

INVESTIGATING VIETNAMESE TERTIARY EFL TEACHERS' LEVELS OF INFORMATION AND COMMUNICATION TECHNOLOGY INTEGRATION THROUGH THE LENS OF THE SAMR MODEL

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Abstract: This study investigated the integration of technology by Vietnamese tertiary EFL teachers, focusing on the SAMR model's levels: Substitution, Augmentation, Modification, and Redefinition. Involving seven teachers, each underwent three observations and a subsequent interview during the second semester of the academic year 2022-2023. The interviews, structured around open-ended questions aligned with the SAMR framework, aimed to elucidate the observed technology use. Findings indicated a predominant reliance on basic functionalities of tools like PowerPoint and Microsoft Word, with Information and Communication Technology (ICT) integration primarily at the substitution and augmentation levels. This suggests a foundational proficiency in ICT use among teachers, yet confined to basic applications with limited pedagogical innovation. The results highlight the imperative for targeted professional development to enhance EFL teachers' ICT skills and foster innovative teaching approaches, facilitating a paradigm shift in technology integration within educational practices.

Keywords: EFL teachers, ICT integration, levels, SAMR model

1. Introduction

In the era of the digital revolution, the pivotal role of Information and Communication Technology (ICT) in education is universally acknowledged, with a significant emphasis on its integration to cultivate key skills such as critical thinking and innovation (DeCoito & Richardson, 2018). The advent of the COVID-19 pandemic further accelerated the shift towards technology-enriched learning environments, underscoring the necessity of ICT competencies among educators (MOET, 2017; Prime Minister, 2022). Despite governmental efforts, challenges persist in the effective integration of ICT in teaching, primarily due to the rapid pace of technological evolution and educators' varying proficiency levels (Phan, 2020; Dang, 2013).

The SAMR model offers a comprehensive framework for evaluating the integration of ICT in educational practices (Puentedura, 2006). However, research focusing on the application of this model in assessing teachers' ICT integration skills, particularly in the context of English Language Teaching (ELT) in Vietnam, remains scant (Batiibwe et al., 2017; Jude et al., 2014). This study aims to bridge this gap by investigating Vietnamese EFL teachers' proficiency in employing ICT within ELT settings, specifically through the lens of the SAMR model's four

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levels: Substitution, Augmentation, Modification, and Redefinition.

2. Literature Review

2.1. Information and Communication Technology (ICT)

The field of Information and Communications Technology (ICT) covers a wide array of technological tools and resources that enable the acquisition, storage, retrieval, manipulation, analysis, and transmission of information (Albugami, 2016). The definition of ICT has undergone modifications over time in response to the swift progression of technical breakthroughs, as seen by Albugami (2016).

According to Vandeyar (2013), the notion of ICT encompasses a wide range of tools and resources. The tools and resources encompass a wide range of communication equipment and services, including but not limited to radio, television, cellular phones, computers, networks, hardware, software, satellite systems, videoconferencing, and distance learning (Rajput et al., 2015). This definition emphasizes the diverse range of technologies encompassed by the field of ICT.

In the realm of foreign language instruction, Dang (2013) provides a precise definition of ICT as encompassing technologies that rely on computers and the Internet. The aforementioned category encompasses a wide range of software applications, including but not limited to web browsers, presentation software, email packages, word processors, search tools, and download tools. Additionally, it encompasses Computer-Assisted Language Learning (CALL) software applications and websites that are specifically tailored to facilitate the teaching of foreign languages (Dang, 2013).

In the context of this research investigation, the word ICT comprises a comprehensive range of applications that are pertinent and advantageous for the facilitation of language instruction and acquisition. This encompasses a wide range of technological components, including hardware, computer-assisted language learning (CALL) applications, software applications, websites, social networks, and communication networks.

2.2. ICT Integration in EFL Teaching

The integration of ICT in education, including English Language Teaching (ELT), is increasingly recognized for its potential to enhance instructional practices and learning environments (Lawrence & Tar, 2018; Gilakjani, 2013). The adoption of ICT in educational settings is influenced by a myriad of factors, ranging from the availability of technological resources to the attitudes and competencies of educators (Knezek & Christensen, 2016; Eger et al., 2018). Despite the acknowledged benefits, the effective incorporation of ICT remains a complex endeavor, often hindered by challenges such as insufficient infrastructure, lack of educator proficiency in technology, and resistance to pedagogical change (Dang, 2013; Pham et al., 2019).

The utilization of ICT in the context of ELT has achieved global recognition as a strategy to augment educational practices. The concept of technology integration pertains to how educators employ technology to enhance instructional practices and establish an optimal learning atmosphere (Gilakjani, 2013). The conviction on the promise of educational technology has resulted in significant global investments in technology (James, 1996). Within the field of ELT, scholars have identified technology devices, software, and infrastructure as valuable resources that can be utilized to augment the instructional process (Donnelly et al., 2011).

ICT is widely utilized in educational settings, particularly in Asian nations, to facilitate the dissemination of instructional materials (Nim Park & Son, 2009; Hassanzadeh et al., 2012). According to Keengwe and Kang (2013), commonly utilized software programs in educational and administrative contexts include web browsers, word processors, email packages, and presentation software. Nevertheless, the adoption of sophisticated software applications and internet-based platforms for facilitating interactive remote education is still constrained (Le, 2015).

