

Article

## ESL Online Teaching: A Survey on Boarding School Teachers' Efficacy and its Sources

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**Abstract:** Teachers' efficacy is important in defining pupils' performance, as it determines teachers' efforts to conduct their lessons. Even though online teaching is not new in this 21<sup>st</sup> century, little research has been done to investigate teachers' efficacy to teach online, as ICT integration was a choice before, leaving researchers to study teachers' perceptions and predict their likeliness to use ICT in teaching. However, the need to assess teachers' online teaching efficacy became pertinent during pandemic as it was the only teaching mode available due to national lockdown. Since efficacy is domain and context specific, this study aimed to assess the level of efficacy and the sources of efficacy among the under-researched population, the boarding school ESL teachers, as a lot of research has focused on STEM subjects and daily school teachers. 252 boarding school ESL teachers were simply randomly selected to answer the e-questionnaire distributed through their schools nationwide. It was found that they had high efficacy in teaching online and rated vicarious experience, enactive mastery experience, and verbal or social persuasion as the main factors that influenced their efficacy. On top of that, vicarious experience was statistically proven to have a 50.1% contribution to the sample's efficacy. This finding provides valuable insights for us, particularly the authorities, on how to better support our teachers in the future while we prepare our pupils with 21st-century skills.

**Keywords:** English as a Second Language (ESL); online teaching; distance teaching; Technological Pedagogical Content Knowledge (TPACK); online teaching efficacy

### Introduction

To succeed in this century, pupils need to be creative, problem solvers, critical thinkers, effective communicators, and collaborators who are also digitally competent (Gentles & Brown, 2021). Empirical evidence shows that although teachers are increasingly using ICT and digital content resources for their professional preparation, they rarely use it ICT-effectively to improve their teaching and support student learning (Kaur & Singh Bhatt, 2020; Singh et al., 2020). This situation creates a considerable gap between the the goals and the actual use of technology by teachers in practice. Most teachers seem to use ICT only marginally within the context of teacher-centered classroom (Kaur & Singh Bhatt, 2020; Roussinos & Jimoyiannis, 2019). Extensive research in various educational contexts has demonstrated that even though teachers' technological knowledge is crucial, it is insufficient to equip them with the competence and confidence in using ICT to aid and enhance their students' learning (Roussinos & Jimoyiannis, 2019; Wu et al., 2022). This lack of efficacy explains why not many teachers were keen to integrate ICT when they taught before the pandemic (Abdul Rashid et al., 2021; Azhar & Hashim, 2022; Dolighan & Owen, 2021; Ma et al.,

2021). However, COVID-19's ability to spread through intimate contact compels teachers to teach pupils outside of traditional classrooms (Arumugam et al., 2021; Kaur & Singh Bhatt, 2020; Singh et al., 2020). Suddenly, all teachers were required to teach fully online after the ministry instructed schools to close due to the national lockdown (Dolighan & Owen, 2021). This transformation in teaching and learning has a direct impact on ESL teachers because they are not trained to teach fully online (Abdul Rauf et al., 2021; Sariati et al., 2024).

The characteristics of teaching in brick-and-mortar classrooms differ significantly from those in online education (Pressley & Ha, 2021). As such, it is crucial to examine teachers' online teaching efficacy (Dolighan & Owen, 2021), particularly in the context of ESL emergency online instruction, as it directly impacts student outcomes. This investigation is especially relevant in today's volatile, uncertain, complex, and ambiguous (VUCA) world, where the future of education may increasingly rely on digital platforms (Dhawan, 2020). For example, during the 2011 earthquake in New Zealand, the University of Canterbury shifted to online teaching to maintain instructional continuity (Dhawan, 2020). In Malaysia, while technology integration was once limited to a few pioneering educators, the sudden shift brought by crises like the COVID-19 pandemic has made online teaching a necessity for all. Therefore, this study aims to (1) assess the levels of ESL teachers' online teaching efficacy based on the TCK, TPK, and TPACK domains, (2) explore their perceptions of the sources of this efficacy, and (3) examine how these sources contribute to their overall TPACK.

## Literature Review

### 1. ESL Online Teaching Efficacy and Its Sources

The ESL teachers' efficacy when conducting emergency online teaching is the particular interest of this study. Bandura (1997) interprets a person's self-efficacy as their belief in their own ability to achieve in a given situation. In a competitive setting, a person with a high level of self-efficacy achieves more while experiencing less emotion revival. These beliefs will influence the actions they take and amount of effort they put into an activity.

