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Relationship between English self-efficacy and language learning strategies among Peruvian university students: the mediating role of academic self-efficacy

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Introduction: This study investigates the mediating role of academic self-efficacy in the relationship between English self-efficacy and language learning strategies among Peruvian university students.

Method: An explanatory cross-sectional design was employed, utilizing a convenience sample of 610 participants. The instruments used included the Strategy Inventory for Language Learning (SILL), the English Self-Efficacy Scale (EAI), and the Perceived Academic Situational Self-Efficacy Scale (EAPESA). The reliability and internal structure of each scale were verified, and the SILL was validated. Descriptive and correlation analyses between variables were conducted, followed by path and mediation analyses.

Results: The proposed model showed adequate fit indices ($\chi^2 = 178$, $df = 33$, $p < 0.001$, CFI = 0.964, TLI = 0.951, RMSEA = 0.085 [CI 90%: 0.073; 0.097]). The indirect effect of English self-efficacy on language learning strategies through academic self-efficacy was significant ($\beta = 0.202$, $p < 0.001$, 95% CI [0.144, 0.261]), indicating that 31.61% of the total effect (direct plus indirect) of English self-efficacy on language learning strategies is explained by this indirect effect.

Conclusion: The results highlight the importance of academic self-efficacy as a mechanism through which English self-efficacy enhances the use of language learning strategies.

KEYWORDS

English self-efficacy, language learning strategies, academic self-efficacy, English language, university students

1 Introduction

According to the 2024 global report from the English Proficiency Index, the Netherlands ranks highest with a very high proficiency level. In South America, two countries are classified at a high proficiency level, with Suriname positioned at 27th and Argentina at 28th, while Peru is ranked 53rd, falling within the moderate proficiency category (Education First, 2025). Enhancing English proficiency at the university level is crucial, given that a substantial portion of scientific literature is published in this language (Sulca Quispe et al., 2024). In Latin America it is acknowledged that the most

significant publications are predominantly in English, necessitating proficiency in the language to remain current (McAlpine, 2025). Moreover, language barriers substantially diminish academic visibility and impact (López Lloreda, 2023). In nations such as Peru, the University Law No. 30220 mandates the compulsory acquisition of a foreign language—specifically English—for the attainment of undergraduate and postgraduate academic degrees for research purposes (Congress of the Republic of Peru, 2023). Consequently, English proficiency constitutes a fundamental competency in university academic training in Peru. However, many university students encounter challenges in effectively acquiring English skills, which can be attributed to individual factors such as self-efficacy, goals, and learning strategies, as well as institutional conditions (Pool-Cibrián and Martínez-Guerrero, 2013). This study builds on the context of improving English proficiency among Peruvian students.

Language learning strategies are defined as actions employed by students to enhance their proficiency in acquiring skills in a second language (Oxford, 1990). Previous research has demonstrated that the utilization of these strategies yields significant benefits for university students. The employment of strategies, such as affective and metacognitive ones, is directly correlated with improved linguistic competence (Sukying, 2021), thereby leading to enhanced academic performance (Agustin et al., 2021).

1.1 Exploring the connection between English self-efficacy and academic self-efficacy and their effect on language learning strategies

English self-efficacy is understood as the beliefs an individual holds about the effectiveness of their abilities to successfully perform a task in English (Wang et al., 2014). Similarly, academic self-efficacy is defined as the belief in one's capabilities to attain academic success (Bandura, 1977; Palenzuela, 1983). Previous research suggests that elevated levels of English self-efficacy correlate with a more frequent and diverse use of learning strategies (Yang and Wang, 2015). English self-efficacy is intrinsically linked to academic self-efficacy (Wang et al., 2014, 2017; Mendoza-Torres et al., 2023). Similarly, a study demonstrated a positive and significant relationship between self-efficacy beliefs and English self-efficacy (Liu, 2023). Other study demonstrated positive correlation between self-efficacy for English learning and the strategies employed for language acquisition (Nasimi et al., 2024). The literature indicates that English self-efficacy is a direct and significant predictor of the use of cognitive strategies, such as critical thinking, metacognitive self-regulation, and time management (Wang et al., 2013; Lee et al., 2020). Additionally, there exists a positive association between English self-efficacy and the employment of metacognitive strategies (Li, 2023).

