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The role of teacher assessment literacy in job stress and job burnout in EFL contexts: a mixed-methods investigation

Afsheen Rezai^{1*}

*Correspondence:
afsheen.rezai@abru.ac.ir

¹ Department of Teaching
English and Linguistics, Ayatollah
Ozma Burojerdi University,
Burojerdi City 68571-14597,
Lorestan Province, Iran

Abstract

Reviewing the literature reveals that the role of teacher assessment literacy (TAL) in teacher job stress (TJS) and teacher job burnout (TJB) among English as foreign language (EFL) teachers in Iran has remained largely unexplored. As a result, this mixed-methods study investigated the association between TAL, TJS, and TJB in the Iranian EFL context. For the quantitative section, 413 EFL teachers, including 221 males and 192 females, were randomly selected. They completed the Teacher Assessment Literacy Questionnaire, the Teacher Job Stress Scale, and the Teacher Job Burnout Inventory, and the data was analyzed using structural equation modeling. For the qualitative part, 18 EFL teachers who joined the quantitative part participated in a focus group interview, and their responses were analyzed through a content analysis approach. Results indicated that TAL is a strong predictor of TJS and TJB. Specifically, the findings indicated that TAL was positively linked to all the sub-scales of TJS and TJB. Additionally, the complementary qualitative results yielded four themes: *TAL promotes job productivity*, *TAL raises teachers' social face*, *TAL enables teachers to manage the class efficiently*, and *TAL brings positive wash-back*. The findings suggest that TAL, TJS, and TJB should be incorporated in pre-service and in-service teacher training courses in EFL education.

Keywords: Teacher assessment literacy, Teacher job stress, Teacher job burnout, EFL teachers, A mixed-methods investigation

Introduction

One of the main duties of teachers is to assess the performance of students. Assessments have been a major factor in deciding students' academic success and showing disparities in their learning, allowing teachers to rate their levels of accomplishment (Xu & Brown, 2016). According to Plake (1993), teachers spend a considerable amount of time, up to 50%, on assessment-related activities. As highlighted by Fulcher (2021), to guarantee credible and dependable assessments, teachers should have an advanced level of assessment literacy. For this, a considerable part of professional development programs now concentrates on improving teacher assessment literacy (TAL) (DeLuca et al., 2016; Kremmel et al., 2020; Mansouri et al., 2021).

TAL is viewed as having a basic understanding of educational assessment and the ability to use that knowledge to measure student performance (Brookhart, 2011; Khodasheenas et al., 2023; Levi & Inbar-Lourie, 2020; Xu et al., 2016). Teachers must develop the right levels and types of TAL to help students reach higher levels of academic success (Coombe et al., 2020; Stiggins, 2010; Wang et al., 2023). Despite the convincing arguments for TAL, as stressed by DeLuca (2012) and Popham (2009), many teachers make assessment-related decisions without the necessary background or training. This is a major issue, as it can affect teacher-related constructs such as teacher job stress (TJS) and teacher job burnout (TJB), particularly for English foreign language (EFL) teachers.

TJS was characterized by Kyriacou (2001) as the negative emotions experienced by teachers in response to the demands of teaching. EFL teachers often experience high levels of TJS in their profession (Fathi et al., 2021; Kyriacou, 2001). In this regard, Piechurska-Kuciel (2011) points out that teaching is very demanding, requiring EFL teachers to have the right skills to manage job duties effectively. EFL teachers bear the majority of the stress caused by daily work activities and modern educational systems (Hepburn & Brown, 2001). On the other hand, TJB is “a syndrome characterized by emotional depletion, lack of personal achievement, detachment, and a decrease in enthusiasm and dedication, resulting in one’s dreams becoming unfulfilled” (Maslach, 1976, p. 1). Due to demanding job duties, EFL teachers often experience high levels of burnout (Fathi et al., 2021; Hiver & Dörnyei, 2017). While the literature indicates that the causes of TJS and TJB are usually rooted in educational contexts, such as inadequate support (Scott, 2019), work-related stress (Aflakseir & Nemati, 2018), student misbehavior (Aloe et al., 2014), interpersonal conflicts, and role ambiguity (Papastylianou et al., 2009), recent studies documented that they may be adversely affected by teaching and assessment skills (Herman et al., 2017; Mansouri et al., 2021; Schneider et al., 2020). Pastore and Andrade (2019) have broadened TAL, claiming that it should embrace appraisal knowledge, evaluation conduct, and socio-emotional proficiency to ensure successful implementation of assessments. As noted by Abell and Siegel (2011), TAL, functioning as a personal resource at the knowledge and skills level, may support teachers in making accurate conclusions about student learning and give direction for instruction, which can increase their effectiveness in teaching. Conversely, inadequate TAL could lower the dependability and validity of teaching, resulting in inappropriate and unwise educational decisions (Wang et al., 2022; Xu & Brown, 2016), which might have an adverse influence on TJB and TJS.

After conducting a review of the literature, it was revealed that no research has looked into the role of TAL in TJS and TJB among EFL teachers in Iran. Thus, the present study probed into the role of TAL in TJS and TJB among EFL teachers in Iran. Examining the interconnections between these constructs is important for two reasons. Firstly, assessments are used to evaluate educational institutions, teachers’ quality, and students’ learning progress. Secondly, assessments are used to provide feedback to various stakeholders, such as teachers, administrators, parents, governments, and students, indicating the areas of mastery and room for improvement. Each of these factors can have a major effect on TJS and TJB, which can then influence their classroom practices. Additionally, this study’s findings can help to expand the knowledge of the interconnections between TAL, TJS, and TJB among EFL teachers, adding to the existing literature on

the subject. Ultimately, the study's focus on the EFL context of Iran adds to its significance. Each educational context has its own unique characteristics and challenges, and understanding the relationship between TAL, TJS, and TJB within this specific context can inform policy and practice. The findings of this study can guide the development of targeted interventions and professional development programs to enhance assessment literacy and improve the well-being of EFL teachers in Iran.

Literature review

Teacher assessment literacy in L2 education

Scholars in the L2 education have shown interest in TAL over the last few decades and provided different interpretations for this construct (Inbar-Lourie, 2013, 2017; Khodashenas et al., 2023; O'Loughlin, 2013; Pastore et al., 2019). Davies (2008) defined TAL as knowledge of language, context, principles of language assessment and measurement, and training in assessment skills. Furthermore, O'Loughlin (2013) viewed TAL as a range of skills concerning test production, test score interpretation and use, and test evaluation along with developing a critical understanding of assessment's roles and functions in society. Recently, Mohammadkhah et al. (2022) found that TAL comprises four major components, including: assessment in language pedagogy, assessment purposes and principles, technical skills, and scoring and interpretation.