Through the educational lens, teacher self-efficacy is linked to their duty in the teaching and learning session. Consequently, teacher efficacy refers to a teacher's confidence in his or her ability to plan and execute the steps required to complete a specific teaching task in a given situation. (Tschannen-Moran et al., 1998). The success of teachers in accomplishing certain instructional duties in their current teaching context is the emphasis of this definition. In other words, teacher self-efficacy is domain and context specific.

According to Moreira-Fontán et al. (2019), when discussing teachers' efficacy to integrate the various technologies in educational tasks, terms like digital competence for teaching, ICT pedagogic competence or ICT self-efficacy for teaching were used by many researchers. The collective definition of teachers' ICT self-efficacy for teaching is teachers' confidence in their abilities to effectively employ ICT in instructional practice, or teachers' perceived competence in utilising ICT for teaching and learning tasks.

In addition, Bandura (1997) hypothesised that, once established, self-efficacy beliefs are relatively stable due to four primary sources: enactive mastery experience that serve as performance indicators; vicarious experience, which alters beliefs about efficacy through sharing of competencies and comparing them to the achievements of others; verbal persuasions and other forms of social influences that one has certain abilities; and physiological and affective states, which people use to judge their capabilities, strength, and resilience. Quite a handful of studies revealed that these four sources of efficacy do contribute to teacher efficacy (Leonardo et al. 2019; Liu et al., 2021; Yap et al., 2022).

Although enactive mastery experience is emphasised as the most important source of efficacy (Bandura, 1997), the role of verbal or social persuasion and vicarious experience as potentially powerful sources should not be disregarded, particularly in the early years when novices may have fewer opportunities to acquire mastery experiences (Tschannen-Moran & Hoy, 2001). In contrast, other factors may become less significant once teachers develop expertise with mastery (George et al., 2018). This explains Bandura's theory that self-efficacy as a stable construct could be malleable when one begins to learn, which for teachers, it is

the process of learning to teach. George et al. (2018) strengthens this nature of teacher efficacy as a few long-term studies have yielded inconsistent findings indicating both gains and declines in teachers' self-efficacy.

On the other hand, Liu et al. (2021) managed to utilise a mixed-method study while examining 486 senior high school EFL teachers' efficacy in China during live streaming classes during the pandemic. The descriptive results indicated that the respondents had moderate to high levels of efficacy in both technological skills and instructional skills when conducting online classes. Those teachers reported that they had higher levels efficacy when integrating technology compared to when teaching online. On top of that, the interview data explained that EFL teachers' strong professional identity and job commitment might have partially led to their high efficacy in live streaming classes despite facing a lot of obstacles during pandemic.

One of the comprehensive studies that explores online teaching efficacy during pandemic and its associated factors and moderators is conducted by Ma et al. (2021). However, this study researched on teachers in general, not specifically to ESL/EFL teachers. This mixed-method study managed to get 351 teachers to take part in the online survey. Data from open-ended questions in the survey together with the interview protocols were used in qualitative phase to get better understanding of the topic. It was found that the respondents' efficacy for technology integration was significantly increased but not for online teaching. There were four major associated factors identified while only passion burnout was found to moderate the change in online teaching efficacy. Next, Howard et al. (2021) tried to identify teacher profiles in secondary education by grouping teachers based on their online presence, TPACK self-efficacy beliefs and perceived institutional support for online instruction. 222 teachers from 20 countries participated in this study. The final profile characterised the highly efficacious teachers felt that they received good support technologically and pedagogically from schools. Next, the teachers with moderate efficacy could benefit from ICT-integration training while teachers in high efficacy group are suitable to support their colleagues at schools in planning and conducting online teaching. On the other hand, teachers in the low and moderate groups also rated they did not really receive technological or pedagogical support from their schools.

In another research done by Lee and Ogawa (2021) investigating how 138 EFL university teachers in Japan perceived their own ability to teach online with four latent constructs. They disclosed that their respondents were highly efficacious towards online teaching including conducting formative assessment, using different digital platforms and organising group work activities. In the same light, Pressley and Ha (2021) investigated 361 American teachers on teaching efficacy but with only two constructs and three different modes of teaching. It was found out that the participants showed decline in their efficacy for both constructs compared to before COVID-19 outbreak. Besides, teachers who had to teach online scored lowest efficacy compared to those who taught in a hybrid or face-to-face classes. However, when it came to teacher location, instruction level, years of teaching experience and previous accolades, there was consistently no difference in efficacy score.

