

An investigation of learners' and instructors' perception of online instruction and effectiveness during Covid-19 Era: A Case of Thailand.

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ABSTRACT : This research on an investigation of learners' and instructors' perception of online instruction and effectiveness during Covid-19 Era: A Case of Thailand. The study focused on the investigation of learners' and instructors' perceptions of online instruction and its effectiveness and provide recommendations in preparation for effective future online instruction. The research participants consisted of students and teachers who were involved in online learning activities during the covid-19 era. Participants consisted of 563 students and 141 teachers randomly selected from the northern region of Thailand. An open-ended interview guide was used for data collection. Data were analyzed using percentages and content analysis through "thematization". The results revealed that a majority (97%) of primary school pupils do not like learning online as they do not meet or collaborate with their friends and that online learning activities are boring, (89%) of primary and vocational (91%) students view online learning as not being effective especially as vocational students could not manipulate the materials required in developing skills. 96% of university students provided positive feedback on online learning. The results also revealed that 93% of primary school teachers, 91% of secondary teachers, and 97% of vocational teachers revealed that online was not successful while 96% of university lecturers revealed that online teaching was successful. The simple fact is that students at all levels are ready to adapt to the new learning system, but they lack the required resources to fully engage in the process.

KEYWORDS: Covid-19, effectiveness, instructors' and learners' perception, online instruction

I. INTRODUCTION

The rapid growth of the internet and information technology has enabled the successful implementation and promotion of online learning in many parts of the world including the European Union, Latin America, other less-developed nations, and many others. Modernization and improvements in technology and communication have led to numerous changes and developments in different fields in general and the education field in particular. Online instruction takes place over the internet with the use of technologies such as chats, the world wide web, email, audio and video conferencing and with the use of applications such as google classrooms, zoom, Line, Facebook, Microsoft team, etc. over the computer networks.

The spread of Covid-19 has brought about digital transformations in all education systems and online instruction has become a prominent part of the education system as instructors and learners who never thought of online instruction are faced with a situation where they must do so. The spread of this pandemic has allowed the incorporation of a new has led to a new learning environment called online learning (The World Bank Education and COVID-19 2020). To contain the spread of Covid-19, many educational instructions have shifted their classroom instruction to online platforms beginning in mid-February 2020. For this reason, the classroom has lost its monopoly as a place of learning. To reduce the risks associated with Covid-19 infection, the government and the Ministry of Education in Thailand ordered the shutdown of educational institutions resulting in online learning. The school closure has not only affected the educational system but presented parents with new challenges to support their children's education during this period. The spread of this pandemic has proven the strengths and weaknesses of education systems facing the challenge of online instruction. According to Bates (2020), the spread of COVID-19 has demonstrated gaps in the system and the need for universal and low-cost access to the internet and technological improvements for education. To contain the spread of Covid-19, many educational instructions have shifted their classroom teaching and learning activities to online platforms beginning in mid-February 2020. Before the outbreak of covid-19 in 2019, online instruction was not popular in Thailand. Teaching and learning were done face-to-face (classroom). This came as a surprise as such, teachers and students were not prepared for a transition from onside to online teaching and learning. However, this unprecedented transition to the online platform has not been easy for students in Thailand because a majority do not have access to computers,

whether desktop or portable versions, tablets, and the internet to study from home. These students usually come from low-income families, which are severely affected by this transition although they should have benefited the most from human capital development. According to the International Telecommunication Union (ITU) (2018), a greater problem faced by households in Thailand other than poor Internet accessibility is having no computers to use at home. Compared to countries around the world, only 21% of Thai households have computers, which is lower than the global average of 49% and the developing country's average of 38% (Rattanakhamfu, 2020). Equally, the ability to afford a computer is even lower for poor households. According to the National Statistical Office of Thailand in 2017, of all households in the country, only 3% of households with an average annual income of fewer than 200,000 baht have Internet-connected computers, and 19% of households with an average annual income of 200,000 baht or more have Internet-connected computers. If classified by region, Bangkok has the highest proportion of households with computers, 42% of all households, which is more than double that in other regions: 21% in the central region, 19% in the north, 17% in the south, and 14% in the northeast (Rattanakhamfu, 2020). With this, students still do not have any choice whether to learn online or onsite and the outbreak of this pandemic makes it clear that all onsite or face-to-face classrooms must be closed and those of online learning opened. As such, the researchers intend to investigate learners' and instructors' perceptions of online instruction and effectiveness during the covid-19 era in Thailand. This study is conducted based on the research questions "how was online instruction conducted and how effective was it during the covid-19 in Thailand? This research sets out to investigate learners' and instructors' perceptions of online instruction and effectiveness during the Covid-19 era in Thailand with recommendations provided to prepare and enhance online learning structures in case of future unforeseen contingencies.