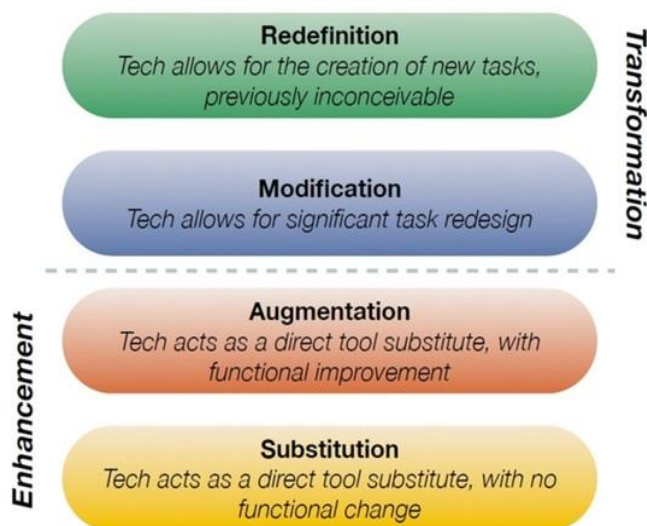
The significance of technology integration in education is recognized by Vietnam, as exemplified in Directive 55 issued by the Ministry of Education and Training (MOET) in 2008. The government has made substantial financial commitments towards the use of technology, leading to notable advancements in rankings related to the development of information and communication technology (Peeraer & Van Petegem, 2015). The primary objective of the National Foreign Language 2020 initiative is to provide English educators with essential ICT competencies via instructional programs (Le & Vo, 2015). Furthermore, educational institutions have been furnished with computer technology, and the provision of complimentary internet services has been facilitated (Dang, 2013).

Notwithstanding these endeavors, the incorporation of technology in ELT encounters obstacles in Vietnam. Insufficient financial resources pose a significant obstacle to the upkeep of technical gadgets within educational institutions (Pham et al., 2019). In addition, it has been observed that English educators frequently exhibit a deficiency in technological skills as a result of insufficient training provided during their educational programs (Pham et al., 2019). Pham et al. (2019) argue that development is hindered by resistance to change and a reluctance to embrace new teaching methodologies and technologies.

To maximize the benefits of technology in the field of ELT, educators must enhance their expertise and competencies beyond rudimentary utilization (Le, 2015). According to Stockwell (2007), teachers have the opportunity to choose appropriate software packages that cater to diverse English language skills. These products can be selected based on pedagogical objectives, user-friendliness, and cost-effectiveness.

2.3. SAMR Model

The SAMR model, conceptualized by Puentedura (2006), delineates a hierarchical framework for integrating technology into educational practices, progressing through Substitution, Augmentation, Modification, and Redefinition levels. This model aims to guide educators in transforming and enhancing learning experiences through technology (Tunjera & Chigona, 2020). It is particularly relevant in Teaching English to Speakers of Other Languages (TESOL), where technology integration is pivotal for enriching language learning through increased interaction and engagement (Budiman et al., 2018).

Figure 1*SAMR Model (Puentedura, 2006)*

At the Substitution level, technology acts as a direct replacement for traditional tools without functional change, while Augmentation enhances these tools with additional features. Modification and Redefinition involve a significant task redesign and the creation of new, previously inconceivable tasks, respectively, leveraging technology to foster higher-order cognitive skills and interactive learning (Wilson, 2021; Alivi, 2019).

Empirical studies, such as those by Jenkins (2021), and Cepeda-Moya and Argudo-Serrano (2022), reveal that while educators are integrating technology, its application often remains at the Substitution and Augmentation levels, highlighting a gap between potential and practice. These findings underscore the necessity for professional development that equips teachers with the skills to fully exploit the SAMR model's potential for enhancing language instruction.

3. Methods

3.1. Research Design

This study adopts a case study design within a qualitative research framework to examine the integration of ICT by EFL teachers at Vietnamese tertiary education institutions. Case study research, as advocated by Yin (2018), enables an in-depth exploration of complex phenomena within their real-life contexts, offering rich insights into the subjective experiences and perspectives of individuals. This approach is particularly suited to understanding the nuanced ways in which EFL teachers incorporate ICT into their teaching practices, as well as the challenges and opportunities they encounter.

Guided by this methodological orientation, the research is structured around the following questions:

1. In what ways do Vietnamese tertiary EFL teachers integrate ICT into their teaching practices?
2. How do these practices reflect the levels of the SAMR model?

3.2. Context and Participants

The study was conducted in the context of EFL instruction at Vietnamese higher education institutions, where ICT has been invested seriously in order to improve the teaching and learning experience. The MOET in Vietnam has recognized the importance of technology in the field of education, particularly in the context of language acquisition. To facilitate the incorporation of technology into the educational system, the MOET designated the academic year 2008-2009 as the period dedicated to the use of ICT. Additionally, MOET has taken steps to enhance teachers' proficiency in ICT by organizing training courses for English teachers nationwide. These initiatives demonstrate the commitment of MOET to leverage technology for educational purposes. (Peeraer & Van Petegem, 2015; Pham et al., 2019).

