
ПРОБЛЕМЫ КАЧЕСТВА ОБРАЗОВАНИЯ

УДК 371

DOI: 10.17853/1994-5639-2021-5-116-130

THE PERCEIVED SATISFACTION WITH EMERGENCY REMOTE TEACHING (ERT) AMIDST COVID-19: AN EXPLORATORY CASE STUDY IN HIGHER EDUCATION

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Abstract. *Introduction.* Online learning is a well-established pedagogical paradigm that has been researched and discussed from a number of perspectives. Educators associate a variety of opportunities and challenges with online education, and recently an unprecedented global pandemic, COVID-19, made traditional classroom teaching temporarily impossible. Emergency remote teaching (ERT) is a newly emerging sub-paradigm that possesses characteristics and challenges that differ from traditional online learning.

Methodology and research methods. This study quantitatively examined undergraduate students' (n = 219) perspectives on the most important attributes that are associated with ERT. Moreover, the students' satisfaction with ERT was assessed, and the relationships between socio-demographic factors were analysed.

Results and scientific novelty. A descriptive analysis revealed that most students preferred a traditional on-site classroom arrangement, while they were satisfied with the alternative ERT having fully virtual delivery. Also, the study highlighted that the students rated being knowledgeable, friendly, and patient as the most important characteristics of their lecturer in these unusual circumstances.

Practical significance. The current research informs educators about student perceptions and preferences during these extraordinary circumstances of uncertain duration.

Keywords: emergency remote teaching, importance-performance analysis, quality education, COVID-19, online education.

For citation: Fuchs K., Karrila S. The perceived satisfaction with emergency remote teaching (ERT) amidst COVID-19: An exploratory case study in higher education. *The Education and Science Journal*. 2021; 23 (5): 116–130. DOI: 10.17853/1994-5639-2021-5-116-130

ОЖИДАЕМОЕ УДОВЛЕТВОРЕНИЕ ЭКСТРЕННЫМ ПЕРЕХОДОМ К ДИСТАНЦИОННОМУ ОБУЧЕНИЮ В УСЛОВИЯХ COVID-19: ИССЛЕДОВАНИЕ В СФЕРЕ ВЫСШЕГО ОБРАЗОВАНИЯ

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Аннотация. *Введение.* Онлайн-обучение – это устоявшаяся педагогическая парадигма, которая исследовалась и обсуждалась с разных точек зрения. Преподаватели связывают с онлайн-образованием множество возможностей и проблем, а беспрецедентная глобальная пандемия COVID-19 сделала традиционное обучение в классе временно невозможным. Экстренное дистанционное обучение (Emergency Remote Teaching – ERT) – это недавно появившаяся подпарадигма, которая обладает характеристиками и проблемами, которые отличаются от присутствующих в традиционном онлайн-обучении.

Методология и методы исследования. В настоящем исследовании количественно изучались взгляды 219 студентов на наиболее важные атрибуты, связанные с экстренным дистанционным обучением, оценивалась их удовлетворенность ERT и анализировалась взаимосвязь между социально-демографическими факторами.

Результаты и научная новизна. Описательный анализ показал, что большинство студентов предпочитали традиционную организацию занятий в классе, в то время как они были удовлетворены альтернативным экстренным дистанционным обучением с полностью виртуальным обучением. Кроме того, студенты оценили осведомленность, дружелюбие и терпение как наиболее важные характеристики своего преподавателя в этих необычных обстоятельствах.

Практическая значимость. Данное исследование информирует преподавателей о восприятии и предпочтениях учащихся в этих чрезвычайных обстоятельствах неопределенной продолжительности.

Ключевые слова: экстренное дистанционное обучение, анализ важности и эффективности, качественное образование, COVID-19, онлайн-образование.

