



VIETNAMESE HIGH-SCHOOL TEACHERS' PERCEPTIONS OF TPACK IN TEACHING ENGLISH AS A FOREIGN LANGUAGE

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Abstract:

Technology-driven changes have led to the needs for knowledge and skills to integrate information and communication technology into instructional activities. This competence, described as the TPACK (technology, pedagogy and content knowledge), attracts relatively extensive scholarship in education. Further research, however, remains essential to develop further insights into teachers' TPACK for foreign language education. Against such a backdrop, this study was conducted to examine Vietnamese teachers' perceptions of TPACK in an EFL context. A 34-item survey adapted from Bostancıoğlu and Handley (2018) was used to collect data from 120 English teachers of 33 high schools in two Mekong Delta's provinces of Vietnam. Quantitative analysis showed that the teachers had a high level of basic computer and office technologies, and pedagogical content knowledge, but they rated their ability to integrate technologies with pedagogical content knowledge just above the average level. No significant differences in their TPACK were observed in terms of their teaching experience, technology training, and gender, except for technology use frequency. The findings confirm that trainers and educators should pay closer attention to supporting teachers both pre-service and in-service to develop TPACK as an integrated ability, instead of knowledge of technology per se. Besides, teachers' TPACK levels interact with the use frequency, so it is crucial for teachers to use technology frequently to increase their TPACK self-efficacy.

Keywords: EFL teacher, technology integration, TPACK

1. Introduction

The robust influence of globalization has led to the issue of Resolution 29/NQ-TW on fundamental comprehensive innovation in Vietnam (Central Committee of Party, 2013). The Resolution has proposed directions and measures to improve the quality of education and training, in which technological measures play a crucial role in promoting the innovation process. In fact, information and communications technology (ICT) was

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inducted into the country in the early 1990s, yet the country has just entered the phase of technology integration (Le, & Song, 2018; Nguyen, 2019). In educational policy, professional standards have also been promulgated, specifying technology knowledge standards required of school teachers for enhancing instruction (MOET, 2014). However, the transition from computer literacy to technology integration skills is slow but inevitable in the current context of digitalization. Studies in Vietnam have shown that the application of ICT is still restricted due to unequal access, technical support, and especially teacher knowledge and skills of technology integration (Le & Song, 2018).

Meanwhile research on technological pedagogical content knowledge (TPACK) has attracted extensive scholarship worldwide (Prasojo et al., 2020; Rosenberg & Koehler, 2015; Sariçoban et al., 2019; Tseng, 2016; Voogt & McKenney, 2017; Willermark, 2018). As a theoretical construct, the TPACK model, proposed by Mishra, & Koehler (2006), provides a depiction of the knowledge base for integrating technology into instructional activities. With TPACK, technology assisted teaching is widely understood as the ability to blend three fundamental dimensions of knowledge: pedagogy (PK), technology (TK) and content (CK) to achieve teaching objectives.

As described in Figure 1, the TPACK framework refers to the interface of three knowledge components: TPK (technology and pedagogy), TCK (technology and content), and Shulman's (1987) PCK (pedagogical content knowledge). In foreign language teaching, PCK for example, means the knowledge and skills to use suitable language teaching methods to represent the language content comprehensively. TCK indicates the knowledge of various technological tools and their affordances that can be used to represent foreign language contents, such as Hot Potatoes or Web 2.0 tools which allow teachers to create their own language resources. TCK differs from general technological knowledge (TK), which refers to skills in computer generic hardware and software, information storage and retrieval, or operating cameras or video recordings, and basic applications like Word processing or Excel. Besides, teachers need the ability to apply technology to enhance cognition such as stimulating learners' motivation, attracting their attention, and promoting their interaction, which is referred to as TPK. For example, Wiki is a useful application to promote collaborative learning or work which is suitable for activities like creating posters, newspapers, handbooks, etc.