## 2. TPACK as Online Teaching Efficacy Framework

In recent years, the reflections on the reality of integrating ICT in schools has centered on the abilities, knowledge and attitudes teachers need to facilitate students' active engagement and knowledge production with technology across the curriculum (Roussinos & Jimoyiannis, 2019). Against this background, the framework of Technological Pedagogical Content Knowledge (TPACK) by Mishra and Koehler (2006) has gained traction in teacher training and educational research (see Figure 1). It has attracted the attention of researchers, as evidenced by 600 Scopus database publications in major disciplines and over 300 Web of Science database publications from 2011 until 2019 (Tseng et al., 2020).

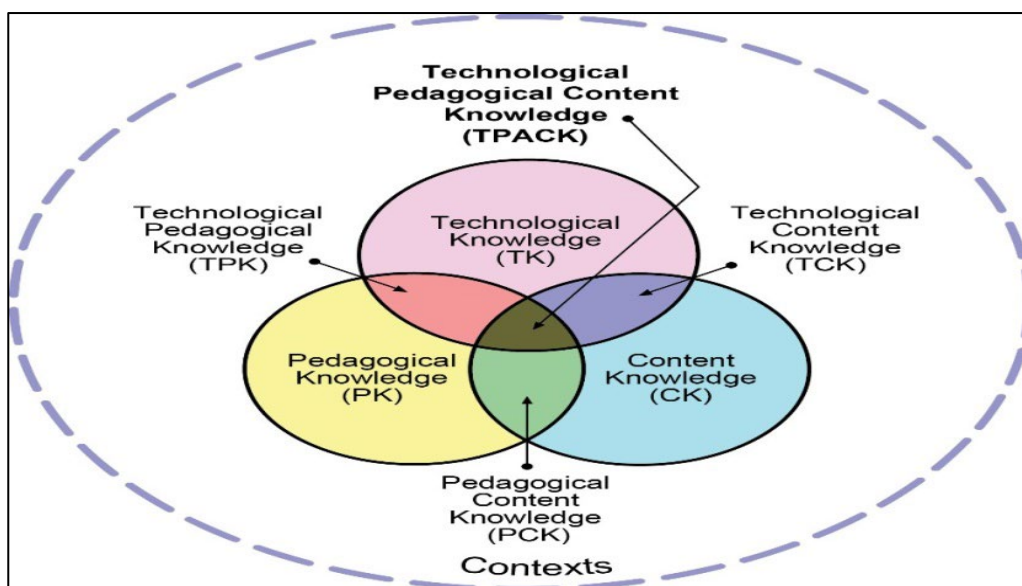


Figure 1. TPACK framework.

Source: Reproduced by permission of the publisher (2012)

The TPACK framework, developed by (Mishra & Koehler, 2006), is expanded on Shulman's (1986, 1987) Pedagogical Content Knowledge (PCK) Model (Graham, 2011) by incorporating technology as a fundamental component, resulting in technological pedagogical content knowledge (TPACK). Koehler et al. (2009) describe TPACK as the links and interactions between technological knowledge (the Internet, software applications, etc.), content knowledge (the subject content to be taught), pedagogical knowledge (teaching and learning practices, strategies, processes, etc.) and the transformation that results from the combination of these domains. This framework goes beyond viewing the three constituent elements of online teaching in isolation, namely the subject matter to be taught, the pedagogy, and the technology. The central tenet of TPACK is that ICT should not be seen as a separate entity that can be tacked on to traditional teaching practices. As shown in Table 1, TPACK consists of seven constructs showing the connections between content knowledge (CK), technology knowledge (TK), and pedagogical knowledge (PK).

Table 1. Descriptions of the TPACK framework domains

TPACK Domain	Description
Technological Knowledge (TK)	Knowledge of advanced and standard technology including the skills of installing, removing, and operating both hardware and software related technologies.
Pedagogical Knowledge (PK)	Knowledge teachers need to have about the subject matter.
Content Knowledge (CK)	Knowledge of methods of teaching and learning which includes development and implementation of lesson plans, classroom management, and student assessment.
Pedagogical Content Knowledge (PCK)	Knowledge of teaching methods suitable to teaching specific subject- matter.
Technological Content Knowledge (TCK)	Knowledge of how subject can be represented by technological tools.
Technological Pedagogical Knowledge (TPK)	Knowledge of various technologies that impact teaching methods and lesson planning.
Technological Pedagogical Content Knowledge (TPACK)	Knowledge of the connections between technological, content, and pedagogical knowledge for teaching with technology inclusion.