1.2 Academic self-efficacy as a potential mediator

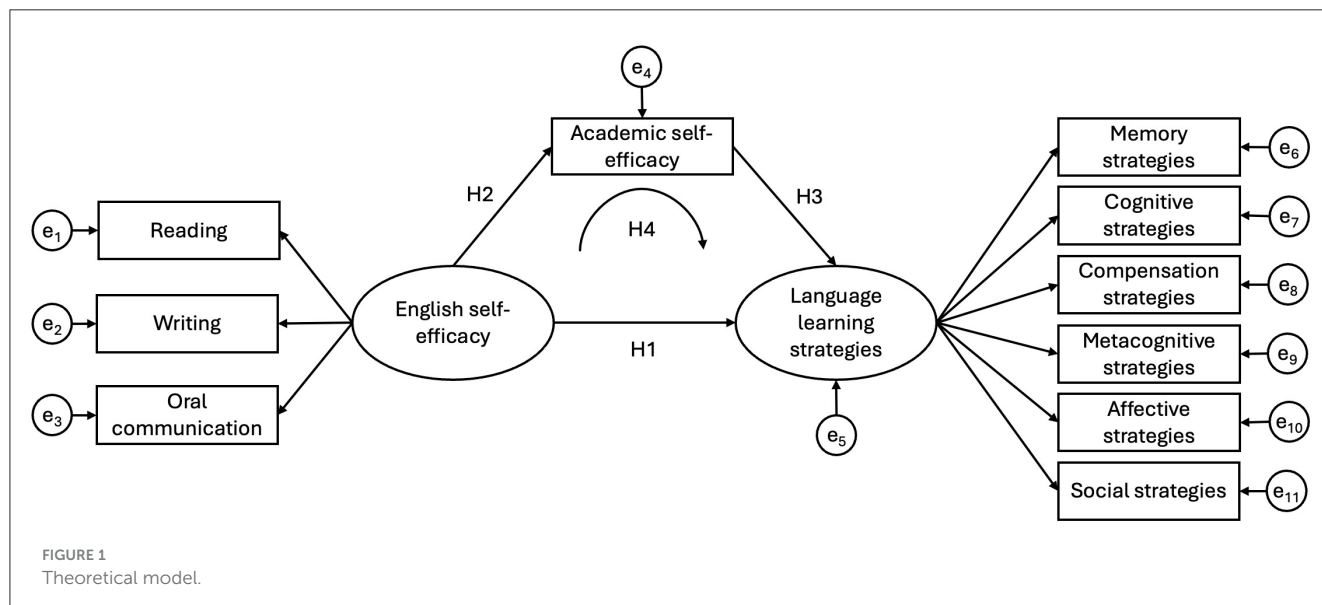
Recent studies indicate that academic self-efficacy may serve as a mediating factor in the relationship between English

self-efficacy and language learning strategies. For instance, it has been demonstrated that academic self-efficacy mediates the interaction of psychological and behavioral variables in university students' learning (Zheng et al., 2024; Chavez-Yacolca et al., 2025). Furthermore, self-efficacy mediates the relationship between motivation, as evidenced by a positive teacher-student relationship, and learning outcomes learning (Ma et al., 2018). This implies that the influence of English-specific self-efficacy (a psychological-motivational variable) on learning strategies (a behavioral variable) may be mediated through academic self-efficacy. In this context, academic self-efficacy—by embodying the student's confidence in their ability to successfully engage with academic tasks—functions as a conduit that either amplifies or diminishes the impact of English-specific self-efficacy on the employment of strategies.

This dynamic can be thoroughly examined through the lens of social cognitive theory (SCT), which posits that human behavior emerges from a triadic interaction among personal, behavioral, and environmental factors, with self-confidence playing a pivotal role (Bandura, 1986). In a subsequent study, Wang et al. (2014) conceptualized self-efficacy for English within the framework of Social Cognitive Theory (SCT). They posited that a student's confidence in their ability to learn the language is cultivated through mastery experiences, observational learning, verbal persuasion, and the individual's emotional or physiological states. The perception of academic competence serves as a conduit that integrates the perception of specific competence in learning English into a broader belief system, thereby facilitating competence and the utilization of learning resources within this academic context (Korpiää et al., 2020). Furthermore, English learning strategies, which include metacognitive, cognitive, and social resources, are actions undertaken by students during the learning process. These strategies are intrinsically connected to students' beliefs regarding their ability to perform the tasks (Cancino et al., 2022).

Academic self-efficacy emerges as the most proximate variable mediating the relationship between English self-efficacy and English learning strategies, as elucidated by the theoretical considerations outlined below. Firstly, this is attributed to the hierarchical and general nature of the self-efficacy concept as proposed in Social Cognitive Theory (SCT). The differentiation between specific beliefs regarding language proficiency and those pertaining to the general capacity to organize and execute actions necessary for academic success enables the latter to mediate the transfer of specific beliefs to a broader context, such as the application of learning strategies (Zimmerman, 2000; Huang, 2024). Usher and Pajares (2008) support this hierarchical model by asserting that domain-specific beliefs, such as English self-efficacy, are incorporated into broader levels of self-efficacy. Furthermore, academic self-efficacy functions as a regulatory variable influencing the selection, persistence, and adaptation of learning strategies (Pintrich and De Groot, 1990), thereby serving as a motivational filter that promotes the employment of effective strategies for learning English (Schunk, 1995).

Empirical research on the link between English self-efficacy and language learning strategies is limited, particularly in Latin American settings. However, given the documented connections between academic self-efficacy and English learning strategies, as well as between English self-efficacy and academic self-efficacy, it



is reasonable to propose that English self-efficacy may influence language learning strategies.

The existing literature has largely overlooked the interaction between academic self-efficacy beliefs and English-specific self-efficacy, as well as their combined impact on the adoption of language learning strategies. This study seeks to address this gap by proposing a manifest variables mediation model to explore the mediating role of academic self-efficacy in the relationship between English self-efficacy and language learning strategies. Subsequently, the study evaluates the fit of a structural model that examines the interrelationships among academic self-efficacy, English self-efficacy, and language learning strategies in university students including an indirect effect analysis (Figure 1). Specifically, the following hypotheses are proposed:

- H1: English self-efficacy is positively associated with academic self-efficacy.
- H2: There is a positive association between academic self-efficacy and language learning strategies.
- H3: English self-efficacy is positively associated with language learning strategies.
- H4: Academic self-efficacy mediates the relationship between self-efficacy for English and language learning strategies.

2 Method

2.1 Design and participants

This study employs a quantitative approach to empirical research, utilizing an associative strategy and a cross-sectional design, as data were collected from participants on a single occasion. The research methodology involved two sequential designs: initially, an explanatory design with observable variables, followed by an explanatory design with latent variables (Ato et al., 2013).

