THE INFLUENCE OF SELF-FEEDBACK DURING IELTS SPEAKING PREPARATION OF SOPHOMORE ENGLISH MAJORS AT THE UNIVERSITY OF DANANG - UNIVERSITY OF FOREIGN LANGUAGE STUDIES

NGHIÊN CỨU TÁC ĐỘNG CỦA PHƯƠNG PHÁP TỰ PHẢN HỒI TRONG QUÁ TRÌNH ÔN LUYỆN IELTS SPEAKING CỦA SINH VIÊN NĂM THỨ HAI, NGÀNH NGÔN NGỮ ANH, TRƯỜNG ĐẠI HỌC NGOẠI NGỮ - ĐẠI HỌC ĐÀ NẴNG

Tran Cong Hau, Le Van Hau, Nguyen Hoang Thao Nguyen, Tran Vu Mai Yen*

The University of Danang - University of Foreign Language Studies, Vietnam

*Corresponding author: tvmaiyen@gmail.com

(Received: January 20, 2026; Revised: April 09, 2026; Accepted: April 17, 2026)

DOI: 10.31130/ud-jst.2026.24(4).053

Abstract - This study examines the mechanism through which self-feedback quality influences students' IELTS Speaking outcomes, focusing on the mediating roles of cognitive and psychological factors, and examining the moderating role of learning technology during IELTS Speaking preparation. Data were collected from 173 second-year English major students and analysed by means of Hayes' Process Macro with bootstrapping. The results indicate that self-feedback quality affects IELTS Speaking performance mainly through indirect pathways, with metacognition emerging as the most prominent mediator. Practice intensity shows a positive correlation with speaking performance, whereas self-efficacy and communication anxiety play more limited roles. The findings also suggest that goal-oriented use of learning technology can enhance the effectiveness of self-feedback in the context of higher education.

Key words - Self-feedback approach; self-assessment; learning effectiveness; learning strategies; IELTS Speaking

Tóm tắt - Nghiên cứu này phân tích cơ chế tác động của chất lượng tự phản hồi đến kết quả IELTS Speaking của sinh viên thông qua vai trò trung gian của các yếu tố nhận thức và tâm lý, đồng thời xem xét vai trò điều tiết của công nghệ học tập trong quá trình luyện tập kỹ năng nói. Dữ liệu được thu thập từ 173 sinh viên năm thứ hai ngành Ngôn ngữ Anh và phân tích bằng Process Macro kết hợp kỹ thuật bootstrapping. Kết quả cho thấy chất lượng tự phản hồi ảnh hưởng gián tiếp đến kết quả IELTS Speaking, trong đó siêu nhận thức là biến trung gian nổi bật nhất. Cường độ luyện tập có mối liên hệ tích cực với kết quả đầu ra, trong khi niềm tin vào năng lực bản thân và lo âu giao tiếp chỉ đóng vai trò hạn chế. Việc sử dụng công nghệ học tập có định hướng được ghi nhận là yếu tố hỗ trợ nâng cao hiệu quả tự phản hồi trong bối cảnh giáo dục đại học.

Từ khóa - Phương pháp tự phản hồi; tự đánh giá; hiệu quả học tập; chiến lược học tập; kỹ năng nói trong bài thi IELTS

1. Introduction

In English language education at the university level, speaking skills - particularly in the context of standardized tests such as IELTS Speaking – have long been one of the major challenges for English language learners. Moreover, developing this skill requires not only expanding vocabulary or improving grammatical structures, but also processing language in real time, while simultaneously organizing ideas, maintaining coherence, and controlling pronunciation without the opportunity to revise responses as in writing. This real-time processing characteristic makes the process of self-assessment in speaking more complex than activities that allow learners to review and revise their output before completion. Within the trend toward promoting self-regulated learning, self-feedback has been regarded as a strategy that enables learners to actively review their own performance and adjust their practice. However, most previous studies have focused on academic writing contexts or tasks that permit repeated revision, thereby implicitly assuming the effectiveness of self-feedback without fully analyzing the specific challenges of speaking skills, such as high cognitive load (the mental demand caused by processing multiple types of information at once) when having to process multiple assessment criteria simultaneously, the risk of increased anxiety when listening to one's recorded speech, or the tendency for feedback to become merely procedural or surface-level when learners lack the ability to monitor, evaluate, and regulate themselves. The choice of the IELTS Speaking test preparation context stems not only from its widespread use as an exit requirement in foreign language education, but also from the fact that the test provides a standardized and publicly available assessment framework. In this study, IELTS Speaking is approached as an assessment context that allows observation and analysis of how learners perform speaking skills under conditions with clearly defined criteria, rather than being regarded as the sole learning goal. This approach enables the study to focus on learners' speaking practice processes within a structured environment, thereby clarifying the cognitive and behavioral mechanisms related to self-feedback. It also facilitates the investigation of how learners interpret assessment criteria and apply self-feedback during practice. In this study, a distinction should be made between "foreign language speaking ability" as a general competence and "IELTS Speaking competence" as a specific form of that ability in the context of a standardized test. At the same time, the variable "IELTS Speaking performance" in this study is approached as self-perceived performance, reflecting the extent to which learners evaluate their ability to meet these criteria, rather than as official scores from a standardized examination.

