Check for updates

OPEN ACCESS

EDITED BY Bin Shen, Fuzhou University, China

REVIEWED BY Siyi Wang, Nanjing Normal University, China Su Li, Nanyang Normal University, China

*CORRESPONDENCE Thi Nhu Ngoc Truong Imagocttn@huit.edu.vn

RECEIVED 14 July 2024 ACCEPTED 12 May 2025 PUBLISHED 13 June 2025

CITATION

Truong TNN (2025) Vietnamese version of the self-regulated motivation for improving speaking English as a foreign language (VV-SRMIS-EFL): validation and speaking score correlations. *Front. Educ.* 10:1464608. doi: 10.3389/feduc.2025.1464608

COPYRIGHT

© 2025 Truong. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Vietnamese version of the self-regulated motivation for improving speaking English as a foreign language (VV-SRMIS-EFL): validation and speaking score correlations

Thi Nhu Ngoc Truong*

Faculty of Foreign Languages, Ho Chi Minh City University of Industry and Trade, Ho Chi Minh City, Vietnam

Increased attention has been given to the role of self-regulation and motivation in second language acquisition, particularly in enhancing English-speaking proficiency. This study investigates the psychometric properties of the Vietnamese Version of the Self-Regulated Motivation for Improving Speaking English as a Foreign Language (VV-SRMIS-EFL) among 414 English majors at a public university in Vietnam. Grounded in Pintrich's Self-Regulated Learning Model, the scale assesses four dimensions: Task Value Activation, Regulation of Learning Environment, Regulation of Affect, and Regulation of Peers. The VV-SRMIS-EFL demonstrated strong internal consistency (Cronbach's $\alpha = 0.89$) and acceptable convergent validity (AVE = 0.55). Descriptive and correlational analyses revealed high levels of self-regulated motivation among participants, with Task Value Activation, Regulation of Peers and Regulation of Affect showing significant positive associations with speaking achievement scores. These findings highlight the relevance of motivational regulation in developing speaking skills and underscore the need for pedagogical and policy interventions that support self-regulated learning strategies in Vietnamese EFL contexts.

KEYWORDS

English majors, English speaking scores, self-regulated learning (SRL), self-regulated motivation, Vietnamese EFL learners

1 Introduction

Self-regulated learning (SRL) has emerged as a central concept in education, emphasizing learners' ability to actively manage their cognition, motivation, and behaviors to achieve academic goals (Pintrich, 2004; Zimmerman, 2002). In second language (L2) acquisition, SRL plays a vital role in promoting learner autonomy and improving overall language proficiency (Dörnyei, 2015). Through goal setting, self-monitoring, and adaptive strategy use, learners can regulate their progress across different language skills (Teng and Zhang, 2016).

Research on language learning strategies has increasingly emphasized SRL strategies, shifting the focus from specific behaviors to broader cognitive and motivational processes (Dörnyei, 2015; Rose, 2012; Stevens, 2016). While debates persist on whether SRL strategies should replace traditional learning strategies (Oxford, 2016; Rose et al., 2018), many scholars emphasize their integration to understand second language learning better (Dörnyei, 2015; Tseng et al., 2006).

Given the increasing focus on SRL's role in enhancing language proficiency, its application to specific language skills warrants further investigation. Among the four core language skills, speaking is widely acknowledged as one of the most cognitively and affectively demanding (Pawlak, 2018). It requires linguistic competence, real-time processing, confidence, and social interaction skills. While SRL research in L2 learning is growing, studies specifically examining its application to speaking proficiency remain limited (Alotumi, 2021; Rose et al., 2018).

In response to this gap, Uztosun (2020) developed the Self-Regulated Motivation for Improving Speaking English as a Foreign Language (SRMIS-EFL) scale, a 20-item instrument measuring learners' motivational strategies across four dimensions: task value activation, learning environment regulation, emotion regulation, and classroom environment regulation. Although this tool provides a valuable foundation, further research is needed to validate its use in diverse EFL settings, particularly in contexts where learners face unique sociocultural and educational challenges (Alotumi, 2021; Uztosun, 2020).

Recent studies highlight the increasing complexity of SRL in multilingual environments, emphasizing the interaction between learners' motivational profiles, language contexts, and selfregulatory behaviors (Wang S. et al., 2024). Similarly, Wang and Wang (2024) explore how learners' multifaceted motivations shape their engagement with multiple languages, underscoring the need for a more contextualized understanding of motivation in diverse EFL settings.

In the Vietnamese EFL context, traditional grammarbased instruction often hinders learners' ability to develop communicative competence (Truong et al., 2022). Many students rely on passive strategies such as translation and rote note-taking rather than actively managing their speaking practice (Tran and Nguyen, 2020). Nevertheless, English remains highly valued, especially for employment opportunities, and learners are further motivated by parental expectations and peer influence (Truong and Archer, 2018; Pham, 2017). Despite these motivators, SRL research in Vietnam has primarily centered on listening (Ngo, 2019) and grammar (Truong, 2022), leaving a gap in understanding how learners regulate their speaking skill development.

Building on this foundation, the present study adopts the Vietnamese version of Uztosun's SRMIS-EFL scale (VV-SRMIS-EFL) to investigate self-regulated motivational strategies among English majors at a Vietnamese public university. Specifically, it examines the reliability and validity of the VV-SRMIS-EFL and explores the extent to which learners use these strategies to enhance their speaking skills. Additionally, the study investigates the relationship between self-regulated motivation and academic achievement in speaking courses.

By addressing this underexplored area, the research contributes to a more nuanced understanding of how self-regulated motivation supports speaking proficiency in EFL learners. The findings have practical implications for language education policies, classroom practices, and intervention strategies to improve English language outcomes among Vietnamese students.

Therefore, this study addresses the following research questions:

Research Question 1: What is the reliability and validity of the Vietnamese version of the Self-Regulated

Motivation for Improving Speaking English as a Foreign Language (VV-SRMIS-EFL)?

Research Question 2: What is the level of self-regulated motivation for improving speaking English as a foreign language among Vietnamese public university English majors?

Research Question 3: Is there any relationship between self-regulated motivation for improving speaking English as a foreign language and English-speaking achievement scores among Vietnamese public university English majors?

2 Literature review

2.1 Theoretical framework

This study is grounded in Self-Regulated Learning (SRL) theory, particularly the model developed by Pintrich (2000), which conceptualizes SRL as a cyclical process involving four phases: forethought, monitoring, control, and reflection. These phases guide learners in planning, regulating, and evaluating their learning activities. Within this framework, motivation is not only a prerequisite for engagement but also a dynamic element that learners actively regulate throughout the learning process, particularly in demanding tasks such as speaking.

In the forethought phase, students set goals, activate prior knowledge, and assess their motivation. During the monitoring phase, they track their attention, monitor their progress, and regulate motivation levels. Effective motivational self-monitoring sustains effort, especially when facing challenges. Strategies such as positive self-talk and short-term goal-setting help learners remain engaged. The control phase involves adjusting learning strategies based on feedback and perceived progress. In the reaction and reflection phase, learners evaluate their performance, attribute outcomes to specific causes, and experience emotional responses, reinforcing future self-regulated behaviors. Positive experiences enhance self-efficacy, fostering a cycle of motivation and improved performance (Zimmerman and Schunk, 2011). Constructive selfreflection enables students to develop resilience and refine their strategies, even in the face of setbacks.

To deepen the motivational dimension of SRL, this study incorporates Self-Determination Theory (SDT; Deci and Ryan, 1985), which provides a robust framework for understanding the quality of learners' motivation. SDT distinguishes between intrinsic motivation and extrinsic motivation. Intrinsic motivation has been linked to greater persistence and deeper engagement (Noels et al., 2000; Ryan and Deci, 2000; Vallerand et al., 1993). In contrast, extrinsically motivated learners—especially those focused on exam results—may lack the autonomy necessary for effective self-regulation (Truong et al., 2022).

Furthermore, this study includes the Expectancy-Value Theory (Eccles and Wigfield, 2002; Wigfield et al., 2016), which explains how learners' expectations for success and the value they attach to speaking tasks influence their effort and persistence. Speaking English as a foreign language often involves high levels of uncertainty, performance pressure, and fear of negative evaluation, making motivational regulation strategies critical for learners to sustain engagement and manage affective responses. By incorporating motivational regulation into self-regulated learning

(SRL), educators can encourage students to take greater ownership of their learning, overcome speaking anxiety, and enhance their long-term language proficiency (Uztosun, 2020).

Building on the theoretical foundations, this study conceptualizes self-regulated motivation for speaking as a dynamic process in which learners mobilize personal and contextual resources to initiate, sustain, and adjust their speaking practice. This framework underpins the design and validation of the Vietnamese Version of the Self-Regulated Motivation for Improving Speaking English as a Foreign Language Scale (VV-SRMIS-EFL) and informs the investigation of how self-regulated motivational strategies relate to learners' speaking outcomes.

2.2 SRL in L2 learning: global perspectives

Self-regulation is a key construct encompassing cognitive, metacognitive, and motivational strategies (Tobias and Everson, 2009). It plays a vital role in lifelong learning competence (European Council, 2002), enabling students to monitor and adjust their learning processes for deeper understanding and real-world application. Research in the United States has established a strong link between self-regulatory strategies and academic success (Boekaerts and Cascallar, 2006; Zimmerman and Cleary, 2006). Over the past decades, numerous intervention studies have explored ways to enhance self-regulation skills and their impact on learning (de Boer et al., 2018; Kostons et al., 2012). Self-regulated learners actively develop self-awareness, motivation, and behavioral control (Zimmerman and Pons, 1986), leading to improved academic achievement and learning motivation.

