Computer Assisted Language Learning Electronic Journal (CALL-EJ), 23(4), 162-186, 2022

Evaluating the Design and Delivery of an Online Community-Based Course to Develop School Teachers' TPACK for Emergency Remote Teaching

Tien M. Mai (tien.mm@ou.edu.vn) *Corresponding author
Ho Chi Minh City Open University, Vietnam

Long T. D. Tran (long.ttd@ou.edu.vn)
Ho Chi Minh City Open University, Vietnam

Mai T. X. Nguyen (mai.ntx@ou.edu.vn)
Ho Chi Minh City Open University, Vietnam

Linh V. P. Le (linh.lvp@ou.edu.vn)
Ho Chi Minh City Open University, Vietnam

Ngan H. K. Vo (ngan.vhk@ou.edu.vn)
Ho Chi Minh City Open University, Vietnam

Abstract

Under the impact of Covid-19 variants and long lockdown, Vietnam's K-12 system had to implement emergency remote teaching and learning (ERT) in most areas during the first semester of the 2021-2022 academic year. To support public school teachers' digital responses, the research team designed and delivered a 20-hour free fully online course targeting two cohorts of primary and secondary school English as a Foreign Language teachers in two consecutive cycles. The course design and delivery were theoretically framed around the modeling of Technological Pedagogical Content Knowledge (TPACK). Employing an exploratory case study design, we evaluate the course impacts on participants' TPACK for ERT. Qualitative data is drawn from 24 active participants' post-course survey responses. Findings illustrate the participants' positive perceptions of the course design and delivery as well as their TPACK mindset development thanks to the trainers' modeling the interplay of technology, pedagogy, and content. More importantly, participants highlighted the inclusion of a lengthened schedule, early socialization, and instructional support for teachers who had low technical knowledge. Hence, we suggest revisions of TPACK-driven course design and delivery for remote teaching in future cycles, which can benefit online professional development program developers and beneficiaries.

Keywords: TPACK, emergency remote teaching, online professional development

Introduction

In the second year of the pandemic, Covid-19 variants significantly disrupted the operation of Vietnam's educational systems. Vietnam had to implement an extended lockdown, and schools unwillingly initiated remote teaching and learning in most areas throughout the 2021-2022 academic year. In fact, the Covid-19 pandemic is the worst education crisis, affecting more than 1.5 billion global learners due to school closures (UNESCO, 2021). In a time of global crisis, teachers felt overwhelmed and underprepared to transform their practices due to the influence of students' unreliable Internet access, needs, and uncertain educational or top-down directives (Trust & Whalen, 2020). Many educators now are "building the plane while flying it": learning to teach online while teaching online at the same time (Trust & Whalen, p.193). Where remote teaching happens for the first time, there is an immediate need for teacher training related to their readiness and equity of access to resources (Leacock & Warrican, 2020). MacIntyre et al. (2020) reported that teacher training projects should rely heavily on activities developing teacher's well-being, reducing burnout, and keeping them in the profession. Against the backdrop of the Covid-19 impacts, professional support is mandated for both Vietnamese primary school teachers (Dau, 2022) and secondary school teachers (Vo, 2021).

To support public school teachers' digital responses in Vietnam, we designed and delivered a 20-hour free online course entitled *Tech Menu for ERT Techniques and Tools: A Survival Combo*. Guided by emergency remote teaching (ERT) (Hodges et al., 2020) and Technological Pedagogical Content Knowledge (TPACK) (Koehler & Mishra, 2009), the course was designed to serve primary and secondary school English as a Foreign Language (EFL) teachers. In this paper, we document details of the course design and delivery as well as evaluate its impacts on participants' development of TPACK for ERT.

In the following section, we will review studies concerning online teacher learning, the TPACK framework, and EFL teacher training in Vietnam.

Literature Review

Online Professional Development

Scholars investigate whether online professional development (OPD) programs can be as effective as in-person ones. The medium does not matter if OPD is based on fundamental teacher education principles (Perry et al., 2021). To enact effective OPD, the inclusion of hands-on activities, reflection, collaboration, and observations should be taken into account (Stickler et al., 2020). In light of OPD for ERT, notable studies have described several models supporting K-12 teachers. In a webinar project for EU-based teachers, participants were engaged because they could pose questions to the experts and shared collective ideas to deal with Covid-19 setbacks (Pozo-Rico et al., 2020). Another important finding supporting OPD for ERT can be found in an evaluation of a mini-MOOCs initiative (Boltz et al., 2021). The course designers reported that the course content increased participant's repertoires of skills to teach remotely. Such studies are worthwhile and suit the needs of educators. In the field of English language teaching, the one-size-fits-all approach for OPD in ERT has been downplayed, and diverse contexts for EFL have been emphasized (Gao & Zhang; 2020; Li, 2022; Moorhouse & Kohnke,

2021). However, limited research has been carried out to evaluate design and delivery of OPD for ERT in low-income countries.

The TPACK Framework

With respect to computer-assisted language learning (CALL) teacher training, TESOL's Technology Standards Framework (2008) advocated the shift away from tools-based workshops, heading towards pedagogy-based activities, for example, content curation, educational escape rooms, and flipped learning (Asiri et al., 2021). Activities modeled in CALL training should not be taken out of context; instead, the integration of a *"*pedagogical dialog*"* should be favored (Jaipai & Figg, 2015, p.155). To guide teachers' integration of technology into education, Koehler and Mishra (2009) proposed the TPACK framework, which determined intersecting knowledge domains. Theoretically, they specified the following capacities:

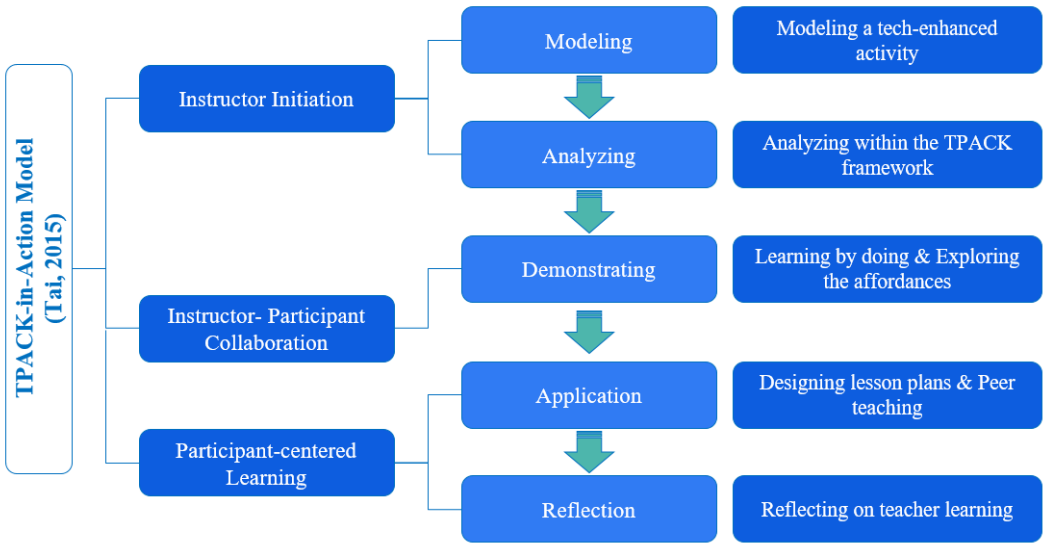
- Content Knowledge (CK): knowledge about curriculum aims and resources
- Pedagogical Knowledge (PK): knowledge about teaching methods and strategies
- Technological Knowledge (TK): knowledge about computer hardware and digital tools
- Pedagogical Content Knowledge (PCK): knowledge of adapting and developing materials based on learners' needs and interests
- Technological Content Knowledge (TCK): knowledge of using appropriate digital tools based on curriculum materials
- Technological Pedagogical Knowledge (TPK): knowledge of activating technological affordances to overcome pedagogical constraints
- Technological Pedagogical Content Knowledge (TPACK): knowledge of integrating digital tools effectively based on instructional aims, curriculum materials, and teaching methods