The study included a total of seven English instructors (referred to as P1-P7) who are now engaged in teaching at four distinct institutions located in the northern region of Vietnam. These universities are situated in three separate cities, including Hanoi (P1, P2, P3), Haiphong (P4, P5), and Thai Nguyen (P6, P7). The four universities comprise two public institutions, one private university, and one foreign institution. To uphold research ethics, the data collected from the participants will be provided in verbatim form, however, their names will be anonymized using symbols (P1, P2, P3, P4, P5, P6, and P7). All individuals involved in the study provided their informed consent to participate and allowed the researchers to collect their data. Based on the demographic data collected, the participants exhibited diverse backgrounds in English teaching, as illustrated in Table 1.

Table 1

Participants' Demographic

Participant	Gender	Age	University	Qualification	Teaching subject	Teaching experience
P1	Female	43	public	M.A. in TESOL	General English	20
P2	Female	34	public	Ph.D. in TESOL	Skill-specific course	13
P3	Male	25	foreign	M.A. in TESOL	General English	2
P4	Female	48	private	Ph.D. in TESOL	General English	23
P5	Female	29	private	M.A. in TESOL	General English	5
P6	Male	31	public	M.A. in TESOL	General English	7
P7	Female	46	public	Ph.D. in TESOL	English Language Theory course	22

3.3. Data Collection and Analysis

This study adopts a case study design, a methodology often aligned with qualitative research to provide an in-depth, holistic description of individual cases within their real-life context (Yin, 2018). Case studies are particularly effective when the research aim is to explore complex phenomena within their specific settings, offering rich, detailed insights (Creswell & Poth, 2018).

Participants were selected through purposive sampling, focusing on English teachers

actively integrating ICT in their instruction. This selection was predicated on the objective of delving into the nuances of ICT integration within EFL teaching environments.

Data collection employed a triangulated approach to enhance validity, consisting of observations and semi-structured interviews conducted throughout the second semester of the academic year 2022-2023. Observations were structured around the SAMR model (Puentedura, 2006), and conducted thrice to assess the levels of ICT integration across Substitution, Augmentation, Modification, and Redefinition. An observation tool, inspired by Jude et al. (2014), facilitated this structured capture of ICT use in teaching. Following the observations of each participant, semi-structured interviews provided further depth, with questions designed to elicit expansive responses, allowing teachers to elaborate on their experiences with ICT in teaching. Conducted in Vietnamese, these interviews ensured clarity and richness in the data collected.

Member checking was implemented as a means of validating the findings, inviting participants to review and confirm the accuracy of the observations and interview responses, thereby aligning with best practices in qualitative research for ensuring credibility and trustworthiness (Lincoln & Guba, 1985).

Data analysis was guided by the interactive model proposed by Miles, Huberman, and Saldaña (2014), encompassing data condensation, data display, and conclusion drawing/verification. This involved a meticulous process of data selection, simplification, and transformation, followed by the organization of the data into coherent displays that aligned with the SAMR model's levels. The analysis of semi-structured interview transcripts employed a thematic coding approach, aligning keywords with the SAMR model's four levels to elucidate the ICT integration's depth. For instance, terms such as “digital textbooks” and “online quizzes” were coded under 'Substitution', reflecting a direct technological replacement of traditional resources. 'Augmentation' was denoted by keywords like “interactive whiteboards” and “enhanced presentations”, indicating a functional enhancement of teaching methods through technology. 'Modification' encompassed terms such as “collaborative online platforms” and “educational blogging”, signifying a pedagogical redesign through ICT. Finally, 'Redefinition' was characterized by innovative terms like “virtual reality environments” and “international collaboration projects”, illustrating a transformative shift in teaching and learning paradigms. This strategic coding not only clarified the spectrum of ICT integration but also provided a structured framework for analyzing the qualitative data, thereby embedding the narrative within a quantifiable academic discourse.

The data from the three separate classroom observations were then aggregated, employing a method akin to that described by Johnson and Christensen (2014). Each teaching technique's frequency was normalized against the total observed behaviors to calculate its relative percentage, using Microsoft Excel for data processing. This normalization process is supported by the work of Miles et al. (2014), who emphasize the importance of converting raw observational data into a format that allows for meaningful comparison and analysis.

To synthesize the data from the three distinct observation sessions into a unified results table, the cumulative aggregation approach was employed, as recommended by Yin (2018). This approach ensures that the data reflects an integrated overview of instructional practices across multiple observations, enhancing the interpretive value of the findings. The integration of data into a single table for analysis and presentation purposes is further supported by the guidelines provided by Silverman (2017), who highlights the efficacy of such consolidation in qualitative and mixed-methods research.

