

VIETNAMESE TERTIARY EFL TEACHERS' SELF-EFFICACY AND INFORMATION AND COMMUNICATION TECHNOLOGY INTEGRATION

Nguyen Huu Hoang

Academy of Journalism and Communication

ARTICLE INFO	ABSTRACT
<p>Received: 25/02/2025</p> <p>Revised: 17/04/2025</p> <p>Published: 19/04/2025</p>	<p>This mixed-methods study examines Vietnamese tertiary EFL teachers' self-efficacy and information and communication technology integration practices. Survey data from 84 lecturers revealed moderately high self-efficacy, with highest confidence in instructional strategies and lowest in student engagement. SAMR model analysis showed predominantly lower-level integration, with Substitution and Augmentation activities dominating over transformative Modification and Redefinition approaches. Document analysis of lesson plans confirmed this pattern. Significant positive correlations emerged between self-efficacy and all integration levels, strongest for Modification activities ($r = 0.61, p < 0.001$). Notably, correlation strengths declined for Redefinition activities despite high self-efficacy, indicating institutional constraints limit implementation of the most transformative practices regardless of teacher confidence. Qualitative data from interviews identified time constraints, curriculum pressures, and institutional expectations as key influencing factors. Findings underscore the need for targeted professional development addressing pedagogical applications of technology and institutional reforms supporting transformative ICT use in Vietnamese EFL contexts.</p>
<p>KEYWORDS</p> <p>Self-efficacy</p> <p>ICT integration</p> <p>SAMR model</p> <p>EFL teachers</p> <p>Vietnamese tertiary education</p>	

MỐI QUAN HỆ GIỮA NIỀM TIN VÀO NĂNG LỰC BẢN THÂN VÀ MỨC ĐỘ TÍCH HỢP CÔNG NGHỆ CỦA GIÁNG VIÊN TIẾNG ANH TẠI VIỆT NAM

Nguyễn Hữu Hoàng

Học viện Báo chí và Tuyên truyền

THÔNG TIN BÀI BÁO	TÓM TẮT
<p>Ngày nhận bài: 25/02/2025</p> <p>Ngày hoàn thiện: 17/04/2025</p> <p>Ngày đăng: 19/04/2025</p>	<p>Nghiên cứu hỗn hợp này xem xét mối quan hệ giữa niềm tin vào năng lực bản thân và mức độ tích hợp công nghệ của giảng viên tiếng Anh bậc đại học tại Việt Nam. Dữ liệu từ 84 giảng viên cho thấy mức độ tự tin nghề nghiệp tương đối cao, cao nhất trong chiến lược giảng dạy và thấp nhất trong việc thu hút sinh viên. Phân tích theo mô hình SAMR cho thấy sự tích hợp chủ yếu ở mức Thay thế và Tăng cường, được xác nhận qua phân tích giáo án. Nghiên cứu tìm thấy mối tương quan thuận đáng kể giữa tự tin nghề nghiệp và tất cả các mức độ tích hợp, mạnh nhất với hoạt động Điều chỉnh ($r = 0,61, p < 0,001$). Cường độ tương quan giảm đối với hoạt động Tái định nghĩa mặc dù có niềm tin nghề nghiệp cao, cho thấy các ràng buộc thể chế hạn chế việc thực hiện các phương pháp chuyên đổi bất kể sự tự tin của giảng viên. Phỏng vấn xác định giới hạn thời gian, áp lực chương trình giảng dạy và kỳ vọng của tổ chức là yếu tố ảnh hưởng chính. Nghiên cứu đề xuất phát triển chuyên môn tập trung vào ứng dụng sự phạm của công nghệ và cải cách thể chế hỗ trợ việc sử dụng công nghệ mang tính chuyên đổi trong bối cảnh giảng dạy tiếng Anh tại Việt Nam.</p>
<p>TỪ KHÓA</p> <p>Niềm tin vào năng lực bản thân</p> <p>Tích hợp công nghệ</p> <p>Mô hình SAMR</p> <p>Giáo viên tiếng Anh</p> <p>Bậc đại học tại Việt Nam</p>	