The three integrated components PCK, TPK, and TCK are the results of interaction between CK, TK, and PK. In other words, *"TPACK is the basis of good teaching with technology and requires an understanding of the representation of concepts using technologies"* (Mishra & Koehler, 2006 p.1029). The key idea of this multidimensional theoretical construct is that it does not emphasize or advocate any teaching perspective or method, but depending upon the content and context, the integration will be adapted (Bostancıoğlu & Handley, 2018).

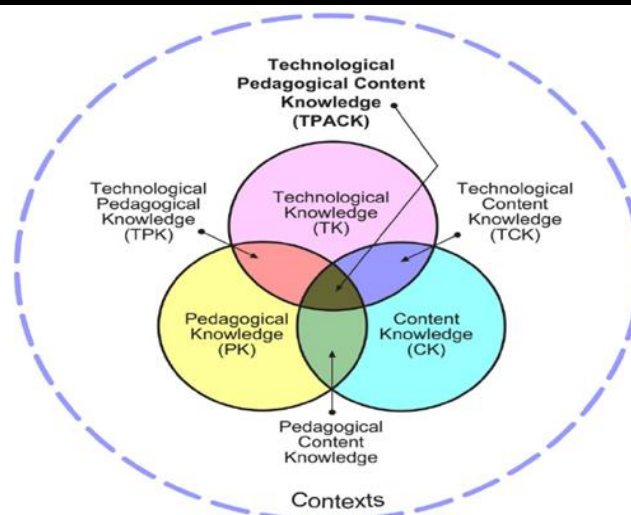


Figure 1: TPACK model image ©2012 by tpack.org

One issue that has attracted growing scholarship regards operationalizing and measuring the multidimensional nature of TPACK (Abbitt, 2011; Baser et al., 2016; Bostancioğlu & Handley, 2018; Chai et al., 2011; Chai et al., 2013; Mohammad, 2020; Nazari et al., 2019; Nguyen, 2019; Tseng, 2016). A body of research works attempted to validate the delineation of TPACK subconstructs by using exploratory factor analysis (EFA) and confirmation factor analysis (CFA) (Baser et al., 2016; Bostancioğlu & Handley, 2018; Chai et al., 2011; Sariçoban et al., 2019; Schmidt et al., 2009), but these studies have extracted the different numbers of factors that form the model based on different educational contexts. Mohammad (2020), for example, successfully extracted seven factors among which the TCK was replaced with WCK, or the knowledge of using webs and online resources for teaching English. In contrast, Bostancioğlu and Handley (2018) found that PK and PCK items loaded on the same factor, giving rise to a six-factor measure. Other studies likewise indicated the unclear boundary between PK and PCK (e.g., Chai et al., 2011; Chai et al., 2013). Research in language education has further pointed out the relationship between language teachers' TPACK and their pedagogical beliefs or attitudes (Kozikoğlu & Babacan, 2019) as well as their technology practice (Hsu, 2016).

Most of the studies on validating and measuring TPACK in language education have focused on pre-service teachers (Kurt et al., 2013; Le & Song, 2018; Öz, 2015; Tseng, 2016). A few studies have, nonetheless, examined in-service language teachers' TPACK. In Turkey, Kozikoğlu and Babacan (2019) surveyed 721 English teachers and concluded that they have a high level of TPACK, and that teaching experience makes no difference in the teachers' TPACK levels. However, teachers who received TPACK training had a higher level of TPACK than those without training. Turgut (2017) found the pre-service teachers and teacher candidates had a higher level of confidence than the in-service teachers in TPACK. Likewise, Nazari et al. (2019), employing two research instruments: a questionnaire adapted from Schmidt et al. (2009) and an in-depth interview, indicated that the EFL experienced teachers in Teheran had higher scores on PK and PCK; in

contrast, the novice teachers had higher scores on TK, TCK, TPK and TPCK. The finding of this study suggests that age and experience might negatively correlate to TPACK competence. Meanwhile, the in-service EFL teachers in Indonesia were found to be lacking in TK but adequate in the other knowledge components (Prasojo et al., 2020). In Taiwan, research similarly indicated elementary English teachers' need for TK to develop TPACK which focused on motivating students rather than creating opportunities for using English (Wu & Wang, 2015). Rouf and Mohamed (2018) who conducted a case study with secondary school teachers in Bangladesh similarly showed that the teachers had basic understanding of technology but failed to use their knowledge effectively in teaching English.