A non-probabilistic or convenience sampling technique was utilized, wherein participants were selected based on their

accessibility and willingness to participate (Creswell and Creswell, 2023). An online form was created using Google Forms, and the link was disseminated at the specified date and time. For in-person classes, the link was shared via WhatsApp, whereas for virtual classes, it was distributed through the Zoom chat feature. The dataset employed in this research is the same as that used in a previous validation study of the Strategy Inventory for Language Learning (Saez-Zevallos et al., 2025). However, the purpose and framework of the current study differ, as it emphasizes mediation analysis through the use of two complementary approaches: a mediation model and a structural equation modeling (SEM) framework that identifies indirect effects. To ascertain the minimum required sample size, a sample size calculator for structural equation models was utilized (Soper, 2024), with parameters set at an anticipated effect size of 0.3, a desired statistical power of 0.8, two latent variables, ten observed variables, and a significance level of 0.05. This calculation indicated a recommended minimum sample size of 100. Nonetheless, the data collected comprised 610 university students aged between 18 and 50 years ($M = 22.8$; $SD = 5.90$), of whom 399 (31.8%) were in early adulthood, 355 (58.2%) were women, 560 (91.8%) were single, 261 (42.8%) were from the Faculty of Health Sciences, and, in terms of geographical distribution, 342 (56.1%) were from the coastal region (Table 1).

2.2 Instruments

The survey methodology was employed, utilizing the following measurement scales:

The Strategy Inventory for Language Learning (SILL) was employed to assess language learning strategies. This instrument, developed by Oxford (1986), was translated into Spanish (García-Herrero and Jiménez-Vivas, 2014) and validated in Peru among university students (Saez-Zevallos et al., 2025), to evaluate the strategies employed in learning the English language. The SILL

TABLE 1 Characteristics of the participants.

Characteristic	Categories	Frequency	%
Age (Min = 18; Max = 50; M = 22.8, SD = 5.9)	Late adolescence	194	31.8 %
	Early adulthood	399	65.4 %
	Middle adulthood	17	2.8 %
Gender	Female	355	58.2 %
	Male	255	41.8 %
Marital status	Single	560	91.8 %
	Married	44	7.2 %
	Divorced	5	0.8 %
	Widowed	1	0.2 %
Faculty	Health Sciences	261	42.8 %
	Business Sciences	166	27.2 %
	Engineering and Architecture	139	22.8 %
	Theology	16	2.6 %
	Human Sciences and Education	28	4.6 %
Geographical region	Coast	342	56.1 %
	Highlands	155	25.4 %
	Jungle	113	18.5 %

comprises 18 items rated on a 5-point Likert scale: “never or almost never” = 1, “generally do not do this” (less than half the time) = 2, “sometimes” (about half the time) = 3, “often” (more than half the time) = 4, and “always or almost always” = 5. These items are distributed across six dimensions: memory strategies (Items 1 to 3), cognitive strategies (Items 4 to 6), compensation strategies (Items 7 to 9), metacognitive strategies (Items 10 to 12), affective strategies (Items 13 to 15), and social strategies (Items 16 to 18). The complete scale exhibits evidence of reliability ($\alpha = 0.916$, $\omega = 0.917$) and validity for its internal structure (CFI = 0.971, TLI = 0.966, RMSEA = 0.034, SRMR = 0.037).

The English Self-Efficacy Scale, as developed and validated in Peru with Peruvian university students (Mendoza-Torres et al., 2023), was employed to assess English self-efficacy. This scale comprises 36 items formatted in a Likert scale with five response options: “I cannot do it at all” = 0, “I cannot do it” = 1, “Relatively sure I can do it” = 2, “I can do it” = 3, “Totally sure I can do it” = 4. The scale comprises three dimensions: Reading (items 1–13), Oral Communication (items 14–22), and Writing (items 23–36). It demonstrates reliability ($\alpha = 0.98$, $\omega = 0.98$) and validity in its internal structure (CFI = 0.92, TLI = 0.92, RMSEA = 0.06, and SRMR = 0.04).

To measure academic self-efficacy, the Perceived Self-Efficacy Scale for Academic Situations (EAPESA) (Palenzuela, 1983) was used, validated in the Peruvian university context (Dominguez-Lara et al., 2012; Dominguez-Lara, 2014). This instrument assesses perceived self-efficacy in academic situations through 9 items with a unidimensional structure (Navarro-Loli and Dominguez-Lara, 2019), measured on a four-point Likert scale: “never” =

1; “sometimes” = 2; “quite often” = 3; and “always” = 4. It demonstrated evidence of reliability ($\omega = 0.88$) and validity of its internal structure (CFI = 0.978, GFI = 0.969, AGFI = 0.949, RMSEA = 0.056, SRMR = 0.029).

2.3 Procedure

The data collection process adhered to the guidelines set forth by the Declaration of Helsinki and received approval from the research ethics committee of the university affiliated with the authors (Reference 2023-CEEPG-00010), thereby ensuring compliance with ethical and data protection standards. An online form was developed using Google Forms, which initially included a request for informed consent. This informed participants about the altruistic nature of their involvement, the study’s objectives, the procedures, and the questionnaires to be completed. Emphasis was placed on the ethical use of data, the voluntary nature of participation, confidentiality, anonymity, the exclusive use of data for research purposes, the right to withdraw at any time, and the protection of data and access to results, in accordance with the ethical standards required for conducting research. Following the informed consent, the form included sections pertaining to sociodemographic data and the data collection instruments.