II. LITERATURE REVIEW

Online learning is a form of distance learning or distance education. It has become the largest sector of distance learning in recent years (Bartley and Golek, 2004; Evans and Haase, 2001). The expansive nature of the internet and the accessibility of technology have generated a surge in the demand for web-based instruction thereby making online learning rapidly expand and allowing users the flexibility of operating outside of the constraints of time and place (Chaney, 2010). According to Silva and Cartwright (2017), the Internet plays an important role in online knowledge acquisition. The learning process through online platforms has led to the evaluation and organization of large class sizes which onsite learning activities would not have been organized and also it is flexible for students (Siripongdee et al., 2020). The U.S. Department of Education (2010) defines Online learning as learning that takes place partially or entirely over the internet online learning is appealing to different learners and is becoming more commonplace at all levels and different sectors of education. Online learning is conducive to students who favor self-regulated learning (You & Kang, 2014). It is designed to reach and engage the modern learner on a one-to-one basis anywhere, anytime.

Online learning can be categorized into three central groups namely: fully web-based learning, blended or hybrid format, and traditional courses using web-based learning supplements. Fully web-based learning is conducted entirely on the internet with no face-to-face interaction. Online learning allows students to work at a time and in a place that is compatible with their learning needs. Many instructors and students commented on their ability to focus more of their attention on the content of the course and less on issues such as parking, traffic, and other problems that may arise when attending a traditional class environment (Thomson, 2010). All aspects of the course are being conducted in an online learning environment. Hybrid web-based learning consists of both web-based learning and classroom sessions, with a varying degree of time allocated to the online and in-class sessions, depending upon the nature of the class and the discretion of the instructor and learners. Zakaryia, Khadled, and Mohammad (2021) found that online education is useful during the current pandemic though less effective than face-to-face learning and teaching. According to Rudestam&Schoenholtz-Read (2010), online learning has become popular because of its potential for providing more flexible access to content and instruction at any time, from any place. Frequently, the motivation for online learning programs entails (1) increasing the availability of learning experiences for learners who cannot or choose not to attend traditional face-to-face sessions, (2) assembling and disseminating instructional content more cost-efficiently, and/or (3) providing access to qualified instructors to learners in places where such instructors are not available. Online learning advocates argue further those additional reasons for embracing this medium of instruction include current technology's support of a degree of interactivity, social networking, collaboration, and reflection that can enhance learning relative to normal classroom conditions. Evidence has revealed that many educational institutions are using information technologies intending to expand access, improve instructional quality, and reduce costs associated with traditional instruction as many institutions provide instruction via the internet (Krafcik 2010; Olster 2010). Online teaching and learning have become a prominent part of the education landscape, and many learners and instructors who never believed they would teach learn online are being asked

to offer Web enhancements to their face-to-face classes or teach a class entirely online (Allen & Seaman, 2010). It is a powerful and flexible medium that can offer transformative learning experiences to learners. Online learning implies a distant and reciprocal interaction between the learner and the instructor (Kearsley and Moore, 2012). Online learning can also be referred to as e-learning or distance learning which represents a relationship between learners and instructors with the main aim of helping learners to learn through the use of the internet and digital technology. According to Ally, (2008), online teaching and learning comprise learners, instructors, and the course curriculum and requires the use of technological tools to effectively communicate the learning objectives. According to Cooley & Johnston, (2001), online learning allows learners to have autonomy over their learning towards specific learning needs rather than learning from a general perspective. Online learning has come on the scene to facilitate teaching-learning (Maeroff 2003). It has become more prevalent in the majority of higher education programs if instructors are provided with all necessary instructional materials to facilitate the effective and comprehensive implementation of online education programs (Allen & Seaman, 2006). There has been an increase in the development of online teaching and learning programs as most educational institutions continuously develop online courses (Allen & Seaman, 2007). According to Archambault et al. (2010); Christensen and Horn (2008); Waldeck (2007) and Waldeck (2008), Online learning is highly individualized and takes into consideration individual learning needs. Online learning increases the availability of learning experiences for learners who cannot or choose not to attend traditional schools. It also helps in assembling and disseminating instructional content more efficiently and increases student-instructor ratios while achieving learning outcomes equal to those of traditional classroom instruction.

III. RESEARCH METHODOLOGY

Participants : The research participants consisted of primary, secondary, vocational college, and university students and instructors purposively selected as follows: considering students, 132 primary school pupils selected only from schools that had online learning activities, 145 secondary school students, 139 vocational students, and 147 university students. The sample population also included 53 university lecturers, 44 primary school teachers, 26 secondary school teachers, and 18 vocational and technical college instructors. The sample population (both students and instructors) were randomly drawn from educational institutions in the lower northern region of Thailand and consisted of only students and instructors who were involved in online instruction activities.

Research Instruments and Procedures : Two sets of open-ended interviews questions for students and teachers were used for data collection in this research. All-open-ended questions were geared towards an investigation of students' and teachers' perceptions towards online learning/instruction and its effectiveness. The open-ended interviews questions for students consisted of seven items while that of the teachers concentrated on how online teaching was/is done and the effectiveness of online teaching and learning and consisted of six items. All sets of open-ended interviews questions were written in English, edited by native speakers of the English language, and validated by three experts to ensure content validity, clarity, and appropriateness of language used. The set of open-ended question items designed focused on investigating participants' perceptions towards online instruction experiences and their effectiveness as represented in tables 1 and 2 respectively as shown below.

