**An International Validation of the Engaged Teacher Scale**

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The purpose of this study was to test and validate the Engaged Teacher Scale (ETS) in a Turkish context (ETS-TR). In order to test the construct validity of the ETS, data were collected from 388 teachers in two northeast cities of Turkey. First-order confirmatory factor analysis results supported the 16-item and four-factor model of ETS while second-order confirmatory factor analysis suggested that a single factor was also appropriate for representing teacher engagement. Additionally, four multiple linear regression analyses were conducted to provide further validation evidence. Results showed that subscales of the ETS-TR were found to be positively correlated with teacher self-efficacy. Given our evidence of validity and reliability, we recommend researchers interested in measuring the engagement of Turkish teachers to consider using the ETS-TR. The adaptation of ETS into Turkish also provides a measure for use when conducting research examining cultural comparisons between English-speaking and Turkish teachers.

Key Words: teacher engagement; work engagement; self-efficacy

 Teacher engagement is an international issue. An increasing number of teachers across the world leave the profession each year, and many report low levels of engagement in the profession (Organisation for Economic Co-operation and Development (OECD, 2005). Previous research suggests highly engaged teachers are less likely to report intentions to quit (Klassen, Aldhafri et al., 2012), but low teacher attrition rates do not necessarily indicate high levels of engagement. In this study, we sought to validate a measure of teacher engagement in Turkey, where teachers generally report a low rate of intention for quitting (Güner, 2016; Öğretir, 2013; Öztürk-Çiftci, Meriç, & Meriç, 2015; Pehlivan & Köseoğlu, 2013; Uştu, 2014; Yüksel & Yüksel, 2014).

 In Turkey, although teacher attrition rates are low, less is known about the level of teachers’ engagement as it is a relatively new topic of research. The Turkish Ministry of Education (MoNE, 2015) revealed annual patterns of approximately 500 teachers who left and about 1100 teachers who changed their occupation, out of a population of about 890,000 teachers. However, this low level of teacher attrition does not guarantee that Turkish teachers have high levels of work engagement. For example, Gün (2017) and Güçlü, Recepoğlu, and Kılınç (2014) found Turkish teachers to display a modest level of work engagement. Knowing that teachers play a critical role in students’ learning (Darling-Hammond & Youngs, 2002), it is also acknowledged that teachers who report low levels of engagement and remain in their position may pose a more serious problem than those who leave the job. Moreover, it is hard to draw a clear situation about Turkish teachers’ engagement level because the term ‘work engagement’ can be translated in different ways in Turkish. Therefore, there is a need for studies using consistent wording for teacher engagement and it is important to have a valid and reliable measure of Turkish teachers’ engagement to help exploring any influential factors.

Within the field of education, Klassen, Aldhafri et al. (2012) claimed three reasons for explaining the increasing interest of educational researchers with investigations of teacher engagement: (1) Teacher engagement plays a role in students’ learning outcomes and teachers’ effectiveness. For example, engaged teachers are more likely to enhance students’ achievement (Gordon, 2006) and student engagement (Roth, Assor, Kanat-Maymon, & Kaplan, 2007). (2) Engaged teachers are better at overcoming work-related stress and burnout. For example, teacher engagement can act as a mediator for the relationship between teachers’ goal orientation and commitment (Han, Yin, & Wang, 2016) and between job resources and organizational commitment (Hakanen, Bakker, & Schaufeli, 2006). (3) Engaged teachers are more likely to take active roles in workplace and make contributions to the school life. In fact, Bakker and Bal (2010) suggest that engaged teachers influence ‘job resources’ that benefit school environments, such as increased autonomy, social support of colleagues, and greater opportunities for professional development.

 Since Klassen, Aldhafri et al. (2012) argued that cultural context also influences teachers’ work-related beliefs (such as job stress, self-efficacy, and teaching motivation), teachers’ engagement in Turkey may play out differently than in other countries. For example, the Turkish culture has a more collectivist orientation than most western cultures (Oyserman, Coon, & Kemmelmeier, 2002; Suh, Diener, & Oishi-Triandis, 1998), which presents an influence on teacher-student and teacher-colleague relationships (Beyazkurk & Kesmer, 2005). Measures used in one context may not be appropriate for use in another context; validation studies are necessary to help understand teacher characteristics within and across a range of contexts.

