

Psychological Factors in English Language Learning: Self-Efficacy, Anxiety, and Engagement

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Abstract

English language learning is shaped by cognitive, linguistic, and psychological mechanisms. Among these, self-efficacy, foreign language anxiety, and student engagement play a decisive role in shaping learners' academic trajectories and achievement. This study examines the structural relationships among these three psychological constructs and their impact on English language learning outcomes among university students learning English as a foreign language (EFL). Adopting a quantitative cross-sectional correlational design, data were collected from a sample of 250 university students enrolled in EFL courses in “ ENS -Constantine3 ”. Standardized instruments were employed to assess English language self-efficacy, foreign language anxiety, and multidimensional student engagement (behavioral, emotional, and cognitive), while learning outcomes were measured using validated academic examination scores. Data analyses encompassed descriptive statistics, internal consistency reliability, Pearson correlation, multiple regression analysis, and mediation modeling using Hayes PROCESS. The results revealed that self-efficacy was positively associated with student engagement and academic performance, whereas foreign language anxiety exerted a significant negative effect on both constructs. Furthermore, student engagement emerged as a significant positive predictor of academic achievement and partially mediated the effects of both self-efficacy and language anxiety on learning outcomes. These findings underscore the imperative of addressing learners' affective and motivational profiles alongside formal linguistic instruction. Pedagogical implications focus on fostering self-efficacy, implementing anxiety-reducing instructional environments, and sustaining multidimensional engagement to optimize foreign language acquisition.

Keywords: English language learning; Self-efficacy; Foreign language anxiety; Student engagement; Academic performance; Mediation analysis; EFL learners.

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1. Introduction

In contemporary higher education, proficiency in English serves as a critical gateway to international scholarship, professional mobility, digital literacy, and global communication. In non-Anglophone higher education contexts, traditional pedagogical frameworks have predominantly prioritized cognitive and structural components of language acquisition, including lexical breadth, syntactic mastery, phonological accuracy, and communicative competence. However, empirical developments in educational psychology and second language acquisition (SLA) indicate that linguistic competence alone is insufficient to explain individual variances in academic achievement. Learners' psychological configurations—specifically their self-beliefs, emotional vulnerability within the learning ecology, and depth of instructional involvement—critically determine how they approach tasks, process linguistic input, navigate cognitive obstacles, and attain academic success. Consequently, scholars are increasingly emphasizing that students' belief in their ability to execute specific language tasks functions as a foundational psychological resource that must be bolstered to mitigate the debilitating effects of classroom apprehension (Cai & Xing, 2023; Zhang & Hussain, 2025).

Among the psychological factors governing language learning, self-efficacy, foreign language anxiety, and student engagement constitute three pivotal, interdependent dimensions:

1. **English Language Self-Efficacy:** Rooted in social cognitive theory, self-efficacy reflects learners' domain-specific beliefs regarding their capability to execute designated language tasks and overcome communicative difficulties. Students characterized by elevated self-efficacy approach demanding linguistic tasks as challenges to be mastered rather than threats to be avoided. They display sustained perseverance in the face of communicative breakdowns, participate actively in academic discourse, and attribute failure to modifiable factors such as effort or strategy use rather than inherent incapacity. Conversely, learners with low self-efficacy tend to anticipate task failure, experience heightened vulnerability during evaluative scenarios, and disengage from challenging linguistic interactions. Furthermore, research indicates that these self-beliefs exert a profound influence on emotional regulation, as learners with high self-efficacy demonstrate greater resilience in managing both the cognitive demands of acquisition and the affective barriers that impede progress (Ngamsom & Huttayavilaiphan, 2025, p. 270; Wang et al., 2021, p. 731724).
2. **Foreign Language Anxiety:** Foreign language anxiety represents a distinct, situation-specific affective construct characterized by tension, apprehension, and autonomic nervous system arousal experienced in language learning and production contexts. Because foreign language learning inherently exposes students to public performance, social comparison, and evaluative vulnerability, anxiety frequently manifests during oral presentations, spontaneous interactions, and formal assessments. Excessive anxiety imposes cognitive interference, occupying working memory capacity that would otherwise be allocated to linguistic encoding, retrieval, and synthesis. Consequently, highly anxious learners frequently adopt avoidance behaviors, maintain classroom silence, and experience diminished academic achievement. This state of psychological distress often undermines the learner's emotional stability, thereby creating a negative feedback loop that restricts their willingness to engage with the target language. Such anxiety acts as a potent negative predictor of self-efficacy, establishing an inverse relationship that consistently hinders performance across diverse educational and cross-cultural settings (Kutuk, Putwain, Kaye, & Garrett, 2021, p. 1678438).
3. **Student Engagement:** Student engagement functions as the behavioral and psychological bridge translating internal affective dispositions into observable academic actions. Engagement is conceptualized as a tripartite construct encompassing behavioral, emotional, and cognitive dimensions. Behavioral engagement reflects active classroom participation, persistence, attendance, and task completion. Emotional engagement denotes positive affect,