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Email: huuhoang309@gmail.com

<http://jst.tnu.edu.vn>

299

Email: jst@tnu.edu.vn

1. Introduction

Information and Communication Technology (ICT) integration has become essential in education, transforming traditional teaching practices across disciplines [1], [2]. Among factors influencing technology adoption in educational settings, teacher self-efficacy—educators' confidence in their ability to incorporate technology effectively—has emerged as a critical determinant of successful implementation [3], [4]. This relationship between self-efficacy and technology use is particularly important as educators navigate increasingly digital learning environments [4], [5].

The theoretical foundation for understanding teacher self-efficacy can be traced to Bandura's [6] social cognitive theory, which established self-efficacy as a fundamental determinant of human behavior. Building on this foundation, Tschannen-Moran and Hoy [7] conceptualized teacher self-efficacy specifically as an educator's belief in their capacity to influence student learning and achievement. This self-perception directly affects instructional choices, pedagogical approaches, and willingness to innovate—including decisions regarding technology integration [8], [9].

For analyzing technology integration levels, Puentedura's [10] SAMR model provides a valuable framework. This model evaluates technology integration through four progressive levels: Substitution (direct tool replacement), Augmentation (functional improvement), Modification (task redesign), and Redefinition (creation of previously inconceivable tasks). While this model has been widely adopted in educational technology research, Hamilton et al. [11] critique its hierarchical structure and technological determinism, noting that it sometimes oversimplifies the complex relationship between pedagogy and technology. Despite these critiques, the SAMR model offers a useful analytical lens for understanding technology integration patterns when applied with sensitivity to specific educational contexts.

In language education, particularly in English as a foreign language (EFL) contexts, technology offers unique opportunities for enhancing language acquisition through increased exposure to authentic materials, interactive learning environments, and autonomous learning opportunities [12]. Basal [13] demonstrated the utility of the SAMR model in language education by applying the framework to assess digital storytelling in EFL writing instruction. ICT integration in EFL instruction enhances language learning through student motivation, authentic material access, and autonomous learning opportunities [13].

While the COVID-19 pandemic accelerated technology adoption in education globally [14], implementation challenges persist, particularly in developing contexts. These challenges are often amplified in language education, where effective technology integration requires not only technical proficiency but also pedagogical innovation [14], [15]. Scherer and Teo's [16] meta-analysis confirmed positive correlations between teacher self-efficacy and technology implementation, emphasizing that this relationship is neither simple nor unidirectional. In language teaching specifically, Choi and Lee [17] found that EFL teachers with higher self-efficacy implemented technology more effectively, influencing both the frequency and sophistication of technology use.

In the Vietnamese educational context, the government has implemented various policies promoting educational technology integration [5]. Peeraer and Van Petegem [18] documented Vietnam's efforts to transition from basic technology integration toward more transformative educational practices. However, despite increased policy emphasis on technology-enhanced instruction, successful implementation depends heavily on teachers' readiness and confidence to adopt these technologies. Ngo and Eichelberger [19] identified persistent barriers to effective ICT integration in Vietnamese educational settings, including inadequate infrastructure, limited professional development opportunities, and curricular constraints.

The Vietnamese tertiary education context presents additional unique considerations for ICT integration, including traditionally teacher-centered pedagogical approaches that may conflict with the student-centered paradigms often associated with technology-enhanced learning. These

contextual factors necessitate examining ICT integration through a culturally situated lens rather than uncritically applying universal models or frameworks.

Previous research by Hoang and Wyatt [20] has established moderate levels of general self-efficacy among Vietnamese EFL teachers, but studies specifically examining technology-specific self-efficacy in this context remain scarce. While separate studies have examined teacher self-efficacy [12] and ICT implementation challenges [15] in Vietnam, research investigating the intersection of these factors is notably absent from the literature. This represents a critical gap in understanding the complex dynamics of technology adoption in Vietnamese language education.