Educational psychology researchers focus on a range of teacher characteristics (e.g., personality, self-efficacy, empathy, beliefs, resilience, etc.) that can influence teaching quality and effectiveness (Klassen, Durksen, Rowett, & Patterson, 2014; Klassen & Tze, 2014; Rimm-Kaufman & Hamre, 2010). For example, effective teachers often report high levels of self-efficacy (Klassen, Tze, Betts, & Gordon, 2011), engagement (Klassen, Aldhafri et al., 2012), self-regulation, job satisfaction, and report low levels of burnout (Klusman, Kunter, Trautwein, & Lüdtke, 2008). Generally, research on teacher engagement has mimicked work engagement research in other professions (e.g., Bakker & Bal, 2010; Han, Yin, & Wang, 2016, Skaalvik & Skaalvik, 2014). Although a range of work engagement measures exist*,* the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003) is the most widely used measure across professions (Shuck, 2011).

 Some research has been conducted in Turkey on teachers’ work engagement by using the UWES (Akman & İmamğlu Akman, 2017; Çağrı San & Tok, 2017; Kavgacı & Çalık, 2017; Köse, 2016). However, there is a range of psychometric problems with the Turkish versions of UWES. Some studies supported the 3-factor structure of the UWES (Eryilmaz & Doğan, 2012; Gündüz, Çapri, & Gökçakan, 2013), whereas others provided only 2 factors and suggested excluding some items (Erim, 2009; Güneşer, 2007; Öner, 2008). Moreover, in some studies (e.g. Akman & İmamğlu Akman, 2017), covariances were added between a few items’ error terms to be able to obtain acceptable model fit indices. Bal (2008) found problems with cross-loadings of factors in a Turkish version of the UWES. Özalp and Meydan (2015) suggested that the Turkish version of the UWES needed to be revised and improved. Based on the aforementioned studies, although they were conducted in various work areas, it can be said that, conceptually, the UWES may not be appropriate to be used to measure teachers’ work engagement in a Turkish context. Therefore, there is a strong need for culturally appropriate measurement tools that are specifically designed for the Turkish teaching context.

Since teachers’ work life involves a complex climate of relationships with students and colleagues substantially different from workers in the business sector (e.g., farmers, police officers, civil servants), a more nuanced measurement – the Engaged Teacher Scale (ETS) – that considers the role of social engagement was developed and validated by Klassen, Yerdelen, and Durksen (2013). In particular, Klassen et al. (2013) focused on teacher-student relatedness research (Davis, 2003; Klassen, Perry, & Frenzel, 2012) when developing the ETS.

In developing the ETS, Klassen et al. (2013) built upon a foundation of previous theoretical approaches and measures of work engagement (e.g., Rich, 2006; Saks, 2006; Schaufeli, Bakker, & Salanova, 2006; Shuck, 2010; Thomas, 2006; Wang & Qin, 2011). The first and one of the most widely used approaches to work engagement was taken by Kahn (1990) whose conceptualization focused on an individual’s presence in work through physical, emotional, and cognitive energies. Kahn’s conceptualization was first empirically supported by Rich, Lepine, and Craeford (2010) and highlighted as a key perspective by Shuck (2011). Another widely used approach (Schaufeli, Salanova, Gonza´lez-Roma, & Bakker, 2002) defined work engagement as ‘‘... a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption’’ (p. 74). Here, vigor refers to “high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties;” dedication implies “a sense of significance, enthusiasm, inspiration, pride, and challenge;” and absorption as “being fully concentrated and deeply engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work*”* (Schaufeli et al., 2002, p. 74-75). Work engagement has positive relationships with job resources (e.g., social support), personal resources (e.g., self-efficacy), and job performance (Bakker, Schaufeli, Leiter, & Taris, 2008). For example, Schaufeli and Bakker (2004) found positive correlations between work engagement and performance feedback, social support, and supervisory coaching. Additionally, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) found positive relations of work engagement to self-efficacy and optimism.

