

# TEACHERS' ATTITUDES TOWARDS INFORMATION COMMUNICATION TECHNOLOGY USE IN EFL TEACHING AT PRIMARY SCHOOLS IN VIETNAM – A PILOT STUDY

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**Abstract:** One of the main goals set by the Vietnamese Ministry of Education and Training (MOET) for the 2022-2025 period is to extensively revamp Vietnam's educational system in a way that teaching and learning in a digital environment plays a fundamental role in daily classroom activities. The present study aims to pilot the instrument developed by Christensen and Knezek (2009) to measure teachers' attitudes towards computers and to examine EFL teachers' attitudes toward ICT use at primary schools in Vietnam. To achieve the aims of the research, 202 EFL teachers were randomly recruited to complete the 73-item questionnaire. Cronbach's alpha coefficients were calculated to examine the reliability of the instrument. In addition, several further analyses were conducted to explore teachers' attitudes towards ICT use in EFL teaching. The findings suggest that the instrument is adequate, reliable, and valid, and that EFL teachers revealed strong interest, low anxiety, low avoidance, and high awareness of the usefulness of ICT use in teaching as well as its role in young learners' language development. The results showed that teaching experience and job status impact EFL teachers' attitudes towards ICT use while age and school locations do not. Future research is encouraged to clarify teachers' neutral attitudes towards online interaction as well as their ignorance regarding the negative impacts of ICT use.

**Keywords:** ICT use, teachers' attitudes, technology use, EFL teaching, primary education

## 1 Introduction

In today's world, information communication technology (ICT) has penetrated all spheres of life, including education. It has served a wide variety of educational purposes, mainly related to managing, teaching, and learning activities. It is undeniable that ICT has greatly contributed to innovation in education and has caught a great deal of attention from researchers. In the present study, ICT is defined as "a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information" (UNDP, 2001, p.2). The use of ICT in this research is restricted to teaching and learning purposes in EFL classes.

In order to successfully integrate ICT into classroom teaching, numerous factors should be considered, including teachers' attitudes towards ICT use. According to Vaughan and Hogg (2005), attitudes refer to a combination of three components: beliefs, feelings, and behavioral tendencies of individuals towards objects or events. In the educational context, Capan (2012) added that teachers' attitudes towards ICT utilization reflects the evaluation and feelings that teachers have towards ICT and the use of ICT in their classrooms.

A large body of literature exists on the benefits of ICT use in English. For instance, ICT use allows teachers and learners to gain access to an enormous collection of audio and visual materials for English learning (Silviyanti & Yusuf, 2015), helps to improve learners' language skills (Ybarra & Green, 2003), increases students' autonomy and motivation to study English (Alsied & Pathan, 2013), and enhances collaboration among teachers and students (Nim Park & Son, 2009). Noticing the benefits of ICT use in teaching and learning as well as educational administration, Vietnam's MOET has directed considerable effort towards innovating the educational system by issuing long-term plans (e.g., Decision No. 131/QĐ-TTg of the Prime Minister on approving the Project entitled "Promoting the ICT application and digital transformation in education and training in the 2022-2025 period, with the orientation towards 2030" (Government of Vietnam, 2022)). These are also accompanied by short-term plans, which aim for clearly stated general goals, specific tasks, and guidance for the effective implementation of ICT (e.g., Official Dispatch no. 4096/BGDĐT-CNTT dated September 20, 2021 on guiding the implementation of ICT integration and educational statistics during the school year 2021-2022 (ICT Department – MOET, 2021)).

The efficiency of ICT implementation in teaching and learning is influenced by a number of factors, but one of the major factors which plays a critical role in the process are teachers' attitudes towards ICT use (Albirini, 2006). However, teachers' attitudes towards ICT use have not received sufficient attention from researchers, teachers, school leaders, or educational policy makers (Bilbatua & Herrero de Haro, 2014; Cavas et al., 2009; Yulisman et al., 2019). The current study seeks to fill this existing gap in the literature.

There is disagreement on the use of ICT in primary school education. On the one hand, prior research suggests that adopting ICT has a positive impact on the teaching of young learners (Van Scoter & Boss, 2002). Some researchers, on the other hand, argue that there is no reliable evidence that employing ICT helps to improve young learners' academic performance (Cuban, 2000). Therefore, the present study shifts the focus to examine EFL teachers' attitudes towards ICT adoption in teaching primary school students.

In Vietnam, the promotion of ICT use and the digitalization of the classroom represent leading goals, as laid out in the previously mentioned government policies. Specifically, teaching and learning in a digital environment should become a fundamental and daily part of the educational experience for both teachers and learners by 2025. In addition, a national online teaching and learning platform which is adequately integrated with curriculum materials for grades 1-12 is scheduled to be completed prior to 2030, allowing all teachers and students to easily and effectively implement educational activities online. The Prime Minister also emphasized that positive attitudes and changes in perception on the part of insiders, including teachers, play a crucial role in the implementation process. However, little is known about teachers' perceptions and attitudes towards ICT use during this transitional period.

This quantitative study aims to pilot a questionnaire designed to measure teachers' attitudes, and to explore and reveal the influence of teachers' demographic characteristics on their attitudes towards ICT use in EFL teaching at primary schools in the Vietnamese context. Accordingly, the paper seeks to answer the following research questions:

1. How reliable is the instrument for exploring teachers' attitudes towards ICT use in EFL teaching at primary schools?
2. What are teachers' attitudes towards ICT use in EFL teaching at the primary school level?
3. How do teachers' demographic characteristics influence their attitudes towards ICT use in teaching?

