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The Construct Validity and Measurement Invariance of the Teacher Emotion Questionnaire for Assessing EFL Teachers' Emotions in the Classroom

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Abstract

This study investigated the construct validity and measurement invariance of the Teacher Emotion Questionnaire to introduce a valid and reliable instrument for assessing English-as-a-foreign-language (EFL) teachers' emotions inside the classroom. Second language (L2) teacher emotions have been largely neglected, despite the fact that Educational Psychology has long recognized and researched the role of teacher emotions in different aspects of teaching and learning. To bridge this gap, the current study had 208 Iranian EFL teachers in private language institutes fill out the Teacher Emotion Questionnaire (TEQ), which assessed six emotions teachers experience in their classroom, i.e., Joy, Pride, Love, Anger, Fatigue/Exhaustion, and Hopelessness. The preliminary analysis of the data showed that six items from the TEQ had a factor loading below the minimum recommended level of 0.3, meaning that they contributed to the total variance in the participants' score less than expected. The collected data were then submitted to confirmatory factor analysis (CFA) for the purpose of construct validation and establishment of the factorial structure of the TEQ. The CFA results indicated that the hypothesized six-factor analysis had more favorable goodness-of-fit indices than both a one-factor structure and a two-factor structure (e.g., positive

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versus negative emotions). Multilevel CFA revealed that the tested six-factor structure of the TEQ was invariant across male and female EFL teachers. The implications for the use of TEQ in EFL teaching contexts are discussed, and some suggestions are proposed for further validation of the TEQ in language teaching contexts.

Keywords: construct validation, Teacher Emotion Questionnaire, confirmatory factor analysis, fit indices, measurement invariance

1. Introduction

Most theories of learning environments (e.g., Aldridge et al., 1999; Fraser, 2012) posit that the teacher is the most immediate determinant of the functionality of teaching/learning environments, with significant repercussions for learners' affective experiences and academic development. As such, attention to teacher factors is vital to mapping out the processes happening in the classroom, and one such factor is teacher emotions (Derakhshan & Zare, 2023; Derakhshan et al., 2025; Shakki, 2022). Researchers in different domains of education (e.g., mathematics, physics, physical education, science, etc.) have examined the relationship between teacher emotions with varying teaching and learning variables, including identity (e.g., Hodgen & Askew, 2007), self-efficacy (e.g., Uzuntiryaki-Kondakci et al., 2020), metacognition (e.g., González et al., 2017), professional development (e.g., Yoo & Carter, 2017), reflection (e.g., Taylor & Newberry, 2018; Xiaojing et al., 2022), work engagement (e.g., Liu et al., 2023; Nalipay et al., 2021; Xiao et al., 2022), and student learning (e.g., Derakhshan et al., 2024; Frenzel et al., 2021).

In the domain of second language (L2) teaching, two forces set the conditions for research on teacher emotions. The first was the "emotional turn" of second language acquisition (SLA) research (White, 2018), driving some researchers to urge that teacher emotions are also significant, as are learner emotions, to understanding the affective mechanisms and processes happening in the L2 classroom (Derakhshan, 2022). Discussing this natural progress from researching L2 learning emotions to researching L2 teaching emotions, Martínez Agudo (2018) states that "what is clear is that much more attention to the affective dimension is certainly needed, in particular to the complexity and contradictions of those emotions often associated with L2 teaching" (p. 5). The other force that put teacher emotions in the center of language teaching research was the advent of Positive Psychology, which marked the onset of attention to positive emotions in both psychology and education. The pioneering work on emotions in Educational Psychology mainly focused on negative emotions to see whether educational inefficacies and learners' or teachers' wellbeing and performance had anything to do with the negative emotions they experience in the classroom. However, it did not take long for educational psychologists to recognize the significance of positive emotions as well and give them the focus they deserved (Clonan et al., 2004). L2 researchers have been following educational psychologists' footsteps in directing their research attention to classroom emotions; however, most of the attention was

devoted to L2 learner emotions (Fathi et al., 2023; Zhang et al., 2024), with L2 teacher emotions mainly under-examined (Martínez Agudo, 2018).

Thus, despite the established status of research on teacher emotions in Educational Psychology (Sutton & Wheatley, 2003) and recognition of their significance in L2 teaching, L2 teacher emotions constitute an area largely neglected in the field of SLA. This is even worse with respect to foreign language (FL) teaching contexts, though teachers in these contexts are usually affected by the forces (e.g., limited L2 proficiency, crowded L2 classrooms, etc.) that might have significant impacts on their emotional experiences in the classroom. It is a fact that interest in L2 teacher emotions has been gaining increasing momentum in recent years (see Benesch, 2017; De Costa et al., 2018, 2019; Gkonou et al., 2020; Khammat, 2022; Richards, 2022). The generalizability of their findings is limited, however. In addition, there are a large number of emotions (particularly positive emotions) that are in line for attracting research attention from the field of SLA. These shortcomings are in part due to the fact that there is a lack of valid and reliable instruments for measuring the majority of language teacher emotions. Consequently, this study was undertaken to borrow such an instrument from Educational Psychology and provide evidence on the validity and factorial structure of the instrument for use in the context of English-as-a-foreign-language (EFL) teaching.

2. Literature Review

As mentioned above, the number of studies examining language teacher emotions is increasing today as never before. This is because the researchers have realized that factoring L2 teacher emotions out leaves the picture of L2 affective variables incomplete (De Costa et al., 2019; Fathi et al., 2021; Richards, 2022). The dominant approach to researching L2 teacher emotions has been symptom-oriented, aiming to identify and examine those negative emotions that would diminish teachers' performance and their perceptions of various aspects of language teaching and learning. Along with this line, the most attention has been devoted to language teacher burnout; an extensive body of literature has shown that job burnout is negatively related to language teachers' performance, teaching perceptions (e.g., Pishghadam et al., 2014; Rojas Tejada et al., 2012), motivation (e.g., Rostami et al., 2015), self-efficacy (e.g., Khani & Mirzaee, 2015; Momenzadeh et al., 2023; Skaalvik & Skaalvik, 2007), perceived L2 proficiency (e.g., Nayernia & Babayan,

2019), and job satisfaction (e.g., Acheson et al., 2016; Esfandiari & Kamali, 2016). As for its measurement, the previous studies on L2 teacher burnout (e.g., Khani & Mirzaee, 2015; Meidani et al., 2021; Nayernia & Babayan, 2019; Pishghadam et al., 2014; Rostami et al., 2015) mainly have employed Maslach Burnout Inventory (Maslach & Jackson, 1981), which consists of 22 items over the three dimensions of Depersonalization (5 items, e.g., *I worry that this job is hardening me emotionally.*), Emotional Exhaustion (9 items, e.g., *I feel burned out from my work.*), and Personal Accomplishment (8 items, e.g., *I can easily create a relaxed atmosphere with my students.*). Yet, these studies have taken the validity of the inventory for granted, though it has been argued that validity interpretations are context-specific and cannot be made regardless of the domain in which a measurement instrument is used (Zumbo, 2009).

