Modeling Gender Differences in Psychological Well-Being, Self-Regulation, and Teacher Support Among Ethiopian EFL Students

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Abstract

Teacher support in English as a Foreign Language (EFL) context is considered a crucial element in students' academic and psychological performance. Despite its relevance, relatively few studies have examined how teacher support interacts with learners' self-regulation to influence mental health, especially in Ethiopian higher education. Therefore, this paper aimed at investigating the relationships among perceived teacher support, self-regulation, and psychological well-being among Ethiopian EFL students and exploring possible gender-based differences. A correlational research design was followed, and data were gathered through standardized self-report questionnaires from 400 second and third-year English majors randomly selected from Jimma, Hawassa, and Wolkite Universities. In addition, Confirmatory Factor Analysis (CFA) was performed to establish construct validity and reliability, while common method bias was tested using Harman's one-factor test, confirming that no significant common method bias was present. The Structural Equation Modeling (SEM) analysis indicated that perceived teacher support positively predicted psychological well-being and self-regulation. Self-regulation partially mediated the effects of teacher support on well-being. Multi-group analysis showed acceptable RMSEA and SRMR values but comparatively weak CFI and TLI values. The small changes in CFI across the increasingly constrained models provided limited support for approximate measurement invariance across gender; therefore, the findings should be interpreted cautiously.

Keywords: EFL students, gender disparities, psychological well-being, self-regulation, education

1. Introduction

EFL involves more than acquiring linguistic competence; it also requires learners to cope with various psychological challenges that influence their academic success and overall well-being. Research has consistently shown that EFL learners frequently experience anxiety, low motivation, limited self-confidence, and fear of failure, all of which can impede language learning and academic performance (Derakhshan et al., 2022; Pan et al., 2023; Tao et al., 2022; Wang et al., 2024). These findings underscore the importance of fostering psychological well-being as an integral component of effective language education.

Psychological well-being is commonly conceptualized as a multidimensional construct encompassing emotional, cognitive, and social functioning. According to Ryff and Keyes (1995), it includes self-acceptance, resilience, positive interpersonal relationships, purpose in life, personal growth, environmental mastery, and autonomy. Within educational settings, particularly EFL classrooms, psychological well-being contributes to greater academic engagement, persistence, and learning achievement (Derakhshan & Fathi, 2024; Mengistnew et al., 2021). This perspective suggests that learners' psychological well-being is shaped by the dynamic interaction between individual characteristics and environmental factors.

The present study is grounded in self-determination theory (SDT) and social cognitive theory (SCT), which together provide a comprehensive framework for explaining learners' psychological well-being. SDT posits that learning environments satisfying students' needs for autonomy, competence, and relatedness promote intrinsic motivation, engagement, and psychological well-being. Complementing this perspective, SCT emphasizes learners' capacity for self-regulation, whereby individuals actively monitor, control, and adapt their thoughts, emotions, and behaviors to achieve academic goals. Together, these theories explain how supportive instructional environments facilitate the development of self-regulatory skills that ultimately enhance students' psychological well-being.

Within this framework, perceived teacher support represents a critical environmental resource. It encompasses academic guidance, emotional encouragement, constructive feedback, and instructional practices that promote learner autonomy. Extensive research has demonstrated that supportive teacher behaviors increase student engagement and motivation while reducing academic stress and emotional distress (Chen & Tang, 2024; Guo et al., 2020; Liu & Li, 2023). In EFL classrooms, teacher support also reduces communication apprehension and fear of negative evaluation, thereby enhancing both language learning and psychological well-being

(Muthukrishnan et al., 2024; Shakki, 2022). These findings indicate that supportive teacher–student relationships create favorable learning conditions that foster students' emotional and academic development.

Self-regulation constitutes an equally important individual factor influencing learners' psychological well-being. It refers to learners' ability to plan, monitor, evaluate, and regulate their cognitive, emotional, and behavioral processes while pursuing academic goals. Self-regulated learners generally demonstrate greater autonomy, persistence, adaptability, and resilience when confronted with the challenges of language learning (Huang, 2022; Tang & Zhu, 2024; Yang & Du, 2025; Zhang et al., 2024). Moreover, evidence suggests that supportive teachers facilitate the development of self-regulatory skills by encouraging goal setting, strategic learning, self-monitoring, and reflective practice (Oliveira et al., 2023; Shakki, 2022). Consequently, self-regulation may serve as an important mechanism through which perceived teacher support enhances students' psychological well-being (Shlash Mohammad et al., 2024).

Despite growing interest in these constructs, the existing literature remains fragmented. Most previous studies have examined perceived teacher support, self-regulation, or psychological well-being independently, with relatively few integrating these variables within a comprehensive theoretical model. Furthermore, limited research has investigated the mediating role of self-regulation in explaining the relationship between perceived teacher support and psychological well-being, particularly through advanced analytical techniques such as structural equation modeling. This theoretical and methodological gap limits a comprehensive understanding of the mechanisms underlying students' psychological well-being in EFL contexts.

These limitations are especially evident in the Ethiopian higher education context. Ethiopian universities operate within linguistically diverse and resource-constrained environments that may intensify students' academic and psychological challenges. Although these contextual factors are likely to influence learners' psychological well-being, empirical evidence examining the combined effects of perceived teacher support and self-regulation remains limited (Taddese et al., 2025). Consequently, the applicability of existing theoretical models to Ethiopian EFL learners has not been adequately established.

Another important gap concerns gender differences. Previous research suggests that male and female learners may differ in their self-regulatory behaviors, coping strategies, and psychological experiences (Dan et al., 2024; Liu & Li, 2023; Zhang et al., 2024). However, few studies have examined whether the relationships among perceived teacher support, self-regulation, and psychological well-being are invariant across gender. Without examining measurement invariance, it is difficult to determine whether the constructs are measured comparably among male and female learners, thereby limiting confidence in gender-based comparisons.

To address these theoretical, methodological, and contextual gaps, the present study develops and tests an integrated model linking perceived teacher support, self-regulation, and psychological well-being among Ethiopian university EFL students. Specifically, the study investigates the direct effect of perceived teacher support on psychological well-being, examines the mediating role of self-regulation, and evaluates the measurement invariance of the proposed model across gender. By applying structural equation modeling, this study contributes to a more comprehensive understanding of the mechanisms through which supportive learning environments promote psychological well-being in EFL settings while extending the literature to an underrepresented educational context.