## 2 Literature review

*Attitudes* have been shown to be a determining factor of *behaviors* in several technology acceptance models (Ajzen, 1991; Compeau & Higgins, 1995; Thompson et al., 1991). According to Teo (2006), teachers' attitudes towards ICT use have a considerable impact not only on the success of ICT integration in teaching but also on the sustainable future use of ICT, a claim which has been supported by other studies on the topic (Albirini, 2006; Al-Zaidiyeen et al., 2010; Huang & Liaw, 2005). A large body of previous findings suggest that the majority of teachers express positive attitudes towards ICT use (Albirini, 2006; Cavas et al., 2009; Hong & Koh, 2002; Mustafina, 2016; Sadik, 2006; Yilmaz & Byraktar, 2014) in the form of low anxiety (Hong & Koh, 2002) and high confidence (Sadik, 2006). However, Player-Koro (2012) emphasized that only positive attitudes which are specifically related to ICT used for teaching purposes encourage teachers' ICT use. Notably, recent research has shown an increase in positive attitudes towards ICT use among teachers when compared to previous studies (Jimoyiannis & Komis, 2006), prompting further inquiry in future studies to determine the factors influencing this tendency.

Taking the crucial role of teachers' attitudes towards ICT use into account, measuring teachers' attitudes is essential for predicting and explaining the use of ICT in the classroom. A large number of instruments have been developed to serve this purpose, including *Attitudes Toward Computers* (ATC) (Raub, 1981), *Attitudes Toward Computers Scale* (Reece & Gable, 1982), *The Computer Usefulness Attitude Scale* (CAS) (Gressard & Loyd, 1986), *The Computer Anxiety Rating Scale* (CARS) (Heinssen et al., 1987), *The Attitude Toward Computer Scale* (Francis, 1993). One of the popular instruments was the *Teachers' Attitudes Toward Computers (TAC) Questionnaire*, which has been widely employed in numerous previous studies (Baya'a & Daher, 2015; González-Carriedo & Esprivalo Harrell, 2018; Günbaş & Demir, 2017; Shattuck et al., 2011). It was developed by Christensen and Knezek (2009) based on 14 prior instruments. It has been refined twice to ensure a well-validated and highly reliable version. This instrument measures all three attitudinal components, including beliefs, feelings, and behaviors of teachers towards computer use, which demonstrates the instrument's relevance to the present study.

Measurements of teachers' attitudes towards ICT use in previous studies have helped to provide a clearer understanding of teachers' attitudes over time and their predictions regarding the use of ICT in classroom teaching. Accordingly, the factors influencing their attitudes towards ICT use have also been identified and examined. Among these, demographic characteristics, such as age, teaching experience, gender, and geographical location of schools, based on my extensive review, appear to be common influencing factors. However, it is worth noting that empirical studies in this field show inconsistent findings regarding the effects of these characteristics on teachers' attitudes towards ICT implementation. Besides, drawing from my teaching context and experience, I hypothesize that *job status* (i.e., contract teachers, permanent teachers) may potentially exert an

influence on EFL teachers' attitudes towards ICT use; hence, a more in-depth investigation into it is necessary. The rest of this section will shift the focus onto the analyses of these issues.

A number of studies show no significant correlations between teachers' attitudes towards ICT use and their ages (Teo, 2008; Woodrow, 1992; Yilmaz & Byraktar, 2014). However, other studies have reported statistically significant effects of teacher age on their attitudes (Cavas et al., 2009; Ziad, 2016). Interestingly, the findings related to the associations between teacher age and attitudes in prior investigations are divergent. On the one hand, numerous researchers have concluded that young teachers tend to express more positive attitudes toward the utilization of ICT (Cavas et al., 2009; Sánchez et al., 2012; Županec et al., 2014; Ziad, 2016). In one such study, Cavas et al. (2009) found that Turkish teachers aged between 20 and 35 are more optimistic about ICT use than the other two groups studied (i.e., 36-49; 50+). In a similar vein, Županec et al. (2014) suggested that the older teachers tend to have more negative attitudes toward ICT integration. The negative association between teacher age and attitudes can be explained by the fact that younger teachers tend to have higher exposure to ICT than their older colleagues (Hammond et al., 2009). On the other hand, Chio's (1992) study has revealed that older teachers are more positive about using ICT in teaching than younger teachers, even though their ICT competency may be lower.

Regarding teaching experience as a factor influencing attitudes towards the use of ICT, previous research has yielded similarly contradictory results. A number of studies have suggested that there is no relationship between teaching experience and attitudes towards ICT use (Ndibalema, 2014; Semerci & Aydin, 2018). In contrast, other researchers provide evidence for differences in teachers' attitudes towards ICT use based on their teaching experience (Adams, 2002; Buabeng-Andoh & Totimeh, 2012; Ziad, 2016); however, these differences are found to be inconsistent as well. For instance, according to Buabeng-Andoh and Totimeh (2012) and Russell et al. (2003), teachers with more teaching experience tend to have more behavioral intentions to use ICT to support their teaching, while Inan and Lowther (2010) and Baek et al. (2008) claimed that the more years of teaching experience instructors have, the less willing they are to utilize ICT in their classroom instruction. Researchers have addressed the reasons for these discrepancies in their studies. Specifically, to explain the greater willingness to use ICT among more experienced teachers, the researchers attributed two possible reasons (Russell et al., 2003). Firstly, newer teachers seem to be more accustomed to using technology in general but lack experience in integrating it into classroom teaching. Secondly, new teachers normally spend several years early in their career learning about the curriculum, becoming acquainted with school and class culture, and mastering assessment systems, and can only spend their time learning how to incorporate ICT into their classrooms later. Conversely, to explain higher positive attitudes among newer teachers toward ICT use, researchers claimed that the younger generation of teachers has higher exposure to and a faster learning curve for technology than their older colleagues (Inan & Lowther, 2010).