This study aims to address these research gaps by investigating the relationship between Vietnamese tertiary EFL teachers' self-efficacy and their ICT integration practices using the SAMR model as an analytical framework. By examining how teacher confidence relates to technology implementation across different integration levels, this research seeks to inform policymakers, administrators, and teacher educators about the factors influencing ICT integration in Vietnamese tertiary EFL classrooms. The findings will contribute to developing more effective professional development programs and support systems for Vietnamese EFL teachers, with potential implications for technology adoption in similar developing contexts.

The study addresses three specific research questions (RQ):

RQ1: How do Vietnamese tertiary EFL teachers perceive their self-efficacy about ICT integration in teaching?

RQ2: What are the levels of ICT integration in the classrooms of Vietnamese tertiary EFL teachers, based on the SAMR model?

RQ3: Is there a relationship between the self-efficacy of Vietnamese tertiary EFL teachers and their level of ICT integration in the classroom?

2. Methodology

This study employed an explanatory sequential mixed methods design [20] with quantitative data collection and analysis followed by qualitative exploration. The sample comprised 84 Vietnamese tertiary EFL teachers recruited through purposive and snowball sampling. Participants had at least one year of teaching experience, with demographic information collected for analysis of potential influences on self-efficacy and ICT integration.

Two adapted instruments were used: (1) The Teachers' Sense of Efficacy Scale [9], modified to focus on ICT integration in EFL teaching using a 9-point Likert scale, and (2) The SAMR Model Survey [21], comprising 20 items categorizing technology-enhanced activities according to SAMR levels using a 5-point frequency scale. Both instruments underwent translation/back-translation and pilot testing ($n = 20$) to ensure validity and reliability.

Qualitative data collection included semi-structured interviews with 20 participants selected through maximum variation sampling to represent diverse self-efficacy levels, teaching experience ranges, and institutional contexts. Additionally, 60 lesson plans (3 per interviewed teacher) were analyzed using a SAMR model-based coding scheme, providing triangulation between self-reported practices and planning documents.

Data collection occurred over four months, with surveys administered online followed by video-conference interviews lasting 45-60 minutes. Quantitative data were analyzed using SPSS 27, with descriptive statistics examining self-efficacy perceptions and Pearson's correlation coefficient assessing relationships between self-efficacy and ICT integration levels. Qualitative data were analyzed using Braun and Clarke's [22] thematic analysis approach, with two researchers independently coding before reaching consensus to enhance reliability. To ensure qualitative data trustworthiness, member checking was implemented through participant verification of transcripts and interpretations, while peer debriefing with two independent research colleagues provided external validation throughout the analysis. This mixed-methods analysis provided comprehensive understanding of the relationship between teachers' self-

efficacy and ICT integration practices while illuminating key contextual factors including institutional infrastructure and resources, educational policies regarding technology integration, traditional teacher-centered pedagogical approaches, professional development opportunities, student digital literacy levels, and administrative expectations.

3. Results and Discussion

3.1. Results

3.1.1. Vietnamese tertiary EFL teachers' self-efficacy

To address the first research question regarding teachers' perceived self-efficacy about ICT integration in teaching, descriptive statistics were calculated for the adapted teachers' sense of efficacy scale (TSES). The overall mean score for self-efficacy was 6.78 (SD = 1.23) on a 9-point scale, indicating a moderately high level of self-efficacy among participants.

Analysis of self-efficacy dimensions revealed that teachers felt most confident in their ability to implement instructional strategies using ICT (M = 7.12, SD = 1.18), followed by managing their classrooms with technology (M = 6.77, SD = 1.29). They reported slightly lower self-efficacy in engaging students through ICT use (M = 6.45, SD = 1.35). The negative skewness values across all dimensions suggested a tendency toward higher self-efficacy scores, indicating generally positive perceptions of ICT-related abilities among participants.