Therefore, the key issue is not merely how frequently self-feedback is used, but more importantly the cognitive mechanism through which self-feedback quality relates to with learners' self-perceived speaking competence. From the perspective of self-regulated learning, metacognition - including the ability to plan, monitor, and evaluate task performance - is considered a central factor in regulating how learners process feedback. In the process of practicing speaking skills for the IELTS test, this capacity may play a key role in transforming feedback into meaningful strategic adjustments. On that basis, this study was conducted as a cross-sectional survey to analyze the relational structure among self-feedback quality, cognitive factors, and learners' self-perceived IELTS Speaking performance, while also examining the mediating role of metacognition and the moderating role of contextual factors. Rather than asserting direct causal relationships, the study seeks to construct an explanatory model consistent with survey data in the context of higher education in Vietnam, thereby contributing to a clearer understanding of the conditions under which self-feedback is associated with changes in perceptions of speaking competence.

2. Literature review

A substantial body of international research has indicated that self-feedback is regarded as a structural component of self-regulated learning, in which learners actively monitor and regulate task performance based on predetermined criteria [1, 2]. Theoretical frameworks on feedback emphasize that the value of self-feedback lies not only in identifying errors, but also in the ability to interpret assessment criteria and transform feedback into specific regulatory actions [3, 4]. Empirical studies have also shown that the use of structured rubrics can enhance the accuracy of self-assessment and reduce cognitive load during the reflective process [5]. However, the effectiveness of self-feedback is not automatic; Butler and Winne [6] point out that feedback becomes meaningful only when it is integrated into a conscious monitoring - regulation cycle, while psychological factors such as self-efficacy or anxiety may influence how learners interpret and use feedback [7]. In foreign language speaking, progress is also associated with structured deliberate practice [8], and the integration of digital technology may play a supportive role but cannot replace the internal process of self-regulation [9]. This evidence suggests that the mechanism of self-feedback operates as a multilayered structure simultaneously influenced by cognitive, psychological, and contextual factors.

In Vietnam, studies on self-assessment and alternative assessment have mainly focused on promoting learner autonomy and enhancing students' awareness of learning criteria. Phan [10] reported a relationship between self-assessment and learner autonomy in higher education, while Duyen and Nghia [11] emphasized that the effectiveness of alternative assessment depends on the degree of guidance and alignment with the local educational context. These studies have helped affirm the positive role of self-feedback in the Vietnamese academic environment; however, most of them remain at the level of descriptive analysis or bivariate correlation. In particular, in the context of IELTS Speaking preparation - a skill assessed according to standardized criteria and requiring real-time language processing [12, 13, 14] - there remains a lack of studies testing the relational structure between self-feedback quality and learners' cognitive, psychological, and behavioral processes. This research gap suggests the need to approach the issue from the perspective of its operating mechanism rather than merely affirming the general effectiveness of self-feedback. In this study, IELTS Speaking is viewed as a standardized assessment context that serves as a tool for quantifying and observing the process of speaking practice, rather than representing learners' entire foreign language speaking competence.

A synthesis of the existing literature reveals three notable gaps. First, the mediating role of metacognition in transforming self-feedback quality into speaking skill outcomes has not been systematically examined, especially in real-time tasks such as IELTS Speaking. Second, most studies have approached self-feedback as an independent factor without simultaneously considering the mediating - moderating structure among cognitive factors (metacognition), psychological factors (belief, anxiety), behavioral factors (practice intensity), and supporting conditions (learning technology). Third, in the context of Vietnamese higher education, quantitative studies using multivariate analytical models to examine these relationships within a single theoretical framework remain limited. On that basis, this study was conducted to analyze the relational structure between self-feedback quality and students' self-perceived IELTS Speaking competence through mediating mechanisms and contextual conditions, thereby contributing empirical evidence to the field of self-regulated learning in foreign language speaking.

3. Theoretical framework

3.1. Self-feedback method

3.1.1. Definition and nature of self-feedback

In models of self-regulated learning, self-feedback is understood as an internal reflective activity in which learners compare their performance with previously established goals and criteria. Unlike external feedback, self-feedback emphasizes the learner's active role in interpreting assessment standards, identifying the discrepancy between the current state and task requirements, and considering appropriate adjustments. According to E. Panadero, feedback is only truly meaningful when it is processed and applied by learners at the strategic level rather than merely received passively [1]. Therefore, self-feedback is not simply detecting errors, but a cognitive process associated with learners' monitoring and evaluate capacities.

In essence, self-feedback can be viewed as the internalization of assessment criteria into the process of task performance [3, 6]. In foreign language learning, especially in speaking tasks assessed according to multiple criteria simultaneously, learners need to maintain consistency between assessment standards and their own language performance [15]. However, the effectiveness of self-feedback depends on the extent to which learners can apply

the criteria accurately and consciously; reflection itself does not automatically guarantee improved outcomes [1, 6].