Originally introduced by Albert Bandura (1977), the sense of efficacy is another variable that has been extensively researched by scholars interested in individual differences in L2 teaching. Sense of efficacy hinges upon emotion and cognition (Kirk et al., 2008), and in the context of teaching, it is defined as a teacher's beliefs in her abilities to perform actions to meet educational goals (Skaalvik & Skaalvik, 2007). This factor is of paramount importance in researching emotions, emotional experience, and beliefs in FL teaching contexts due to several reasons. Before all else, FL teachers are usually non-native speakers of the target language, and thus may be uncertain of their efficacy to undertake communicative L2 teaching activities in their classrooms. Further, FL classrooms are usually crowded, and their teachers often lack access to appropriate teaching resources, posing challenges to the teachers' classroom management skills and their ability to control learners' behaviors (Debreli & Ishanova, 2019; Horwitz, 2005). It is argued that these challenges would provoke anxiety and other negative emotions in foreign language teachers, thus diminishing their teaching confidence and performance (Atay, 2007; Moradkhani et al., 2017).

The relationship between FL teachers' sense of self-efficacy and emotional teaching experiences has empirically been documented in the literature. The previous research has strongly shown that EFL teacher self-efficacy is related to several L2 teaching emotions such as emotional labor (e.g., Acheson et al., 2016; Lee & Van Vlack, 2018), burnout (e.g., Ghasemzadeh et al., 2019; Khani & Mirzaee, 2015), anxiety and stress (e.g., Merc, 2015), emotional intelligence (e.g., Mashhady, 2013; Moafian & Ghanizadeh, 2009), well-being (e.g., Fathi et al.,

2020), and emotion regulation (e.g., Greenier et al., 2021). As for the measurement of L2 teaching efficacy perceptions, the previous studies have usually employed Tschannen-Moran and Woolfolk Hoy's (2001) Teacher's Sense of Efficacy Scale (TSES). The scale consists of two forms, with the long form having 22 items and the short form having 12 items. As for the validity for use in EFL teaching contexts, Karami et al. (2021) employed both factor analysis and Rasch modelling to test the factorial structure of the TSES. The results of the study confirmed the three-factor structure originally proposed for the TSES via both factor analysis and Rasch modelling. However, one item (Item 22) did not show adequate fit, meaning that it contributed to the total variance in the participants' scores less than expected. Karami et al. (2021) also found that, with respect to EFL teachers, the original nine-point Likert of the TSES was not interpretable; rather, they provided evidence for the use of a five-point Likert scale, which could better distinguish between EFL teachers with high and low EFL teaching self-efficacy.

To a lesser extent, a number of other emotions have been examined with respect to language teaching. Among these L2 teaching emotions are anxiety (e.g., Aydin, 2016; Machida, 2016), enjoyment (e.g., Ergün & Dewaele, 2021; Mierzwa, 2019), enthusiasm and happiness (e.g., Dewaele & Li, 2021; Gabryś-Barker, 2014; Moskowitz & Dewaele, 2021), passion(e.g., Mirshojaee et al., 2019), emotional labor (Dewaele & Wu, 2021; Ghanizadeh & Royaei, 2015; Kang, 2022; King & Ng, 2018), emotion regulation (e.g., Ghanizadeh & Royaei, 2015), frustration (Cowie, 2011; Morris & King, 2018), and anger (Cowie, 2011). Although not all these L2 teaching emotions have been psychometrically defined, there exist some instruments for measuring a number of them. The development of instruments for other L2 teaching emotions shows that L2 researchers are gradually recognizing the significance of moving from exploratory research on L2 teacher emotions towards research involving more participants, with the obtained findings having higher generalizability.

For example, Horwitz (2008) developed the Teacher Foreign Language Anxiety Scale (TFLAS) to assess the feelings of anxiety and stress that language instructor's experience with respect to their perceived L2 proficiency and L2 use in the classroom. The scale consists of 18 items over a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Although the TFLAS has not been independently validated, the scale has been employed in several rigorous investigations of L2 teachers (e.g., Machida, 2016; Machida & Walsh, 2015; Tum,

2015). In fact, since Elaine K. Horwitz is the pioneering figure of theory and research on L2 learning and teaching anxiety (e.g., Horwitz, 1996, 2001; Horwitz et al., 1986), we can rely on the suitability of the content of the TFLAS to a great extent.

As said above, several studies in the field have examined emotional labor among language teachers. Most of these studies have used Yin's (2012) Teacher Emotional Labor Strategy Scale; to the best of the authors, the validity of the scale remains unexamined with respect to L2 teachers. Fortunately, based on the argument that "research into English as a foreign language (EFL) teachers' emotional labor has been relatively slow" (p. 2) due perhaps to lack of instruments to assessing it, Li and Liu (2021) have developed and validated an instrument for measuring emotional labor strategies in L2 teaching among beginning EFL teachers, i.e., Beginning EFL Teachers' Emotional Labor Strategy Scale. The scale has 20 items measuring beginning teachers' emotional labor in L2 teaching over a five-point Likert scale ranging from 1 (never) to 5 (always). The results of factor analysis supported a four-factor structure for the scale, encompassing the four dimensions of Surface Acting (5 items, e.g., *I tried to keep calm when encountering unknown words.*), Deep Acting (6 items, e.g., *After motivating students, I was in a better state.*), Negative Consonance (6 items, e.g., *I felt lost that I couldn't persuade students.*), and Positive Consonance (3 items, e.g., *Students' improved levels made me confident.*). Li and Liu (2021) also provided evidence on the convergent validity, discriminant validity, and reliability of the scale for use with EFL teachers.

Heydarnejad et al. (2021) developed and validated the Language Teacher Emotion Regulation Inventory (LTERI) for measuring EFL teachers' abilities to manage their emotional experiences in the classroom efficiently in order to control the effects of these experiences on L2 teaching and learning. The LTERI consists of 27 items over a five-point Likert scale from *never* (1) to *always* (5). The results of factor analysis indicated that six factors could be extracted as related to the participants' L2 teaching emotion regulation; i.e., Situation Selection (5 items, e.g., *I try to evade unpleasant discussions.*), Situation Modification (5 items, e.g., *When I face an upsetting conversational topic, I try to substitute it with suitable ones.*), Attention Deployment (4 items, e.g., *If I feel frustrated in language classes, I try to engage myself in different class activities to forget it.*), Reappraisal (5 items, e.g., *If for some reasons, I feel upset at work, I remind myself of my goals in my life.*), Suppression (4 items, e.g., *If I feel helpless in my language classes, I disregard*

that.), and Seeking social support (4 items, e.g., *If I feel nervous in my language classes, I talk about it with someone who can understand me.*).