Source: Adapted from technological, pedagogical, and content knowledge (tpack) of foreign language teachers of adult learners by Source: Shah (2022).

TPACK Framework needs to be situated in a specific domain and context (Wang, 2022). Since discussions of efficacy are also domain- and context-specific (Bandura, 2006), TPACK is a good framework

for determining how effective ESL teachers are at teaching online because it takes into account the complex interactions among the subject matter (in this case, English), pedagogy, and technology, all of which are crucial components of online instruction. A variety of studies focusing on all or a unique combination of the knowledge domains TK, PK, and CK were uncovered through a review of relevant literature (Shah, 2022). Thus, this present study only used three TPACK domains which are TCK, TPK and TPACK since these domains really represent the integration of ICT during online teaching compared to the remaining four domains.

Throughout the years, there has been an increasing study interest in examining the relationship between language teachers and TPACK in order to offer critical evidence regarding teachers' proficiency and capacity to use their TPACK knowledge and skills in actual classroom settings (Kozikoğlu & Babacan, 2019; Wang, 2022). Many studies show that in-service teachers scored all TPACK domains well above neutral (Mainake & McCrocklin, 2021; Tseng et al., 2020). Yet, teachers across different nations and educational systems give the overall TPACK domain the lowest rating (Ma et al., 2021; Mainake & McCrocklin, 2021, Scherer et al., 2023). Nonetheless, the results of these investigations differ with relation to lowest the and highest TPACK domain ratings.

Kozikoğlu and Babacan's (2019) study which investigated the relationship between Turkish EFL teachers' attitudes towards technology and TPACK skills revealed that the respondents had a high level of TPACK skills and attitude towards technology. The similar research was done in Malaysia and the results were identical when the 65 ESL teachers showed amazingly high TPACK levels and their attitude towards technology is also high (Azhar & Hashim, 2022). For both studies, it was found that the levels of teachers' TPACK skills were significantly and positively related to ESL teachers' attitudes towards technology.

525 EFL teachers from Taiwan, China, Japan, and France were administered a two-dimensional TPACK scale that assessed their TPACK in integrating technology and thinking skills (Wang, 2022). Wang (2022) discovered in this study that the participants' confidence in their TPACK teaching higher-order thinking skills was diminished. However, they still rated highly efficacious in the fundamental TPACK competencies. In addition, EFL teachers from different regions reported varying levels of TPACK and thinking skills, while high-achieving EFL teachers reported high TPACK self-efficacy.

Roussinos and Jimoyiannis (2019) examined the perceptions of ICT-integrated classroom skills and knowledge among Greek primary school teachers using the TPACK framework. They discovered that the respondents have a solid understanding of the primary TPACK domains, namely, TK, CK and PK. However, the majority of teachers viewed them independently and were unable to combine their TPACK knowledge when planning and implementing meaningful integration of ICT in the classrooms. Additionally, the results were statistically different between teachers based on their genders, teaching experiences and ICT training. Finally, the results demonstrated that the educational context factors in Greek primary schools may influence teachers' efforts to use ICT-based interventions in their classes.

## Methodology

### 1. Research Design

A quantitative approach was used in this study by adopting survey research as the design. According to (Brianza et al. (2022), self-report questionnaires emerged as the most frequently adopted instruments in this topic, with a couple of surveys (or their adaptations) being used in multiple studies. Survey designs allow recognition of patterns among our samples either in their opinions, attitudes, behaviors or features (Creswell & Plano Clark, 2018).

### 2. Participants

The population was ESL teachers from 60 SBPs as 9 other SBPs had involved in the pilot test earlier. Since the population is small in number (N=483) and scattered all around Malaysia, simple random sampling was employed. Only ESL teachers who were teaching in SBPs during COVID-19 outbreak could be the participants. After three weeks, 252 completed responses were received. This sample size is enough as set by

Krejcie and Morgan's (1970) sample size table, which a minimum of 248 teachers are needed for such population. This study involved 42 male respondents (16.7%) and 210 female respondents (83.3%). In terms of age, some respondents are less than 30 years old (8.3%), 30 to 40 years old as many as 87 people (34.5%), 41 to 50 years old as many as 90 people (35.7%) and 50 years old and above as many as 54 people (21.4%).