2.4 Data análisis

The data analysis was performed utilizing Jamovi software, version 2.4.14 (The Jamovi Project, 2023), which serves as an interface for the “R” software (R Core Team, 2023). Initially, the reliability of the instruments was assessed using the internal consistency method, employing both alpha (α) and omega (ω) coefficients. Following the reliability assessment, a descriptive statistical analysis was conducted, encompassing mean, standard deviation, skewness, and kurtosis. Skewness and kurtosis values were deemed to indicate an approximately normal distribution of the variables if they fell within the range of ± 1 (George and Mallery, 2024). The relationships between variables were examined through Pearson’s correlation analysis.

Two complementary approaches to mediation analysis were employed: one utilizing observable variables and the other employing latent variables through structural equation modeling (SEM). The mediation analysis with observable variables was conducted using the jAMM GLM Mediation Model module (Gallucci, 2020), which implemented Bias-corrected Bootstrap (BC) analysis with 5,000 samples. For the evaluation of the structural model with latent variables, the “lavaan” library (Rosseel, 2012) was utilized via the SEMlj module (Gallucci and Jentschke, 2021). The theoretical model of the study was analyzed using the maximum likelihood (ML) estimator in conjunction with bias-corrected bootstrapping (BC) with 5,000 repetitions, a suitable procedure for numerical variables with an approximately normal distribution (Kline, 2023). This method is recommended for assessing indirect effects in mediation analysis through SEM, as it does not require the assumption of normality for the distribution of the products of coefficients that determine the values of

indirect effects (Preacher and Hayes, 2008). The structural equation modeling (SEM) approach was implemented as a content-based parcel model, parceling items into their respective dimensions (Matsunaga, 2008), reducing bias based on the empirical evidence and theoretical support of the dimensionality of the constructs (Landis et al., 2000; Little et al., 2013). This decision was based on the understanding that parcel models, as opposed to item-level models, effectively minimize sampling and parsimony errors and decrease the probability of correlated residuals (Rioux et al., 2020; Little et al., 2022). The model fit was evaluated using the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). CFI and TLI values greater than 0.90, SRMR less than 0.080, and RMSEA 90% CI less than 0.10 were employed, given the complexity of the structural model (Mueller and Hancock, 2019; Kline, 2023), with 95% confidence intervals for standardized coefficients. This SEM analysis facilitates the control of measurement error and rigorously assesses the validity of the structural model (Kline, 2023). The reliability of the constructs was calculated using α (Cronbach, 1951) and ω (McDonald, 2009) coefficients from the psych statistical package (Revelle, 2022), for which magnitudes > 0.70 are considered adequate (Hair et al., 2019; Stensen and Lydersen, 2022).

3 Results

In the course of the descriptive analysis, the total scores of the scales were computed, and their mean and standard deviation were ascertained. The skewness and kurtosis measures were found to fall within the normal distribution range (± 1.0). Furthermore, the reliability of each scale and its respective dimensions was evaluated (Table 2).

A correlation analysis was performed on the variables under investigation, as presented in Table 3. The analysis indicated that all correlations among the variables were statistically significant ($p < 0.001$).

Following the correlation analysis, a mediation analysis was conducted to explore the mediating role of academic self-efficacy in the relationship between English self-efficacy and language learning strategies, as proposed in the hypothesized model. As presented in Table 4, the total effect of English self-efficacy on language learning strategies was significant ($\beta = 0.592$, $p < 0.001$, 95% CI [0.245, 0.313]). In a mediation model, total effects represent the effects calculated without the inclusion of mediators, meaning they are derived by summing the indirect and direct effects. This total effect serves as a reference for determining the percentage of mediation of the indirect effect relative to the total effect.

In relation to hypothesis 1, the findings demonstrated that the direct effect of English self-efficacy on language learning strategies was statistically significant ($\beta = 0.398$, $p < 0.001$, 95% CI [0.147, 0.228]). The direct effects denote the impact calculated while controlling for mediators, thereby reflecting the unmediated effects. This indicates that English self-efficacy had a direct influence on students' language learning strategies. Therefore, hypothesis 1, which posits a direct and positive relationship between English self-efficacy and language learning strategies, was substantiated by the results.

The mediation analysis pertaining to hypothesis 2 revealed a significant positive association between self-efficacy for English and academic self-efficacy ($\beta = 0.603$, $p < 0.001$, 95% CI [0.136, 0.163]). Students exhibiting high levels of self-efficacy for English demonstrated enhanced academic self-efficacy. Consequently, hypothesis 2 is substantiated.

In relation to hypothesis 3, which suggests that there is a positive relationship between academic self-efficacy and language learning strategies, the analysis indicates a significant positive association ($\beta = 0.322$, $p < 0.001$, 95% CI [0.456, 0.765]). This finding implies that university students with higher levels of academic self-efficacy are inclined to utilize language learning strategies more frequently.

The final hypothesis, referred to as hypothesis 4, was assessed to determine the indirect influence of English self-efficacy on language learning strategies, with academic self-efficacy serving as

TABLE 2 Descriptive analysis of the variables under study.