Для цитирования: Фукс К., Каррилла С. Ожидаемое удовлетворение экстренным переходом к дистанционному обучению в условиях COVID-19: исследование в сфере высшего образования // Образование и наука. 2021. Т. 23, № 5. С. 116–130. DOI: 10.17853/1994-5639-2021-5-116-130

Introduction

Online learning¹ is not a new pedagogical approach. It has been around for decades, with Computer Assisted Instruction (CAI) pursued since the 1980's,

¹The terms online learning, online teaching and online education are used interchangeably in this paper.

and particularly the emerging concept of Technology-Enhanced Learning (TEL) gaining momentum over the previous decade [1]. The United Nations estimated recently that about 58 % of the worlds' population has access to the Internet [2]. In this time of increased global connectivity, the paradigm of online education represents an enormous opportunity to educate the population in societies that often do not practice inclusive education [3]. However, as a result of the global pandemic, SARS-CoV-2 (COVID-19), educators were required in an unprecedented move to convert entire syllabi to a virtual classroom, to ensure the continuity of teaching their courses to students. This study is aimed to quantitatively examine the students' perceptions of Emergency Remote Teaching (ERT) through an exploratory case study at an institution in higher education. Furthermore, the research was guided by the following research questions:

RQ1: What attributes (related to their courses) do undergraduate students perceive as the most important during emergency remote teaching?

RQ2: What is the level of perceived satisfaction by the undergraduate students with regards to emergency remote teaching?

The research begun with the following announcement made by the faculty management informing its entire academic staff that the spring semester 2021 would commence in seven days fully online: "As COVID-19 pandemic is once again spreading throughout Thailand, we need to adjust our teaching [...] to minimise the impacts of COVID-19: The campus administration has announced that all classes [...] must be conducted online".

Literature Review

Online Education as facilitator of student-centered learning

Online education is being applied everywhere around the world, in schools, colleges, and universities, as well as in private institutes. There are several types of research that have explored how online education affects students, both positively and negatively, from the perspective of e-learning. In the National Survey of Student Engagement, research conducted by Dumford and Miller [4], it was found that the students taking courses online did engage in quantitative reasoning. Similarly, Malan [5] conducted a study involving student engagement in online learning. The results showed that, by incorporating engagement tactics within the module, effective results were seen in the students, both in peer engagement and module completion. This study could be followed to ensure constant student engagement, especially in this COVID-19 period, during which e-learning has become mandatory [5]. Also, Moore's interaction framework was used in a study conducted by Martin and Bolliger [6], where learner-to-instructor engagement strategy was welcomed by the students, more so than the learner-to-learner category [6].

The structure of higher education has been transformed into online learning due to the pandemic crisis throughout the world. This poses a dilemma for practice-based activities, such as laboratory practice, translation courses, and others. Nugroho et al. [7] used a qualitative structure to determine the perception of students in a specific translation class. Although there was an 80 % negative review of the online lectured class, a 90 % positive review was given to the utilisation of Google Classroom and OmegaT application. This shows that futuristic e-learning could be effective with modern IT solutions [7]. While using a quantitative method to understand the perspective of students in e-learning, Loh et al. [8] found that students felt comfortable due to the flexibility of e-learning, allowing progress at their own pace.

However, there are also negative reviews from the students, complaining about lack of fostering teamwork, no human interaction, and self-motivation problems [8]. An Indonesian study by Bali and Liu [9] showed that face-to-face education was more highly rated than e-learning as regards satisfaction, social interactions, and presence. However, a few students have expressed their comfort with e-learning as it helped them be creative with support of information technology [9]. According to Shih and Tsai [10], project-based online learning helps increase the learning interest, motivation, and effectiveness among students.

In Taiwan, research using an Online Learning Readiness Scale (OLRS) showed that students displayed readiness and motivation for self-directed online learning [11]. Since there are both negative and positive reactions to online education, Adam et al. [12] conducted a study proposing ways to eliminate the negative reactions. In that study, students explained that the use of digital communication and media, integrated with face-to-face lecturing and with simple navigation, will result in effective student reactions to online education [12]. E-learners with more self-driven motivation toward online education seemed to have greater learning contentment and anticipated good [13]. To summarise, education institutions must acknowledge the ideas of students in online education and motivate the faculty to implement a variety of delivery forms, in which the students can positively engage in online learning.