Research Questions

1. What is the relationship between perceived Ethiopian EFL teacher support and students' psychological well-being?
2. Does self-regulation mediate the relationship between perceived teacher support and students' psychological well-being?
3. Does the measurement model of perceived teacher support, self-regulation, and psychological well-being demonstrate invariance across gender among Ethiopian EFL learners?

2. Methodology

Research Design

This study employed a **cross-sectional correlational research design** to examine the relationships among perceived teacher support, self-regulation, and psychological well-being among Ethiopian university EFL students, while also investigating whether the measurement model operated equivalently across gender through measurement invariance analysis. A correlational design was appropriate because the study sought to examine the magnitude and direction of the associations among naturally occurring variables without manipulating any independent variable or implementing an intervention. Data were collected at a single point in time using standardized self-report questionnaires, and the hypothesized relationships were analyzed using structural equation modeling (SEM). Consistent with the nature of correlational research, the findings provide evidence of statistical associations among the study variables but do not permit causal inferences.

Participants

The research participants consisted of a total of 400 EFL students majoring in English, of which 204 were males and 196 were females at the second year and third-year levels. They were taken from three public Ethiopian universities, namely Jimma University (82 males and 78 females), Hawassa University (67 males and 74 females), and Wolkite University (55 males and 44 females).

Instruments

Data were collected using standardized self-report questionnaires adapted from previously validated instruments measuring perceived teacher support, self-regulation, and psychological well-being. Because the original scales were developed in different cultural contexts, a

systematic adaptation process was undertaken to ensure their linguistic clarity, cultural relevance, and conceptual equivalence for Ethiopian university EFL students.

The adaptation process comprised four stages. First, the original instruments were reviewed, and minor linguistic and contextual modifications were made to enhance their relevance to the Ethiopian higher education context while preserving the underlying theoretical constructs. Second, the adapted instruments were evaluated by a panel of experts in applied linguistics and educational psychology to establish content validity and cultural appropriateness. Third, a pilot study was conducted with 60 undergraduate EFL students from a university that was not included in the main study. Based on participants' feedback, ambiguous and repetitive items were revised to improve clarity and readability. Finally, the pilot data demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients exceeding .80 for all scales. This multistage adaptation process ensured that the instruments maintained their psychometric integrity while being appropriately contextualized for the target population.

Perceived teacher support was measured using an adapted version of the Teacher Support Scale developed by Metheny et al. (2008). The instrument consisted of 26 close-ended items assessing students' perceptions of instructors' academic, emotional, and autonomy support. Responses were recorded on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The original instrument demonstrated satisfactory reliability and construct validity, and its factorial structure was revalidated in the present study using confirmatory factor analysis (CFA).

Self-regulation was assessed using an adapted version of the Self-Regulated Control of Language Learning Scale developed by Tseng et al. (2017). The scale comprised 27 items measuring learners' motivational, metacognitive, and cognitive self-regulatory strategies. Minor contextual modifications were introduced to reflect the learning experiences of Ethiopian EFL students without altering the conceptual meaning of the original items. Responses were rated on the same five-point Likert scale. The construct validity and reliability of the adapted scale were subsequently evaluated through CFA and internal consistency analyses.

Psychological well-being was measured using an adapted version of the Psychological Well-Being Scale developed by Ryff and Keyes (1995). The adapted instrument included 25 items representing six dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, personal growth, and purpose in life. Minor wording revisions were made to enhance contextual relevance while preserving the theoretical structure of the original scale. Responses were recorded on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The factorial validity of the adapted instrument was subsequently confirmed through CFA.

The psychometric properties of all three instruments were evaluated before testing the structural model. Construct validity was examined using CFA. Convergent validity was assessed through standardized factor loadings, composite reliability (CR), and average variance extracted (AVE), whereas discriminant validity was evaluated using the Fornell and Larcker (1981) criterion. Internal consistency reliability was assessed using Cronbach's alpha and composite reliability coefficients. As reported in the Results section, all constructs satisfied the recommended criteria for reliability and validity, supporting the adequacy of the measurement model for subsequent structural equation modeling.

Because all variables were measured using self-report questionnaires administered in a single survey, both procedural and statistical remedies were employed to minimize the potential influence of common method bias (CMB). Procedurally, participants were informed that their responses would remain anonymous and confidential, reducing evaluation apprehension and social desirability bias. In addition, the questionnaire was organized into distinct sections with clear instructions to reduce response consistency effects. Statistically, Harman's single-factor test was first conducted as a preliminary assessment. The first unrotated factor accounted for 36.31% of the total variance, which was below the commonly accepted threshold of 50%, indicating that no single factor dominated the covariance among the observed variables. Because Harman's test provides only a preliminary assessment of CMB, a common latent factor (CLF) analysis was subsequently performed within the structural equation modeling framework. The inclusion of the latent method factor produced negligible changes in the standardized factor loadings and structural parameter estimates, indicating that common method variance did not materially influence the study results. These findings suggest that common method bias was unlikely to threaten the validity of the conclusions.

Procedures

Ethical approval was obtained from the research ethics committees of the participating universities prior to data collection. Formal permission letters were submitted to institutional authorities, and coordination was established with department heads and instructors to facilitate access to participants.

Data collection was conducted during regular class sessions to maximize participation and minimize disruption. Participants were informed about the purpose of the study and were assured that their responses would remain anonymous and confidential. They were also informed of their voluntary participation and their right to withdraw at any time without penalty. Written informed consent was obtained from all participants before administering the questionnaires. Completed questionnaires were collected immediately after completion to ensure data completeness and minimize potential errors.

Data Analysis

Data analysis was performed using SPSS version 23.0 for preliminary analyses and AMOS version 27.0 for structural equation modeling (SEM). Initially, descriptive statistics, including means, standard deviations, skewness, and kurtosis, were calculated to assess data

distribution and normality. Pearson correlation analysis was conducted to examine the relationships among perceived teacher support, self-regulation, and psychological well-being.