The relationship between teacher engagement and related variables, such as self-efficacy, can be understood through the lens of several theoretical frameworks, including social cognitive theory. In social cognitive theory, self-efficacy represents ‘‘beliefs in one’s capabilities to organize and execute the course of action required to produce given attainments’’ (Bandura, 1997, p. 3). Within this theory, engagement and efficacy are internal personal factors that are reciprocally related to behaviors and to the external environment (Bandura, 1997). Teaching self-efficacy implies teachers’ judgements of their capabilities to engage all students to learn, use variety of instructional strategies, and effectively manage the classroom (Tschannen-Moran & Woolfolk Hoy, 2001). The sense of confidence to carry out a task (e.g., teaching) is related, but not identical, to the feeling of being absorbed in the task. Note that the two are theoretically separable: one can be engaged without feeling efficacious; similarly, one can feel efficacious to carry out a task, but not be invested or engaged in the task (Bandura, 1997). In addition to theoretical links, teacher engagement has been shown empirically to be related to teaching self-efficacy (Llorens, Schaufeli, Bakker, & Salanova, 2007; Simbula, Guglielmi, & Schaufeli, 2011; Skaalvik & Skaalvik, 2014). Social cognitive theory provides one framework to explore teacher engagement, but work in organizational psychology provides explanations grounded in other theories.

Another theoretical lens to understand teacher engagement is the Conservation of Resources (COR) theory (Hobfoll, 1989). In this theory, work-related stress lowers personal resources, whereas self-efficacy is considered as a work-related personal resource that increases work engagement (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli 2007; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Hobfoll, Johnson, Ennis, and Jackson (2003) stated that higher individual resources bring out more positive resiliency. Additionally, Xanthopoulou, et al. (2009) found that workers with higher self-efficacy and optimism about work are potential to experience higher level of work engagement. Self-efficacy has also been found to act as the mediator between job resources and teacher engagement (see Llorens et al., 2007). Therefore, based on social cognitive and COR theories, one would expect a positive relationship between teacher engagement and teaching self-efficacy.

Although some studies have explored teacher engagement and related variables, almost all of the work has been conducted in English-speaking settings. More work is needed in multiple settings to understand whether or not current measures are valid outside of English-speaking settings. We set out to translate and adapt the ETS for a Turkish context, resulting in the creation of the ETS-TR, to be used to measure teacher engagement in Turkey.

***Current Study***

 Following the development and validation of the ETS in a North American context (see Klassen et al., 2013), we sought to test whether the ETS was a valid and reliable measure of teachers’ work engagement once translated and adapted for a different teaching context: Turkey. Moreover, given previous theoretical and empirical work (e.g., Bandura, 1997; Hobfoll, 1989; Xanthopoulou, et al., 2009), we tried to predict teacher engagement with teaching self-efficacy to find out a positive association between these variables. Specifically, we wondered:

1. To what extent is the ETS-TR a valid and reliable instrument for measuring Turkish teachers’ work engagement?
2. To what extent is teacher engagement predicted by teaching self-efficacy?

**Method**

***Participants and Procedures***

 Data were collected via questionnaire from a convenience sample of teachers (*N* = 388) located in two cities in Turkey’s north-eastern region. Teachers voluntarily completed the ETS questionnaire after being informed about the purpose of the study and assured of the confidentiality of their data. The study complied with ethical requirements of the first author’s university and the school districts involved in the research. Trained research assistants (graduate students) administered the questionnaires to school staff who volunteered to complete the questionnaires. The research assistants used personal relationships and only recruited participants from the schools in which they knew the staff. In order to ensure anonymity (which was required by the school authorities), we only asked participating teachers to indicate the level of their school and not the school name. Questionnaires were completed by 209 female and 168 male teachers (11 unspecified) in primary (29%) and middle (71%) school settings. At the time of data collection (spring semester of 2014/2015 academic year), participants had a mean of 4.07 years of teaching experience (*SD* = 4.09; Range = 1 to 30) with an average of 25 students (*SD* = 6.97) per classroom.

 *Engaged Teacher Scale (ETS).* Questionnaire preparation began with the original ETS. In order to measure teachers’ work engagement, Klassen and colleagues (2013) developed the scale (in English) through a series of steps. First an item pool was created, and then items were pilot tested and reduced through principle component analysis. Next an exploratory factor analysis with a new sample was conducted in order to identify key factors. Final steps included CFA analyses (with a new sample) for construct validity and examining the correlation of ETS factors with additional variables for further evidence of validity. With a total of 16 items that invited responses on 7-point Likert scale (0 = *Never*, 6 = *Always*), results yielded good model fit to the data. Sample items and reliability values for the four subscales (emotional, cognitive, social with students, social with colleagues) of the final ETS are presented through Table 1. Item loadings of the factors ranged from .66 to .85. Moreover, the loadings of these 4 factors on the second order factor were between .61 and .88. Cronbach alpha coefficients were found between .79 and .87 for the subscales of ETS and .91 for the whole scale, which indicated that scores on the ETS were sufficiently reliable (and that a higher score was deemed indicative of higher work engagement).