Finally, adopting a mixed-methods research approach, Burić et al. (2018) developed their Teacher Emotion Questionnaire (TEQ) to measure six teacher emotions inside the classroom. Three of the emotions were of a positive valence (i.e., Joy, Pride, and Love), whereas the other three emotions were of a negative valence (i.e., Anger, Fatigue/Exhaustion, and Hopelessness). The results of both exploratory and confirmatory factor analysis on data from 315 teachers from different school subjects confirmed a six-factor structure for the TEQ, supporting the valid use of the questionnaire for measuring teaching emotions experienced inside the classroom. As for the divergent validity of the subscales, the results also indicated that there were positive latent correlations among the negative emotions of Hopelessness, Anger and Fatigue, on the one hand, and the positive emotions of Pride and Joy, on the other hand. In addition, the emotions of the opposite valence (i.e., Hopelessness, Anger, and Fatigue versus Pride and Joy) had no directional correlation as the correlation between them approached zero. These obtained correlations were consistent with the dominant theories of teaching emotions in educational psychology (e.g., Frenzel et al., 2016).

As highlighted earlier, the majority of the previous studies on L2 teaching emotions have mostly focused on negative, symptom-oriented emotions, such as burnout, anxiety, and emotional labor. Even with negative emotions, there are a number of emotions that have been largely overlooked, for example, anger, fear, frustration, and hopelessness, among others. Further, many studies on L2 teacher emotions have adopted a qualitative approach to data collection and analysis, which has been very instrumental in helping to understand the role of emotions in different aspects of L2 teaching and its relationship with L2 learning variables. However, the findings obtained from qualitative research often are of limited generalizability due in part to the impracticality of collecting data from large samples of participants (Queirós et al., 2017). In addition, hypothesis testing and replication of the previous research on L2 teacher emotions is not efficiently possible through merely qualitative techniques (Hammersley, 1997; Markee, 2017).

The insufficient attention to the overlooked emotions and the dominance of qualitative research on L2 teacher emotions can be ascribed to the lack of valid and reliable instruments for measuring the majority of emotions in relation to L2 teaching. To overcome this shortcoming to some extent, the present study went to

establish the construct validity and measurement invariance of Burić et al.'s (2018) TEQ in the context of EFL teaching. To serve this purpose, the following research questions (RQ) were formulated:

RQ1: Do the TEQ items have acceptable functionality as shown by factor loading analysis? Are the TEQ and its subscales reliable measures of EFL teacher emotions?

RQ2: What factorial structure supports the valid use of the TEQ for measuring EFL teacher emotions?

RQ3: Does the TEQ assess parallel constructs across male and female EFL teachers?

3. Method

3.1. Participants

The participants of the study included 208 practicing EFL teachers from private language institutes in Tehran, Sanandaj, and Semnan. Their ages ranged from 19 to 47 years old ($M = 27.63$, $SD = 4.20$), and their teaching experience ranged from 6 months to 21 years ($M = 5.17$, $SD = 1.12$). Of the sample, 86 teachers (41%) were male, and the remaining 122 teachers (59%) were female. Furthermore, 134 teachers (64%) were graduates/students in different branches of the English language (i.e., English Language Teaching, English Translation, and English Literature), while the remaining 74 teachers (36%) were graduates/students in non-English majors.

3.2. Instrumentation

Two instruments were used in the present study, both administered in the English language. The first instrument was a background questionnaire intended to collect data on the participants' demographic information (e.g., age, gender, field of study, L2 teaching experience, etc.). The second instrument was the TEQ (Burić et al., 2018), which consisted of 35 items. Burić et al. (2018) developed these 35 items over six subscales; Joy (five items), Pride (six items), Love (six items), Anger (five items), Fatigue/Exhaustion (seven items), and Hopelessness (six items). The items measured the target L2 teaching emotions on a five-point Likert scale; strongly

disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, and strongly agree = 5. Two changes were made in the TEQ to make it consistent with the purposes of the present study. First, the word 'English' was inserted into some of the items to observe the domain specificity of their use with EFL teachers in the present study. Second, the word 'student' in the original TEQ items was substituted with the word 'learner', which is a more common register in L2 research. Some other minor changes were made to contextualize the use of the TEQ for measuring EFL teachers' experienced emotions in the classroom.

3.3. Data Collection

The required data were collected from the participants in person. After arranging with the managements of the institutes from which the data were collected, the potential respondents were met in the break room. The purpose of the study was explained to them, and they were asked whether they would volunteer to partake in the study. They were assured that their identity would not be disclosed and that responses would be kept confidential. One of the researchers was always present in the data collection sessions to answer the respondents' questions.

4. Results

4.1. Formulating the Structural Model

RQ1 was formulated as "Do the TEQ items have acceptable functionality as shown by factor loading analysis? Are the TEQ and its subscales reliable measures of EFL teacher emotions?" The results of the preliminary analysis via exploratory factor analysis (EFA) indicated that, of the 35 items in the original TEQ, six items had a factor loading below 0.3, which was the minimum recommended level of factor loading in structural equation modelling approaches (Thompson, 2004). It is necessary to point out that a simple structure was assumed for the inclusion of the items in the questionnaire, meaning that each item was supposed to load onto only one factor (Byrne, 2012; Thompson, 2004). Thus, in cases where an item loaded onto more than one factor, the item was set on the factor that was more theoretically interpretable. The list of the items surviving the EFA stage are shown in Table 1. It should be noted that the items in the table have been renumbered so that they show Items 1-29. The reliability coefficients of the whole questionnaire and its subscales

were also calculated. The reliability of the whole questionnaire was 0.91, and the reliabilities of the subscales were 0.82 for Joy, 0.77 for Pride, 0.80 for Love, 0.72 for Anger, 0.83 for Fatigue/ Exhaustion, and 0.78 for Hopelessness. All these coefficients were above the recommended level of 0.7 (Dörnyei, 2003), pointing to the consistency with which L2 teachers' emotions inside EFL classrooms can be measured through the TEQ.

Table 1
The Factor Loadings of the Items and their Respective Factors

Factor	Item Description	Factor Loading
Joy (Items 1 to 5)	1. I am happy when I manage to motivate learners to learn English.	0.84
	2. I am glad when I achieve English teaching goals that are set.	0.70
	3. Exerting a positive influence on my learners makes me happy.	0.66
	4. I am happy when learners understand the English material.	0.59
	5. I am joyful when the class atmosphere is positive.	0.53
Pride (Items 6 to 9)	6. I feel like a winner when my learners succeed in learning English.	0.73
	7. Pride due to my learners' achievements confirms to me that I am doing a good job.	0.61
	8. Due to my learners' achievements, I feel as if I am 'growing'.	0.57
	9. I am filled with pride when I make a learner interested in English.	0.42
Love (Items 10 to 14)	10. I feel affection towards my learners.	0.78
	11. My learners evoke feelings of love inside me.	0.69
	12. I love my learners.	0.55
	13. I feel warmth when I just think about my learners.	0.41
	14. I honestly care about each of my learners.	0.35
Anger (Items 15 to 19)	15. I sweat from frustration when the English class is not carried in the way it is supposed to.	0.79
	16. Some learners make me so angry that my face goes red.	0.65
	17. I get an anger-caused headache from the behavior of some learners.	0.62
	18. The reactions of some learners frustrate me so much that I would rather just quit the job of teaching English.	0.56
	19. The frustration I feel while working with learners undermines my job motivation.	0.47