Alongside a paucity of research on EFL in-service teachers' TPACK worldwide, in Vietnam few studies both in and outside the ELT field have attempted to propose a technology integration model and develop a TPACK instrument to gauge teachers' technology integration competence. This highlights the need for further research on TPACK in the educational context of Vietnam (Le & Song, 2018; Nguyen, 2019). While Le and Song (2018) focuses on training pre-service teachers for TPACK, Nguyen's (2019) study concentrates on school teachers in general, scant research has yet to examine the in-service EFL teachers' perceptions in high schools. It was noted that the EFL-TPACK needs to be validated in a wider range of contexts (Baser et al., 2016; Bostancıoğlu & Handley, 2018). Therefore, the current study was conducted to expand the understanding of EFL-TPACK as a tool for assessment and development of teachers' ability to implement technology assisted teaching of English as a foreign language.

2. Methodology

2.1 Research Aims

This study aims to assess English high-school teachers' perceptions of integrating knowledge of technology, content and pedagogy in the context of Vietnam. It first seeks to reevaluate the EFL-TPACK adapted from Bostancıoğlu and Handley (2018), then examines high-school EFL teachers' perceived TPACK. The following questions are answered:

- 1) What is the internal reliability of the EFL-TPACK instrument verified by the Vietnamese high-school EFL teachers' self-assessment of their TPACK?
- 2) What is the Vietnamese high-school EFL teachers' perceived TPACK?
- 3) Is there any difference in their TPACK perceptions in terms of demographic variables?

2.2 Survey Questionnaire

The survey method was opted to achieve the research objectives. Self-reporting is commonly used in TPACK evaluation research (Rosenberg & Koehler, 2015; Willermark, 2018) because the major advantage of this method lies in its capacity to quantify data and verify scale reliability. Thus, the EFL-TPACK survey of Bostancıoğlu and Handley (2018)

was adapted. This questionnaire had been validated through three phases involving the participation of a large number of English experts and teachers of English as a Foreign Language (EFL) from many countries. The validation was conducted through (1) the expert review of item pool (2) explorative factor analysis (EFA) and (3) confirmatory factor analysis (CFA). In addition, the construct was measured against the EFL teachers, so adapting the questionnaire items would better suit the Vietnamese context and guarantee the instrument reliability.

Specifically, for the CK questions were adjusted in accordance with the six-level language competency framework according to the provision of Dispatch No. 792/BGDĐT-NGCBQLGD (MOET, 2014), and especially the general specification for level 5 (C1-CEFR), the standard applied to Vietnamese high school teachers. For other knowledge components such as TK, PCK, TPK, TPCK, the items were rephrased. All the items were then translated into Vietnamese and checked carefully to ensure the respondents understood the contents precisely. There were 36 items intended to investigate six factors, as Bostancıoğlu and Handley (ibid.) found that PK and PCK loaded onto one.

Most TPACK surveys use the Likert 'disagree-agree' scale (1-5 points), and its internal reliability coefficients are relatively high. Nevertheless, this scale semantic is not explicit to respondents in terms of determining their specific level of understanding or abilities. For example, the response 'I agree' to 'I can use office software' cannot accurately indicate the respondent's ability to use the software. Therefore, in the current study, we used a more semantically specific assessment scale. For example, for TK and TCK, the following scale was utilized:

- 1= I've never heard of it (i.e., don't know / have no knowledge)
- 2= I know but have never used it (i.e., know but unknown skill to use the technology)
- 3= I can use it, but need to make efforts (i.e., average ability)
- 4= I can use it, but can't guide others (i.e., relatively proficient)
- 5= I can use it and guide others (i.e., proficient)

Likewise, an equivalent scale was devised for other dimensions of the TPACK construct (TPK, CK, PCK, & TPCK) with similar meanings.