In this study, we followed a translation and back-translation process. The first author (a native Turkish speaker), translated the ETS (English) to Turkish and then enlisted two teacher education experts for independent translation. Agreement was reached on most translated items with some discussion necessary for consensus. Translated items were then back-translated into English by another teacher education expert and compared with the original items. The first author was involved with the comparison process to ensure the meaning of items was consistent. Lastly, all items were examined by a Turkish language expert. As a result, the Turkish version of the ETS (ETS-TR) was considered grammatically and meaningfully appropriate for implementing with teachers in Turkey. The ETS-TR is presented alongside the original ETS in Appendix 1 , complete with instructions for researchers and participants.

*Teachers’ Sense of Efficacy Scale.*To measure teachers’ confidence about teaching in the classroom, our questionnaire included Capa, Cakiroglu, and Sarikaya’s (2005) Turkish version of Tschannen-Moran and Woolfolk Hoy’s (2001) Teachers’ Sense of Efficacy Scale (TSES). Specifically, we administered the short version with 4 items from each of the 3 subscales: Efficacy for Student Engagement (e.g. “How much can you do to motivate students who show low interest in schoolwork?”), Efficacy for Classroom Management (e. g. “How much can you do to control disruptive behavior in the classroom?”), and Efficacy for Instructional Strategies (e. g. “To what extent can you use a variety of assessment strategies?”). The 12 items were presented with a 9-point Likert response scale (1= *Nothing* to 9 = *A great deal*), with higher scores indicating a higher level of self-efficacy for teaching. Reliability coefficients for the translated TSES used in the current study were high (.74, .85, and .83 for student engagement, classroom management, and instructional strategies, respectively).

***Strategy for Scale Analysis***

 The present research sought to investigate the reliability and internal validity of the Turkish ETS, while also considering convergent validity by examining the relation between teacher engagement and teacher self-efficacy. Overall, we expected a positive relationship between teachers’ engagement and self-efficacy that was sufficiently high enough to indicate the convergent validity of the ETS, yet low enough to warrant conceptual separation between those established phenomena and the four subscales measured by the ETS. In order to provide support for the construct validity of the four-factor Turkish translation of the ETS (ETS-TR), a first-order CFA and a second-order CFA were performed using LISREL 8.80 (Jöreskog & Sörbom, 2006) with SIMPLIS command language. For further evidence of validity, we examined correlations among the subscales of ETS-TR and TSES.

**Results**

 To examine the factor structure of the ETS-TR, we performed a first-order CFA using data obtained from 388 teachers. Results indicated (see Appendix 2) good model fit to the data ($χ\_{(98)}^{2}$= 232.29, *p* < .05; CFI = .98; GFI = .93; NFI = .96; SRMR = .036; RMSEA = .059; 90% CI = .049, .069). As in the original scale, completely standardized parameter estimates (Lambda-X) of all items were above .50 (see Table 2) which is the suggested cut-off value by Hair, Black, Babin, Anderson, and Tatham (2010). Moreover, the data had good internal consistency as indicated by Cronbach’s alphas of .81 to .87.

In the development process of the original version of ETS, Klassen et al. (2013) found that these four factors of ETS can be represented by a single superordinate factor. Therefore, in order to test this suggested factor structure with our Turkish sample, a second-order factor analysis was conducted. Results revealed (see Appendix 3) a good model fit to the data ($χ\_{(100)}^{2}$= 240.06, *p* < .05; CFI = .98; GFI = .93; NFI = .96; SRMR = .040; RMSEA = .060; 90% CI = .050, .070). All factor loadings were found significant and above the cut-off point of .50 (Hair et al., 2010). Regression coefficients (Gamma, γ) of each factor, mean, standard deviation and Cronbach’s alpha of the composite teacher engagement variable are displayed through Table 2. As shown in the Table 3, we also compared results of the first-order CFA and second-order CFA. A chi-square difference test revealed that adding new factors into the model did not make a significant contribution. Therefore, our findings supported the first order four-factor and the second order single-factor models of the ETS-TR.