The current understanding of TAL has evolved into a socially contextual and active practice (Wang et al., 2023; Willis et al. (2013)), where teachers collaborate with students to design effective assessment strategies to aid student learning goals. Educational researchers, such as Looney et al. (2018) and Xu and Brown (2016), stressed that TAL is a crucial element in teacher identity. In other words, the new outlook on TAL implies that it is not a mere accumulation of knowledge and skills in assessment, but it is a continuously changing construct that includes personal, social, and contextual aspects. Recent studies conducted by DeLuca et al. (2016), Looney et al. (2018), Pastore and Andrade (2019), and Xu and Brown (2016) also support this definition of TAL.

Various models have emerged over the recent years, emphasizing the significance of personal characteristics in shaping TAL. For example, Xu and Brown's (2016) model integrates assessment knowledge, teachers' beliefs and attitudes toward assessment. Pastore and Andrade (2019) also characterized TAL as a dynamic aspect of teachers' identity and proposed a similar model, incorporating socio-emotional aspects of evaluation. Similarly, Looney et al.'s (2018) model of TAL included the emotional connection that teachers have to assessment, along with assessment beliefs, knowledge, and confidence. Finally, DeLuca et al.'s (2016) model depicted TAL as a multidimensional construct, forming from teachers' learning experiences, context, and personal dispositions that shape theoretical orientations and assessment philosophies in the classroom. Given this, it is of paramount importance to examine if TAL is interconnected with teacher-traits like TJS and TJB.

Teacher job stress in L2 education

One of teacher-related constructs that may be affected TAL is TJS. It is an extensively studied topic since the 1976 when Selye first introduced it. The term "stress," which refers to the interplay between an individual and their environment, has become

commonplace in the social sciences (Antoniou et al., 2003; Sadeghi & Sa'adatpourvahid, 2016). As noted by Kyriacou (2000), research on TJS had become plentiful by the end of the 1990s. TJS refers to negative emotions, such as tension, anger, depression, anxiety or frustration that teachers primarily experience due to unique features of their profession (Prilleltensky et al., 2016; Zhao et al., 2022).

The level of stress experienced by EFL teachers is a complex psychological state that can be influenced by a variety of factors. These variables can vary from person to person and may include “personal, psychological, and contextual factors such as age, marital status, teaching experience, gender, physical classroom condition, student characteristics, relationships with administrators and parents, the educational setting, grade level, family demands, financial status, and curriculum changes” (Sadeghi & Sa'adatpourvahid, 2016, p. 77). Travers (2001) notes that negative working conditions can have a detrimental effect on TJS. He observes that various factors like poor school amenities, unattractive working environment, unsatisfactory physical settings, large class sizes, and high levels of noise can lead to TJS. Based on the study conducted by Forlin in 2001 analyzing 72 articles published between 1980 to 1993, 24 concerns were found that can adversely affect TJS. They were of three clusters: administrative, classroom-based, and personal. Additionally, Manthei and Solman (1988) supposed a model of TJS which include diverse factors: pupil recalcitrance, poor remuneration, curriculum demands, low professional recognition, poor working environment, community antagonism and time demands. This model was used as the framework to measure TJS among the EFL teachers in the current study.

Teacher job burnout in L2 education

In 1974, an American psychiatrist named Freudenberg coined the term job burnout to describe the feelings of exhaustion and disengagement that human service workers experience when exposed to prolonged and intense workplace stress. According to Freudenberg's observations, “it is an individual's inability to cope with work demands due to a lack of resources, resulting in a loss of motivation to work. In a sense, job burnout is described as “a situation in which one loses an idea—the incentive that motivates the person.” (Maslach et al., 2001, p. 161). According to Maslach et al. (2001), the cause of job burnout was related to an individual's work situation rather than their personal experience. Emotionally drained individuals who did not see any progress toward their goals or helping others experienced job burnout (Khezerlou, 2017; Leiter & Maslach, 2005). In sum, job burnout is viewed as a personal stress experience resulting from social relationships and an individual's self-perception and perception of others.

In the educational contexts, TJB is a consequence of long-term stress encountered in the occupational setting that triggers a decrease in overall well-being (Khezerlou, 2017; Maslach et al., 2012; Pressley, 2021). Teachers may leave their profession or experience job burnout if their coping mechanisms fail to handle these demands, resulting in increased stress levels that endanger their mental and physical health (Haberman, 2004). However, social psychological models of TJB, focus on the situational factors that lead to it (Brenninkmeijer et al., 2001). Maslach and Jackson's model (1981) is used to describe these factors and is characterized by three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment.

The first aspect is related to feeling emotionally exhausted, resulting in negative emotions during teaching due to a lack of emotional resources. Teachers experiencing this phenomenon may feel they have reached the limit of their energy levels and can no longer carry on (Fivesa et al., 2007; Jeon et al., 2022). The second aspect is characterized by a shift in attitude toward students and the school community, manifesting in increased cynicism and reduced interaction in a dehumanizing and impersonal manner (Khezerlou, 2017). The final aspect refers to a decrease in one's work-related confidence and satisfaction with their accomplishments. TJB may prompt teachers to view their work achievements in a negative light, provide minimal information, feel that their profession is no longer significant or fulfilling, and develop discontent with teaching (Skaalvik & Skaalvik, 2010). Consequently, this can create personal stress, reduced job performance, poor health, family conflicts, a desire to quit their job, and overall failure (Fivesa et al., 2007; Zhao et al., 2022).