Variable	Mean	SD	Skewness	Kurtosis	α	ω
Reading	32.8	8.18	0.174	0.095	0.929	0.932
Oral communication	21.4	6.19	0.245	0.124	0.950	0.950
Writing	34.5	9.00	0.218	0.193	0.965	0.965
English self-efficacy	88.7	22.08	0.269	0.366	0.982	0.982
Academic self-efficacy	26.3	5.50	0.137	-0.680	0.936	0.937
Memory strategies	10.4	2.31	-0.191	0.153	0.730	0.742
Cognitive strategies	10.8	2.12	-0.105	0.033	0.720	0.722
Compensation strategies	10.8	2.16	-0.123	-0.082	0.754	0.760
Metacognitive strategies	11.5	2.07	-0.348	0.224	0.763	0.764
Affective strategies	11.6	2.18	-0.293	-0.290	0.738	0.741
Social strategies	10.3	2.34	-0.162	-0.001	0.745	0.749
Language learning strategies	65.3	10.42	-0.050	0.564	0.916	0.917

TABLE 3 Correlation matrix.

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1.	—											
2.	0.816***	—										
3.	0.824***	0.869***	—									
4.	0.936***	0.938***	0.957***	—								
5.	0.608***	0.514***	0.571***	0.603***	—							
6.	0.414***	0.416***	0.450***	0.454***	0.418***	—						
7.	0.519***	0.478***	0.511***	0.535***	0.456***	0.638***	—					
8.	0.451***	0.449***	0.471***	0.485***	0.362***	0.518***	0.600***	—				
9.	0.404***	0.329***	0.407***	0.408***	0.476***	0.544***	0.609***	0.540***	—			
10.	0.432***	0.362***	0.428***	0.436***	0.520***	0.505***	0.576***	0.479***	0.653***	—		
11.	0.440***	0.458***	0.480***	0.487***	0.435***	0.535***	0.535***	0.468***	0.536***	0.531***	—	
12.	0.560***	0.527***	0.580***	0.592***	0.562***	0.793***	0.831***	0.757***	0.812***	0.787***	0.767***	—

*** $p < 0.001$.
1. Reading, 2. Oral communication, 3. Writing, 4. English self-efficacy, 5. Academic self-efficacy, 6. Memory strategies, 7. Cognitive strategies, 8. Compensation strategies, 9. Metacognitive strategies, 10. Affective strategies, 11. Social strategies, 12. Language learning strategies.

TABLE 4 Mediation analysis coefficients.

Type	Effect	Label	Estimate	SE	95% C.I.		β	z	p
					Lower	Upper			
Indirect	ESE $\Rightarrow$ ASE $\Rightarrow$ LLS	a $\times$ b	0.092	0.012	0.068	0.118	0.194	7.59	<.001
Component	ESE $\Rightarrow$ ASE	a	0.150	0.008	0.136	0.163	0.603	18.65	<.001
	ASE $\Rightarrow$ LLS	b	0.611	0.073	0.456	0.765	0.322	8.31	<.001
Direct	ESE $\Rightarrow$ LLS	c'	0.188	0.018	0.147	0.228	0.398	10.26	<.001
Total	ESE $\Rightarrow$ LLS	c' + a $\times$ b	0.279	0.015	0.245	0.313	0.592	18.12	<.001

ESE, English self-efficacy; LLS, Language learning strategies; ASE, Academic self-efficacy. Confidence intervals computed with method: Bias corrected bootstrap. Betas are completely standardized effect sizes.

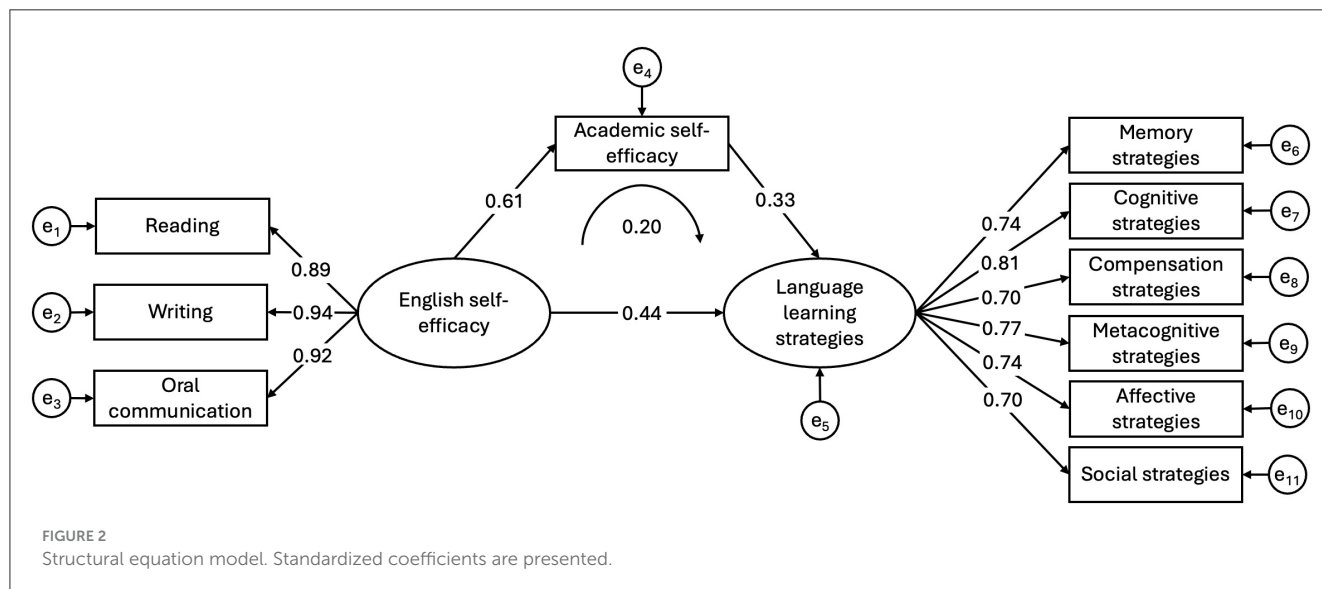
a mediator. The analysis indicated a significant indirect effect ($\beta = 0.194$, $p < 0.001$, 95% CI [0.068, 0.118]), which constituted 32.8% of the overall effect, encompassing both direct and indirect components, thereby affirming hypothesis 4.