For supporting the convergent validity, we examined engagement (measured by the ETS-TR) in relation to teaching self-efficacy (measured by the TSES). For this part of the study, we used data from a sub-sample (*n* = 288) of participants (153 female, 126 male, and 9 unspecified). Four separate multiple linear regression models were set to discover which subscales of TSES significantly predict the subscales of the ETS-TR. While the four subscales of ETS-TR were used as dependent variables, the three subscales of TSES were used as predictors. As displayed through Table 4, bivariate correlations among subscales of ETS-TR and TSES were positively and significantly correlated with each other, with the highest correlation between Cognitive Engagement and Efficacy for Instructional Strategies (*r* = .54) and the lowest correlation for Emotional Engagement and Efficacy for Student Engagement (*r* = .27). Mean values also indicated that participants had high levels of teaching engagement (ranging from 5.00 to 5.19 out of 6) and teaching self-efficacy (ranging from 6.71 to 7.10 out of 9). See Table 4 for a summary of descriptive statistics and bivariate correlations for all variables.

Multiple linear regression analyses (see Table 5) revealed that Efficacy for Student Engagement positively and significantly predicted Social Engagement: Students (β= .35) and Social Engagement: Colleagues (β= .17). Efficacy for Classroom Management positively and significantly predicted Emotional Engagement (β= .19), Social Engagement: Students (β= .16), and Social Engagement: Colleagues (β= .16). Finally, Efficacy for Instructional Strategies positively and significantly predicted only Cognitive Engagement (β= .47). Moreover, R-squared values indicated that linear combination of the subscales of self-efficacy accounted the largest variance in cognitive engagement (29%) and Social Engagement: Students (26%). About 10% of the variability in Emotional Engagement and 12% of the variance in Social Engagement: Colleagues were also accounted for by sub-dimensions of self-efficacy.

**Discussion**

In this study, we translated the Engaged Teacher Scale from English into Turkish and validated the translated version with a sample of Turkish teachers. We specifically set out to determine (a) the extent to which a translated version of the ETS could act as a valid and reliable instrument for measuring Turkish teachers’ work engagement, and (b)how teaching self-efficacy was associated with teachers’ work engagement, which is considered as convergent validity evidence. The key contributions of this study are threefold. First, we confirmed that teacher engagement—previously tested in western, individualist, English-speaking settings—operates in a similar fashion in a more collectivist, non-western cultural setting. Second, we showed that the theoretically and empirically supported relationship with teaching self-efficacy was similar in the new context. Third, we laid the groundwork for further research in teacher engagement in a setting where little is known about levels and patterns of teachers’ motivation profiles.

***Turkish Teachers’ Work Engagement***

 The results of the first-order factor analysis supported the original 16-item and 4-factor structure of ETS for the ETS-TR with a Turkish sample. Additionally, findings of the second-order CFA suggested that teacher engagement in a Turkish context can be represented by a single superordinate factor, as well as four factors, similar to the original version of the scale. The ETS-TR was reliable, with analyses of the complete scale as well as the four subscales revealing high internal consistency.

When measuring teacher engagement, the ETS (and ETS-TR), has two important advantages over the most widely used work engagement scale (UWES, Schaufeli & Bakker, 2003). First, it is focused on the work life of teachers. That is, items of the ETS focus on teachers’ practices in the classroom and school whereas, in the UWES, items are more general and do not focus on specific features of a job. Moreover, the ETS-TR emerged as a superior measure for the Turkish context with statistical evidence for the factor structure being as strong as the original ETS.

Second, the ETS also includes the relatedness of teachers, which has not been measurable with existing work engagement measures. Namely, it considers teachers’ relationship with students’ and colleagues, which should not be ignored particularly when considering the complex and diverse influences of classroom and school climate on both teacher and student engagement (Klassen, Perry et al., 2012). For example, in Turkey, even in secondary schools, there tends to be one large staff room shared by all teachers. Therefore, they interact and form relationships with other teachers on a daily basis; it is sensible to expect that relatedness between colleagues would be an important part of work engagement. Therefore, by using the ETS-TR, we can gain a new perspective on Turkish teachers’ engagement with robust findings that include the important, and previously under-recognised, influences of their social context.