The role of TAL in TJS and TJB in L2 education

Despite the increasing research on TAL, limited studies have been conducted to explore the role of TAL in teacher-related constructs, such as TJS and TJB, especially pertaining to the EFL context. Pishghadam et al. (2014) explored the relationship between teacher's assessment beliefs and job burnout levels. Their findings documented a significant relationship between teachers' assessment-related beliefs and the three dimensions of burnout (e.g., emotional exhaustion, depersonalization and reduced personal accomplishment). Another research by Zolfaghari and Ashraf (2015) investigated the association between TAL, teaching experience, and age among Iranian EFL teachers. According to their findings, there was a positive, significant correlation between the participants' TAL and teaching experience and age. A study by Levy-Vered and Nasser-Abu Alhija in 2015 used a structural equation modeling to investigate the relationship between TAL, assessment training, self-efficacy, and conceptions of assessment. They discovered a positive association between the constructs involved. Similarly, Hazim Jawad conducted a study in 2020 on Iraqi EFL teachers' attitudes and practices related to formative assessment. The study showed that the teachers had positive attitudes toward formative assessment and were keen to include it in their teaching practices. Besides, in a cross-sectional study, Schneider and colleagues (2020) investigated the correlation between personality traits and TAL among student teachers in Canada and Germany. The results revealed that self-efficacy was a significant predictor of TAL for the participants in both contexts. In 2022, Farangi and Rashidi looked into the connection between the conceptions of assessment held by Iranian EFL teachers and their self-efficacy. The results uncovered a positive and significant correlation between the variables investigated. Recently, in 2023, Rastegri and Zarei explored the link between various components of TAL and job demands such as burnout and work engagement in Iran. The findings disclosed that aspects of test construction, administering, rating, and interpretation, as well as psychometric properties and statistical use and interpretation, were significant predictors of burnout. Additionally, feedback during assessment, alternative assessment methods, and ethical and cultural considerations were significant predictors of work engagement.

As may be inferred from the research conducted up to this point, there were two notable limitations with them. Firstly, no studies have investigated the role of TAL in TJS, and

TJB among Iranian EFL teachers. Secondly, there has been a scarcity of mixed-method studies that shed light on the interconnection between TAL, TJS, and TJB through both quantitative and qualitative lenses. These shortcomings were the main reasons why the researchers conducted this mixed-methods research to reveal the interconnection between TAL, TJS, and TJB in the EFL context of Iran. To meet this purpose, the following research questions (RQ) were formulated:

RQ1: Does teacher assessment literacy play a positive role in teacher job stress and teacher job burnout among Iranian EFL teachers?

RQ2: In what ways teacher assessment literacy affects teacher job stress and teacher job burnout among Iranian EFL teachers?

Method

Research design

This research employed a mixed-methods design referred to as 'sequential explanatory' which incorporated both quantitative and qualitative data. This approach was chosen to achieve triangulation, which involves the use of multiple methods and data to strengthen the reliability and credibility of the research results (Riazi, 2016). Gass and Mackey (2016) also stress the significance of triangulation in research to enhance the overall quality of the findings. Overall, this study adopted a mixed-methods design to disclose the role of TAL in TJS, and TJB in the Iranian setting.

Participants

In the fall of 2022, this study was conducted in Khorramabad City and Borujerd City, Iran. Using a random sampling method, 413 teachers were randomly chosen to take part in the study. As underscored by Riazi (2016), the random sampling method is a statistical technique used to participants from a larger population in a way that each member of the population has an equal probability of being chosen. The primary criteria for selection were the teachers' availability and their employment in state schools. The participants included both males ($n=221$) and females ($n=192$) with ages ranging from 26 to 55 years old. They had varying levels of education, including a B.A. ($n=256$), M.A. ($n=145$), and Ph.D. ($n=12$). Their teaching experience varied from 3 to 30 years. For the qualitative part, the researchers randomly chose 18 EFL teachers who completed the questionnaires. They were composed of both males ($n=10$) and females ($n=8$) ranging in age from 27 to 53 years old, with 10 having a B.A. degree, 6 having an M.A. degree, and 2 having a Ph.D. degree. The first researcher got in touch with the Deputy Education offices in both Khorramabad City and Borujerd City to seek permission to approach prospective participants. He gave a detailed explanation of the study's goals and the education deputies agreed to share contact details of the EFL teachers who were currently employed in the regions. After that, the researchers approached each EFL teacher, introduced themselves, and described the study in detail. Later, the researchers requested their willingness to participate in the research, and those who agreed to join received a Persian consent form through email, Eitaa App, and Telegram App. It is worth mentioning that the researchers explained to the participants that their involvement would be voluntary, and they had the right to withdraw from the study anytime. Additionally, they assured the EFL teachers that all their responses would remain strictly confidential and

would be communicated about the final outcomes of the research. The study was overseen and approved by the Ethics Committee of Research from Ayatollah Ozma Borujerdi University (b/58c/258).

Instruments

To obtain the necessary data, the researchers utilized three different data collection tools. The first data collection tool was the Teacher Assessment Literacy Questionnaire (TALQ), developed and validated by Mohammadkhah et al. (2022). The researchers evaluated TAL of the participants through the use of TALQ, which comprised of 26 questions measuring four sub-scales: Assessment in language pedagogy (e.g., "I am skilled/competent in knowing how assessments can influence the design of a language course or curriculum."), assessment purposes and principles (e.g., "I am skilled/competent in providing individualized learning opportunities to meets students' different needs."), technical skills (e.g., "I am skilled/competent in selecting appropriate rating scales depending on the purpose of my assessment."), and scoring and interpretation (e.g., "I am skilled/competent in communicating assessment purposes and results to students."). The participants rated their level of agreement on a five-point Likert scale, which ranged from one (strongly disagree) to five (strongly agree).

The second data collection tool was the Teacher Job Stress Scale (TJSS), which was created and validated by Manthei and Solman in 1988, to gauge the TJS of the participants. The TJSS was made up of 24 statements that evaluated seven sub-scales, including pupil recalcitrance (e.g., "I maintain class discipline with difficult cases."), poor remuneration (e.g., "Salary does not cover the cost of living expenses."), curriculum demands (e.g., "There is lack of direction in curriculum change."), low professional recognition (e.g., "I have lack of encouragement to be involved in effective decision-making."), working environment ("The geographical surroundings are unpleasant."), community antagonism ("There is lack of respect in society for schools and teachers."), and time demands ("There is lack of time for preparation, marking and/or organizations."). The TJSS items were scored on a five-point Likert scale ranging from one (strongly disagree) to five (strongly agree).

The Teacher Job Burnout Inventory (TJBI), a tool to measure TJB among the participants, was employed as the third data collection tool. Maslach et al. (1996) developed and validated the TJBI, which consisted of 22 items assessing three sub-scales: namely emotional exhaustion (e.g., "I feel fatigued when I get up in the morning and have to face another day on the job."), depersonalization (e.g., "I don't really care what happens to some students."), and personal achievement (e.g., "I have accomplished many worthwhile things in this job."). The participants rated the items on a five-point Likert scale, with one indicating strong disagreement and five indicating strong agreement. Prior to the study, the researchers verified the reliability and validity of the TJBI, along with the TALQ and TJSS, and their findings are discussed in the subsequent section.