Conflicting findings have also been reported in terms of the influence of gender on teachers' attitudes towards ICT use. Apart from a number of studies that showed no differences in teachers' attitudes towards ICT use based on gender (Cavas et al., 2009; Hong & Koh, 2002; Teo, 2008; Ziad, 2016), numerous prior investigations report significant variance in attitudes between male and female teachers (Markauskaite, 2006; Schumacher & Morahan-Martin, 2001; Tezci, 2011). However, the findings supporting the presence of differences in teachers' attitudes toward ICT use by gender are in agreement, as there is no research study indicating that female teachers are more optimistic about ICT usage than male teachers. Researchers suggest that female teachers have more

anxiety, less experience, and less confidence towards ICT use (Jimoyiannis & Komis, 2006; Shapka & Ferrari, 2003; Ziad, 2016) while males are witnessed to be more optimistic (Jimoyiannis & Komis, 2006; Schumacher & Morahan-Martin, 2001; Sadik, 2006). Markedly, a few recent studies suggest that the gender gap in teachers' attitudes towards ICT use is narrowing (Shapka & Ferrari, 2003), prompting further research to gain deeper insight into the issue.

Among demographic characteristics, the geographical location of schools (i.e., rural areas, urban areas) where teachers are working has received less attention from researchers. Urban areas are thought to be more equipped with ICT facilities than rural ones, resulting in a shortage of necessary ICT equipment in rural areas (Mahdum et al., 2019; Sarfo et al., 2011). Furthermore, a lack of qualified personnel has been recorded in rural areas (Mahdum et al., 2019). These obstacles can lead to differences in attitudes towards ICT use between teachers working in urban and rural settings (Sarfo et al., 2011). Prior studies show mixed results in this regard. For example, Mahdum et al. (2019) found no significant difference in attitudes between teachers working in urban areas and those working in rural areas, despite the fact that teachers working in urban areas utilize ICT substantially more than those working in rural schools. Ziad (2016), on the other hand, found statistically significant differences in attitudes toward ICT use among teachers working in urban and rural locations. In a 2002 study, Hong and Koh narrowed their focus to teachers from rural schools only, and the findings revealed that the teachers showed positive attitudes towards technology use as well as low anxiety levels. The findings from the above studies highlight the need to further investigate how the geographical location of the schools where teachers work impacts their attitudes toward ICT use.

The final demographic factor relevant to the current study is job status (i.e., contract teacher or permanent teacher). Contract teachers are defined as those who are employed on a temporary basis, whereas permanent teachers are fully qualified, tenured, and work as official teachers for a longer period. Because of the scarcity of permanent teachers in Vietnam, a considerable number of schools hire contract teachers, especially at primary schools. In spite of the thorough review, no prior studies examining the effects of teachers' job status on their attitudes towards the utilization of ICT in EFL teaching at the primary school level were found. This gap emphasizes the significant contribution of the present study to the existing body of literature in this aspect. In the context of my teaching experience, a noticeable divergence in beliefs among teachers regarding the impact of teachers' occupational status on attitudes towards ICT use has been observed. Some believe that contract teachers often show fewer positive attitudes towards and a lower willingness to use ICT use due to their awareness of the short-term nature of their teaching. In contrast, others suppose that most contract teachers are fresh graduates who have greater exposure to ICT use, and thus have more positive attitudes towards ICT utilization and also show higher usage of ICT than permanent teachers. Given the scarcity of research in this specific context, a comprehensive investigation into the influence of job status on teachers' attitudes towards ICT use is necessary to fill the gap in the literature.

Having laid the foundation in the preceding literature review, which presented the key concepts and insights regarding teachers' attitudes towards ICT use in classroom teaching and the influence that their demographic characteristics have on these attitudes, I now shift my focus to the methods section. This section will elucidate the research design, participants, instrument, data collection strategies, and analytical techniques employed to achieve the research goals.

## 3 Methods

### 3.1 Research design

The primary purposes of this study are to examine the reliability of the designed instrument and to examine the preliminary results of teachers' attitudes towards ICT use at primary schools in Vietnam. A quantitative design employing a cross-sectional questionnaire was utilized to obtain data on three attitudinal aspects: cognition, affect, and behaviors. Online administration of the questionnaire was chosen by the researcher for several reasons. Firstly, the survey was conducted during the social distancing period of the Covid-19 pandemic which resulted in limited access to the participants in person. Consequently, an online survey appeared as the best solution at the time. Secondly, collecting data online helped to reduce administrative costs and efforts (e.g., traveling, printing, and accessing the necessary facilities), ensured a high level of anonymity, reached participants from numerous areas, and produced a data file which was ready to undergo statistical analysis (Dörnyei, 2007).

#### 3.1.1 Participants

English teachers at primary schools in Vietnam who have used ICT in their EFL classes were recruited for the study using convenience sampling on a voluntary basis. The sample consists of 202 EFL teachers of which there are 17 males (8.4%), 162 females (80.2%) and 23 who preferred not to say (11.4%);  $M=2.03$ ,  $SD=.445$ . Their ages ranged from 26 to 30 ( $M=3.04$ ;  $SD=1.26$ ). Participants' teaching experience mostly ranged from 6 to 10 years ( $M=2.22$ ;  $SD=1.17$ ). In terms of education level, 129 participants (63.9%) held university degrees, 44 (21.8%) held associate degrees, 28 (13.9%) achieved master's degrees, and only one (0.5%) obtained a doctoral degree. All respondents had reached B2 level of English proficiency and above. The majority of respondents, 115 (56.9%), were from elementary schools situated in the Central Highlands of Vietnam while 72 (35.6%) were from South Vietnam, and only small numbers, 10 (5%) and 5 (2.5%) respectively, were from the North and the Central regions. A total of 136 EFL teachers (67.3 %) were working in rural areas while 66 (32.7 %) were teaching in an urban area. In the Vietnamese context, students in Grades 3, 4, and 5 study English as a compulsory subject, while teaching English to students in Grades 1 and 2 is optional. However, all primary schools are encouraged to teach English to students from Grades 1 and 2. Because of the scarcity of permanent teachers in Vietnam, a considerable number of schools hire contract teachers. Interestingly, the number of contract teachers in the study is slightly higher than that of permanent teachers, accounting for 51.5% (104) and 48.5% (98), respectively. Regarding prior training on ICT use, 151 respondents (74.8%) have attended official training sessions organized by the Department of Education and Training, and 51 respondents (52.5%) have studied ICT use online by themselves.