Factor	Item Description	Factor Loading
Fatigue/ Exhaustion (Items 20 to 25)	20. Sometimes, I am so exhausted at work that I only think about how to endure.	0.81
	21. Due to the speedy pace of work, at the end of the day I feel as if I am going to fall down.	0.68
	22. When I finish my work, I feel drained.	0.54
	23. At the end of my working day, I just want to rest.	0.51
	24. When I finish classes, I feel numbed.	0.44
	25. My job sometimes makes me so tired that all I want to do is 'switch off'.	0.38
Hopelessness (Items 26 to 29)	26. Because of the behavior of some learners, I feel completely helpless.	0.68
	27. While working with completely unmotivated English learners, I feel there is no way out.	0.60
	28. It seems to me that I cannot do anything to get through to some English learners.	0.52
	29. I feel hopeless when I think about the English achievement of some learners.	0.47

4.2. Testing the Hypothesized Models

RQ2 was formulated as "What factorial structure supports the valid use of the TEQ for measuring EFL teacher emotions?" In this study, a number of confirmatory factor analyses (CFA) were conducted to examine the factorial structure and construct validity of the TEQ for assessing EFL teachers' experienced emotions inside the classroom. For this purpose, three structural models were hypothesized, including a one-factor (unidimensional) model, a two-factor model with negative and positive emotions as the latent variables, and a six-factor model as proposed by the developers of the TEQ (Burić et al., 2018) and hypothesized based on the results presented in the previous section. In the current study, the unidimensional model was included in the process of CFA to establish the dimensionality of EFL teacher emotions. Further, a two-dimensional model was included to determine whether a model based on positive emotions versus negative emotions was more interpretable than the original six-factor model.

Several CFA indices were used to make the CFA comparisons among the hypothesized models. The indices used in the analyses were chi-square (χ2), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square (SRMR), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI). As for the interpretation of these CFA indices, the following guidelines from Brown (2006) and Byrne (2012) were set for deciding on the fit of the models: RMSEA values

lower than 0.06, SRMR values lower than 0.08, and TLI and CFI values higher than 0.90. Further, since comparisons were to be made among the models, two indices particularly tuned for model comparison, i.e., Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), were also employed. It is argued that, of the competitive models of a construct, the one with the lowest AIC and BIC values is more favorable (Byrne, 2012).

The results of CFA comparisons among the three structural models are shown in Table 2. The table shows that none of the fit indices showed adequate fit with respect to the one-factor (unidimensional) model. In addition, the one-factor model had the highest values regarding the AIC and BIC indices, which were not favorable for model fit. These results meant that the dimensionality of the questionnaire was supported. On the other hand, the six-factor model showed adequate fit for all the fit indices, while the two-factor model failed to show adequate fit for the TLI and CFI indices. Finally, of the three hypothesized models, the six-factor model had the lowest values of the AIC and BIC indices. In summary, these results demonstrate that the six-factor model was more interpretable against the collected data, and thus it can be established as the structural model of the TEQ for measuring EFL teachers' emotions in the classroom. The path diagram of the six-factor model is presented in Figure 1.

Table 2
CFA Indices of the Three Hypothesized Models

Fit index	Criterion	One-factor model	Two-factor model (positive vs. negative emotions)	Six-factor model
χ^2	——	1236.46	612.325	542.247
RMSEA	0.06>	0.063	0.04	0.04
SRMR	0.08>	0.085	0.05	0.05
TLI	0.90<	0.56	0.88	0.92
CFI	0.90<	0.61	0.90	0.94
AIC	Lowest	46,562.741	45,885.324	45,665.274
BIC	Lowest	46,895.254	46,320.425	45,860.383

Figure 1
The Six-Factor Model (jo = Joy, pr = Pride, lo = Love, an = Anger, fe = Fatigue/exhaustion, and ho = Hopelessness; i1 to i29 Show Items 1 to 29)
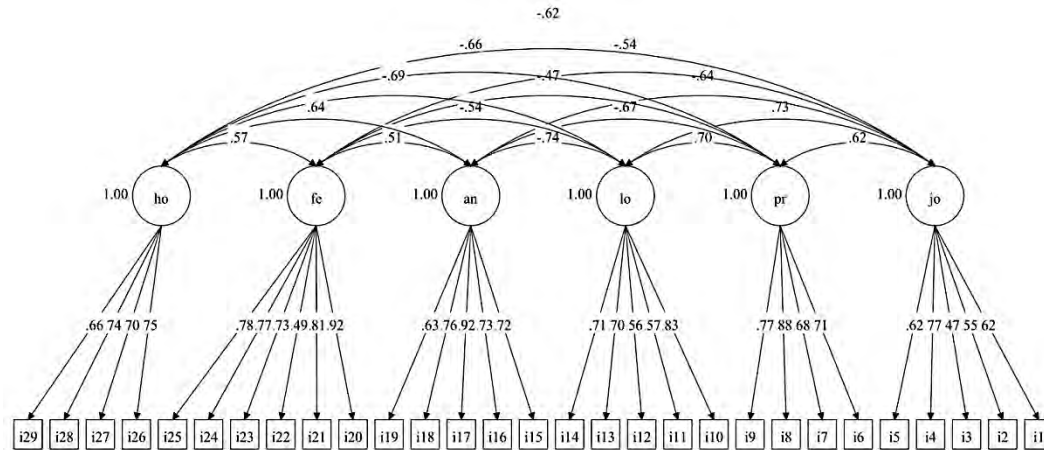
The correlations among the subscales of the TEQ were also calculated, as the emotion theories (e.g., Izard, 1992; Pekrun et al., 2005; Shuman & Scherer, 2014) assume that emotions of the same valence are often positively correlated, while emotions of the opposite valence are often negatively correlated. In addition, since emotions of different valences (i.e., positive versus negative) are included in the TEQ, the correlation coefficients among these emotions would provide evidence on the divergent and convergent validity of the TEQ. The calculated correlation coefficients are shown in Table 3. The results in Table 3 demonstrate that each of the positive emotions was positively correlated with other positive emotions, and each of the negative emotions was positively correlated with other negative emotions. On the other hand, each of the positive emotions was negatively correlated with each of the negative emotions. These results are consonant with the theoretical predictions about the relationship between positive and negative emotions and provide evidence on the divergent and convergent validity of the TEQ for use with EFL teachers.

Table 3
Inter-correlations Among the TEQ Subscales

Subscale	Hopelessness	Fatigue/Exhaustion	Anger	Love	Pride	Joy
Joy	-0.43	-0.45	-0.38	0.53	0.33	1.00
Pride	-0.36	-0.26	-0.41	0.43	1.00	
Love	-0.46	-0.37	-0.50	1.00		
Anger	0.29	0.31	1.00			
Fatigue/Exhaustion	0.51	1.00				
Hopelessness	1.00					

4.3. Examining Measurement Invariance across Gender

RQ3 was formulated as "Does the TEQ assess parallel constructs across male and female EFL teachers?" As a large percentage of studies in Humanities and Social Sciences are group-based (i.e., comparing groups on particular variables), psychometricians stress that psychological and educational instruments measure parallel constructs across groups (Vandenberg & Lance, 2000). In other words, a measurement instrument cannot be justifiably used in group-based studies until its measurement invariance across the group under question is established. In the present study, the measurement invariance of the TEQ was examined across the variable of gender, which is one of the variables around which most group-based studies in language teaching are conducted.