The fourth instrument was a focus group interview. The researchers organized a focus-group interview to cross-check and investigate the reasons behind how and why the participants believed that TAL linked with TJS and TJB. It involved 18 participants who took part in the quantitative phase, and they were selected on a voluntary basis and gave informed consent to attend the event. The researchers arranged a suitable time and

comfortable venue, and the interview was conducted in Farsi (The participants' mother tongue) to help them express their views with ease. The focus group interview revolved around this question: *Do you think that assessment literacy affect your job stress and job burnout? If yes, how?* It lasted for two hours and was audio-recorded with the participants' permission. During the interview, the first researcher greeted and welcomed the participants and explained the study's objectives, encouraging them to provide their perspectives on the links between TAL, TJS, and TJB. After the focus group interview, the researchers hired a professional translator to convert the participants' conversations into English.

Data collection procedures

To conduct the study, the researchers followed several steps. Firstly, they hired two professional translators to translate the questionnaires into Persian. Following this, the Persian versions of the questionnaires were reviewed for face and content validity by two professors in applied linguistics at Tehran University. Corrections in terms of language and content were made based on their feedback. The questionnaires were then administered to a group of 35 EFL teachers to test their reliability. The Cronbach Alpha results were 0.79 for TJB1, 0.92 for TALQ, and 0.83 for TJSS. Secondly, prior to distributing the questionnaires, the researchers communicated with the participants through email, Eitaa App, and Telegram App to explain the study's objectives and the significance of their input. The Persian summaries were provided to the participants to clearly explain AL, TJS, and TJB. Subsequently, the questionnaires were disseminated using Google Forms and the participants were allowed to use their personal devices to complete them. The researchers were available to answer any questions, and provided clarification over the phone in cases of confusion. Ultimately, the participants' responses were compiled into a database for future analysis by the researchers. Upon completion the quantitative part, the researchers conducted the focus group interview.

Data analysis procedures

The researchers performed several steps to analyze the gathered quantitative data. They began by examining the reliability of the instruments using Cronbach's alpha and measuring their validity through experts' judgment strategy. Next, they checked the normality distribution of the data through a Kolmogorov–Smirnov test. They then calculated descriptive statistics such as the mean (M) and standard deviation (SD). Lastly, they analyzed the data using the CFA and SEM with LISREL 8.80. This involved validating all the latent variables with CFA prior to testing a structural model. SEM was used to confirm the proposed structural theory in a confirmatory hypothesis-testing approach (Schreiber et al., 2006).

In relation to the qualitative data, the responses provided by the EFL teachers were analyzed using a content analysis method. This method, suggested by Strauss and Corbin (1998), consists of three phases: open coding, axial coding, and selective coding. In the initial stage, the first researcher read and re-read the participants' responses to gain a thorough comprehension of the data. He then started coding the responses, focusing on concepts related to the research topic and continued until no new themes were discerned, ensuring consistency and significance among codes. As

the coding process was not linear (Glaser, 2011), axial coding was done concurrently with open coding. At this stage, the first researcher compared existing codes to identify if there were any links between them. In the final phase of selective coding, he pinpointed the most frequently occurring themes by consolidating and merging the codes. He specified the recurring themes along with the relevant excerpts (Table 1). The researchers took measures to evaluate the reliability and validity of their findings. To assess reliability, two code analysts were enlisted to analyze the data independently and their level of agreement was calculated using inter-rater reliability. The results yielded a score of $\alpha = 0.84$, indicating high reliability for this research. To ensure validity, a member checking technique was utilized, involving six EFL teachers being asked to verify whether the themes and excerpts extracted accurately reflected their intended meanings. The results disclosed a strong agreement between the extracted themes and excerpts and the EFL teachers' intended meanings, confirming the study's validity.

Quantitative results

The first research question examined if the EFL teachers' TAL was significantly associated with TJS and TJB in Iran. This section provides a comprehensive overview of the statistical techniques used to answer this question. The descriptive statistics for each instrument and its sub-scales are outlined in Table 1.

As Table 1 reveals, the Assessment in language pedagogy had the highest mean score ($M = 24.237$, $SD = 6.860$) in TAL. the Pupil recalcitrance had the greatest mean value ($M = 13.600$, $SD = 3.662$) among the sub-scales of TJS. Additionally, the Depersonalization had the highest mean value ($M = 27.174$, $SD = 6.800$) in regards to TJB.

Table 2 displays the outcomes of utilizing the Kolmogorov–Smirnov test to examine the normality of the collected data.

Table 1 The outcomes of the analysis based on descriptive statistics

	N	Min	Max	M	S.D
Assessment in Language Pedagogy	413	8	32	24.237	6.860
Assessment Purposes and Principles	413	5	20	16.077	3.945
Technical Skills	413	7	28	22.194	5.097
Scoring and Interpretation	413	6	24	19.225	4.397
TAL	413	30	104	81.734	18.028
Pupil recalcitrance	413	4	20	13.600	3.662
Poor remuneration	413	3	15	9.722	3.024
Curriculum demands	413	3	15	10.051	3.114
Low professional recognition	413	6	20	13.860	3.519
Working environment	413	3	15	10.298	2.997
Community antagonism	413	3	15	10.663	3.103
Time demands	413	3	15	10.056	2.776
TJS	413	28	115	78.249	16.794
Emotional exhaustion	413	7	35	23.465	6.469
Depersonalization	413	8	40	27.174	6.800
Personal achievement	413	12	34	25.864	3.816
TJB	413	38	103	76.504	13.554

Table 2 Results of the Kolmogorov–Smirnov test

	Kolmogorov–Smirnov Z	Asymp. Sig. (2-tailed)
Assessment in Language Pedagogy	1.034	0.235
Assessment Purposes and Principles	1.338	0.056
Technical Skills	1.153	0.140
Scoring and Interpretation	1.222	0.101
TAL	1.013	0.256
Pupil recalcitrance	0.802	0.541
Poor remuneration	1.133	0.154
Curriculum demands	0.918	0.368
Low professional recognition	1.282	0.075
Working environment	1.268	0.080
Community antagonism	1.352	0.052
Time demands	1.219	0.120
TJS	0.896	0.398
Emotional exhaustion	0.642	0.804
Depersonalization	0.980	0.292
Personal achievement	1.004	0.266
TJB	0.691	0.726

Table 3 Model Fit Indices (Model 1)

Fitting indexes	χ^2	df	χ^2/df	RMSEA	GFI	NFI	CFI
Cut value			> 3	> 0.1	> 0.9	> 0.9	> 0.9
	217.12	75	2.895	0.068	0.941	0.956	0.931

It was determined that the parametric techniques were suitable for the data since Table 2 disclosed that the data had a normal distribution. The LISREL 8.80 statistical package was used to carry out CFA and SEM to investigate the structural connections between the variables of TJS and TJP with TAL. To assess the appropriateness of the model, various indices such as chi-square magnitude, root mean squared error of approximation (RMSEA), comparative fit index (CFI) and normed fit index (NFI) were employed. As Jöreskog and Sörbom (1993) note, the chi-square/df ratio should be less than three, chi-square should be non-significant, RMSEA should be less than 0.1, and the cut-off values for NFI, GFI and CFI should exceed 0.90 so as to determine the model fit indices.