A two-step SEM approach, as recommended by Kline (2015), was employed. In the first step, Confirmatory Factor Analysis (CFA) was conducted to validate the measurement model and ensure that the observed variables adequately represented their respective latent constructs. In the second step, the structural model was tested to examine the hypothesized relationships among the variables.

Model fit was evaluated using multiple indices to ensure robustness. These included the chi-square to degrees of freedom ratio (χ^2/df), with values between 1 and 3 indicating acceptable fit; the Root Mean Square Error of Approximation (RMSEA), with values below .08 considered acceptable and below .05 indicating a good fit; and the Standardized Root Mean Square Residual (SRMR), with values below .08 indicating adequate fit. In addition, incremental fit indices such as the Comparative Fit Index (CFI > .95), Tucker–Lewis Index (TLI > .90), and Goodness-of-Fit Index (GFI > .90) were used to confirm model adequacy.

To test the mediating role of self-regulation, a bootstrapping procedure with 5,000 resamples was employed to estimate indirect effects. In addition, multi-group SEM analysis was conducted to examine measurement invariance across gender groups through configural, metric, and scalar invariance testing.

3. Results

Confirmatory Factor Analysis

CFA was applied to assess the validity of the indicated measurement model utilizing AMOS software (version 27.0). The following fit indices depicted a strong overall model fit: $\chi^2 = 800.3$, $\chi^2/df = 2.12$, $p < .001$; RMSEA =.048; SRMR =.027; CFI =.942; TLI =.918. It is crucial to comprehend that studies with large sample sizes might occasionally provide a significant chi-square value. The remaining fit indices provided strong evidence for a good model fit.

Table 1. Descriptive Statistics and Correlations

Construct	M (SD)	1	2	3
1. Teacher Support	2.96 (0.65)	—	.36	.27
2. Self-regulation	3.87 (0.57)		—	.18
3. Psychological Well-being	2.79 (0.72)			—

Table 1 presents the descriptive statistics and correlations among the study variables. Perceived teacher support (M = 2.96, SD = 0.65), self-regulation (M = 3.87, SD = 0.57), and psychological well-being (M = 2.79, SD = 0.72) indicate that students reported moderate levels of teacher support and self-regulation, but relatively lower levels of psychological well-being.

All variables demonstrated acceptable skewness and kurtosis values, indicating approximate normality. Correlation analysis revealed that perceived teacher support was positively associated with self-regulation (r = .36) and psychological well-being (r = .27). Additionally, self-regulation was positively correlated with psychological well-being (r = .18). These findings show that higher levels of perceived teacher support are linked to better self-regulation and improved psychological well-being.

Table 2. Convergent Validity and Reliability

Construct	AVE	MSV	ASV	Cronbach's α / CR
Teacher Support	.59	.49	.11	.90/ .84
Self-regulation	.63	.54	.11	.92/ .86
Psychological well-being	.52	.39	.08	.84 / .80

Note. AVE = Average Variance Extracted; MSV = Maximum Shared Variance; ASV = Average Shared Variance; CR = Composite Reliability.

Table 2 presents the results of the convergent validity, discriminant validity, and reliability analyses for the measurement model. Convergent validity was evaluated using the AVE, while reliability was assessed through Cronbach's alpha (α) and CR. All three constructs demonstrated satisfactory convergent validity, with AVE values exceeding the recommended threshold of .50 (Fornell & Larcker, 1981). Specifically, the AVE values were .59 for Teacher Support, .63 for Self-regulation, and .52 for Psychological Well-being, indicating that each latent construct explained more than half of the variance in its observed indicators.

The reliability results further supported the adequacy of the measurement model. Cronbach's alpha coefficients ranged from .84 to .92, while composite reliability values ranged from .80 to .86. All reliability coefficients exceeded the recommended minimum thresholds ($\alpha \geq .70$; CR $\geq .70$), demonstrating strong internal consistency among the measurement items (Hair et al., 2022).

Discriminant validity was assessed by comparing the average variance extracted (AVE) with the maximum shared variance (MSV) and average shared variance (ASV). For all constructs, the AVE values exceeded both the corresponding MSV and ASV values (Teacher Support: AVE = .59, MSV = .49, ASV = .11; Self-regulation: AVE = .63, MSV = .54, ASV = .11; Psychological Well-being: AVE = .52, MSV = .39, ASV = .08). These findings indicate that each construct shared more variance with its own indicators than with other latent constructs, providing evidence of satisfactory discriminant validity (Fornell & Larcker, 1981).

Overall, the results demonstrate that the measurement model possesses satisfactory psychometric properties, including adequate convergent validity, discriminant validity, and internal consistency reliability. These findings provide strong support for the validity and reliability of the

latent constructs and confirm the suitability of the measurement model for subsequent structural equation modeling analyses (Hair et al., 2022).

Common Method Bias

Common method bias (CMB) is a major issue with self-reporting studies. All information from one source, such as students or cohorts, can inflate the relationship between two or more variables because social desirability, consistency motives or common measurement environment could all introduce CMB into the data collected. The authors of the article determined CMB using unrotated exploratory factor analysis and Harman's one-factor method (Podsakoff & Organ, 1986).

The authors' analysis revealed that the first factor accounted for 36.31% of the total variance, which is significantly less than the 50% cutoff point traditionally cited as indicative of a substantial measurement bias. Based on Podsakoff et al. (2003), a lack of a dominant factor means it is unlikely that CMB will threaten the validity of the research.

Consequently, the research suggests that measurement artefacts have not significantly affected the relationships between well-being and regulation, and well-being with teacher support. In addition, since the amount of commonality within the population was minimal, respondent bias due to social desirability or acquiescing is not thought to have had a significant impact. To further assess common method bias, a common latent factor was added to the measurement model. The inclusion of the common latent factor produced only minor changes in the standardized factor loadings and structural parameter estimates, while the direction and statistical significance of the structural relationships remained unchanged. These findings suggest that common method variance did not materially affect the study results.

SEM Analysis

The relationship between the dependent, mediator and independent variables was established using SEM software (AMOS). This study employed Psychological well-being, Self-regulation and teacher-support as the dependent, mediator and independent variables respectively.