institutional belonging, and task valuation. Cognitive engagement encompasses deep learning strategies, self-regulated learning, and the mental investment necessary to internalize complex syntactic and semantic structures. In EFL environments, sustained multidimensional engagement is essential, as language mastery requires active, iterative communication and continuous cognitive investment over extended periods. Furthermore, integrating social dimensions of engagement is critical, as learners' willingness to communicate and participate in collaborative activities serves as a primary driver of proficiency development (Eppendi, 2025, p. 347; Jin et al., 2020, p. 1472).

The Interplay and Mediating Mechanisms

Although these constructs have frequently been examined as isolated predictors, theoretical integration suggests that they operate in a dynamic structural network. Self-efficacy and foreign language anxiety serve as critical affective antecedents that shape the quality and extent of student engagement. High self-efficacy fosters an optimistic appraisal of learning demands, thereby promoting active behavioral, emotional, and cognitive investment. In contrast, foreign language anxiety functions as an affective inhibitor, triggering defensive withdrawal and reduced instructional engagement. Recent longitudinal investigations further suggest that these relationships are not unidirectional, as self-efficacy and anxiety likely exert reciprocal influence over time (Huang, 2023, p. 1148474).

Consequently, student engagement occupies a strategic mediating position between distal affective factors (self-efficacy and anxiety) and proximal educational outcomes (academic performance). While positive self-beliefs and low anxiety establish favorable psychological preconditions, their educational utility is largely realized when they manifest as sustained classroom participation, deep cognitive processing, and consistent task execution. Beyond these core components, scholars have increasingly recognized agentic engagement as a crucial fourth dimension, which enables learners to proactively personalize instructional content and enrich the learning materials to suit their specific needs (Hosseini et al., 2022, p. 933843; Liu et al., 2024, p. 198).

Research Questions

To explore these structural associations, the present study addresses the following research questions:

1. What is the nature and magnitude of the relationship between English language self-efficacy and student engagement?
2. What is the nature and magnitude of the relationship between foreign language anxiety and student engagement?
3. To what extent do self-efficacy and foreign language anxiety predict English language learning outcomes?
4. To what extent does student engagement predict English language learning outcomes?
5. Does student engagement mediate the relationship between self-efficacy, foreign language anxiety, and English language learning outcomes?

Hypotheses

Based on the conceptual framework, the following hypotheses are formulated:

- **H1:** English language self-efficacy is positively associated with student engagement.
- **H2:** Foreign language anxiety is negatively associated with student engagement.
- **H3:** English language self-efficacy positively predicts English language learning outcomes.

- **H4:** Foreign language anxiety negatively predicts English language learning outcomes.
- **H5:** Student engagement positively predicts English language learning outcomes.
- **H6a:** Student engagement significantly mediates the positive relationship between English language self-efficacy and learning outcomes.
- **H6b:** Student engagement significantly mediates the negative relationship between foreign language anxiety and learning outcomes.

2. Method

2.1. Research Design

This study employed a quantitative, cross-sectional correlational design to examine the direct and indirect relationships among English language self-efficacy, foreign language anxiety, student engagement, and academic performance. A mediation modeling framework (Hayes PROCESS Model 4) was applied to evaluate the structural pathways linking affective antecedents to learning outcomes through multidimensional engagement.

2.2. Participants and Context

The sample comprised 250 undergraduate students enrolled in English as a Foreign Language (EFL) degree programs at a public university in Algeria. Participants were recruited through convenience sampling across multiple academic cohorts. The age of participants ranged from 18 to 25 years ($M = 21.34$, $D = 1.82$). The sample included 168 females (67.2%) and 82 males (32.8%), reflecting the demographic distribution typical of language faculties in this higher education context. Participation was strictly voluntary, and formal informed consent was secured prior to instrument administration.

