

ASSESSING EFL LECTURERS' DIGITAL COMPETENCE: A DIGCOMPEDU-BASED STUDY AT A VIETNAMESE PRIVATE UNIVERSITY

KHẢO SÁT SƠ BỘ THỰC TẾ NĂNG LỰC SỐ CỦA GIẢNG VIÊN TIẾNG ANH: NGHIÊN CỨU DỰA TRÊN KHUNG DIGCOMPEDU TẠI MỘT TRƯỜNG ĐẠI HỌC TƯ THỰC Ở VIỆT NAM

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Abstract - The digital competence of educators is increasingly recognized as a key factor in ensuring teaching quality in the era of educational digitalization [1]. This study investigated the digital competence of English as a Foreign Language (EFL) lecturers at a Vietnamese private university using the DigCompEdu framework and examined the influence of teaching experience. A quantitative research design was employed, with data collected through an online survey and analyzed using descriptive statistics, regression analysis, and ANOVA. The results revealed that most lecturers demonstrated intermediate levels of digital competence, particularly in integrating digital technologies into teaching, while competencies related to innovation, leadership, and transformative digital pedagogy remained limited. Teaching experience was positively associated with digital competence. The study contributes empirical evidence from the Vietnamese EFL higher education context and highlights the need for targeted professional development initiatives to strengthen advanced digital pedagogical competencies and support sustainable digital transformation in higher education.

Keywords - Digital competence; DigCompEdu framework; University lecturers; Educational digital transformation; Lecturer digital capability; Digital competence assessment

1. Introduction

In the context of rapid global digital transformation, educators' digital competence has become a critical factor in ensuring the quality and effectiveness of teaching and learning. According to Redecker and Punie [1], digital competence is not only a prerequisite for maintaining educational quality but also a fundamental driver for pedagogical innovation and enhanced learner experiences. At the international level, numerous studies have focused on developing and applying frameworks for assessing educators' digital competence, among which DigCompEdu is widely recognized as a comprehensive model that enables multidimensional evaluation, ranging from technology integration to innovation and leadership in digital environments.

However, despite the growing body of research on digital competence, several important gaps remain. First of all, most existing studies have been conducted in developed countries, while empirical research in developing contexts such as Vietnam remains limited,

Tóm tắt - Năng lực số của giảng viên được xem là một yếu tố quan trọng bảo đảm chất lượng giảng dạy và chuyển đổi số giáo dục [1]. Dựa trên khung DigCompEdu, nghiên cứu này đánh giá thực trạng năng lực số của giảng viên tiếng Anh tại một trường đại học tư thực ở Việt Nam. Nghiên cứu sử dụng phương pháp định lượng, hồi quy tuyến tính và ANOVA. Kết quả cho thấy, phần lớn giảng viên đạt mức năng lực số trung bình, trong khi các năng lực liên quan đến đổi mới sáng tạo và sự phạm số vẫn còn hạn chế. Kinh nghiệm giảng dạy có mối liên hệ tích cực với năng lực số. Nghiên cứu góp phần làm phong phú cơ sở thực nghiệm về năng lực số của giảng viên đại học tại Việt Nam thông qua việc vận dụng khung DigCompEdu trong bối cảnh giảng dạy tiếng Anh như một ngoại ngữ và nhấn mạnh sự cần thiết của các chương trình bồi dưỡng chuyên môn có mục tiêu nhằm phát triển năng lực số ở mức độ cao và hỗ trợ chuyển đổi số bền vững trong giáo dục đại học.

Từ khóa - Năng lực số; Khung năng lực số DigCompEdu; Giảng viên đại học; Chuyển đổi số giáo dục; Năng lực số giảng viên; Đánh giá năng lực số

particularly studies that systematically apply the DigCompEdu framework. Secondly, many studies primarily focus on describing levels of digital competence without examining the relationships between individual factors (e.g., teaching experience) and digital competence development. Thirdly, empirical evidence regarding lecturers' readiness for digital transformation in private higher education institutions remains limited, despite the distinct governance structures and resource allocation mechanisms that characterize this sector.

In Vietnam, digital transformation in higher education has been strongly promoted through national policies and institutional initiatives, including the adoption of online learning, blended learning models, and digital teaching tools. Nevertheless, the digital competence of lecturers remains uneven across institutions, and there is a notable lack of studies employing internationally recognized frameworks to provide systematic assessment. Therefore, it is essential to investigate lecturers' digital competence levels and the factors influencing their development in

order to support the design of effective professional development strategies.