3.1.2. Self-feedback quality in the learning and practice of speaking skills

Within the self-regulated learning framework, self-feedback is not understood as a uniform activity, but may differ considerably in terms of specificity, accuracy, and action orientation. Therefore, the value of self-feedback is often considered dependent on the quality of the reflective process carried out by learners. Studies on feedback literacy show that self-feedback is meaningful only when learners are able to interpret task requirements, apply assessment criteria appropriately, and make judgments that are sufficiently specific to guide strategic adjustments [3, 15]. When self-feedback remains at the level of general comments or becomes overly subjective, this activity may fail to provide a clear basis for learning decisions and may even lead to inaccurate interpretations of one's own competence.

For speaking skills, where task performance occurs in real time and involves the simultaneous processing of multiple language components, the quality of self-feedback is associated with learners' ability to use assessment frameworks consciously. Using structured assessment criteria, such as proficiency descriptors or scoring rubrics, helps shift the self-assessment process from intuition to systematic analysis [5, 6]. However, the effectiveness of this process depends on how learners apply the criteria and process information, rather than resulting automatically from reflective activity.

3.1.3. Influencing factors in the self-feedback process

Within the self-regulated learning framework, self-feedback quality is not regarded as a fixed characteristic, but is influenced by multiple factors related to learners' cognition and psychological states. Among these, metacognitive ability is often placed at the center, because the self-feedback process requires learners to consciously monitor, analyze, and evaluate task performance. The extent to which learners can apply assessment criteria to examine their speaking performance systematically depends considerably on their capacity for cognitive monitoring and control. In addition, psychological factors such as self-efficacy and attitudes toward errors are closely related to learners' willingness to engage in reflective activity, thereby affecting the specificity and depth of self-feedback [7].

Beyond internal factors, the learning context and support conditions are also considered factors influencing how self-feedback is implemented. The clarity of assessment criteria, the presence of structured reference frameworks, and guidance from instructors may provide a foundation for learners to situate self-assessment within specific standards [13, 15]. However, these factors are not assumed to guarantee the effectiveness of self-feedback, but are approached as contextual conditions related to the quality of the reflective process.

3.1.4. The impact of self-feedback quality on speaking practice behavior

Within the self-regulated learning framework, practice behavior is viewed as an observable component of the internal regulation process. The extent to which learners engage in practice, the way they select tasks, and how they allocate time may be related to how they interpret and apply feedback. From this perspective, self-feedback quality not only reflects an internal evaluative activity, but may also be associated with the practice orientation that learners adopt. When self-feedback is carried out on the basis of specific criteria and includes action-oriented judgments, learners have a clearer basis for identifying the focus of practice rather than practicing without clear focus.

From the perspective of deliberate practice, progress in speaking skills is often associated with structured practice and focus on aspects that need improvement [8, 16]. However, the extent and form of practice depend not only on feedback, but are also influenced by metacognitive ability and psychological factors related to motivation and self-regulation [2, 17].

3.2. The mechanism of the impact of the self-feedback method on learners' psychology and cognition

In models of self-regulated learning, self-feedback is often viewed as a reflective activity associated with learners' internal monitoring and evaluation processes. When comparing performance outcomes with goals and assessment criteria, learners engage in cognitive processing to determine the degree of alignment between task requirements and their actual performance [1, 3]. From this perspective, self-feedback may be related to metacognitive capacity, as both involve the ability to monitor, analyze, and regulate learning processes at the strategic level. In the context of foreign language speaking - where learners must simultaneously control multiple language components - the conscious use of assessment criteria is considered an element associated with the systematic nature of the reflective process, rather than intuitive judgments alone.

In addition to the cognitive aspect, self-feedback also influences learners' psychological states. The extent to which learners are able to identify criteria and evaluate their own speaking performance may be associated with their sense of control over the tasks and confidence in their own ability. Studies on self-regulation indicate that a clear awareness of criteria and performance outcomes is often accompanied by differences in willingness to engage in tasks and attitudes toward errors [12]. However, these relationships are neither inevitable nor linear, but depend on how learners interpret feedback information and apply it in specific contexts.

3.3. Speaking skills in the IELTS test

The speaking component of the IELTS test (IELTS Speaking) is designed as a face-to-face interview between the candidate and the examiner, lasting from 11 to 14 minutes and recorded to ensure fairness and reliability of the assessment process [12, 13]. The test consists of three parts with increasing levels of demand, ranging from questions on familiar topics, to a short talk with preparation time based on a cue card, and an extended discussion of more abstract issues. Throughout this process, the examiner uses a standardized question framework and scoring criteria to control the test structure and maintain consistency in the assessment of candidates' speaking ability [12, 18].

IELTS Speaking results are assessed on a band scale from 1 to 9 based on four main criteria, including fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation. These criteria reflect not only linguistic accuracy but also the ability to organize, develop, and regulate spoken performance in real time [14]. Many studies have shown that IELTS Speaking results are closely related to the ability to identify and correct errors, the extent of using appropriate communication strategies, and metacognitive capacity in planning, monitoring, and evaluating spoken performance [19]. In this context, learners' clear understanding of the test structure and assessment criteria is considered an important condition that helps them organize ideas coherently, select appropriate test-taking strategies, and gradually improve fluency as well as the quality of speaking output. On that basis, in this study, IELTS Speaking is approached as a specific assessment context of foreign language speaking with a standardized system of criteria. The term "IELTS Speaking performance" is used to refer to the extent to which learners demonstrate speaking ability within the framework of these criteria, and it is measured through learners' subjective judgments. This approach allows the study to focus on learners' cognitive and self-assessment processes rather than scores.