- 1= I am not confident at all (not knowing)
- 2= I am not confident (little knowing)
- 3= I need to make effort in this skill (average);
- 4= I am confident/proficient, and
- 5= I am very confident/proficient

The item codes of the original version were retained to help readers easily corroborate. For example, for item TKA5, TK stands for technological knowledge, and A5 (paraphrased) represents the item loaded on TK as indicated in the original questionnaire (see Bostancıoğlu & Handley, 2018).

2.3 Sampling and Participants

Due to difficulty in approaching the teachers' profiles, we relied on convenience sampling to collect the data. We came directly to schools both inside and outside the urban areas in the region that we could approach. Upon getting permission from the school principals, we delivered the printed questionnaire. The teachers had one week to consider to participate and complete the questionnaire. After one week, we came back to collect the ones that were returned.

The participants in the survey were 120 English teachers working in 33 high schools in the Mekong Delta of Vietnam. Out of the total, there were 33 male teachers and 87 female teachers; 77 (64.2%) teachers were based at rural schools, and 43 (35.8%) teachers were working at town or urban schools. In terms of teaching experiences, the participants consisted of 4 groups: less than 9 years (19.5%), 10-15 years (36.7%), 16-19 years (23.3%), and from 20 years (20.8%). All of them have obtained BA degrees in English language or teaching. Only 6 of the teachers held an MA in TESOL.

2.4 Data Analysis

The data were entered into the SPSS 20.0 Statistical Package Program for analysis. After checking the data for accuracy, using frequency, we ran a six-factor extraction factor analysis to reassess the delineation of the factors. Then the Cronbach's alpha for each factor was calculated for each factor. Descriptive statistics were then used to analyze the teachers' TPACK understanding. Independent-samples t-test and ANOVA tests were also run to explore their perceptual differences.

3. Findings

Research question 1: What is the internal reliability of the TPACK instrument verified by the Vietnamese high-school EFL teachers' self-assessment?

On running a principal axis factoring with loading indices minimally set as .50, a six-factor extraction was revealed. The items were loaded on six factors as reported in the original version, but item TKA15 failed to load on the TK factor. So, we removed it, leaving a 35-item survey instrument. Then, the internal reliability coefficient of each cluster was calculated, yielding high levels of coefficients as presented in Table 1. This confirms that the instrument can be used for assessing the Vietnamese EFL teachers' perceived TPACK.

Table 1: Standardized internal reliability of TPACK questionnaire

Clusters	Number of items	Cronbach's Alpha
TK	4	.837
TCK	7	.941
CK	5	.860
PCK	7	.880
TPK	6	.888
TPCK	5	.856

Research question 2: What are the Vietnamese high-school EFL teachers' perceptions of their TPACK?

Given the verification above, descriptive statistics were run, and the results described in Table 2 show that the level of teachers' understanding of basic computer technology was relatively high (Total Mean = 4.18, SD= .866), with average scores ranging from M = 3.97 (TKA18) to M = 4.3 (TKA16).

Table 2: Vietnamese High school EFL teachers' perceptions of TK

TK scale alpha = .837	Mean	SD.
TKA5. Using computer based communication technology (Email, Chat, Zalo...)	4.26	.865
TKA16. Using digital storage tools (e.g., USB, memory sticks)	4.30	.826
TKA17. Using Microsoft word processing (e.g., Word, PowerPoint)	4.28	.790
TKA18. Projecting audio and video files	3.97	.983
Total Mean	4.18	.866

However, regarding the potential technologies used for English language teaching as shown in Table 3, the teachers' perception overall tended to be only at the average level (Total Mean = 3.26, and SD = 1.07); the lowest score was rated for technology used in speaking and writing (M = 3.02); and the highest score was for knowledge of technology used for teaching vocabulary (M = 3.47). The results are generally consistent with the fact that technology is being gradually integrated into the subject content.