For this purpose, multilevel CFA is often run, whereby constraints are successively imposed on the base model to examine whether the model parameters would stand firm, or they would otherwise deteriorate, once the constraints are imposed. The measurement invariance of an instrument is confirmed if no deterioration is observed. In configural models, it is hypothesized that the same factor loading patterns are applicable across the groups of interest. In metric models, it is hypothesized that equal factor loadings are observed across the groups. Finally, in scalar models, it is hypothesized that equal item intercepts are also observed across the groups. In addition to the CFA indices discussed earlier, two further indices are employed for the purpose of model comparison in multilevel CFA (Sass, 2011; Vandenberg & Lance, 2000). The first one is chi-square distribution ($\Delta\chi2$); the recommendation is that the chi-square distribution should be non-significant ($p > 0.05$) to make sure about the firmness of the structural model across the groups of interest. The second index requires that the CFI differences among the models should not be larger than 0.01 (Cheung & Rensvold, 2002).

Table 4 indicates the results of the measurement invariance analysis of the TEQ across the variable of gender (i.e., male versus female language teachers). As seen in the table, the constraints did not deteriorate the adequate fit of the base model; the chi-square distribution proved to be statistically non-significant for the configural model ($\Delta\chi2 = 681.2, p = 0.13$), the metric model ($\Delta\chi2 = 40.8, p = 0.16$), and the scalar model ($\Delta\chi2 = 44.5, p = 0.25$). In addition, Table 4 indicates that the CFI differences among the models were not larger than 0.01. All these results substantiate the measurement invariance of the TEQ for use with both male and female EFL teachers in Iran.

Table 4
Measurement Invariance Across Gender

Fit index	Criterion	Base model	Configural model	Metric model	Scalar model
RMSEA	0.06>	0.04	0.06	0.06	0.05
SRMR	0.08>	0.05	0.05	0.05	0.06
TLI	0.90<	0.92	0.92	0.92	0.91
CFI	0.90<	0.94	0.93	0.93	0.93
Δχ2			681.2	40.8	44.5
p value	p> 0.05		0.13	0.16	0.25

5. Concluding Remarks

The study examined the psychometric properties of the TEQ for measuring the emotions that EFL teachers experience in their L2 classrooms. The results indicated that the six emotions measured by the TEQ (i.e., Joy, Pride, Love, Anger, Fatigue/Exhaustion, and Hopelessness) could also explain the feelings that Iranian EFL teachers would experience in their classrooms. However, we had to remove six items from the original version of the TEQ since they contributed to the total variance in the participants' scores less than expected. Based on these results, a structural model of the TEQ for use in the EFL teaching context was hypothesized. The hypothesized model included six dimensions that involved 29 items. In the CFA stage, the hypothesized six-factor model was compared with both a one-factor model to test the dimensionality of the TEQ and a two-factor model to examine whether the two-factor model (i.e., positive emotions versus negative emotions as the latent variables) would be more structurally interpretable than the original six-factor model of the TEQ (Burić et al., 2018).

The CFA results revealed that the six model was more structurally interpretable than both competing models (i.e., one-factor and two-factor models), as it had more favorable CFA indices. The results of the study also showed that the emotions of the same valence were positively correlated, while the emotions of the opposite valence were negatively correlated. These correlations were consistent with the theoretical predictions about the relationship between positive and negative emotions (e.g., Izard, 1992; Pekrun et al., 2005; Shuman & Scherer, 2014). They also provided evidence on the divergent and convergent aspects of the TEQ for assessing EFL teachers' experienced emotions in the classroom. Finally, measurement invariance analysis demonstrated that the TEQ was measuring parallel constructs across male and female EFL teachers.

Now that the validity and factorial structure of the TEQ are established with the

participants in the present study, we can defend its use for the following purposes. First, research on language teaching emotions would benefit the most, as it is now equipped with a valid and reliable instrument for measuring a wider range of L2 teacher emotions. It follows that researchers can carry out studies to weigh the relative effects of different L2 teaching emotions on L2 teaching and learning variables (e.g., job satisfaction, professional development, learner emotions, L2 achievement, etc.). This opportunity is currently rather absent in the field of L2 teaching in that most studies adopt a discrete approach to researching L2 teaching emotions where single emotions are selected for the purpose of examination. Second, although group-based studies on the role of gender in L2 learning are sufficiently conducted (see Elsner & Lohe, 2016; Pavlenko & Piller, 2008), scientific comparison between male and female L2 teachers is scarce in the literature. Since the present study substantiated the measurement invariance of the TEQ across gender, such comparison can be made in the area of L2 teaching emotions. Finally, the TEQ can be used to raise in-service language teachers' awareness of their own experienced emotions in the classroom, and the results can be employed to train the teachers on necessary emotion regulation strategies so that they would experience more positive emotions and less negative emotions in their profession.

As for the future research, it is stressed that the TEQ be also validated with English-as-a-second-language (ESL) teachers. Stemming from differences in their teaching context and target language proficiency, a body of research has shown that the factors affecting ESL teacher emotions might differ from those affecting EFL teacher emotions (Gkonou et al., 2020), with significant repercussions for the assessment of these emotions. Second, the present study supported the divergent and convergent validity of the TEQ by examining the correlations among the subscales of the questionnaire. However, criterion validations against established instruments can also be undertaken to increase our confidence in different validity aspects of the TEQ for use with L2 teachers. Finally, the TEQ is not the only self-report instrument for measuring teacher emotions. Examples of such other instruments are Frenzel et al.'s (2016) Teacher Emotions Scales and Chen's (2016) Teacher Emotion Inventory. Thus, it is recommended that these other instruments be validated with language teachers. The motivations for validating these instruments in L2 teaching contexts can be that they involve some other emotions not assessed by the TEQ (e.g., anxiety, sadness, and fear), enabling L2 researchers and practitioners to scrutinize L2 teachers' experienced emotions more deeply.

References

Acheson, K., Taylor, J., & Luna, K. (2016). The burnout spiral: The emotion labor of five rural US foreign language teachers. *The Modern Language Journal*, *100*(2), 522–537. https://doi.org/10.1111/modl.12333

Aldridge, J. M., Fraser, B. J., & Huang, T. C. I. (1999). Investigating classroom environments in Taiwan and Australia with multiple research methods. *The Journal of Educational Research*, *93*(1), 48–62. https://doi.org/10.1080/00220679909597628

Atay, D. (2007). Beginning teacher efficacy and the practicum in an EFL context. *Teacher Development*, *11*(2), 203–219. https://doi.org/10.1080/13664530701414720

Aydin, S. (2016). A qualitative research on foreign language teaching anxiety. *The Qualitative Report*, *21*(4), 629–642. https://doi.org/10.46743/2160-3715/2016.2232

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Benesch, S. (2017). Emotions and English language teaching: Exploring teachers' emotion labor. Routledge. https://doi.org/10.4324/9781315736181

Brown, T. A. (2006). *Confirmatory factor analysis for applied research.* Guilford Press.