3.4. Research model and hypotheses

3.4.1. Proposed analytical framework

The proposed analytical framework is based on data synthesized from the antecedent factors of social cognitive theory and the regulatory processes of self-regulated learning in order to construct a model representing the structural relationships among variables in the research model, based on the combination of Models 1 and 4 of Hayes' Process Macro [20].

3.4.2. Proposed research model diagram

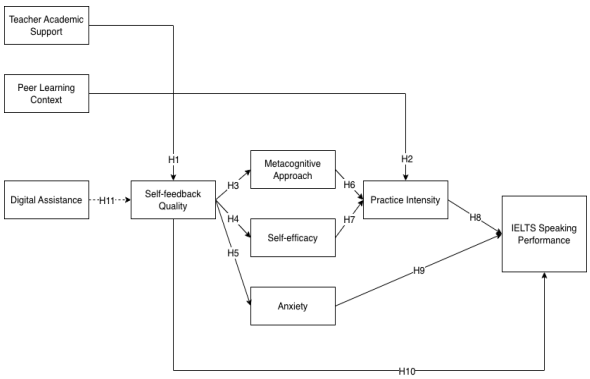

Figure 1. *Proposed research model*

3.4.3. Research hypotheses

H1: Teacher academic support has a positive effect on self-feedback quality.

H2: The peer learning context has a positive effect on practice intensity.

H3: Self-feedback quality has a positive effect on learners' metacognition.

H4: Self-feedback quality has a positive effect on self-efficacy.

H5: Self-feedback quality has a negative effect on students' communication anxiety.

H6: Metacognitive approach has a positive effect on students' speaking practice intensity.

H7: Self-efficacy has a positive effect on practice intensity.

H8: Practice intensity mediates the relationship between metacognitive support and IELTS Speaking performance.

H9: The level of anxiety and fear of communication moderates the relationship between practice intensity and IELTS Speaking results.

H10: Self-feedback quality has a direct and positive effect on students' IELTS Speaking competence.

H11: Digital assistance (speaking practice applications, AI feedback) moderates the relationship between self-feedback quality and students' metacognition.

3.5. Research questions

This study aims to clarify the mechanism and influence of the self-feedback method in students' IELTS Speaking practice and outcomes, with a focus on its relationships with cognitive, psychological, and learning-context factors. On that basis, the research team examines the mediating and moderating relationships using Hayes' Process Macro as proposed in the section above and addresses the following research questions.

RQ1. How are learning-context factors (instructor support and learning environment) related to students' self-feedback quality and level of practice?

RQ2. How does self-feedback quality affect IELTS Speaking results through the mediating factors of metacognition, self-efficacy, communication anxiety, and practice intensity?

RQ3. What role does learning technology play in the relationship between self-feedback quality and the self-regulation process in IELTS Speaking practice?

4. Methodology

This study was conducted using a quantitative method combined with a cross-sectional survey design to analyze the relational structure between self-feedback quality and cognitive, psychological, and behavioral factors in speaking practice. Data were collected from 173 English-major students through a structured questionnaire using a five-point Likert scale. This sample size meets the minimum requirement for regression models with mediation and moderation using Process Macro, as models with a moderate number of predictors can be estimated stably with sample sizes of approximately 150 observations [18]. The scales were developed based on instruments that had been used and validated in previous studies, notably Zimmerman's self-regulated learning framework and Horwitz's Foreign Language Classroom Anxiety Scale, and were then adapted to fit the context of IELTS Speaking practice. The dependent variable in this study was self-perceived IELTS Speaking performance, reflecting the extent to which students evaluate their ability to meet the criteria of the IELTS Speaking test. This variable was used to approach the cognitive aspect of speaking ability within a standardized assessment context, rather than measuring foreign language speaking ability in a broader sense.

Data analysis was conducted using SPSS 20.0. The reliability of the scales was tested using Cronbach's Alpha, followed by exploratory factor analysis (EFA) with Varimax rotation to evaluate the structure of the measured variables. Hypotheses concerning mediating and moderating relationships were tested using Hayes' Process Macro, in which Model 4 was used to analyze mediation effects and Model 1 to examine moderating effects, with a bootstrapping method of 5,000 resamples to estimate 95% confidence intervals for indirect effects. The technology support variable was measured through the extent to which students used feedback-support tools during speaking practice, including speaking practice applications with integrated automated feedback (e.g., Elsa Speak), functions for recording and replaying spoken responses, or platforms providing feedback based on artificial intelligence. The scale reflects the intensity of technology use in general, rather than evaluating the effectiveness of any specific application; therefore, findings related to this variable are interpreted in terms of technology use as a conditional factor, consistent with the cross-sectional survey design. The entire process of data collection and processing was carried out based on the principles of voluntariness and confidentiality, in compliance with research ethics requirements.

