



Digital Divide and Factors Affecting English Synchronous Learning during Covid-19 in Thailand

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This study examined both factors underlying the digital divide among Thai EFL students and factors affecting the implementation of synchronous online learning in English courses at a university level in Thailand during the COVID-19 situations. Using a mixed-method design, it distributed a survey questionnaire to 306 undergraduate students (81.2% Female; 17.8% Male) and conducted an interview with 8 voluntary students. The results of the Exploratory Factor Analysis (EFA) for digital divide unveiled two factors that counted for 57.207% of the total variance, validated by Bartlett's test of sphericity ($\chi^2(55) = 1916.309, p < .001$), and these identified factors were aligned with the interview data. This study also found two underlying factors from parents ($\chi^2(28) = 1356.981, p < .001$), students ($\chi^2(55) = 2211.475, p < .001$), and teachers ($\chi^2(55) = 1916.309, p < .001$) that affected the expediency of online learning at a university in Thailand. Each factor could explain more than 60% of the total variance in the outcome variables. The qualitative data also strengthened the quantitative findings.

Keywords: COVID-19, digital divide, synchronous learning, Thai EFL learners, EFL

INTRODUCTION

There have been concerns about the factors that may challenge the expediency of the Thai students' synchronous learning during the outbreak of COVID-19. These concerns are understandable since not once did universities in Thailand ever conduct a big scale of online learning involving every single student and lecturer. Simply put, parents, students, and teachers were not ready for the unanticipated move from traditional face-

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to-face learning to online learning, especially in terms of devices, resources, and digital literacy (Aboagy et al., 2020; Lau & Lee, 2020).

The digital divide among Thai students has become inevitable, especially for those coming from low-income families. Such inequality can deprive some students of continuing their learning and critically affect their performances as well as educational achievements (Hongladarom, 2016; Rattanakhamfu, 2020; Sucaromana, 2020; Wintachai et al., 2020). The digital divide describes the gap between students who have access to information technology (IT) and those who have not (Khan, 2005; Van Dijk, 2006). The disparity between the 'haves and have-nots' was caused broadly by what Schneider and Droege (2014) believe that they would include socio-economic, demographic, educational, and racial factors. However, Rattanakhamfu (2020) contends that the divide among Thai students may be caused by economic and demographic factors. Yet, the crucial factors causing the digital divide and affecting the usefulness of synchronous learning are still insufficiently researched, especially in the current COVID-19 contexts.

During the pandemic, starting from March 2020 to the present day, online synchronous and asynchronous learnings have become the only learning modes for students to continue their education (Chopra et al., 2020; Onyema et al., 2020). Teachers have been assigned to provide online lectures at a particular time via a specific platform or record lectures, prepare assignments, and share them with students. However, the expediency of synchronous learning was challenged by different factors in different contexts and therefore, Sucaromana (2020) found that students and teachers in Thailand would still prefer traditional teaching instead of online teaching. Wintachai et al. (2020), who examined the challenges of online teaching and learning in Thailand during the outbreak of COVID-19, disclosed that synchronous learning was affected by teachers' digital literacy, students' economic difficulty, lack of devices, and teachers' limited support during online learning. Aguilera-Hermida (2020) examined the Thai students' acceptance of online learning, appended that student disliked online learning due to situational, educational, and emotional challenges. However, the evidence in the Thai context is still limited; there is a lack of knowledge about the factors that undermine the expediency of synchronous learning of the Thai EFL learners during COVID-19.

To contribute to the existent literature and provide a clear overview of the digital divide among Thai students, the present study investigates the factors that underlie the digital divide among Thai EFL learners during the pandemic. Synchronous learning is a sort of learning mode, in which students and teachers are not in the same place but interact at the same time via an online platform (Brewer & Picus, 2014). It has become the only convenient means for learning for around 1.2 billion students in 186 countries during COVID-19 (Chopra et al., 2020; Onyema et al., 2020). The present study is important as it provides some suggestions for the teachers to reconsider whilst delivering online classes. This might in turn influence their teaching approaches and strategies in a way to accommodate the students' needs and context. The results of the study will contribute to a deeper understanding of the factors that underlie the digital divide among the Thai EFL learners during the pandemic and thus have challenged the expediency of their

synchronous learning. To be more specific, the current study investigates the following research questions:

1. What are the factors that underlie the Digital Divide among Thai EFL learners during COVID-19?
2. What are the factors that challenge the expediency of their synchronous learning during the pandemic?

Literature Review

Digital Divide among Thai EFL Students

There has been little prior research about the digital divide among Thai EFL learners. Arthur-Gray and Campbell (2008) believe that the digital divide exists in Thailand as there is “a deep-rooted inequality permeating all aspects of the Thai society” (p. 256). The divide among the Thai students is normally caused by socioeconomic, demographic, and/or educational factors categorizing them into poor and rich, rural, and urban, digitally literate, and digitally deficient (Arthur-Gray & Campbell, 2008; Hongladarom, 2016; Srinuan et al., 2012; Srinuan, & Bohlin, 2011; Schneider & Droege, 2014). Nowadays, students with digital literacy skills and access to ICT are a distinct advantage (Sharp, 2018).

During COVID-19, the digital divide has become more evident and affective among students in all the countries around the world including Thailand. Wintachai et al. (2020) relate that during the pandemic, schools and universities were urged to move from traditional face-to-face into synchronous teaching. Not only Thailand but also the entire world was not well-prepared for that sudden shift. Before the outbreak of COVID-19, students from low-income families who did not have computers at home used universities' facilities (e.g., computers and the internet) to learn and practice the language. However, after closing the campuses many students were left helpless as they did not have devices to attend online classes. Some families were forced to buy computers for their children whilst many other families could not afford to buy and thus urged their children to struggle with their available mobiles or computers. Rattanakhamfu (2020) points out, “a greater problem faced by households in Thailand than poor internet accessibility is having no computer to use at home. Only 21 % of Thai households have computers at home which is lower than the global average of 49 % and 38 % in the developing countries” (p. 2).