4. Findings

4.1. Results of Observations

The results of observations of the EFL teachers integrating ICT into the classes are described in the figures below:

Figure 2

Observation Checklist of Substitution by EFL Teachers

No.	Activities	Mean						
		P1	P2	P3	P4	P5	P6	P7
1.	Utilizing ICTs (laptops, smartphones, Microsoft Word) for creating and organizing educational content	100%	100%	100%	100%	100%	100%	100%
2.	Replacing printed books with digital notes	0%	75%	100%	33.3%	100%	100%	33.3%
3.	Delivering lectures via PowerPoint presentations	100%	100%	100%	100%	100%	100%	100%
4.	Uploading educational materials to digital platforms (Facebook...) for easy student access	0%	100%	100%	0%	100%	100%	0%
5.	Directing students to electronic databases for reference materials	33.3%	100%	100%	0%	100%	100%	0%
6.	Communicating with students via cell phones for assistance	100%	100%	50%	100%	100%	100%	100%
7.	Providing student support through email communication	100%	50%	100%	0%	100%	100%	0%
8.	Engaging with students on social media platforms for academic assistance	50%	100%	100%	0%	100%	100%	0%
9.	Encouraging students to submit assignments via email	0%	50%	100%	100%	100%	100%	0%
10.	Organizing student assignments in distinct laptop directories	0%	100%	100%	100%	100%	100%	0%
11.	Recording lecture audio for student distribution	0%	0%	100%	0%	0%	0%	0%

12.	Capturing instructional sessions for future educational use	0%	0%	0%	0%	0%	0%	0%
Grand mean		40%	73%	88%	44%	83%	83%	28%

The Substitution level of ICT integration by Vietnamese tertiary EFL teachers showcases a spectrum of digital technology utilization in educational practices. The data reveals a mix of universal and selective adoption of ICT tools across various teaching activities.

All educators (P1-P7) consistently employed ICTs such as laptops, smartphones, and applications like Microsoft Word for creating and organizing educational content (100%), and similarly, the use of PowerPoint for lecture delivery was universally adopted (100%). This indicates a strong foundation in employing digital tools for basic instructional tasks.

However, the integration of digital notes, dissemination of resources through digital platforms, and directing students towards electronic databases showed variability. For instance, the use of digital notes ranged from 0% (P1) to 100% (P3, P5, P6), and the facilitation of resource access via digital platforms varied from 0% (P1, P4, P7) to 100% (P2, P3, P5, P6), highlighting differences in the extent to which educators leverage digital resources beyond traditional methods.

Communication with students through mobile devices and email was broadly adopted, with most participants showing high engagement, except for specific instances like P3's 50% adoption of mobile communication and P4's 0% use of email. The use of social media for academic assistance also varied, with a range from 0% (P4, P7) to 100% (P2, P3, P5, P6).

Notably, innovative practices such as capturing lectures in audio or video formats for future use were minimally adopted or not at all, with P3 being the exception at 100% for audio capture but no participants engaging in video recording.

The grand mean percentages, ranging from 28% (P7) to 88% (P3), underscore the diverse levels of ICT integration at the Substitution level among the educators. This range from foundational to more advanced ICT applications in teaching practices suggests areas for further development and support to enhance the comprehensive integration of ICT in EFL teaching methodologies.

Figure 3

Observation Checklist of Augmentation by EFL Teachers

No.	Activities	Mean						
		P1	P2	P3	P4	P5	P6	P7
1.	Enhancing text presentation with color and font size variations	100%	100%	100%	100%	100%	100%	100%
2.	Conducting scholarly searches via search engines like Google	100%	100%	100%	100%	100%	100%	100%
3.	Correcting grammatical errors using word processing software	0%	100%	100%	0%	50%	75%	0%

4.	Accessing vocabulary alternatives within word processing software	0%	75%	100%	0%	50%	0%	0%
5.	Accessing resources through digital libraries like Digilib	0%	33.3%	100%	0%	50%	50%	0%
6.	Communicating with students via online group lists	50%	75%	100%	100%	50%	100%	50%
7.	Organizing folders alphabetically for easy retrieval	100%	100%	100%	100%	100%	100%	100%
8.	Communicating academic information through mass messaging	0%	75%	50%	0%	33.3%	50%	0%
9.	Conducting plagiarism checks on student work	0%	100%	100%	100%	100%	50%	33.3%
10.	Providing feedback on student work via social media or email	50%	100%	100%	50%	100%	33.3%	0%
Grand mean		40%	86%	95%	55%	73%	66%	38%

The analysis of Augmentation-level ICT integration demonstrated a range of engagement with digital technologies to enhance teaching methodologies. All educators uniformly employed digital tools for visual enhancements and scholarly searches (100%), indicating a consensus on the value of basic ICT functionalities to enrich instructional content.

However, the adoption of advanced editorial features in word processing, utilization of digital libraries, and engagement with online communication tools varied significantly among the participants. For instance, P2, P3, and P5 showed higher engagement with word processing functionalities for grammar and vocabulary enhancement, with adoption rates of 100%, 100%, and 50% respectively, while P1, P4, and P7 did not utilize these features at all (0%). Similarly, the use of digital libraries ranged from 0% (P1, P4, P7) to 100% (P3), and online group communication saw a wide adoption range from 50% (P1, P7) to 100% (P3, P6).

The grand mean percentages further highlight this disparity, with P3 exhibiting the highest level of ICT augmentation integration at 95%, while P1 and P7 displayed the lowest at 40% and 38% respectively. This spread from 38% to 95% in ICT engagement levels underscores the varied depth of digital tool integration among educators.

In summary, the findings reveal a foundational yet uneven application of ICT augmentation across the participant group, suggesting a need for targeted development programs to enhance the consistent and comprehensive integration of advanced digital functionalities in EFL teaching practices.