Related Works about Emergency Remote Teaching

Hodges et al. [14] described ERT as a temporary shift of instructional delivery to an alternate delivery model due to crisis circumstances. It was further noted that online education has been studied for decades, and there was a relative agreement on the elements, which do not proportionally contribute to the effectiveness of online education [14–15]. These characteristics were not limited to, but include modality, pacing, student-instructor ratio, and pedagogy, the role of assessment,

instructor role, student role, communication channels, and source of feedback. Inevitably, an effective ERT class would include these characteristics. Arguably, the lack of time available for educators to adjust their teaching materials – in an emergency shift from classroom to online – could suggest an imperfect learning environment for the students. At the beginning of 2021, the scientific database Scopus featured 65 publications that are associated with the search string “emergency remote teaching” in a TITLE-ABS-KEY¹ search that was executed on 18th January 2021. Notably, all these publications originated in the preceding 12 months, since February 2020 when SARS-CoV-2 (COVID-19) first emerged, and actions led to the shift towards emergency remote teaching. With the limited research available, there is no consensus about the effectiveness or the student perceptions of this emerging sub-paradigm within the context of online education.

A case study conducted by Kyne and Thompson [16] identified several difficulties perceived amongst students in their fully online semester. These included the difficulty to complete lab-based assignments, navigating Moodle², and engagement with online material. The statement is on par with a similar finding that stated “undergraduate students claim a lack of socialisation with peers and low engagement with the course materials” as primary reasons for their dissatisfaction if the course content is not carefully and purposefully planned [17]. Furthermore, Wilcox and Vignal [18] identified that the most common difficulties that students experienced as a result of ERT fell into the categories (1) course inaugural, and (2) learning environment. In the latter category, the most commonly stated problem was related to an unstable Internet connection that deteriorated the students learning experience. Gelles et al. [19] added that participants stated that the learning experience was awkward and rather unpleasant, and quoted one participant with the following statement “It feels like Facetiming your professor”. Further, another participant added appreciation about conducting all classes entirely online under consideration of the health hazards related to the coronavirus “I’m at home. I’m safe. I’m healthy. And my family is healthy. That is the most important”. Even though there is little information available on the perception of students concerning emergency remote teaching, still preliminary research has suggested a rather negative perception towards this mode of studying, while also showing gratitude and understanding for the exceptional circumstances [16, 18]. In a related study, preliminary perceptions in higher education were analysed, and Cameron-Standerford et al. [20] noted that “challenging”, “concern”, and “anxious” were

¹The abbreviation TITLE-ABS-KEY refers to “title, abstract or keyword search” in a database of scientific publications.

²Moodle is an Open Source Learning Management System (LMS) to facilitate access to course content.

the three most commonly reoccurring words in the qualitative convenience sampling that was applied. This further suggested that students have generally a rather hesitant view with regards to emergency remote teaching, and would much rather prefer traditional classroom teaching. The following conceptual framework was developed to guide this current study (Fig. 1).