Following the completion of the mediation analysis involving observable variables, the examination of the proposed theoretical model was undertaken. This model incorporated both latent and observable variables, with the latter derived by parceling items into their respective dimensions (Figure 2). The proposed model demonstrated a satisfactory fit ($\chi^2 = 178$, $df = 33$, $p < 0.001$, CFI = 0.964, TLI = 0.951, RMSEA = 0.085 [90% CI: 0.073; 0.097], SRMR = 0.035). All standardized coefficients were statistically significant ($p < 0.001$), with confidence intervals obtained via BC Bootstrapping at 95%, which did not encompass zero. Hypothesis 1 (H1) pertains to the direct effect of English self-efficacy on language learning strategies ($\beta = 0.437$, $p < 0.001$, 95% CI [0.342, 0.533]). Hypothesis 2 (H2) addresses the effect of English self-efficacy on academic self-efficacy ($\beta = 0.610$, $p < 0.001$, 95% CI [0.554, 0.666]). Hypothesis 3 (H3) concerns the effect of academic self-efficacy on language learning strategies ($\beta = 0.331$, $p < 0.001$, 95% CI [0.238, 0.425]). Hypothesis 4 (H4) relates to the indirect effect of English

self-efficacy on language learning strategies through academic self-efficacy ($\beta = 0.202$, $p < 0.001$, 95% CI [0.144, 0.261]), indicating that 31.61% of the total effect (comprising both direct and indirect effects) of English self-efficacy on language learning strategies is accounted for by the indirect effect mediated through academic self-efficacy.

4 Discussion

The objective of this study was to develop a mediation model to investigate the mediating role of academic self-efficacy in the relationship between English self-efficacy and language learning strategies among university students. Additionally, the study aimed to assess the fit of a structural model that examines the interrelationships among academic self-efficacy, English self-efficacy, and language learning strategies, including an analysis of indirect effects in this population. The mediation analysis indicated that English self-efficacy is directly associated with language learning strategies and also exerts an indirect effect through academic self-efficacy. Moreover, the structural model exhibited an adequate fit.



4.1 English self-efficacy and its association with learning strategies and academic self-efficacy

English self-efficacy demonstrated a positive association with the employment of strategies for learning English. This finding aligns with the results reported by [Montaño-González and Cancino \(2020\)](#) in a study involving Chilean university students, although that particular study did not specifically address English self-efficacy nor did it incorporate regression analysis. Conversely, research conducted with Iranian university students indicated that general self-efficacy positively predicted the use of English learning strategies ([Shirzad et al., 2022](#)). This research emphasizes the link between English-specific self-efficacy and the utilization of strategies for mastering the language.

The relationship between English self-efficacy and academic self-efficacy was found to be positive. This finding is consistent with the results reported by [Wang et al. \(2017\)](#) and [Mendoza-Torres et al. \(2023\)](#), who illustrated those specific forms of self-efficacy, such as English self-efficacy, are positively associated with more general forms of self-efficacy, including academic self-efficacy. Similarly, [Chen and Usher \(2013\)](#) identified a relationship between self-efficacy resources and enhanced scientific self-efficacy. Furthermore, other studies have indicated that these self-efficacy resources are positively linked to reading self-efficacy ([Shehzad et al., 2019](#)) and writing self-efficacy ([Sun et al., 2021](#); [Barreda-Parra et al., 2023](#)).

4.2 Relationship between academic self-efficacy and language learning strategies

Academic self-efficacy demonstrated a positive association with English learning strategies. This finding aligns with the results reported by [Martins and Santos \(2019\)](#) among Brazilian university

students. In the context of China, elevated levels of self-efficacy among university students were associated with an increased utilization of cognitive, affective, and compensation strategies for English learning ([Shi, 2018](#)). Furthermore, this variable has been linked to avoidance learning strategies and metacognitive self-regulation, which, although not encompassed within Oxford's theoretical classification, are related to metacognitive and affective strategies ([Bai et al., 2022](#)).

4.3 Academic self-efficacy as a mediator

The primary contribution of this study is the identification of academic self-efficacy as a mediating factor in the relationship between English self-efficacy and language learning strategies. English self-efficacy is connected to the use of cognitive strategies, such as critical thinking, metacognitive self-regulation, time management and metacognitive strategies ([Wang et al., 2013](#); [Lee et al., 2020](#); [Li, 2023](#)). Furthermore, it is associated with academic self-efficacy ([Wang et al., 2014, 2017](#); [Mendoza-Torres et al., 2023](#)), highlighting the intermediary function of academic self-efficacy in this dynamic. This concept is consistent with the notion of transfer within Social Cognitive Theory, wherein beliefs in one's specific abilities in English can be transferred to other academic areas requiring similar cognitive processes, such as general academic self-efficacy, thereby facilitating the development of skills that enhance performance across various academic domains ([Bandura, 1986](#); [Franco and Rodrigues, 2018](#)).