The model demonstrated a good overall fit, as evidenced by multiple fit indices: χ^2 (322) = 723.10, $p < .001$; $\chi^2/df = 2.24$; RMSEA = .052; SRMR = .034; CFI = .957; and TLI = .924. Although Chi-square shows a statistically significant relationship for large sample sizes, due to sampling error, Kline (2015) has documented that the complexity of this statistic makes it challenging to use as the primary indicator of model fit when the sample size is large; therefore, additional fit indices have been calculated for determining the viability of this model.

The results of the RMSEA (Root Mean Square Error of Approximation) indicated a .052 value, showing a trend toward accepting the proposed alternative model (i.e., less than .06) whereas the average SRMR (Standardised Root Mean Square Residual) of .034 indicates a low level of disagreement between expected and observed relationships. Additionally, both the CFI (Comparative Fit Index) and TLI (Tucker-Lewis Index) exceeded the minimum recommended level of .90 (Hu & Bentler, 1999) and hence exhibit superior model fit. The consistent path coefficients are provided in Figure 1, which further supports the proposed mediation model by demonstrating the expected structural relationships among the variables.

Table 3. Standardized Estimates and Path Coefficients

Path	β	SE	95% CI
Teacher Support → Well-being	.270	.06	[.14, .43]
Self-Regulation → Well-being	.341	.09	[.19, .50]
Teacher Support → Self-Regulation	.308	.05	[.30, .49]
Indirect Effect			
Teacher Support → Self-Regulation → Well-being	.14	.04	[.07, .21]

Table 3 shows the standardized path coefficients, standard errors, and 95% confidence intervals. To determine whether the direct and indirect associations were statistically significant, bootstrapping with 5,000 resamples was conducted.

As shown in Table 3 and Figure 1, perceived teacher support was positively associated with psychological well-being ($\beta = .270$, $p < .01$) and self-regulation ($\beta = .308$, $p < .01$). Self-regulation was also positively associated with psychological well-being ($\beta = .341$, $p < .01$). These findings indicate that students who reported greater perceived teacher support also tended to report stronger self-regulation and higher psychological well-being.

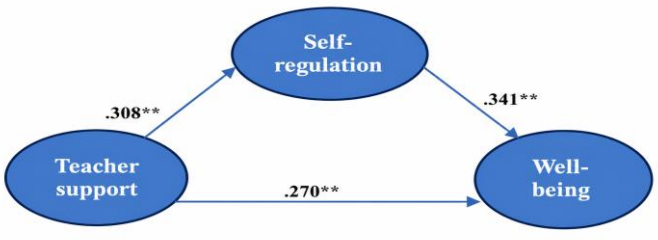

Figure 1. Mediation Model

The model demonstrated that self-regulation partially mediated the association between perceived teacher support and psychological well-being. The indirect association of perceived teacher support with psychological well-being through self-regulation was statistically significant (β = .14, SE = .04, 95% CI [.07, .21]). Because the direct association between perceived teacher support and psychological well-being remained significant after self-regulation was included in the model, the findings indicate partial mediation. This suggests that perceived teacher support was associated with psychological well-being both directly and indirectly through students' self-regulation.

The results also offer compelling empirical support for the suggested model and their indication that there is a dual function of teacher support, first, to create a supportive environment of learning, secondly to enhance students' ability to deal with adversity. The measurement-invariance results are presented in Table 4.

Table 4. Measurement Invariance across Gender

Model	χ^2(df)	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$(Δdf)	p	ΔCFI
Configural	209.67 (171)	0.822	0.805	0.051	0.026	-	-	-
Metric	227.11 (174)	0.814	0.807	0.055	0.031	17.44 (3)	0.001	0.008
Scalar	243.36 (179)	0.817	0.788	0.063	0.033	16.25 (5)	0.006	0.003

The metric invariance model, in which factor loadings were constrained to equality across gender groups, showed a statistically significant increase in chi-square compared with the configural model, $\Delta\chi^2(3) = 17.44$, $p < .001$. However, the change in CFI was small (ΔCFI = .008), indicating that constraining the factor loadings did not substantially worsen model fit. The scalar invariance model, which additionally constrained item intercepts to equality, also showed a statistically significant chi-square difference compared with the metric model, $\Delta\chi^2(5) = 16.25$, $p = .006$. Nevertheless, the change in CFI remained small (ΔCFI = .003), suggesting that the additional constraints had a limited practical effect on model fit.

Overall, while the absolute fit indices (particularly CFI and TLI) were below recommended cutoff values, the small changes in CFI across the increasingly restrictive models provide evidence of approximate measurement invariance across gender. These findings suggest that comparisons between male and female participants can be made with caution, while acknowledging the limitations associated with the relatively weak absolute model fit.

The structural model examined the direct and indirect relationships among perceived teacher support, self-regulation, and psychological well-being. As illustrated in Figure 1, perceived teacher support significantly predicted students' self-regulation (β = .308, **p** < .01), indicating that learners who perceived greater academic, emotional, and instructional support from their teachers tended to demonstrate stronger self-regulatory abilities. Besides, self-regulation had a significant positive effect on psychological well-being (β = .341, **p** < .01), suggesting that students with stronger abilities to monitor, regulate, and manage their learning processes experienced higher levels of psychological well-being.

In addition to its indirect influence, perceived teacher support also demonstrated a significant direct effect on psychological well-being (β = .270, **p** < .01). This finding indicates that supportive teacher behaviors contributed directly to learners' psychological well-being by fostering a positive and supportive learning environment. Collectively, these results suggest that perceived teacher support enhanced psychological well-being through both direct pathways and an indirect mechanism mediated by self-regulation.

The findings provide empirical support for the integration of self-determination theory and social cognitive theory, demonstrating that supportive educational environments facilitate learners' self-regulatory capacities, which subsequently contribute to improved psychological functioning. The significant pathways among the constructs highlight the importance of combining contextual support and learner-centered regulatory processes in promoting EFL learners' psychological well-being.

4. Discussion

The Correlations between Perceived EFL Teacher Support and Psychological Well-Being among EFL Students

The present study found a statistically significant positive association between perceived EFL teacher support and students' psychological well-being. The structural model indicated that perceived teacher support was positively associated with psychological well-being (β = .28), while the bivariate correlation analysis revealed a comparable moderate positive relationship (r = .27). These findings suggest that students who perceived greater academic, emotional, and autonomy-related support from their teachers tended to report higher levels of psychological well-being. Given the cross-sectional correlational design of the study, however, these findings should be interpreted as evidence of association rather than causal influence.