Addressing these research gaps, this study aims to (1) assess the digital competence of English as a Foreign Language (EFL) lecturers at a Vietnamese private university using the DigCompEdu framework, and (2) examine the relationship between teaching experience and digital competence. By doing so, the study contributes empirical evidence to the growing body of research on digital competence in the context of Vietnamese higher education and provides practical implications for institutional policy-making and lecturer professional development in the era of digital transformation.

2. Literature Review

2.1. Digital Competence in Higher Education

Digital competence has become a central requirement for educators in the context of educational digitalization and the rapid integration of technology into higher education. The concept extends beyond basic technological literacy and includes the ability to integrate digital technologies effectively into teaching, assessment, communication, collaboration, and professional development [1]. In higher education, educators' digital competence is increasingly viewed as a key determinant of teaching quality, student engagement, and innovation in learning environments [2].

Among the existing frameworks, the European DigCompEdu framework proposed by Redecker and Punie [1] is one of the most widely adopted models for assessing educators' digital competence. The framework conceptualizes digital competence across six dimensions: professional engagement, digital resources, teaching and learning, assessment, empowering learners, and facilitating learners' digital competence. It also classifies educators into six progressive proficiency levels ranging from A1 (Newcomer) to C2 (Pioneer). Due to its comprehensive structure and pedagogical orientation, DigCompEdu has been extensively applied in studies examining teachers' readiness for digital transformation in higher education [3].

Previous studies have shown that lecturers in higher education are often concentrated at intermediate competence levels, particularly the B1 (Integrator) and B2 (Expert) levels, where technology is integrated into existing teaching practices but has not yet fully transformed pedagogy [3]. Although digital technologies are increasingly embedded in teaching activities, the transition from operational use to innovative and transformative digital pedagogy remains a major challenge for many institutions [3].

2.2. Factors Influencing Educators' Digital Competence

The literature suggests that educators' digital competence is influenced by a combination of individual, behavioral, and institutional factors. One of the most important determinants is ICT competence, which refers to educators' technical ability to use digital devices, software, and online platforms effectively [4]. Studies consistently

report that lecturers with stronger ICT skills tend to demonstrate higher levels of digital competence because they are better able to integrate digital technologies into pedagogical activities [5].

Technology use in teaching is another significant factor associated with digital competence. Frequent engagement with digital tools allows educators to develop confidence, familiarity, and practical experience in technology-enhanced teaching [2]. However, researchers emphasize that frequency of use alone does not guarantee effective pedagogical integration. Instead, the educational value of technology depends on how lecturers apply digital tools to support interaction, collaboration, creativity, and student-centered learning [5].

Institutional factors, particularly training and support, also play an important role in shaping educators' digital competence. Professional development programs, technical assistance, and organizational support can facilitate the adoption of digital pedagogies and encourage lecturers to experiment with innovative teaching practices [3]. Nevertheless, some studies suggest that institutional support often has a weaker impact compared with individual ICT capability because training programs are frequently limited to technical instruction rather than pedagogical transformation [5].

Teaching experience has also been examined as a factor influencing digital competence. While younger educators are often assumed to possess stronger technological familiarity, recent studies indicate that experienced lecturers may demonstrate higher digital competence due to accumulated pedagogical expertise and long-term engagement with technology-enhanced teaching environments [4]. Therefore, digital competence should be understood as a multidimensional construct resulting from the interaction between technological skills, pedagogical knowledge, and institutional conditions.

2.3. Previous Studies in the Vietnamese Context

In Vietnam, research on educators' digital competence has gained increasing attention in response to national digital transformation policies and the expansion of online and blended learning after the COVID-19 pandemic [6]. Existing studies generally indicate that university lecturers demonstrate moderate levels of digital competence, particularly in the operational use of digital technologies [6]. However, advanced competencies related to innovation, digital leadership, and transformative pedagogy remain limited [7].

Several Vietnamese studies have also identified ICT competence and technology use as important predictors of educators' digital competence [6]. Lecturers who frequently integrate technology into teaching activities tend to report higher confidence and stronger digital pedagogical practices. At the same time, institutional support and professional development opportunities are often found to be insufficient or uneven across institutions, limiting lecturers' ability to progress toward more advanced levels of digital competence [8].