Sucaromana (2020) examined the change of Thai EFL students' online learning strategies (e.g., self-monitoring, motivation, internet literacy, internet anxiety, and concentration) during COVID-19 and found that “the level of internet anxiety was high while the level of motivation, degree of self-monitoring, level of internet literacy and level of concentration could be rated average when engaging in online learning” (p. 15). Her findings indicated the existence of the digital divide as their anxiety was caused by the lack of a stable internet connection. This consequently affected their concentration and motivation. Therefore, “most schools and teachers in Thailand still prefer to use classroom teaching instead of online teaching” (*ibid*). To bridge the existing divide, that

was caused by the economic factor, the Ministry of Higher Education, Science, Research, and Innovation requested cooperation from institutions and companies to offer special assistance (e.g., arrange and provide online learning platform, reduce the tuition fee, and negotiate with the internet providing companies to grant SIM card with a special price package) for students to be able to continue their online learning (Huang et al., 2020).

Hongladarom, (2016) asserted that the digital divide among the Thai students is caused by a demographic factor as “16 percent of the population in the Bangkok metropolitan area have access to the internet while only 4 to 5 percent of the people in the rural areas outside Bangkok do so” (p. 4). The “household internet access is estimated in Thailand by 28 %” (Schneider & Droege, 2014, p.36). A study by the National Electronics and Computer Technology Center (NECTC) explained that “55.2 percent of the total users of the internet in Thailand reside in Bangkok, 14.4 in the neighboring provinces: 10.9 % in the central region, 8 % in the North, 5.7 % in the Northeast and 4.7 % in the South” (Hongladarom, 2016, p. 4). The “digital divide originates with more socially complex factors such as race, income, location (urban/suburban versus rural areas) and other demographic factors” (Schneider & Droege, 2014, “p. 35). The students usually come from different rural and urban areas in Thailand, and this presumably makes the students’ demographic location a causative factor for the divide.

Relatively, Arthur-Gray and Campbell, (2008) posit that there is an information divide that needs to be bridged before discussing the digital divide and thereby offering diminution in the digital divide. Students’ digital literacy is here presumed to be the cause of digital literacy. “They have technical or digital skills to maneuver through digital technologies but lack cognitive and socio-emotional skills. Students are proactive in using technology for social media or entertainment but not for learning” (Anthonysamy, 2020, p. 134). Wintachai et al. (2020) point out that Thai universities including the top ones encounter the challenge on how to assist those who lack basic literacy skills and/or digital devices to cope up with the contemporary demands and unexpected challenges like that of COVID-19. This digital deficiency impacted unfavorably their educational achievements. The students must continue their education at home and thus digital skills mattered a lot and directly affected their performance (Kayalar, 2020).

Impact of COVID-19 on Education in Thailand

On January 13, 2020, Thailand registered the first positive case of COVID-19 for a Thai national coming from Wuhan. Confirmed cases arose quickly, urging the Thai government to announce the National Emergency Decree on March 26. The key measures included social distancing, closure of schools and universities, and the restriction of traveling inside and outside Thailand. Most of the universities in Thailand were either in the mid or about to finish the second semester of the academic year 2019-2020. Thai universities turned to online teaching and learning to contain the virus and help the students to continue their education. Nevertheless, this unanticipated shift from traditional face-to-face learning to synchronous learning seems to be simple but it is not. It primarily disrupted the students’ learning, exams, and overall educational

achievement (Sahu, 2020; Wintachai et al., 2020; Sinring & Aryani, 2021). Synchronous learning “increased the demands for computers and IT equipment at home for parents, children, and other relatives who have to work from home” (Sahu, 2020, p. 2). It overburdened parents as they must provide computers and look after their children’s learning. Meanwhile, some universities have faced huge challenges in “adapting themselves to online teaching and testing in order to maintain the quality of standard Thai education” (Rattanakhomfu, 2020).

Wintachai et al. (2020) argue that COVID-19 has significantly affected the Thai Education system as it explores the ‘educational inequality’ among students. It reinforced ineffective teaching practices as Thailand like many other countries in the world was not prepared to deliver e-learning. Few teachers were utilizing ICT for remote teaching before the pandemic, however; teachers were forced to teach online despite their digital deficiency. COVID-19 also undermined the reliability of summative assessment due to “the possibility of cheating” (Khan, 2020; Rofiah & Waluyo, 2020), the replacement of the summative assessment with homework (Gonzalez et al. 2020), the postponement or cancellation of summative assessment, and the utilization of predicted grades (Hudson et al., 2020). Besides, Wintachai et al. (2020) add that COVID-19 limited the teachers’ support for the students as they cannot meet the students face-to-face. The struggling students were left behind as it became difficult for the teachers to give the same support during synchronous teaching (Tracey & Francesca, 2020).

Factors Affecting the Expediency of Synchronous Learning

Parents, students, and teachers have expressed discomfort and stress during online learning and teaching as all encountered persistent difficulties that critically affected the fruitfulness of online learning (Garbe et al., 2020; Lau & Lee, 2020). Nevertheless, the present study explores the factors that challenged the usefulness of online learning during COVID-19. Aguilera-Hermida (2020) found that synchronous learning during COVID-19 was affected negatively by situational and environmental challenges which include: first, “the distractors of family members, noise and housework” (p.5). Some students are living in cities and therefore fail to hear the teachers’ voice. Second, the inability to balance personal life, work, and school activities. Third, the lack of internet connection. It is a “problem for many students because many people/family members were using the internet at once” (*ibid*). The students’ synchronous learning was also affected critically by the lack of digital devices (e.g., computers or iPad). Some families “could not afford to buy devices or good internet at home” due to economic difficulty (Wintachai et al., 2020, p. 4). These challenges urged some students to think of dropping out as they got “unsatisfactory academic results” (*ibid*, p. 5).