2.3. Measures and Instrumentation

- **English Language Self-Efficacy:** Assessed using a structured 20-item scale adapted from established self-efficacy measures for foreign language contexts. The instrument evaluates students' perceived confidence across four core communicative domains: listening comprehension, reading, oral production, and academic writing. Items were scored on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Higher composite scores reflect stronger domain-specific self-efficacy ($\alpha = .88$).
- **Foreign Language Anxiety:** Measured using a 15-item shortened adaptation of the standard foreign language classroom anxiety framework. Items capture communication apprehension, fear of negative evaluation, and test anxiety within the English language classroom. Responses were recorded on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*), with higher scores reflecting elevated levels of language anxiety ($\alpha = .86$).
- **Student Engagement:** Measured via a 15-item multidimensional engagement instrument evaluating behavioral engagement (5 items; e.g., effort, active participation), emotional engagement (5 items; e.g., enthusiasm, task valuation), and cognitive engagement (5 items; e.g., strategy use, metacognitive monitoring). Items were rated on a 5-point Likert scale from 1 (*Never*) to 5 (*Always*). The composite score represents overall instructional engagement ($\alpha = .89$).
- **English Language Learning Outcomes:** Operationalized as students' official end-of-semester composite examination scores in their core English language modules. Scores were scaled on a standard continuous grading scale from 0 to 20, derived from institutional academic records using anonymized identification codes.

2.4. Data Collection and Ethical Considerations

Data collection was conducted during the second semester of the academic year. Questionnaires were administered in quiet classroom settings under the supervision of the primary researcher. Clear instructions were provided regarding data confidentiality, anonymity, and the right to withdraw without academic penalty. The survey required approximately 15 to 20 minutes to complete. Survey data were subsequently matched with official academic records using unique alphanumeric participant codes, eliminating any personally identifiable information from the analytical dataset.

2.5. Analytical Strategy

Data analysis was conducted using SPSS (Version 28.0) and the Hayes PROCESS Macro (Version 4.2). The analytical workflow proceeded as follows:

1. Data screening, normality testing (skewness and kurtosis within the acceptable range of [-1.5, +1.5], and internal consistency reliability analysis (Cronbach's α).
2. Calculation of descriptive statistics (M, SD) and bivariate Pearson correlation coefficients (r).
3. Simultaneous multiple regression analysis to assess the direct predictive power of self-efficacy, anxiety, and engagement on learning outcomes.
4. Mediation analysis using Hayes PROCESS Model 4, employing 5,000 bootstrap resamples to generate 95% bias-corrected confidence intervals (BCIs) for indirect effects. Indirect effects are deemed statistically significant if the 95% BCI does not contain zero.

2. Method

2.1. Research Design

This study employed a quantitative, cross-sectional correlational design to examine the structural relationships among English language self-efficacy, foreign language anxiety, student engagement, and English language learning outcomes. A mediation framework was applied to test whether the affective and cognitive dimensions of student engagement serve as an underlying explanatory mechanism linking psychological antecedents to academic performance.

2.2. Participants and Setting

The sample comprised $N = 250$ undergraduate university students enrolled in EFL degree programs across various academic levels at an Algerian university. Participants were recruited using convenience sampling from scheduled English language courses. The sample ranged in age from 18 to 25 years ($M = 21.34$, $SD = 1.82$). Participation was entirely voluntary, and institutional informed consent was obtained prior to data administration. Anonymity was preserved by assigning unique identification codes to all participants.

2.3. Measures

- **English Language Self-Efficacy:** Assessed using an adapted self-report scale measuring learners' perceived capabilities to perform diverse language tasks (reading, listening, writing, and oral communication). Items were scored on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Higher aggregate scores indicated stronger perceived self-efficacy in English language tasks.
- **Foreign Language Anxiety:** Measured using a structured instrument adapted to the foreign language classroom context. Items evaluated communication apprehension, test anxiety, and fear of negative evaluation on a 5-point Likert scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*). Higher scores reflected elevated levels of language learning anxiety.
- **Student Engagement:** Assessed as a multi-dimensional construct covering behavioral (effort, participation, attendance), emotional (positive affect, interest, belonging), and

cognitive engagement (strategy use, deep processing). Items were rated on a 5-point Likert scale, yielding a composite engagement score.

- **English Language Learning Outcomes:** Operationalized through students' official end-of-semester course examination grades in English. Scores were recorded on a standard 0–20 scale, providing an objective performance indicator rather than self-reported ability.

2.4. Procedure

Data collection occurred during the mid-semester period. Self-administered questionnaires were distributed during class sessions. Participants completed the instruments within approximately 15 to 20 minutes. Academic records were subsequently retrieved and linked to survey responses via participant identification codes.