Qualitative data from interviews provided deeper insights into teachers' self-efficacy perceptions. Thematic analysis revealed three primary themes: (1) confidence in basic ICT tasks, (2) uncertainty with advanced applications, and (3) context-dependent self-efficacy. These themes emerged consistently across interviews, suggesting a nuanced understanding of self-efficacy among participants. As one teacher explained: "I'm very comfortable using PowerPoint and online quizzes in my daily teaching. However, when it comes to more complex tasks like creating interactive online content or managing virtual classroom discussions, I often feel less sure of my abilities" (Participant 7).

This sentiment was echoed by 68% of the interviewees (n = 14), indicating a prevalent pattern of varying self-efficacy levels depending on the complexity of the ICT task. The interview data revealed teachers' confidence with familiar technologies (presentation software, online quizzes, digital repositories) that supported established practices, but diminished self-efficacy with innovative applications requiring advanced skills—specifically interactive content creation, virtual classroom management, and multimedia authoring platforms mentioned by participants. This finding underscores the importance of considering task-specific self-efficacy when examining ICT integration in EFL contexts, as teachers' confidence varies substantially across different technological tools and implementations.

3.1.2. Levels of ICT integration

Addressing the second research question on ICT integration levels based on the SAMR model, survey analysis revealed a clear hierarchical pattern. Substitution-level activities predominated (M = 3.85, SD = 0.92), followed by Augmentation (M = 3.42, SD = 1.05), while transformative practices were less common – Modification (M = 2.73, SD = 1.18) and Redefinition (M = 2.01, SD = 1.31). This pattern indicates widespread yet primarily enhancement-focused technology use.

Document analysis confirmed this distribution: 41.7% of lesson plans showed Substitution, 33.3% Augmentation, 18.3% Modification, and only 6.7% Redefinition. Interviews revealed three key factors explaining this pattern: tool familiarity, preparation time constraints, and curriculum alignment pressures. As participant 4 noted: "PowerPoint replaces blackboard writing efficiently while saving class time" – a sentiment reflecting pragmatic technology adoption decisions.

Institutional expectations further reinforced lower-level integration, with 65% of participants citing curriculum coverage concerns that discouraged technological experimentation. This

finding highlights how systemic factors, beyond individual preferences, significantly influence teachers' ICT implementation choices.

3.1.3. Relationship between self-efficacy and ICT integration

The third research question examined the relationship between teachers' self-efficacy and their level of ICT integration. Pearson correlation analysis revealed significant positive correlations between self-efficacy scores and all SAMR levels of technology integration. The strongest correlation was observed with Modification-level activities ($r = 0.61$, $p < 0.001$), followed by Augmentation ($r = 0.53$, $p < 0.001$), Redefinition ($r = 0.48$, $p < 0.001$), and Substitution ($r = 0.42$, $p < 0.001$). These findings indicate that higher self-efficacy is associated with more advanced and transformative ICT integration practices, with particularly strong connections to activities involving significant task redesign.

Interview data provided concrete examples illustrating these correlations. Teachers reporting higher self-efficacy typically described more diverse and sophisticated technology applications: "I enjoy experimenting with new digital tools. Recently, I implemented a digital storytelling project where students created multimedia narratives, combining language practice with digital literacy skills" (Participant 11). Conversely, teachers with lower self-efficacy tended to describe more basic applications: "I mainly use technology for straightforward tasks like displaying vocabulary lists or playing audio recordings for listening exercises" (Participant 6).

Further qualitative analysis revealed that self-efficacy influenced not just the complexity of technology use but also teachers' resilience when facing technical challenges. Higher-efficacy teachers described persistence through technical difficulties and willingness to troubleshoot problems, while lower-efficacy teachers often reverted to non-digital alternatives when encountering obstacles. This pattern suggests that self-efficacy functions as both an enabler of advanced technology integration and a buffer against implementation challenges.