Despite the growing body of research, several gaps remain in the Vietnamese context. Firstly, many studies focus primarily on public universities, while research on private higher education institutions remains limited. Secondly, few studies apply internationally recognized frameworks such as DigCompEdu to systematically assess educators' digital competence. Thirdly, limited attention has been paid to EFL lecturers, whose teaching context requires intensive integration of digital tools, online interaction, and language-learning technologies. Therefore, further empirical research is needed to better understand the digital competence of lecturers in specialized and technology-oriented higher education contexts such as HUFLIT.

2.4. Research Gap

Although previous studies have contributed significantly to understanding educators' digital competence, important gaps remain unresolved. Existing research in Vietnam has mainly focused on general assessments of technology use rather than comprehensive evaluations grounded in internationally recognized frameworks such as DigCompEdu. Moreover, limited attention has been paid to the combined effects of ICT competence, training and support, and technology use on lecturers' digital competence.

In addition, empirical evidence concerning EFL lecturers in private universities remains scarce, despite the increasing demand for digitally enhanced language education. Few studies have also examined whether teaching experience contributes to differences in digital competence among lecturers.

Therefore, this study addresses these gaps by investigating the digital competence of EFL lecturers at a Vietnamese private university using the DigCompEdu framework, while simultaneously examining the influence of ICT competence, training and support, technology use, and teaching experience on lecturers' digital competence.

3. Methodology

3.1. Theoretical Framework and Research Model

This study is grounded in the DigCompEdu framework proposed by Redecker and Punie [1], which conceptualizes educators' digital competence across six areas and six proficiency levels (A1-C2). The framework is widely used in higher education research due to its comprehensive structure and applicability in assessing teachers' digital competence.

In this study, DigCompEdu serves three purposes: (i) to define the construct of digital competence (DC); (ii) to guide the development of measurement items; and (iii) to classify lecturers' competence levels (Table 3).

Based on prior literature, a conceptual model is proposed in which digital competence (DC) is influenced by three key factors: ICT competence (ICT), training and support (TR), and technology use in teaching (TU). In addition, teaching experience is examined as a grouping variable to explore differences in digital competence.

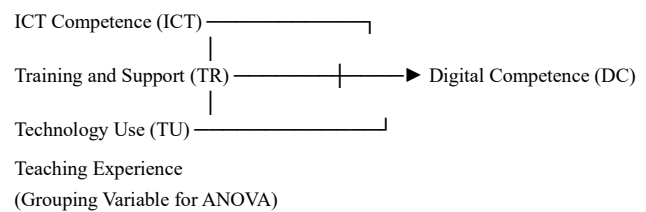


Figure 1. Proposed Research Model

As shown in Figure 1, digital competence is hypothesized to be influenced by ICT competence, training and support, and technology use.

3.2. Research Questions and Hypotheses

This study addresses the following research questions: (1) What is the current level of digital competence among EFL lecturers according to DigCompEdu? (2) Which factors influence lecturers' digital competence? (3) Does teaching experience explain differences in digital competence?

Accordingly, the following hypotheses are tested:

H1: ICT competence positively affects digital competence.

H2: Training and support positively affect digital competence.

H3: Technology use positively affects digital competence.

H4: Digital competence differs significantly across teaching experience groups.

3.3. Data Collection Instrument and Procedure

Data were collected through an online survey using a structured questionnaire. The instrument consisted of 24 items adapted from the DigCompEdu framework and previous studies on teachers' digital competence and technology integration in higher education. Specifically, ICT competence items were adapted from studies examining educators' technological proficiency, while training and support and technology use items were derived from prior research on digital teaching practices and institutional support.

The questionnaire includes three sections:

+ **Demographics:** gender, qualification, and teaching experience;

+ **Independent variables:** ICT competence (ICT), training and support (TR), technology use (TU);

+ **Dependent variable:** digital competence (DC).

The distribution of items was as follows: ICT competence (6 items), training and support (5 items), technology use (5 items), and digital competence (8 items). Example items include: "I can effectively integrate digital tools into classroom activities" (DC), "I receive sufficient institutional support for digital teaching" (TR), and "I regularly use digital platforms to support student learning" (TU).

All items were measured using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). This scale is appropriate for measuring perceptions and supports parametric statistical analysis such as regression and ANOVA.

3.4. Sample of the Study

The participants were English language lecturers from the Faculty of Foreign Languages, Ho Chi Minh City University of Foreign Languages - Information Technology (HUFLIT), Vietnam. A total of 63 questionnaires were collected, of which 60 valid responses were retained for analysis after excluding incomplete responses.

The sample included lecturers holding master’s degrees with varying teaching experience (from under 5 years to over 15 years). Although convenience sampling was employed, the sample still reflects diversity in teaching experience - a key variable in the research model.