In the context of English as a Second Language (ESL) and English as a Foreign Language (EFL), SRL has gained significant attention, particularly in developing strategies to enhance language acquisition. Studies have shown a correlation between SRL and English proficiency across various global contexts, including China (Bai, 2018; Bai and Guo, 2018; Peacock and Ho, 2003), Taiwan (Lai, 2009; Lan and Oxford, 2003), and Singapore (Wharton, 2000). This connection underscores the crucial role of SRL strategies in language learning (Wang and Sun, 2024). Advanced learners, in particular, tend to apply cognitive and metacognitive strategies more flexibly and effectively than their lower-proficiency peers (Boekaerts and Cascallar, 2006; Oxford, 1999). Further studies have confirmed this trend in diverse contexts, including Hong Kong (Bai and Wang, 2020), China (Wang et al., 2013; Wang and Bai, 2017), and Vietnam (Ngo, 2019). However, research specifically focusing on SRL strategies for speaking remains limited despite evidence that applying these strategies enhances oral proficiency and helps learners overcome task-related challenges (Sun, 2022).

2.3 SRL and speaking skill development

Although the role of self-regulated learning (SRL) in language learning is well-established, its application to speaking skills remains relatively underexplored. In a qualitative study, Pawlak (2018) investigated twenty advanced English students at a Polish university as they completed two communication tasks. The findings revealed a strong preference for metacognitive strategies—such as planning, monitoring, and self-evaluation—alongside frequent use of social strategies (e.g., seeking clarification and collaboration) and compensatory strategies (e.g., gestures, use of the native language, approximation, and reformulation). These strategies were employed at various stages of task execution, highlighting their importance in developing spoken language. Similarly, Wael et al. (2018), in a qualitative study involving 12 third-year Thai university students, found that learners used memory strategies to enhance speaking performance more frequently than metacognitive or social strategies.

To further understand how SRL supports speaking skill development, it is important to move beyond strategy use and consider the motivational foundations that sustain these behaviors. Uztosun (2020) was among the first to systematically measure Turkish students' motivational regulation in speaking using the Self-Regulated Motivation for Improving Speaking English as a Foreign Language (SRMIS-EFL) scale, which covers four dimensions: Task Value Activation, Learning Environment Regulation, Emotion Regulation, and Peer Regulation. Building on this work, Alotumi (2021) applied the SRMIS-EFL scale to a sample of 300 Yemeni EFL college students. The findings indicated that both juniors and seniors generally exhibited moderate to high levels of self-regulated motivation, with Task Value Activation emerging as the strongest subdomain. Regarding Affect Regulation, senior students demonstrated better management of anxiety and self-confidence than juniors. Both groups used Peer Regulation moderately, reflecting students' occasional reliance on peers for motivation and support. However, Learning Environment Regulation was reported as the least frequently used strategy, indicating limited efforts to seek additional speaking practice outside the classroom, particularly with native speakers. The study found no significant differences in SRMIS-EFL scores based on academic level. Nevertheless, gender had a small but significant effect, with female students scoring slightly higher than their male counterparts. While the role of gender in SRL strategy remains inconclusive, with some studies reporting no significant differences (Dinsa et al., 2022; Suhesti et al., 2022), others find small statistically significant effects favoring female students (Alotumi, 2021; Lee, 2018), suggesting that further research is needed to clarify these findings.

Building on the foundational work of Uztosun (2020) and Alotumi (2021), who identified key dimensions of selfregulated motivation for improving speaking in English as a Foreign Language (EFL)—namely, Task Value Activation, Emotion Regulation/Regulation of Affect, Peer Regulation, and Learning Environment Regulation—recent studies have further illuminated how these components that underpin effective SRL interact to enhance speaking proficiency.

Among these, Task Value Activation is pivotal in motivating learners to engage in speaking activities. When students perceive speaking tasks as valuable and relevant to their personal goals, they are more likely to invest effort and persist in facing challenges. This intrinsic appreciation for the task enhances engagement, facilitates deeper learning, and significantly predicts self-regulation and language achievement (Ghasemi and Dowlatabadi, 2018). Equally important is Emotion Regulation, which plays a critical role in managing the anxiety and apprehension often associated with speaking in a foreign language. Effective emotion regulation strategies enable learners to maintain composure and confidence during speaking tasks, thereby improving performance and reducing communication apprehension (Wang P. et al., 2024). Research indicates that individuals with higher emotion regulation abilities tend to exhibit greater adaptability in their communication styles across various social contexts, enhancing their interpersonal communication dynamics and language proficiency (Eisenberg et al., 2005).

In addition, Peer Regulation involves leveraging interactions with peers to enhance motivation and learning. Collaborative activities and peer feedback allow learners to practice speaking in a supportive environment, boosting confidence and fostering English enjoyment (Pan and Yuan, 2023). Such social interactions are instrumental in developing communicative competence. Studies have shown that positive peer relationships can facilitate emotion regulation, leading to improved social behaviors such as cooperation and leadership. These behaviors are associated with increased peer acceptance, which in turn bolsters students' confidence and communicative abilities (Huang, 2023).

Finally, Learning Environment Regulation entails strategically manipulating one's learning context to optimize speaking practice. This includes seeking out opportunities for authentic communication, such as engaging with native speakers and participating in language exchange programs and situated learning. By proactively shaping their learning environments, students can create conditions conducive to speaking development (Alotumi, 2021; Yan et al., 2024).

In short, integrating the motivational components within SRL frameworks can significantly enhance speaking skills in EFL learners. Learners can develop greater confidence and communicative competence in speaking by fostering task value, regulating emotions, engaging with peers, and optimizing learning environments.

2.4 The Vietnamese EFL context

In Vietnam, English education remains largely grammarfocused, with limited emphasis on communicative competence (Truong et al., 2022). As a result, learners often adopt passive strategies such as translation and memorization (Tran and Nguyen, 2020). Speaking remains a significant challenge for Vietnamese EFL learners due to low confidence, fear of mistakes, a lack of real-world speaking opportunities, speaking anxiety, and linguistic factors (Ho and Truong, 2022; Le et al., 2025; Nguyen et al., 2023). While the utility value of English for career success is a major motivator (Truong and Archer, 2018), many students are still driven by extrinsic goals shaped by exams and social expectations (Le et al., 2025; Pham, 2017). This exam-oriented context may restrict learners' autonomy, motivation, and capacity to regulate their speaking development.

While several Vietnamese studies have examined self-regulated learning (SRL), most have focused on language skills such as listening (Ngo, 2019) and grammar (Truong, 2022), with limited

attention to speaking. However, a growing body of research has recently begun to address this area. For example, Pham (2020) found that A1-level students frequently relied on compensatory strategies during speaking tasks. Vu (2023) reported that individual video assignments enhanced students' SRL abilities. Similarly, Dinh and Hoang (2025) identified a positive relationship between SRL strategy use and speaking proficiency in MOOCs, although their study did not examine face-to-face communication.

Despite these developments, most existing research emphasizes general learning contexts or online environments. Little is known about how Vietnamese university students regulate their motivation in developing speaking skills. This study seeks to address that gap by validating the Vietnamese version of the SRMIS-EFL scale (VV-SRMIS-EFL) and exploring the relationship between students' self-regulated motivational strategies and speaking achievement.

3 Methodology

3.1 Participants

All second-year (N = 178) and third-year (N = 410) English majors at Ho Chi Minh City University of Industry and Trade were invited to participate. A total of 490 students responded, but only 414 students provided valid responses. The final sample comprised 269 females and 145 males, with an average age of 19.76. Regarding the academic year, 121 were in their second year, while 293 were in their third year. On average, participants reported 10.75 years of experience learning English and spent 1.19 h daily practicing spoken English. Table 1 provides a concise overview of their demographic details, including total numbers, gender distribution, age, university year, years of English study, and post-class self-directed practice hours.

3.2 Instruments

3.2.1 Vietnamese version of the self-regulated motivation for improving speaking English as a foreign language (VV-SRMIS-EFL)

Vietnamese Version of the Self-Regulated Motivation for Improving Speaking English as a Foreign Language (VV-SRMIS-EFL) was adapted from Uztosun's (2020) Self-Regulated Motivation for Improving Speaking English as a Foreign Language (SRMIS-EFL). Uztosun (2020) validated the SRMIS-EFL among 1,065 Turkish university students, reporting high overall reliability (α = 90). Each subfactor demonstrated strong internal consistency, with Cronbach's alpha values exceeding 0.80. The scale employs a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Uztosun's (2020) SRMIS-EFL consists of 20 items, categorized into four factors: Task Value Activation (items 1–7), Regulation of Learning Environment (items 8–12), Regulation of Affect (items 13–15), and Regulation of Peers (items 16–20).

In line with Uztosun's (2020) SRMIS-EFL, this study modified certain items to enhance clarity and precision. For example, item SRM2 was revised to emphasize active listening in English learning, changing the original phrasing, "When the teacher speaks English,

10.3389/feduc.2025.1464608

TABLE 1 Participants' demographic information (N = 414).