The usefulness of online learning was also affected by students’ “emotional challenges” (Aguilera-Hermida, 2020, p.5). Worrying about their health and study created mixed feelings of stress and anxiety which consequently affected their concentration. Meanwhile, studying at home alone and coping up with the challenges of the internet and difficulties of learning increased their demotivation (Ardan et al., 2020). The lack of learning activities and support in learning from their peers and/or teachers made them

feel bored (Watson & Barton, 2020). The “absence of the teacher, who can find solutions as soon as they have problems” (Hebebe et al., 2020, p. 270) was one of the biggest challenges of their e-learning. They sometimes do not understand what teachers are teaching and meanwhile cannot ask teachers as they used to in face-to-face classroom learning (Chopra et al., 2020). Most if not all the students disliked online learning as it negatively affected their learning and understanding (Simonson & Orellana, 2020) limited the teachers’ support (Wintachai et al., 2020), and challenged their digital literacy (Anthonysamy, 2020).

Accordingly, as a response to the Covid-19 situation, universities in Thailand assigned teachers to deliver online lectures at a specific time via specific platforms such as ZOOM or Microsoft Teams. However, synchronous learning in Thailand during COVID-19 was challenged by the teachers’ digital literacy. The “university lecturers started learning from students and senior colleagues seeking support from their juniors which did not take place prior to the COVID-19 pandemic” (Wintachai et al., 2020, p. 3). The hierarchical culture of seniority (i.e., the higher rank and status are supposed to provide knowledge, make decisions, and lead others) is still dominant in Thailand nevertheless; COVID-19 has given priority to those who have better digital literacy skills (*ibid*). Teachers’ digital literacy includes their attitude, awareness, cognitive thinking, ability to appropriately utilize technological tools and apps. It also entails “locating, assessing, analyzing and integrating digital resources to generate new insights in a specific context” (Wyk et al., 2020, p. 502).

Another factor that affected the expediency of online learning during COVID-19 is the teachers’ limited teaching online experience (Aguilera-Hermida, 2020). During the pandemic, online learning was the only option, however, teachers have no e-learning teaching resources and no knowledge on platforms for online teaching. Almanthari et al. (2020) explained that e-learning during the pandemic was affected by four barriers “namely teacher, school, curriculum, and students” (p. 5). Teachers’ barrier entails a lack of knowledge, confidence, experience, convenience, and belief about e-learning. This unfamiliarity affected their teaching strategies. Some teachers believe that giving a lot of homework to the students will constantly keep them busy. “In this way, it will compensate for a lot of hours of learning” (Sintema, 2020, p. 5). Aguilera-Hermida (2020) rejected this strategy as it “lacks the educational value” (p.5). It increased the students’ stress and weakened their educational achievements as they are not familiar with online tools and dedicated all their time for doing homework only (*ibid*). Besides, the expediency of online learning was hindered by “poor infrastructure including network, power, inaccessibility, unavailability issues, and poor digital skills” (Onyema et al. 2020, p. 1). The lack of constant support especially for the low-level students which the teachers used to offer during the traditional face-to-face teaching significantly affected their e-learning experience, attitude, and performance. “The casual conversation with the students in face-to-face sessions helps to build rapport. In online teaching, the teacher and the students could hardly interact causally because of fatigue from working online” (Wintachai et al., 2020, p. 4).

METHOD

Participants

This study employed a mixed-method design, involving a questionnaire and semi-structured interviews to answer the research questions. It involved 306 first-and second-year students from 13 different schools at a university in the south of Thailand. Their age ranged from 18 to 24 years old ($M = 19.76$, $SD = .805$). The demographic characteristics, as seen in Table 1, helped identify the digital divide based on gender, school, and age. The study took place in the third term of the academic year of 2019-2020 from 10th February to May 2020. In the middle of the courses precisely on April 2nd, 2020, the university switched to synchronous learning due to the urge of social distancing and the attempt to contain the virus. The students had to continue their learning via online regular classes delivered by university teachers through online platforms such as ZOOM and Microsoft Teams.

Table 1
Demographic characteristics

		Frequency	%
Gender	Female	251	81.2
	Male	55	17.8
	Prefer not to say	3	1
Age	18	2	0.6
	19	120	38.8
	20	148	47.9
	21	33	10.7
	22	1	0.3
	23	4	1.3
	24	1	0.3
	School	School of Allied Health Sciences	59
School of Management		72	23.3
School of Engineering and Technology		22	7.1
Walailak University International College		2	0.6
School of Informatics		4	1.3
School of Liberal Arts		11	3.6
School of Science		17	5.5
School of Nursing		87	28.2
School of Pharmacy		11	3.6
School of Public Health		14	4.5
School of Architecture and Design		5	1.6
School of Medicine		4	1.3
Walailak University International College of Dentistry		1	0.3

Instruments

Questionnaire and semi-structured interviews were employed in the present study.