#### 3.1.2 Instrument

With an aim of exploring teachers' attitudes towards technology, a valid and reliable instrument was necessary. In 2009, Christensen and Knezek validated the Teachers' Attitudes Towards Computers (TAC) questionnaire, which was developed based on 32 previous scales in the

same field. It was initially a 284-item version in 1997; it subsequently underwent two major refinement phases to cut down on the number of items. Ultimately, Christensen and Knezek achieved TAC version 6 with 51 items under nine constructs. This version exhibited acceptable goodness-of-fit indices based on the analysis of data collected in 2003 and demonstrated high internal consistency when examining the 2006 and 2008 datasets.

In this study, seven constructs, including *interest*, *comfort*, *accommodation*, *concern*, *utility*, *absorption*, and *significance* were adopted from the TAC questionnaire, version 6 (Christensen & Knezek, 2009). The items under these constructs were revised to avoid double-barreled questions and ambiguity to the best of the author's judgment. In addition, some items from TAC form A (previous version of TAC version 6) and items developed by the author were added to enrich the pool. Next, the initial questionnaire was sent to peer researchers for comprehension checking before being sent to two experts for review. Based on the feedback, changes were made to avoid hypothetical questions, outdated information, ambiguity, overly-general terms, and unclear comparatives. Three questions added by the researcher were removed at this stage based on the experts' recommendations. Afterwards, all the items were compiled on an online platform (*Google Forms* for personal use). Next, think-aloud protocols were carried out with two English teachers who were tasked with verbalizing their thoughts while filling in the questionnaire. Although it was revealed that there were two different ways of understanding the phrase *learning difficulties*, both understandings were determined to be acceptable within the boundaries of the study, therefore no change was made following the protocols. The finalized questionnaire consisted of two parts with 73 questions written in English with basic sentence structure and clear, comprehensible language (see Appendix A). The first part of the questionnaire, which consists of 11 questions, was designed to gather respondents' demographic information. The rest of the items consist of 5-point Likert scale questions that examine teachers' attitudes on ICT integration in EFL teaching.

### 3.1.3 Data collection and analysis

The link to access the questionnaire was posted in online groups for Vietnamese EFL teachers on social media (i.e., Facebook and Zalo) in January 2023 and it took roughly two weeks to finalize. Participants completed the survey by expressing their opinions towards each item on a five-point Likert scale (1: strongly disagree, 2: disagree, 3: undecided, 4: agree, 5: strongly agree) in about 20 minutes. 202 out of 230 of the responses were valid. Later on, the data was analyzed using the Statistical Package for Social Sciences (SPSS) version 22 for Windows. The data analysis procedure aimed to accomplish three main research objectives: (1) to examine the reliability of the instrument; (2) to explore the teachers' attitudes towards ICT in education; and (3) and to investigate the differences in attitudes between teachers based on age, teaching experience, job status, and school locations. To achieve the first aim, Cronbach's alpha coefficients were calculated for all the constructs to inspect their internal consistency reliability. Descriptive statistics were computed for each scale to accomplish the second goal. In addition, normality tests were carried out and the output revealed that the data was non-parametric. As a result, Spearman rank-order correlation coefficients were calculated to examine the strength of associations between variables in order to answer research question 2. To answer the third research question, the Mann-Whitney U Tests and Kruskal-Wallis tests were carried out to reveal the effects of teachers' demographic characteristics on their attitudes towards ICT use.

## 4 Results

In this section, the findings of the study are organized according to the order of the research questions posed in the earlier sections. The results presented in the subsequent sections offer a comprehensive analysis of the collected data. They contribute significantly to achieving the goal of piloting the instrument and obtaining preliminary results on EFL teachers' attitudes towards ICT use in their classroom teaching at the primary school level.

### 4.1 Research question 1: How reliable is the instrument exploring teachers' attitudes towards ICT use in language teaching at primary schools?

Construct	Cronbach's Alpha
Interest	.912
Comfort	.888
Accommodation	.889
Online interaction	.874
Concern	.837
Utility	.886
Absorption	.811
Significance	.901

Table 1. Cronbach Alpha Coefficients of the eight constructs

The questionnaire was developed based on the TAC version 6 (Christensen & Knezek, 2009) to measure teachers' attitudes towards ICT use in teaching. The final version of the questionnaire consisted of 73 items, 11 out of which aimed to collect teachers' demographic information while the rest consisted of content questions aimed at exploring teachers' feelings, beliefs, and behaviors in connection with ICT use in their teaching. After adjusting the items based on experts' suggestions and the author's own thorough consideration, the questionnaire was sent to two teachers for think-aloud protocols. These steps were made to ensure the validity of the questionnaire. In terms of the reliability of the instrument, Cronbach's alpha coefficients were computed for the eight scales. Table 1 shows that all reliability coefficients for the eight constructs are above .70, indicating that they are reliable enough for future use (Dörnyei, 2007).