Burić, I., Slišković, A., & Macuka, I. (2018). A mixed-method approach to the assessment of teachers' emotions: development and validation of the Teacher Emotion Questionnaire. *Educational Psychology*, *38*(3), 325–349. https://doi.org/10.1080/01443410.2017.1382682

Byrne, B. (2012). *Structural equation modeling With Mplus.* Routledge. https://doi.org/10.4324/9780203807644

Chen, J. (2016). Understanding teacher emotions: The development of a teacher emotion inventory. *Teaching and Teacher Education, 55*, 68–77. https://doi.org/10.1016/j.tate.2016.01.001

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A*

Multidisciplinary Journal, 9(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5

Clonan, S. M., Chafouleas, S. M., McDougal, J. L., & Riley-Tillman, T. C. (2004). Positive psychology goes to school: Are we there yet? *Psychology in the Schools*, *41*(1), 101–110. https://doi.org/10.1002/pits.10142

Cowie, N. (2011). Emotions that experienced English as a Foreign Language (EFL) teachers feel about their students, their colleagues and their work. *Teaching and Teacher Educ*ation, 27(1), 235–242. https://doi.org/10.1016/j.tate.2010.08.006

Debreli, E., & Ishanova, I. (2019). Foreign language classroom management: Types of student misbehaviour and strategies adapted by the teachers in handling disruptive behaviour. *Cogent Education*, *6*(1). https://doi.org/10.1080/2331186X.2019.1648629

De Costa, P. I., & Li, W., Rawal, H. (2019). Language teacher emotions. In M. A. Peters (ed.), *Springer Encyclopedia of teacher educatio*n (pp. 1–4). Springer. https://doi.org/10.1007/978-981-13-1179-6_262-1

De Costa, P. I., Rawal, H., & Li, W. (2018). Broadening the second language teacher education agenda: international perspectives on teacher emotions. *Chinese Journal of Applied Linguistics*, *41*(4), 401–409. https://doi.org/10.1515/cjal-2018-0030

Derakhshan, A. (2022). Revisiting research on positive psychology in second and foreign language education: Trends and directions. *Language Related Research, 13*(5), 1–43. https://doi.org/10.52547/LRR.13.5.2

Derakhshan, A., Fathi, J., Pawlak, M., & Kruk, M. (2024). Classroom social climate, growth language mindset, and student engagement: the mediating role of boredom in learning English as a foreign language. *Journal of Multilingual and Multicultural Development, 45*(8), 3415–3433. https://doi.org/10.1080/01434632.2022.2099407

Derakhshan, A., Solhi, M., & Azari Noughabi, M. (2025). An investigation into the association between student-perceived affective teacher variables and students' L2-grit. *Journal of Multilingual and Multicultural Development, 46*(3), 798–814. https://doi.org/10.1080/01434632.2023.2212644

Derakhshan, A., & Zare, J. (2023). The impact of altruistic teaching on English as a foreign language (EFL) learners' emotion regulation: an intervention study. *Brain Sciences*, *13*(3), 458. https://doi.org/10.3390/brainsci13030458

Dewaele, J. M., & Li, C. (2021). Teacher enthusiasm and students' social-behavioral learning engagement: The mediating role of student enjoyment and boredom in Chinese EFL classes. *Language Teaching Research*, *25*(6), 922–945. https://doi.org/10.1177/13621688211014538

Dewaele, J. M., & Wu, A. (2021). Predicting the emotional labor strategies of Chinese English Foreign Language teachers. *System, 103*, 102660. https://doi.org/10.1016/j.system.2021.102660

Dörnyei, Z. (2003). *Questionnaire in second language research: Construction, administering, and processing*. Routledge.

Elsner, D., & Lohe, V. (Eds.) (2016). *Gender and language learning. Research and practice*. Narr Francke Attempto.

Ergün, A. L. P., & Dewaele, J. M. (2021). Do well-being and resilience predict the foreign language teaching enjoyment of teachers of Italian? *System, 99*, 102506. https://doi.org/10.1016/j.system.2021.102506

Esfandiari, R., & Kamali, M. (2016). On the relationship between job satisfaction, teacher burnout, and teacher autonomy. *Iranian Journal of Applied Language Studies, 8*(2), 73–98.

Fathi, J., Derakhshan, A., & Saharkhiz Arabani, A. (2020). Investigating a structural model of self-efficacy, collective efficacy, and psychological well-being among Iranian EFL teachers. *Iranian Journal of Applied Language Studies*, *12*(1), 123–150.

Fathi, J., Greenier, V., & Derakhshan, A. (2021). Self-efficacy, reflection, and burnout among Iranian EFL teachers: the mediating role of emotion regulation. *Iranian Journal of Language Teaching Research*, *9*(2), 13–37.

Fathi, J., Pawlak, M., Kruk, M., & Naderi, M. (2023). Modelling boredom in the EFL context: An investigation of the role of coping self-efficacy, mindfulness, and foreign language enjoyment. *Language Teaching Research*, 13621688231182176. https://doi.org/10.1177/13621688231182176

Fraser, B. J. (2012). Classroom learning environments: Retrospect, context and prospect. In B. J. Fraser, K. G. Tobin, & C. J. McRobbie (Eds.), *Second international handbook of science education* (pp. 1191–1239). Springer.

https://doi.org/10.1007/978-1-4020-9041-7_79

Frenzel, A. C., Daniels, L., & Burić, I. (2021). Teacher emotions in the classroom and their implications for students. *Educational Psychologist*, 1–15. https://doi.org/10.1080/00461520.2021.1985501

Frenzel, A. C., Pekrun, R., Goetz, T., Daniels, L. M., Durksen, T. L., Becker-Kurz, B., & Klassen, R. M. (2016). Measuring teachers' enjoyment, anger, and anxiety: The Teacher Emotions Scales (TES). *Contemporary Educational Psychology*, *46*, 148–163. https://doi.org/10.1016/j.cedpsych.2016.05.003

Gabryś-Barker, D. (2014). Success: From failure to failure with enthusiasm. *Studies in Second Language Learning and Teaching*, *4*(2), 301–325. https://doi.org/10.14746/ssllt.2014.4.2.7

Ghanizadeh, A., & Royaei, N. (2015). Emotional facet of language teaching: Emotion regulation and emotional labor strategies as predictors of teacher burnout. *International Journal of Pedagogies and Learning*, *10*(2), 139–150. https://doi.org/10.1080/22040552.2015.1113847