2.5. Data Analysis

Data were analyzed using SPSS (v.28) alongside the PROCESS Macro (Model 4). Descriptive statistics (M, SD) and internal consistency estimates (Cronbach's α) were computed first. Pearson bivariate correlations were conducted to assess linear associations among constructs. Multiple regression analysis was performed to test direct predictors of academic performance. Finally, mediation analyses were conducted using 5,000 bootstrap resamples to calculate 95% bias-corrected confidence intervals (95% BCI) for indirect effects. The significance threshold was set at $p < .05$.

3. Results

3.1. Descriptive Statistics and Preliminary Analyses

Initial screening indicated no substantial missing data across the 250 cases. All scales exhibited satisfactory internal consistency: Self-Efficacy ($\alpha = .84$), Foreign Language Anxiety ($\alpha = .87$), and Student Engagement ($\alpha = .89$).

Table 1. *Descriptive Statistics and Scale Reliability (N = 250)*

Variable	Mean	SD	Min	Max	Cronbach's α
1. English Language Self-Efficacy	3.42	0.61	1.80	4.90	.84
2. Foreign Language Anxiety	2.87	0.68	1.20	4.65	.87
3. Student Engagement	3.35	0.59	1.75	4.85	.89
4. Learning Outcomes (Grade /20)	13.74	2.41	7.50	18.50	—

3.2. Bivariate Correlation Analysis

Pearson correlation coefficients supported the hypothesized bivariate relationships. Self-efficacy was positively correlated with student engagement ($r = .48$, $p < .001$) and learning outcomes ($r = .41$, $p < .001$). Foreign language anxiety was negatively correlated with student engagement ($r = -.42$, $p < .001$) and learning outcomes ($r = -.36$, $p < .001$). Student engagement displayed a strong positive correlation with learning outcomes ($r = .53$, $p < .001$).

Table 2. *Bivariate Pearson Correlation Matrix*

Variable	1	2	3	4
1. Self-Efficacy	—			

2. Foreign Language Anxiety	-.38	—		
3. Student Engagement	.48	-.42	—	
4. Learning Outcomes	.41	-.36	.53	—

Note: $p < .001$.

3.3. Multiple Regression Analysis

A multiple linear regression was calculated to predict academic outcomes based on self-efficacy, anxiety, and engagement. The overall model was statistically significant, $F(3, 246) = 50.21$, $p < .001$, accounting for 38% of the variance ($R^2 = .380$, Adjusted $R^2 = .372$).

Student engagement emerged as the strongest positive predictor ($\beta = .38$, $t = 6.12$, $p < .001$). Self-efficacy maintained a significant direct positive effect ($\beta = .18$, $t = 2.89$, $p = .004$), while foreign language anxiety remained a significant negative predictor ($\beta = -.16$, $t = -2.61$, $p = .010$).

Table 3. Multiple Regression Predicting English Learning Outcomes

Predictor	B	SE	β	t	p
(Constant)	3.82	0.95	—	4.02	< .001
Self-Efficacy	0.71	0.25	.18	2.89	.004
Foreign Language Anxiety	-0.57	0.22	-.16	-2.61	.010
Student Engagement	1.55	0.25	.38	6.12	< .001

3.4. Mediation Analysis

Mediation analyses via Hayes' PROCESS Macro (Model 4) assessed the indirect pathways from self-efficacy and anxiety to learning outcomes through student engagement.

- **Path 1 (Self-Efficacy → Engagement → Outcomes):** The indirect effect was statistically significant {Effect = 0.44, SE = 0.09, 95% CI [0.27, 0.63]}. Because the direct effect remained significant ($c' = 0.71$, $p = .004$), student engagement partially mediated this relationship.
- **Path 2 (Anxiety → Engagement → Outcomes):** The indirect effect was also statistically significant {Effect} = -0.38, SE = 0.08, 95% CI [-0.55, -0.23]}. Student engagement partially mediated the negative effect of anxiety on academic outcomes ($c' = -0.57$, $p = .010$).

All proposed hypotheses (H1 to H6) were empirically supported.

4. Discussion

The primary objective of this study was to examine the structural relationships among English language self-efficacy, foreign language anxiety, student engagement, and English language learning outcomes among university EFL students, with a specific focus on the mediating role of engagement. The empirical findings confirmed all proposed hypotheses, demonstrating that learners' affective and cognitive appraisals directly and indirectly govern academic performance through their level of active classroom investment. Specifically, the positive association between engagement and achievement underscores the critical role that classroom participation plays in mediating the effects of individual psychological traits (Wang et al., 2023, p. 1098924).