Table 3: Vietnamese high-school EFL teachers' perceptions of TCK

TCK scale alpha = .941	Mean	SD
TCKD1. Knowing technologies used for teaching listening	3.26	0.59
TCKD2. Knowing technologies used for teaching speaking	3.02	1.08
TCKD3. Knowing technologies used for teaching reading	3.20	1.09
TCKD4. Knowing technologies used for teaching writing	3.02	1.08
TCKD5. Knowing technologies used for teaching grammar	3.20	1.05
TCKD6. Knowing technologies used for teaching vocabulary	3.47	1.02
TCKD7. Knowing technologies used for teaching pronunciation	3.35	.932
Total Mean	3.26	1.07

Table 4 shows the teachers' perceptions of their content knowledge with a focus on language proficiency. They overall rated their level as average in most of the skills described (M = 3.32; SD = .655). Among them, their cultural understanding was the lowest, below the average level (M = 2.75). This result also reflects a general situation regarding Vietnamese teachers' low English proficiency through the Project NFL2020's survey over recent years (Nguyen, 2014, as cited in Nguyen & Chung, 2021). Although many teachers may have met the required English proficiency standards at the survey time, sustainability in professional development should be considered (Nguyen & Chung, 2021).

Table 4: Vietnamese high school EFL teachers' perceptions of CK

CK scale alpha = .86	Mean	SD
CKC5. Understand a range of long, complicated English texts**	3.45	.732
CKC6. Understand long English speeches on different topics**	3.22	.758
CKC7. Self-monitor and regulate accuracy in writing English	3.59	.845
CKC8. Self-monitor and regulate accuracy in speaking English	3.62	.801
CKC9. Understand the cultures of English speaking countries	2.75	.900
Total Mean	3.32	.655

(** Items adapted from C1/level CEFR descriptor)

Meanwhile, the teachers' pedagogical knowledge for English teaching, as indicated in Table 5, was quite proficient in all criteria related to selecting appropriate methods, organizing activities, giving feedback to engage students in learning activities and facilitate the learning process (Total Mean = 3.95, SD = .539), and all the items achieved a high mean score (from M =3.70).

Table 5: Vietnamese high-school EFL teachers' perceptions of PCK

PCK scale alpha = .88	Mean	SD
PCKE6. Select appropriate methods for teaching students.	3.84	.686
PCKE7. Plan how and when to speak English in the classroom, including using terminology to explain about English.	3.70	.805
PCKE8. Recognize students' language errors (e.g. vocabulary, grammar, pronunciation).	4.08	.762
PKB3. Respond positively to students.	4.06	.759
PKB11. Use different methods for assessing students' learning	4.03	.755
PKB12. Get students engaged in tasks	3.93	.670
PKB14. Create opportunities for individuals, groups and whole class to participate in the learning process	4.01	.692
Total Mean	3.95	.539

In contrast, in both TPK and TPCK groups, the self-reported results (shown in Table 6 and Table 7) indicate similar average levels. Accordingly, the participating teachers thought that their ability to apply ICT in teaching English was just above the average (TPK total mean = 3.48, SD = .62; TPCK mean = 3.39, SD = .668). In particular, the lowest scores pertained to their knowledge of deploying digital resources for designing learning activities (M= 3.06; SD = .946); and the ability to apply technology to cultural teaching and learning to develop students' empathy with cultural differences (M = 3.18, SD = .85). These results mean that many of the teachers were not confident about exploiting network resources to design learning activities. In contrast, the self-efficacy in using technology for designing and teaching specific lessons was highly scored (e.g., TPKF2 and TPKF3). This might be due to the fact that the teachers were familiar with and often used presentation tools such as PowerPoint, as a basic requirement in their teaching contexts.

Table 6: Vietnamese high-school EFL teachers' perceptions of TPK

TPK scale alpha = .888	Mean	SD
TPKF2. Select appropriate technologies to support the teaching of a particular English lesson.	3.73	.753
TPKF3. Select suitable technologies to enhance the effectiveness of an English lesson.	3.62	.722
TPKF5. Flexibly use technology in alignment with teaching activities.	3.57	.775
TPKF6. Use technology to design appropriate experiential learning activities to enhance learning effectiveness.	3.48	.710
TPKF7. Select appropriate technology to assess students' learning	3.41	.772
TPKF8. Engage students in using technology and digital resources to solve real-life problems (e.g., doing projects)	3.06	.964
Total Mean	3.48	.620