Subsequently, numerous studies have explored the adoption of a TPACK-driven training model for teachers from the perspectives of stakeholders and school teachers in Asia (Aisyah et al., 2021; Arcueno et al., 2021; Nasri et al., 2020; Tafazoli, 2021). Despite Covid-19 challenges, teachers developed their TPACK in a limited time (Can & Silman-Karanfil, 2022), and TPACK competence empowered them to navigate through the transition period and increase students' engagement (Marissa & Allahji, 2022). On the other hand, the process of enacting TPACK can encounter certain challenges. Novita et al. (2022) reported a government-initiated TPACK study narrating teachers' lack of wider sociocultural perspectives and experiences. Experienced teachers, who perceived TPACK as different from novice teachers, might not develop their TK to promote their professional development (Nazari et al., 2019). Therefore, OPD should be geared toward helping teachers to notice their highly contextualized TPACK.

To design effective TPACK intervention programs, course developers are advised to make an explicit introduction of TPACK to trainees, modeling technology integration, and facilitate trainees' engagement in collaborative lesson designing (Tseng et al., 2022). Incorporating TPACK competence, the TPACK-in-Action model has been employed in various training settings. The model is illustrated in Figure 1 below, offering a coherent

workflow for instructor-initiated, instructor-participants collaboration, and participant-led activities.

Figure 1
TPACK-in-Action, adapted from Tai (2015)



The model emphasizes trainers' expertise and professionalism as well as their understanding of sociocultural perspectives to facilitate effective teacher learning. Through trainers' modeling, participants' TPACK will be enacted in the application stage when peer teaching happens. Two recent studies have highlighted the adoption of the TPACK-in-Action approach to train teachers and learners. In an Indonesian school setting, observation and interview notes from the case study by Aisyah et al. (2021) suggested that teacher's modeling of language skills learning in an innovative online-based application led to students' uptake of similar learning strategies. At a Saudi Arabian university, the survey results by Sulaimani et al. (2017) pointed out that the incorporation of technology means much more than how a tool works, but the process of skillful adaptation in teachers' contexts using curriculum materials to suit the learners' needs. It is worth noting that the employment of the TPACK-in-Action model for OPD courses has not been examined.

EFL Teacher Training in Vietnam

In Vietnamese public schools, English language teaching was depicted as "teacher-fronted instruction, knowledge-based transmission, and a textbook-coverage teaching approach" (Tran, 2018, p. 100). Financial difficulty can be a critical concern as some public school teachers had to organize extra tutoring classes to make ends meet (Nguyen, 2017). In some regions, teachers were not confident in their English abilities (Dang, 2018). Pedagogically, teachers reported a medium level of CK, TPK, TCK, and TPCK (Nguyen, 2021). When it comes to their perceptions of training programs, school teachers lamented the low quality of top-down teacher training projects, referring to a lack of practicality, usefulness, and sustainability (Tran, 2018). At the secondary level, teachers are expected to observe trainers' demonstrations and receive visible input (Canh,

2002; Tran, 2018). At the tertiary level, voices of language teachers indicated that national CALL training programs helped to develop their technical skills, but failed to demonstrate the pedagogical integration of technologies that participants could translate into their own contexts (Nguyen, 2018).

In summary, the current literature has not investigated the design and delivery of an OPD at the course level targeting school teachers, modeling and developing their TPACK, and preparing them for ERT. Based on Vietnamese participants' expectations, we decided to adopt the TPACK-in-Action framework to model the intersection of technology, pedagogy, and content using national curriculum materials.

Design of the Survival Combo Course

Our community-based course provision and evaluation study is significant because it would respond to public school teachers' urgent needs, addressing both practical and theoretical aspects of OPD driven by TPACK. Metaphorically, we portrayed ourselves as *educational shippers* who delivered a CALL teacher training *survival combo* to teachers in need through a community engagement initiative. Drawing on our experiences in national CALL training projects in the pre-Covid era, we tailored the content to target different cohorts of primary and secondary school teachers. Based on the contextual factors mentioned earlier, the course design was conceptualized and framed within ERT (Hodges et al., 2020), TPACK (Koehler & Mishra, 2009), and TPACK-in-Action (Tai, 2015). On *consuming the combo*, participants were able to understand ERT expectations by revisiting students' attendance, asynchronous learning, and flexibility for assessment modes, course and institutional policies (Hodges et al., 2020). In doing so, they would enact TPACK skills for ERT and deliver synchronous/asynchronous pedagogical activities using prescribed curriculum materials. Table 1 and Figure 2 below present the course activities in six consecutive days for each cycle. Figures 3 and 4 (all figures are edited to protect participants' privacy) illustrate instructor-led activities on a Padlet gallery for primary school teachers and in a reading lesson for secondary school teachers via Zoom video conferencing using Total Physical Response (TPR).

Table 1
The original training program of the Survival Combo course

Day	Content & Action Mode	Activity & Technology
1	**Introduction to Emergency Remote Teaching** [Instructor Initiation]	Watch YouTube recorded webinars to understand the differences between online teaching and ERT Say *Hello* to instructors and peers on Zalo support group and SHub classroom Post your profile on a Padlet gallery Create an introduction video using the CapCut app

Day	Content & Action Mode	Activity & Technology
2	**Student-paced Learning & Flipped Classroom** [Instructor Initiation]	Read and comment on your classmates' posts on Padlet. [For primary school teachers] Share an English learning app with parents [For secondary school teachers] Create an Edpuzzle class Use Zalo as a group messaging app Learn to develop your Zoom teaching skills Prepare for Zoom meetings with instructors on Day 3
3	**Live Participation** [Instructor Initiation]	Join live Zoom meetings to experience synchronous learning/teaching and brain breaks under instructors' demonstration Create a ClassDojo class to manage online behaviors Create a Zalo group to prepare for a Zoom teaching demonstration
4	**Tools for Collaboration & Assessment** [Instructor-Participant Collaboration]	Practice and record a Zoom rehearsal in groups Create a quiz with Quizizz Create a Google Jamboard Create a Mentimeter to crowdsource ideas [For secondary school teachers] Create a Google Docs to write collaboratively
5	**Microteaching** [Participant-centered Learning]	Demonstrate Zoom skills to your classmates Do peer observation
6	**Professional Learning Networks for ERT & Reflection** [Participant-centered Learning]	Join private and massive Facebook groups to seek professional support Complete the post-training feedback form

Figure 2
The end-of-course poster

Figure 3
Instructor-led, asynchronous activity on Padlet to model a digital gallery to build a classroom community