Table 1: Questions for students to investigate perceptions towards online learning and its effectiveness

No	Theme under study	Questions
1	Availability of technology and required learning materials	Do you have all resources required for effective online learning? Talk about what you have that will make online learning smooth and effective.
2	Technology literacy	Talk about your ability to use technology and other materials for online leaning (Are you able to manipulate the instruments for online learning?)
3	learning environment	Talk about your learning environment. Tell us about your learning environment
4	Flexibility and Economic nature	What can you say about the flexibility of online learning?
5	Online learning assessments	How effective do you find online learning assessments?
6	Problems related to online learning	What problems has online learning resulted to in your life?
7	Online learning activities and effectiveness	How do you perceive online learning activities and what can you say about the effectiveness of online learning?

The table above focuses on investigating students' perceptions towards online learning taking into consideration the themes represented in the table.

Table 2: Questions for instructor to investigate perception towards online learning and its effectiveness

No	Theme under study	Questions
1	Availability of technology and instructional materials	What can you say about the availability of online learning instructional materials? Do you have all required materials for effective online teaching?
2	Technology literacy	How do you perceive your ability to use the technology for online learning?
3	Teaching environment	How do you perceive the online teaching environment? How conducive is the online teaching environment?
4	Flexibility	How do you perceive online learning in terms of flexibility?
5	Online learning assessment	How effective is online learning assessment?
6	Online learning effectiveness	According to your own perception, how effective is online learning

Research Procedure and Data Analyses : The study was designed to generate a description of students' and instructors' perceptions towards online teaching and learning. Qualitative data was employed in this research to provide a comprehensive investigation and analysis of stated issues. The investigator triangulation method was used for data collection in this study to enhance the credibility of the research findings and interpretations. Investigator triangulation involves using more than one researcher for data collection and analysis (Thurmond, 2001). As such, investigator triangulation was accomplished through the use of multiple investigators to lower or reduce the potential of bias in data collection and analysis. The data collection team consisted of five instructors who were all involved in online instructional delivery to students in secondary, vocational, and university. Some university students were also included in the data collection team to interview students. The researcher and the data collection team went to different learning institutions, as well as students' homes during the online learning period to survey and interview the various parties involved. Some participants were also interviewed using online platforms (zoom, Microsoft team, Line etc.) Students from different educational institutions were interviewed to get information related to the availability of online learning resources and instructional material, learners' ability to use computers and other online learning technology, online learning environment, the flexibility of online learning, Problems associated with online learning, and online learning activities and online learning effectiveness compared with in-person learning in class. The open-ended questions were interpreted in Thai to some participants who could not fully understand the English Language. After the interview with students, the researcher proceeded to interview instructors from different institutions.

Data Analysis and Interpretation : Data analysis and interpretation involved transforming qualitative themes into quantitative numbers and interpreting them. The collected data were analyzed using content analysis through the process of "thematizing" according to Mitchell & Jones (2004) in which categories/themes in the data emerged through an iterative process of reading and re-reading the responses. The themes identified in this study were grouped and reviewed for further interpretation and integration, analyses interpretation, and discussions. The themes were initially identified independently by each member of the research team, using three criteria (Owen, 1984). The first criterion was the recurrence of ideas within the data set, that is, ideas with the same meaning but presented in different words.

Research Findings and Discussions : This study aimed to investigate the learners' and instructors' perceptions towards online teaching and learning. The research findings presented in this study included discussions on the findings that emanated from the study. Content and thematic data analysis revealed major themes such as availability of technology and required learning materials, technology literacy, learning environment, flexibility and economy, online related problems learning activities, and online learning effectiveness. The themes from surveying students' and instructors' perceptions towards online learning are summarized in Table 1 and 2 respectively and discussed below with comments taken from the research data in keeping with requirements of the ethical approval and without any personal identification of the research participants.

Table 1: Summary of Themes and learners' perception towards online learning

Theme under study	Summary
Availability of technology and instructional materials	<ul style="list-style-type: none"> - 87.7% of primary school students lack technology and learning materials - 76% of secondary school students lack learning materials - 63% of vocational students lack learning materials - 100% of university students have all learning materials - 71% revealed about the expensive nature of required learning materials.
Technology literacy	<ul style="list-style-type: none"> - 73 % of primary school students could use the TV. - 82% of secondary school students were able to use the learning resources. - 83% of vocational and technical students were able to use the learning resources. - 100% of university students could use the online learning materials and applications
Learning environment	<ul style="list-style-type: none"> - A majority (80%) of students revealed that the learning environment was not conducive for online learning
Flexibility	<ul style="list-style-type: none"> - A majority of students at all levels revealed that online learning is flexible and economical because they can learn from anywhere and at any time.
Online learning assessment	<ul style="list-style-type: none"> - 89% of students revealed that they don't like online learning assessments. Learners clearly stated that it was not effective because it had many weaknesses such as allowing learners to get answers from other sources; they also revealed that online learning focused on assessing only knowledge with less emphasis on assessing learners' skills. Thus, a general perception of online learning assessment was negative.
Problems associated with online learning	<ul style="list-style-type: none"> - A majority of university and secondary school students revealed that online learning has resulted to a lot of physical and psychological problems as sitting in one position and steering at the computers for many hours lead to problems such as social isolation, virtual learning fatigue, stress and anxiety, eye problems, back pain, etc.
Online learning activities and effectiveness	<ul style="list-style-type: none"> - For primary, secondary and vocational students, online learning activities were instructor centered, boring and less effective as students are passive listeners without authentic and participatory activities. - A lot of assignments and homework for students to complete in groups which was very difficult to come together.