Table 7: Vietnamese high-school EFL teachers' perceptions of TPACK

TPCK scale alpha = .856	Mean	SD
TPCKG4. Use technology effectively to communicate ideas to students and colleagues.	3.49	.788
TPCKG5. Use technology to stimulate students' curiosity and pursuit of their interests.	3.50	.767
TPCKG6. Use a range of technologies to encourage students to actively participate in learning English.	3.42	.816
TPCKG7. Create opportunities for students to access technology and online resources for learning English.	3.37	.860
TPCKG8. Use technology to increase students' understanding of cultural differences and learning about different cultures.	3.18	.850
Total Mean	3.39	6.68

Research question 3: Is there any difference in the teachers' TPACK perceptions in terms of demographic variables?

On running the independent samples t-tests and ANOVA tests to explore the differences in the teachers' self-assessed TPACK, we found that there were no perceptual variations with regards to gender, working locations (countryside versus city), and training in technology (no training versus training both short-term and professional coursework) with all the probability significance levels above $p = .05$. However, some differences in their TPACK were observed in terms of their years of teaching and experience in using technology. As shown in Tables 8 and 9, the teachers differed in their TK whereby those with less than 5 years and above 20 years tended to be less confident than the other groups ($p < .05$). Similarly, teachers who used technology more often than others tended to perceive TPACK at a higher level in respect of TK, TCK and TPCK ($p < .05$).

Table 8: Vietnamese EFL teachers' TPACK difference by teaching experience

		Sum of Squares	df	Mean Square	F	Sig.
MeanTK	Between Groups	5.564	4	1.391	2.750	.032
	Within Groups	58.168	115	.506		
MeanTCK	Between Groups	1.061	4	.265	.342	.849
	Within Groups	89.224	115	.776		
MeanCK	Between Groups	1.227	4	.307	.727	.576

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	Within Groups	48.538	115	.422		
MeanPCK	Between Groups	.911	4	.228	.718	.581
	Within Groups	36.456	115	.317		
MeanTPK	Between Groups	1.960	4	.490	1.260	.290
	Within Groups	44.738	115	.389		
MeanTPCK	Between Groups	.286	4	.072	.164	.956
	Within Groups	50.071	115	.435		

Table 9: Vietnamese EFL teachers' TPACK difference by technology use experience

		Sum of Squares	df	Mean Square	F	Sig.
MeanTK	Between Groups	5.377	2	2.689	5.391	.006
	Within Groups	58.355	117	.499		
MeanTCK	Between Groups	7.583	2	3.792	5.364	.006
	Within Groups	82.702	117	.707		
MeanCK	Between Groups	1.199	2	.600	1.444	.240
	Within Groups	48.566	117	.415		
MeanPCK	Between Groups	.576	2	.288	.916	.403
	Within Groups	36.791	117	.314		
MeanTPK	Between Groups	1.450	2	.725	1.875	.158
	Within Groups	45.248	117	.387		
MeanTPCK	Between Groups	3.295	2	1.647	4.096	.019
	Within Groups	47.062	117	.402		

In short, the Vietnamese English teachers generally perceived their TPACK at an average level although they highly assessed their knowledge of technology and pedagogy. Demographic variables generally do not make any significant difference in their TPACK, except the frequency use of technology.

4. Discussion and Implications

The present study examines the high-school EFL teachers' perceptions of TPACK in Vietnam by using a self-report survey. The survey results overall indicate that the internal reliability of the EFL-TPACK survey questionnaire confirmed that of Bostancıoğlu and Handley (2018). The item TKA15 regarding the understanding of basic computer hardware and operations was not loaded on any factor. This may be because this knowledge is perceived to be unrealistic by many Vietnamese teachers who prefer practical skills and technology that can be immediately applicable to their teaching. Additionally, a six-factor model is confirmed, showing consistency with other studies (Bostancıoğlu & Handley, 2018; Chai, Chin, Koh & Tan, 2013; Chai, Koh & Tsai, 2011).