Figure 4*Observation Checklist of Modification by EFL Teachers*

No.	Activities	Mean						
		P1	P2	P3	P4	P5	P6	P7
1.	Integrating multiple media formats using tools like "Movie Maker"	0%	33.3%	50%	0%	75%	0%	0%
2.	Providing URLs to online dictionaries and reputable sources	0%	100%	100%	0%	0%	0%	100%
3.	Administering assessments with Google Forms	100%	100%	100%	100%	100%	100%	0%
4.	Compiling academic materials using Google Drive	50%	100%	100%	50%	100%	100%	0%
5.	Delivering lectures through e-learning platforms like Edmodo	0%	75%	75%	0%	0%	0%	0%
6.	Facilitating discussions via platforms like Zalo groups	100%	100%	100%	100%	100%	100%	100%
7.	Evaluating academic performance with web-based tools	0%	0%	0%	0%	0%	0%	0%
8.	Organizing web sources with note-taking programs like Google Note	0%	0%	0%	0%	0%	0%	0%
9.	Facilitating remote instruction via video conferencing platforms like Google Meet	0%	0%	0%	0%	0%	0%	0%
Grand mean		28%	56.5%	58%	28%	42%	33%	33%

The observation checklist data on the Modification level reveals a nuanced approach to leveraging technology for enhancing and transforming educational practices. The data indicates the selective adoption of various digital tools and platforms to modify traditional teaching and assessment methods.

Notably, the use of Google Forms for administering assessments was universally adopted by all participants except P7, demonstrating a significant shift towards digital platforms for evaluations. Similarly, the utilization of open educational resources for facilitating group discussions was consistently applied across all educators (100%), indicating a recognition of the value these platforms bring to collaborative learning environments.

However, the integration of multimedia content through tools like "Movie Maker" and the organization of student materials using Google Drive exhibited variability among the teachers, with adoption rates ranging from 0% to 100%. This variability suggests differing levels of comfort and familiarity with multimedia integration and cloud-based organization

among the educators.

The adoption of e-learning platforms like Edmodo and web-based tools for academic performance evaluation was minimal or non-existent, with no participants utilizing web-based evaluation tools or note-taking programs. This lack of engagement with certain digital tools highlights potential areas for development in the educators' ICT competencies.

The grand mean percentages further underscore the diverse levels of ICT integration at the Modification level, with P3 showing the highest level of integration (58%) and P1 and P4 the lowest (28%). This range indicates a spectrum of engagement with modification-level ICT practices, from minimal to more advanced applications, suggesting a need for targeted professional development to enhance educators' abilities to effectively modify traditional teaching practices with digital technologies.

Figure 5

Observation Checklist of Redefinition by EFL Teachers

No.	Activity	Mean						
		P1	P2	P3	P4	P5	P6	P7
1.	Integrating multimodal digital platforms for instructional resources	0%	33.3%	100%	0%	100%	50%	0%
2.	Facilitating note-taking with digital notepad applications	0%	0%	0%	0%	0%	0%	0%
3.	Enhancing instructional activities with multimodal assignments	0%	0%	0%	0%	0%	0%	0%
4.	Employing MOOCs as study materials	0%	50%	33.3%	0%	0%	0%	0%
5.	Evaluating educational progress with electronic learning systems like MOOCs	0%	0%	0%	0%	0%	0%	0%
6.	Benefiting from augmented reality (AR) technology in education	0%	0%	0%	0%	0%	0%	0%
7.	Using electronic games for instructional purposes	0%	50%	70%	0%	33.3%	0%	0%
Grand mean		0%	19%	29%	0%	19%	7%	0%

The observation checklist data on the Redefinition level illustrates a nascent stage of employing advanced digital technologies to fundamentally transform educational practices. The data reflects a cautious exploration of redefinitional ICT tools and methodologies among EFL teachers.

A notable observation is the adoption of multimodal digital platforms by P3 and P5 (100% and 100%, respectively), indicating an innovative approach to instructional design that leverages auditory, visual, and interactive resources. Similarly, the use of electronic games as an instructional tool by P3 (70%) and to a lesser extent by P2 and P5, suggests an emerging recognition of gamification's potential in education.

However, the integration of digital notepads, the design of multimodal assignments, and the utilization of augmented reality technology in teaching were not adopted by any of the participants, highlighting significant gaps in the adoption of cutting-edge digital tools that could redefine educational experiences.

The use of MOOCs for study materials and student evaluation was minimally explored, with only P2 and P3 engaging with MOOCs to a limited extent. This cautious engagement with MOOCs reflects a broader hesitancy among educators to fully embrace the transformative potential of open educational resources.

The grand mean percentages, ranging from 0% to 29%, underscore the limited integration of Redefinition-level ICT practices among teachers. P3 exhibited the highest level of integration (29%), suggesting a more forward-thinking approach to ICT use, while P1, P4, and P7 showed no engagement at this level (0%).

In summary, the findings indicate that while there are instances of innovative ICT use among the educators, the overall integration at the Redefinition level remains limited. This highlights a need for enhanced support and professional development to encourage the adoption of advanced digital technologies that can fundamentally transform teaching and learning in EFL contexts.