4.4 Theoretical implications

The distinction between specific beliefs about language proficiency and those related to the general ability to organize and execute actions necessary for academic success allows the latter to facilitate the transfer of specific beliefs to a broader context, such as the application of learning strategies ([Zimmerman,](#)

2000; Huang, 2024). In alignment with this, the present research adds to the existing literature by revealing that English self-efficacy, while encompassing more specific domain beliefs than academic self-efficacy, benefits from the latter's role in enhancing strategic learning behavior. This finding aligns with previous research outcomes (Zimmerman, 2000; Schunk and Pajares, 2002). Furthermore, the study empirically validates the presence of a bidirectional relationship between specific self-efficacy and general academic self-efficacy. Specifically, self-efficacy in particular domains predominantly enhances academic self-efficacy, thereby facilitating the employment of cognitive, metacognitive, and behavioral strategies for learning (Zimmerman and Schunk, 2011). Additionally, creates opportunities for future research to investigate how varying degrees of self-efficacy, particularly general academic self-efficacy, affect the learning processes and outcomes of university students.

Beyond the social cognitive account of self-efficacy, research has highlighted affect as a proximal mechanism through which efficacy beliefs influence learning strategies. According to Bandura (1997), self-efficacy is shaped by mastery experiences, vicarious learning, verbal persuasion, and physiological and affective states. However, affect should not be treated merely as a background context but as a core process that enables or constrains self-regulation. Control-value theory (Pekrun, 2006) explains how perceived control over learning tasks and their value generate achievement emotions, which facilitate or hinder strategy deployment. Lo (2023) posits that emotional factors, such as self-control, significantly influence self-efficacy, which in turn affects the degree of commitment exhibited toward learning. Similarly, another study suggests that students with high levels of self-efficacy experience reduced anxiety and increased enjoyment in learning (Lo, 2022) thereby facilitating the adoption of effective learning strategies. Future studies could conceptualize English self-efficacy as indirectly influencing strategy use through academic self-efficacy and affective mechanisms, particularly enjoyment, emotional regulation, and perceived control.

4.5 Practical implications

The present study elucidates significant implications derived from the findings reported. It underscores the necessity of employing a diverse array of strategies to enhance academic performance in language acquisition (Agustin et al., 2021). The study demonstrates that the direct effect of English self-efficacy on language learning strategies is substantial, there exists a positive correlation between English self-efficacy and academic self-efficacy, academic self-efficacy positively forecasts language learning strategies, and there is a notable indirect effect of English self-efficacy on language learning strategies mediated by academic self-efficacy. These findings suggest that higher education institutions should (a) optimize the development of self-efficacy skills to enhance the utilization of language learning strategies, ensuring that students independently monitor their use, (b) implement training programs to fortify academic self-efficacy and promote the use of language learning strategies to improve performance and facilitate the learning of additional languages such

as English, and (c) design instructional activities that integrate linguistic skills, thereby facilitating the use of multiple strategies with the aim of fostering effective and meaningful learning (García-Herrero and Jiménez-Vivas, 2014).

Educational institutions can enhance students' academic and English self-efficacy through the implementation of peer mentoring (Huang, 2023), structured linguistic tasks (Nguyễn et al., 2022), and digital tools (Arbulú Pérez Vargas et al., 2024). Digital technologies provide personalized practice opportunities, personalized feedback, and interactive AI Tools (Yaseen et al., 2025). When effectively applied, these strategies contribute to the improvement of students' academic and language performance (Casa-Coila, 2025).

This study may signify a substantial advancement in instructional design within English for Academic Purposes (EAP) and English for Specific Purposes (ESP) contexts by incorporating pedagogical principles that prioritize affect as a crucial connection between course structure and students' emotional wellbeing. In this context, it aims to foster the development of linguistic competencies and enhance academic self-efficacy. This proposal acknowledges that language learning in higher education is not merely cognitive but also deeply affective, and that addressing factors such as enjoyment, anxiety, and perceived control can significantly influence the sustained adoption of learning strategies. Thus, aligning course design with an affective rationale enhances its practical feasibility and provides stakeholders with a means to improve student performance and experiences.

5 Conclusions

Academic self-efficacy serves as a partial mediator in the relationship between English self-efficacy and language learning strategies among Peruvian university students. These findings hold both theoretical and practical significance within the context of higher education. It is recommended that higher education institutions foster the development of both English language self-efficacy and academic self-efficacy, given their potential to enhance the utilization of language learning strategies. Notably, English assumes a prominent role due to its educational implications, as it is the primary language in which most scientific information is disseminated, thereby functioning as the *lingua franca* for scientific communication.

6 Limitations and future research

This study significantly enhances our comprehension of the interactions among the variables investigated, yet it is essential to acknowledge certain limitations. Firstly, the use of self-report scales may introduce participant subjectivity, potentially leading to social desirability bias (Morgado et al., 2017). Future research should consider employing external evaluations to address this concern. Secondly, the study employed a non-probabilistic convenience sample of university students. Although this sampling method is frequently utilized in educational psychology research, it constrains the generalizability of the findings to the specific (sub)population from which the sample is derived, rather than to the entire population (Andrade, 2021). Future research should aim to

replicate these results using probabilistic sampling methods to enhance external validity and reduce the potential for selection bias. Thirdly, the cross-sectional design limits the ability to establish causal links between self-efficacy, learning strategies, and the proposed mediating mechanisms. Conversely, longitudinal designs offer the potential to provide more robust causal evidence (Maxwell and Cole, 2007; West, 2011; Cain et al., 2017; Maier et al., 2023) and quasi-experimental designs with a causal mediation analysis can provide insights into the development of academic self-efficacy and its mediating role in the relationship between English self-efficacy and English language learning strategies (Cerezo et al., 2019; Chi et al., 2022). Consequently, the associations identified in this study necessitate further validation through longitudinal or quasi-experimental research designs to investigate temporal relationships. Furthermore, augmenting the analysis with qualitative techniques such as semi-structured student interviews or focus groups can elucidate perceptions of causality on the participants (Maxwell, 2012; Jensen, 2022). This approach would facilitate the clarification of causal explanations, enhance the cultural interpretation of the findings, and yield specific recommendations. This impact would be most significant in disciplines such as educational psychology, applied linguistics, and policy and regulatory development in higher education.