### 4.2 Research question 2: What are teachers' attitudes towards ICT use in language teaching at primary schools?

A descriptive procedure was employed to calculate the mean values and standard deviations of the scales. Table 2 shows that the three scales of *interest*, *utility* and *significance* scored relatively high, with mean values all above 4. These results indicate that the teachers in the sample showed high interest in ICT use ( $M=4.45$ ;  $SD=.59$ ), had a heightened awareness of the practical value of technology use in their teaching ( $M=4.15$ ;  $SD=.58$ ), and showed a high level of agreement on the importance of ICT-mediated instruction to students. In terms of *comfort* and *accommodation*, the mean values are 2.54 and 2.03, respectively, which implies that the teachers expressed low levels



of anxiety and avoidance in using ICT at work. As for *absorption*, the participants demonstrated a moderately high intention to integrate ICT into their EFL classes,  $M=3.70$ ;  $SD=.59$ . However, they showed their unclear attitudes towards the impacts of online interaction on learners ( $M=3.29$ ;  $SD=.74$ ). In addition, their concern towards negative impacts caused by technology does not appear to be considerable either ( $M=3.27$ ;  $SD=.69$ ).

Construct	N	Mean	Std. Deviation
Interest	202	4.45	.589
Comfort	202	2.54	.831
Accommodation	202	2.03	.928
Online Interaction	202	3.29	.741
Concern	202	3.27	.697
Utility	202	4.15	.584
Absorption	202	3.70	.597
Significance	202	4.19	.624

Table 2. Descriptive statistics for the eight constructs

The data from the eight variables were subjected to normality tests to determine whether they were normally distributed. Table 3 shows that all of the Sig. values are significant ( $p < .05$ ), indicating a violation of the normality assumption (Pallant, 2010). Therefore, Spearman Rank Order Correlation ( $\rho$ ) was used instead of Pearson Correlation to explore relationships between the variables.

Only strong correlations, which are above .5 or below -.5 (Cohen, 1988), are reported in this section. A strong positive correlation was found between *accommodation* and *comfort*,  $r(200) = .709$ ,  $p < .001$ , with higher levels of *accommodation* associated with higher levels of *comfort*. This result underscores a crucial insight into the relationship between teachers' comfort levels with ICT use and their actual integration of ICT in the classroom. The positive correlation indicates that as teachers become more comfortable with utilizing ICT tools in teaching, they are more likely to incorporate these technologies into their instructional practices. This correlation emphasizes the pivotal role of teachers' comfort in enhancing the integration of ICT by educators. Accordingly, it suggests a significant implication, which will be further explored in the subsequent sections of the paper.

Another strong positive association is found between the two variables of *significance* and *utility*,  $r(200) = .687$ ,  $p < .001$ , with higher scores for *significance* correlating with higher scores for *utility*. This finding suggests that teachers who have a strong belief that using ICT can improve their teaching productivity are also highly aware that ICT use in teaching is beneficial to students' learning.

Construct	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	sig.
Interest	.176	201	.000
Comfort	.092	201	.000
Accommodation	.160	201	.000
Online Interaction	.075	201	.007
Concern	.086	201	.001
Utility	.109	201	.000
Absorption	.105	201	.000
Significance	.111	201	.000

Table 3. Normality test results

#### 4.3 Research question 3: How do the demographic characteristics of the teachers (e.g., age, teaching experience, job status and school area) influence their attitudes towards ICT use in teaching?

Kruskal-Wallis Tests were carried out to examine the influence of *age* and *teaching experience* on the teachers' attitudes towards ICT use. As for *age*, the results reveal that the significance levels are higher than .05, which means that no statistically significant differences were found based on age (see Table 4). Regarding *teaching experience*, the Kruskal-Wallis test showed a significant difference in the teachers' comfort levels in using ICT across the five different teaching experience groups (Gp1,  $n = 60$ : less than 5 years, Gp2,  $n = 87$ : 6-10 years, Gp3,  $n = 15$ : 11-15 years, Gp4,  $n = 30$ : 16-20 years, Gp5,  $n = 10$ : 21 years and above),  $\chi^2(4, n = 202) = 10.236$ ,  $p = .037$ . Post-hoc Mann-Whitney tests were used to compare all pairs of groups. The results indicated that there are significant differences in the comfort level between the group 2 ( $Md = 2.67$ ,  $n = 87$ ) and group 5 ( $Md = 2.11$ ,  $n = 10$ ),  $U = 212.500$ ,  $z = -2.644$ ,  $p = .008$ ,  $r = .26$ . and between group 4 ( $Md = 2.44$ ,  $n = 30$ ) and group 5 ( $Md = 2.11$ ,  $n = 10$ ),  $U = 77.500$ ,  $z = -2.274$ ,  $p = .023$ ,  $r = .36$ . These results can be interpreted to mean that differences in attitudes towards ICT use in teaching between group 2 (6-10 years of teaching experience) and group 5 (21 years of teaching experience and above); group 4 (16-20 years of teaching experience) and group 5 (21 years of teaching experience and above) are influenced by the demographic characteristics of *teaching experience*.

Construct	Age	Teaching experience
Interest	.330	.651
Comfort	.551	.037
Accommodation	.671	.662
Online Interaction	.491	.080
Concern	.831	.417
Utility	.457	.339
Absorption	.788	.865
Significance	.211	.065

Table 4. Significant values in Kruskal-Wallis Tests

Mann-Whitney U tests were conducted to determine whether *job status* (i.e., contract teachers or permanent teachers) and *school area* (i.e., urban area or rural area) affect the teachers' attitudes towards ICT use in EFL classes. Table 5 shows that there are no significant differences in attitudes towards ICT use between the teachers in urban areas and those teaching in rural areas, as all p-values were found to be above .05. However, significant differences could be seen in the levels of *significance*, *interest*, and *utility* between contract teachers and permanent teachers (see Table 5).