5. Results

5.1. Reliability and validity of the Research Data

5.1.1. Research variables and conceptual descriptions

Table 1. *Research variables and conceptual descriptions*

Variable	Variable name	Description
TAS	Teacher academic support	The extent to which learners receive guidance, instructional direction, and formative feedback from instructors during speaking practice.
PLC	Peer learning context	The level of interaction, support and influence from peers throughout speaking and self-feedback activities.
SFQ	Self-feedback quality	The level of feedback accuracy, specificity, and actionability that learners self-generate after speaking tasks.
DA	Digital assistance	The extent of learners' use of technological tools (e.g., applications, digital platforms, etc) to support self-feedback and speaking practice.
MA	Metacognitive approach	Learners' capacity to plan, monitor, and evaluate their own speaking practice process.
SE	Self-efficacy	Learners' belief in their ability to successfully perform English speaking tasks.
ANX	Anxiety	The level of apprehension and tension learners experience when engaging in English speaking tasks.
PI	Practice intensity	The frequency and goal-oriented nature of learners' speaking practice activities.
ISC	Perceived IELTS Speaking performance	Learners' level of proficiency in English speaking as demonstrated in the context of the IELTS Speaking test.

Before conducting empirical analyses to test the relationships in the proposed model, it is necessary to clarify the variables used as well as the conceptual content of each variable in the research context. Clearly identifying the research variables not only contributes to ensuring consistency in the interpretation of statistical results, but also serves as a foundation for testing the reliability and validity of the scales in the subsequent analytical steps. In this study, the selected variables simultaneously reflect contextual factors, self-study behavior, and learners' cognitive - psychological processes during IELTS speaking practice, as presented in Table 1.

5.1.2. Reliability and validity of research scales

The analytical process began with assessing the reliability and empirical validity of the scales in order to ensure that the theoretical constructs in the research model were measured consistently and meaningfully. Data were collected from 173 valid responses from English-major students and were reviewed prior to analysis to remove patterned responses or outlying observations that could distort the results. Although self-reported data always involve certain limitations regarding subjectivity, the procedures for cleaning the data and standardizing the scales were carried out carefully to minimize measurement bias and ensure that the indicators included in the analysis closely reflected learners' cognitive, psychological, and learning behavior during the application of the self-feedback method in IELTS speaking practice.

Table 2. *Descriptive statistics, reliability, and convergent validity of the scales (N=173)*

Variable	Mean	SD	Cronbach's Alpha	CR	AVE
TAS	3.41	1.10	0.791	0.852	0.540
PLC	3.36	1.06	0.757	0.835	0.510
SFQ	3.48	1.05	0.807	0.864	0.561
DA	3.54	1.03	0.822	0.871	0.574
MA	3.50	0.99	0.779	0.842	0.522
SE	3.42	0.99	0.794	0.854	0.541
ANX	3.58	1.05	0.799	0.857	0.550
PI	3.42	1.07	0.818	0.873	0.582
ISC	3.42	1.03	0.843	0.885	0.612

Note: SD = Standard deviation; CR = Composite reliability; AVE = Average variance extracted.

The descriptive statistical results show that the mean values of the constructs ranged from 3.36 to 3.58, reflecting a moderate level of agreement among learners regarding the factors in the research model. An average standard deviation of approximately 1.0 indicates a reasonable level of dispersion in the data, reflecting diversity in the learning experiences of the surveyed participants. In terms of reliability and convergent validity, all scales met the required criteria, with Cronbach's Alpha coefficients and composite reliability (CR) values exceeding the threshold of 0.70, while all average variance extracted (AVE) values were greater than 0.50. These results indicate that the observed variables demonstrate good internal consistency and appropriately represent the latent constructs that the study aims to measure.

To further assess discriminant validity among the constructs, the study used the Heterotrait-Monotrait Ratio (HTMT). The results show that all variable pairs had HTMT values below the recommended threshold of 0.85,

including pairs of constructs with close theoretical relationships such as metacognition and self-feedback quality. This indicates that the scales in the model not only show conceptually reasonable relationships, but also maintain the necessary distinctiveness, thereby limiting overlap among the factors. Although these findings should be interpreted within the limitations of the sample size of N = 173, the validation results provide sufficiently strong empirical evidence to confirm that the dataset meets the requirements of reliability and measurement validity, thereby providing a solid foundation for the structural model analyses in the next step.

5.2. Empirical analysis of relationships and levels of impact

After establishing the reliability and empirical validity of the scales, the study proceeded to test the theoretical model in order to examine the relationships among the variables in the proposed model. The results of the path regression analysis show that the model has a moderate level of explanatory power for the dependent variable, Perceived IELTS Speaking performance (ISC), with an adjusted R^2 of 0.462. This indicates that the variables in the model explain approximately 46.2% of the variance in speaking performance in the IELTS Speaking test within the research sample, reflecting a moderate explanatory capacity of the model.