Survey

A survey questionnaire with 41 items through 5 Likert scales (with five response range e.g., “1” strongly disagree, “2” disagree, “3” no opinion, “4” agree, and “5” strongly agree) were utilized to obtain quantitative data that would answer the research questions. The questionnaire was used in this study to reach out to a group of Thai EFL students and find out the challenges that affected the usefulness of their synchronous learning during COVID-19. First, the questionnaire was adapted from other studies (Adnan & Anwar, 2020; Aguilera-Hermida, 2020; Demuyakor, 2020; Rajab et al. 2020) which similarly examined the impact of the digital divide and explored challenges of online learning during COVID-19. Second, the questionnaire items were revised by three experts from different Thai universities who encountered the same situations. Third, the questionnaire was designed and translated into Thai to avoid the bias of online measurement and to help the students to overpass the language barrier and understand the purport of each item clearly. The survey was divided into four parts (i.e., the reasons that caused the digital divide among the Thai EFL, the components of synchronous learning that might affect the expediency of online learning (e.g., parents, students themselves, and teachers) which collectively aimed to fulfill the research objectives. Fourth, the questionnaire items were adjusted in a Google Form, then prepared a Quick Response Code (QR) and finally shared with the respondents.

Semi-structured Interview

Since the study investigated the factors that underlie the digital divide among the Thai EFL learners and explored the factors that challenged the usefulness of their synchronous learning during COVID-19, a semi-structured individual interview with pre-determined and follow-up questions was included to give the participants a chance to disclose the factors that specifically affected their synchronous learning. An individual interview is an invaluable tool that assists the researchers to gain a fuller and more complete understanding of a particular issue. A semi-structured interview is the most used as it gives the interviewees a chance to express themselves in their own words that they could not assert in the questionnaire and grants the researcher access to the participants' ideas and thoughts (Strauss & Hogan, 2013).

Table 2
Sample of interview questions

Research Questions	References
Questions on the underlying factors on the digital divide	
1 What is the digital divide?	
2 Do you think there is a digital divide between you and your classmate?	
3 What do you think is the reason for the digital divide?	
Questions on factors that challenged the expediency of students' synchronous learning during the pandemic	
1 Do you like to study online or in the classroom?	(Aguilera-Hermida, 2020'
2 Did you face any challenges studying online last semester?	Adnan & Anwar, 2020; Rajab et al. 2020,
3 What are the most challenging factors in an online study?	Demuyakor, 2020)
4 Were you able to solve those challenges?	
5 Did those challenges affect your learning?	
6 Did those challenges affect your performance and scores?	

Data Collection Procedures

Quantitative and qualitative data were collected to answer research questions. The quantitative data were collected from July to September 2020, in the academic year of 2019-2020 at a university in the south of Thailand. A set of surveys was adapted and administered by using Google Form. 21 teachers distributed the surveys by sharing the QR Codes in their closed Facebook Groups that enabled students to complete the survey by using their smartphones or computers at home. Participation in this research was voluntary. In the end, we received 311 responses. However, after data cleaning, only 306 responses were considered acceptable for data analysis.

The qualitative data were initially aimed at having at least 17 interviewees - one interviewee from each school. The representative number seems to be small, but it was very difficult to find students on campus at that time as all were forced to leave their dorms and go study online at home in an attempt to contain the virus. Requests for interviews were sent to their closed Facebook Groups by 21 English teachers. The interviews were scheduled for about 10 -15 minutes. Researchers waited for one month, but only 8 students accepted to do the interview. These volunteering students had the interview between 23rd July - 28th August 2020. Before proceeding in the interview, the interviewees were informed about the aims and procedures of the interview. Researchers explained that the interview was going to be recorded by mobile just for the sake of accuracy.

Data Analysis

Quantitative data

After collecting the data, this study used IBM SPSS Statistics 22 to run the data analysis. The first step was data cleaning and preparation, in which the collected data were computed into SPSS. The missing and doubled data were deleted. Then, the reliability analysis was run to see the internal consistency for each item included in the survey of 'Digital divide', 'Parents', 'Students', and 'Teachers'. Cronbach's alpha was adopted to determine the reliability level. Items below .70 would be excluded from the data analysis. The results displayed all the sub-scales had Cronbach's alpha higher than .70: "Digital divide" ($\alpha = .817$), "Parents" ($\alpha = .883$), "Students" ($\alpha = .915$), and "Teachers" ($\alpha = .937$). Hence all the sub-scales were included in the data analysis. Afterward, to answer the first and the second research questions, descriptive statistics, involving mean, standard deviation, percentage and frequency, and factor analysis were employed.

Qualitative Data

This research employed qualitative content analysis to find out the meaning of contextual messages from interview data and identify consistent patterns and relationships between emerging themes. Content analysis is utilized to "categorize qualitative textual data into clusters of similar entities or conceptual categories" (Given, 2008, p. 20). After the researchers transcribed the audios the files of the interview were sent to the interviewees to enhance the data accuracy. Once the participants sent back the files, the researchers started reading the transcripts thoroughly and repeatedly to familiarize themselves with the data (King et al., 2018; Ciesielska, 2018). The preliminary codes including the prior themes were highlighted and categorized into groups that attempted to answer the research questions. The researchers thereafter picked up, grouped, and gave titles for the themes which significantly contributed to answering the research questions. Definitions of each category and subcategory and codes were developed (Hsieh & Shannon, 2003) to report the findings.

FINDINGS

Factors Underlying the Digital Divide among Thai EFL Learners

The normality of the data was initially explored and observed with the values of skewness and kurtosis between -2 and +2 for all items (George & Mallery, 2010). Then, to analyze the latent variables underlying the survey items, several Exploratory Factor Analyses (EFA) were conducted (Henson & Roberts, 2006). The analysis procedures followed the guidelines from Phakiti (2018) who suggest the steps of performing EFA by using SPSS in applied linguistics research. Four criteria were applied: 1) the extraction method was Principal Axis Factoring (PAF) because of its robustness, 2) factors to be reserved were the ones with Eigenvalue higher than 1, 3) the threshold for sampling adequacy was .50, identified by using KMO and Bartlett's test (Field, 2018), and 4) it was assumed that some factors might be unrelated, so orthogonal rotation, i.e.,

Varimax, was utilized; .40 was selected as the minimum point for acceptable factor loadings. After the underlying factors were obtained, new labels were given.