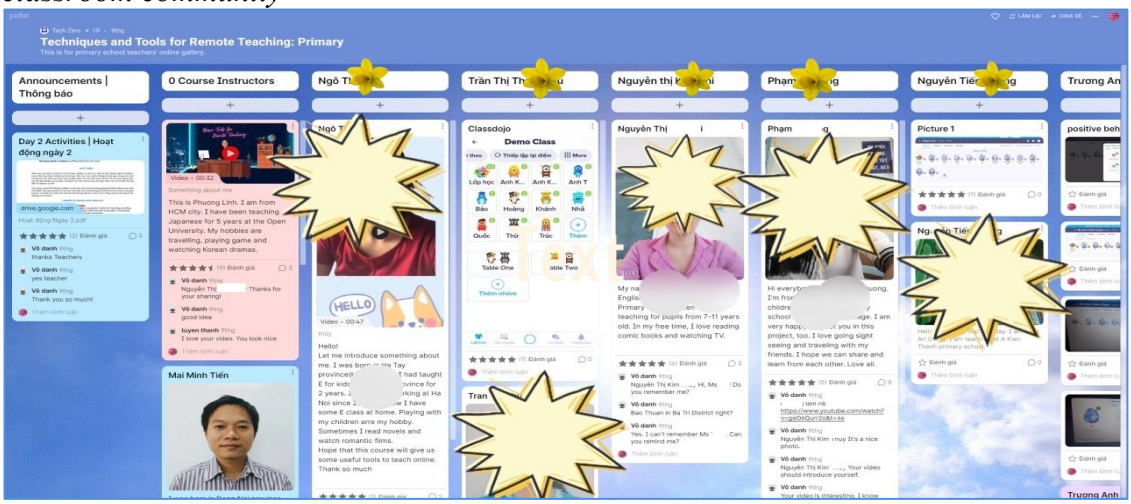
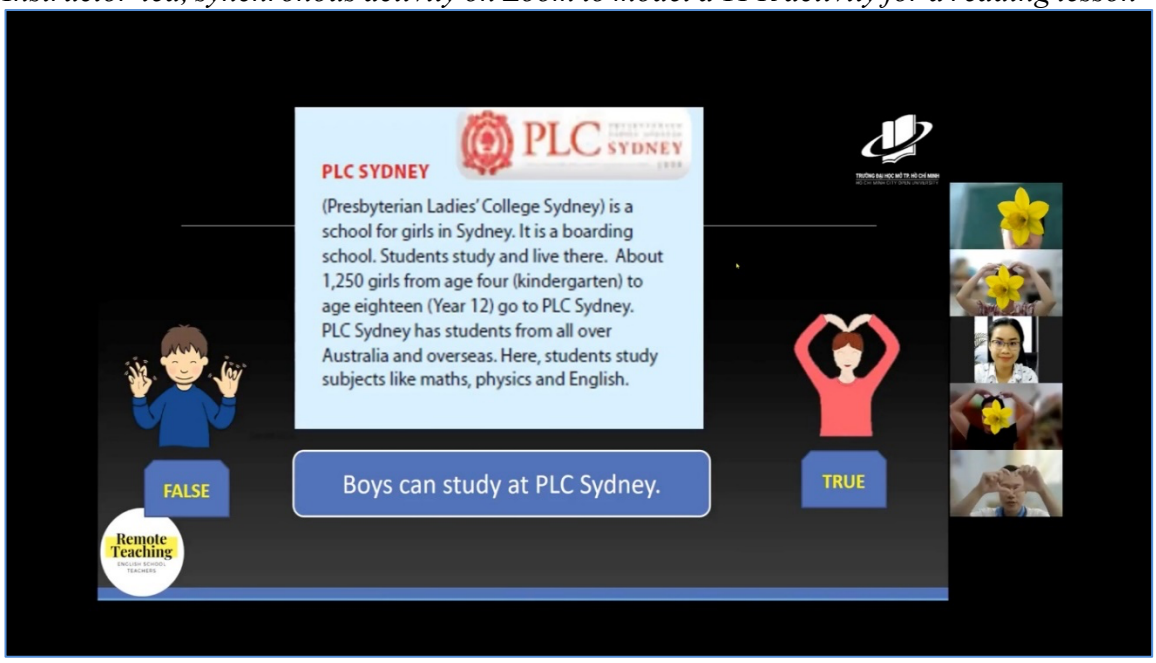


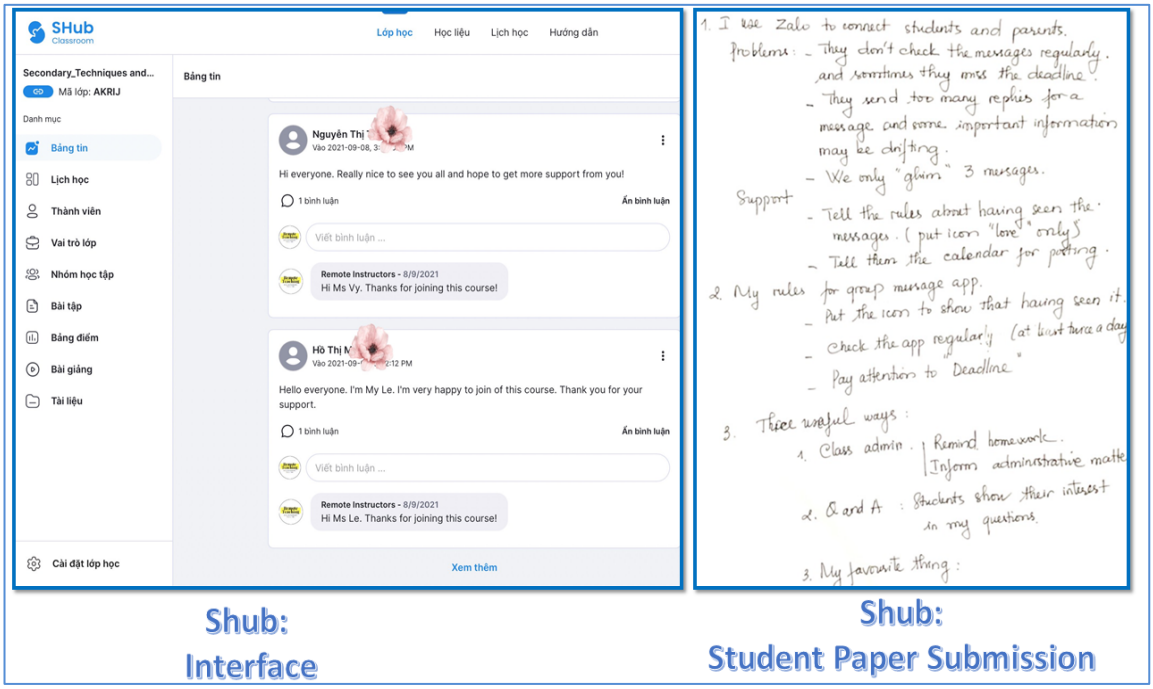
Figure 4

Instructor-led, synchronous activity on Zoom to model a TPR activity for a reading lesson



The curation of course materials and tools was based on the criteria of practicality, ease of access, and a strong community of users' support as well as resources sharing to deal with ERT, for example, reusing ready-made digital worksheets and quizzes. Reading texts for the course included Hockly's technology articles (2017), while pedagogical videos were linked to a popular recorded webinar series on YouTube (see Macmillan Education ELT, 2020). Among different Learning Management System (LMS) platforms, we selected SHub Classroom because it offered appropriate affordances including (1) a user-friendly interface written in the native language (Vietnamese) (2) a student-initiated discussion forum and interaction (3) a rigorous assessment system that allowed users to upload paper-based submissions (Figure 5).