***Turkish Teachers’ Self-Efficacy***

 To provide evidence for the convergent validity of ETS-TR, we looked for the previously established positive relationship between teachers’ engagement and self-efficacy (Llorens, Schaufeli, Bakker, & Salanova, 2007; Simbula, Guglielmi, & Schaufeli, 2011; Skaalvik & Skaalvik, 2014). Results from multiple linear regression analyses revealed efficacy for classroom management was strongly related to emotional engagement and social engagement with both students and colleagues. This is not surprising given that classroom management is a social issue within a classroom and has been tied to emotions. For example, in validating the Teacher Emotions Scale, Frenzel et al. (2016) found that attending to the social context (e.g., current class of students) when asking questions on enjoyment, anger and anxiety was a meaningful way to measure teachers’ emotional experiences. Overall, our findings indicated that teachers who are engaged in their work reported a higher level of confidence in preventing disruptive behaviors and controlling unexpected events in the classroom.

 In terms of the social dimensions of engagement, our study suggests that teachers who report higher levels of confidence for engaging all students to participate were more likely to report a higher level of engagement for social interactions with students and colleagues. This may be a bidirectional relationship since the feedback (e.g., verbal persuasion; Bandura, 1997) that teachers may be receiving through social engagement may be an important source of high efficacy with respect to student engagement. Additionally, we found that teachers who had a higher level of concentration while teaching and a higher level of effort for successful teaching were more likely to score highly on using variety of instructional strategies in their teaching process. Our findings suggest that teacher engagement and self-efficacy are distinct but related constructs, as predicted in previous theoretical and empirical work.

**Limitations and Future Research**

 Similar to the English version of the ETS, we found strong psychometric properties of the ETS-TR along with some clear limitations. The participants were all working in two cities in Turkey, and were largely from middle school settings, and thus the sample offers only limited representativeness to other populations. That said, the ETS-TR now provides an avenue for researchers to begin conducting cross-country comparisons. We were not able to test the hierarchical nature of our data due to a limitation in identifying teachers’ schools. Future research would benefit from exploring teacher engagement as nested within schools and use multilevel analysis methods, particularly given the relationships found between collective efficacy and engagement. The data were collected at one time point and as a result do not take into account how engagement can fluctuate over time (e.g., Bakker & Bal, 2010). Since indications of convergent validity were limited by the chosen research design, future research with the ETS-TR would benefit from the inclusion of an objective measure such as the Classroom Assessment Scoring System (CLASS; Pianta & Hamre, 2009). The CLASS measures social and emotional components of teacher-student interactions which indeed may reveal an influence on teacher engagement – and specifically the social and emotional dimensions revealed through the ETS-TR.

**Implications and Conclusions**

 Understanding teacher engagement is an important step in improving teachers’ motivation and job satisfaction, and ultimately, a key step in improving educational outcomes for students. Engaged teachers are effective teachers (OECD, 2005), and if we can accurately measure teachers’ engagement, we can begin to understand the effects of teaching conditions and policies (and policy changes) on teacher engagement and effectiveness. Thus, the ETS-TR can be used for research and in practice to evaluate levels of teacher engagement. Since the ETS-TR has strong validity and reliability, it will be possible to obtain more accurate information about how teachers engage in teaching, which in turn contributes to our understanding about Turkish teachers’ occupational motivation. A key feature of the measure is that it can not only be used to evaluate broad teacher engagement, but also to assess individual facets of engagement, making it a useful measure for a wide range of circumstances. The ETS-TR can provide valuable information about teacher relatedness with students and colleagues, which has been ignored in existing teacher engagement research in Turkey (and in many other countries), as previous work engagement scales have not focused on this aspect of teaching. One possible use of the scale is for education authorities to consider how within-school relations influence teacher outcomes, and offer professional development programs for teachers based on improving social relations. In Turkey, as in many countries, more work can be done on improving the quality of teachers’ relationships with their colleagues. With this newly validated scale, the relationship between specific facets of teacher engagement and student engagement could be determined more accurately, thus providing avenues for interventions. The ETS-TR also has the potential for making international comparisons of teacher engagement, which may shed light on our understanding of whether cultural differences influence the facets of teacher engagement. The ETS-TR may also serve as an important tool for gaining information on teachers’ non-cognitive profiles during the teacher hiring processes.

 In conclusion, our findings provide support for the validity and reliability of the ETS-TR, paving the way for future use to assess Turkish teachers’ work engagement. There is a clear need for more studies to examine the validity of ETS-TR with more diverse samples. It was not surprising to find that our results support social engagement (with students and colleagues) given the collectivist culture of Turkey. By highlighting the role of relationships with students and colleagues as an important component of teacher engagement, we consider the ETS-TR to be a valid and holistic measure that can help capture the complex work life of teachers in a large and diverse country spanning Europe and Asia. Overall, we expect that this adapted scale can help researchers contribute to our understanding of Turkish teachers’ engagement and provide opportunities for further understanding of this important topic.

