. (2023). The effects of teaching presence on students' motivation and performance in a long-term online gamified EFL listening course. *International Journal of Instruction, 16*(2), 1111-1134. https://doi.org/10.29333/iji.2023.16259a

Suyatno., Wantini., Pambudi, D. I., Hamami, T., Rachmawati, Y., & Nofiaturrahmah, F. (2022). The influence of meaning in life and teacher leadership on teacher professionalism through structural equation model. *International Journal of Instruction, 15*(3), 561-580. https://doi.org/10.29333/iji.2022.15331a

Takšić, V., Mohoric, T., & Duran, M. (2009). Emotional skills and competence questionnaire (ESCQ) as a self-report measure of emotional intelligence. *Horizons of Psychology, 18*(3), 7-21. https://doi.org/10.1037/t63691-000

Toyota, H., Morita, T., & Takšić, V. (2007). Development of a Japanese version of the emotional skills and competence questionnaire. *Perceptual and Motor Skills, 105*, 469-476.

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805. https://doi.org/10.1016/S0742-051X(01)00036-1

Valente, S., & Lourenço, A. A. (2020). Conflict in the classroom: How teachers' emotional intelligence influences conflict management. *Frontiers in Education, 5*(5). https://doi.org/10.3389/feduc.2020.00005

Valente, S., Lourenço, A. A., Alves, P., & Domínguez-Lara, S. (2020). The role of the teacher's emotional intelligence for efficacy and classroom management. *CES Psicología, 13*(2), 18-31. http://dx.doi.org/10.21615/cesp.13.2.2

Valente, S. N., Lourenço, A. A., & Dominguez-Lara, S. (2022). Teachers in the 21st century: Emotional intelligence skills make the difference. In H. Şenol (Ed.), *Pedagogy - Challenges, Recent Advances, New Perspectives, and Applications*. IntechOpen. http://dx.doi.org/10.5772/intechopen.103082

Wang, L. (2022). Exploring the relationship among teacher emotional intelligence, work engagement, teacher self-efficacy, and student academic achievement: A moderated mediation model. *Frontiers in Psychology. 12*, 10559. https://doi.org/10.3389/fpsyg.2021.810559

Woyciekoski, C., & Hutz, C. (2009). Inteligência emocional: Teoria, pesquisa, medida, aplicações e controvérsias. *Psicologia: Reflexão e Crítica, 22*(1), 1-11. https://doi.org/10.1590/S0102-79722009000100002

Zain, F. M., Sailin, S. N., & Mahmor, N. A. (2022). Promoting higher order thinking skills among pre-service teachers through group-based flipped learning. *International Journal of Instruction, 15*(3), 519-542. https://doi.org/10.29333/iji.2022.15329a