Profile of res	spondents	Frequency	Percentage (%)	
Gender	Male	145	35.00	
	Female	269	65.00	
Age	19	112	27.05	
	20	291	70.29	
	21	9	2.17	
	22	2	0.49	
University year	2	121	29.20	
	3	293	70.80	
Years of English	<5 years	7	1.69	
study	5–7 years	32	7.73	
	8-10 years	158	38.16	
Post-class self-directed	>10 years	217	52.42	
practice hours	Under 0.5 h	62	14.98	
	0.5–1 h	203	49.03	
	More than 1 h	149	35.99	

I carefully listen to their voice" to "I carefully listen to the teacher's voice when speaking English". Similarly, item SRM5 was adjusted to highlight a more proactive approach to learning from others' mistakes in spoken English, rewording "To speak English more correctly, I learn from the mistakes others often make when they speak English" as "I learn from the mistakes others often make when they speak English so that I can speak English more correctly".

Additionally, Item 6 has been revised for conciseness while emphasizing sustained attention: "I try to pay attention all the time in English lessons", instead of "In English lessons, I try to pay attention all the time". Item 8 now clarifies the goal of finding international friends for English practice, stating: "I try to find international friends to practice speaking English", rather than "I try to find friends from abroad". In the case of Item 11, the revised wording underscores the purpose of visiting tourist-heavy locations during holidays to enhance spoken English: "I try to visit places with a lot of tourists during the holidays to improve my spoken English", as opposed to "During the holidays, I try to visit places with a lot of tourists, in order to improve my spoken English". Similarly, Item 12 has been rephrased to emphasize the active practice of English in interactions with foreigners: "I try to practice my English when meeting foreigners", replacing "When I meet foreigners, I try to practice my English".

Line 520: Pls change " I entertain the notion of speaking English in class" into "I try to speak English in class"

Finally, Items 18, 19, and 20 have been refined for precision. Item 18 now explicitly focuses on active participation in Englishspeaking tasks and activities during class: "I try to participate as much as possible in English-speaking tasks and activities in class", rather than "I try to participate as much as possible in Englishspeaking activities in class". Item 19 clarifies the intention behind speaking English in class: "I try to speak English in class", instead of "I make the point of speaking English in class". Lastly, Item 20 highlights the collaborative and supportive nature of peer interactions in language learning: "I spend time with friends who help and motivate each other to speak English", replacing "I spend time with friends who encourage each other to speak English".

These revisions aim to improve the clarity and specificity of the questionnaire items in this study (Appendix A). Following these revisions, all the adapted questionnaire items were translated into Vietnamese using the back-translation technique (see Appendix B), and VV-SRMIS-EFL consists of the following four factors.

Factor 1, *Task Value Activation* (TVA), comprises items SRM1, SRM2, SRM3, SRM4, SRM5, SRM6, and SRM7. TVA refers to the perceived importance, interest, and utility of a task, which are crucial for SRL (Uztosun, 2020). This concept, introduced by Eccles (1983) and further expanded by Pintrich (1999), underscores how learners' engagement is influenced by the value they attach to tasks. It is crucial in sustaining motivation and fostering self-regulation (Eccles, 1983; Pintrich, 1999; Zimmerman, 2002).

Factor 2, *Regulation of the Learning Environment* (RLE), comprises items SRM8, SRM9, SRM10, SRM11, and SRM12. This factor pertains to efforts to practice spoken language in environments with limited exposure to English. Regulating the learning environment underscores the significance of controlling one's environment in SRL (Uztosun, 2020). It involves creating a conducive learning environment and adapting contextual conditions to enhance learning effectiveness, such as seeking additional language input beyond the classroom to compensate for limited exposure (Paris and Winograd, 2001).

Factor 3, *Regulation of Affect* (RA), includes SRM13, SRM14, and SRM15. This factor is critical for developing speaking skills, especially in environments with limited language exposure. It highlights the importance of managing emotions, such as anxiety, to improve learning outcomes (Dörnyei, 2015; Uztosun, 2020) and emphasizes coping strategies to mitigate negative emotional impacts (Pintrich, 2000).

Factor 4, *Regulation of Peers* (RP), consists of SRM16, SRM17, SRM18, SRM19, and SRM20. This factor explores how individuals interact with and influence their peers within a learning context (Uztosun, 2020). Regulation of Peers aligns with concepts of co-regulated learning, involving activities such as collaboration, providing peer feedback, and utilizing peer learning strategies (Hadwin et al., 2011).

The framework for interpreting the mean scores of VV-SRMIS-EFL in English speaking skills was based on the suggestions provided by Alotumi (2021) to facilitate the assessment and categorization of the effectiveness and intensity of VV-SRMIS-EFL in enhancing speaking skills, Specifically, mean scores (M) in the range of 1.0–1.8 indicate very low levels of selfregulated motivation for improving English speaking skills. Scores between 1.8 and 2.6 suggest low levels, while those between 2.6 and 3.4 indicate medium levels of self-regulated motivation. Mean scores ranging from 3.4 to 4.2 signify high levels, and scores between 4.2 and 5.0 represent very high levels of self-regulated motivation for improving speaking English as a foreign language.

3.2.2 English speaking achievement scores

Achievement in the educational context refers to attaining specific learning objectives central to instructional activities and expected outcomes for learners (Hattie and Anderman, 2013). The achievement assessment is typically based on tests and exams, serving as "indicators of achievement" (Hattie and Anderman, 2013, p. 5). Therefore, this study uses the final speaking exam scores as an indicator of speaking achievement to align with criteria for accuracy and effectiveness in assessing achievement. The speaking test comprises three parts (Appendix C). In Part 1, students introduce themselves and answer questions about their interests, habits, and studies. Part 2 involves a topic card provided beforehand, giving students 1 min to prepare and 2 min to respond. Part 3 includes a follow-up discussion on the given topic.

English speaking scores are based on four criteria: varied and accurate use of structures, pronunciation, lexical resource, fluency, and coherence, and are evaluated on a 10-point scale (Appendix D). The scores can be interpreted using a structured framework based on a scale from 0 to 10. Scores between 0 and 2.5 indicate very low proficiency, suggesting significant difficulty in basic communication tasks. Scores from 2.6 to 5.0 represent low proficiency, where communication may be limited and somewhat challenging. Proficiency levels between 5.1 and 7.5 indicate moderate proficiency, reflecting adequate communication skills in most everyday situations. Scores ranging from 7.6 to 10 signify high proficiency, where speakers can effectively communicate complex ideas fluently and accurately.

3.3 Data collection procedure

The Institutional Ethics Committee at Ho Chi Minh City University of Industry and Trade approved the research (Reference No: 118/HD-DCT). Before participation, all students signed a Consent to Participate in Research form after being informed about the research objectives and assured of data confidentiality. A quantitative approach was employed, with primary data collected through a direct survey questionnaire administered to second and third-year students during break times between classes from August 24, 2023, to August 29, 2023. Survey responses and speaking scores were gathered. To ensure data quality, the researcher reviewed and excluded surveys with unanswered questions or identical responses with all questions. The final pool of participants that had valid responses included 414 students.

3.4 Data analysis

Smart PLS (Version 3.3.3) was used to analyze the collected data, with a predetermined alpha level of 0.05, a widely accepted threshold in educational research (Fraenkel et al., 2011). While covariance-based structural equation modeling (CB-SEM) is commonly employed after exploratory factor analysis (EFA) to confirm theoretical relationships, partial least squares structural equation modeling (PLS-SEM) is often preferred for predictive relevance (Sharma et al., 2018). Confirmatory composite analysis within partial least squares (PLS-CCA) has been proposed to validate measurement models (Henseler et al., 2014).

This study adopted a disjoint two-stage approach (Jarvis et al., 2003) to evaluate the reflective measurement and structural models

of VV-SRMIS-EFL. The reliability and validity of VV-SRMIS-EFL were examined, along with the relationship between SRL strategies and English-speaking scores. The decision to use a reflective model was based on the characteristics of the measured construct, where items exhibit a shared theme, and the conceptual domain remains unchanged even if items are added or removed (Coltman et al., 2008). Given the established relationship between self-regulated learning and self-efficacy in prior studies, it is hypothesized that this relationship extends to speaking learning.

In addition to Smart PLS, SPSS (version 25) was used for the quantitative analysis. Descriptive statistics (mean and standard deviation) were calculated to assess English majors' VV-SRMIS-EFL levels and speaking achievement scores. Pearson correlation analysis examined the relationship between VV-SRMIS-EFL and English-speaking achievement scores.

4 Research findings

4.1 Reliability and validity of VV-SRMIS-EFL

Cronbach's alpha was calculated using SPSS to assess the overall reliability of VV-SRMIS-EFL. As shown in Table 2, the scale's internal consistency was high, with an overall Cronbach's alpha of 0.888 (20 items), exceeding the 0.70 threshold (George and Mallery, 2019). The second-order components also demonstrated acceptable to good internal consistency with values of 0.76 for Task Value Activation (7 items), 0.78 for Regulation of Learning Environment (5 items), 0.86 for Regulation of Affect (3 items), 0.78 for Regulation of Peers (5 items). These results meet established standards, as Cronbach's alpha values are between 0.76 and 0.86 (Hair et al., 2018). Besides, all items in the column labeled *Corrected Item-Total Correlations* exceeded 0.3, indicating strong correlations with the overall scale. These findings confirm that students' responses to the VV-SRMIS-EFL items were reliable.