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**Appendices**

Appendix 1: *English and Turkish Items of the ETS*

|  |  |  |
| --- | --- | --- |
|  | English | Turkish |
| Name | Engaged Teacher Scale | Öğretmenler için Mesleğe Adanmışlık Ölçeği |
| Instructions | Below you will find a list of statements describing your experiences as a teacher. Please indicate your personal response to each of these statements by checking the number that best represents your answer. | Aşağıda öğretmenlik yaşantınızla ilgili bazı ifadelere yer verilmiştir. Lütfen her bir madde için sizi en iyi yansıtan ifadeyi işaretleyiniz. |
| Response Scale | 0: Never, 1: Rarely, 2: On occasion, 3: Sometimes, 4: Often, 5: Frequently, 6: Always | 0: Hiçbir Zaman, 1: Neredeyse Hiç, 2: Nadiren, 3: Bazen, 4: Sıklıkla, 5: Çoğunlukla, 6: Her Zaman |
| Items | 1. At school, I connect well with my colleagues.
2. I am excited about teaching.
3. In class, I show warmth to my students.
4. I try my hardest to perform well while teaching.
5. I feel happy while teaching.
6. In class, I am aware of my students’ feelings.
7. At school, I am committed to helping my colleagues.
8. While teaching, I really ―throw” myself into my work.
9. At school, I value the relationships I build with my colleagues.
10. I love teaching
11. While teaching I pay a lot of attention to my work.
12. At school, I care about the problems of my colleagues.
13. I find teaching fun.
14. In class, I care about the problems of my students.
15. While teaching, I work with intensity
16. In class, I am empathetic towards my students.
 | 1. Okulda, öğretmen arkadaşlarımla iyi iletişim kurarım.
2. Öğretim vermeyi heyecan verici buluyorum.
3. Sınıfta, öğrencilerime sıcak davranırım.
4. Öğretim verirken, başarılı olabilmek için elimden gelenin en iyisini yapmaya çalışırım.
5. Öğretim verirken, mutlu hissediyorum.
6. Sınıfta, öğrencilerimin duygularının farkındayımdır.
7. Okulda, öğretmen arkadaşlarıma yardım etmeyi görev bilirim.
8. Öğretim verirken, kendimi işime adarım.
9. Okulda, öğretmen arkadaşlarımla kurduğum ilişkiler benim için değerlidir.
10. Öğretmeyi çok seviyorum.
11. Öğretim verirken, bütün dikkatimi işime veririm.
12. Okulda, öğretmen arkadaşlarımın sorunlarıyla ilgilenirim.
13. Öğretim vermeyi eğlenceli buluyorum.
14. Sınıfta, öğrencilerimin sorunlarıyla ilgilenirim.
15. Öğretim yaparken, işime yoğunlaşırım
16. Sınıfta, öğrencilerimle empati kurarım
 |

Appendix 2*: Schematic representation of the first order CFA with standardized parameter coefficients*



Note. EE: Emotional Engagement, CE: Cognitive Engagement, SEC: Social Engagement -Colleagues, SES: Social Engagement – Students

Appendix 3*: Schematic representation of the second order CFA with standardized parameter coefficients.*

Note. EE: Emotional Engagement, CE: Cognitive Engagement, SEC: Social Engagement -Colleagues, SES: Social Engagement - Students

Table 1. Sample items and reliability for each subscaleof the original ETS

|  |  |  |
| --- | --- | --- |
| Factor/Subscale | Sample Item  | Cronbach Alpha  |
| Emotional Engagement | “I feel happy while teaching” | .87 |
| Cognitive engagement | “While teaching I pay a lot of attention to my work” | .84 |
| Social Engagement: Students | “In class, I am empathetic towards my students” | .83 |
| Social Engagement: Colleagues  | “At school, I value the relationships I build with my colleagues” | .79 |

Note: Each subscale consists of 4 items for a total measure of 16 items.