The results of EFA for digital divide unveiled two factors that counted for 57.207% of the total variance, validated by Bartlett's test of sphericity: $\chi^2(55) = 1916.309$, $p < .001$. The measure of sampling adequacy was .835 higher than the threshold of .50. as shown in the table below.

Table 3

Determinant correlation matrix table or KMO table

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.835
Bartlett's Test of Sphericity	Approx. Chi-Square	1916.309
	df	55
	Sig.	0

After that, each factor was named. The first factor (F1) comprises six items (item 5,6,7,8,9,10) with factor loading above .40. Considering the nature of these items, this factor was labeled as *F1. Students' situational background* (*Eigenvalue* = 3.911, $\alpha = .86$). The second factor (F2) consists of four items (items 1,2,3,4) with item loading above .40 and was labeled as *F2. Student's economic and geographical background* (*Eigenvalue* = 3.090, $\alpha = .86$).

The qualitative data correlated with the factors stated above and similarly, revealed that the digital divide among the Thai EFL learners was caused by three factors: first, the economic factor, several the interviewees asserted that the digital divide was brought about by their inability to have good internet and/or buy devices to access to synchronous learning, explaining:

"Some friends' homes do not have good internet and some friends do not have money to buy iPad and some friends do not have computers. Have only a telephone and if they open the online on the telephone, I cannot see the lecture of the teacher" (IX3). "Last year I did not have an iPad but my friends have iPad. In study online class I had only a telephone. I was not able to do two things together e.g. I watch zoom and do Socrative. When I do Socrative I have to leave the Zoom class" (IX7, IX4).

Second, the interviewees referred to the existence of the digital divide among their peers to the demographic factor. Living in a city/town or the countryside during the pandemic made a difference in terms of accessing synchronous learning. Residing in remote villages became one of the hindrances' that affected the students' synchronous learning during the pandemic. as an interviewee stated

"I think it became even difficult to understand teachers. Because I live in the countryside and internet Wi-Fi is usually disconnected, depends on the weather, not sure, sometimes it is disconnected for 3 hours. Sometimes disconnected 3 times in the bad weather. Some day is good" (IX5).

Whilst questioning the students' familiarity with and background about the synchronous learning, the qualitative data showed that the students' digital literacy was the third impediment that to some extent made a digital gap among the Thai EFL learners as an interviewee opined:

"I think the internet is the cause of the gap because not every home has a good internet. The knowledge about technology is also a reason because not everyone has the same knowledge to study online" (IX6).

Factors Affecting the Expediency of Thai EFL Students' Synchronous Learning during COVID-19

Three main elements (i.e., students, parents, and teachers) of the teaching and learning process were put for the investigation to clearly understand the factors that affected the expediency of online learning of the Thai EFL learners during the outbreak of COVID-19.

Parents

First, the results of parents released two factors from variable parents: *Factor 1. Parents' emotional background* with (*Eigenvalue* = 4.526, α = .87) and *Factor 2. Parents' financial background* with (*Eigenvalue* = 1.039, α = .74). The two factors were counted for 62.033% of the total variance, validated by Bartlett's test of sphericity: $\chi^2(28) = 1356.981, p < .001$. The measure of sampling adequacy was .862, higher than the threshold of .50.

The qualitative data revealed that the students' parents understood the requirements for e-learning and tried to support them with the possible means. However, the Thai EFL learners' synchronous learning was affected to some extent by the family failure to provide a calm atmosphere at home and the poor internet connection as the Wi-Fi was shared by all the family members as an interviewee stated:

"But in the online class, we are at home and there is a lot of noise such as my home is near the main road ... and so many noises from bus and truck. Sometimes I cannot hear the teacher. I think in class is better than the online class" (IX8).

Poor internet coverage at home was shared by all family members and thus affected their synchronous learning as interviewees related,

"The internet is the problem. My internet is okay because I have Wi-Fi" (IX6). "For me, I share the internet with my mother and go out of my home" (IX7).

Students

Second, the result of students also revealed two factors that accounted for 62.648% of the total variance, validated by Bartlett's test of sphericity: $\chi^2(55) = 2211.475, p < .001$. The measure of sampling adequacy was .912, higher than the threshold of .50. The first factor consisted of 6 items with factor loadings above .40. Considering the nature of these items, this factor was labeled as *Factor 1: Students' ability and management* (*Eigenvalue* = 6.020, α = .90). The second factor consisted of 5 items with item

loadings exceeding .40 and was labeled as *Factor 2: Students' experience and enjoyment* (*Eigenvalue* = 1.564, α = .87).

The students' part was also presumed to have an impact on the students' synchronous learning as it was their first experience. The qualitative data relatively revealed that the students' online learning was affected to a great extent by the students' attitude and total aversion. They did not like synchronous learning as it affected their understanding, asserting:

"I don't like online classes because I don't understand, and I cannot contact the teacher. I love to learn in the classroom more than online class" (IX7, IX8). "When I learn in class I have more attention" (IX6). "I cannot ask the teacher at the moment" (IX2). I cannot understand when the teacher teaches me online. ... I think a normal class teacher can explain better than an online class" (IX4).

The students disliked online learning as it limited teachers' support as interviewees stated:

"Sometimes when I do not understand teachers teaching, I cannot see the teacher face-to-face. You also cannot ask the teacher when you have questions" (IX1, IX2). I don't understand and I don't have contact with teachers" (IX7). "For me, if I choose, I will choose to study in class. It is better because when I have a question I can ask the teacher at the moment" (IX1).