4.2 Lower-order components

In the initial stage, a model incorporating all lower-order components, including exogenous and endogenous constructs, was estimated using Smart PLS. The primary focus was on the reflective measurement models of the four lower-construct components related to self-regulated motivation (SRM): Task Value Activation, Regulation of the Learning Environment, Regulation of Affect, and Regulation of Peers.

Cronbach's alpha and composite reliability (CR) were calculated to assess the indicator reliabilities and ensure the robustness of the measurement model. The average variance extracted (AVE) was also computed to establish convergent validity. Discriminant validity was examined using the Heterotrait-Monotrait (HTMT) criterion to confirm that lower-order components were distinct from one another.

The assessment of the construct quality followed a systematic approach. Factor loadings were first examined, and construct reliability and validity were subsequently established. The reliability of indicators was assessed through standardized factor loadings, which measure the correlation between each item and its respective

Items	Scale mean if item deleted	Scale variance if item deleted	Corrected item- total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
SRM16	72.0381	78.098	0.590	0.451	0.880
SRM17	71.9772	79.249	0.457	0.315	0.885
SRM18	72.1904	78.368	0.572	0.408	0.881
SRM19	72.0736	79.407	0.494	0.365	0.883
SRM20	71.9289	78.377	0.514	0.386	0.883
SRM1	71.2386	82.844	0.327	0.224	0.888
SRM2	71.4442	80.914	0.460	0.385	0.884
SRM3	71.7665	77.772	0.609	0.457	0.880
SRM4	71.5431	80.905	0.469	0.375	0.884
SRM5	71.7157	79.919	0.463	0.357	0.884
SRM6	71.6421	80.678	0.473	0.343	0.884
SRM7	71.6371	80.573	0.431	0.302	0.885
SRM8	72.2716	79.374	0.494	0.490	0.883
SRM9	72.2132	79.456	0.448	0.451	0.885
SRM10	72.6269	78.336	0.508	0.456	0.883
SRM11	72.6802	78.707	0.461	0.375	0.885
SRM12	72.0381	78.301	0.529	0.342	0.882
SRM13	71.9467	77.211	0.594	0.665	0.880
SRM14	72.0964	77.380	0.558	0.695	0.881
SRM15	71.9645	78.391	0.576	0.486	0.881

TABLE 2 Item-total statistics for VV-SRMIS-EFL.

principal component in the correlation matrix. These loadings range from -1.0 to +1.0, with higher absolute values indicating stronger correlations with the underlying construct (Field, 2018).

Hair et al. (2022) state that standardized loadings should ideally be 0.708 or higher, with *t*-values exceeding ± 1.96 in reflective measurement models. However, indicators with outer loadings between 0.40 and 0.70 may still be retained to maintain content validity if they contribute meaningfully to the construct (Hair et al., 2022). If composite reliability (CR) and average variance extracted (AVE) fall below the recommended thresholds, removing weaker factor loadings can enhance these values. The preliminary PLS Algorithm analysis revealed factor loadings, as depicted in Figure 1.

Following the execution of the PLS algorithm, the findings indicate that SRM1 and SRM7 had low factor loadings of 0.531 and 0.534, respectively. Most of the remaining items demonstrated factor loadings above 0.70, though some ranged between 0.627 and 0.683 (Table 3).

To assess multicollinearity among the indicators, the Variance Inflation Factor (VIF) was computed, following the recommendations of Fornell and Bookstein (1982). According to Hair et al. (2018), multicollinearity is a concern when VIF values exceed 5, and VIF values should remain below 3.

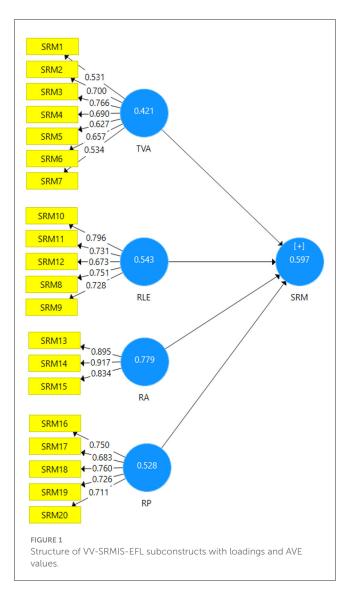
The PLS algorithm results confirmed that multicollinearity was not an issue, as all VIF values were below 3.0, except for SRM14, which had a VIF of 3.14—slightly exceeding the recommended threshold but still well below the critical limit of 5.0.

Therefore, multicollinearity does not pose a significant concern in this study.

Composite Reliability (CR) and Cronbach's Alpha were examined to evaluate the internal consistency and reliability of the constructs. Composite Reliability (CR) provides a more comprehensive measure of construct reliability by accounting for item loadings, with values ranging from 0.834 to 0.914—all exceeding the recommended threshold of 0.7. Similarly, Cronbach's Alpha values range from 0.766 to 0.857, indicating acceptable to good reliability. Among the subconstructs, Regulation of Affect (RA) exhibited the highest internal consistency ($\alpha = 857$). These findings suggest the constructs demonstrate strong reliability, ensuring consistent measurement across items.

Convergent validity is established when the Average Variance Extracted (AVE) exceeds 0.50, indicating that the items adequately represent the underlying construct and explain at least 50% of the variance (Fornell and Larcker, 1981). In this study, all AVE values for the sub-constructs of VV-SRMIS-EFL were above 0.50, except the task value activation (TVA; Table 3).

While the TVA construct reported composite reliability (CR) above 0.70, its AVE was 0.421, which falls below the commonly accepted threshold of 0.50. Two indicators within TVA—SRM 1 ("I remind myself that I need to speak English well") and SRM7 ("I try to find ways to increase my motivation to speak English")—had factor loadings of 0.531 and 0.534, respectively. While these values are slightly below the ideal threshold of 0.60–0.70, they



were retained for several reasons. Firstly, these indicators represent key aspects of TVA, including self-awareness of the importance of speaking English and active efforts to enhance motivation. Removing them would weaken the conceptual coverage of the construct (Pintrich, 2004). Secondly, factor loadings above 0.50 are still acceptable in exploratory models (Hulland, 1999), ensuring a more comprehensive representation of TVA. Thirdly, despite the low AVE, the construct was retained because its CR exceeded 0.70, indicating that the indicators still explain a significant portion of the construct's variance (Fornell and Larcker, 1981; Hair et al., 2022). Lastly, the higher-order construct, self-regulated motivation, has good AVE and CR, meaning that any minor issues at the lower-order level do not significantly impact the overall measurement model.

Discriminant validity is established when the AVE of a construct exceeds its shared variance with other constructs. According to Fornell and Larcker (1981) and Chin (2010), this criterion is met when the square root of the AVE (bold diagonal values) for a latent variable is greater than its correlations with all other variables (off-diagonal values). In this study, the analysis

confirmed that the square root of the AVE for each construct exceeded its correlations with other constructs, providing strong evidence for discriminant validity (Table 4). This finding indicates that each construct is more closely related to itself than any other construct.

4.3 Higher-order construct (HOC)

In the second stage, latent variable scores from the lower-order components were used to construct and estimate the higher-order construct (HOC), Self-Regulated Motivation (SRM). The validity of the HOC was assessed using the bootstrapping technique. Selfregulated motivation (SRM) served as the study's HOC, comprising four lower constructs: Task Value Activation, Regulation of Affect, Regulation of Learning Environment, and Regulation of Peers. The outer loadings for each lower-order construct were significant and exceeded 0.50 (Sarstedt et al., 2019; Table 5).

VIF values were examined to check collinearity, with all values remaining below the recommended value of 3 (Hair et al., 2022). As all criteria were met, the validity of the HOC was confirmed. Additionally, the composite reliability for the structural model was strong (CR = 0.855) with an AVE of 0.597, indicating good model reliability.

4.4 Research question 1

Vietnamese public university English majors exhibited a high level of English-speaking self-regulated motivation (M = 3.80, SD = 0.47), with subscale scores ranging from moderate to high (3.39-4.13). Among the SRM subscales, Task Value Activation (TVA) received the highest mean score (M = 4.18, SD = 0.48), followed by Regulation of Affect (RA; M = 3.76, SD = 0.80) and Regulation of Peers (RP; M = 3.70, SD = 0.61). In contrast, the Regulation of the Learning Environment (RLE) had the lowest mean score (M = 3.39, SD = 0.65). Participants' English-speaking test scores reflected a medium level (M = 7.46, SD = 0.95), with raw scores ranging from 4.00 to 9.80 on a scale of 0 to 10. Table 6 presents the descriptive statistics of SRM, its subscales, and speaking scores by gender and university year.

To determine whether gender and university year significantly affect students' overall Self-Regulated Motivation and whether the effect of university year differs by gender, a two-way ANOVA was conducted. Table 7 showed no significant interaction between gender and university year on SRM, $F_{(1, 410)} = 1.11$, p = 0.294, $\eta^2 = 0.003$. Additionally, there was no significant main effect of gender, $F_{(1, 410)} = 1.97$, p = 0.161, $\eta^2 = 0.005$, or university year, $F_{(1, 410)} = 0.00$, p = 0.982, $\eta^2 = 0.000$.