The results of studying learners' perception of online teaching and learning are presented as follows:

Concerning the availability of online teaching and learning resources and technology, a majority of students (87.7% of primary students), (76% of secondary school students), and (63% of vocational students) lack the required materials and technology for effective online learning. Many students revealed that they had limited access to reliable and appropriate online learning technology and software as in many cases, several situations were noticed where many family members shared a single computer, TV set, or mobile device within one household. Equally, not all students have regular or reliable access to the internet and in some cases, internet access was limited with very low speed. Some households could not afford an internet package due to financial difficulties. Comments such as "I don't have internet or my internet package is very slow", "My family cannot afford a Tv, phone and internet" provided by participants illustrate this aspect. The results were consistent with Brittany (2015) who studied challenges faced by students in online learning and it was noted that lack of reliable internet at home was a major problem faced by students during online learning as some of the respondents did not have access to the internet at home. The findings were also consistent with Elizaphan, WaiganjoMuuro, Wagacha, Oboko, and Kihoro (2014), who conducted a study on "Students' perceived challenges in an online collaborative environment: A Case of Higher Learning Institutions in Nairobi, Kenya" and slow internet connectivity was one of the problems faced by students during online learning. The results equally revealed that only 12.3% of the learners could afford the required learning materials for effective online learning. Some comments provided by research participants included "our house has a big TV with good internet package which enables us to study online", I have a phone and internet and I use it to study online." The results revealed

that a majority of learners from primary, secondary and vocational institutions did not have required learning materials for effective online learning. The research findings were as a result of the fact that a majority of family are unemployed with low or no income and as such cannot afford the resources for students to effectively study online. On the other hand, the research findings revealed that all (100%) of university students had the required learning materials though with complaints. Some students complained that getting learning materials such as good phones, internet and the use of some applications required huge expenditures. Report from students revealed that some learning activities required the use of more than one electronic gadget which was very expensive. The finding related to the availability of instructional materials for online learning for university students were consistent with Thomas and Richard (2006) who conducted a study on computer literacy and attitudes towards e-learning among first-year medical students and found that almost all students (94%) have access to a privately-owned PC they can use for their studies, which is either owned by the students themselves (74%) or shared with family members or roommates (20%).

Based on learners' ability to use online learning resources, the majority students (82% of secondary school students, 83% of vocational and technical school students, and 100% of university students) agreed that they were able to use the technology and instructional materials for online learning except for a few who complained that "the online learning registration process and submitting assignment was complicated" and "accessing some programs and application was difficult to do and frustrating" illustrating that only a few secondary and vocational students are not technology literate. For primary school learners, only 23% of the students could manipulate online learning resources and available technology. For this reason, parents had to stay home or take their children to their job sites on order to help students during the learning process. Equally secondary school students (82%), vocational (83%) and university (100%) students are literate enough to manipulate the learning resources such as phones, computers, and other appliances. Some comments provided by the sample population included "we could easily manipulate a computer and join online classes because we were taught how to use online learning programs before proper learning period." The research findings revealed that students (80%) at all levels perceived the online learning environment as not favorable. They had to study in their noisy and crowded family houses, with dogs barking. This made learning ineffective as they were constantly disturbed. During the study, it was found that some neighborhoods even organized birthday and coronation parties with loud music that made students unable to concentrate during the learning process. The findings were in line with Bali and Liu (2018) who found out those students' preferences for face-to-face learning were higher than online learning in terms of social presence, social interaction, and satisfaction after studying Students' perceptions towards online learning and face-to-face learning course. Students' perception of online learning related to flexibility was positive. Based on the students' responses, it was revealed that online learning was flexible and economical.