Besides, the survey results reveal that the high school English teachers' TPACK perceptions are high in TK and PCK, but their perceptions of TPK, TCK, CK, and TPCK are just above the medium level. This result may be due to the interaction between the knowledge components, particularly the relatively high correlations between TCK and TPCK ($r = .61$), between TPK and TPCK ($r = .66$), and between TCK and TPK ($r = .69$) (Bostancıoğlu, & Handley, 2018). The Vietnamese teachers' TPACK level seems to be

lower than what previous studies found among pre-service teachers and teacher candidates (Öz, 2015; Sariçoban, et al., 2019; Turgut, 2017), and among the in-service teachers in the Turkish context (Kozikoğlu, & Babacan, 2019) who hold high levels of TPACK self-efficacy. Compared to the Indonesian teachers in Prasojo et al. (2020), and Taiwanese teachers in Wu and Wang (2015), however, the Vietnamese teachers outweighed in TK. This might be due to the fact that they teach different levels and have different needs for technology.

The non-significant difference in the Vietnamese teachers' overall TPACK in terms of gender ($p > .05$) is consistent with what Sariçoban et al. (2019) reported. However, the male teachers were found to be more able than the females only in TPKF8 ($p = .047$). This minor difference could be because in the Vietnamese culture, men are usually more oriented towards technology, but overall females, with equal educational chances in today's era, tend to show comfort in using technologies (Le & Song, 2018). The result overall differed from what Prasojo et al. (2020) found about the outweighing ability of female teachers in TPACK.

The fact that professional experience made no marked difference among the groups of teachers with various years of teaching in most constructs overall echoes previous research (Kozikoğlu, & Babacan, 2019). This finding appears to echo Nazari et al. (2019) who found that the experienced teachers in Teheran had higher pedagogical than technological skills compared to the novice ones. In contrast, Prasojo et al. (2020) found the stronger competence among young teachers compared to older teachers. These differences need to be further observed through interviews and observations.

Surprisingly, training experience has little influence as similarly pointed out in a previous study in Vietnam (Le & Song, 2018), contrary to the effect of training observed in other contexts (Kozikoğlu & Babacan, 2019; Yuksel & Yasin, 2014). This difference could be firstly due to the design of training programs, especially the opportunity for practice and reflection, and additionally to the situation that multiple factors constrained the use of trained knowledge in practice such as exam-oriented assessment and teaching, the lack of facilities and the like (Le & Song, 2018). As shown in the current study, the evidence that they varied in the perceived abilities in TK, TCK and TPCK with regards to their experience frequency with technology speaks of the importance of technology deployment in teachers' change in their TPACK perception and competence as pointed out previously (Rouf & Mohamed, 2018).

The study implies that the EFL-TPACK is potential for assessing and training teachers in technology for teaching English. In terms of training, there is a need to emphasize the integration skills and knowledge instead of focusing on TK per se. Training contents should also cater to their needs and real situations. Besides, teachers should be engaged in using what they learned more frequently so that they can develop their TPACK competence and self-efficacy.

5. Conclusion and Suggestions

Researching EFL teachers' TPACK is essential for contributing to EFL teacher education and development. The current research revealed evidence to conclude that EFL teachers' TPACK is an evolving capacity alongside the context in which they are situated. Experience in using technology plays a crucial role in their TPACK development. Besides, there is no clear evidence about the effect of gender, working years as well as training on teachers' TPACK. Some limitations are to be acknowledged. First, the sample is not representative of all the EFL high school teachers in Vietnam, so further research could be conducted on a larger sample, using random sampling and involving teachers working at various levels. Another weakness is the lack of qualitative data on their real practice which could be collected through observations or lesson plan analysis. Exploring these sources would give insights into their TPACK competence. Further research in the context could be conducted on a larger sample to further validate the instrument for using as a self-assessment tool for teachers in ongoing professional development and teacher education.

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Conflict of Interest Statement

The author declares that no conflicts of interests exist regarding this publication.

About the Author

Nguyen Van Loi is currently working as a TEFL educator at Can Tho University. His research interests include English language teaching and learning issues, teacher cognition and professional development, and technology in teaching English.

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