Regarding different areas of self-regulated motivation (Task Value Activation, Regulation of Learning Environment, Regulation of Affect, and Regulation of Peers), the analysis revealed that none of the factors (university year and gender) had a significant main and interaction effect on Task Value Activation, Regulation of Learning Environment and Regulation of Affect. However, a significant effect was found for the Regulation of Peers, with the main effect of university year [$F_{(1,410)} = 6.21$, p = 0.013] and

Subconstructs	Items	Loadings	AVE	Cronbach's alpha	CR	VIF
	SRM1	0.531				1.237
Task value activation (TVA)	SRM2	0.70	0.421	0.766	0.834	1.573
	SRM3	0.766				1.591
	SRM4	0.690				1.543
	SRM5	0.627				1.422
	SRM6	0.657				1.472
	SRM7	0.543				1.227
Regulation of the learning environment (RLE)	SRL8	0.796	0.543	0.789	0.856	1.791
	SRL9	0.731				1.748
	SRL10	0.673				1.737
	SRL11	0.751				1.537
	SRL12	0.728				1.319
Regulation of affect (RA)	SRL13	0.895	0.779	0.857	0.914	2.776
	SRL14	0.917				3.130
	SRL15	0.834				1.709
Regulation of peers (RP)	SRL16	0.750	0.528	0.776	0.848	1.527
	SRL17	0.683				1.385
	SRL18	0.760				1.526
	SRL19	0.726				1.534
	SRL20	0.711				1.473

TABLE 3 Summary of measurement models.

gender [$F_{(1,410)} = 4.45$, p = 0.036]. These results suggest that both academic year and gender play a role in how students regulate their peers. The interaction of university year × gender was not significant, $F_{(1,410)} = 3.01$, p = 0.083.

A two-way ANOVA was conducted to examine the effects of gender and university year on students' speaking proficiency. There was a significant main effect of gender, $F_{(1, 410)} = 15.93$, p < 0.001, $\eta^2 = 0.037$, indicating that speaking proficiency differed significantly between male and female students. Similarly, there was a significant main effect of the university year, $F_{(1, 410)} = 9.40$, p = 0.002, $\eta^2 = 0.022$, suggesting that students' year in university also influenced their speaking proficiency. However, the interaction effect between gender and university year was not significant, $F_{(1, 410)} = 1.21$, p = 0.272, $\eta^2 = 0.003$, indicating that the effect of gender on speaking proficiency did not differ significantly across university years.

4.5 Research question 2

The correlation matrix in Table 8 provides insights into the relationships among the study variables, with the interpretation

TABLE 4 Discriminant validity.

Fornell-Lacker criterion								
	1	1 2 3 4						
1. Regulation of affect (RA)	0.883							
2. Regulation of the learning environment (RLE)	0.401	0.737						
3. Regulation of peers (RP)	0.508	0.482	0.727					
4. Task value activation (TVA)	0.524	0.478	0.536	0.649				

The bold values represent the square root of the Average Variance Extracted (AVE) for each construct.

guided by Guilford's (1973) rule of thumb. Speaking scores exhibit weak, yet significant, positive correlations with the overall Self-Regulated Motivation (SRM; r = 0.17, p < 0.01) and its subscales: Regulation of Affect (r = 0.18, p < 0.01), Regulation of Peers (r = 0.19, p < 0.01), Task Value Activation (r = 0.12, p < 0.01). However, speaking scores show no significant correlation with Regulation of the Learning Environment (r = 0.05, p > 0.05).

нос	LOCs	Outer loadings	T-statistics	P-values	VIF
SRM	Regulation of affect (RA)	0.719	5.826	0	1.405
	Regulation of the learning environment (RLE)	0.751	16.806	0	1.44
	Regulation of peers (RP)	0.799	35.348	0	1.589
	Task value activation (TVA)	0.816	16.641	0	1.644

TABLE 5 Higher-order construct.

TABLE 6 Descriptive statistics.

Characteris	itics	Statistics	SRM	TVA	RLE	RA	RP	Speaking score
Gender	Female ($N = 269$)	М	3.78	4.18	3.38	3.71	3.67	7.33
		SD	0.48	0.50	0.65	0.76	0.62	0.90
	Male (<i>N</i> = 145)	М	3.83	4.19	3.40	3.84	3.76	7.70
		SD	0.44	0.46	0.65	0.86	0.58	1.00
University	Second-year ($N = 121$)	М	3.78	4.18	3.30	3.65	3.80	7.65
year		SD	0.48	0.47	0.67	0.78	0.66	0.88
	Third-year ($N = 293$)	М	3.83	4.18	3.42	3.80	3.67	7.38
		SD	0.44	0.48	0.64	0.81	0.58	0.97

M = Mean; SD = Standard Deviation.

4.6 Discussion and implications

This study provides valuable insights into Vietnamese university university students' self-regulated motivation (SRM) in developing their English speaking skills. Contrary to previous research highlighting the dominance of teachercentered approaches in Vietnam (e.g., Truong et al., 2022), our findings reveal a more dynamic learning landscape. Students reported moderate to high engagement in SRM strategies, including Task Value Activation (TVA), Regulation of Affect (RA), Regulation of Peers (RP), and Regulation of the Learning Environment (RLE). The positive correlation between SRM and English-speaking scores suggests that learners actively employ strategies that support autonomous and effective language acquisition.

The Vietnamese version of the SRMIS-EFL (VV-SRMIS-EFL) demonstrated strong psychometric properties. The overall Cronbach's alpha of 0.89 indicates high internal consistency, with subscale reliabilities ranging from 0.76 to 0.86. Although the Average Variance Extracted (AVE) for TVA was slightly below the ideal threshold (0.421), its composite reliability exceeded 0.70, justifying the retention of items. These results align with Uztosun's (2020) original scale, confirming the VV-SRMIS-EFL as a robust and culturally appropriate instrument for assessing Vietnamese students' motivational regulation in English language learning.

Vietnamese English majors exhibited high levels of SRM (M = 3.80, SD = 0.47), with third-year students slightly outperforming second-year students. TVA emerged as the most frequently used strategy (M = 4.18), reflecting students' strong perception of English as valuable for academic and career advancement. This intrinsic valuation aligns with earlier findings (Alotumi, 2021; Ghasemi and Dowlatabadi, 2018) and underscores the critical

role of task value in sustaining motivation and promoting goaldirected learning.

Students also reported relatively high levels of Regulation of Affect (RA; M = 3.76) and Regulation of Peers (RP; M = 3.70), indicating that emotional regulation and peer collaboration are significant strategies in their language learning process. These findings align with previous research emphasizing the role of peer support and emotional regulation in language skill development. For instance, Huang (2023) found that peer support positively influences foreign language enjoyment and anxiety through the mediating effect of self-efficacy. Similarly, Pan and Yuan (2023) demonstrated that peer support and regulatory emotional selfefficacy positively predict English enjoyment among Chinese university students. In contrast, RLE received the lowest average score, suggesting that students may lack access to supportive external environments for practicing English. This is especially salient in Vietnam, where authentic speaking opportunities are often limited, particularly for students in rural or economically disadvantaged areas (Truong and Wang, 2019).

The relationship between SRM and speaking performance was strongest for RA and RP, followed by TVA. These results are in line with prior studies (Eisenberg et al., 2005; Wang S. et al., 2024), emphasizing that emotional control and peer engagement are crucial for building confidence and increasing communicative competence. Our findings reveal a distinctive profile of self-regulated motivation among Vietnamese EFL learners, particularly in speaking tasks. Notably, affective regulation (RA) emerged as one of the top three self-regulatory components, indicating a heightened emphasis on managing emotions during speaking activities. This contrasts with Pawlak's (2018) study, where metacognitive strategies—planning, monitoring, and self-evaluation—dominated, and affective strategies were notably underutilized. The divergence may stem from cultural factors;

Source		df	MS	F	p	Partial η^2
University year	VV-SRMIS-EFL	1	0.00	0.00	0.982	0.000
	TVA	1	0.00	0.01	0.906	0.000
	RLE	1	0.91	2.15	0.143	0.005
	RA	1	0.75	1.18	0.277	0.003
	RP	1	2.28	6.21	0.013*	0.015
	Speaking scores	1	13.716	15.9	0.000*	0.037
Gender	VV-SRMIS-EFL	1	0.43	1.97	0.161	0.005
	TVA	1	0.00	0.02	0.895	0.000
	RLE	1	0.11	0.25	0.615	0.001
	RA	1	2.44	3.84	0.051	0.009
	RP	1	1.63	4.45	0.037*	0.011
	Speaking scores	1	8.09	9.40	0.002*	0.022
University year * gender	VV-SRMIS-EFL	1	0.24	1.11	0.294	0.003
	TVA	1	1.49	0.00	0.998	0.000
	RLE	1	0.08	0.19	0.662	0.000
	RA	1	1.11	1.75	0.187	0.004
	RP	1	1.10	3.01	0.083	0.007
	Speaking scores	1	1.04	1.21	0.272	0.003
Error	VV-SRMIS-EFL	410	0.22			
	TVA	410	0.23	-		
	RLE	410	0.42			
	RA	410	0.64	-		
	RP	410	0.37	-		
	Speaking scores	410	0.86			
Total	VV-SRMIS-EFL	414				
	TVA	414				
	RLE	414	-			
	RA	414				
	RP	414	_			
	Speaking scores	414				
Corrected total	VV-SRMIS-EFL	413				
	TVA	413				
	RLE	413				
	RA	413				
	RP	413				
	Speaking scores	413				

TABLE 7 Analysis of variance for VV-SRMIS-EFL, its subconstructs and speaking scores by university year and gender.