Figure 5
SHub affordances: Interface and samples of participants' posts and assignment submission



As the platform is built in a native language, it can be used by teachers of other subjects. Course participants, therefore, could share their LMS knowledge with other subject teachers in their context when the course ends. We contacted SHub Classroom's Support Team for sponsorship opportunities; thankfully, they agreed to offer free premium accounts for all participants. In addition, the program in Cycle 2 for secondary school teachers was revised to suit curriculum goals and learners' backgrounds (Table 1). A heavy emphasis was placed on the multimodal scaffolding and instructional support with strategies including:

- A course e-portfolio in English for each cohort was published on Google Sites.
- Daily notifications, activity guidelines, and clarifications were emailed in Vietnamese and shared in Zalo – the most popular group messaging app platform in Vietnam.
- Video tutorials for both course participants and their students were either created by instructors or curated from YouTube and Facebook links.
- Daily tasks were modeled.
- Peer support was encouraged on Zalo.
- On-demand technical, content and pedagogical support was delivered via Zalo and Zoom.

Methodology

Research questions

To fill in the research gaps, we designed an evaluation study to seek answers to the following questions:

1. *What are teachers' perceptions of the course design and delivery?*
2. *How does the course affect teacher beliefs, emotions, and intentions?*
3. *How does the course affect teacher TPACK development?*
4. *How should the course design and delivery be modified in future cycles?*

Research design

The evaluative study adopted an exploratory case study design (Yin, 2018) with the convenience sampling method: The course instructors and participants were the research investigators and subjects respectively.

Participants

The call for course participation and the registration form were publicized on the instructors' public Facebook profiles, then shared with well-recognized massive groups created for Vietnamese teachers' professional development (see Mai et al., 2020). Within 24 hours, we received 242 applications, including 80 primary school teachers and 124 secondary school teachers. After two rounds of an application screening, 50 public primary and 36 secondary school teachers were invited to join the course. When the course started, the actual participants were 11 primary and 13 secondary school teachers. The registration forms indicated that the participants were full-time English teachers in public schools all over Vietnam. They came from diverse teaching contexts (urban, rural, remote, and gifted schools), had different English proficiencies (from CEFR B1 to C1), and varied teaching experiences. 54 percent of participants (N=13) admitted that they had never taught online before while 29 percent had some experience but did not feel confident about online teaching. A small percentage of participants (17%) were confident about online teaching but expected to learn the remote teaching techniques methodologically. Not surprisingly, an overwhelming number of course participants were female teachers.

Data Collection and Analysis

Empirical data relied on an anonymous survey inviting participants to reflect and write about their learning experience, which comprised three open-ended prompts and sent to participants at the end of Day 5 via separate Google Form links for each cycle:

- *What have you enjoyed most about this course?*
- *How have your beliefs, emotions, and behaviors towards online teaching changed after this course?*
- *What recommendations would you make for the course?*

To maximize participants' detailed and honest sharing, we did not require participants to specify their demographic or identity information in the form, and they were encouraged to write in Vietnamese. After two course cycles, we collected 24

responses from 24 participants including primary school teachers (N=11) in Cycle 1 and secondary school teachers (N=13) in Cycle 2.

After translating the responses into English, we conducted a theoretical thematic analysis (Braun & Clarke, 2006). For the third research question, we coded TPACK competences according to Bostancıoğlu and Handley's validated TPACK competency measurements for EFL teachers (2018), which is exemplified below:

- CK: I am familiar with the culture of target language communities.
- PK: I can facilitate individual, pair, group, and whole classwork.
- TK: I know about basic computer hardware (e.g., CD-ROM, mother-board, RAM) and their functions.
- PCK: I can choose an appropriate approach to teach learners (e.g., communicative approach, direct method.)
- TCK: I know about technologies that I can use to teach a skill (e.g., reading, writing) in English.
- TPK: I can choose technologies that enhance the teaching approaches for a lesson.
- TPACK: I can select technologies to use in my classroom that enhance the lesson content, pedagogical approach, and student learning.

To ensure coding reliability, we followed guidelines of collaboration for research teams suggested by Ottenbreit-Leftwich et al. (2018) in which virtual discussions were made to resolve conflicts and reach theme consensus. The analysis process was digitally performed using NVivo 12 Qualitative Data Analysis Software. In the given tables of the Results section, the code PR#1 refers to the primary school teacher number 1 while SR#1 refers to the secondary school teacher number 2.

Results

Teachers' Perceptions of the Survival Combo Design and Delivery

Overall, participants felt that the course content and activities met their urgent needs during the Covid-19 pandemic. Their textual responses determined that the Survival Combo provided an easy-to-follow plan, interesting content, and practical activities that engaged participants throughout the course. Affectionately, participants thanked the enthusiastic instructors for their extensive knowledge, dedication, and skills.

Table 2
Teachers' reflections on the course design and delivery

Themes		Teachers' reflections	Ref. No.
Course Design	**Content & Activities**	*interesting, attracting my attention and enabling me to be fully committed to task completion*	PRef#7
		meeting teachers' needs in the Covid-19 era	Ref#2
	Instructional plan	*The daily plan is detailed and clear.*	PRef #2, #4, #8

Themes		Teachers' reflections	Ref. No.
Instructors' Delivery	**Knowledge**	*providing accurate professional advice and possessing an extensive experience of course content*	SRef#5
	Skills	*providing meticulous instruction and sharing with me content and pedagogical ideas. I'm quite embarrassed when wasting your time. With dedication and skills, the instructors have activated participants' hands-on practice.*	PRef#7 SRef#2
	Attitudes	*enthusiastic*	PRef#1, #2, #4, #5, #7, #8, #9 SRef#2, #5, #8, #9

Teacher Emotions, Confidence, and Intentions

Teachers' reflections revealed that the Survival Combo influenced the participants emotionally, developed their remote teaching confidence, and triggered their good-willed intentions. Initially, the course evoked some uncomfortable feelings because some participants were experiencing online learning and teaching for the first time. Their positive emotions surfaced once they became confident applying the digital tools and demonstrating the remote teaching techniques**.** While the course activated a primary school participant's passion for life-long learning (PRef#6), secondary school teachers anticipated their emerging role as a community giver (SRef#11). In particular, a teacher shared a line from the Bible about the act of giving to mention an unexpected value of this community-based course.

Table 3

Teachers' emotions, confidence, and intentions

Themes	Teachers' reflections	Ref. No.
Emotions	*frustrated but interested*	PRef#5
	strange then engaged	PRef#4, #7
	happy and motivated	PRef#11
	I appreciate your sharing and deep affection. Thank you and love you all.	SRef#1
Confidence	*I have never taught online, so I don't have much knowledge and experience of online teaching. Therefore, I was worried and afraid that I would not know what to do when my school assigned me to teach online. Fortunately, I've joined this course. Although the training time was not long, it was a high quality and effective course. Now I become more confident if I am assigned to teach online.*	PRef#2
	More confident. My curiosity for learning has awakened.	PRef#6

	Prior to this course participation, I did not truly teach online with reference to the lecturers' demonstrations via Zoom. After this course, I still feel that teachers' and students' challenges of online teaching remain. However, I will remind myself to do self-practice of what I have learned in this course. Right now, I feel more excited, happier, and more confident of designing content for online teaching.	PRef#7
	Although the course was short-termed and rushed, I've gained a lot of knowledge that I haven't known before. Now I feel more confident in teaching online.	SRef#11
Intentions	*I will also share knowledge that I have learned from the course and discuss with my colleagues so that everyone can apply them to teaching.*	SRef#5
	I would like to give my big thanks to the trainers for their attitude. "Freely you have received; freely give": *I also learned that virtue from the trainers, and will try to share my knowledge to other people.*	SRef#11

Teachers' TPACK development

Participants' total immersion in the course content and workflow led to the development of their perceived TPACK competence across all knowledge domains. The participants' written expressions illuminated the indicators of CK, PK, TK, PCK, TCK, TPK, and TPACK. The essence of TPACK competence was vividly captured in several vignettes of both primary and secondary school teachers. Their participation enabled them to be cognizant of the digital affordances that technology offers. In the same vein, they identified the barriers to technology adoption (equipment and access) in English language teaching in their own contexts. Hence, they would develop their potential as a versatile primary school teacher or a mindful secondary school teacher who would plan to design creative lessons in large-size virtual classrooms.