The results also revealed that online learning helps the learner to learn at their own pace and convenience since they could record the online lecture and listen or watch it over and over again. Some comments provided by students such as "online learning is safe and economical", "it is less tiring and saves time" and "online learning is flexible because students can study at home, in the car, or anywhere provided they have the required resources", "students could follow up classes after learning by repeatedly watching the video many times" go a long way to illustrate that online learning is flexible and economical. Equally, the findings revealed that online learning was economical because studying from home reduces the risk for an accident as well as the cost of fuel. The research findings were in line with Fisher and Whale (2014) who stated that flexibility is one of the key benefits of online learning and teaching in higher education. The results were also in conformity with Muthuprasad et al (2021) who's research on students' perception and preference for online education in India during COVID -19 pandemic revealed that students opened that flexibility and convenience of online classes make it an attractive option, whereas broadband connectivity issues in rural areas make it a challenge for students to make use of online learning initiatives. Also, the majority students indicate that flexible schedule and convenience was ranked as the major benefits of online learning because it offers students the opportunity to study at their own pace and time of their convenience. Hence, flexibility and convenience are major drivers behind the demand for online education. The results of studying learners' perception towards online learning assessment revealed positive views. A majority (89%) of students revealed that they do not like online learning assessments though it helped them to have good grades. They clearly stated that it was not effective because it had many weaknesses such as allowing learners to get answers from other sources (examination fraud). "My grandmother helped me in answering questions during the examination", "I like online learning assessment because I can get answers from the internet" were answers that occurred frequently among students in lower primary school levels. They also revealed that online learning focused on assessing only knowledge with less emphasis on assessing learners' skills. Thus, a general perception of online learning assessment was negative.

The results were consistent with that of a study conducted by Hussain, Daoud, Alrabaiah, and Owais, (2020) on students' perception of online assessment during the COVID-19 pandemic and found that there is an inverse correlation between the students' GPAs, on the one hand, and their level of satisfaction with online assessment and the pass/fail option on the other as students with higher Grade Point Average were less satisfied with online testing and the pass/fail option. In addition, students' responses to the open ending question provided educators with several suggestions for improvement such as implementing online oral exams and on-campus testing. Equally, the results of studying online learning-related problems revealed that online learning resulted in many physical health, psychological and mental health disorders due to social isolation. They lacked opportunities for socialization and interaction with their peers which resulted in loneliness, unmotivated, or discouragement without regular social interaction. University students revealed that a lot of work led to stress and anxiety as they experience difficulty concentrating or staying focused while learning online. Also, students reported that they developed health problems such as virtual learning fatigue, eye problems, back pain, etc. as a result of using the computer for long hours. The research findings were consistent with Jessica Mangis (2016) who conducted a pilot study on online learning and its effects on functional health and the results revealed that online learning harms functional health. The results were also in line with Wang, Luo, Gao, & Kong, (2012) who stated that online learning presents a major risk on learners' emotional and physical health, otherwise known as functional health which results in a trend away from active leisure pursuits and recreational sports and leading us towards a sedentary lifestyle.

Based on the online learning activities and effectiveness, students expressed dissatisfaction as all learning activities were instructor-centered especially for primary, secondary, and vocational students. "The instructors did all the talking while students did the listening". For primary school students, online learning was characterized by watching old videos replayed on TV channels for students to simply watch and complete worksheets. These videos were prepared without taking into consideration learners' learning styles, void of interesting learning activities to enhance active learners' participation. Students participated in online learning but did not participate in any learning activities. The research findings were consistent with Romiszowski & Mason, (2004); Vonderwell & Zachariah, (2005) who considered participation in online learning as interacting with peers and instructors by writing and stated that learners are not active in online learning because they do not interact face-to-face with peers. Learners also perceived online learning as isolating and lonely which was in line with McInnery & Roberts, (2004) who revealed that learners may feel isolated and disconnected in online courses. Based on the aspect of effectiveness of online learning, the results revealed a lot of gaps, frustrating issues, and complaints about the shallowness of online learning. Also, students (university students) faced a lot of problems in terms of group work and assessments. Online learning activities were characterized by group work which made it very difficult for students to come together during the spread of this pandemic. It was revealed from students' interviews that online learning and learning practices in Thailand during the Covid-19 were not good enough and non-sustainable in terms of value addition, particularly for learners.

There was the absence of authentic learning activities that will enable students to develop their skills especially for vocational students and for some courses with students who are supposed to develop various skills through manipulation of various equipment. Primary school pupils who studied online had to watch past videos on TV which were not related to students learning environment and sometimes learning styles. The results from primary school learners in general and lower levels, in particular, revealed negative perceptions towards online learning through comments such as "I don't understand the teacher", "I don't understand what the teachers are talking about", "I don't like the learning activities because I cannot do it with my friends in class." The finding proves that learners watched and listen without participation or interaction. The findings were consistent with the study conducted by a group of researchers in their study of 96 participants in 3-week online undergraduate courses and the results revealed that learners spent three-quarters of their time listening or observing in online discussions without participation (Wise et al., 2013) and also consistent with Romiszowski and Mason (2004) who argued the assumption that infrequent contributors are "passive recipients rather than actively engaged in online learning. Equally, students agreed that during the online learning process, they never concentrated comprehensively because there was no effective check. Due to the absence of this effective check and follow-up, they had to play online computer games or do other things during the learning process. It was also revealed that there was a lack of feedback from instructors or teachers. Students therefore perceived online learning as not being effective due to the absence of collaborative, effective check, lack of participatory learning activities, and interactive skill development learning activities.

The themes from surveying instructors' perceptions of online teaching and learning are summarized in Table 2 and discussed below with comments taken from the research data. In keeping with the requirements of the

ethical approval and without any personal identification the research findings are summarized in the table below.