*Statistically significant *p*-values (p < 0.05).

Vietnamese learners often exhibit a strong concern for face-saving and a fear of making mistakes, which could necessitate greater emotional regulation during speaking. Comparing our results with Wang S. et al.'s (2024) study on multilingual international students in China, similarities in the emphasis on motivation and emotional control as core SRL components are observed. In the current study, the participants' high scores in task value and affective regulation, along with the predictive role of self-regulation of motivation (SRM) on speaking performance, align with Wang S. et al.'s (2024) identification of motivation and self-efficacy as central to SRL.

Interestingly, RLE shows no significant correlation with speaking scores and has the lowest mean score among the four components, suggesting that students may have limited access to English-speaking environments. In Vietnam, where English is

TABLE 8 Correlations.

HOC and LOCs	SRM	TVA	RLE	RA	RP	Speaking scores
SRM	1	0.82**	0.77**	0.70**	0.79**	0.17**
TVA		1	0.48**	0.48**	0.53**	0.12*
RLE			1	0.37**	0.48**	0.05
RA				1	0.44**	0.18**
RP					1	0.19**
Speaking scores						1

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

*Correlation is significant at the 0.05 level (2-tailed).

learned as a foreign language, opportunities to engage in reallife English conversations are relatively scarce (Truong and Wang, 2019). While some students practice English in language centers or city-center parks where tourists gather, these options are not equally accessible to all. Many students live far from city centers, making frequent visits impractical due to time constraints and financial costs. Additionally, interactions with native speakers at tourist sites often require organized visits, which may not be feasible for all learners.

Given these challenges, universities should explore alternative ways to create structured speaking opportunities, such as integrating peer speaking activities, online conversation exchanges with native speakers, and teacher-facilitated interactions into the curriculum. Collaborating with international organizations or virtual exchange programs could expand students' access to authentic language use. By addressing these barriers, universities can ensure that all students, regardless of location or financial situation, have equitable opportunities to develop their speaking skills.

A notable contribution of this study is its examination of gender and academic year differences in SRM. While no significant gender differences emerged across TVA, RA, or RLE, Regulation of Peers (RP) showed significant variation based on both gender and academic year. Specifically, third-year students and male students reported higher RP use, suggesting that peer regulation develops with educational experience and may be influenced by gender-related socialization. These findings challenge prior results by Alotumi (2021), which reported higher SRM among female learners and invite reflection on cultural and educational factors that shape gendered learning behaviors in Vietnam. Gender-based differences could reflect societal expectations: in Vietnam, male students may receive more encouragement to lead or engage in assertive communication, while female students may experience greater anxiety or less access to collaborative opportunities (Ho and Truong, 2022). Despite these differences, both genders demonstrated a shared preference for TVA, RA, and RP over RLE, indicating universal value in these motivational strategies.

Vietnamese cultural norms, rooted in Confucian values, emphasize respect for authority and collectivism, significantly influencing students' interactions with peers and educators (Truong and Wang, 2019). Collectivist values encourage collaboration and support-seeking behaviors, aligning with selfregulated motivation strategies like peer collaboration. However, hierarchical educational structures and cultural expectations in Vietnam, which often emphasize deference to teachers and structured learning environments, may further inhibit learners from actively seeking or creating their own speaking opportunities, thereby affecting the development of RLE. The current study did not find significant results regarding RLE, suggesting a potential gap in students' autonomous control over external learning conditions. This may be attributed to limited institutional support for independent or peer-initiated speaking practice in Vietnamese EFL classrooms.

Additionally, traditional educational values in Vietnam emphasize rote memorization and exam-oriented learning (Truong et al., 2022), which may initially hinder the development of autonomous learning behaviors. As a result, students often prioritize short-term exam preparation over long-term skill development, potentially affecting their motivation to engage with SRL strategies deeply. However, with the gradual shift toward learner-centered approaches, there is growing recognition of the importance of SRL strategies in fostering critical thinking and lifelong learning skills among Vietnamese students (Ngo, 2019). This transformation underscores the crucial role of self-regulated motivation in enhancing educational outcomes and equipping students with the skills needed to navigate future academic and professional challenges.

The prominence of affective regulation among Vietnamese EFL learners underscores the need for pedagogical approaches that address the emotional aspects of language learning. Instructors should consider integrating activities that build learners' confidence and reduce anxiety, such as low-stakes speaking exercises and positive feedback mechanisms. Recognizing the influence of academic year and gender on peer regulation suggests that tailored interventions could be developed to encourage peer collaboration, especially among groups less inclined to engage in such strategies.

To enhance students' speaking proficiency, educational programs should prioritize the development of self-regulated motivational strategies, particularly those related to affect regulation and peer interactions, which have shown strong correlations with performance. Encouraging task value activation can further boost learners' motivation and engagement in language learning. Integrating self-regulated learning into national curriculum frameworks and investing in teacher training for strategy-based instruction are crucial at the policy level. Emphasizing evidence-based practices and ongoing evaluation of self-regulated learning initiatives can support adaptive policies that promote equitable access to quality language education and prepare learners for future global demands. Moreover, the lack of significant findings in regulating the learning environment (RLE) highlights an area for curriculum development. Institutions should provide more opportunities for autonomous learning through initiatives like self-directed speaking clubs and peer-led discussion groups. Teacher training should also focus on fostering learner autonomy and designing classroom environments that support independent language practice.

While self-regulated motivation plays a critical role in enhancing students' English speaking proficiency, the findings also revealed that both gender and university year had significant effects on speaking scores. These results suggest that speaking ability is influenced by individual motivational strategies and demographic factors. Therefore, instructional practices should be designed with sensitivity to these differences, ensuring that language teaching approaches and motivational support are appropriately tailored to address the specific needs of students across genders and academic levels.

In short, this study provides a comprehensive understanding of the self-regulated motivational strategies employed by Vietnamese English majors in developing their speaking skills. While the traditional teaching methods persist, students actively engage in self-regulation, with emotional regulation, peer collaboration, and task value activation playing crucial roles in speaking proficiency. The validation of the VV-SRMIS-EFL further reinforces the reliability and applicability of self-regulation constructs in a Vietnamese context. Despite students' positive engagement in selfregulated motivation, the relatively lower use of environmental regulation highlights potential challenges in accessing Englishspeaking environments. This limitation underscores the need for universities to implement structured speaking opportunities, such as online exchanges and peer collaboration, to enhance students' language practice. These findings highlight the importance of considering cultural and contextual factors in the development of self-regulated motivational strategies among EFL learners. By aligning instructional practices with learners' specific needs and cultural backgrounds, educators can more effectively support the development of comprehensive self-regulatory skills in language learning.

5 Conclusion, limitations, and suggestions for further studies

This study underscores the significant role of self-regulated motivation (SRM) in enhancing English-speaking proficiency among Vietnamese university students majoring in English. Key components—Regulation of Affect (RA), Regulation of Peers (RP), and Task Value Activation (TVA)—demonstrated positive correlations with speaking achievement, highlighting their importance in language education programs. Conversely, Regulation of the Learning Environment (RLE) did not have a significant relationship with speaking proficiency, suggesting its impact may be context-dependent. While overall SRM and its dimensions showed no significant gender differences, RP varied across academic years and genders, indicating demographic influences on peer collaboration strategies. These findings offer valuable insights into English education policies and instructional practices in Vietnam.

Despite its contributions, this study has several limitations. First, the research focused on English majors at a single public university in Vietnam, which may limit the generalizability of the findings to other educational settings or student populations. Second, data collection relied on self-report questionnaires, which can be susceptible to biases such as social desirability or inaccuracies in self-assessment. Third, the study's survey design restricts the ability to infer causal relationships between SRM components and speaking proficiency.

Building upon the insights gained from this study, several avenues for future research are recommended to deepen the understanding of SRM in English language learning among Vietnamese students. Firstly, expanding the participant pool to include students from diverse academic years, disciplines, and institutions across Vietnam would enhance the generalizability of the findings. Such diversity would allow for a more comprehensive analysis of SRM across different educational contexts and student demographics.

Secondly, incorporating a mixed-methods approach that combines quantitative measures with qualitative data, such as interviews or classroom observations, could provide a more nuanced understanding of how students employ SRM strategies in real-world settings. This approach would help capture the complexities of learners' experiences and the contextual factors influencing their motivational regulation.

Thirdly, conducting longitudinal studies would be beneficial in examining how SRM components influence language proficiency over time. Longitudinal research could establish causal relationships and track the development of SRM strategies and their impact on language learning outcomes throughout students' academic journeys.

Additionally, exploring the role of cultural and institutional factors in shaping the effectiveness of SRM strategies, particularly RLE, is crucial. Given that RLE did not significantly correlate with speaking proficiency in this study, future research should investigate the conditions under which RLE contributes to language learning outcomes, considering cultural norms and educational structures in Vietnam.

Lastly, the significant effects of gender and university year on English speaking scores could imply that motivational strategies or interventions may need to be tailored based on these demographic factors for greater effectiveness. Future studies should use controlled designs (e.g., ANCOVA, SEM) to isolate the effects of self-regulated motivation while accounting for these demographic influences. By addressing these areas, future studies can provide deeper insights into how self-regulated motivation influences language learning and inform the development of more effective educational practices.