The results of Model 2, as shown in Table 3, report that all of the model fit indices are satisfactory. These indices include the chi-square/df ratio of 2.895, RMSEA of 0.068, GFI of 0.941, NFI of 0.956, and CFI of 0.931.

Figures 1 and 2 display the connections between the variables, with evidence showing that TJS and TJB have a meaningful connection with TAL. Notably, the influence of TJS ($\beta = 0.79$, $t = 25.43$) and TJB ($\beta = 0.63$, $t = 14.28$) on TAL was found to be significant. Model 2 demonstrated satisfactory results for model fit indices as indicated in Table 4, which has a chi-square/df ratio of 2.989, a RMSEA of 0.069, a GFI of 0.923, an NFI of 0.952, and a CFI of 0.931.

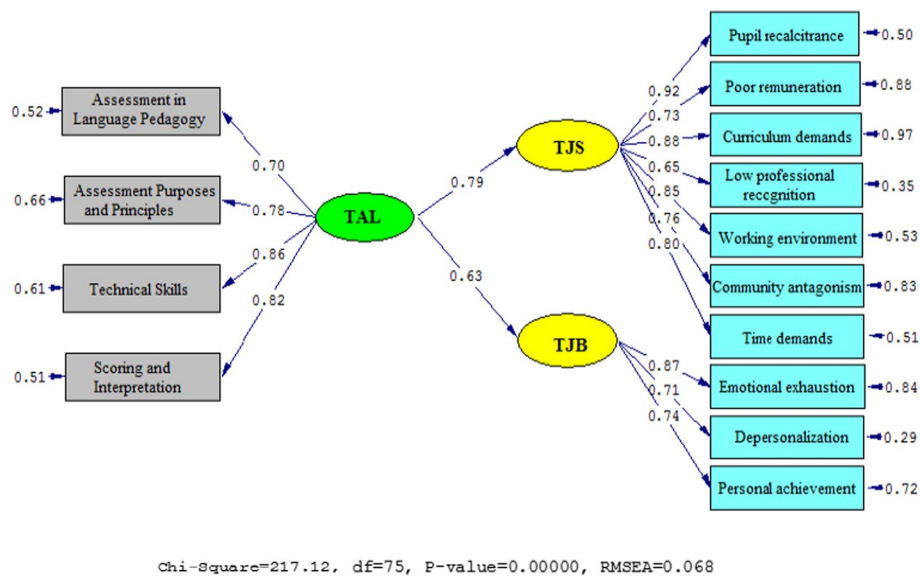


Fig. 1 An Illustration of the Values of Path Coefficients for TAL and TJS with TJB in a Symbolic Format (Model 1)

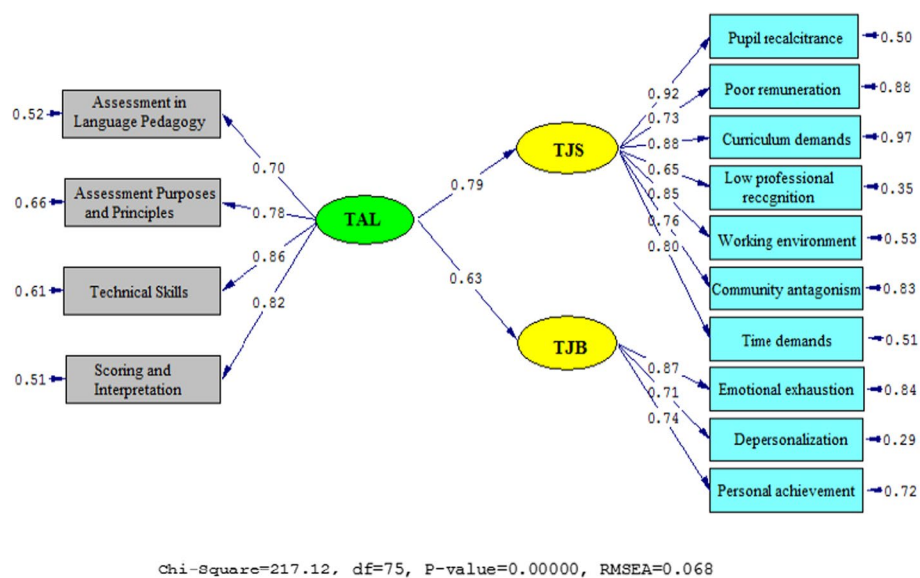


Fig. 2 T Significance Values for Path Coefficients (Model 1)

Table 4 Model Fit Indices (Model 2)

Fitting indexes	χ^2	df	χ^2/df	RMSEA	GFI	NFI	CFI
Cut value			< 3	0.1 >	> 0.9	> 0.9	> 0.9
	3338.68	1117	2.989	0.069	0.923	0.952	0.931

Figures 3 and 4 present Model 2, which displays the visual representation of the path coefficient values for the connection between TAL and the components of TJS and TJB. The effects of TAL on TJS sub-scales are demonstrated as follows: TAL on the pupil