Students disliked synchronous learning as it affected their motivation as an interviewee asserts:

"I don't have motivation for online class because sometimes I get up late and sometimes the teachers' internet connection is not good" (IX7).

"Laboratory class should be in class not online. We did not do anything, the teacher just gave homework and some activity" (IX8).

Teachers

Third, the results for teachers unveiled two factors that accounted for 65.179% of the total variance, validated by Bartlett's test of sphericity: $\chi^2(55) = 1916.309$ $p < .001$. The measure of sampling adequacy was .835, higher than the threshold of .50. The first factor consisted of 6 items with factor loadings above .40. Considering the nature of these items, this factor was labeled as *Factor 1: Teachers' class management* (*Eigenvalue* = 6.763, α = .91). The second factor consisted of 5 items with item loadings exceeding .40 and was labeled as *Factor 2: Teachers' students online study experience* (*Eigenvalue* = 1.040, α = .87). The decision was motivated by the fact that the items in this factor were concerned from students' perspective towards teachers' problem during an online class.

The qualitative findings correlated with the factors asserted above and showed that the teachers' digital literacy, online teaching experience, and strategies of online teaching

affected to some extent the students' synchronous learning. Regarding the teachers' digital deficiency, the interviewees explain:

"Some teachers are not good on the internet and sometimes are noisy. Some teachers have babies" (IX4).

"Umm! Like when teachers come to an online class and the teacher's internet is not good. Every student is careless, cannot study. For me I comment in the FB group to ask the teacher, teacher your internet is not good, can you change to Wi-Fi please" (IX2).

Regarding teachers' teaching strategy, some teachers give a lot of homework with a short deadline, leaving the students frustrated with no chance to revise what they study as an interviewee explained, "Some teachers have a lot of homework. I cannot read books because I do homework" (IX8). The expediency of synchronous learning was also challenged by the teachers' lack of teaching online experience as some could not explain well as most of the interviewees explained:

"I don't like to study online. Sometimes I understand and sometimes I don't understand" (IX1).

"I think it is hard to understand, some subjects have good teachers to explain, some teachers do not explain well" (IX8).

"Some teachers are talking fast and sometimes I cannot hear the teacher. I think studying in class is better than online class" (IX4, IX8).

DISCUSSION

By investigating the factors that brought about the digital divide among the Thai EFL learners, the quantitative and qualitative findings correlated and revealed that the digital divide still exists among the Thai EFL learners. The first result confirms that the digital divide was caused by three factors namely: economic factor, demographic factor, and the students' digital literacy (Arthur-Gray & Campbell, 2008). It was not caused by racial factors as Schneider and Droege, (2014) assumed in their research about the digital divide in Thailand. The inequality between the 'haves and have-nots' is related to the students' socio-economic background. 'Half' of the students could move from face-to-face learning to synchronous learning easily as they had devices (i.e., laptop, computers, or iPad) and stable internet connection whilst the other 'half' encountered immense challenges as they came from low-income families (Onyema et al., 2020; Rattanakhamfu, 2020; Schneider & Droege, 2014). This gap became effective as students were required to attend classes, submit their homework, and take the exams online. Before the outbreak of COVID-19, the universities' facilities (e.g., computer labs, libraries, and Wi-Fi) were of great help in their study but after the closing of the universities, all students moved unwillingly to synchronous learning homes. At that moment, they realized a huge gap between them and their peers as they do not have devices and stable internet connection (Sucaromana, 2020; Wintachai et al., 2020.)

The second result also affirmed that the digital divide was caused by demographic factors. There is a gap between the Thai EFL learners who reside in the urban and rural

areas in terms of internet connection and accessibility to quality content despite the universities' attempt to bridge this gap (Hongladarom, 2016; Schneider & Droege, 2014). Those who are living in urban cities have stable internet connections whereas the internet connection of those who are living in remote villages depends on the weather. In bad weather, the internet signal may disconnect for hours whilst in good weather the internet is intermittent. This gap affected their educational achievements (Hongladarom, 2016; Schneider & Droege, 2014; Wintachai et al., 2020). Meanwhile, the results revealed that Thai EFL learners' digital literacy was another reason for the digital divide (Arthur-Gray & Campbell, 2008). Anthony'samy (2020) similarly opines that some students may possess devices and stable internet connections; however, they may have some lack of knowledge to use technology for educational purposes.

The present study also explored the factors that affected the expediency of their synchronous learning during COVID-19. Parents, students, and teachers had presumably a great impact on the expediency of online learning and thus were put for investigation. The first result confirmed that parents understood the situation and demands of online learning. They tried to prepare a suitable environment to study at home (Garbe et al., 2020; Lau & Lee, 2020).

The second results stated that students' synchronous learning was affected to some extent by situational and environmental challenges (i.e., the noisy atmosphere at home and the instability of the internet). Aguilera-Hermida (2020) similarly explains, students were unable to concentrate at home due to some distractors (e.g., family members talking, parents working on some machinery at home, kids playing inside the house, grandparents offering food during online class, and sounds of trucks and cars coming from the main road) which negatively affected students' synchronous learning (Garbe et al., 2020). Another challenge was the low-speed internet connection as it used to be shared by all family members Aguilera-Hermida, 2020). The internet became slower when two or three children attended different online classes at the same time especially in terms of devices and stability of internet connection (Lau & Lee, 2020).

On the students' part, the results confirmed that their synchronous learning was affected first by the students' total aversion to online learning (Aguilera-Hermida, 2020). They did not like online learning because it affected their understanding. They sometimes did not understand some teachers, and this could be related to some other issues (e.g., the teachers' internet connection, the students' internet stability, digital literacy of both, and the quality of devices both were using) that altogether affected unfavorably the Thai EFL learners' synchronous learning (Simonson & Orellana, 2020). Respondents appended that they did not understand because some teachers were either not explaining well, speaking fast, and/or cannot be heard due to teachers' unstable internet connection.