Table 2. Descriptive and reliability statistics of subscales with standardized parameter estimates obtained from the First- and Second-Order CFAs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Second-Order Factor | First-Order Factor/Item | γ | λ | *M* | *SD* | Cronbach Alpha |
| Teacher Engagement |  |  |  | 5.03 | .54 | .88 |
|  | Emotional Engagement | .62\* |  |  |  |  |
|  | Item 10 |  | .72\* |  |  |  |
|  | Item 2 |  | .83\* | 5.03 | .78 | .87 |
|  | Item 5 |  | .80\* |  |  |  |
|  | Item 13 |  | .82\* |  |  |  |
|  | Cognitive Engagement | .77\* |  |  |  |  |
|  | Item 11 |  | .74\* |  |  |  |
|  | Item 8 |  | .87\* | 5.16 | .65 | .87 |
|  | Item 15 |  | .89\* |  |  |  |
|  | Item 4 |  | .66\* |  |  |  |
|  | Social Engagement: Students | .67\* |  |  |  |  |
|  | Item 14 |  | .64\* |  |  |  |
|  | Item 16 |  | .78\* | 5.05 | .69 | .81 |
|  | Item 6 |  | .80\* |  |  |  |
|  | Item 3 |  | .67\* |  |  |  |
|  | Social Engagement: Colleagues | .52\* |  |  |  |  |
|  | Item 9 |  | .74\* |  |  |  |
|  | Item 7 |  | .79\* | 4.87 | .89 | .85 |
|  | Item 12 |  | .79\* |  |  |  |
|  | Item 1 |  | .76\* |  |  |  |

\**p*<.05

Table 3. Comparison of first-order and second-order models

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | *χ2* | *df* | *χ2/df* | *RMSEA* | *CFI* | *GFI* | *Model Comparison* | *Δ χ2* | *Δ df* |
| 1. First-Order CFA
 | 232.29 | 98 | 2.37 | .059 | .98 | .93 |  |  |  |
| 1. Second-Order CFA
 | 240.06 | 100 | 2.40 | .060 | .98 | .93 | 2 vs 1 | 7.77***ns*** | 2 |

Note: *ns* = nonsignificant, *p*<.01

Table 4. Descriptive statistics and bivariate correlations for ETS-TR and TSES

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *M* | *SD* | *2* | *3* | *4* | *5* | *6* | *7* |
| 1. Emotional Engagement
 | 5.00 | .80 | .22\* | .44\* | .36\* | .27\* | .30\* | .27\* |
| 1. Social Engagement: Colleagues
 | 5.00 | .88 |  | .35\* | .32\* | .32\* | .31\* | .28\* |
| 1. Cognitive Engagement
 | 5.19 | .63 |  |  | .43\* | .42\* | .37\* | .54\* |
| 1. Social Engagement: Students
 | 5.10 | .65 |  |  |  | .49\* | .42\* | .40\* |
| 1. Efficacy for Student Engagement
 | 6.71 | 1.00 |  |  |  |  | .64\* | .70\* |
| 1. Efficacy for Classroom Management
 | 6.99 | 1.11 |  |  |  |  |  | .63\* |
| 1. Efficacy for Instructional Strategies
 | 7.10 | 1.12 |  |  |  |  |  |  |

\**p*<.01Table 5. Multiple linear regression analyses for predicting subscales of ETS-TR

Table 5. Multiple linear regression analyses for predicting subscales of ETS-TR

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Emotional Engagement |   | Cognitive Engagement |  | Social Engagement: Students |  | Social Engagement: Colleagues |
|  | B | SE  | β |   | B | SE  | Β |   | B | SE | β |   | B | SE | β |
| Constant | 3.14\*\* | .36 |  |  | 2.90\*\* | .23 |  |  | 2.70\*\* | .25 |  |  | 2.72\*\* | .36 |  |
| Efficacy for Student Engagement | .08 | .07 | .09 |  | .05 | .05 | .08 |  | .23\*\* | .05 | .35\*\* |  | .15\* | .07 | .17\* |
| Efficacy for Classroom Management | .13\* | .06 | .19\* |  | .01 | .04 | .02 |  | .09\* | .04 | .16\* |  | .13\* | .06 | .16\* |
| Efficacy for Instructional Strategies | .06 | .06 | .08 |  | .26\*\* | .04 | .47\*\* |  | .03 | .04 | .05 |  | .05 | .07 | .06 |
| F | 10.77\*\* |  | 39.31\*\* |  |  | 32.99\*\* |  |  | 12.92\*\* |
| R2 |  | .10 |  |  |  | .29 |  |  |  | .26 |  |  |  | .12 |  |

\**p*<.05 \*\**p*<..01