Fourthly, potential confounding factors not considered like teacher style and socioeconomic background on academic self-efficacy (Xiao and Song, 2022; Zhou and Liu, 2025) or prior English language experience on English self-efficacy (Huang, 2024), which can affect indirectly on language learning strategies. Students with better educational resources and prior English learning experiences might report higher self-efficacy and use more innovative strategies. The omission of these factors limits establishing causal relationships, as uncontrolled external variables could influence results.

Fifthly, while the use of item parceling in structural equation modeling analyses aligns with established methodological practices designed to enhance model parsimony and estimation stability, it carries the potential risk of concealing underlying multidimensionality within the constructs. The decision to implement parceling was guided by the objective of reducing model complexity, in accordance with prior methodological guidance (Little et al., 2013, 2022; Williams et al., 2025). Future studies should employ item-level analyses to corroborate the robustness of the findings. Nevertheless, although the constructs' dimensions were treated as observable variables through the item parceling method, the results are bolstered by two mediation analysis approaches.

Sixthly, research conducted within hybrid teaching environments, such as those in Hong Kong, indicates that elements such as the organization of classes in hybrid or flipped formats, teacher support, the emphasis on assessment, and the structuring of group work significantly impact students' emotional states (Lo, 2022, 2023). These emotional states are closely linked to their levels of participation and self-regulation (Zhou and Liu, 2025). These findings enhance our understanding of previously overlooked contextual variables and underscore the necessity of incorporating specific factors in future research, including perceived autonomy, teacher support, anxiety related to

assessment, and the intensity or quality of participation in hybrid settings. Considering these elements as environmental antecedents, in accordance with Social Cognitive Theory (Bandura, 1986) and the value-control theory (Zimmerman, 2000; Huang, 2024), would facilitate a more comprehensive understanding of how contextual conditions influence the efficacy-strategy relationship delineated in this study.

Seventhly, the research conducted in Hong Kong on English for EAP/ESP (Lo, 2022, 2023) yields results that are generalizable to similar populations within Asia. Its applicability, however, may extend to educational contexts where English serves a functional role. This includes English for Academic Purposes programs at technical universities in Mexico, where proficiency in academic English is essential for publishing and pursuing graduate studies (Castillo-Martínez et al., 2023). Additionally, it pertains to English for Specific Purposes (Dou et al., 2023; Coracini et al., 2024; Mao and Zhou, 2024) in institutions related to engineering, tourism, or medicine; in Chile, where universities engage in internationalization initiatives; in Colombia, where there is an increasing demand for professional English in sectors such as tourism and technology; and in Argentina, where universities offer academic English training programs for researchers and in the business sector, professional transnationalism, among others.

Conducting comparative studies to assess whether enjoyment and perceived control function as moderating or mediating variables in the sequence of English self-efficacy, academic self-efficacy, and language learning strategies among higher education students in Peru is advisable. Such an investigation could elucidate the affective and cognitive mechanisms involved in language learning within hybrid contexts, allowing for regional comparisons. Given that Latin American countries face similar university challenges related to internationalization, technological access, and language policies, it is pertinent to examine whether the characteristics of hybrid design yield equivalent effects in environments such as Chile, Colombia, Argentina, or Mexico. Through this comparative approach, common patterns and contextual divergences could be identified, thereby enhancing pedagogical practices in the teaching of English as a second language in Latin America.

An extended model is thus proposed, integrating affective variables such as enjoyment and perceived control into the conventional framework of English self-efficacy, academic self-efficacy, and language learning strategies. This model aims to recognize the impact of emotional factors within hybrid university education contexts.

Future research is advised to thoroughly investigate the relationship between students' academic self-regulation and their learning strategies within the context of foreign language acquisition (Erdogan, 2018). Clark et al. (2021) identify integrative motivation as a significant mediating variable in the relationship between self-efficacy beliefs and academic performance in English as a foreign language teaching context. Furthermore, it has been demonstrated that students with high self-efficacy are more likely to exhibit a greater capacity for autonomous learning (Lee et al., 2020). Subsequent studies could explore motivation and autonomous learning as mediating variables between academic self-efficacy and language learning strategies. While some research has suggested

examining how the use of specific self-regulated learning strategies, such as help-seeking, varies among university students of English with differing levels of self-efficacy (Lee et al., 2020). Additional studies could be conducted to ascertain how English language self-efficacy and academic self-efficacy influence the use of specific language learning strategies.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Comité de ética de la Escuela de Posgrado de la Universidad Peruana Unión. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

NS-Z: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing. DC-A: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. CA-R: Project administration, Supervision, Writing – original draft, Writing – review & editing. DM-A: Investigation, Project administration, Supervision, Writing – original draft, Writing – review & editing.

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