3.5. Data Analysis Procedures

Data were analyzed using SPSS 26 through the following steps:

(1) **Data screening:** The dataset was checked for missing values and outliers. No significant issues were identified; therefore, all 60 responses were retained.

(2) **Descriptive statistics:** Descriptive analysis was conducted to:

- + Summarize demographic characteristics (Table 2a);
- + Assess the level of technology use (Table 2b);
- + Classify digital competence levels based on DigCompEdu (Table 3);
- + Calculate means and standard deviations of key constructs (Table 4).

(3) **Multiple linear regression analysis:** Multiple regression was used to examine the effects of ICT, TR, and TU on digital competence (Table 5). The model was evaluated using:

- + Standardized coefficients (β);
- + Statistical significance (p-values);
- + Coefficient of determination (R^2).

This method is appropriate for testing direct relationships between variables and aligns with the study’s explanatory objective.

(4) **One-way ANOVA:** ANOVA was conducted to examine differences in digital competence across teaching experience groups (Table 6). Post-hoc interpretation focused on mean differences and statistical significance.

3.6. Reliability and Validity Assurance

To ensure measurement quality:

- Questionnaire items were adapted from established frameworks and validated prior studies, supporting content validity.
- Internal consistency reliability was assessed using Cronbach’s Alpha, with a threshold value of 0.70 considered acceptable.
- Data collection was anonymous to reduce common method bias.

Table 1 presents the Cronbach’s Alpha values for each construct. All constructs exceeded the recommended threshold, indicating satisfactory internal consistency reliability.

Table 1. Cronbach's Alpha Reliability Coefficients for the Research Constructs (Source: Authors, 2025)

Construct	Number of Items	Cronbach's Alpha
ICT Competence (ICT)	6	0.87
Training and Support (TR)	5	0.84
Technology Use (TU)	5	0.86
Digital Competence (DC)	8	0.91

The strong reliability coefficients suggest that the measurement scales were appropriate for assessing lecturers’ perceptions of digital competence and related factors. In addition, the use of multiple analytical techniques (descriptive statistics, regression, and ANOVA) enhances the robustness and triangulation of findings.

4. Results

Table 2a. Demographic characteristics of respondents (N = 60) (Source: Authors, 2025)

Variable	Category	n	%
Gender	Male	9	15.0
	Female	51	85.0
Educational qualification	Master’s degree	55	91.7
	Doctoral degree	5	8.3
Teaching experience	< 5 years	6	10.0
	5-10 years	27	45.0
	11-15 years	15	25.0
	> 15 years	12	20.0

The sample consisted predominantly of female lecturers (85.0%). Most participants held a master’s degree (91.70%), while 8.3% possessed doctoral qualifications. In terms of teaching experience, the majority of lecturers had between 5 and 10 years of experience (45.0%), followed by 11-15 years (25.0%) and more than 15 years (20.0%).

Table 2b. Descriptive statistics of technology use in teaching (N = 60) (Source: Authors, 2025)

Level	Description	n	%	Mean	SD
4	Frequently used	39	65.0		
5	Very frequently used	21	35.0		
Overall		60	100.0	4.35	0.48

Note: n = 60. Mean and SD represent the overall perceived frequency of technology use.

Footnote: Responses were measured using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), with higher scores indicating greater frequency of technology use in teaching.

The findings indicate a high level of technology use in teaching. All lecturers reported either frequent (65.0%) or very frequent (35.0%) use of digital technologies. The overall mean score was high (M = 4.35, SD = 0.48), suggesting that digital tools are regularly integrated into teaching practices.

Most lecturers were classified at the B1 (Integrator) level (65.0%), followed by B2 (Expert) (23.3%). A smaller proportion remained at A2 (Explorer) (8.3%), while only 3.4% reached the C2 (Pioneer) level. No participants were classified as A1 (Newcomer) or C1 (Leader). These findings suggest that lecturers generally demonstrate intermediate levels of digital competence, particularly in integrating digital technologies into teaching activities.

Table 3. Distribution of Digital Competence Levels Based on the DigCompEdu Framework among EFL Lecturers (N = 60)
(Source: Authors, 2025)

A1 - Newcomer	A2 - Explorer	B1 - Integrator	B2 - Expert	C1 - Leader	C2 - Pioneer
0 (0%)	5 (8.3%)	39 (65.0%)	14 (23.3%)	0 (0%)	2 (3.4%)

Table 4. Descriptive statistics of digital competence constructs (N = 60) (Source: Authors, 2025)

Construct	N	Mean	SD	Cronbach's Alpha
ICT (ICT competence)	60	3.68	0.54	0.86
TR (Training & support)	60	3.52	0.61	0.82
TU (Technology use)	60	3.74	0.49	0.85
DC (Digital competence)	60	3.81	0.47	0.88

Note: ICT = information and communication technology competence; TR = training and support; TU = technology use; DC = digital competence.