Table 4

Teachers' TPACK Development

Domain	Teachers' reflections	Ref. No.
CK	*ideas for lesson topic*	PRef#7
PK	*exciting lessons that attract students' interests*	PRef#10
	student-paced learning	PRef#4, #7 SRef#5
	lesson planning components that suit students' psychology	SRef#5
TK	*I am able to use techniques and tools for online teaching such as SHub, Padlet, CapCut, ClassDojo, WordWall, Baamboozle, Quizizz, Mentimeter, Jamboard, and Zoom. I should turn off nearby sound devices near Zoom to avoid echo*.	PRef#7
	use of Zalo to connect with my students	PRef#10

Domain	Teachers' reflections	Ref. No.
	Teachers who have low TK would expect the course instructors to show them the step-by-step instruction.	SRef#6
	online teaching via Zoom and useful websites such as Jamboard, CapCut, and Edpuzzle	SRef#7
PCK	*re-writing the lyric of a popular song*	PRef#7
TCK	*apps for parents such as Monkey Junior, Lingo, Learn English Kids, English for Kids*	PRef#7
TPK	*When I share links, I should set it to* edit *mode so students can contribut*e.	PRef#7
	I can utilize the tools supporting online teaching. I know ways of making students pay attention such as chunking (breaking tasks into smaller parts), checking whether students are paying attention, or listening to our instruction.	PRef#9
	Learning different methods of teaching online and using applications such as SHub, ClassDojo, Padlet . . . that I've not known before. They are useful for both a large-size class and a small-size class.	SRef#11
TPACK	*A teacher becomes a versatile person because they should know how to apply tools, be aware of classroom management problems, deal with negative situations, be proactive, and make many investments.*	PRef#8
	Contrary to the assumption that online teaching makes students bored, online learning can help them develop their creativity if teachers know how to use online tools flexibly and effectively. Therefore, teachers need to learn and practice the tools continuously and fluently.	SRef#3
	I can make immediate application in my current teaching. I'll send materials before our class meeting (interesting materials: games, clips) and students can conduct self-paced learning. If this is implemented, online teaching will not be so stressful in terms of Internet connection and focused on main aims. The course instructors have caught my attention relating to their notes on avoiding hurting students for uncertain reasons when students cannot follow the online class due to device errors or connectivity. The learning activity can be always interactive, making the classroom more lively thanks to the course instructors' recommendation of materials.	SRef#5
	I've learned about these tools prior to this class enrollment. However, thanks to the course, I've learned how to use the tools methodically.	SRef#6
	It requires teachers to acquire skills of using technology, learning many tools, and applying them to the right lesson content and to the right student. In doing so, the teaching can be creative and engage students.	SRef#7

Domain	Teachers' reflections	Ref. No.
	Remote teaching does not simply mean making clips or posting Word documents. Instead, we can apply approaches of instructional designs helping students to engage in English learning.	SRef#10

Modification of Course Design and Delivery in Future Cycles

In addition to discerning their positive perceptions, participants were encouraged to reflect on how the course should be fine-tuned, reviewing different aspects in need of changes. They suggested opportunities for collaborative learning, revised content and schedule, video conferencing socialization, and follow-up activities. Noticeably, comments were elaborated on delayed feedback and special support for teachers who had low TK. If the schedule was set at a more reasonable pace, engagement could be higher, and feedback on their assignments could arrive sooner.

Table 5
Modification of course design and delivery

Themes		Teachers' reflection	Ref. No.
Design	**Collaboration**	*If there is more time, participants should have more practice and exchange experience of teaching online so the course can be more effective.*	SRef#3
	Content	*You are so enthusiastic and devoted. There is so much knowledge that I'm unable to use and apply.*	SRef#13
	Socialization	*Sometimes I feel sorry for you because we ask so many questions. I think there should be a Zoom session on the first day so course participants can get to know each other. We can also work in groups from the first day to reduce your workload. When we get to know each other, we can collaborate better in our demonstrations.*	SRef#10
	Schedule	*The problem with live lessons on Zoom. The sessions should be in the evening because all teachers are teaching during office hours.*	SRef#2
		Practice hours should be increased, and the course should be lengthened.	SRef#8
		I suggest that following each day, there should be a day off so participants could be better prepared for task completion. The demonstrations can be shorter: instead of 2 extended live sessions, there should be three shorter chunks.	SRef#11

Themes		Teachers' reflection	Ref. No.
	Follow-up Plan	*I hope I can continue to receive support from your team via Zalo or Facebook after our course ends.*	SRef#8
Delivery	**Instructional support**	*Instructors should guide us to use a specific tool. They should demonstrate how to do it so that participants can easily follow. The younger teachers might grasp the knowledge but are unable to execute the task because the knowledge is so new. If participants are old, they might not be able to follow the course. Instructions should be in detail.*	PRef#8
	Feedback	*Course instructors should review our assignment submissions to evaluate our strengths and weaknesses.*	SRef#3

Discussion

Acknowledging the Survival Combo: Interesting Content and Hands-On Activities

To the participants' delight, our Survival Combo arrived just in time. In fact, participants who were committed reaped the most benefits from this course. They found the content interesting and were involved in the hands-on activities (*enabling me to be fully committed to task completion* – Pref#7 in Table 2). Despite the intense training schedule and their limited or zero online teaching experience, the participants even managed to fulfill the tasks. On a side note, the relevant content and activities were the results of the instructors' heated debates on what tools to include, what activities should happen, and how we should base our training on their local needs using curriculum materials.

Secondly, the instructors' previous teacher training experience in in-person national CALL training projects with school teachers and online teaching at their institution enabled the team to provide professional feedback as shared by SRef#5 (*providing accurate professional advice)*. This is consistent with Tafazoli's findings regarding teachers' expectations of CALL experts in training programs (2021).

Riding an Emotional Rollercoaster and Appreciating Acts of Kindness

The course achieved its purpose of creating e-learning environments where teachers imagined and played the role of learners (Boltz et al., 2021). In those scenarios, teachers experienced opposing emotions to understand online learning (e.g., *frustrated but interested* - PRef#5) (Table 3). Similarly, teachers' confidence was enhanced. The initial anxiety faded, as honestly reflected by participants PRef#2 and PRef#7. On building teachers' competence, the course positively affected teacher's psychological health when the course ended (*happy and motivated* - PRef#11). The finding resonates

well with the importance of embracing teachers' well-being in training courses (MacIntyre et al., 2020).

Remarkably, participants realized that they could become champion teachers and initiated their own community endeavors: *"Freely you have received; freely give": I also learned that virtue from the trainers, and will try to share my knowledge to other people* (SRef#11). On acknowledging the instructors' acts of kindness (i.e. offering a free online course), they considered taking a more responsible role with the newly gained skills and knowledge. This finding adds a new dimension to the concept of Vietnamese teachers of English as agents of change (Nguyen & Bui, 2016): High quality community OPD can empower participants, encouraging them to lead an inspiring role.