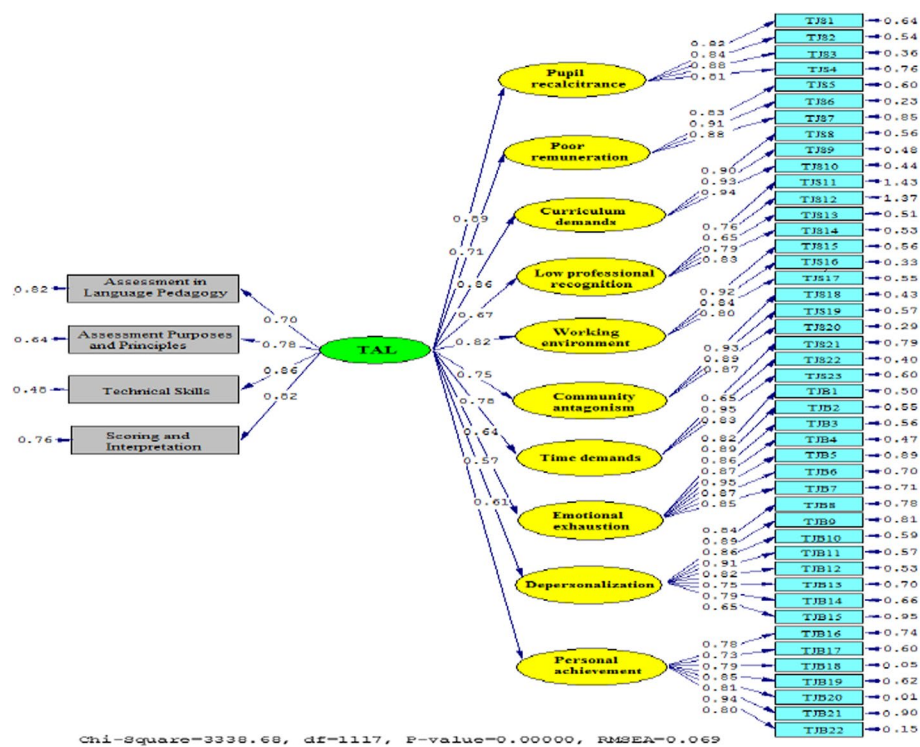


Fig. 3 An Illustration of the Values of Path Coefficients for TAL and TJS with TJB in a Symbolic Format (Model 2)

recalcitrance ($\beta = 0.89$, $t = 38.76$), TAL on the poor remuneration ($\beta = 0.71$, $t = 23.45$), TAL on the curriculum demands ($\beta = 0.86$, $t = 35.56$), TAL on the low professional recognition ($\beta = 0.67$, $t = 18.87$), TAL on the working environment ($\beta = 0.82$, $t = 33.55$), TAL on the community antagonism ($\beta = 0.75$, $t = 26.53$), and TAL on the time demands ($\beta = 0.64$, $t = 27.18$). Additionally, the influence of TAL on the all sub-scales of TJB, including the emotional exhaustion ($\beta = 0.64$, $t = 16.84$), the depersonalization ($\beta = 0.57$, $t = 13.67$), and the self-assessment purposes and principles ($\beta = 0.61$, $t = 15.72$) are also shown.

Table 5 demonstrates a strong correlation between various components of TJS, such as the pupil misbehavior, inadequate compensation, curriculum requirements, lack of professional acknowledgment, work atmosphere, community opposition, and time constraints, and TAL (ranging from 0.67 to 0.89, $p < 0.01$). Additionally, TAL was associated with the sub-scales of TJB, including the emotional exhaustion, depersonalization, and personal accomplishment, with varying degrees of correlation (ranging from 0.57 to 0.64, $p < 0.01$).

Qualitative results

The second research question investigated in what ways the EFL teachers' AL affected TJS and TJB in Iran. The results of the content analysis yielded four overarching themes: *TAL promotes job productivity*, *TAL raises teachers' social face*, *TAL enables teachers to manage the class efficiently*, and *TAL brings positive wash-back*.

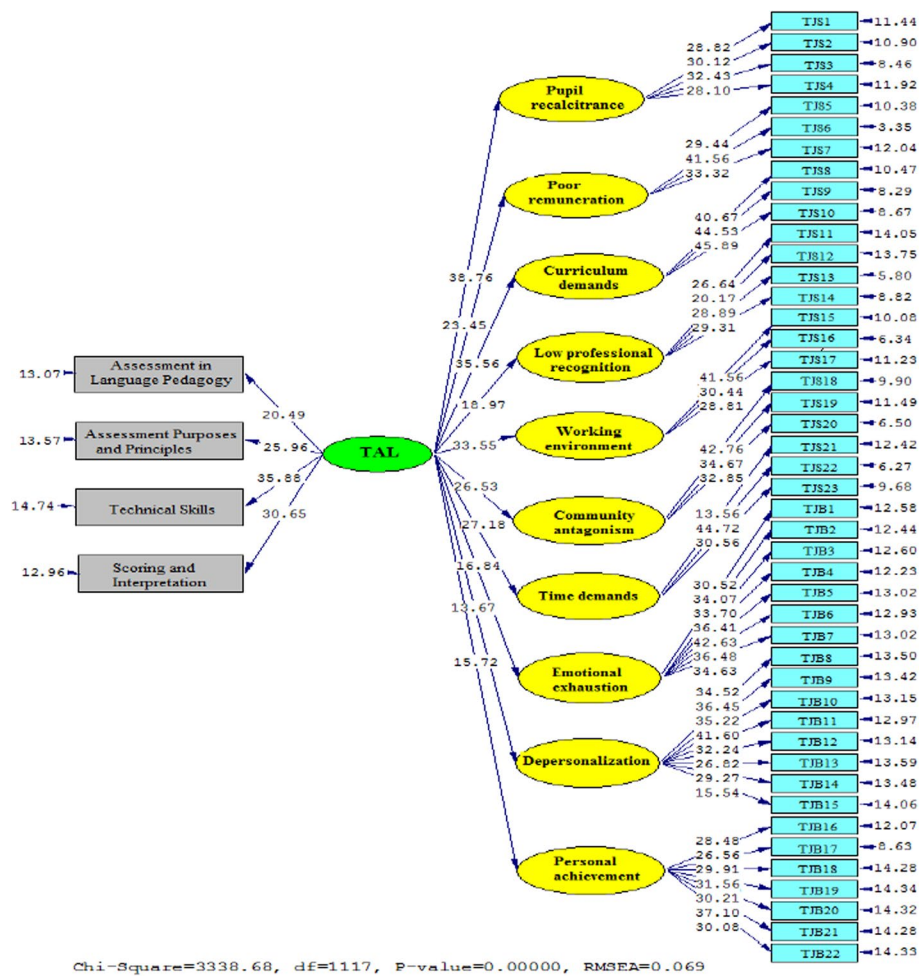


Fig. 4 T Significance Values for Path Coefficients (Model 2)

Table 5 Results of Correlation between TAL with the Sub-scales of TJS and TJB

Paths	Path coefficient	T Statistics	Test results		
TAL →		Pupil recalcitrance	0.89	38.76	Supported
TAL →		Poor remuneration	0.71	23.45	Supported
TAL →		Curriculum demands	0.86	35.56	Supported
TAL →		Low professional recognition	0.67	18.97	Supported
TAL →		Working environment	0.82	33.55	Supported
TAL →		Community antagonism	0.75	26.53	Supported
TAL →		Time demands	0.78	27.18	Supported
TAL →		Emotional exhaustion	0.64	16.84	Supported
TAL →		Depersonalization	0.57	13.67	Supported
TAL →		Personal achievement	0.61	15.72	Supported

** Correlation is significant at the 0.01 level (2 tailed)

The first theme emerged from the participants' words was *TAL promotes job productivity*. According to the participants, the utilization of TAL is very crucial in improving their work productivity. To illustrate this point, a participant mentioned:

Two crucial aspects of education are teaching and assessment literacy, which work together like the two wings of a bird. In order for the bird of education to achieve its goal, using both wings is essential. In other words, to be productive in my job, I must have a thorough understanding of the necessary strategies to create effective assessments. As my job productivity improves, I experience less job-related stress, and I have a passion for teaching English.