Ghasemzadeh, S., Nemati, M., & Fathi, J. (2019). Teacher self-efficacy and reflection as predictors of teacher burnout: An investigation of Iranian English language teachers. *Issues in Language Teaching*, *8*(2), 25–50. https://dx.doi.org/10.22054/ilt.2020.49009.451

Gkonou, C., Dewaele, J. M., & King, J. (Eds.) (2020). *The emotional rollercoaster of language teaching*. Multilingual Matters. https://doi.org/10.21832/GKONOU8335

González, A., Fernández, M. V. C., & Paoloni, P. V. (2017). Hope and anxiety in physics class: Exploring their motivational antecedents and influence on metacognition and performance. *Journal of Research in Science Teaching*, *54*(5), 558–585. https://doi.org/10.1002/tea.21377

Greenier, V., Derakhshan, A., & Fathi, J. (2021). Emotion regulation and psychological well-being in teacher work engagement: a case of British and Iranian English language teachers. *System*, *97*, 102446. https://doi.org/10.1016/j.system.2020.102446

Hammersley, M. (1997). Qualitative data archiving: some reflections on its prospects and problems. *Sociology*, *31*(1), 131–142. https://doi.org/10.1177/0038038597031001010

Heydarnejad, T., Zareian, G., Ghaniabadi, S., & Adel, S. M. R. (2021). Measuring language teacher emotion regulation: Development and validation of the language teacher emotion regulation inventory at workplace (LTERI). *Frontiers in Psychology*, 12. https://doi.org/10.3389/fpsyg.2021.708888

Hodgen, J., & Askew, M. (2007). Emotion, identity and teacher learning: Becoming a primary mathematics teacher. *Oxford Review of Education*, *33*(4), 469–487. https://doi.org/10.1080/03054980701451090

Horwitz, E. K. (1996). Even teachers get the blues: Recognizing and alleviating language teachers' feelings of foreign language anxiety. *Foreign Language Annals*, *29*(3), 365–372. https://doi.org/10.1111/j.1944-9720.1996.tb01248.x

Horwitz, E. K. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics*, *21*, 112–126. https://doi.org/10.1017/S0267190501000071

Horwitz, E. K. (2005). Classroom management for teachers of Japanese and other foreign languages. *Foreign Language Annals*, *38*(1), 56–64. https://doi.org/10.1111/j.1944-9720.2005.tb02453.x

Horwitz, E. K. (2008). *Becoming a language teacher: A practical guide to second language learning and teaching*. Allyn and Bacon.

Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, *70*(2), 125–132. https://doi.org/10.1111/j.1540-4781.1986.tb05256.x

Izard, C. E. (1992). Basic emotions, relations among emotions, and emotion-cognition relations. *Psychological Review, 99*(3), 561–565. https://doi.org/10.1037/0033-295X.99.3.561

Kang, D. M. (2022). An elementary school EFL teacher's emotional intelligence and emotional labor. *Journal of Language, Identity & Education, 21*(1), 1–14. https://doi.org/10.1080/15348458.2020.1777867

Karami, H., Mozaffari, F., & Nourzadeh, S. (2021). Examining the psychometric features of the Teacher's Sense of Efficacy Scale in the English-as-a-foreign-language teaching context. *Current Psychology, 40*(6), 2680–2697. https://doi.org/10.1007/s12144-019-00203-2

Khammat, A. H. (2022). Investigating the relationships of Iraqi EFL teachers' emotion regulation, resilience and psychological well-being. *Language Related Research,*

13(5), 613–640. https://doi.org/10.52547/LRR.13.5.22

Khani, R., & Mirzaee, A. (2015). How do self-efficacy, contextual variables and stressors affect teacher burnout in an EFL context? *Educational Psychology*, *35*(1), 93–109. https://doi.org/10.1080/01443410.2014.981510

King, J., & Ng, K.-Y. S. (2018). Teacher emotions and the emotional labour of second language teaching. In S. Mercer & A. Kostoulas (Eds.), *Language teacher psychology* (pp. 141–157). Multilingual Matters. https://doi.org/10.21832/9781783099467-013

Kirk, B. A., Schutte, N. S., & Hine, D. W. (2008). Development and preliminary validation of an emotional self-efficacy scale. *Personality and Individual Differences, 45*(5), 432–436. https://doi.org/10.1016/j.paid.2008.06.010

Lee, M., & Van Vlack, S. (2018). Teachers' emotional labour, discrete emotions, and classroom management self-efficacy. *Educational Psychology*, *38*(5), 669–686. https://doi.org/10.1080/01443410.2017.1399199

Li, H., & Liu, H. (2021). Beginning EFL teachers' emotional labor strategies in the Chinese context. *Frontiers in Psychology*, 12. https://doi.org/10.3389/fpsyg.2021.737746

Liu, L., Fathi, J., Allahveysi, S. P., & Kamran, K. (2023). A model of teachers' growth mindset, teaching enjoyment, work engagement, and teacher grit among EFL teachers. *Frontiers in Psychology*, *14*, 1137357. https://doi.org/10.3389/fpsyg.2023.1137357

Machida, T. (2016). Japanese elementary school teachers and English language anxiety. *TESOL Journal*, *7*(1), 40–66. https://doi.org/10.1002/tesj.189

Machida, T., & Walsh, D. J. (2015). Implementing EFL policy reform in elementary schools in Japan: A case study. *Current Issues in Language Planning*, *16*(3), 221–237. https://doi.org/10.1080/14664208.2015.970728

Markee, N. (2017). Are replication studies possible in qualitative second/foreign language classroom research? A call for comparative re-production research. *Language Teaching*, *50*(3), 367–383. https://doi.org/10.1017/S0261444815000099

Martínez Agudo, J. (2018). Introduction and overview. In J. Martínez Agudo (Ed.), *Emotions in second language teaching: Theory, research and teacher education*

(pp. 1–16). Springer. https://doi.org/10.1007/978-3-319-75438-3_1

Mashhady, H. (2013). Toward an analysis of the bond between emotional intelligence and self-efficacy among EFL teachers. *Journal of English Language Teaching and Learning, 5*(11), 107–125.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, *2*(2), 99–113. https://doi.org/10.1002/job.4030020205

Meidani, E. N., Pishghadam, R., & Shakeebaee, G. (2021). The role of time perspectives in Language Teachers' Burnout. *Current Psychology, 40*(10), 5145–5155. https://doi.org/10.1007/s12144-019-00456-x

Merc, A. (2015). Foreign language teaching anxiety and self-efficacy beliefs of Turkish preservice EFL teachers. *The International Journal of Research in Teacher Education*, 6(3), 40–58.

Mierzwa, E. (2019). Foreign language learning and teaching enjoyment: teachers' perspectives. *Journal of Education Culture and Society*, *10*(2), 170–188. https://doi.org/10.15503/jecs20192.170.188

Mirshojaee, S. B., Sahragard, R., Razmjoo, S. A., & Ahmadi, A. (2019). Iranian language teachers' passion for the profession: A qualitative study. *Journal of Research in Applied Linguistics*, *10*(2), 44–69.