All constructs demonstrated acceptable internal consistency, with Cronbach's Alpha values ranging from 0.82 to 0.88. Mean scores for all variables were above the midpoint of the scale, indicating generally positive perceptions of digital competence and technology-related practices among lecturers.

Table 5. Structural model results (Regression analysis predicting digital competence) (Source: Authors, 2025)

Path	β	t-value	p-value	VIF	Result
ICT $\rightarrow$ DC	0.32	3.48	< 0.001*	1.74	Supported
TR $\rightarrow$ DC	0.21	2.36	0.018*	1.58	Supported
TU $\rightarrow$ DC	0.41	4.32	< 0.001*	1.69	Supported

Model summary

Indicator	Value
R ²	0.62
Adjusted R ²	0.59
F	30.45
p-value	< 0.001

Note: Dependent variable = Digital Competence (DC). $p < 0.05$, $p < 0.001$.

The regression results indicate that all three factors - ICT competence (ICT), training and support (TR), and technology use in teaching (TU) - have significant positive effects on lecturers' digital competence (DC), as all p-values are below 0.05. Among these factors, technology use (TU) has the strongest influence ($\beta = 0.41$), followed by ICT competence ($\beta = 0.32$) and training and support ($\beta = 0.21$). This suggests that lecturers who frequently use technology in teaching and possess stronger ICT skills tend to demonstrate higher levels of digital competence.

The VIF values range from 1.58 to 1.74, indicating no multicollinearity issues among the independent variables. In addition, the model explains 62% of the variance in digital competence ($R^2 = 0.62$), showing strong explanatory power. The overall regression model is statistically significant ($F = 30.45$, $p < 0.001$), confirming that the proposed model is appropriate for predicting lecturers' digital competence.

Table 6. Differences in digital competence by teaching experience (ANOVA results) (Source: Authors, 2025)

(A) Descriptive statistics

Teaching experience	Mean (DC)	SD
< 5 years	3.45	0.42
5-10 years	3.72	0.48
11-15 years	3.89	0.44
> 15 years	4.02	0.39

(B) ANOVA results

Test	Value
F-statistic	5.87
p-value	0.002
η^2 (Eta squared)	0.24

Note: Results indicate statistically significant differences in digital competence across teaching experience groups ($p < 0.01$).

The ANOVA results showed significant differences in digital competence across teaching experience groups ($F = 5.87$, $p = 0.002$). Mean scores increased progressively according to years of teaching experience, with lecturers having more than 15 years of experience reporting the highest level of digital competence.

The effect size was moderate to large ($\eta^2 = 0.24$), indicating that teaching experience accounted for a meaningful proportion of variance in digital competence.

5. Discussion

5.1. Demographic Characteristics and Digital Competence

The demographic profile of the participants reflects patterns commonly reported in EFL higher education. The predominance of female lecturers is consistent with the feminization of language teaching reported by Prieto-Rodriguez [9], a pattern frequently observed in EFL contexts. Although gender was not examined as a determinant of digital competence in this study, the finding provides contextual understanding of how DigCompEdu-related professional development may be situated within EFL teaching environments.

Most participants held Master's degrees, which aligns with previous studies suggesting that higher academic qualifications are associated with greater engagement in professional learning and digital pedagogical practices [10], [11]. However, the findings indicate that advanced qualifications alone do not necessarily correspond to higher digital competence. Despite the participants' strong academic background, most lecturers remained at the B1–B2 DigCompEdu levels rather than progressing to advanced levels (C1–C2). From a DigCompEdu perspective, this suggests that formal qualifications may support foundational digital teaching competence but may be insufficient for more advanced pedagogical integration without sustained professional development.

The dominance of mid-career lecturers (5-15 years of experience) is also consistent with Zhao et al. [12], who describe this group as combining pedagogical experience with adaptability to technological change. In the context of EFL teaching, the findings suggest that digital competence may depend not only on technological familiarity but also

on accumulated pedagogical expertise, which supports more meaningful technology integration in language instruction.