The observed relationship is theoretically consistent with Self-Determination Theory (Deci & Ryan, 2000), which posits that supportive educational environments facilitate the satisfaction of students' basic psychological needs for autonomy, competence, and relatedness, thereby promoting psychological functioning and well-being. Likewise, Social Support Theory suggests that supportive interpersonal relationships serve as protective resources that enhance individuals' capacity to cope with academic demands and psychological stress. Within EFL classrooms, teachers who provide emotional encouragement, constructive academic guidance, and opportunities for autonomous learning may contribute to students' positive emotional experiences, stronger academic confidence, and greater psychological adjustment.

The present findings are consistent with an emerging body of research demonstrating positive associations between teacher support and students' psychological well-being across educational contexts. For example, many studies (Derakhshan et al., 2022: Derakhshan & Fathi,

2024; Fathi et al., 2024; Gao et al., 2023; Lin et al., 2022; Shakki, 2022) similarly reported that supportive teacher–student relationships are associated with higher levels of emotional well-being, academic engagement, resilience, and lower levels of psychological distress. The convergence of these findings across diverse educational settings suggests that teacher support represents an important contextual resource that contributes to students' positive psychological functioning. Nevertheless, the magnitude of the association observed in the present study was moderate, indicating that teacher support constitutes one of several factors associated with students' psychological well-being rather than its sole determinant.

A plausible explanation for this finding is that supportive teachers create learning environments characterized by trust, emotional safety, and meaningful academic interaction. Such environments may reduce learners' anxiety, strengthen their sense of belonging, enhance perceived competence, and encourage adaptive coping strategies when encountering academic challenges. In EFL settings, where communication apprehension and language-related anxiety are common, emotionally supportive instructional practices may be particularly important in helping students maintain positive psychological functioning. These mechanisms are consistent with previous literature suggesting that teacher support facilitates both academic and psychological adaptation through increased motivation, emotional security, and learner confidence.

Despite the significant association identified in this study, the descriptive findings indicated that students reported only moderate levels of perceived teacher support and comparatively lower levels of psychological well-being. This pattern suggests that although teacher support is positively related to psychological well-being, it alone is unlikely to explain the complexity of students' psychological experiences. Psychological well-being is inherently multidimensional and is likely influenced by a combination of personal, social, institutional, and environmental factors, including socioeconomic circumstances, academic workload, access to educational resources, peer relationships, and individual coping capacities. Consequently, improving students' psychological well-being may require comprehensive institutional strategies that extend beyond classroom-based teacher support.

The findings should also be interpreted within the specific context of Ethiopian higher education. Institutional resource constraints, large class sizes, limited student support services, and sociocultural expectations may shape both students' perceptions of teacher support and their psychological well-being. These contextual characteristics may partially explain differences in the strength of the observed relationships compared with studies conducted in other educational systems. Therefore, caution should be exercised when generalizing the findings beyond similar educational contexts.

Several limitations should be acknowledged when interpreting the present results. First, the cross-sectional correlational design precludes causal inference or conclusions regarding the directionality of the observed association. It is equally plausible that psychologically healthier students perceive greater teacher support or that reciprocal relationships exist between these constructs. Second, the study relied exclusively on self-report measures, which may be susceptible to common method variance despite the procedural and statistical controls implemented. Third, although the measurement model demonstrated satisfactory validity and reliability, the findings reflect the characteristics of the sampled universities and may not be generalizable to all EFL contexts.

Future research should employ longitudinal, experimental, or cross-lagged panel designs to examine the temporal and reciprocal relationships between teacher support and psychological well-being. In addition, mixed-methods studies could provide deeper insights into how students experience different forms of teacher support and identify the contextual mechanisms through which supportive instructional practices contribute to psychological well-being. Examining potential mediating variables, such as academic engagement, self-efficacy, or resilience, and moderating factors, including gender, academic achievement, and institutional characteristics, would further advance understanding of the conditions under which teacher support is most strongly associated with students' psychological well-being.

Overall, the present findings contribute to the growing literature demonstrating that perceived teacher support is positively associated with psychological well-being among EFL university students. Although teacher support should not be viewed as the sole determinant of students' psychological functioning, it represents a meaningful educational resource that may promote healthier learning experiences when integrated with broader institutional and psychosocial support systems.

The mediating role of self-regulation in the relationship between perceived teacher support and psychological well-Being

The present study found that self-regulation partially mediated the association between perceived teacher support and psychological well-being among EFL university students. Specifically, perceived teacher support was positively associated with self-regulation ($\beta = .308$), self-regulation was positively associated with psychological well-being ($\beta = .341$), and the indirect effect of perceived teacher support on psychological well-being through self-regulation was statistically significant ($\beta = .14$). These findings suggest that students who perceived greater support from their teachers also tended to report stronger self-regulatory capacities, which were, in turn, associated with higher levels of psychological well-being. Nevertheless, because the study employed a cross-sectional correlational design, the mediation should be interpreted as a statistical explanation of the observed associations rather than evidence of a causal mechanism.

The observed mediation is theoretically consistent with Self-Determination Theory (Deci & Ryan, 2000), which proposes that supportive learning environments facilitate the satisfaction of learners' basic psychological needs, thereby promoting autonomous regulation and positive psychological functioning. Similarly, Social Cognitive Theory (Bandura, 1986) emphasizes that environmental factors and learners' self-regulatory processes operate interactively to influence behavioral and psychological outcomes. From these theoretical perspectives, supportive teachers may provide instructional guidance, emotional encouragement, and autonomy-supportive learning opportunities that are associated with students' ability to plan, monitor, and regulate their learning. These self-regulatory processes may subsequently be

associated with enhanced psychological well-being by fostering greater perceived competence, adaptive coping, and resilience in academic settings.

The present findings are consistent with previous empirical research demonstrating significant associations among teacher support, self-regulation, and students' psychological well-being. Many studies (Cochran & Peters, 2023; De Carvalho et al., 2021; Derakhshan & Fathi, 2024; Teng & Zhang, 2021) similarly reported that supportive educational environments are positively associated with learners' self-regulatory capacities and psychological adjustment. Moreover, Fan and Cui (2024) found that self-regulation serves as a significant mediator linking teacher support to positive psychological outcomes in EFL learning contexts. The convergence of these findings across different educational settings strengthens the empirical evidence that self-regulation represents an important psychological process through which supportive teacher–student relationships are associated with students' well-being.