Table 2: Summary of Themes and teachers' perceptions towards online teaching and learning for instructors

Theme under study	Summary
Availability of technology and instructional materials	A majority (93%) of instructors/teachers revealed that instructional materials required for effective online learning were available.
Technology literacy	Instructors are technology literate and others who were not literate before were trained on how to use technology for teaching (Zoom, Microsoft team, google classroom, etc.).
Teaching environment	100% of instructors revealed that their teaching environment was conducive and well organized for effective online learning since teaching was done from the school/and university
Flexibility	-89% of university instructors viewed online learning as flexible and economical.
Online learning assessments	- 76% of instructors see online learning assessments as ineffective.
Online learning effectiveness	- 87% of primary and secondary school teachers revealed that online learning during the covid-19 period was not effective. - 100% of vocational and technical college instructors perceived online learning as not effective especially for practical course. - 87% of university instructors revealed that online learning was effective during the covid-19 period - 13% of university lecturers who taught practical science and other practical courses perceived online learning as not effective

Based on teachers' perception towards online learning concerning factors such as availability of technology and instructional materials, technology literacy, instructional environment, flexibility, and online learning effectiveness, the results revealed as follows: The research findings from instructors on the availability of online learning technology and instructional materials provided positive results. All instructors from secondary, vocational institutions, and universities agreed that all required materials such as computers, internet, etc. were made available by their institutions. Teaching was done from school/faculties with high-speed computers and internet provided by the administration. Some comments from instructors such as "the university provided good computers", the school internet is very fast and makes teaching easy" and "the university or institution provided all the required resources for learning to be effective" proves that all required resources for effective online teaching and learning were available for teachers. The findings were in line with Akingbemisilu (2014) whose studies revealed that online learning tools are available at Adekunle Ajasin University, Akungba-Akoko, Ondo State, and also in concordance with Wole and Opesade (2008) on the e-readiness assessment of the University of Ibadan.

Related to the findings on instructors' ability to use online teaching, technology, a majority of the instructors revealed that they were able to use the online teaching technology. The instructors agreed that they were instructed by their various institutions to attain seminars organized by the institution to train all teachers on how to use various online teaching applications and programs such as Microsoft team, zoom, google classroom, and a series of others. The findings were consistent with Bediang et al. (2013) who conducted a study on "Computer literacy and E-learning perception in Cameroon with the case of Yaounde, Faculty of Medicine and Biomedical Sciences and found that instructors have a fairly good mastery of ICT. The results of studying instructors' perceptions towards the online teaching environment revealed positive perceptions. From teachers' responses, the teaching environment was favorable. Teaching was done in their offices. The offices were less noisy, air-conditioned with enough light with no disturbances from students or colleagues. Based on the flexibility of online teaching the results from teachers' interviews revealed that online teaching was flexible. According to instructors' responses, online teaching was flexible in terms of time, location, and information sharing. Teaching could be done in the office or at home, they could easily agree with students on an agreed time. The findings were consistent with Zakaryia, Khadled, and Mohammad (2021) who found that both faculty and students agreed that online education is useful during the current pandemic and also agrees that the benefits were mainly self-learning, low costs, convenience, and flexibility.

76% of instructors perceived online learning assessments as ineffective. According to teachers, online learning assessment makes their job easier but due to lack of knowledge in designing assessment tools, and lack of effective check, they stated that online learning assessment was ineffective. Teachers and university instructors revealed that online learning assessments had many drawbacks as they could not follow up with students during the examination process. According to instructors, students could “cheat” during the examination process. Equally, some instructors expressed a lack of knowledge in designing effective online assessments. The results were in line with that of Ibid (2021) whose studies revealed that teachers had limited skills in online learning assessment. According to her, the limitations of online learning assessment such as lack of guidance on how to implement diagnostic, formative, impassive, and summative assessments online, almost all participants choose not to use online quizzes and exams to assess validity, reliability, and other practical elements. Instead, they used projects, oral presentations, reflection papers, and performances as assessment tools. Consequently, participants reported being very satisfied with the university’s decision to administer final exams in-person and on campus, all the participants agreed that this practice should be used in the fall of 2020-2021 in case remote or blended learning is maintained.

Teachers'/instructors' perceptions towards the effectiveness of online learning were varied. 87% of primary and secondary school teachers, used in this study revealed that online learning was not effective as they had to re-teach all that was learned during online learning activities in face-to-face situations. The teachers revealed that an assessment of what was learned online revealed that students still lacked knowledge of what was taught. This made them re-teach all that was learned online. vocational (100%) teachers and some university instructors (13%) who had to teach practical and or skill development causes that demanded learners to manipulated equipment in workshops or laboratories perceived online learning as not effective while 87% of university instructors who taught theoretical and general causes revealed that online learning was effective during the covid-19 era. This was in line with Zakaryia, Khadled, and Mohammad (2021) whose research study found that both faculty and students agreed that online education is useful during the current pandemic but at the same time, its efficacy is less effective than face-to-face learning and teaching. The results from university lecturers were consistent with Nursalina and Fitrawati (2021) whose studies revealed that the teachers' perceptions of English online learning activities during the pandemic at High Schools in Padang were quite positive.