In terms of *significance*, there was a significant difference in attitudes towards the importance of ICT-mediated teaching between contract teachers ( $Md = 4.00, n = 104$ ) and permanent teachers ( $Md = 4.17, n = 98$ ),  $U = 4026.500, z = -2.600, p = .009, r = .18$ . That is to say, permanent teachers exhibited a higher perception of the significance of ICT use in EFL teaching compared to their colleagues who worked on a contract basis.

In addition, the difference in the *interest* level towards technology utilization between the contract teachers ( $Md = 4.430, n = 104$ ) and permanent teachers ( $Md = 4.71, n = 98$ ) is statistically significant,  $U = 4067.500, z = -2.508, p = .012, r = .17$ . In other words, the long-term teachers found the adoption of ICT in teaching to be more interesting than the short-term teachers.

Construct	Job status	School area
Interest	.012	.526
Comfort	.334	.099
Accommodation	.058	.071
Online Interaction	.383	.174
Concern	.097	.996
Utility	.004	.687
Absorption	.064	.351
Significance	.009	.398

Table 5. Significant values in Mann-Whitney U Tests

Finally, *utility* scores of the permanent teachers ( $Md = 4.25, n = 98$ ) were significantly higher than those of the contract teachers ( $Md = 4.00, n = 104$ ),  $U = 3917.500, z = -2.852, p = .004, r = .18$ . This suggests that permanent teachers have a stronger belief that utilizing ICT in teaching can increase their teaching productivity compared to the contract teachers.

## 5 Discussion

This study examined the reliability of the instrument discussed above while obtaining the preliminary results regarding the participants' attitudes towards ICT use in EFL classes and exploring the effects of their demographic characteristics (e.g., age, teaching experience, school area, and job status) on their attitudes. A large body of literature has shown that teachers' attitudes play a crucial role in the implementation of ICT in teaching (Ajzen, 1985; Ajzen & Fishbein, 1980; Compeau & Higgins, 1995; Moore & Benbasat, 1991; Thompson et al., 1991). There are a large number of instruments that have been developed to measure teachers' attitudes towards technology

use (Christensen & Knezek, 2009; Gressard & Loyd, 1986; Raub, 1981; Reece & Gable, 1982), yet many of them were constructed at the time when more attention was paid to the significance of the use of computers in teaching and learning. Due to recent developments in technology, ICT use is no longer restricted to the computer but has extended to other technological devices (e.g., smartphones, tablets, and interactive smart boards). This study piloted the instrument adapted from TAC Version 6 (Christensen & Knezek, 2009). The results of the reliability analysis indicated that the instrument is highly reliable and can thus be used for future studies.

The findings from the pilot study suggest that EFL teachers show a strong interest in using ICT in their work, learning about educational technology tools, and exploring their latest features. In addition, they expressed a low level of anxiety and a high level of willingness to use ICT in their EFL classes. Furthermore, the participants were shown to be highly aware of the significance of ICT-mediated teaching and the utility of ICT use itself. Consequently, they showed great intentions to make use of ICT. The preliminary results revealed that EFL teachers have positive attitudes towards ICT use (e.g., strong interest, great comfort, high willingness to use ICT, and strong awareness of the role of ICT), which echoes the outcomes of prior studies in the same field of study (Albirini, 2006; Cavas et al., 2009; Hong & Koh, 2002; Troutman, 1991; Sadik, 2006). Furthermore, these positive results demonstrated that EFL teachers' attitudes towards ICT use in classroom teaching in this study follows the upward trend suggested by Jimoyiannis and Komis (2006).

Nevertheless, the findings exhibited unclear attitudes from EFL teachers regarding the impact of online interaction on students and their ignorance about the negative influences of ICT. The major impact that the Covid-19 pandemic had on education was a sudden surge of ICT use to maintain educational activities during social distancing periods. On the one hand, EFL teachers have become more aware of the critical role of ICT in teaching and learning; on the other hand, they have also been simultaneously dealing with the emerging difficulties of this abrupt change. As a result, they are perhaps uncertain about their attitudes towards online interaction in EFL classrooms and they may no longer focus their attention on the negative influences of technology as they may have in the past. Hopefully, future studies can be carried out to provide further insights in connection with this finding.

The results indicated a strong positive correlation between the participants' level of comfort in using ICT in their EFL classes and their willingness to integrate it. Understandably, the more comfortable that they as teachers feel about using technology, the more willing they are likely to be to utilize it. Another strong positive association was found in the participants' awareness of the practical value of technology use and its positive impacts on learners. This means that if teachers believe technology use can increase their productivity, they are also likely to perceive its importance for learners in regard to their studies and future careers.

The results do not show any effects of age on the teachers' attitudes. This echoes some previous findings (Teo, 2008; Woodrow, 1992; Yilmaz & Byraktar, 2014), but is not in line with other prior studies (Cavas et al., 2009; Zyad, 2016). It is worth noting that this finding calls into question the relevance of the digital native/digital immigrant dichotomy suggested by Prensky (2001) within the specific context of EFL teachers' attitudes towards ICT use. To be more specific, Prensky (2001) proposed a distinct division regarding technology adoption, categorizing individuals as *digital natives* – those born in the digital world – and *digital immigrants* – those who

adapted to technology later in life. Prensky's 2001 dichotomy emphasized the significant impact of generational differences on the utilization of technology. Nevertheless, the absence of age-related variations in EFL teachers' attitudes towards ICT use in this study sheds light on the necessity for a more in-depth understanding of what drives EFL teachers to integrate technology into their teaching practices regardless of age.

Interestingly, no significant difference in teachers' attitudes towards ICT use among teachers working in different areas was reported. This is contrary to the assumption that teachers working in urban areas have easier access to ICT resources and facilities than those in underdeveloped areas, and hence they may show more positive attitudes towards ICT integration. This finding is consistent with what was found in Mahdum et al.'s (2019) study, but is inconsistent with the results of Zyad's (2016) study.