5.2. Technology Adoption and Digital Competence

The findings show that digital technology use has become highly common among EFL lecturers, with all participants reporting frequent or very frequent use of digital tools in teaching. This pattern aligns with post-pandemic studies identifying the normalization of digital technology in higher education [13], [14], particularly in technology-mediated language teaching environments.

However, frequent technology use did not necessarily correspond to advanced digital competence. Although lecturers regularly integrated digital tools into teaching, most remained at the B1 (Integrator) level of DigCompEdu. This suggests that digital technologies are primarily being used to support existing instructional practices rather than to facilitate more transformative forms of digital pedagogy. This finding is consistent with Luis et al. [15], who argued that effective technology integration depends more on pedagogical purpose than frequency of use alone. From a DigCompEdu perspective, regular technology use may not automatically lead to higher levels of digital competence unless accompanied by reflective and pedagogically meaningful implementation.

Another notable finding is the absence of C1-level lecturers despite the presence of a small number of C2 “Pioneers.” This pattern may indicate that advanced digital competence develops unevenly and may rely more on individual initiative than on systematic institutional support. In EFL higher education, this finding may reflect a gap between technology adoption and the development of digital leadership envisioned in higher DigCompEdu proficiency levels.

5.3. Individual Capability, Institutional Support, and Teaching Experience

The study found that ICT competence and technology use had a stronger influence on digital competence than training and institutional support. This result aligns with Elechicon and Paris [16] and Tadesse et al. [17], which emphasize teachers’ technological capability as an important condition for effective digital pedagogy. Within the DigCompEdu framework, lecturers with stronger ICT competence may be better positioned to integrate digital tools pedagogically and adapt technology to instructional needs in EFL classrooms.

At the same time, training and institutional support appeared to have a comparatively weaker influence. This may suggest that existing professional development opportunities remain primarily technical rather than sufficiently focused on pedagogical application. Consequently, professional development programs may need to emphasize not only technical skills but also pedagogically meaningful technology integration that supports language teaching and learning.

Teaching experience also emerged as an important factor associated with higher digital competence. This

finding contrasts with assumptions that younger educators are naturally more digitally competent because of greater familiarity with technology. Instead, the findings are consistent with Riquelme-Plaza and Marolla-Gajardo [18] and Serric and Praničević [19], who suggest that experienced lecturers may integrate technology more effectively due to stronger pedagogical knowledge and instructional decision-making. In EFL contexts, digital competence appears to involve not only operational technological skills but also pedagogical judgment, which is central to the DigCompEdu framework.

5.4. Implications for Digital Transformation in Higher Education

This study extends the application of the DigCompEdu framework to the Vietnamese EFL higher education context, where empirical evidence remains limited. The findings suggest that digital competence is shaped by multiple factors, including ICT capability, teaching experience, technology use, and institutional conditions.

More importantly, the results indicate that widespread technology use does not automatically result in advanced digital pedagogy. While lecturers appear confident in using digital tools, relatively few reached advanced DigCompEdu levels associated with innovation and leadership. This suggests that digital transformation in higher education may currently be stronger in technology adoption than in pedagogical transformation.

Accordingly, universities may need to move beyond infrastructure provision and short-term technical training toward long-term professional development that supports pedagogically meaningful technology integration and sustainable digital competence development in EFL teaching contexts.

6. Conclusion

This study contributes to the growing body of research on educators’ digital competence by providing empirical evidence from the Vietnamese EFL higher education context using the DigCompEdu framework. The findings indicate that most lecturers demonstrate intermediate levels of digital competence, particularly in integrating digital technologies into teaching, while advanced competencies related to innovation and leadership remain limited. These findings are consistent with recent studies in the Vietnamese higher education context, which emphasize the growing importance of interdisciplinary and technology-related competencies in lecturers’ professional development and curriculum innovation [20].

The study further confirms that ICT competence, technology use, and institutional training and support significantly influence digital competence. Technology Use (TU) was identified as the strongest predictor, followed by ICT competence and training and support. In addition, teaching experience was found to be associated with higher levels of digital competence, suggesting that effective digital pedagogy develops through the interaction between technological skills and accumulated teaching experience.

These findings have important practical implications for higher education institutions. Universities should prioritize pedagogically oriented professional development programs rather than focusing solely on technical ICT training. Sustained institutional support, collaborative learning environments, and differentiated training strategies for lecturers at different career stages are also necessary to promote more transformative and innovative digital teaching practices. In line with Nguyen [20], such professional development initiatives should also encourage interdisciplinary competence development to better prepare lecturers for increasingly digitalized and globally connected educational environments.

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