IV. CONCLUSION

This research attempted to investigate learners' and instructors' perceptions towards online instruction and its effectiveness during the covid-19 era in Thailand. The spread of covid-19 and the implementation of inline teaching and learning activities had both positive and negative aspects. Recent changes in our society today such as the spread of pandemics and other natural disasters have declared online instruction as an issue that the entire world must prepare to contain. As such, learners and instructors must prepare to teach and learn online given the presence of uncontrollable environmental disasters (floods, volcanic eruptions, global warming, etc.) in general, and particularly the spread of Covid-19 and other pandemics. This study identified many gaps and weaknesses affiliated with online teaching and learning which can be covered by taking into consideration different views from learners and instructors, analyzing them effectively, and the effectiveness of online instruction concerning adding value to learners' lives instead of focusing only on technological aspects of it. From a general viewpoint, this study concluded that online teaching was effective to a lesser extent in achieving the stated learning objectives such as developing learners' knowledge, skills, and attitudes in different subject areas and at different levels. The ineffectiveness of online instruction was not only due to the lack of required learning materials for students, an uncondusive learning environment, lack of interactive learning activities and collaboration among learners, and lack of authentic learning environment and activities that will bring about effective learning. The ineffectiveness was also due to poor planning and the unprepared nature of the educational system and the administrators to execute effective online instruction. Therefore, good planning, the provision of required online learning resources, the training of instructors on online teaching media and technology, and organization of safe and conducive learning environment from the part of the Ministry of Education and organization of effective, active, and authentic online teaching-learning activities from the part of the instructor are essential and pertinent components to be taken into consideration. It becomes clear that the online system will become effective in the future if all these aspects are considered and improved upon.

Recommendations : Based on the research findings, the following recommendations were made. The government and the Ministry of Education should put in place measures to make available required resources for effective online instruction for both teachers and students. Equally, education authorities and administrators should organize learning environments that all students can study online in school to solve the problem of lack of learning resources such as computers,

TV sets, and internet at home and also to solve the problems of an uncondusive learning environment at home. This will help to reduce expenditure from parents and families. Moreover, the government and the Ministry of Education should organize training courses on the use of online teaching technologies and computers for instructors at all levels of education and also training courses on how to develop active and authentic online learning activities. This training will help to prepare teachers, get them ready for effective use of online teaching technologies and effective online teaching at any time in case of unforeseen contingencies. Online learning should be authentic not just watching already prepared videos on TV.

Limitations and Recommendations for Further Study : This study focused on analyzing learners' and instructors' perceptions towards online instruction in Thailand during the COVID-19 era. Further research should be conducted with a focus on developing instructional models that will favor online instruction at all levels, especially during the spread of pandemics and unforeseen circumstances. Also, this study was conducted with students selected randomly from the lower northern region of Thailand specifically schools in Phitsanulok province, and small schools in remote or rural areas were not analyzed. Further studies should concentrate on analyzing the online situation allover Thailand as this will enable the educational administrators to have a comprehensive understanding of the situation as well as needs that will enable them to have better plans to enhance online learning in Thailand.

REFERENCES

1. Akingbemisilu, A. A. (2014). Availability of online learning tools and the readiness of teachers and students towards it in Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria. *Procedia-Social and Behavioral Sciences* 176 (2015) 610- 615. Retrieved from: <https://doi.org/10.1016/j.sbspro.2015.01.517>
- 2.
3. Allen, I. E., and Seaman, J. (2010). Learning on demand online education in the United States. Newburyport, MA: The Sloan Consortium. Retrieved from http://www.aln.org/publications/survey/learning_on_demand_sr2010
4. Alley, M. (2008). Foundation of educational theory for online learning. In T. Anderson, Theory and practices of online learning. (p. 16-44) Canada AU press, Athabasca University Press.
5. Bali, S. & Liu, M. C. (2018). Students' perceptions toward online learning and face-to-face learning courses. *Journal of Physics: Conference Series*. pp. 1-7.
a. doi :10.1088/1742-6596/1108/1/012094
6. Bates, T. (2020). Crashing into online learning: A report from five continents and some conclusions. Available online:<https://www.tonybates.ca/2020/04/26/crashing-into-online-learning-a-report-from-five-continents-and-some-conclusions/>
7. Bediang G. et al. (2013). Computer literacy and E-learning perception in Cameroon: the case of Yaoundé Faculty of Medicine and Biomedical Sciences. *BMC Medical Education*, 13:57. From: <https://www.researchgate.net/publication/236250556>
8. Brittany, G., (2015). Online Learning Revealing the Benefits and Challenges. Fisher Digital Publications. From: http://fisherpub.sjfc.edu/education_ETD_masters/303
9. Chaney, E.G. (2001). Web-based Instruction in a Rural High School: A Collaborative Inquiry into Its Effectiveness and Desirability. *NASSP Bulletin*, 85(628), 20-35. Retrieved July 22, 2022, from: <https://www.learntechlib.org/p/94170/>.
10. Fisher, J., & Whale, S. (2014). Flexibility and technology-enhanced learning and teaching: The rhetoric and reality. In B. Hegarty, J. McDonald, & S.-K. Loke (Eds.), *Rhetoric and Reality: Critical perspectives on educational technology*. Proceedings ascilite Dunedin 2014 (pp. 446-450). From
b. <https://www.ascilite.org/conferences/dunedin2014/files/concispapers/82-Fisher.pdf>
11. HussainE. T., Daoud, S., Alrabaiah, H. and Owais, A. K. (2020). Students' Perception of online assessment during the COVID-19 pandemic: The case of undergraduate students in the UAE," 2020 21st International Arab Conference on Information Technology (ACIT), 2020, pp. 1-6, doi: 10.1109/ACIT50332.2020.9300099.
12. International Telecommunication Union (2018). Measuring the Information Society Report. From: <https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2018/MISR-2018-Vol-1-E.pdf><https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2018/MISR-2018-Vol-1-E.pdf>
13. Jessica, M. (2016). Online learning and the effects on functional health: a pilot study. EWU Masters Thesis Collection. 386. From: <https://dc.ewu.edu/theses/386>