Besides, the results confirmed that the students did not like online learning because it limited the teachers' support (Hebebcı et al., 2020). They usually ask teachers' assistance if they had any questions or did not understand. However, COVID-19 limited these chances due to teachers' fatigue and lack of time which they dedicated to preparing and teaching online (Wintachai et al., 2020). The students believed that the students-teachers' rapport is essential for understanding. Thus, this type of isolation was

one of the factors that diminished the fruitfulness of their synchronous learning (Hebecci et al., 2020). The results indicated also that the students disfavored online learning as it made them feel bored especially with the persistent challenges of unstable internet connection, stress, anxiety, and inability to reach the teacher (Aguilera-Hermida, 2020). The students used to enjoy class activities, interaction with their teachers, and getting help from their classmates; but, during online class, they had to study, do homework and search for solutions by themselves (Chopra et al., 2020).

On the teachers' side, the results similarly indicated that online learning of the Thai EFL learners was affected by the teachers' digital deficiency. Teachers were not trained and well-prepared for this sudden shift (Wyk et al., 2020). Before COVID-19, ICT tools were occasionally incorporated to contact the students and/or take some formative assessment tasks but during the pandemic, the teachers were urged to contact, teach, assess, and support the students via online applications. The students found some teachers unskilful in technology as they possessed unstable internet connection and sometimes could not be heard. This consequently affected the students' learning and understanding (Waluyo & Apridayani, 2021; Wintachai et al., 2020).

CONCLUSION

Before the outbreak of COVID-19, universities and schools incorporated ICT tools in language teaching through different teaching approaches (e.g., blended learning and mobile learning) to help students to practice and acquire the language soundly. However, during COVID-19 teachers and students around the world were urged to move from traditional face-to-face to synchronous learning despite their preparedness to contain the virus and help the students to continue their education. Schools and universities opted for online learning as they were asked to comply with the social-distancing policy. Flexibility, affordability, and accessibility are some of the arguments related to synchronous pedagogy. Online learning is regarded as flexible as it fits the students' contexts. It is cheaper in terms of accommodation, and transportation than traditional learning. Synchronous learning is considered more accessible even for students in remote areas. Nevertheless, the expediency of synchronous learning during the pandemic was affected critically by the challenges of the digital divide, students' and teachers' digital literacy, teachers' limited online teaching experience, and support, especially for the low-level students.

Based on the results of the quantitative and qualitative data analyses, it is concluded that, first, the digital divide is still persistent among EFL learners. It was caused by economic, demographic factors, and the students' digital literacy. Second, parents, students, and teachers played ineffective roles in students' synchronous learning. Parents undoubtedly understood the needs of online and thus provided the possible requirements. Yet, the noisy atmosphere and the inability to maintain a stable internet connection affirmed to have a negative impact on their synchronous learning. Students collectively disliked online learning as it affected their understanding and limited the teachers' instant support. Besides, the students; synchronous learning was affected by the teachers' digital literacy, limited online teaching experience, and teaching strategies.

REFERENCES

- Aboagye, E., Yawson, J. A., & Appiah, K. N. (2020). COVID-19 and e-learning: The challenges of students in tertiary institutions. *Social Education Research*, 2(1), 1-8.
- Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Online Submission*, 2(1), 45-51.
- Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to Covid-19. *International Journal of Educational Research Open*, 1(-), 1-8.
- Almanthari, A., Maulina, S., & Bruce, S. (2020). Secondary school mathematics teachers' views on e-learning implementation barriers during the COVID-19 pandemic: The case of Indonesia. *Eurasia Journal of Mathematics, Science and Technology Education*, 16(7), 1-9.
- Anthonymsamy, L. (2020). Digital literacy deficiencies in digital learning environment among university students. *Understanding Digital Industry: Proceedings of the conference on managing digital industry, technology and entrepreneurship (CoMDITE 2019), July 10-11, 2019, Bandung, Indonesia*. 133-36.
- Ardan, M., Rahman, F. F., & Geroda, G. B. (2020). The influence of physical distance to student anxiety on COVID-19, Indonesia. *Journal of Critical Reviews*, 7(17), 1126-1132.
- Arthur-Gray, H., & Campbell, J. (2008). Education Trends in Thai Businesses Utilizing Information Technology. In *Global Information Technologies: Concepts, Methodologies, Tools, and Applications*. IGI Global. pp. 1520-1531.
- Brewer, D. J., & Picus, L. O. (Eds.). (2014). *Encyclopedia of education economics and finance*. Sage Publications.
- Chopra, M., Mahapatra, C. & Verma, A. (2020). *New Paradigm in eLearning Technologies Arising Due to Covid-19 Crisis*. EPFRA.
- Ciesielska, M. (2018). *Qualitative Methodologies in Organization Studies Volume II: Methods and Possibilities*. Springer.
- Demuyakor, J. (2020). Coronavirus (COVID-19) and online learning in higher institutions of education: A survey of the perceptions of Ghanaian international students in China. *Online Journal of Communication and Media Technologies*, 10(3), 1-9.
- Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). SAGE.
- Garbe, A., Ogurlu, U., Logan, N., & Cook, P. (2020). Parents' experiences with remote education during COVID-19 school closures. *American Journal of Qualitative Research*, 4(3), 45-65.
- George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference*, 17.0 update.