Table 3. *Results of direct effects in the proposed research model (N = 173)*

Hypothesis	Structural Path	β	t-value	p-value	Effect-size (f^2)
H1	TAS → SFQ	0.384	5.214	<0.001	0.182 (medium)
H2	PLC → SFQ	0.321	4.652	<0.001	0.145 (small)
H3	SFQ → MA	0.512	8.421	<0.001	0.364 (large)
H4	SFQ → SE	0.285	3.954	<0.001	0.112 (small)
H5	SFQ → ANX	-0.246	3.125	0.002	0.084 (small)
H6	MA→ PI	0.415	6.182	<0.001	0.231 (medium)
H10	SFQ → ISC	0.176	2.410	0.017	0.061 (small)

Based on the results presented in Table 3, the path coefficients show that the exogenous factors have direct and statistically significant relationships with self-feedback quality (SFQ). Specifically, instructor support has a positive effect of medium magnitude on self-feedback quality ($\beta = 0.384$, $p < 0.001$), while the peer learning context also shows a positive effect but with a smaller effect size ($\beta = 0.321$, $p < 0.001$). In addition, self-feedback quality shows a strong relationship with metacognition (MA) ($\beta = 0.512$, $p < 0.001$), with a large effect size ($f^2 = 0.364$), confirming the central role of self-feedback in activating learning monitoring and regulation. Furthermore, self-feedback quality has a positive relationship with self-efficacy (SE) ($\beta = 0.285$, $p < 0.001$) and a negative relationship with communication anxiety (ANX) ($\beta = -0.246$, $p = 0.002$), indicating that self-feedback affects not only cognition but also learners' psychological states during speaking practice.

At the level of learning behavior, the results show that metacognition (MA) has a positive and statistically significant relationship with practice intensity (PI) ($\beta = 0.415$, $p < 0.001$), reflecting that the ability to plan, monitor, and evaluate the learning process may be related to learners' level of engagement in speaking practice. This finding suggests that when students are able to organize and monitor their practice process consciously, they tend to maintain a more frequent and clearly goal-directed level of practice.

In addition to the direct relationships, the hypotheses related to mediating and moderating mechanisms (H7, H8, H9, and H11) were tested through Process Macro analysis with bootstrapping. The results show that the mediating effects through metacognition (MA), self-efficacy (SE), and communication anxiety (ANX) were all statistically significant when the 95% confidence intervals did not include 0. At the same time, the moderating effect of learning technology (DA) on the relationship between self-feedback quality and metacognition was also confirmed, indicating that the hypotheses related to mediating and moderating mechanisms in the research model were all supported by the survey data.

5.3. Mediating and moderating effects in the relationship between self-feedback quality and students' speaking performance

To clarify how self-feedback quality (SFQ) affects Perceived IELTS Speaking performance (ISC), the study further analyzed mediating and moderating effects using the bootstrapping method with 5,000 resamples in Process Macro. Based on Table 4, it can be seen that SFQ has statistically significant indirect effects on ISC through multiple mediating variables, reflecting the interaction among cognitive, psychological, and practice-behavior factors in the research model.

Table 4. *Mediation and moderation analysis results (N=173)*

Effect Type	Pathway	Coefficient	BootLLCI	BootULCI
Indirect	SFQ → MA → ISC	0.254	0.175	0.342
Mediating effects	SFQ → SE → ISC	0.082	0.021	0.145
	SFQ → ANX → ISC	0.045	0.005	0.098
Conditional Effect	SFQ × DA → MA	0.126	0.015	0.243
	Interaction effect at high DA	0.452	0.321	0.584

Note: Coeff = Regression coefficient; BootLLCI and BootULCI denote the lower and upper limits of the 95% bootstrapped confidence interval with 5,000 resamples.

Among the mediating variables tested, metacognition (MA) demonstrates a mediating role in the relationship between SFQ and ISC. The indirect effect through MA reached a coefficient of 0.254, with a 95% confidence interval that did not include 0 (BootLLCI = 0.175; BootULCI = 0.342), suggesting that metacognition has a significant relationship with learners' self-perceived speaking performance. In addition, SFQ also shows indirect effects through self-efficacy (SE) (Coeff = 0.082; BootLLCI = 0.021; BootULCI = 0.145) and communication anxiety (ANX) (Coeff = 0.045; BootLLCI = 0.005; BootULCI = 0.098); however, these effects are relatively smaller than the central cognitive mechanism.

Notably, when considering both the indirect effects and the direct effect of SFQ on ISC ($\beta = 0.176$, $p = 0.017$), the results indicate partial mediation. This suggests that although most of the influence of self-feedback is transmitted through cognitive and behavioral processes - especially metacognition - self-feedback quality still exerts

a direct effect on speaking performance. In addition, the moderation analysis shows that learning technology support strengthens the relationship between SFQ and MA (Coeff = 0.126; BootLLCI = 0.015; BootULCI = 0.243), in which the effect of SFQ on MA becomes stronger at a high level of technology use. This suggests that the effectiveness of self-feedback is not automatic, but depends on contextual conditions and the extent to which learners use supporting tools during speaking practice.