The correlation between self-efficacy and Modification-level activities being stronger than with Redefinition-level activities suggests that even teachers with high confidence may face additional barriers to implementing the most transformative practices. Interview data indicated that institutional factors, including assessment requirements and syllabus constraints, often limited opportunities for Redefinition-level integration regardless of personal confidence levels. This finding highlights how self-efficacy, while important, operates within broader institutional contexts that can either facilitate or hinder transformative technology use.

3.2. Discussions

3.2.1. Teachers' Self-Efficacy in ICT Integration

The moderately high self-efficacy scores ($M = 6.78$) among Vietnamese tertiary EFL teachers mask critical disparities that warrant examination. While teachers expressed confidence in instructional strategies ($M = 7.12$), their lower self-efficacy in student engagement ($M = 6.45$) reveals a problematic gap between technical ability and pedagogical application. This disparity aligns with Zhang's [12] observation that technological confidence often fails to generate authentic pedagogical transformation—a concern validated by our finding that most ICT integration remains at basic Substitution and Augmentation levels.

This pattern suggests Vietnamese educational policies [5] have succeeded in promoting basic technological adoption but fallen short in fostering transformative implementation. The emphasis on technology-enhanced instruction appears to reinforce existing teaching methods rather than catalyzing pedagogical innovation. This represents a critical limitation of current approaches to ICT integration in Vietnamese tertiary education.

The context-dependent nature of self-efficacy revealed in our qualitative findings challenges Bandura's [8] original conceptualization. Teachers demonstrate graduated confidence that varies

substantially across technological tasks, suggesting that self-efficacy operates not as a uniform construct but as a context-specific attribute. This more nuanced understanding necessitates targeted professional development addressing specific technological implementations rather than generic training—an approach currently missing in most Vietnamese institutions.

These findings indicate that enhancing ICT integration requires addressing both technological and pedagogical dimensions of self-efficacy [4], with particular attention to developing teachers' confidence in student engagement through technology. Current professional development approaches that focus primarily on technical skills while neglecting pedagogical application perpetuate the substitution-level integration prevalent in our findings.

3.2.2. Levels of ICT Integration

The predominance of lower-level ICT integration practices - Substitution ($M = 3.85$) and Augmentation ($M = 3.42$) - reveals a significant gap between Vietnamese educational policy aspirations and classroom realities. While technology adoption is widespread, its transformative potential remains largely unrealized, with Modification ($M = 2.73$) and Redefinition ($M = 2.01$) activities occurring infrequently. This pattern, consistent with findings from other EFL contexts [15], [17], challenges the effectiveness of current ICT implementation approaches in Vietnamese tertiary education.

The prevalence of Substitution-level activities (replacing blackboard writing with PowerPoint) represents a problematic technological veneer rather than meaningful pedagogical innovation. While this constitutes a first step toward ICT integration, it falls substantially short of the transformative use envisioned in Vietnamese educational policies [5]. This discrepancy suggests a critical misalignment between policy rhetoric and practical implementation, exacerbated by insufficient institutional support for higher-level integration.

The qualitative findings identified three key factors perpetuating lower-level integration: time constraints, tool familiarity, and curriculum alignment pressures. These barriers align with challenges identified by Ngo and Eichelberger [19] but further reveal how institutional structures actively discourage innovation. Teachers' responses indicate that Vietnamese educational institutions implicitly reward reliability and curriculum coverage over pedagogical experimentation—a systemic constraint that undermines transformation regardless of individual teacher motivation or capability.

The document analysis findings particularly challenge the sufficiency of current professional development approaches. Despite generally positive attitudes toward technology, 75% of lesson plans featured only enhancement-level integration. This suggests that existing training programs successfully promote basic technology adoption but fail to develop the skills and confidence necessary for transformative implementation. This limitation requires urgent attention, as it indicates that current approaches to ICT integration reinforce rather than transform traditional pedagogical practices in Vietnamese tertiary EFL education.