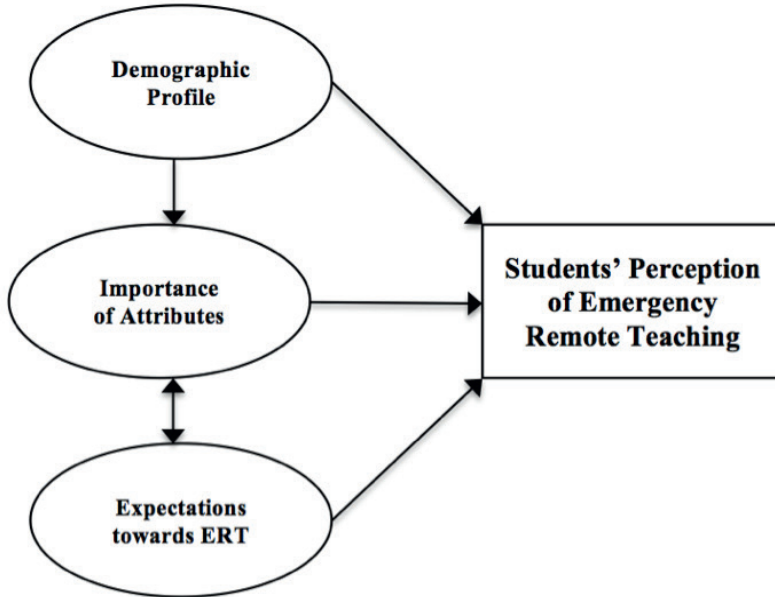


Fig. 1. Conceptual framework of this case study

Methodology

Sample

The data were collected from undergraduate students, who were enrolled in a full-time Bachelor of Business Administration degree programme. After screening the results, 21 responses were discarded. These discarded responses included 15 responses from another faculty, 3 responses from international exchange students, and 3 inconclusive/incomplete responses. The overall sample size ($n = 219$) that was included in the data analysis corresponded to an effective response rate of 39 % relative to the total enrolment count ($n = 561$). The confidence level of accurate sampling was 95 % ($p < 0.05$), and based on the total student enrollment of 561 and a sample size of 219, the margin of error was quantified at 5 %. The gender distribution was also representative of the overall demographic

at the faculty at the time of data collection. On the basis of eligible responses, the representative demographic profile in Table 1 summarises the respondents' gender, years of study, age, nationality, and preferred mode of study.

Data Collection

Convenience sampling was used to collect the data through a bilingual (Thai and English) self-administered online survey. The data were collected in the first quarter of 2021 at the Faculty of Hospitality and Tourism (FHT), Prince of Songkla University (PSU) in Phuket. It was collected in the midst of COVID-19, wherein a countrywide ERT policy was implemented and effectively replaced the traditional face-to-face teaching. The survey contained 27 questions and was divided into three sections. The first section sought to collect data pertaining to the participant's demographic profile. The second and third section contained each ten (10) items, wherein the participants were able to express their views on a 5-point Likert-type scale with pre-coded responses for Not Important At All (1), Not Very Important (2), Somewhat Important (3), Very Important (4), and Extremely Important (5) in the second section. Similarly, the third section had pre-coded Likert-type responses for Not At All Satisfied (1), Not Very Satisfied (2), Somewhat Satisfied (3), Very Satisfied (4), and Extremely Satisfied (5). Otherwise, the items in the second and third sections were similar to compare the perceived importance and satisfaction for each item.

Data Analysis

The survey data were examined using JASP software to obtain for each item an average value (Mean), standard deviation (SD), minimum value (Min), maximum value (Max), proportion of the data (i.e. fraction of cases without missing data), distribution of data, as well as correlations between pairs of attributes. The correlations were analysed for attributes from the socio-demographic profile of the participants. The data analysis and findings are discussed and interpreted in later sections of this report.

Results and Discussion

Socio-demographic profile

The demographic descriptors of the sample ($n = 219$) are presented in Table 1 and it can be noted that 58 of the respondents were male (26.48 %), 159 were female (72.60 %) and 2 opted not to specify their gender (0.92 %). Moreover, more than half of the participants were in their first two years of study ($n = 133$; 60.73 %), while third-year students contributed 19.64 % of the sample ($n = 43$), fourth-year students were 14.61 % of respondents ($n = 32$), and the remainder

were in year 5 or beyond (n = 11; 5.02 %). Also, the vast majority (n = 190; 86.76 %) of students, who completed the survey were between 19 and 22 years old. Another notable characteristic of the participants was that 165 students (75.34 %) preferred a traditional classroom setting, while 54 students (24.66 %) preferred the virtual classroom as a mode of delivery for their studies.