In accordance with the previous statement, one of the EFL teachers stated:

The attainment of high-quality second language education is dependent on the level of teaching and assessment literacy of EFL teachers. My proficiency in assessment literacy enables me to perform my job responsibilities effectively. This includes the ability to create assessment practices that align with the school's curriculum table of specifications. Consequently, I experience less stress and am motivated to continue working in my current position.

The second most common theme identified was *TAL raises teachers' social face*. According to the EFL teachers, TAL helps to enhance their social face. One of the participants expressed this view by stating:

If an EFL teacher seeks social respect, they are in need of high assessment literacy. Because when I design and administer quality assessment practices, the school principal, my students and their parents respect me as a proficient English teacher. This makes me enjoy my job.

According to the previous statement, the EFL teachers emphasized that possessing a strong understanding of assessment gives them a feeling of personal accomplishment. One EFL teacher in particular stated:

Possessing knowledge and expertise in assessment principles and procedures has given me a sense of achievement in my profession. My ability to create, implement, evaluate, and analyze effective assessment tasks has earned me recognition and admiration from others, as I am able to perform my job responsibilities with excellence.

The third theme extracted from the participants' words was *TAL enables teachers to manage the class efficiently*. The majority of EFL teachers emphasized the importance of TAL for class management. They highlighted that by implementing quality assessment practices, they can efficiently manage their classes. In this respect, one of the EFL teachers who recently started teaching English quoted:

To manage the classroom, we have to use tests. I mean that when the students are aware that they have to take some tests after the instruction, and the results are crucial for their success and failure in the course, they pay attention to the materials and avoid being noisy and distracting. I really appreciate tests as they help me control students.

The last theme uncovered from the participants' responses was *TAL brings positive wash-back*. The EFL teachers posited that having a solid understanding of assessment leads to a beneficial wash-back. This is evident in the following extract.

To avoid feeling anxious in the workplace, I had to create a positive wash-back effect. In other words, in order to positively influence my teaching and student learning and not worry about the outcomes, I had to either make or select high-quality assessment practices. Since the fundamental aspects of quality assessment practices include reliability, validity, authenticity, and practicality, I cannot achieve this objective unless I am familiar with the essentials of assessment.

In agreement with the previous statement, one of the EFL teachers remarked:

In order to promote positive wash-back, it is important for EFL teachers to have a strong understanding of assessment literacy. This includes being able to effectively guide and influence the learning process, as well as providing constructive feedback on student test performances. By administering tests in a thoughtful and intentional manner, teachers can have a positive impact on their students' overall learning outcomes.

Based on the preceding statements, it can be understood that the participants emphasized the TAL's capacity to predict their TJS and TJB accurately. The outcomes disclosed that the EFL teachers who were well-versed in assessment principles and techniques were experienced lower levels of TJS and TJB (Table 6).

Discussion

This study examined the role of TAL in EFL teachers and TJS and TJB in Iran. The results disclosed that TAL had a positive effect on TJS and TJB. The results documented that the EFL teachers who possessed TAL experienced less TJS and were less likely to quit their job. The findings indicated that the TAL was positively associated with all the sub-scales of TJS, including the Pupil recalcitrance, Poor remuneration, Curriculum, Low professional recognition, Working environment, Community antagonism, and Time demands. Additionally, the findings revealed that influence of TAL on the Emotional exhaustion, Depersonalization, and Self-assessment purposes and principles were significant. Additionally, the results of the content analysis yielded four themes: *TAL promotes job productivity*, *TAL raises teachers' social face*, *TAL enables teachers to manage the class efficiently*, and *TAL brings positive wash-back*. Along with the results of the study, it may be argued that the EFL teachers who knew how to assess their students and make informed decisions about their future might be better equipped to manage stress and tension in their profession, and were less likely to experience TJB.

The study's findings align with those of Pishghadam et al. (2014), who found a significant correlation between job burnout and teachers' assessment-related beliefs. Similarly, the results support Zolfaghari and Ashraf's (2015) discovery of a positive relationship

Table 6 The Frequency of the Extracted Themes

Themes	Frequency
Theme 1: TAL promotes job productivity	42
Theme 2: TAL raises teachers' social face	32
Theme 3: TAL enables teachers to manage the class efficiently	26
Theme 4: TAL brings positive wash-back	19

between TAL and teaching experience and age in Iran. Levy-Vered and Nasser-Abu Alhija (2015) also found a positive association between TAL and assessment training, self-efficacy, and conceptions of assessment, which is consistent with the current study's results. Additionally, along with the findings of this study, Hazim Jawad (2020) discovered that teachers had positive attitudes toward formative assessment and wanted to use it in their teaching practices. Farangi and Rashidi also found that Iranian EFL teachers' assessment conceptions had a positive and significant correlation with their self-efficacy, which supports the current study's results. Finally, the findings of this research lend support to those of Rastegri and Zarei (2023), indicating that various aspects of test construction, administration, rating, interpretation, and psychometric properties were significant predictors of TJB.

To discuss the gained findings, it may be argued that developing TAL was crucial for effective education. This involved the ability to create assessments that align with learning objectives and accurately gauge student understanding and performance. It is argued that the EFL teachers who were familiar with the various assessment tools could aid in selecting the most suitable assessment strategy for specific learning goals (Mertler & Campbell, 2005). By integrating assessment with instruction and choosing appropriate teaching methods, the EFL teachers might manage their emotions and anxiety, thereby relieving their TJS and TJB (Gottheiner & Siegel, 2012).