6. Discussion

6.1. The role of instructors and the learning environment in shaping self-study habits

The analysis of 173 survey responses shows that instructor support has a direct and statistically significant relationship with self-feedback quality in students' speaking practice. This finding indicates that the role of instructors is not limited to providing evaluative feedback, but also influences how learners approach and carry out criterion-based self-study activities. From a theoretical perspective, this result is consistent with Vygotsky's concept of the zone of proximal development [17], according to which initial structured guidance - such as rubrics or reflective procedures - can support learners in forming evaluative standards and gradually developing self-regulation skills in foreign language learning, particularly in the context of IELTS Speaking preparation.

However, the medium effect size suggests that instructor support serves more as an initiating factor than as a factor directly determining long-term improvement. This implies that external pedagogical influences can only produce sustainable effects when they are internalized by learners into self-regulatory strategies and habits of self-reflection. Therefore, the core role of instructors in speaking development does not lie in maintaining frequent feedback, but in designing transferable interventions that help students use assessment criteria as tools for self-monitoring and independently controlling the quality of their speaking performance. This approach helps explain why, even under similar levels of instructional support, students may achieve different levels of progress depending on their ability to transform guidance into proactive self-study behavior.

In addition, the learning environment may also function as a contextual condition influencing how learners receive and apply feedback. In learning settings that encourage experimentation, accept errors, and promote feedback exchange among learners, students have greater opportunities to engage in reflective activities and adjust their practice strategies. In contrast, in environments that place excessive emphasis on outcome evaluation, learners may tend to limit experimentation or avoid difficult communication tasks. This helps explain why, even when the level of instructional support is relatively similar, students may still show considerable differences in how they apply feedback and engage in speaking practice.

6.2. The mediating role of metacognition in the relationship between self-feedback and speaking performance

The findings show that the effectiveness of self-feedback in speaking practice depends considerably on learners' ability to organize and control their own learning process. When students are able to monitor their practice progress, compare their speaking performance with goals, and self-evaluate the extent to which they meet task requirements, self-feedback not only helps identify errors but also provides a basis for adjusting practice methods in subsequent attempts. From this perspective, metacognition may be regarded as a factor helping learners move from isolated error correction to a more clearly directed practice process, which is consistent with approaches that consider metacognition the core component of self-regulated learning [2].

In addition, psychological factors such as self-efficacy and communication anxiety play only a supportive role in the relationship between self-feedback and speaking performance. Although these factors may influence learners' willingness to engage in practice or their attitudes toward errors, their effects are difficult to sustain if they are not tied to direct reflective activities. The findings also show that self-feedback still has a certain degree of direct impact on speaking performance, but such immediate improvements are only truly reinforced when learners develop metacognitive capacity, thereby transforming self-generated feedback into more stable progress in speaking skills [6]. In this research model, practice intensity is approached as a behavioral manifestation of the self-regulation process rather than as a cognitive mechanism. Therefore, this variable is regarded as a behavioral factor directly related to speaking outcomes rather than as part of the cognitive mediation process.

6.3. The conditional role of technology in the self-feedback process

The moderation analysis shows that technology support has the capacity to strengthen the relationship between self-feedback quality and metacognition, thereby indirectly affecting students' speaking performance. The relatively small effect size of the technology variable also indicates that technology is not a direct determinant of self-feedback quality, but mainly serves as a facilitating condition in the practice process. This finding suggests that digital tools, including speaking practice applications and feedback systems based on artificial intelligence, may function as a form of cognitive scaffolding to support learners in approaching the self-assessment process in a more structured and consistent manner. In the context of IELTS Speaking preparation, technology helps learners identify errors in pronunciation, intonation, and fluency almost instantly, thereby supporting the feedback process and allowing learners to focus more on monitoring and adjusting their speaking strategies. However, the results also show that the role of technology is conditional and becomes clearly effective only when learners actively use these tools within a goal-directed self-study process.

In addition to the technology factor, the results related to the psychological variable show that self-feedback has only an indirect and limited effect on reducing communication anxiety and increasing speaking confidence. Although the mediating effects through emotional factors all reached statistical significance, their relatively small effect sizes indicate that negative psychological states are enduring in

nature and difficult to regulate through individual practice or self-generated feedback alone. This finding is consistent with approaches to foreign language anxiety, according to which evaluative pressure and the examination context may continue to trigger anxiety even when learners have become accustomed to listening to and correcting their own spoken responses. Therefore, the findings emphasize that technology and self-feedback need to be situated within a broader pedagogical ecosystem in which learners are supported in building a psychologically safe practice environment that can optimize the long-term development of speaking performance.

7. Conclusion

This study has clarified how the self-feedback method affects the practice and development of speaking skills in the IELTS test among English-major students in the context of higher education, thereby showing that differences in self-perceived speaking performance may be related to the interaction among external support factors, self-study behavior, and learners' cognitive - and psychological processes. Within this structure, instructor support plays an initiating role by helping students form initial standards and orientations for self-feedback activities, while sustainable learning effectiveness is associated with learners' ability to internalize these orientations into self-regulatory strategies during practice. The findings also emphasize the central role of metacognition, showing that differences in the ability to plan, monitor, and regulate the learning process may lead to significant disparities in IELTS Speaking results even when the level of practice is similar. In addition, learning technology is identified as a supportive rather than decisive factor, serving a moderating function when integrated into a goal-directed self-study process, thereby helping learners use self-feedback at the cognitive level. In contrast, psychological factors such as communication anxiety demonstrate relative stability, implying that the development of speaking skills requires pedagogical interventions beyond scope of individual practice or self-generated feedback.