Table 1
Socio-demographic profile of the participants

Participants (n = 219)	Category	Absolute	(Percent)
Gender	Male	58	26.48 %
	Female	159	72.60 %
	Prefer not to say	2	0.92 %
Years of study	Year 1	50	22.83 %
	Year 2	83	37.90 %
	Year 3	43	19.64 %
	Year 4	32	14.61 %
	Year 5 or above	11	5.02 %
Age range	18 years old or below	6	2.74 %
	19 – 20 years old	122	55.71 %
	21 – 22 years old	68	31.05 %
	23 – 24 years old	16	7.31 %
	25 years old or above	7	3.19 %
Nationality	Thai	184	84.02 %
	Foreign	35	15.98 %
Preferred mode	Virtual classroom	54	24.66 %
	Traditional classroom	165	75.34 %

RQ1: What attributes (related to their courses) do undergraduate students perceive as the most important during emergency remote teaching?

On comparing for the ten query items/attributes the importance and performance perceived by the participants, several findings emerged. Firstly, the average importance rating of each attribute was across the board higher than the average performance rating. This demonstrates that the student expectations towards emergency remote teaching were consistently higher than the perceived performance in their ERT experience. The largest discrepancy between expectation (importance) and satisfaction (performance) was recorded

for the second attribute, namely “The teacher presents the material in an interesting and engaging way” ($v = .411$). Based on the average importance rating of 4.032, it can be noted that the students perceived this attribute as very important, but were not satisfied with the outcome as regards interesting and engaging teaching material.

The disparity could be the result of insufficient time to prepare effectively for the online lectures based on the short notice period for the commencement of ERT. Hodges et al. [14] made a similar observation that a fundamental difference between online teaching and ERT is the preparation time to create engaging and interesting course content. Another attribute that received the second-highest disparity was “The course material is well and professionally prepared”, wherein the gap between importance (4.119) and performance (3.836) was nearly 0.3 units. Similar to the previous attribute, a possible explanation could be the lack of time to prepare the teaching materials in advance. In order to identify a possible correlation, a quantitative or qualitative follow-up would need to be conducted.

Table 2

Importance-performance ratings (summarised from the survey)

Attribute Sequence	Attribute Description	Importance		Performance	
		Mean	SD	Mean	SD
1	The teacher begins the class with a review of the previous class	3.731	0.993	3.521	0.992
2	The teacher presents the material in an interesting and engaging way	4.032	1.011	3.621	1.035
3	The teacher presents the material in an organised and coherent way	4.055	0.922	3.795	1.004
4	The teacher is knowledgeable about the content and material of the course	4.370	0.886	4.119	0.960
5	The teacher is friendly and patient with the students	4.269	0.960	4.050	0.944
6	The course material is well and professionally prepared	4.119	0.993	3.836	0.977
7	The course material is easy to access in the Learning Management System	4.132	1.030	3.868	0.998
8	Students are engaged to actively participate in the discussion	3.982	0.953	3.813	0.961
9	I am learning something which I consider valuable	3.950	0.983	3.758	1.014
10	I am finding the course challenging and stimulating	3.584	1.236	3.539	1.197

Secondly, the two highest average ratings for importance were received for attributes number four (4.370) and five (4.269). Also, the corresponding standard deviations for these items indicate relatively strong consensus amongst the students that to be knowledgeable, friendly, and patient are the most important expectations from the teacher in emergency remote teaching. This study confirmed that the students were 'very satisfied' with the performance on these two attributes, but it is also noted that the two attributes that were rated as most important (Table 2) for students do not require for the teacher to prepare in advance for switching to ERT. It can be stated that friendliness, patience, and knowledge are transferable skills that exist regardless of the mode of teaching, as noted by Downer et al. [21].

RQ2: What is the level of perceived satisfaction by the undergraduate students as regards emergency remote teaching?