Developing a TPACK Mindset: Versatility, Creativity and Context Sensitivity

The research project provides empirical evidence in relation to teachers' TPACK for ERT via OPD. The findings revealed that the most salient areas of development are PK (PRef#10, PRef#4, PRef#7, and SRef#5), TK (PRef#7, PRef#10, SRef#6, and SRef#7), and TPK (PRef#7, PRef#9, and SRef#11) as shown in Table 4. More importantly, detailed accounts of TPACK conceptualization demonstrate their awareness and development (PRef#8, SRef#3, SRef#5, SRef#6, SRef#7, and SRef#10).

According to their reflections, several tenets of TPACK mindsets were elaborated. Firstly, it is versatility (Morsink et al., 2011): *A teacher becomes a versatile person because they should know how to apply tools, be aware of classroom management problems, deal with negative situations, be proactive, and make many investments* (PRef#8). Secondly, it is connected to teacher creativity (Koehler et al., 2011): *It requires teachers to acquire skills of using technology, learning many tools, and applying them to the right lesson content and to the right student. In doing so, the teaching can be creative and engage students.* (SRef#7). Additionally, SRef#5 shared their empathy and context sensitivity (Koehler et al., 2011): *avoiding hurting students for uncertain reasons when students cannot follow the online class due to device errors or connectivity*. A major cause for the participants' TPACK development could be traced to the effectiveness of our TPACK-driven task modeling using teachers' curriculum materials and our previous experience working with school students and teachers in secondary settings. Our course design and delivery re-affirmed the significance of instructor's modeling and support in TPACK-based training programs (Aisyah et al., 2021; Chai et al., 2019; Tai, 2015; Tseng et al., 2022) with Vietnamese school teachers (Canh, 2002; Nguyen, 2018; Tran, 2018).

While actual classroom observation might be required to track teachers' TPACK development (Bibi & Khan, 2017; Polly, 2011), participation in the Survival Combo could be a catalyst for participants' TPACK development. In this sense, we share the same view with Arcueno et al. (2021) who argued that professional development courses could be an important milestone for teacher learning beyond the pandemic. With the enactment of TPACK competence, participants in the Survival Combo were ready to deliver their ERT and expected to further engage in self-directed professional development. Our study, therefore, meets local teachers' professional development needs as voiced in previous studies (Arcueno et al., 2021; Dau, 2022; Nasri et al., 2020; Nguyen, 2021; Novita et al., 2022; Tafazoli, 2021; Vo, 2021).

On the other hand, despite our efforts for multimodal scaffolding and instructional support, teachers who had low TK demanded special assistance. While participants with

high TK developed their PK, TK, PK, and TPK, participants with low TK were overwhelmed and unsatisfied. This finding brings us to a revised training program discussed below.

Creating a Less Intensive, Better Support, and More Sustainable Training Program

For some participants who had low TK, technical support was needed. They admitted that the instructional videos were complex and sought one-to-one technical support. This practice referred to their need of basic operation skills training (see Healey et al., 2011) as shared by PRef#8 in Table 5. The schedule, hence, should be less intensive and can be more TK-oriented. What needs revision is the training schedule and live teaching sessions with indicators of low/medium/high TK levels, addressing participants' "differentiation for technical competence" (Jaipai & Figg, 2015, p.159) Furthermore, participants made an important suggestion regarding the course instructors' delayed feedback for self-paced tasks (SRef#3). Because the schedule was tightly packed, the instructors did not have sufficient time to respond to their submissions on time. Based on such suggestions, we have revised the training program implemented in future cycles with key changes highlighted in Table 6 below:

- The activity flow extends to 12 days/sessions rather than six days as scheduled in the original plan.
- Course instructors have a careful tech check with participants regarding their equipment and TK on day 1.
- Video conferencing socialization should precede flipped activities: Participants should get to know each other and understand the importance of asynchronous activities before they are tasked with self-paced activities.

Table 6
The revised training program of the Survival Combo course

Day	Content & Action Mode	Activity & Technology	TK Level
1	Course Introduction Socialization [Instructor Initiation]	Check your basic computer skills & equipment access	*Low*
		Complete the pre-test of TPACK	*Low*
		Say *Hello* to instructor and peers on a national chat messaging app as a support group	*Low*
		Join live video conference meetings to get to know each other and form groups for collaboration	*Medium*
		Post your profile on a digital gallery	*Medium*
2	Remote Teaching [Instructor Initiation]	Watch YouTube recorded webinars to understand the differences between online teaching & ERT	*Low*
		Join a national LMS classroom	*Medium*
3	Student-paced Learning & Flipped Classroom [Instructor Initiation]	Read and comment on your classmates' posts on the digital gallery.	*Low*
		Learn to interact with students in the group messaging app	*Low*
		[For primary school teachers] Share an English learning app with parents	*Medium*
		[For secondary school teachers] Create an Edpuzzle class	*High*
4	Preparation for Instructor's Demonstration [Instructor Initiation]	Watch YouTube videos to learn to develop your video conference teaching skills	*Low*
		Prepare for the video conference meeting on Day 5	*Medium*
5	Instructor's Demonstration [Instructor Initiation]	Join live video conference meetings to experience synchronous learning/teaching and brain breaks through instructor's demonstrations	*Medium*
6	Tools for Collaboration [Instructor-Participant Collaboration]	Create a digital whiteboard for interaction	*High*
		Create a Mentimeter to crowdsource ideas	*High*
		[For secondary school teachers] Create a shared document to write collaboratively	*High*

Day	Content & Action Mode	Activity & Technology	TK Level
7	Tools for Assessment [Instructor-Participant Collaboration]	Create a quiz with online assessment tools (Quizizz) Create a ClassDojo class to manage online behaviors	*High* *High*
8	Preparation for Microteaching [Instructor-Participant Collaboration]	Create a support group and prepare for a video conference teaching demonstration Practice and record a video conference rehearsal in groups Create an LMS classroom	*High* *High* *High*
9	Microteaching 1 [Participant-centered Learning]	[For primary school teachers] Demonstrate teaching songs, chants, games, vocabulary, storytelling, listening, and speaking skills to your classmates through video conferencing platforms [For secondary school teachers] Demonstrate teaching vocabulary, pronunciation, listening, and speaking skills to your classmates through video conferencing platforms Do peer observation	*High* *High* *High*
10	Microteaching 2 [Participant-centered Learning]	Demonstrate teaching grammar, reading, and writing skills to your classmates through video conferencing platforms Do peer observation	*High* *High*
11	Professional learning networks for ERT [Participant-centered Learning]	Join private and massive social media groups to seek professional support	*Low*
12	Reflection [Participant-centered Learning]	Complete the post-test of TPACK Complete the post-training feedback form	*Low* *Low*

The redesign of the training program shows concretely how our future training should be delivered, with the inclusion of tech checking, e-moderating techniques for socialization (Salmon, 2012), and longer intervals in the workflow. At the heart of the revised training program is a comprehensive analysis of participants' and their students'

access to equipment, TK and TPACK results on the pre-test which could result in leveled adaptation for the materials, tools, and tasks to be implemented. Next, ice-breaking activities can be designed to welcome participants to the community, encourage them to interact synchronously and asynchronously, and develop their social relationships at an early stage prior to their cognitive engagement. Finally, when the training program is set at a slower pace and with longer intervals, participants can devote more time to experience new tools and have better preparation for their virtual microteaching and collaboration. At the same time, instructors can schedule timely, personalized feedback or review sessions, thereby enhancing learning outcomes.