### 3. Instrument

The questionnaire consisted of 4 questions on basic demographic information, 25 questions on ESL online teaching efficacy (using 3 domains of TPACK which were adapted from (Bostancıoğlu & Handley, 2018), and 16 questions on sources of efficacy were own developed based on literature. All the items were rated on a 5-Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). In addition, the Cronbach Alpha test that was done during a pilot study to 80 SBP ESL teachers showed high internal reliability as the values were within 0.91 to 0.98 for all 7 constructs (3 constructs for online teaching efficacy and 4 constructs for sources of efficacy).

### 4. Data Collection

An email was sent with the link and QR code of the e-questionnaire to all respondents from 60 SBPs. In the span of three weeks, emails and even text messages were sent to respondents as an invitation to answer the e-questionnaire.

### 5. Ethical Consideration

Ethical approval was obtained from the relevant institutional review board prior to data collection. Participation in the study was voluntary, and informed consent was obtained from all respondents. Anonymity and confidentiality were strictly maintained, and participants were assured that their responses would be used solely for research purposes.

### 6. Data Analysis

#### Descriptive Analysis

An online survey programme was used to collect data. Next, the data were exported from the online survey tool into a spreadsheet, imported into SPSS and inspected for outliers. The findings were analysed descriptively by using mean as the measure of central tendency. On top of that, standard deviation was used to see the way data spread out as it might affect the mean. The interpretation of mean score used in this study was based on Landell, (1997) (see Table 2).

Table 2. Mean score interpretation

Total Mean Score	Level
1.00 – 2.33	Low
2.34 – 3.67	Moderate
3.68 – 5.00	High

Source: Landell (1997)

#### Multiple Regression Analysis

In this research, multiple regression analysis was used to test one null hypothesis, Ho1: There are no contributions of sources of efficacy to TPACK domain among teachers. The p-value that is less than the degree of significance (0.05) indicates that there is a significant relationship between variables and the null hypothesis can be rejected. However, if the p-value is greater than 0.05, it indicates that there is no significant relationship between the variables and the null hypothesis should be accepted.

## The Findings

1. The Levels of ESL Online Teaching Efficacy (using TCK, TPK & TPACK Domains) among Teachers  
 To answer the first research question on the levels of ESL online teaching efficacy among teachers based on 3 TPACK domains, a descriptive analysis involving mean scores and standard deviations was conducted. Table 3 shows the findings of the descriptive analysis that has been conducted.

Table 3 Levels of ESL online teaching efficacy based on 3 TPACK domains

TPACK Domains	Mean	Standard deviation
Technological Content Knowledge (TCK)	4.02	0.71
Technological Pedagogical Knowledge (TPK)	3.80	0.69
Technological Pedagogical Content Knowledge (TPACK)	3.77	0.70

We could observe that SBP ESL teachers in this study had high levels of efficacy for TCK, TPK and TPACK domains as the mean score ranging from 3.77 to 4.02. Like many other studies, this research revealed the same pattern where teachers scored slightly lower in TPACK domain (3.77) compared to other domains, TCK (3.99) and TPK (3.80). A more detailed results on each domain can be seen in Tables 4, 5, and 6.

Table 4 Technological content knowledge (TCK) among teachers

No.	Item	Mean	Standard deviation
1	I know the technologies that I can use to teach listening in English.	3.91	0.77
2	I know the technologies that I can use to teach speaking in English.	3.98	0.71
3	I know the technologies that I can use to teach reading in English.	4.10	0.69
4	I know the technologies that I can use to teach writing in English.	4.15	0.66
5	I know the technologies that I can use to teach English language grammar.	4.16	0.65
6	I know the technologies that I can use to teach English vocabulary.	4.11	0.64
7	I know the technologies that I can use to teach pronunciation of English words.	3.96	0.74
8	I know the technologies that I can use to teach spelling of English words.	3.82	0.79
<b>Technological Content Knowledge</b>		<b>4.02</b>	<b>0.71</b>

Results of descriptive analysis in Table 4 show the highest mean score is the item "I know the technologies that I can use to teach English language grammar" (M = 4.16, SP = 0.65). On the other hand, the score that shows the lowest mean is the item "I know the technologies that I can use to teach English to pupils with different cultural backgrounds" (M = 3.75, SP = 1.83). Next, for TPK domain (see Table 5), teachers felt most efficacious when they choose the technologies that enhance teaching approaches for an online lesson. However, they felt least efficacious when they have to engage pupils in solving authentic problems using digital technologies.