The results obtained in this study may also be attributed to the importance of TAL in the EFL context (Scarino, 2013). Along with Falsgraf (2005), it may be argued that having strong language assessment skills might have assisted the EFL teachers in understanding, analyzing, and utilizing information related to student performance in order to improve their teaching practices. As Siegel and Wissehr (2011) also argue, becoming familiar with various assessment types might have helped the EFL teachers choose appropriate and effective assessment tools to meet their educational objectives. That is, based on the study's findings, it can be argued that there was a significant connection between assessment quality, student achievement, and TAL. This, in turn, may have acted as a strong factor for the EFL teachers to experience less TJB and TJS.

One further possible explanation for the results may be that the EFL teachers who were knowledgeable about assessment may have had a positive impact on their students' learning and the quality of their own teaching (Remesal & Brown, 2015). In a sense, the EFL teachers who viewed assessment as a method for improving student performance and teaching practice may have sought change and improvement. Most of the EFL teachers likely conducted assessments to determine the effectiveness of their teaching strategies and practices (Leong, 2014). This may have, accordingly, reduced TJS and TJB among the EFL teachers.

One possible further explanation for the findings is that the EFL teachers who viewed assessment as a valuable tool for identifying and describing student performance might have utilized it to improve their teaching (Rezai et al., 2021). Valuing assessment as a way to enhance instruction may have led these teachers to use various strategies, including providing alternative examples and explanations, asking effective questions, trying alternative teaching methods, responding to challenging questions, adapting lessons to meet student needs, assessing understanding, and presenting appropriate challenges to high-achieving students (Khodashenas et al., 2022). Employing these techniques may have

increased job productivity, as assessment-literate teachers were capable of performing their job duties effectively, potentially reducing TJS and the likelihood of leaving their job.

The study's results can also potentially be explained by Kennedy's (2007) socio-cultural model of assessment. In accordance with this model, it may be argued that the EFL teachers who offered students a variety of assessment strategies may have viewed the resulting data as valid and trustworthy. Consequently, they may have been motivated to provide students with beneficial feedback on their performance. By valuing assessment as a tool for improving instruction, these teachers could accurately identify their students' strengths and weaknesses and make necessary adjustments to their teaching methods". This, in turn, may have made them enjoy their profession and stick to their job duties. The ultimate potential reasoning for the findings of the present study is that having strong TAL could make the EFL teachers better understand the advantages and disadvantages of different types of assessments (Siegel & Wissehr, 2011). Having a high level of TAL might enable the EFL teachers to interpret assessment data, have a conversation with their students about their progress, and apply this data to establish goals for their learning in the short and long run (Gottheiner & Siegel, 2012). Consequently, having these competencies might have influenced directly the job performance of the EFL teachers, which could, in turn, have an effect on their TJS and TJB.

Conclusions, implications, and suggestions for further research

The present study was carried out in Iran to explore the link between the EFL teachers' TAL, TJS, and TJB. According to the findings, the EFL teachers who possessed good TAL encountered less TJS and had a lower chance of TJB. The complementary qualitative results included four major themes: *TAL promotes job productivity*, *TAL raises teachers' social face*, *TAL enables teachers to manage the class efficiently*, and *TAL brings positive wash-back*. The results evidenced that EFL teachers who possess a higher level of TAL are more likely to experience lower levels of TJS and TJB. This implies the importance of promoting assessment literacy among EFL educators in order to enhance their overall well-being and job satisfaction. By investing in training and support programs that enhance assessment literacy, educational institutions in Iran can create a more conducive and healthy work environment for their EFL teachers, ultimately benefiting both the teachers and their students.

The implications of the findings can be discussed for pertinent stakeholders. As EFL teachers possessing insufficient TAL will face oppression in the system, policymakers and authorities in the Ministry of Education could implement assessment policies that aim at enhancing TAL of Iranian EFL teachers, thereby partially influencing their TJS and TJB. In order to ensure proper evaluation of students' learning in the L2 education process, the Ministry of Education should acknowledge the significance of EFL teachers as valuable stakeholders. This can be achieved by minimizing the use of pre-made tests and other summative assessments that haven't been discussed with classroom teachers. In addition, the study's findings have implications for educational programs designed for EFL teachers. Individuals responsible for teacher training and decision-making can create training programs that provide instruction in TAL, as well as follow-up interventions offered in pre-service and in-service contexts. These programs could aid EFL teachers

in acquiring core competencies in TAL and utilizing them appropriately in their work. Considering TAL's ever-changing nature, it is critical that both EFL teachers and teacher trainers stay up-to-date on the most recent research-based findings. Therefore, "training and support to engage in assessment and to adapt to learner-centered activities are considered critical" (Fulcher, 2021, p. 44). Moreover, it is crucial for evaluators like school principals and supervisors to improve their TAL by increasing their knowledge and comprehension of the social, cultural, and political elements related to the evaluation of language as EFL teachers are responsible and their performance is being assessed. Besides, fostering a supportive organizational culture that values and prioritizes TAL is essential. Administrators can play a significant role in creating an environment where teachers' assessment concerns, needs, and achievements are acknowledged and supported. Recognizing the importance of TAL and fostering a culture of continuous improvement can contribute to job satisfaction and reduced levels of TJS and TJB among EFL teachers. Likewise, since EFL teachers' understanding evolves with their experiences in the classroom and their teacher education programs, the assessment system should be amended accordingly. Ultimately, implementing measures to manage teachers' workload is crucial in reducing TJS and TJB. Examining the distribution of assessment tasks and deadlines, ensuring they are reasonable and manageable, can help prevent overwhelming workloads. It may also be necessary to explore strategies such as delegating tasks or providing adequate resources to support teachers in fulfilling their assessment responsibilities.

Considering the limitations of the current study, several recommendations for future research are provided. Firstly, qualitative research methods, such as observation can be used to obtain a more holistic understanding of the topic under investigation. Secondly, since the study was conducted in one province of Iran, replicating it in other parts of the country may improve the generalizability of the results. Thirdly, while the study focused on EFL teachers at state schools, further research could target teachers in higher education contexts in Iran. Fourthly, the study investigated the role of TAL in TJS and TJB. Future studies could explore the role of TAL in other teacher-related concepts, like job performance, job satisfaction, and self-efficacy. Finally, since the study was cross-sectional, a longitudinal study may be conducted to reveal the long-term impacts of TAL on TJS and TJB among the EFL teachers.

Abbreviations

TAL	Teacher assessment literacy
TJS	Teacher job stress
TJB	Teacher job burnout
EFL	English as a foreign language

Author contributions

The study was formulated and completed by Dr. Rezai.

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Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethical approval

The study was overseen and approved by the Ethics Committee of Research from Ayatollah Ozma Borujerdi University (b/58c/258).

Informed consent

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

Competing interests

The corresponding author states that there is no competing interest.

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