Moafian, F., & Ghanizadeh, A. (2009). The relationship between Iranian EFL teachers' emotional intelligence and their self-efficacy in Language Institutes. *System*, *37*(4), 708–718. https://doi.org/10.1016/j.system.2009.09.014

Momenzadeh, S. E., Pishghadam, R., & Naji Meidani, E. (2023). Examining the role of active/passive motivation in EFL teachers' burnout and efficacy. *Language Related Research,14*(1), 1–33. https://doi.org/10.29252/LRR.14.1.1

Moradkhani, S., Raygan, A., & Moein, M. S. (2017). Iranian EFL teachers' reflective practices and self-efficacy: Exploring possible relationships. *System, 65*, 1–14. https://doi.org/10.1016/j.system.2016.12.011

Morris, S., & King, J. (2018). Teacher frustration and emotion regulation in university language teaching. *Chinese Journal of Applied Linguistics*, *41*(4), 433–452. https://doi.org/10.1515/cjal-2018-0032

Moskowitz, S., & Dewaele, J. M. (2021). Is teacher happiness contagious? A study of

the link between perceptions of language teacher happiness and student attitudes. *Innovation in Language Learning and Teaching*, *15*(2), 117–130. https://doi.org/10.1080/17501229.2019.1707205

Nalipay, M. J. N., King, R. B., Frondozo, C. E., & Mordeno, I. G. (2021). Joyful teachers: How enjoyment and psychological empowerment foster teachers' work engagement. In J. Chen, & R. B. King (Eds.), *Emotions in learning, teaching, and leadership: Asian perspectives* (pp. 111–126). Routledge. https://doi.org/10.4324/9780429353581-8

Nayernia, A., & Babayan, Z. (2019). EFL teacher burnout and self-assessed language proficiency: Exploring possible relationships. *Language Testing in Asia*, *9*(1), 1–16. https://doi.org/10.1186/s40468-019-0079-6

Pavlenko, A., & Piller, I. (2008). Language education and gender. In S. May & N. H. Hornberger (Eds.), *Encyclopedia of language and education. Volume 1: Language policy and political issues in education* (pp. 57–69). Springer. https://doi.org/10.1007/978-0-387-30424-3_5

Pekrun, R., Goetz, R., & Perry, R. P. (2005). *Academic Achievement Emotions Questionnaire (AEQ). User's manual*. Department of Psychology, University of Munich.

Pishghadam, R., Zabihi, R., & Shayesteh, S. (2014). The perception–practicum interface revisited: life-wise language teaching perceptions and teacher burnout. *The Asia-Pacific Education Researcher*, *23*(2), 287–297. https://doi.org/10.1007/s40299-013-0104-y

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies, 3*(9), 369–387.

Richards, J. C. (2022). Exploring emotions in language teaching. *RELC Journal, 53*(1), 225–239. https://doi.org/10.1177/0033688220927531

Rojas Tejada, A. J., Cruz del Pino, R. M., Tatar, M., & Jiménez Sayáns, P. (2012). "Spanish as a foreign language" teachers' profiles: Inclusive beliefs, teachers' perceptions of student outcomes in the TCLA program, burnout, and experience. *European Journal of Psychology of Education*, *27*(3), 285–298. https://doi.org/10.1007/s10212-011-0070-9

Rostami, S., Ghanizadeh, A., & Ghonsooly, B. (2015). External factors affecting

second language motivation: The role of teacher burnout and family influence. *Iranian Journal of Applied Linguistics*, *18*(2), 165–187. https://doi.org/10.18869/acadpub.ijal.18.2.165

Sass, D. A. (2011). Testing measurement invariance and comparing latent factor means within a confirmatory factor analysis framework. *Journal of Psychoeducational Assessment, 29*(4), 347–363. https://doi.org/10.1177/0734282911406661

Shakki, F. (2022). Iranian EFL students' L2 engagement: The effects of teacher-student rapport and teacher support. *Language Related Research, 13*(3), 175–198. https://doi.org/10.52547/LRR.13.3.8

Shuman, V., & Scherer, K. R. (2014). Concepts and structures of emotions. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 13–35). Routledge.

Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology, 99*(3), 611–625. https://doi.org/10.1037/0022-0663.99.3.611

Sutton, R. E., & Wheatley, K. F. (2003). Teachers' emotions and teaching: A review of the literature and directions for future research. *Educational Psychology Review*, *15*(4), 327–358. https://doi.org/10.1023/A:1026131715856

Taylor, L. P., & Newberry, M. (2018). Self-Study of a teacher's practices of and experience with emotion regulation: Being and becoming through reflection and engagement. *Studying Teacher Education*, *14*(3), 296–307. https://doi.org/10.1080/17425964.2018.1541276

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications*. American Psychological Association. https://doi.org/10.1037/10694-000

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*(7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tum, D. O. (2015). Foreign language anxiety's forgotten study: The case of the anxious preservice teacher. *TESOL Quarterly*, *49*(4), 627–658. https://doi.org/10.1002/tesq.190

Uzuntiryaki-Kondakci, E., Kirbulut, Z. D., Sarici, E., & Oktay, O. (2020). Emotion regulation as a mediator of the influence of science teacher emotions on teacher efficacy beliefs. *Educational Studies*, 1–19. https://doi.org/10.1080/03055698.2020.1793300

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*(1), 4–70. https://doi.org/10.1177/109442810031002

White, C. J. (2018). The emotional turn in Applied Linguistics and TESOL: Significance, challenges and prospects. In J. Martínez Agudo (Ed.), *Emotions in second language teaching: Theory, research and teacher education* (pp. 19–34). Springer. https://doi.org/10.1007/978-3-319-75438-3_2

Xiao, Y., Fathi, J., & Mohammaddokht, F. (2022). Exploring a structural model of teaching enjoyment, teacher self-efficacy, and work engagement. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.918488

Xiaojing, X., Badakhshan, E., & Fathi, J. (2022). Exploring teacher reflection in the English as a foreign language context: Testing factor structure and measurement invariance. *Frontiers in Psychology*, *12*, 6708. https://doi.org/10.3389/fpsyg.2021.828901

Yin, H. (2012). Adaptation and validation of the teacher emotional labour strategy scale in China. *Educational Psychology*, *32*(4), 451–465. https://doi.org/10.1080/01443410.2012.674488

Yoo, J., & Carter, D. (2017). Teacher emotion and learning as Praxis: Professional development that matters. *Australian Journal of Teacher Education*, *42*(3), 38–52. https://doi.org/10.14221/ajte.2017v42n3.3

Zhang, L. J., Saeedian, A., & Fathi, J. (2024). Testing a model of growth mindset, ideal L2 self, boredom, and WTC in an EFL context. *Journal of Multilingual and Multicultural Development, 45*(8), 3450–3465. https://doi.org/10.1080/01434632.2022.2102175

Zumbo, B. D. (2009). Validity as contextualized and pragmatic explanation, and its implications for validation practice. In R. W. Lissitz (Ed.), *The concept of validity: Revisions, new directions and applications* (pp. 65–82). Information Age Publishing, Inc.

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