Table 5. Technological pedagogical knowledge (TPK) among ESL teachers

No.	Item	Mean	Standard deviation
1	I can evaluate the appropriateness of a technology for teaching a lesson.	3.71	0.88
2	I can choose the technologies that enhance the teaching approaches for a lesson.	3.89	0.78
3	I can choose the technologies that enhance pupils' understanding for a lesson.	3.84	0.81
4	I can adapt the use of the technologies for different teaching activities.	3.80	0.85
5	I can design relevant learning experiences to promote pupil's learning, using technology.	3.78	0.84
6	I can choose the technologies to be used in assessment.	3.88	0.79
7	I can engage pupils in solving authentic problems using digital technologies.	3.67	0.82
8	I can engage pupils in solving authentic problems using digital resources.	3.80	0.81
<b>Technological Pedagogical Knowledge</b>		<b>3.80</b>	<b>0.69</b>

For the last domain, TPACK, the results can be seen in Table 6. From the mean score, we could see that teachers rated item number 2, “I can select technologies to use in my classroom that enhance what I teach, how I teach, and what pupils learn.” with the highest mean. In contrast, item number 7, “I can provide equitable access to digital language learning resources.” was rated the lowest. Interestingly, with 3.63 mean score, it is still interpreted as the teachers believed that they had high efficacy in providing virtual language learning resources fairly and impartially to every pupil.

Table 6. Technological pedagogical content knowledge among ESL teachers

No.	Item	Mean	Standard deviation
1	I can teach lessons that appropriately integrate English linguistic concepts, technologies, and teaching approaches.	3.75	0.72
2	I can select technologies to use in my classroom that enhance what I teach, how I teach, and what pupils learn.	3.94	0.74
3	I can use technology effectively to deliver information to pupils and peers.	3.85	0.82
4	I can use a range of technologies to help pupils pursue their individual curiosities.	3.85	0.80
5	I can use a range of technologies that enable pupils to become active participants.	3.77	0.90
6	I can provide equitable access to digital language learning tools.	3.65	0.83
7	I can provide equitable access to digital language learning resources.	3.63	0.89
8	I can facilitate intercultural understanding by using technology to engage pupils with different cultures.	3.75	0.88
<b>Technological Pedagogical Content Knowledge</b>		<b>3.77</b>	<b>0.70</b>

## 2. Teachers’ Perceptions on Sources of ESL Online Teaching Efficacy

An overall summary of the teachers’ perception on sources of ESL online teaching efficacy is presented in Table 7 below. To answer the second research question, a descriptive analysis of calculating mean scores and standard deviations was conducted. There are three sources of efficacy that teachers rated as high which are vicarious experience, enactive mastery experience and verbal or social persuasion as the mean scores ranged between 3.71 to 3.91. With mean score 3.30, teachers’ physiological and emotional arousals were described as moderate sources of efficacy.

Table 7. Teachers' perceptions on sources of ESL online teaching efficacy

Sources of ESL Online Teaching Efficacy	Mean	Standard Deviation
Vicarious experience	3.92	0.69
Enactive mastery experience	3.74	0.61
Verbal or social persuasion	3.71	0.66
Physiological and Emotional Arousals	3.30	0.99

## 3. The Contribution of the Sources of Efficacy Variables to TPACK

This subsection will answer the third research question with one null hypothesis:

Ho1: There are no contributions of sources of efficacy to TPACK domain among teachers.

In order to test the hypothesis, all four sources of efficacy were tested to see the contribution they brought to only one domain, which was the TPACK domain as it represents the holistic synergy of ESL online teaching efficacy. Thus, multiple regression test was administered after dropping some data that could interfere with the reliability of the regression findings. Tables 8 and 9 below show the stepwise multiple regression analysis.