Data availability statement

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

Ethics statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

TT: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that financial support was received for the research and/or publication of this article. This research project was funded by Ho Chi Minh City University of Industry and Trade, Vietnam.

References

Alotumi, M. (2021). EFL college junior and senior students' self-regulated motivation for improving English speaking: a survey study. *Heliyon* 7, 1–10. doi: 10.1016/j.heliyon.2021.e06664

Bai, B. (2018). Understanding primary school students' use of self-regulated writing strategies through think-aloud protocols. *System* 78, 15–26. doi: 10.1016/j.system.2018.07.003

Bai, B., and Guo, W. (2018). Influences of self-regulated learning strategy use on self-efficacy in primary school students' English writing in Hong Kong. *Read Writ Quart* 34, 523–536. doi: 10.1080/10573569.2018.1499058

Bai, B., and Wang, J. (2020). Hong Kong secondary students' self-regulated learning strategy use and English writing: Influences of motivational beliefs. *System* 96. doi: 10.1016/j.system.2020.102404

Boekaerts, M., and Cascallar, E. (2006). How far have we moved toward the integration of theory and practice in self-regulation? *Educ. Psychol. Rev.* 18, 199–210. doi: 10.1007/s10648-006-9013-4

Chin, W. W. (2010). "How to write up and report PLS analyses," in *Handbook of Partial Least Squares: Concepts, Methods and Applications*, eds. V. Esposito Vinzi, W. W. Chin, J. Henseler, and H. Wang (Berlin; Heidelberg: Springer), 655–690.

Coltman, T., Devinney, T. M., Midgley, D. F., and Venaik, S. (2008). Formative versus reflective measurement models: two applications of formative measurement. *J. Bus. Res.* 61, 1250–1262. doi: 10.1016/j.jbusres.2008.01.013

de Boer, H., Donker, A. S., Kostons, D. D. N. M., and van der Werf, G. P. C. (2018). Long-term effects of metacognitive strategy instruction on student academic performance: a meta-analysis. *Educ. Res. Rev.* 24, 98–115. doi: 10.1016/j.edurev.2018.03.002

Deci, E. L., and Ryan, R. M. (1985). Intrinsic Motivation and Self-Determination in Human Behavior. New York, NY: Springer Science and Business Media.

Dinh, C. T., and Hoang, Y. P. (2025). Teaching self-regulated learning strategies on EFL students in Moocs: a case study in Vietnam. *Turk. Online J. Dist. Educ.* 26, 101–121 doi: 10.17718/tojde.1440472

Dinsa, M. T., Seyoum, G., and Dinsa, D. T. (2022). The influence of gender and study duration on EFL learners' speaking strategies use. *Int. J. Lang. Educ.* 6, 10–24. doi: 10.26858/ijole.v6i1.19272

Dörnyei, Z. (2015). The Psychology of the Language Learner: Individual Differences in Second Language Acquisition. New York, NY: Routledge.

Eccles, J. (1983). "Expectancies, values and academic behaviors," in Achievement and Achievement Motives: Psychological and Sociological Approaches, eds. J. T. Spence (Francisco, CA: W.H. Freeman), 75–146.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2025. 1464608/full#supplementary-material

Eccles, J. S., and Wigfield, A. (2002). Motivational beliefs, values, and goals. Ann. Rev. Psychol. 53, 109–132. doi: 10.1146/annurev.psych.53.100901.135153

Eisenberg, N., Sadovsky, A., and Spinrad, T. L. (2005). Associations of emotionrelated regulation with language skills, emotion knowledge, and academic outcomes. *New Direct. Child Adoles. Dev.* 109, 109–118. doi: 10.1002/cd.143

European Council (2002). Council resolution of June 27 2002 on lifelong learning. Off. J. Eur. Commun. 9, 1–3. Available online at: https://eur-lex.europa.eu/LexUriServ/ LexUriServ.do?uri=OJ%3AC%3A2002%3A163%3A0001%3A0003%3AEN%3APDF& utm_source=chatgpt.com

Field, A. (2018). Discovering Statistics Using IBM SPSS Statistics, 5th Edn. London: Sage Publications.

Fornell, C., and Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *J. Mark. Res.* 19, 440–452. doi: 10.1177/002224378201900406

Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* 18, 39–50. doi: 10.1177/002224378101800104

Fraenkel, J. R., Wallen, N. E., and Hyun, H. H. (2011). *How to Design and Evaluate Research in Education, 8th Edn.* New York, NY: McGraw-Hill.

George, D., and Mallery, P. (2019). *IBM SPSS Statistics 25 Step By Step: A Simple Guide and Reference*. New York, NY: Routledge.

Ghasemi, A. A., and Dowlatabadi, H. R. (2018). Investigating the role of task value, surface/deep learning strategies, and higher order thinking in predicting self-regulation and language achievement. *J. AsiaTEFL* 15, 664–681. doi: 10.18823/asiatefl.2018.15.3.664

Guilford, J. P. (1973). Fundamental Statistics in Psychology and Education, 6th Edn. New York, NY: McGraw-Hill.

Hadwin, A. F., Järvelä, S., and Miller, M. (2011). "Self-regulation, co-regulation, and shared regulation in collaborative learning environments," in *Handbook of Selfregulation of Learning and Performance*, eds. D. H. Schunk and J. A. Greene (New York, NY: Routledge), 65–84.

Hair, J. F., Black, W. C., Babin, B. J., and Anderson, R. E. (2018). Multivariate Data Analysis, 8th Edn. Hampshire: Cengage.

Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. (2022). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM), 3rd Edn. Thousand Oaks, CA: SAGE Publications.

Hattie, J., and Anderman, E. M. (2013). International Guide to Student Achievement. London: Routledge.

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., et al. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann 2013. *Org. Res. Methods* 17, 182–209. doi: 10.1177/1094428114526928

Ho, D. P. K., and Truong, T. T. N. (2022). Exploring Vietnamese non-Englishmajored freshmen's English-speaking anxiety at a public university in Vietnam. *VNU J. Foreign Stud.* 38, 105–125. doi: 10.25073/2525-2445/vnufs.4789

Huang, Y. (2023). Examining the relationship between peer support and foreign language emotions in online learning: the mediating effect of self-efficacy. *Front. Psychol.* 14, e1148472. doi: 10.3389/fpsyg.2023.1148472

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strat. Manag. J.* 20, 195–204. doi: 10.1002/(SICI)1097-0266(199902)20:2andlt;195::AID-SMJ13andgt;3.0.CO;2-7

Jarvis, C. B., MacKenzie, S. B., and Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *J. Cons. Res.* 30, 199–218. doi: 10.1086/376806

Kostons, D., Van Gog, T., and Paas, F. (2012). Training self-assessment and task-selection skills: a cognitive approach to improving self-regulated learning. *Learn. Instruct.* 22, 121–132. doi: 10.1016/j.learninstruc.2011.08.004

Lai, Y.-C. (2009). Language learning strategy use and English proficiency of university freshmen in Taiwan. *TESOL Quart.* 43, 255–280. doi: 10.1002/j.1545-7249.2009.tb00167.x

Lan, R., and Oxford, R. L. (2003). Language learning strategy profiles of elementary school students in Taiwan. *Int. Rev. Appl. Ling. Lang. Teach.* 41, 339–380. doi: 10.1515/iral.2003.016

Le, H. T., Truong, T. N. N., Nguyen, T. N., and Pham, T. H. T. (2025). Challenges faced by Vietnamese university English majors in speaking English and their motivation for improving speaking skills. Ho Chi Minh City Open Univ. J. Sci. Soc. Sci. 15, 37–53. doi: 10.46223/HCMCOUJS.soci.en.15.2.3212.2025

Lee, J.-Y. (2018). The use of test-taking strategies and students' performances in answering TOEIC reading comprehension questions. *Taiwan J. TESOL* 15, 33–64. doi: 10.30397/TJTESOL.201810_15(2).0002

Ngo, C. L. (2019). Self-regulated learning and its relation to Vietnamese EFL learners' L2 listening achievement. VNU J. Foreign Stud. 35, 4395. doi: 10.25073/2525-2445/vnufs.4395

Nguyen, T. A. L., Nguyen, H. S., Ngan, T. P. N., Duong, M. A., Phan, Y. N., and Thai, C. D. (2023). Study on learning autonomy strategies for English speaking skills of high-quality first-year students, School of Foreign Languages, Can Tho University, Vietnam. *Eur. J. Altern. Educ. Stud.* 8, 177–200. doi: 10.46827/ejae.v8i3.5062

Noels, K. A., Pelletier, L. G., Clément, R., and Vallerand, R. J. (2000). Why are you learning a second language? Motivational orientations and self-determination theory. *Lang. Learn.* 50, 57–85. doi: 10.1111/0023-8333.00111

Oxford, R. L. (1999). Relationships between second language learning strategies and language proficiency in the context of learner autonomy and self-regulation. *Revista Canaria de Estudios Ingleses* 38, 109–126.

Oxford, R. L. (2016). Teaching and Researching Language Learning Strategies: Self-Regulation in Context. New York, NY: Taylor and Francis.