The participants were asked in the last section of the survey about their preferred type of classroom and were given the choice between a virtual classroom as part of ERT and a traditional classroom. Students responded with 75.34 % (n = 165) in favour of a traditional classroom arrangement, while the virtual classroom received support in 24.66 % of the responses (n = 54). It could be expected that students have a rather negative perception of the virtual classroom arrangement during ERT, and by virtue of these results, it can be stated that three quarters preferred the traditional classroom. Despite this, the average performance ratings for the attributes, which were tested for the virtual classroom during emergency remote teaching, indicate that the students were very satisfied with their alternative mode of learning. The average performance ratings ranged from 3.521 to 4.119 (Table 2).

Attribute number seven asked the students about easy access to the Learning Management System, wherein only 4.3 % or n = 19 of the students rated this as not very important or not important at all. Therefore, it can be stated that the majority of students perceived this as an important element to manage their learning. An average rating of 3.868 and SD of 0.998 suggest that the students were very satisfied with the way it was managed during their ERT. This finding is in contrast to a case study conducted by Kyne and Thompson [16] who noted that students had difficulties navigating their way through the LMS in times of emergency remote teaching. Further, Hodges et al. [14] noted that "a full-course development project can take months when done properly. The need to just get it online is in direct contradiction to the time and effort normally dedicated to developing a quality course". This could explain the difficulties that students encountered when navigating through their learning management system, as the content was likely rushed for sharing with the class, instead of purposefully selected over a longer period of time.

Another factor potentially hampering the quality of online teaching is the plentiful selection of related virtual tools. However, in many cases, neither the university nor any of its departments are willing to commit resources and support to only one preference. The paradox of choice is described in detail in the book “The Digital Classroom: Transforming the Way We Learn” by Michaelsen [22], who notes that the choice is ultimately left for the lecturers to decide whether to adopt Google Classroom, Microsoft Teams, Zoom, or something else. A further wide selection of tools is available for screencasting and editing videos, compressing them, and sharing them. With a lack of time and training and experience, each teacher is forced to make a pick to live with. As usual with software, the alternatives compete with “feature sets” that border on excessive and an expert providing instruction wants to demonstrate his/her competence – not by showing the five buttons you would need to record and share a sufficient lecture, but by explaining excruciatingly about countless features that practically nobody has time to use. The “frequency dictionary” approach will only emerge after a while, from those who have figured out the five critical buttons and show them to others in actually useful 2-minute hands-on tutorials. The reality that these authors have seen and lived is that lecture videos are in practice not edited at all, except for clipping off extra minutes from either end or changing the sound volume in one setting for the whole lecture. With these, the number of buttons needed remains below ten.

Even though the students signaled a high satisfaction based on the attributes that were surveyed, it remains an important objective to continuously assess the satisfaction associated with web-based learning during a crisis. A case study that sought to gauge factors impacting students’ perceptions about e-learning emphasised the importance of “minimising factors that negatively affect satisfaction by evaluating them in order to highlight [...] negative situations in distance education” [23]. Those authors also noted that an interesting and pleasing way to present the course contents is essential to achieve high engagement levels with the students. Correspondingly, the largest discrepancy between importance and performance was detected in the second attribute regarding “presenting the material in an interesting and engaging way”. The students rated the importance of this attribute at 4.032, while the performance was lagging at 3.521 – a rating only at a “satisfactory” level, and the discrepancy of 0.5 suggests there is room for improvement.

At a glance, it is apparent that there is a relationship between the perceived importance and the perceived performance. Through data analysis using JASP, the identified R-value of 0.752 ($p < 0.001$) indicates a fairly strong relationship. As the mean value for importance increases, the mean value for performance

also tends to increase. However, this is not a perfect relationship, in particular in the lower mean ratings there are a few outliers. Nevertheless, the general tendency that importance and performance increase together is unquestionably present.