Table 8. Analysis of variance

	Sum of Squares	Df	Mean Squared	F	Sig.
Regression	49.345	1	49.345	250.613	0.000
Residual	49.225	250	0.197		
Total	98.570	251			
Regression	55.105	2	27.553	157.843	0.000
Residual	43.465	249	0.175		
Total	98.570	251			
Regression	56.075	3	18.692	109.086	0.000
Residual	42.495	248	0.171		
Total	98.570	247			
Regression	57.041	4	14.260	84.816	0.000
Residual	41.529	247	0.168		
Total	98.570	251			

Table 8 shows that the multiple regression analysis conducted found verbal or social persuasion (F = 250.613, sig = 0.000), enactive mastery experience (F = 157.843, sig = 0.000), vicarious experience (F = 109.086, sig = 0.000) and physiological and emotional arousals (F = 84.816, sig = 0.000) are significant variants that provide predictors of technological pedagogical content knowledge (TPACK) among teachers.

Table 9. Regression: contribution of sources of efficacy towards technological pedagogical content knowledge (TPACK) domain

Sources Of Efficacy	Unstandardised Coefficients	Standardised Coefficients					
	B	Std. Error	Beta	T	Sig	R <sup>2</sup>	Contribution
Verbal or Social Persuasion	0.418	0.059	0.445	7.104	0.000	0.501	50.1%
Enactive Mastery Experience	0.270	0.066	0.267	4.099	0.000	0.559	4.9%
Vicarious Experience	0.159	0.064	0.176	2.492	0.013	0.569	1%
Physiological & Emotional Arousal	-0.069	0.029	-0.110	-2.397	0.017	0.579	1%
Constant	0.900						

Lastly, Table 9 shows that verbal or social persuasion contributed 50.1% (B = 0.418, t = 7.104, sig = 0.000 and R<sup>2</sup> = 0.501), performance accomplishment contributed 4.9% (B = 0.270, t = 4.099, sig = 0.000 and R<sup>2</sup> = 0.559), vicarious experience contributed 1% (B = 0.159, t = 2.492, sig = 0.013 and R<sup>2</sup> = 0.569) and physiological and emotional arousal contributed 1% (B = 0.069, t = 2.397, sig = 0.017 and R<sup>2</sup> = 0.579) on technological pedagogical content knowledge (TPACK) domain among teachers. Therefore, the null hypothesis (Ho1) is rejected, it shows that there is a contribution of all four sources of efficacy to technological pedagogical content knowledge (TPACK) domain efficacy among teachers.

**Discussion**

Even online teaching is not new in Malaysia, the levels of implementation were always varied previously (Goliong et al., 2020; Tamin & Mohamad, 2020). The variation ranged from zero ICT-integrated classes to fully ICT-integrated classes. However, the current COVID-19 pandemic has given all the teachers no choice but to conduct classes online. Therefore, we will discuss the results of this study regarding SBP ESL teachers' levels of online teaching efficacy and their sources of efficacy.

1. SBP ESL Teachers' Levels of Online Teaching Efficacy

As expected, the teachers rated their online teaching efficacy as high. This finding strengthened the other study results (Howard et al., 2021; Ma et al., 2021; Roussinos & Jimoyiannis, 2019; Scherer, 2023; Tseng et al., 2020). Like many other studies (Bostancioğlu & Handley, 2018; Corry & Ste la, 2018; Tseng et al., 2020; Wyatt, 2018), TPACK framework is used in this research as the measurement for online teaching efficacy,

however, with the focus of only three domains that are directly related to online teaching. They are TCK, TPK and TPACK. Even the respondents of this study rated they had high efficacy of all three domains, the score pattern actually repeated those of other study results (Ma et al., 2021; Roussinos & Jimoyiannis, 2019). Their TPACK efficacy was rated slightly lower than the other two domains. This means teachers feel that they are less efficacious when they have to integrate and consider all three aspects of online teaching (technology, pedagogy and content knowledge) compared to when they have only two aspects to deal with. Ma et al. (2021) found the same phenomenon in their study as the 351 teachers in China showed increase in efficacy for technology application but not for online teaching during the early COVID-19 pandemic.

The majority of respondents in this study also showed high efficacy in teaching all four English language skills through online teaching. This is seen when majority of them rated high level of familiarisation with the technologies to deliver each individual language skill. This finding proves that online teaching is also applicable to skill-based subject like English and not exclusively applicable to other subjects which have specific contents to be delivered like STEM. However, teachers' efficacy in delivering the subject online might not be beneficial to all pupils. This is due to teachers' difficulties to provide equitable access to digital language learning resources to all pupils. They rated this item as the lowest efficacy in the survey. This is among the digital constraints that could not be solved by teachers alone. Providing access to devices and even internet connection needs attention and effort from the authorities if teachers and parents could not do it.