Hamilton et al.'s [11] critique of the SAMR model's hierarchical structure bears consideration in interpreting these findings. While higher-level integration was less frequent, this may not necessarily represent pedagogical inadequacy but rather contextual appropriateness. Nevertheless, the overwhelming predominance of lower-level practices suggests limited technological versatility rather than deliberate pedagogical choice—a critical distinction that future professional development initiatives must address.

3.2.3. Relationship between self-efficacy and ICT integration

The correlation pattern between self-efficacy and SAMR levels - strongest for Modification ($r = 0.61$) and progressively weaker for Augmentation ($r = 0.53$), Redefinition ($r = 0.48$), and Substitution ($r = 0.42$) - challenges conventional assumptions about this relationship. Despite

supporting Bandura's [8] general self-efficacy theory, these findings reveal a complex, non-linear relationship that existing models fail to adequately explain.

The stronger correlation with Modification rather than Redefinition exposes a critical limitation in current theoretical frameworks: self-efficacy alone cannot overcome systemic barriers to transformative technology integration. Our qualitative findings confirm Hatlevik and Hatlevik's [4] assertion that institutional factors critically mediate this relationship—a dimension frequently overlooked in technology adoption research. Vietnamese educational structures actively constrain even high-confidence teachers' ability to implement Redefinition-level practices.

The self-efficacy/integration relationship operates bidirectionally through a dual mechanism: enabling advanced implementation and providing resilience against technical obstacles. However, this mechanism proves insufficient at the Redefinition level, where institutional constraints - including rigid assessment requirements and inflexible curricula - override personal confidence. This explains why correlation strengths peak at Modification before declining for Redefinition activities.

These findings necessitate reconceptualizing ICT integration support in Vietnamese tertiary contexts. Current approaches focusing primarily on individual skill development without addressing systemic barriers perpetuate enhancement-level implementation regardless of self-efficacy improvements - a fundamental flaw requiring urgent attention from policymakers and institutional leaders.

4. Conclusions and implications

This study examined the relationship between Vietnamese tertiary EFL teachers' self-efficacy and their ICT integration practices, revealing a complex landscape that challenges simplistic approaches to technology adoption in language education. Three key findings emerge with significant theoretical and practical implications.

First, Vietnamese EFL teachers demonstrated moderately high overall self-efficacy regarding ICT integration ($M = 6.78$), but with critical variations across dimensions - highest for instructional strategies and lowest for student engagement. This disparity reveals a fundamental limitation in current professional development approaches that emphasize technical skills over pedagogical application.

Second, ICT integration remains predominantly at enhancement rather than transformation levels, with Substitution and Augmentation activities dominating classroom practices. This pattern exposes a significant gap between Vietnamese educational policy aspirations and implementation realities, suggesting that current initiatives promote technology adoption without adequately supporting transformative implementation.

Third, the relationship between self-efficacy and ICT integration, while significant across all SAMR levels, exhibits a complex non-linear pattern that peaks at Modification before declining for Redefinition activities. This finding challenges prevailing theoretical assumptions by demonstrating that institutional constraints can override personal confidence at the highest integration levels - a critical insight for technology adoption models.

These findings have immediate implications for Vietnamese tertiary education. Professional development programs must shift from generic technology training to targeted interventions addressing specific areas of pedagogical uncertainty, particularly student engagement through technology. Institutional support should extend beyond infrastructure to include creating environments that value and reward innovative technology use. Additionally, curriculum frameworks require revision to accommodate and encourage transformative ICT integration rather than merely permitting enhancement-level applications.

The study contributes to the literature by demonstrating how self-efficacy operates within specific cultural and institutional contexts, highlighting the limitations of models that focus exclusively on individual factors while neglecting systemic influences. Future research should

examine institutional policy modifications and professional development approaches that can effectively address both personal and systemic barriers to transformative technology integration in Vietnamese tertiary EFL education.

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