5. Results of Interviews

5.1. Substitution Level

In the exploration of ICT integration at the Substitution level within EFL teaching at Vietnamese tertiary institutions, the synthesis of qualitative insights from educator interviews with observation data reveals a multifaceted view of digital technology adoption.

The consensus among educators on the utility of fundamental ICT tools, such as laptops and Microsoft Word, for streamlining the creation and organization of teaching materials is evident. Participant 1's reflection, "I find using ICT like laptops and Microsoft Word extremely beneficial in preparing my lectures", aligns with the observation findings where a 100% utilization rate of these tools was noted. This alignment underscores a foundational integration of ICT in enhancing traditional pedagogical approaches.

However, the interviews also revealed nuanced views on the adoption of specific ICT practices. For instance, Participant 1's reservation, "I have considered the option of recording lectures...but I feel that it may not be the most effective method", contrasts with the observation data, which indicated a lack of recorded lecture usage across participants. This divergence suggests a potential discrepancy between educators' perceived value of certain ICT practices and their actual implementation.

The widespread use of PowerPoint, as highlighted by Participant 4, "PowerPoint presentations have become my go-to method for delivering lectures", and corroborated by the observation data's 100% adoption rate, reinforces the tool's pivotal role in ICT integration at the Substitution level.

Diverse preferences for communication methods emerged from the interviews, reflecting a broad spectrum of ICT utilization for student engagement. Participant 7's preference for cell phone communication, "Communicating with students via cell phone has become an essential aspect of my teaching approach", and Participant 1's inclination towards email, "I always communicate with my students via email when offering support", were mirrored in the observation data, which showed varied adoption rates for different communication tools.

The interviews also touched upon the cautious adoption of innovative ICT practices, such as leveraging social media for academic support, with Participant 1 noting, “I find that using social media platforms like Facebook can be beneficial for supporting students”. This cautious approach is reflected in the observation data, where the use of social media for educational purposes varied significantly among participants.

By synthesizing educators’ qualitative reflections with observation data, a comprehensive narrative emerges, highlighting a general acknowledgment of the value of ICT in substituting traditional teaching elements. Yet, the depth and consistency of ICT integration exhibit considerable variability. This analysis not only illuminates the complexities and challenges inherent in fully leveraging ICT at the Substitution level but also underscores the necessity for enhanced professional development and support to harmonize educators’ perceptions with their practical application of ICT in teaching methodologies.

5.2. Augmentation Level

In examining the Augmentation level of ICT integration within the context of EFL instruction at Vietnamese tertiary institutions, the integration of teachers’ responses with the data from observation checklists reveals a nuanced approach to enhancing traditional teaching methods with digital technologies.

Educators demonstrated a selective yet progressive adoption of digital tools to augment their teaching practices. For instance, Participant 2’s utilization of digital platforms to enhance the visual presentation of content, “I enhance my lectures with color and varied font sizes using digital tools”, aligns with the observation data showing varied adoption rates for such practices. This selective integration suggests an evolving recognition of digital tools’ potential to enrich the instructional experience.

The incorporation of open educational resources and the use of Google Drive for organizing student materials were highlighted by some educators as key augmentative strategies. Participant 4 noted, “Google Drive is instrumental in compiling and organizing my students’ work”, reflecting a strategic approach to leveraging cloud-based solutions for educational management, as supported by the observation data.

However, the adoption of more sophisticated digital functionalities, such as e-learning platforms and web-based group discussion tools, was less consistent. Participant 6’s mention of using “Edmodo to deliver lecture modules” contrasts with the overall minimal engagement with such platforms observed across the participant group. This discrepancy underscores a gap between the potential of these digital tools to augment traditional teaching and their actual application in practice.

The grand mean percentages from the observation data, ranging from 28% to 58%, further illustrate the varied levels of digital tool integration at the Augmentation level. This range indicates a spectrum of engagement with digital augmentation practices, from minimal to more advanced applications, highlighting areas for further development and support.

In synthesizing the educators’ reflections with the observation data, a complex picture of ICT integration at the Augmentation level emerges. While there is evidence of digital tools being used to enhance traditional teaching methodologies, the depth and consistency of this integration vary considerably among educators. This analysis not only sheds light on the opportunities and challenges associated with augmenting teaching practices with digital technologies but also emphasizes the need for targeted professional development initiatives to encourage a more comprehensive and consistent application of ICT in EFL instruction.

5.3. Modification Level

In terms of the Modification level of ICT integration, the results reveal a strategic yet varied application of digital technologies to transform traditional educational practices.

The teachers exhibited a discerning approach to leveraging technology for instructional modification. For instance, Participant 1's innovative use of Google Forms for assessments, "I've shifted to using Google Forms for quizzes, making the process more interactive and efficient," mirrors the observation data that showed a high adoption rate for this tool among all participants except P7. This reflects a significant move towards integrating digital platforms for more dynamic and interactive evaluation methods.

The use of open educational resources and collaborative platforms like Zalo groups for group discussions was another area where educators, such as Participant 3, demonstrated a forward-thinking approach: "Leveraging Zalo groups has revolutionized how we conduct group discussions, making them more accessible and engaging." This aligns with the observation data, which indicated a universal (100%) adoption of such platforms, underscoring their perceived value in fostering collaborative learning environments.