A plausible explanation for the observed mediation is that supportive teachers create classroom environments that encourage students to assume greater responsibility for their own learning. Through clear instructional guidance, constructive feedback, emotional reassurance, and opportunities for autonomous decision-making, teachers may help students develop effective self-regulatory strategies, including goal setting, self-monitoring, strategic learning, and self-reflection. Students who effectively regulate their learning are likely to experience greater academic confidence, reduced learning-related stress, and a stronger sense of control over academic challenges, all of which are positively associated with psychological well-being. The partial mediation observed in this study further suggests that although self-regulation represents an important explanatory mechanism, teacher support may also be associated with psychological well-being through additional pathways that were not examined in the present model.

The present findings also contribute to the literature by extending evidence on the mediating role of self-regulation to the Ethiopian higher education context, where empirical research examining these relationships remains limited. Although the observed pattern is consistent with international studies, contextual characteristics such as institutional resources, classroom conditions, cultural expectations, and educational practices may shape how teacher support facilitates students' self-regulatory behaviors and psychological well-being. Consequently, the strength and nature of these associations may vary across educational systems, highlighting the importance of examining contextual influences in future research.

Despite the significant mediation effect, psychological well-being should be recognized as a multidimensional construct influenced by numerous factors beyond those included in the present model. Individual characteristics, personality traits, academic self-efficacy, resilience, classroom climate, peer relationships, family support, and institutional learning environments may also contribute to students' psychological functioning. Therefore, the mediating role of self-regulation should be interpreted as one important explanatory pathway rather than a comprehensive account of how teacher support is associated with psychological well-being.

Measurement Invariance across Gender

The present study examined whether the measurement model of perceived teacher support, self-regulation, and psychological well-being operated similarly across male and female EFL university students. Although the RMSEA and SRMR values indicated acceptable approximate fit, the CFI and TLI values for the configural, metric, and scalar models were below commonly recommended thresholds. Therefore, the invariance findings should not be interpreted as evidence of satisfactory absolute model fit. Nevertheless, the relatively small changes in CFI across the increasingly constrained models provide limited support for approximate measurement invariance across gender. Accordingly, comparisons between male and female participants should be made cautiously. Structural path differences across gender were not examined in the present study.

This tentative pattern is broadly consistent with previous studies that have reported measurement equivalence of psychological and educational constructs across gender in language-learning contexts (Derakhshan & Fathi, 2024; Liengaard, 2024; Sahlan et al., 2024). However, given the relatively weak absolute fit indicated by the CFI and TLI values, the present findings should be regarded as preliminary rather than conclusive evidence of measurement equivalence.

Although the changes in CFI across configural, metric, and scalar models were relatively small, the absolute CFI and TLI values remained below commonly recommended thresholds. The results therefore provide only limited support for approximate measurement invariance across gender and should not be interpreted as conclusive evidence of configural, metric, or scalar invariance. These findings suggest that the measurement model may operate approximately similarly across gender; however, the weak absolute fit indices prevent firm conclusions about whether male and female students interpreted the constructs equivalently. Such differences may reflect variations in response styles, socialization processes, or contextual experiences rather than substantive differences in the latent constructs themselves. Accordingly, comparisons of latent means across gender should be interpreted with caution because observed mean differences may be influenced, at least in part, by item-level measurement non-invariance rather than genuine group differences (Pauls et al., 2019).

A plausible explanation for the observed pattern of measurement non-equivalence is that male and female students may experience educational environments differently despite sharing similar conceptual understandings of teacher support, self-regulation, and psychological well-being. In the Ethiopian higher education context, sociocultural expectations, gender norms, classroom interactions, and access to academic support may shape how students respond to particular questionnaire items without fundamentally altering the meaning of the underlying constructs. These contextual influences may contribute to differences in responses to particular items without necessarily altering the general pattern of the measurement model.

The present findings have important methodological and theoretical implications. Methodologically, the relatively small changes in CFI provide preliminary support for the comparability of the measurement model across gender groups. However, because the absolute CFI and TLI values were below recommended thresholds and structural path differences were not examined, the findings should be interpreted cautiously. Theoretically, the findings extend the growing body of evidence supporting the cross-gender applicability of these psychological constructs within second language acquisition research, particularly in underrepresented educational contexts such as Ethiopian higher education.

Nevertheless, the limited evidence of measurement equivalence underscores the importance of exercising caution when comparing latent mean scores across gender. Given the relatively weak absolute fit of the invariance models, researchers should avoid assuming complete measurement equivalence and should interpret possible gender differences within their broader sociocultural and educational contexts.

Several limitations should also be acknowledged. The invariance analysis was conducted using data collected from Ethiopian EFL university students, and the findings may not generalize to learners in other cultural or educational settings. Furthermore, the quantitative design does not explain why certain items exhibited non-invariant intercepts across gender. Future research should therefore combine multi-group structural equation modeling with qualitative or mixed-methods approaches to explore how gender-related educational experiences, classroom interactions, and sociocultural expectations shape students' perceptions of teacher support, self-regulation, and psychological well-being. Cross-cultural replication studies would also help determine whether the observed pattern of approximate measurement invariance is specific to the Ethiopian context or reflects a broader characteristic of these constructs across diverse educational systems.

Overall, the relatively small changes in CFI provide limited and preliminary support for approximate measurement invariance across gender. However, because the absolute CFI and TLI values were below commonly recommended thresholds, the findings should not be interpreted as evidence of satisfactory cross-gender measurement equivalence. Comparisons between male and female participants should therefore be made cautiously. At the same time, the relatively weak absolute model fit highlights the importance of contextual sensitivity when interpreting possible gender differences and emphasizes that psychometric equivalence should be evaluated alongside the sociocultural realities in which educational experiences are embedded.