14. Moore, M. and Kearsley, G. (2012) Distance Education: A Systems View of Online Learning. 3rd Edition, Wadsworth, Belmont.
15. Long, C.S., Sinclair, B.B., Fraser, B.J. et al. (2021). Preservice teachers' perceptions of learning environments before and after pandemic-related course disruption. Learning Environments Research (2021). From <https://doi.org/10.1007/s10984-021-09376-9>
16. Maeroff, G. I. (2003). A classroom of one: How online learning is changing our schools and colleges. Palgrave, Macmillan. New York, New York.
17. Muthuprasad, T. et al. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. *Social Sciences & Humanities Open* 3(2021) pp.1-11
18. Nursalina&Fitrawati. (2021). EFL Teachers' Perception on English Online Learning Activities during the Pandemic at High Schools in Padang. *Journal of English Language Teaching*, 10(2), 204-223, DOI: 10.24036/jelt.v10i2.112341
19. Rattanakhomfu, S., (2020). **Covid-19 emphasizes the need to bridge the digital divide and reduce online educational inequality. From:**
20. <https://tdri.or.th/en/2020/05/covid-19-emphasizes-the-need-to-bridge-the-digital-divide-and-reduce-online-educational-inequality/>
21. Robert, O., ohn M. K., Waiganjo, P. W., &Maina E., (2014). Students' perceived challenges in an online collaborative Environment: A case of Higher learning Institutions in Nairobi, Kenya. *International Review of Research in Open and Distance Learning*. Vol 15 / No 6, (132-161). From:
a. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.978.2867&rep=rep1&type=pdf>
22. Silva, M., and Cartwright, G. F. (2017). The internet as a medium for education and educational research. *Educ. Libr.* 17:7. doi: 10.26443/el.v17i2.44
23. Siripongdee, K. et al. (2020). A blended learning model with IoT-based technology: Effectively used when the COVID-19 pandemic? *J. Educ. Gift. Young Sci.* 8, 905– 917. doi: 10.17478/JEGYS.698869
24. The World Bank World Bank Education and COVID-19. (2020) Available online: <https://www.worldbank.org/en/data/interactive/2020/03/24/world-bank-education-and-covid-19>
25. Thomas, M. L. & Richard, M. (2006). Computer literacy and attitudes towards e-learning among first year medical students. *BMC Medical Education* 2006, 6:34. Available online: <http://www.biomedcentral.com/1472-6920/6/34>
26. Thomson, L. D. (2010). Beyond the Classroom Walls: Teachers' and Students' Perspectives on How Online Learning Can Meet the Needs of Gifted Students. *Journal of Advanced Academics*, 21(4), 662-712. <http://joa.sagepub.com.pluma.sjfc.edu/content/21/4/662.full.pdf+html>
27. Thurmond, A. V. (2001). The point of triangulation. *Journal of Nursing Scholarship*, 33(3), pp. 253-258. From:
a. <http://msessd.ioe.edu.np/wp-content/uploads/2017/04/the-point-of-triangulation.pdf>
28. U.S. Department of Education (2010). Office of Planning, Evaluation, and Policy Development, Evaluation of Evidence-Based Practices in Online Learning: A Meta- Analysis and Review of Online Learning Studies, Washington, D.C.
29. Wang, L., Luo, J., Gao, W., & Kong, J. (2012). The effect of internet use on adolescents' lifestyles: a national survey. *Computers in Human Behavior*, 28, 2007-2013.
30. Olatokun, W. & Opesade, A. (2008). An E-readiness Assessment of Nigeria's Premier University (Part 1). *International Journal of Education and Development using ICT*, 4(2), 16-46. Open Campus, The University of the West Indies, West Indies. Retrieved July 22, 2022 from <https://www.learntechlib.org/p/42287/>.
31. Zakaryia, A., Khadled, M. & Mohammad O. A. (2021). Faculty's and students' perceptions of online learning during COVID-19. <https://doi.org/10.3389/feduc.2021.638470>