Conclusion

Driven by ERT and TPACK, our study offers an in-depth analysis of a highly contextualized OPD at the course level during the pandemic. The qualitative findings contribute to an emerging field of ERT research in low-income countries. Participants' reflections show the effectiveness of the online training mode, which echoes Stickler et al. (2020) that the digital medium of teacher education can be as effective as the in-person mode.

We are humbled to learn that our course has arrived timely and provided support for participants to transition from in-person to remote teaching. This study adds to our understanding of how TPACK-based OPD changes school teachers' beliefs, taps into their emotions, and shapes their intentions of ERT. A dynamic vision of a TPACK-competent teacher who is versatile, creative, and sensitive begins to take shape. Furthermore, participants express their willingness to become local helpers of technological implementation. It is in this spirit that the course is perceived to be an effective OPD initiative and can be replicated in diverse contexts training EFL teachers for CALL development. On the other hand, despite our efforts and needs analysis, the course is constrained in supporting teachers who have low TK and are overwhelmed with digital tools and tasks. A further contribution to the literature, therefore, is through the revision of our course design and delivery to focus on teachers who require basic computer skills training.

We acknowledge the limitation of this evaluation study. Data are mainly drawn from teachers' self-reported written reflections; individual participants' TPACK profiles and their classroom instruction are not tracked, either. Our research, therefore, will be subject to further investigations. We will triangulate the data by conducting follow-up interviews and asynchronous observations with voluntary course participants to learn about the enablers and barriers to their actual TPACK and ERT implementations together with a replicate study to evaluate the effectiveness of the revised training program in a further iteration.

Author Note

Tien M. Mai https://orcid.org/0000-0002-0357-2691
Long T. D. Tran https://orcid.org/0000-0002-9605-8746
Mai T. X. Nguyen https://orcid.org/0000-0002-3084-7224

Linh V. P. Le https://orcid.org/0000-0002-1291-864X
Ngan H. K. Vo https://orcid.org/0000-0002-7765-2491

The research team is grateful for professional guidance from the editors, valuable comments from three anonymous reviewers, and the agreement to participate in the research project of the public school teachers. We have no conflicts of interest to disclose.

Correspondence concerning this article should be addressed to Tien M. Mai, Faculty of Foreign Languages, Ho Chi Minh City Open University, 35-37 Ho Hao Hon St., District 1, Ho Chi Minh City, Vietnam. Email: tien.mm@ou.edu.vn

References

Aisyah, R. N., Setiawan, S., & Munir, A. (2021). Technological Pedagogical Content Knowledge (TPACK) in Action: Unraveling Indonesian English as a Foreign Language teachers' TPACK by implementing Telegram. *Computer Assisted Language Learning Electronic Journal*, *22*(3), 17–32. http://callej.org/journal/22-3/Aisyah-Setiawan-Munir2021.pdf

Arcueno, G., Arga, H., Manalili, T.A., & Garcia, J.A. (2021, July 7-9). *TPACK and ERT: Understanding teacher decisions and challenges with integrating technology in planning lessons and instruction* [Paper presentation]. DLSU Research Congress 2021, De La Salle University, Manila, Philippines. https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2021/LLI-16.pdf

Asiri, A., Panday-Shukla, P., Rajeh, H. S., & Yu, Y. (2021). Broadening perspectives on CALL teacher education: From techno-centrism to integration. *TESL-EJ*, *24*(4). https://tesl-ej.org/pdf/ej96/a8.pdf

Bibi, S., & Khan, S. H. (2017). TPACK in action: A study of a teacher educator's thoughts when planning to use ICT. *Australasian Journal of Educational Technology, 33*(4), 70-87. https://doi.org/10.14742/ajet.3071

Boltz, L. O., Yadav, A., Dillman, B., & Robertson, C. (2021). Transitioning to remote learning: Lessons from supporting K-12 teachers through a MOOC. *British Journal of Educational Technology*, *52*(4), 1377-1393. https://doi.org/10.1111/bjet.13075

Bostancıoğlu, A., & Handley, Z. (2018). Developing and validating a questionnaire for evaluating the EFL 'Total PACKage': Technological Pedagogical Content Knowledge (TPACK) for English as a Foreign Language (EFL). *Computer Assisted Language Learning*, *31*(5–6), 572–598. https://doi.org/10.1080/09588221.2017.1422524

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77–101. https://doi.org/10.1191/1478088706qp063oa

Can, I. & Silman-Karanfil, L. (2022). Insights into emergency remote teaching in EFL, *ELT Journal*, *76* (1), 34–43. https://doi.org/10.1093/elt/ccab073

Canh, L.V. (2002). Sustainable professional development of EFL teachers in Vietnam. *Teacher's Edition*, *10*, 32–37. http://www.nzdl.org/gsdl/collect/literatu/index/assoc/HASH010a.dir/doc.pdf

Chai, C. S., Koh, H. L. J., & Teo, Y. H. (2019). Enhancing and modeling teachers' design beliefs and efficacy of technological pedagogical content knowledge for 21st

century quality learning. *Journal of Educational Computing Research*, *57*(2), 360–384. https://doi.org/10.1177/0735633117752453

Dang, V. H. N. (2018) The government's policy on EFL teacher professional development: Opportunities and challenges for the Mekong Delta. *Can Tho University of Journal Science*, *54*(8), 45-53. https://doi.org/10.22144/ctu.jen.2018.037

Dau, T. T. L. (2022). Remote teaching amid the Covid-19 pandemic in Vietnam: Primary school EFL teachers' practices and perceptions. *AsiaCALL Online Journal*, *13*(1), 1-21. http://eoi.citefactor.org/10.11251/acoj.13.01.001

Jaipai, K., & Figg, C. (2015). The framework of TPACK-in-Practice: Designing content-centric technology professional learning contexts to develop teacher knowledge of technology-enhanced teaching (TPACK). In C. Angeli & N. Valanides, (Eds.), *Technological pedagogical content knowledge: Exploring, developing and assessing TPCK* (pp. 137-163). New York: Springer. https://doi.org/10.1007/978-1-4899-8080-9_7

Gao, L. X., & Zhang, L. J. (2020). Teacher learning in difficult times: Examining foreign language teachers' cognitions about online teaching to tide over Covid-19. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/FPSYG.2020.549653

Healey, D., Hanson-Smith, E., Hubbard, P., Ioannou-Georgiou, S. Kessler, G., & Ware, P. (2011). *TESOL technology standards: Description, implementation, integration* (pp. 74-76). Alexandria, VA: TESOL. https://www.deborahhealey.com/uruguay2011/healey-tesol_technology_standards-pad.pdf

Hockly, N. (2017). *ETpedia Technology: 500 ideas for using technology in the English language classroom*. Pavilion Publishing and Media Ltd.