However, the integration of more advanced digital functionalities, such as e-learning platforms like Edmodo and web-based tools for academic performance evaluation, was less uniformly embraced. The observation data revealed minimal engagement with these tools, highlighting a potential disconnect between the availability of advanced digital resources and their practical application in the educational setting.

The grand mean percentages from the observation data, ranging from 28% to 58%, illustrate the diverse levels of engagement with Modification-level digital practices among the teachers. This variability underscores the nuanced landscape of ICT integration at this level, where the adoption of digital tools to modify traditional teaching practices ranges from minimal to more advanced.

By weaving together the educators' responses with the observation data, a complex narrative of ICT integration at the Modification level emerges. While there are instances of educators effectively employing digital tools to transform and enhance pedagogical approaches, the consistency and depth of this integration vary significantly. This analysis highlights the transformative potential of digital technologies in EFL teaching, as well as the need for enhanced support and professional development to ensure educators can fully leverage these tools to modify and enrich the educational experience.

5.4. Redefinition Level

At the Redefinition level of ICT integration within the domain of EFL instruction, the amalgamation of educators' perspectives with observational findings elucidates a tentative yet evolving engagement with digital innovations poised to fundamentally alter educational paradigms.

Educators conveyed a measured approach to integrating sophisticated digital technologies. Notably, Participant 3's utilization of multimodal platforms, as articulated, "Incorporating diverse digital elements like 'Movie Maker' enriches the learning experience", mirrors the complete engagement (100%) observed for P3 and P5 in the dataset. This reflects a recognition of the capacity of digital tools to forge innovative instructional content and methodologies.

Conversely, the restrained use of technologies such as augmented reality (AR) and MOOCs was prominent. Observational data revealed scant engagement, underscoring a divergence between the theoretical potential of these technologies and their actual application in pedagogical contexts. Participant 2 voiced concerns regarding the adoption of such advanced tools, stating, “The prospect of integrating AR in teaching is compelling, yet the absence of requisite resources and support poses substantial implementation challenges”.

The observational data, marked by prevalent instances of non-engagement (0%) in advanced digital practices, accentuates the embryonic phase of integration at the Redefinition level. Participant 4 remarked, “The intricacies and demands associated with MOOCs constitute formidable obstacles to their assimilation into our existing syllabus”. Similarly, Participant 6 highlighted, “The infrastructural and expertise prerequisites for deploying avant-garde technologies like AR exceed our current capabilities”.

The grand mean percentages, spanning from 0% to 29%, depict a cautious foray into digital innovations by educators. While individuals such as P3 are pioneering transformative applications of ICT, the aggregate level of integration remains constrained, evidenced by the widespread instances of non-engagement in redefinitional practices.

The confluence of educators' introspections and empirical data offers a detailed portrayal of ICT integration at the Redefinition level. Despite instances of pioneering use of digital technologies, the pervasive non-engagement signals considerable impediments, encompassing resource deficits, technical hurdles, and the exigency for professional enhancement. This scrutiny accentuates the latent capacity of digital technologies to revolutionize education and underscores the critical need for focused initiatives to equip educators with the means to fully actualize the redefinitional potential of ICT in EFL pedagogy.

6. Discussion and Conclusion

The results of this research provide insight into the practical implementation of technological resources by EFL instructors in Vietnamese higher education settings. The findings are consistent with other research (Keengwe & Kang, 2013; Le, 2015; Dang, 2013; Pham et al., 2019), which suggests that educators commonly use technology into their instructional methods. Nevertheless, there was variation among participants in terms of the precise tools utilised and the quantity of tools employed. The aforementioned technologies fulfilled four primary objectives, namely: fostering student engagement, assessing comprehension, generating instructional materials, and evaluating student comprehension. The findings of Budiman et al. (2018) and Tseng (2019) align with the present results, indicating that educators commonly incorporate technology at the lower tiers of the SAMR model, including substitution and augmentation. Other reasons contribute to this inclination, encompassing the accessibility of resources, limitations on time, and educators' level of proficiency with technology resources.

The important aspect impacting the integration of technology in the classroom was discovered to be its availability. The scenario was demonstrated by T7's class, which was classed at the substitution level. If the use of cellphones were permitted for educational purposes, instructors would have the opportunity to develop more innovative learning activities by leveraging a broader selection of applications. Furthermore, EFL teachers encountered considerable challenges with time limits, which were exacerbated by their demanding workloads. Sufficient time is necessary for educators to adequately construct proficient lesson plans and successfully integrate technological resources at advanced stages of the SAMR

model. The utilization of technical tools was also influenced by the level of familiarity with them. The participants showed a preference for utilizing familiar technologies that were both user-friendly and readily accessible, suggesting a necessity for additional instruction on the functionalities and applications of technological tools. The findings shown in this study are consistent with the outcomes reported by Ranellucci et al. (2020), whereby they underscored the significant impact of factors such as ease of use and usefulness in shaping instructors' decision to adopt technology. Despite the fact that the participants were considered digital natives, their understanding of various applications was found to be restricted. This observation underscores the significance of providing training opportunities to enhance the utilisation of technological tools within educational settings. EFL teachers might endeavour to incorporate technology at the transformation level by expanding their knowledge and proficiency in a broader array of tools.