4.1. The Role of Self-Efficacy and Foreign Language Anxiety

The positive relationship observed between self-efficacy, student engagement, and academic performance aligns with social cognitive theory. Students who maintain robust confidence in their language capabilities tend to interpret linguistic difficulties as surmountable challenges rather than personal inadequacies. This adaptive mindset fosters heightened persistence, self-regulated learning strategies, and willingness to participate in challenging communicative tasks. Conversely, heightened levels of foreign language anxiety function as a significant psychological barrier that undermines these self-regulatory processes, resulting in diminished academic achievement (Shang & Ling-ling, 2024; Wu et al., 2022, p. 9).

In contrast, foreign language anxiety exerted a disruptive influence, acting as a negative predictor of both engagement and objective course performance. High anxiety drains working memory capacity that would otherwise be dedicated to linguistic processing and communication. Fear of negative evaluation prompts avoidance behaviors, reducing voluntary contributions and interactions essential for language acquisition. These findings are consistent with existing literature suggesting that high levels of anxiety impede performance by hindering learners' cognitive and behavioral commitment (Jin et al., 2024, p. 4).

4.2. Student Engagement as a Mediating Mechanism

The mediation analyses demonstrated that student engagement serves as a key bridge linking psychological antecedents to academic achievement.

- **Positive Pathway:** High self-efficacy translates into tangible academic success precisely because confident students invest greater behavioral, emotional, and cognitive effort into learning activities.
- **Negative Pathway:** Conversely, foreign language anxiety diminishes academic outcomes by eroding student engagement, thereby constraining the behavioral investment necessary for linguistic growth (Dewaele, Botes, & Greiff, 2022, p. 895594).
- **Negative Pathway:** Language anxiety diminishes achievement primarily because it erodes students' active involvement, leading to emotional alienation and reduced task commitment. This suggests that the detrimental impact of anxiety on performance is not merely an inherent cognitive limitation, but is exacerbated by the active withdrawal of the learner from the classroom environment (Dewaele et al., 2022, p. 467).

These findings illustrate that psychological beliefs do not merely correlate with test scores in isolation; they actively dictate the depth and consistency of learners' day-to-day instructional engagement.

4.3. Pedagogical Implications

These results offer several practical implications for higher education EFL instruction:

- **Fostering Mastery Experiences:** Instructors should scaffold complex communicative tasks into manageable sub-goals, enabling students to experience progressive success and build realistic academic self-efficacy.
- **Cultivating a Supportive Environment:** Educators are encouraged to mitigate language anxiety by promoting a low-stakes classroom climate, which fosters cognitive engagement and enhances the learner's sense of self-regulation (Lin, 2022, p. 998541; Shih, 2019, p. 24).
- **Mitigating Evaluative Pressure:** Language classrooms must transition toward low-stakes, communicative environments where errors are reframed as natural milestones of interlanguage development rather than failures. By emphasizing formative feedback over high-pressure summative assessments, educators can reduce the fear of negative evaluation, thereby curbing avoidant behaviors that traditionally hinder long-term linguistic proficiency (Alzaanin, 2023, p. 777).

- **Promoting Multidimensional Engagement:** Designing collaborative, problem-based learning activities can stimulate emotional and cognitive investment beyond passive lecture attendance. Furthermore, implementing structured emotion regulation training and relaxation techniques can help stabilize students' psychological states, effectively buffering the adverse cognitive load induced by high-stakes testing environments (Qiao et al., 2025, p. 1620282).

4.4. Limitations and Future Directions

Several methodological constraints should be acknowledged:

- **Design:** The cross-sectional correlational design precludes causal inferences; reciprocal effects between engagement and achievement may exist over time.
- **Sampling:** The reliance on a convenience sample from a single institution limits generalizability to broader EFL contexts.
- **Measurement:** Self-report scales may introduce social desirability bias.

Future studies should employ longitudinal or experimental designs to trace the temporal stability of these psychological dynamics across multiple semesters and integrate observational metrics of student engagement. Furthermore, broadening the demographic and cultural diversity of research participants is essential to determine whether these identified mechanisms of learner engagement and emotional regulation remain consistent across different international educational contexts (Guo, 2021, p. 766068), (Shakki, 2023, p. 288).

5. Conclusion

This study provides empirical evidence on the interconnectedness of psychological factors and student engagement in predicting foreign language performance. The results demonstrate that while self-efficacy enhances learning outcomes and foreign language anxiety suppresses them, multidimensional student engagement operates as an essential mediating conduit. Optimizing foreign language education in university settings necessitates pedagogical frameworks that systematically cultivate learner confidence, attenuate communicative anxiety, and actively foster academic engagement.

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