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*. https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Koehler, M. J., Mishra, P., Bouch, E., DeSchryver, M., Kereluik, K., Shin, T. S., et al. (2011). Deep-play: Developing TPACK for 21st century teachers. *International Journal of Learning Technology*, *6*(2), 146–163. https://doi.org/10.1504/IJLT.2011.042646

Koehler, M. J., & Mishra, P. (2009). What is Technological Pedagogical Content Knowledge? *Contemporary Issues in Technology and Teacher Education*, *9*(1), https://citejournal.org/volume-9/issue-1-09/general/what-is-technological-pedagogicalcontent-knowledge

Leacock, C. J., & Warrican, S. J. (2020). Helping teachers to respond to COVID-19 in the Eastern Caribbean: Issues of readiness, equity and care. *Journal of Education for Teaching*, *46*(4), 576-585. https://doi.org/10.1080/02607476.2020.1803733

Li, B. (2022) Ready for online? Exploring EFL teachers' ICT acceptance and ICT literacy during Covid-19 in Mainland China. *Journal of Educational Computing Research*, *60*(1). https://doi.org/10.1177/07356331211028934

MacIntyre, P. D., Gregersen, T., & Mercer, S. (2020). Language teachers' coping strategies during the Covid-19 conversion to online teaching: Correlations with stress, wellbeing and negative emotions. *System*, *94*, 102352-102352. https://doi.org/10.1016/j.system.2020.102352

Macmillan Education ELT. (2020, March 31). *Moving your instruction online - fast*. YouTube. https://youtu.be/PKiqayaOVYE

Mai, T. M., Nguyen, L. T., Tran, T. L. N. & Le, T. V. (2020). EFL teachers' Facebook groups as online communities of practice: Towards configurations for engagement and sustainability. *Computer Assisted Language Learning Electronic Journal*, *21*(3), 140-158. http://callej.org/journal/21-3/Mai-Nguyen-Tran-Le2020.pdf

Marissa, D. N., & Allahji, W. (2021). Exploring EFL Teachers' Technological Pedagogical Content Knowledge and student engagement in an emergency remote teaching context. In J. Chen, (Eds) *Emergency Remote Teaching and Beyond*. Springer. https://doi.org/10.1007/978-3-030-84067-9_22

Moorhouse, B. L., & Kohnke, L. (2021). Responses of the English-language-teaching community to the Covid-19 pandemic. *RELC Journal*, *52*(3), 359-378. https://doi.org/10.1177/00336882211053052

Morsink, P. M., Hagerman, M. S., Heintz, A., Boyer, M. D., Harris, R., Kereluik, K., et al. (2011). Professional development to support TPACK technology integration: The initial learning trajectories of thirteen fifth and sixth grade educators. *Journal of Education*, *191*(2), 1–18. https://doi.org/10.1177/002205741119100203

Nazari, N., Nafissi, Z., Estaji, M., Marandi, S. S., & Wang, S. (2019). Evaluating novice and experienced EFL teachers' perceived TPACK for their professional development. *Cogent Education*, *6*(1), 1632010. https://doi.org/10.1080/2331186X.2019.1632010

Nasri, M. N., Husnin, H., Mahmud, S. N. D., & Halim, L. (2020). Mitigating the COVID-19 pandemic: A snapshot from Malaysia into the coping strategies for pre-service teachers' education. *Journal of Education for Teaching*, *46*(4), 546-553. https://doi.org/10.1080/02607476.2020.1802582

Novita, D., Purwati, O., & Anam, S. (2022). In-service EFL teachers' sociocultural-based TPACK beliefs and practices: Voice of teachers and students. *Computer Assisted Language Learning Electronic Journal*, *23*(1), 278-293. http://callej.org/journal/23-1/Novita-Purwati-Anam2022.pdf

Nguyen, C. D. (2017). Beyond the school setting: Language teachers and tensions of everyday life. *Teachers and Teaching*, *23*, 766–780. https://doi.org/10.1080/13540602.2016.1276054

Nguyen, H. T. M., & Bui, T. (2016). Teachers' agency and the enactment of educational reform in Vietnam. *Current Issues in Language Planning*, *17*(1), 88-105. https://doi.org/10.1080/14664208.2016.1125664

Nguyen, N.T. H. (2018). Vietnamese teachers' views on a large-scale professional development course on using computer-assisted language learning. In K. Hashimoto & V. Nguyen (Eds.), *The professional development of English language teachers in Asia: Lessons from Japan and Vietnam* (pp. 130-159). Routledge. https://doi.org/10.4324/9781315413259

Nguyen, V.L. (2021). Vietnamese high school teachers' perceptions of TPACK in teaching English as a Foreign Language. *European Journal of Education Studies*, *8*(4), 183-198. http://dx.doi.org/10.46827/ejes.v8i4.3693

Ottenbreit-Leftwich, A., Liao, J. Y-C., Sadik, O. & Ertmer, P. (2018). Evolution of teachers' technology integration knowledge, beliefs, and practices: How can we support beginning teachers use of technology? *Journal of Research on Technology in Education*, *50*, 282-304. https://doi.org/10.1080/15391523.2018.1487350

Perry, T., Findon, M., & Cordingley, P. (2021). Remote and blended teacher education: A rapid review. *Education Sciences*, *11*(8), 453. https://doi.org/10.3390/educsci11080453

Polly, D. (2011). Teachers' learning while constructing technology-based instructional resources. *British Journal of Educational Technology*, *42*(6), 950-961. https://doi.org/10.1111/j.1467-8535.2010.01161.x

Pozo-Rico, T., Gilar-Corbí, R., Izquierdo, A., & Castejón, J-L. (2020). Teacher training can make a difference: Tools to overcome the impact of COVID-19 on primary schools. An Experimental Study. *International Journal of Environmental Research and Public Health*, *17*(22), 8633. https://doi.org/10.3390/ijerph17228633

Salmon, G. (2011). *E-moderating*. New York: Routledge https://doi.org/10.4324/9780203816684

Stickler, U., Hampel, R., & Emke, M. (2020). A developmental framework for online language teaching skills. *Australian Journal of Applied Linguistics*, *3*(1), 133–151. https://doi.org/10.29140/ajal.v3n1.271

Sulaimani, A. O., Sarhandi, P. A., & Buledi, M. H. (2017). Impact of CALL in-house professional development training on teachers' pedagogy: An evaluative study. *Cogent Education*, *4*(1). https://doi.org/10.1080/2331186X.2017.1355646

Tafazoli, D. (2021). CALL teachers' professional development amid the COVID-19 outbreak: A qualitative study. *Computer Assisted Language Learning Electronic Journal*, *22*(2), 4-13. http://callej.org/journal/22-2/Tafazoli2021.pdf

Tai, S. J. D. (2015). From TPACK-in-Action workshops to classrooms: CALL competency developed and integrated. *Language Learning & Technology*, *19*(1), 139–164. http://dx.doi.org/10125/44406

TESOL (2008). *TESOL Technology Standards Framework*. TESOL. http://www.tesol.org/docs/books/bk_technologystandards_framework_721.pdf

Tran, L. T. Q. (2018). Meeting the demands of ELT innovation in Vietnam: Teachers' linguistic and pedagogic challenge. In M. Wedell & L. Grassick (eds.), *International Perspectives on Teachers Living with Curriculum Change* (pp. 83-102). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-137-54309-7_5

Trust, T., & Whalen, J. (2020). Should teachers be trained in Emergency Remote Teaching? Lessons learned from the COVID-19 pandemic. *Journal of Technology and Teacher Education*, *28*(2), 189-199. http://www.learntechlib.org/p/215995/

Tseng, J. J., Chai, C. S., Tan, L., & Park, M. (2022). A critical review of research on technological pedagogical and content knowledge (TPACK) in language teaching. *Computer Assisted Language Learning*, *35*(4), 948-971 https://doi.org/10.1080/09588221.2020.1868531

UNESCO. (2021). *Education: From school closure to recovery*. https://www.unesco.org/en/covid-19/education-response

Vo, T. K. A. (2021). Vietnamese secondary teachers' responses to emergency online teaching. *International Journal on E-Learning Practices*, *4*. https://jurcon.ums.edu.my/ojums/index.php/ijelp/article/view/3422

Yin, R. K. (2018). *Case study research and applications* (6th ed.). Sage Publications.