In line with the previous research (Baek et al., 2008; Inan & Lowther, 2010), the pilot study indicated that the participants who had fewer years of teaching experience (6-10 years and 16-20 years) were more comfortable with ICT use than those who had more teaching experience (21 years and above). However, this finding does not accord with previous studies wherein no associations between teaching experience and teachers' attitudes towards ICT use were found (Ndibalema, 2014; Semerci & Aydin, 2018).

Finally, a novel finding concerns the influence of job status (i.e., contract teachers and permanent teachers) on the participants' attitudes towards ICT integration. Contract teachers exhibited higher interest and stronger beliefs about the effectiveness of using ICT compared to permanent teachers, as well as greater awareness of the importance of ICT to students. The finding contributes to a better understanding of the effect of teachers' occupational status on their attitudes towards ICT use, a factor which had not been researched in previous studies on the topic.

## 6 Conclusion

As emphasized in the project entitled "Promoting ICT use and digital transformation in education and training during the 2022-2025 period with a vision towards 2030" approved by the Vietnamese Prime Minister, positive teacher attitudes play a crucial role in successful ICT integration in the classroom. Hence, it is important for research on teachers' attitudes towards ICT use to continue to expand. The present study was carried out to examine the reliability of a questionnaire for examining teachers' attitudes, gather preliminary findings, and investigate the effects of teachers' demographic characteristics on their attitudes towards ICT integration in primary school EFL classrooms in Vietnam.

The findings indicate that the instrument is reliable and can be used for future studies on this topic. The results also show that teachers display great interest, low anxiety, a high level of willingness to use ICT in their EFL teaching, increasing awareness regarding the usefulness of ICT use, and a clear perception of the significance of ICT integration for learners' development. On the other hand, they also exhibit unclear attitudes toward online interaction and minor concerns about the negative impacts of ICT use in EFL teaching. Teachers are more willing to adopt ICT in their EFL classrooms when they feel more comfortable and less anxious about its usage. Those who

believe that ICT integration is beneficial to their performance at work also tend to hold a strong belief regarding its crucial role in their students' learning performance and future careers. No significant effects based on teachers' age or school locations were found regarding their attitudes towards ICT incorporation. In connection with years of teaching experience, two groups of teachers with fewer years of teaching experience (6-10 years and 16-20 years) showed greater comfort in using ICT than those who had more years of teaching experience (21 years and above). Moreover, the results cast a new light on the influence of teachers' occupational status on their attitudes towards ICT use. Specifically, contract teachers in Vietnam tend to be more interested in utilizing ICT in their EFL teaching and have stronger beliefs regarding the usefulness of integrating ICT, as well as a greater awareness of the significant role of ICT in students' development compared with permanent teachers.

The study's findings have noteworthy implications for researchers, policy makers, and educational leaders. Primarily, the refined instrument employed for measuring teachers' attitudes towards ICT use has been demonstrated to possess reliability, making it suitable for future research within the same domain. Therefore, it is available for other fellow researchers to integrate in their studies within the same domain. Moreover, school leaders or policymakers can employ it to scrutinize teachers' attitudes towards ICT use in EFL teaching, which is necessary to some extent for their relevant tasks. Secondly, an investigation into the actual ICT use of teachers should be conducted to gain deeper insights into the relationship between EFL teachers' attitudes towards ICT use and their practical implementation in EFL teaching. Additionally, research can be undertaken to explain why permanent teachers demonstrated a higher perception of the significance of ICT use in EFL teaching but exhibited a lower level of interest compared to their contract counterparts. Finally, it is highly recommended to cultivate a positive and supportive working environment for teachers in terms of the ICT incorporation in their teaching practices. The more comfortable they feel, the higher the likelihood of utilizing ICT.

Although the research was conducted in the Vietnamese setting, its findings can potentially be generalized to other developing countries to broaden the understanding of teachers' attitudes towards ICT use in the classroom. This research not only provides a deeper understanding of teachers' attitudes towards ICT use but also reveals the influence of teachers' age, teaching experience, school location and occupational status on these attitudes. These results are thus meaningful and significant for policy-makers, educational administrators, and school leaders as they make efforts to foster positive attitudes in teachers which then can aid in the accomplishment of established educational goals.

One limitation of the pilot study is the uneven distribution of participants. The researcher will make efforts to ensure that the main study will contain an equal distribution of teachers so that more informative statistical analyses can be carried out, yielding more results from the gathered data. Future studies can also be carried out to clarify teachers' unclear attitudes regarding online interaction and ignorance regarding the negative impacts of ICT use.

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**APPENDIX A****Questionnaire**

Thank you for participating in this study.

My name is Vuong Thi Hoan. I am a doctoral student at the Faculty of Humanities, Eötvös Loránd University, Hungary. I am doing a piece of research on teachers' attitudes towards the use of Information Communication Technology (ICT) in language teaching. Therefore, this questionnaire aims to ask teachers at primary schools in Vietnam for information about their background and attitudes towards ICT use in language teaching. If you have any question, please do not hesitate to contact me at [hoanvuong@student.elte.hu](mailto:hoanvuong@student.elte.hu)

The questionnaire should be completed by you only. It should take about 15-20 minutes to complete.

This is not a test so there are no “right” or “wrong” answers. I am interested in your personal opinion. Please give your answers sincerely. If you do not know an answer precisely, your best estimate will be adequate for the purposes of the study.

Your answers will be kept confidential. No blank in the questionnaire requires your name fulfillment. They will be combined with answers from other teachers to calculate totals and averages in which no single teacher can be identified.

Thank you very much for your help.