One major digital constraint faced by teachers is the lack of equitable access to devices and internet connectivity an issue that cannot be resolved by teachers alone. When both teachers and parents are unable to provide the necessary technological support, intervention from authorities becomes crucial. In addition to ensuring fair access to virtual learning, teachers also struggled to engage students in authentic problem-solving tasks, a key aspect of 21st-century skills where learners should be exposed to real-world challenges (MOE, 2013). This difficulty is supported by Liu et al. (2021), who found that transferring authentic activities from traditional classrooms to digital environments poses significant challenges. Despite having high self-efficacy in integrating ICT, teachers often reported feeling less effective in sustaining student engagement during ESL online classes. As Ma et al. (2021) observed, while initial technological barriers diminish as teachers become more familiar with online tools, the ongoing concern lies in creating meaningful, interactive learning experiences that foster student participation.

## 2. Sources of Online Teaching Efficacy among SBP ESL Teachers

Bandura (1997) has outlined four sources of information that affect one's self-efficacy. ESL teachers in this study rated physiological and emotional arousals as moderate sources of efficacy as opposed to the other three factors, namely, vicarious experience, enactive mastery experience and verbal or social persuasion, which were rated as high. This shows that even though they were forced to teach online out of the blue, the ESL teachers took it professionally. This is in line with teachers in Liu et al.'s (2021) research who showed high self-efficacy due to their strong professional identity and occupational commitment. The stress, pressure and anxiety were there, but they did not let their online teaching efficacy get affected by those challenges (Fathi et al., 2021; Asliaty Atim et al., 2021). In fact, they believed that they could aid pupils' growth both academically and personally during COVID-19 pandemic through online teaching (Liu et al., 2021; Nurshamshida et al., 2023).

The study used multiple regression to examine how four sources of efficacy influence the confidence of respondents in their ability to provide online instruction. The results showed that all four sources of efficacy had an impact, contributing up to 57% to respondents' efficacy. This finding aligns with Bandura's (1997) efficacy theory, which proposes that a person's confidence in their ability to perform a task is influenced by four factors: Performance accomplishment, vicarious experiences, emotional and physiological states, and social or verbal persuasion. Similarly, previous studies have reached similar conclusions, indicating that these sources of efficacy play a significant role in building confidence for online instruction (Leonardo et al. 2019; Liu et al., 2021; Yap et al., 2022). However, the current study found that verbal or social persuasion was the primary factor contributing to efficacy, accounting for 50.1% of the outcome. This finding suggests that feedback from others, such as students, colleagues, and administrators, is a critical aspect of building

confidence for online instruction.

The study results highlight the importance of providing support and feedback to online teachers to help improve their confidence and efficacy. Additionally, the timing of the study (Scherer et al., 2023), conducted almost two years after the introduction of online instruction, may have influenced the results by indicating that other sources of efficacy can take the place of performance accomplishment over time. Nonetheless, the analysis also highlights the needs to conduct further research that explore other sources of efficacy for ESL online teaching as the four sources of efficacy tested in this study only contributed 57% of respondents' online teaching efficacy. This new direction of study will give more information on how we can better support our teachers to meaningfully teach ESL online.

## Conclusion

This paper reported findings from a modified 3-TPACK-domain survey administered to ESL teachers in Malaysian boarding schools (SBP) to assess their online teaching efficacy and its sources. Results indicated that while teachers demonstrated high efficacy in integrating ICT to teach ESL, they were less confident in synthesizing pedagogical knowledge (PK), technological knowledge (TK), and content knowledge (CK) into a cohesive framework for designing meaningful online ESL lessons. Furthermore, stepwise multiple regression analysis revealed that although all four sources of efficacy contributed significantly, verbal or social persuasion emerged as the strongest predictor, accounting for approximately half of the explained variance in teaching efficacy. Pedagogically, this underscores the importance of continuous encouragement and feedback from students, peers, and school administrators to strengthen teachers' confidence and effectiveness in online ESL instruction.

This study is not without limitations. The reliance on electronic surveys and self-reported data introduces potential biases, such as social desirability and response bias. Additionally, the inherent constraints of quantitative methodologies may have limited the depth of insight into the complex, context-specific nature of TPACK efficacy. Future research should explore mixed-methods approaches, incorporating qualitative data such as interviews or classroom observations, to enrich understanding and validate quantitative findings. Practically, teacher training and professional development programs should emphasize not only technological integration but also strategies for fostering authentic engagement and peer support in digital learning environments.

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