In contrast, Warsen and Vandermolen (2020) found that a high percentage of students in the United States used individual computing devices at the modification or redefinition levels of the SAMR model. This suggests that the availability of technology supports teaching and learning, enhancing efficiency and creating engagement in the classroom. When each student has their own device, it becomes easier for them to learn and complete tasks. Moreover, individual device usage can foster a competitive atmosphere when students are engaged in individual game-based activities. Jenkins (2021) also reported that teachers frequently integrate technology at the substitution and augmentation levels, with fewer instances of integration at the modification and redefinition levels. In this study, only one participant reached the modification stage, highlighting the need for further support and motivation among EFL teachers to integrate technology effectively. Encouragement from advisors and mentor teachers was mentioned as a significant motivating factor for participants. For teachers with limited experience, such guidance and support were crucial in facilitating effective technology integration. Therefore, providing ongoing support and encouragement to EFL teachers can significantly enhance their teaching practices.

Some of the participants in this study reached the modification stage, even despite being in a school with limited facilities. This finding aligns with Boonmoh et al. (2022), who found that teachers in smaller schools demonstrated greater effort and more positive attitudes toward technology use for educational purposes. Cepeda-Moya and Argudo-Serrano (2022) argued that integrating technology can increase teachers' motivation and enable them to be more creative in their teaching approaches. Moreover, motivation derived from students can further drive teachers to use technological tools more creatively. This indicates that when students enjoy learning in the classroom, teachers are more inclined to develop their teaching methods to make them more interesting and engaging. Ciampa and Gallagher (2013) similarly emphasized that technology usage can enhance student engagement and motivation to learn.

Lastly, while technology plays a significant role in teaching and learning, there are contexts where technological tools may not be readily available or students may not have smartphones. In such cases, tangible materials remain valuable and can capture students' attention. Participants P3 and P4 demonstrated the continued relevance and usefulness of tangible materials in certain situations. Therefore, EFL teachers should receive training in utilizing both technological tools and tangible materials effectively in their teaching practices.

In summary, this study, though based on a limited cohort of EFL instructors, reveals a primary focus on technology integration at the substitution and augmentation levels within a specific educational context. Factors such as teacher motivation, ICT resource availability, and

proficiency with technological tools significantly impact classroom technology integration. Stakeholder encouragement is crucial in bolstering EFL teachers' efforts towards effective technology use. Given the challenges of limited time and tool familiarity, it becomes imperative to implement structured professional development programs. Such initiatives should aim to enhance teachers' technological competencies and pedagogical strategies, enabling them to ascend beyond basic ICT usage to more advanced levels of the SAMR model. This approach promises to foster a more innovative and transformative educational environment, aligning with contemporary pedagogical demands.

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NGHIÊN CỨU MỨC ĐỘ TÍCH HỢP CÔNG NGHỆ THÔNG TIN VÀ TRUYỀN THÔNG CỦA GIÁNG VIÊN TIẾNG ANH TẠI VIỆT NAM THÔNG QUA MÔ HÌNH SAMR

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Tóm tắt: Nghiên cứu này nhằm tìm hiểu mức độ tích hợp công nghệ thông tin và truyền thông (ICT) của giảng viên tiếng Anh tại Việt Nam vào việc giảng dạy, tập trung đặc biệt vào các cấp độ: thay thế, tăng cường, sửa đổi và tái định nghĩa (mô hình SAMR). Tác giả thu thập dữ liệu bằng cách dự giờ quan sát và phỏng vấn bảy giảng viên Tiếng Anh. Quá trình dự giờ quan sát được tiến hành ba lần trong suốt học kỳ thứ hai của năm học 2022-2023, trong khi đó, cuộc phỏng vấn bao gồm các câu hỏi mở theo khung SAMR. Kết quả nghiên cứu cho thấy các giảng viên chủ yếu sử dụng các chức năng cơ bản của phần mềm thuyết trình, như PowerPoint, cũng như các ứng dụng xử lý văn bản như Microsoft Word, kết hợp với các nguồn tài nguyên kỹ thuật số khác. Ngoài ra, kết quả cho thấy việc tích hợp công nghệ thông tin và truyền thông của các giảng viên chủ yếu ở cấp độ thay thế và tăng cường. Những kết quả này cho thấy sự thành thạo của các giảng viên trong việc tích hợp công nghệ thông tin (CNTT) vào việc giảng dạy; tuy nhiên, việc sử dụng của họ bị giới hạn trong các chức năng cơ bản trong một phạm vi hạn chế của các ứng dụng trên máy tính, với những thay đổi và cải tiến tối thiểu. Kết quả nhấn mạnh sự cần thiết của việc phát triển chuyên môn để nâng cao kỹ năng CNTT của giảng viên tiếng Anh và thúc đẩy các phương pháp giảng dạy mới, tạo điều kiện cho sự chuyển đổi trong việc tích hợp CNTT trong giảng dạy.

Từ khóa: giảng viên tiếng Anh, tích hợp công nghệ thông tin và truyền thông, mức độ, mô hình SAMR