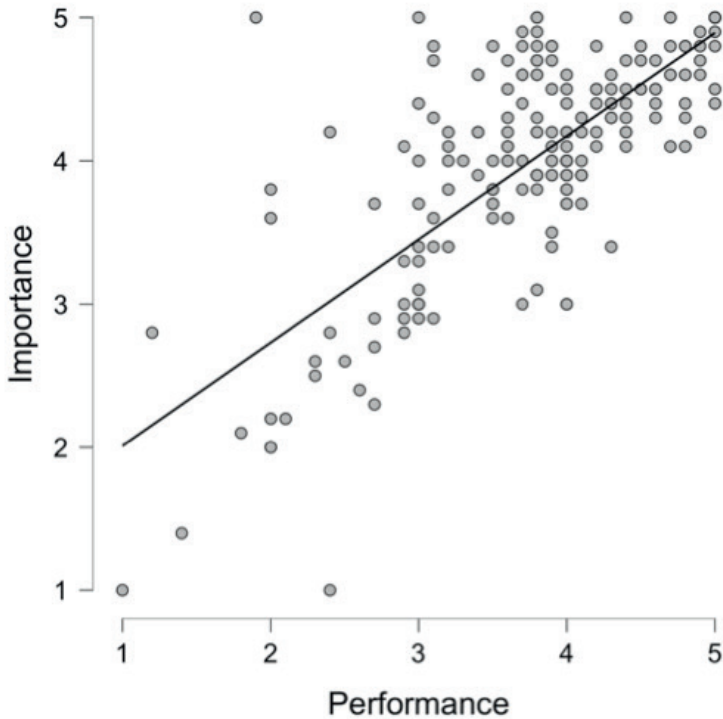


Fig. 2. The linear correlation of perceived importance and performance is illustrated by the least squares fit straight line

Tabor [24] provides recommendations on how to improve the engagement in these circumstances, wherein he states that “in an online situation a student should have more freedom to explore, with assignments focusing on knowledge building, yet many teachers want to give them less freedom and exert more control”. Similarly, Kaufmann [25] suggests avoiding turning the online classroom into a constraint with virtual boundaries. Instead, letting students exercise discussions in small groups, or allowing them time to work on individual tasks can increase their engagement levels, as well as give the educators a break and time to plan the next steps.

Conclusion

At the time of writing this, the pandemic is not yet over (in February 2021), and the semester in Thailand has begun fully online. The circumstances allowed this opportunity to empirically survey for comprehensive insights on the student perspectives, and to effectively contribute to the body of knowledge regarding the newly emerged sub-paradigm of emergency remote teaching (ERT). The study revealed that most students prefer a traditional on-site classroom arrangement, but still they were satisfied with the alternative ERT that was delivered fully online. The study highlighted that the students perceived knowledge, friendliness, and patience as the most important characteristics of their teacher in these circumstances (potentially similar to conventional classroom teaching). Further, the largest disparity between student expectations of the emergency remote teaching and their satisfaction with the actual outcome concerned suitability of the professionally prepared course materials, and whether the presentation of course contents was sufficiently interesting and engaging. Both of these perceived shortcomings can be attributed to a sudden change from classroom teaching to online teaching, without appropriate time to prepare the materials for the latter. The next step in future research could be to conduct multiple case studies at various higher education facilities, to increase reliability of the results, to validate patterns seen in this or other case studies, and to potentially identify geographical correlations. Furthermore, students' grade point average (GPA) could be introduced as a further socio-demographic factor in order to assess possible correlations between the perceived satisfaction with emergency remote teaching and the academic performance of the students.

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Conflict of interest statement. The authors declare that there is no conflict of interest.

Received 02.03.2021; accepted for publication 30.04.2021.

The authors have read and approved the final manuscript.

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Информация о конфликте интересов. Авторы заявляют об отсутствии конфликта интересов.

Статья поступила в редакцию 02.03.2021; принята в печать 30.04.2021.

Авторы прочитали и одобрили окончательный вариант рукописи.