- Given, L. M. (Ed.). (2008). *The Sage encyclopedia of qualitative research methods*. Sage publications.
- Gonzalez, T., et al. (2020). Influence of COVID-19 confinement on students' performance in higher education. *PloS one*, 15(10), 1-15.
- Hebebcı, M. T., Bertiz, Y., & Alan, S. (2020). Investigation of views of students and teachers on distance education practices during the Coronavirus (COVID-19) pandemic. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 267-282.
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement*, 66(3), 393-416.
- Hongladarom, S. (2016). Cultural politics of the digital divide in Thailand. *PSDS Journal of Development Studies, Puey Ungphakorn School of Development Studies, Thammasat University*, 13(1), 294-320.
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research*, 15(9), 1277-1288.
- Huang, R. H., Liu, D. J., Tlili, A., Yang, J. F., & Wang, H. H. (2020). *Handbook on facilitating flexible learning during educational disruption: The Chinese experience in maintaining undisrupted learning in COVID-19 outbreak*. Beijing: Smart Learning Institute of Beijing Normal University.
- Hudson, B., Leask, M., & Younie, S. (Eds.). (2020). *Education System Design: Foundations, Policy Options and Consequences*. Routledge.
- Kayalar, F. (2020). Shift to digitalized education due to COVID 19 pandemic and the difficulties the teachers encountered in the process. *Proceeding of IAC 2020 in Venice*. Pp. 23-29.
- Khan, B. H. (Ed.). (2005). *Managing e-learning: Design, delivery, implementation, and evaluation*. IGI Global.
- Khan, R. A., & Jawaid, M. (2020). Technology enhanced assessment (TEA) in COVID 19 Pandemic. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4), 108-110.
- King, N., Horrocks, C., & Brooks, J. (2018). *Interviews in qualitative research*. SAGE Publications Limited.
- Lau, E. Y. H., & Lee, K. (2020). Parents' views on young children's distance learning and screen time during COVID-19 class suspension in Hong Kong. *Early Education and Development*, -(), 1-18.
- Onyema, E. M., et al, (2020). Impact of coronavirus pandemic on education. *Journal of education and Practice*, 11(13), 108-121.

- Phakiti, A. (2018). Confirmatory factor analysis and structural equation modeling. In *The palgrave handbook of applied linguistics research methodology* (pp. 459-500). Palgrave Macmillan.
- Rajab, M. H., Gazal, A. M., & Alkattan, K. (2020). Challenges to online medical education during the COVID-19 pandemic. *Cureus, 12*(7), 1-11.
- Rattanakhamfu, S. (2020). Covid-19 emphasizes the need to bridge the digital divide and reduce online educational inequity. *Thailand Development Research Institute*. Retrieved from <https://tdri.or.th/en/2020/05/covid-19-emphasizes-the-need-to-bridge-the-digital-divide-and-reduce-online-educational-inequality/> on October 23, 2020.
- Rofiah, N. L., & Waluyo, B. (2020). Using Socrative for Vocabulary Tests: Thai EFL Learner Acceptance and Perceived Risk of Cheating. *The Journal of AsiaTEFL, 17*(3), 966-982.
- Schneider, M. A., & Droege, S. B. (2014). Poverty and the digital divide in developing nations. *Studies in Asian Social Science, 1*(2), 33-43.
- Sharp, L. A. (2018). Collaborative Digital Literacy Practices among Adult Learners: Levels of Confidence and Perceptions of Importance. *International Journal of Instruction, 11*(1), 153-166.
- Simonson, M. & Orellana, A. (Ed.). (2020). *Quarterly Review of Distance Education: Volume 21# 1*. IAP, Icn.
- Sinring, A., & Aryani, F. (2021). Assessing Verbal Positive Reinforcement of Teachers during School from Home in the Covid-19 Pandemic Era. *International Journal of Instruction, 14*(2), 1037-1050.
- Sintema, E. J. (2020). Effect of COVID-19 on the performance of grade 12 students: Implications for STEM education. *Eurasia Journal of Mathematics, Science and Technology Education, 16*(7), 1-6.
- Srinuan, C., & Bohlin, E. (2011). What makes people go online? An empirical analysis of the digital divide in Thailand. In *Proceedings of the annual international conference on Micro and Macro Economics (MME 2011), 25-26 July 2011, Singapore*.
- Srinuan, C., Srinuan, P., & Bohlin, E. (2012). An analysis of mobile Internet access in Thailand: Implications for bridging the digital divide. *Telematics and informatics, 29*(3), 254-262.
- Strauss, R., & Hogan, P. (2001). *Developing effective websites: a project manager's guide*. Taylor & Francis.
- Sucaromana, U. (2020). A study of online learning strategies among Thai undergraduate EFL students. *Proceedings of IAC 2020 in Vienna 17* (9).
- Tracey, B., & Francesca, G. (Eds.). (2020). *Educational Research and Innovation Education in the Digital Age Healthy and Happy Children: Healthy and Happy Children*. OECD Publishing.

Van Deursen, A. J., & Van Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New media & society*, *16*(3), 507-526.

Van Dijk, J. A. (2006). Digital divide research, achievements and shortcomings. *Poetics*, *34*(4-5), 221-235.

Waluyo, B., & Apridayani, A. (2021). Teachers' beliefs and classroom practices on the use of video in English language teaching. *Studies in English Language and Education*, *8*(2), 726-744.

Watson, M., & Barton, G. (2020). Using arts-based methods and reflection to support postgraduate international students' wellbeing and employability through challenging times. *Journal of International Students*, *10*(S2), 101-118.

Wintachai, J., Khong, T. D. H., & Saito, E. (2020). COVID-19 as a game changer in a Thai university: A self-reflection. *PRACTICE*, *-(-)*, 1-7.

Wyk, B. V., Mooney, G. Duam, M. & Faloye, S. (2020). Emergency remote learning in the times of COVID: A higher education innovation strategy. *Proceedings in the ECEL 2020 19th European Conference on e-Learning*. Edited by Busc, I. C., Wendler, T. & Steinicke, M.