The findings also indicate the central role of metacognition in transforming self-feedback quality into substantive improvement in speaking performance. The implementation of this method is based on the guiding role of instructors, learners' metacognitive capacity, the support of learning technology, and consideration of psychological factors such as communication anxiety. Through this approach, learners gradually develop self-regulatory capacity in speaking practice through activities of planning and monitoring practice, thereby gradually reducing their dependence on external factors. On this basis, the self-feedback method demonstrates practical value in orienting practice activities and supporting English-major students in improving the effectiveness of IELTS Speaking preparation in the context of higher education.

Although the study has yielded meaningful findings, several limitations should be taken into account when interpreting the results. The cross-sectional research design does not allow causal relationships to be established over time, while self-reported data may be influenced by respondents' cognitive bias. In addition, the sample was limited to one specific educational institution, which may affect the generalizability of the findings. On that basis, future studies may expand by diversifying research designs and contexts in order to test the stability of the model, while also deepening understanding of the roles of self-feedback, metacognition, and technology in the development of foreign language speaking skills in higher education.

REFERENCES

[1] E. Panadero, "A Review of Self-regulated Learning: Six Models and Four Directions for Research," *Frontiers in Psychology*, vol 8, p. 422, 2017.

[2] B. J. Zimmerman, "Becoming a Self-Regulated Learner: An overview," *Theory into practice*, vol 41, no 2, pp. 64-70, 2002.

[3] D. J. Nicol and D. Macfarlane-Dick, "Formative assessment and self-regulated learning: a model and seven principle of good feedback practice," *Studies in Higher Education*, vol 31, no 2, pp. 199-218, 2006.

[4] Z. Yan and D.Carless, "Self-assessment is about more than self: the enabling role of feedback literacy," *Assessment & Evaluation in Higher Education*, vol 47, no 7, pp. 1116-1128, 2022.

[5] B. Rothstein and J. R. R. Kreb, "Rubrics enhance accuracy and reduce cognitive load in self-assessment," *Metacognition and Learning*, vol 17, pp. 627-650, 2022.

[6] D. L. Butler and P. H. Winne, "Feedback and Self-Regulated Learning: A Theoretical Synthesis," *Review of Educational Research*, vol 65, no 3, pp. 245-281, 1995.

[7] Z. Yan, J. Zhu, W. Guo, J. Wu, B. Huang, and Y. Yang, "Exploring the mediating effect of feedback self-efficiency between students' self-feedback behaviour and academic proficiency," *Frontiers in Psychology*, vol 16, 2025.

[8] K. A. Ericsson, "Deliberate Practice and Acquisition of Expert Performance: A General Overview," *Academic Emergency Medicine*, vol 15, no 11, pp. 988-994, 2008.

[9] M. Zhang, "Enhancing self-regulation and learner engagement in L2 speaking: exploring the potential of intelligent personal assistants within a learning-oriented feedback framework," *BMC Psychology*, vol 12, no 421, pp. 1-16, 2024.

[10] T. T. T. Phan, "Self-assessment and Language Learner Autonomy: An Exploratory Study in a Vietnamese University", *Vietnam Journal of Education,* vol 5, no 3, pp. 72-83, 2021.

[11] N. N. T. Duyen and V. T. Nghia, "Promoting Alternative Assessement in Vietnamese Higher Education: Overcoming Challenges in Language Education" *in The 7th International Conference on English Language Teaching 2024 (IECLT 2024) – Glocalization and ELT*, Ho Chi Minh City, 2024

[12] IELTS, "IELTS Academic format - Speaking," *IELTS Partners*, [Online]. Available: https://www.ielts.org/take-a-test/test-types/ielts-academic-test/ielts-academic-format-speaking. [Accessed Jan. 15, 2026].

[13] L. Taylor and P. Falvey*, IELTS Collected Papers: Researching in speaking and writing assessment*, Cambridge: Cambridge University Press.

[14] G. Fulcher, "Assessing Second Language Speaking," *Cambridge*, vol 48, no 2, pp. 198-216, 2015.

[15] D. Carless and D. Boud, "The development of student feedback literacy: enabling uptake of feedback," *Assessment & Evaluation in Higher education*, vol 43, no 8, pp. 1315-1325, 2018.

[16] L. Jin, "The Effects of Using Self-assessment on L2 Speaking," *Frontiers in Educational Research*, vol 4, no 8, pp. 85-93, 2021.

[17] L. S. Vygotsky, *Mind in Society: The Development of Higher Psychological Process*, Cambridge, Massachusetts, London, England: Harvard University Press, 1978.

[18] H. D. Brown, *Language Assessment: Principles and Classroom Practice*, Pearson Education, 2004.

[19] J. M. O'Malley and A. U. Chamot, *Learning Strategies in Second Language Acquisition*, Cambridge: Cambridge University Press, 2012.

[20] A. F. Hayes, *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, New York, NY: Guilford Press, 2018