**Teachers' attitudes towards ICT use****Part 1**

Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	A job using technologies is interesting to me.	1	2	3	4	5
2	I want to learn about technologies which I can use in my teaching.	1	2	3	4	5
3	I can explore a lot of interesting things when I use technologies in my teaching	1	2	3	4	5
4	I like using technologies in my teaching at school.	1	2	3	4	5

5	I think that working with technologies is enjoyable.	1	2	3	4	5
6	I find it exciting to learn about technologies.	1	2	3	4	5
7	I think that working with technologies is stimulating.	1	2	3	4	5

**Part 2**

Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	I feel anxious when I use technologies.	1	2	3	4	5
2	Working with technologies makes me feel frightened.	1	2	3	4	5
3	I find it challenging to learn about technologies.	1	2	3	4	5
4	Some technologies can be difficult to understand.	1	2	3	4	5
5	Working with technologies makes me feel worried.	1	2	3	4	5
6	I do not feel confident when it comes to working with technologies.	1	2	3	4	5
7	I feel anxious even when I think of using technologies.	1	2	3	4	5
8	Using technologies can be annoying.	1	2	3	4	5
9	Working with technologies makes me feel nervous.	1	2	3	4	5

**Part 3**

Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	I prefer not to take a job where I have to work with technology.	1	2	3	4	5
2	I don't use technologies in my teaching if I don't have to.	1	2	3	4	5
3	I can't think of any way to use technologies in my teaching.	1	2	3	4	5
4	I probably never use some technologies.	1	2	3	4	5
5	Learning about technologies is a waste of time.	1	2	3	4	5
6	I see the technologies as something I rarely use in my daily life.	1	2	3	4	5

**Part 4**

Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	I prefer online instruction.	1	2	3	4	5
2	Online environment helps to increase students' talking time.	1	2	3	4	5
3	Online instruction helps students understand the content easily.	1	2	3	4	5
4	Online classrooms require less teachers' preparation than face-to-face ones.	1	2	3	4	5
5	Online environment helps to increase the quality of interaction between teachers and students.	1	2	3	4	5
6	On-line environment makes it easy to communicate with students in class	1	2	3	4	5

7	Online communication is less stressful for the students than face-to-face one.	1	2	3	4	5
8	Students feel comfortable to answer questions presented in online classes.	1	2	3	4	5
9	Online environment provides a good teaching experience.	1	2	3	4	5
10	Online instruction is more efficient than in-person one.	1	2	3	4	5

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**Part 5**


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Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	Technologies are changing the world too rapidly.	1	2	3	4	5
2	Technologies have the potential to control our lives.	1	2	3	4	5
3	Technologies can take away people's jobs.	1	2	3	4	5
4	Using technologies prevents me from being creative	1	2	3	4	5
5	Technologies isolate people by preventing social interactions among user	1	2	3	4	5
6	If I use technologies, I become addicted to them.	1	2	3	4	5
7	The use of technologies in teaching distracts students' attraction.	1	2	3	4	5
8	Some teachers rely too much on technologies.	1	2	3	4	5
9	Working with technologies makes me feel isolated from other people	1	2	3	4	5

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**Part 6**


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Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	Technologies could help learners with learning difficulties understand	1	2	3	4	5
2	Technologies help me with teaching activities.	1	2	3	4	5
3	Technologies improve the overall quality of life.	1	2	3	4	5
4	Technologies are necessary tools in educational settings.	1	2	3	4	5
5	Technologies help to improve education.	1	2	3	4	5
6	Technologies can increase my productivity.	1	2	3	4	5
7	Using technologies helps me to be a good teacher.	1	2	3	4	5
8	Technologies can be useful instructional aids in almost all subject areas.	1	2	3	4	5

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**Part 7**


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Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	I like reading about technologies.	1	2	3	4	5
2	I always try to use technologies in my teaching as much as I can.	1	2	3	4	5

3	I like to talk to others about technologies	1	2	3	4	5
4	When there is a technological problem that I can't immediately solve, I stick with it until I have the answer.	1	2	3	4	5
5	It is fun to figure out how technologies work.	1	2	3	4	5
6	I don't like the challenge of solving problems with technologies.	1	2	3	4	5
7	If a technological problem is left unsolved in a class, I continue to think about it afterward.	1	2	3	4	5

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**Part 8**


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Instruction: select one level of agreement that best describes how you feel

1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree

1	Technologies can encourage creativity in students.	1	2	3	4	5
2	All students should have an opportunity to learn with technologies at school.	1	2	3	4	5
3	Having technological skills helps one get a good job.	1	2	3	4	5
4	It is important for students to learn with technologies in order to be informed citizens.	1	2	3	4	5
5	Technologies can provide students with different methods of learning.	1	2	3	4	5
6	Students should understand the role technologies play in society.	1	2	3	4	5

**Background information**

1. What gender do you identify as?
  - Male
  - Female
  - Prefer not to answer
2. What is your age?
3. What is the highest degree or level of education you have completed?
  - Degree of Associate
  - Degree of Bachelor
  - Degree of Master
  - Degree of Doctor of Philosophy or higher
4. What is your current employment status?
  - A contract teacher
  - A permanent teacher
5. What type of school are you teaching at?
  - A private school
  - A public school
6. Where is your school located?
  - North Vietnam
  - Central Vietnam

- South Vietnam
- Central Highlands, Vietnam

7. Please specify your school district

- Rural
- Urban

8. I am teaching at

- 1<sup>st</sup> grade
- 2<sup>nd</sup> grade
- 3<sup>rd</sup> grade
- 4<sup>th</sup> grade
- 5<sup>th</sup> grade

9. How many years of teaching experience do you have?

10. Have you ever attended any training courses on technology use in language teaching organized by the Department of Education and training?

- Yes
- No

11. Have you ever attended any online training courses on technology use in language teaching?

- Yes
- No

12. Do you want to add any comments on technology use?