5. Conclusion

The purpose of this study was to investigate the relationship between support perceived from English language teachers and its impact on Self-Regulation and Mental Well-being for students learning EFL in Ethiopia, as well as to see if all three constructs measured are similar across gender. Evidence from this analysis supports a positive correlation between perceived support from teachers and EFL learners' well-being. Specifically, EFL learners who received both emotional and instrumental assistance from their English teachers developed a sense of their emotional well-being and resilience. Further, this study provided empirical evidence that Self-Regulation skills mediate the association between perceived support from teachers and EFL learners' well-being. Thus, perceived teacher support was directly and indirectly associated with learners' psychological well-being through self-regulation.

Supportive evidence for the mediating effect of self-regulation skills on well-being has been provided by self-determination theory (SDT), which explains the interplay between perceived external supports (e.g. provided through the EFL teaching relationship) and the internal self-regulation skills (e.g. self-determined motivation to study EFL) that impact on student well-being. In addition to supporting the findings of this study, the findings also support the use of perceived external supports and learner well-being through a study of the Ethiopian EFL learning context, which has not received a lot of attention in the literature. The measurement invariance analysis provided limited support for the comparability of the measurement model across male and female EFL learners. However, because the absolute CFI and TLI values were below commonly recommended thresholds, the findings should be interpreted cautiously and should not be regarded as conclusive evidence that the constructs were measured equivalently across gender.

While this research has enhanced our understanding of personal development, we cannot distinguish between correlation and causation because of the cross-sectional nature of the design. We also do not know how these relationships change over time. The relatively weak absolute fit of the invariance models limits confidence in comparisons of latent scores between male and female participants, as apparent differences may partly reflect measurement-related factors. In addition, the diverse levels and types of institutional resources and teacher practices across the Ethiopian educational systems may affect how students feel about the support and well-being they receive at their schools.

Pedagogical Implications

Teachers should continuously offer emotional and instrumental support that could boost students' well-being and academic resilience in EFL classrooms. Simultaneously, explicit instructional practices for self-regulation, such as goal-setting, reflective learning, and using metacognitive strategies, would further strengthen the emotional stability and sense of autonomy among learners. Complementing these classroom-level efforts, schools should be able to embed mental-health-responsive practices into the process of teaching the English language, especially in resource-poor contexts like Ethiopia, where teacher support itself may not be enough to address broader emotional challenges faced by students. Mental health support systems should be integrated into EFL classrooms as resources for students, especially in impoverished countries such as Ethiopia where teacher support alone often does not adequately address students' emotional needs.

Recommendation

Training for new teachers should include training on the association between socio-emotional supports and developing students' ability to self-regulate. Supportive environments for teachers can be created and maintained through the reduction of teacher workload, the provision of access to counseling resources, and the establishment of ongoing professional development programs. Future curriculum design for EFL should incorporate principles of mental health promotion and the language skills of an individual, providing a holistic and learner-centered approach to EFL education.

Authors' Contributions

Dr. Esayas Teshome Taddese guided the research design and ensured the validity and reliability of the research instruments. Dr. Mitiku Tasisa Dinsa led the study by designing research instruments, conducting the literature review, coordinating data collection, and performing data analysis. Dr. Habtamu Adem Yassin and Mr. Kebede Geleta Balcha contributed to participant recruitment and data collection, supported data organization and preliminary checks, and were responsible for final proofreading and formatting of the manuscript. All authors reviewed the final version of the manuscript and approved it for submission.

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Competing interest

The authors declare that there are no competing interests associated with this work.

Informed consent

Obtained.

Ethics approval

Ethical approval for this study was obtained from the Institutional Ethics Review Board of Wolkite University (Approval No. WKU/025/060) on December 20, 2025. All procedures were conducted in accordance with the university's ethical guidelines, and written informed consent was obtained from all participants prior to data collection.

Provenance and peer review

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Declaration of AI Use

The QuillBot AI was used solely to improve the clarity, coherence, and readability of the manuscript. All ideas, analyses, interpretations, and conclusions are entirely those of the authors and have not been influenced by the AI tool.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Chen, S., & Tang, L. (2024). EFL teachers' engagement: The impact of well-being and emotion regulation. *Heliyon, 10*(5), 1-14. https://doi.org/10.1016/j.heliyon.2024.e27338

Cochran, L. M., & Peters, M. P. (2023). Mindful preparation: An exploration of the effects of mindfulness and SEL training on pre-service teacher efficacy and empathy. *Teaching and Teacher Education, 123*, 1-16. https://doi.org/10.1016/j.tate.2022.103986

Dan, Q., Bai, B., & Huang, Q. (2024). Gender differences in the relations between EFL students' classroom relationships and English language proficiency: The mediating role of self-regulated learning strategy use. *System, 123*, 1-11. https://doi.org/10.1016/j.system.2024.103311

De Carvalho, J. S., Oliveira, S., Roberto, M. S., Gonçalves, C., Bárbara, J. M., de Castro, A. F., … Marques-Pinto, A. (2021). Effects of a mindfulness-based intervention for teachers: A study on teacher and student outcomes. *Mindfulness, 12*(7), 1719-1732. https://doi.org/10.1007/s12671-021-01635-3

Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry, 11*(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01

Derakhshan, A., & Fathi, J. (2024). The interplay between perceived teacher support, self-regulation, and psychological well-being among EFL students. *Iranian Journal of Language Teaching Research, 12(3*), 113-138. https://doi.org/10.30466/IJLTR.2024.121579

Derakhshan, A., Dewaele, J. M., & Noughabi, M. A. (2022). Modeling the contribution of resilience, well-being, and L2 grit to foreign language teaching enjoyment among Iranian English language teachers. *System, 109*, 1-18. https://doi.org/10.1016/j.system.2022.102890

Fan, L., & Cui, F. (2024). Mindfulness, self-efficacy, and self-regulation as predictors of psychological well-being in EFL learners. *Frontiers*

in Psychology, *15*, 1-15. https://doi.org/10.3389/fpsyg.2024.1332002

Fathi, J., Pawlak, M., Saeedian, S., & Ghaderi, A. (2024). Exploring factors affecting foreign language achievement: The role of growth mindset, self-efficacy, and L2 grit. *Language Teaching Research*, *1*(1), 1-23. https://doi.org/10.1177/13621688241227603

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Gao, Y., Gan, L., & Zhang, D. (2023). The mediating role of perceived teacher emotional support in EFL students' social-emotional competence and psychological well-being: a structural equation modelling (SEM) study. *Journal of Multilingual and Multicultural Development*, 1-17. https://doi.org/10.1080/01434632.2023.2294240