Pan, X., and Yuan, Z. (2023). Examining the association between peer support and English enjoyment in Chinese university students: The mediating role of regulatory emotional self-efficacy. *Front. Psychol.* 14, e1278899. doi: 10.3389/fpsyg.2023.1278899

Paris, S. G., and Winograd, P. (2001). The Role of Self-Regulated Learning in Contextual Teaching: Principles and Practices for Teacher Preparation. Washington, DC: US Department of Education.

Pawlak, M. (2018). Investigating the use of speaking strategies in the performance of two communicative tasks: the importance of communicative goal. *Stud. Sec. Lang. Learn. Teach.* 8, 269–291. doi: 10.14746/ssllt.2018.8.2.5

Peacock, M., and Ho, B. (2003). Student language learning strategies across eight disciplines. *Int. J. Appl. Ling.* 13, 179–200. doi: 10.1111/1473-4192.00043

Pham, H. C. (2017). Situated perspectives on the motivational trajectories of high school students learning English in rural Vietnam. *J. Engl. Educ. Ling. Stud.* 4, 249–266. doi: 10.30762/jeels.v4i2.68

Pham, T. T. A. (2020). Chiến luọ'c học kỹ năng nói môn tiếng Anh cça sinh viên không chuyên (A1) Đài hóc Huể. Tàp chí Khoa học Ngôn ngữ' và Văn hóa 4, 288–96. doi: 10.63506/jilc.0403.140

Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. Int. J. Educ. Res. 31, 459-470. doi: 10.1016/S0883-0355(99)00015-4

Pintrich, P. R. (2000). "The role of goal orientation in self-regulated learning," in *Handbook of Self-regulation*, eds. M. Boekaerts, R. Pintrich, and M. Zeidner (San Diego, CA: Academic Press), 452–502.

Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educ. Psychol. Rev.* 16, 385–407. doi: 10.1007/s10648-004-0006-x

Rose, H. (2012). Reconceptualizing strategic learning in the face of self-regulation: throwing language learning strategies out with the bathwater. *Appl. Ling.* 33, 92–98. doi: 10.1093/applin/amr045

Rose, H., Briggs, J. G., Boggs, J. A., Sergio, L., and Ivanova-Slavianskaia, N. (2018). A systematic review of language learner strategy research in the face of self-regulation. *System* 72, 151–163. doi: 10.1016/j.system.2017.12.002

Ryan, R. M., and Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am. Psychol.* 55, 68–78. doi: 10.1037/0003-066X.551.68

Sarstedt, M., Hair, J. F., Cheah, J.-H., Becker, J.-M., and Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Austr. Mark. J.* 27, 197–211. doi: 10.1016/j.ausmj.2019.05.003

Sharma, P. N., Shmueli, G., Sarstedt, M., Danks, N., and Ray, S. (2018). Predictionoriented model selection in Partial Least Squares path modeling. *Decis. Sci.* 52, 567–607 doi: 10.1111/deci.12329

Stevens, W. (2016). "Bringing order out of chaos: Definitions and features of language learning strategies," in *Teaching and Researching Language Learning Strategies:* Self-Regulation in Context, 2nd Edn., ed. R. L. Oxford (New York, NY: Routledge).

Suhesti, A., Kasmaini, K., and Kurniawan, I. (2022). Language learning strategies used by male and female students in learning speaking. *J. Engl. Educ. Teach.* 6, 45–56. Available online at: https://ejournal.unib.ac.id/index.php/JEET/article/view/ 15840?utm_source=chatgpt.com

Sun, P. P. (2022). Strategic self-regulation for speaking English as a foreign language: scale development and validation. *TESOL Quart.* 56, 1369–1383. doi: 10.1002/tesq.3132

Teng, L. S., and Zhang, L. J. (2016). A questionnaire-based validation of multidimensional models of self-regulated learning strategies. *Modern Lang. J.* 100, 674–701. doi: 10.1111/modl.12339

Tobias, S., and Everson, H. T. (2009). "The importance of knowing what you know: a knowledge monitoring framework for studying metacognition in education," in *Handbook of Metacognition in Education*, eds. D. J. Hacker, J. Dunlosky, and A. C. Graesser (New York, NY: Routledge), 107–127.

Tran, Q. T., and Nguyen, C. H. L. (2020). The use of self-regulated language learning strategies among Vietnamese English-majored freshmen: a case study. *VNUJ. Sci. Educ. Res.* 36, 50–63. doi: 10.25073/2588-1159/vnuer.4331

Truong, C. B., and Archer, J. (2018). "Examining the motivation and achievement of Vietnamese university students as they undertake English classes," in *English Tertiary Education in Vietnam*, ed. J. Albright (New York, NY: Routledge).

Truong, T. N. N. (2022). Psychometric properties of self-regulated learning strategies in learning English grammar and English grammar self-efficacy scales. *Front. Educ.* 7, e801570. doi: 10.3389/feduc.2022.801570

Truong, T. N. N., Noordin, N., Ismail, L., and Yahya, Y. (2022). Revisiting views of grammar and grammar learning strategy use: a multiple case study in Vietnam. *Lang. Value* 15, 52–80. doi: 10.6035/languagev.6124

Truong, T. N. N., and Wang, C. (2019). Understanding Vietnamese college students' self-efficacy beliefs in learning English as a foreign language. *System* 84, 123–132. doi: 10.1016/j.system.2019.06.007

Tseng, W.-T., Dörnyei, Z., and Schmitt, N. (2006). A new approach to assessing strategic learning: the case of self-regulation in vocabulary acquisition. *Appl. Ling.* 27, 78–102. doi: 10.1093/applin/ami046

Uztosun, M. S. (2020). The development of a scale for measuring the self-regulated motivation for improving speaking English as a foreign language. *Lang. Learn. J.* 48, 213–225. doi: 10.1080/09571736.2017.1335766

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., and Vallières, E. F. (1993). On the assessment of intrinsic, extrinsic, and amotivation in education: evidence on the concurrent and construct validity of the academic motivation scale. *Educ. Psychol. Meas.* 53, 159–172. doi: 10.1177/0013164493053001018

Vu, T. L. (2023). Promoting students' self-regulated learning using a self-recorded video task in a course on presentation skills. *Hong Duc Univ. J. Sci.* 13, 127–37.

Wael, A., Asnur, M. N. A., and Ibrahim, I. (2018). Exploring students' learning strategies in speaking performance. *Int. J. Lang. Educ.* 2, 65–71. doi: 10.26858/ijole.v2i1.5238

Wang, C., and Bai, B. (2017). Validating the instruments to measure ESL/EFL learners' self-efficacy beliefs and self-regulated learning strategies. *TESOL Quart.* 51, 931–947. doi: 10.1002/tesq.355

Wang, C., Schwab, G., Fenn, P., and Chang, M. (2013). Self-efficacy and self-regulated learning strategies for English language learners: comparison between Chinese and German college students. *J. Educ. Dev. Psychol.* 3, 173–191. doi: 10.5539/jedp.v3n1p173

Wang, P., Ganushchak, L., Welie, C., and van Steensel, R. (2024). The dynamic nature of emotions in language learning context: theory, method, and analysis. *Educ. Psychol. Rev.* 36, 1–26. doi: 10.1007/s10648-023-09836-z

Wang, S., Pan, Z., and Wang, Y. (2024). A mixed-methods investigation into complex components of multilingual international students' self-regulated learning in English as a foreign language context: a social cognitive perspective. *Learn. Motiv.* 88, 102055. doi: 10.1016/j.lmot.2024.102055

Wang, S., and Wang, Y. (2024). Exploring complex multilingual motivation types among Chinese students majoring in dual foreign languages: a Q method study. J. Multiling. Multicult. Dev. 1–19. doi: 10.1080/01434632.2024.2384493 Wang, Y., and Sun, P. P. (2024). Development and validation of speaking strategies for self-regulated learning questionnaire (S3RLQ): a multidimensional approach. *Asia-Pac. Educ. Res.* 33, 1339–1350. doi: 10.1007/s40299-023-00807-0

Wharton, G. (2000). Language learning strategy use of bilingual foreign language learners in Singapore. *Lang. Learn.* 50, 203-243. doi: 10.1111/0023-8333. 00117

Wigfield, A., Tonks, S. M., and Klauda, S. L. (2016). "Expectancy-value theory," in *Handbook of Motivation at School*, eds. K. R. Wentzel and D. B. Miele (New York, NY: Routledge), 55–74.

Yan, W., Lowell, V. L., and Yang, L. (2024). Developing English language learners' speaking skills through applying a situated learning approach in VR-enhanced learning experiences. *Virtual Real*. 28, 1–23. doi: 10.1007/s10055-024-01061-5

Zimmerman, B. J. (2002). Becoming a self-regulated learner: an overview. *Theory Into Pract.* 41, 64–70. doi: 10.1207/s15430421tip 4102_2

Zimmerman, B. J., and Cleary, T. J. (2006). Adolescents' development of personal agency: the role of self-efficacy beliefs and self-regulatory skill. *Self-Effic. Beliefs Adolesc.* 5, 45–69.

Zimmerman, B. J., and Pons, M. M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *Am. Educ. Res. J.* 23, 614–628. doi: 10.3102/00028312023004614

Zimmerman, B. J., and Schunk, D. H. (2011). "Self-regulated learning and performance: an introduction and overview," in *Handbook of Self-regulation of Learning and Performance*, eds. B. J. Zimmerman and D. H. Schunk (New York, NY: Routledge), 1–12.