Guo, J., Liu, L., Zhao, B., & Wang, D. (2020). Teacher support and mental well-being in Chinese adolescents: The mediating role of negative emotions and resilience. *Frontiers in Psychology*, *10*, 1-11. https://doi.org/10.3389/fpsyg.2019.03081

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling* (3rd ed.). Sage Publications. https://doi.org/10.1007/978-3-030-80519-7

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling. *A Multidisciplinary Journal, 6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Huang, Q. (2022). Influence of EFL teachers' self-assessment on their self-regulation and self-efficacy. *Frontiers in Psychology*, *13*, 1-8. https://doi.org/10.3389/fpsyg.2022.891839

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press

Liengaard, B. D. (2024). Measurement invariance testing in partial least squares structural equation modeling. *Journal of Business Research*, *177*, 1-15. https://doi.org/10.1016/j.jbusres.2024.114581.

Lin, S., Fabris, M. A., & Longobardi, C. (2022). Closeness in student–teacher relationships and students' psychological well-being: The mediating role of hope. *Journal of Emotional and Behavioral Disorders*, *30*(*1*), 44-53. https://doi.org/10.1177/10634266211013756

Liu, H., & Li, X. (2023). Unravelling students' perceived EFL teacher support. *System*, *115*, 1-15. https://doi.org/10.1016/j.system.2023.103048

Mengistnew, M., Sahile, A., & Asrat, D. (2021). Examining teachers' self-regulation practice in secondary school science teaching: the case of South Gondar Zone, Ethiopia. *Heliyon*, *7*(*11*). 1-12. https://doi.org/10.1016/j.heliyon.2021.e08306

Metheny, J., McWhirter, E. H., & O'Neil, M. E. (2008). Measuring perceived teacher support and its influence on adolescent career development. *Journal of Career Assessment*, *16*(*2*), 218-237. https://doi.org/10.1177/1069072707313198

Muthukrishnan, P., Fung, L. L., Anandhan, H., & D Swamy, P. (2024). The role of growth mindset on the relationships between students' perceptions of English language teachers' feedback and their ESL learning performance. *Education Sciences*, *14*(10), 1073. https://doi.org/10.3390/educsci14101073

Oliveira, Í M., Barroso, P., Vautero, J., & Silva, A. D. (2023). Psychometric analysis of the teacher support scale with higher education students. *Psicologia*, *37*(2), 23-35. https://doi.org/10.17575/psicologia.1851

Pan, Z., Wang, Y., & Derakhshan, A. (2023). Unpacking Chinese EFL students' academic engagement and psychological wellbeing: The roles of language teachers' affective scaffolding. *Journal of Psycholinguistic Research*, *52*(*5*), 1799-1819. https://doi.org/10.1007/s10936-023-09974-z

Pauls, F., Daseking, M., & Petermann, F. (2019). Measurement invariance across gender on the second-order five-factor model of the German Wechsler Intelligence Scale for Children–Fifth Edition. *Assessment*, *27*(*8*), 1836-1852. https://doi.org/10.1177/1073191119847762

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of management*, *12(4)*, 531-544. https://doi.org/10.1177/014920638601200408

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(*5*), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*(4), 719-728. https://doi.org/10.1037/0022-3514.69.4.719

Sahlan, R. N., Serier, K. N., & Smith, J. E. (2024). Using exploratory structural equation modeling to examine the factor structure and measurement invariance of the Farsi version of the Children's eating attitudes test among Iranian preadolescents across gender and age. *Child Psychiatry & Human Development*, *55*(4), 1092-1102. https://doi.org/10.1007/s10578-022-01466-w

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

Shlash Mohammad, A. A., Alshebel, M., Al Oraini, B., Vasudevan, A., Shelash Mohammad, S. I., Jiang, H., & Al Sarayreh, A. (2024). Research on multimodal college English teaching model based on genetic algorithm. *Data and Metadata, 3,* Article 421. https://doi.org/10.56294/dm2024421

Taddese, E. T., Yassin, H. A., Dinsa, M. T., & Lakew, A. K. (2025, October). The practices and challenges of teaching English to young learners: a case of selected primary schools in Ethiopia. *Frontiers in Education, 10,* 1-14. https://doi.org/10.3389/feduc.2025.1656387

Tang, L., & Zhu, X. (2024). Academic self-efficacy, grit, and teacher support as predictors of psychological well-being of Chinese EFL students. *Frontiers in Psychology*, *14*, 1-16. https://doi.org/10.3389/fpsyg.2023.1332909

Tao, Y., Meng, Y., Gao, Z., & Yang, X. (2022). Perceived teacher support, student engagement, and academic achievement: A meta-analysis. *Educational Psychology*, *42*(*4*), 401-420. https://doi.org/10.1080/01443410.2022.2033168

Teng, F., & Zhang, L. J. (2021). Self-regulated learning strategies and writing performance: Effects and mediation of self-efficacy. *System, 102,* 1-15. https://doi.org/10.1016/j.system.2021.102595

Tseng, W. T., Liu, H., & Nix, J.-M. L. (2017). Self-regulation in language learning: Scale validation and gender effects. *Perceptual and Motor Skills*, *124*(2), 531-548. https://doi.org/10.1177/0031512516684293

Wang, Y., Derakhshan, A., & Azari Noughabi, M. (2024). The interplay of EFL teachers' immunity, work engagement, and psychological well-being: Evidence from four Asian countries. *Journal of Multilingual and Multicultural Development*, *45*(8), 3241-3257. https://doi.org/10.1080/01434632.2022.2092625

Yang, Y., & Du, C. (2025). The predictive effect of perceived teacher support on college EFL learners' online learning engagement: Autonomous and controlled motivation as mediators. *Journal of Multilingual and Multicultural Development*, *46*(7), 1890-1904. https://doi.org/10.1080/01434632.2023.2259879

Zhang, L. J., Fathi, J., & Rezaei, N. (2024). Exploring the interplay of growth mindset, mindfulness, and L2 self-efficacy in second language achievement: a mixed-methods study. *International Review of Applied Linguistics in Language Teaching*, *1*(1), 1-32. https://doi.org/10.1515/iral-2024-0056