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Cambodian EFL university students' perceptions of online learning effectiveness during the COVID-19 pandemic: A survey study

Sereyrath Em
Western University
Phnom Penh, Cambodia

Sophea Phann
Ministry of Education, Youth and Sport
Phnom Penh, Cambodia

Somphors Khan
National Institute of Education
Phnom Penh, Cambodia

Abstract

This study aims to investigate English as a Foreign Language (EFL) university students' perceptions of online learning effectiveness. A total of 117 Cambodian students studying in a bachelor's degree program at a provincial Cambodian university participated in the study. Descriptive statistics were used to identify the data concerning students' perceptions of online learning effectiveness. Independent samples t-test and one-way ANOVA were also used to investigate the differences in the reported levels of students' perceptions. The results showed that students perceived the effectiveness of online learning to be moderate. The results also indicated no statistically significant difference in their perceptions in terms of gender and years of study. The study calls for future research to be conducted with a larger sample size to investigate the perceptions of students from other universities in other provinces. Teachers' perceptions of online teaching effectiveness during or after the pandemic should also be examined.

Keywords: EFL university students; perceptions; online learning; learning effectiveness; COVID-19; Cambodia

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Introduction

Following its outbreak in early 2020, the novel coronavirus, later known as COVID-19, has disrupted all aspects of life, including education (Em, 2021; Meng, 2021; Pokhrel & Chhetri, 2021). The COVID-19 pandemic has severely affected the education process because educational institutions were ordered to close temporarily, and students were instructed to shift their learning mode from physical to online (Winter et al., 2021). Within the last few years, teachers and students at all learning and teaching levels in Cambodia experienced significant challenges as a result of the COVID-19 pandemic (Heng & Sol, 2021a).

Due to the pandemic, online learning has been considered the most useful means to continue the process of learning and teaching. However, the rise of online learning has brought both advantages and disadvantages. Research has shown that the rise of online learning allowed teachers and students in Cambodia to learn how to use digital devices to continue their education (Em, 2021; Heng, 2020, 2021; Mutton, 2020). Kaing (2020) stated that the rise of online learning allowed teachers and students in Cambodia to learn through a hybrid mode. On the contrary, some researchers argued that the rise of online learning had brought challenges to students and teachers, such as problems with expensive internet services or unstable internet connection (Em, 2021; Meng, 2021).

Since the COVID-19 outbreak, there have been many research studies on COVID-19, especially its effects on different sectors, such as manufacturing, the economy, and education (Chowdhury et al., 2021; Heng et al., 2021; Paul et al., 2021). Of these studies, some were conducted in Cambodia to explore the challenges faced by students and teachers and their perceptions of online learning (e.g., Chan & Sarik, 2020; Em, 2021, Soeung & Chim, 2022). However, the present study examines the perceptions of online learning effectiveness of English as a Foreign Language (EFL) students at a Cambodian university located in Kampong Cham province.

Literature review

Studies on students' perceptions of online learning in the global contexts

In a recent study conducted with 534 college students from three countries, namely the United States, South Korea, and Colombia, Zapata-Cuervo et al. (2021) discovered that students' self-efficacy and anxiety influenced their online learning engagement and impacted their online learning outcomes. While some students were enthusiastic about online learning, many perceived it as less effective and challenging than face-to-face learning. Another cross-national qualitative study involving 14 undergraduate students from Spain, Italy, Hungary, Germany, the Czech Republic, and France who were taking courses at two higher education institutions in Spain and Hungary found that the students perceived online learning with reduced social interaction as a serious obstacle to their learning activities (Koris et al., 2021). The study also revealed students' satisfaction with their academic achievements.

In Poland, Bączek et al. (2021) studied college students' perceptions of online learning by surveying 804 medical students. The results revealed no statistically significant difference between online and face-to-face learning in increasing knowledge. However, the study showed statistically significant differences between online and face-to-face learning concerning increasing skills and social competence. The study concluded that the students were less active when learning online and that online learning was ineffective compared to face-to-face learning.

Another study in Nigeria with 148 undergraduate students showed that student participants felt conversant with online learning since they had a high level of readiness and were not disappointed with online learning (Olayemi et al., 2021). However, the high cost of internet data and poor internet connection was found to be major problems.

Also, in Africa, a study with 358 undergraduate medical students in Sudan found that the majority (87.7%) of them agreed that changing from physical to online classes was the best solution to curb the COVID-19 pandemic (Gismalla et al., 2021). A comparison of students' living places was also analyzed in the study. The results disclosed a correlation difference pointing out that the

students living in the downtown areas had higher perceptions of online learning than those in rural Sudan. Challenges such as the limitations of technical support, time inflexibility, and technical problems were also reported. Overall, COVID-19 has caused many challenges to the education system in different countries around the world. Even though some students and teachers were enthusiastic about online learning during the pandemic, many challenges have been raised as difficulties in learning and teaching.

Studies on students' perceptions of online learning in the Asian contexts

Studies about online learning during the pandemic have also been conducted in different settings in Asia. Khan et al. (2020) surveyed 184 university students in India regarding their perceptions and readiness toward online learning during the COVID-19 pandemic. The results showed that the students felt optimistic about learning using online platforms such as Zoom or Google Meet and that online learning was recommended as a valuable means for future learning, with improvements made to the apps' functions and internet connection.

In Saudi Arabia, Shawaqfeh et al. (2020) conducted a survey with 309 pharmacy students concerning their perceptions of online learning during the pandemic. They found that about 61.4% of the students agreed that online learning was not a challenge because their college was already prepared to transform from physical to online learning. The study also indicated that 49.2% of the respondents expressed positive attitudes toward online learning. It was also found that only 34% of the students experienced barriers in their online learning, including internet cut-off and isolation from teachers and friends.

In Sri Lanka, Akuratiya and Meddage (2020) surveyed 130 information technology undergraduate students regarding their perceptions of online learning during the COVID-19 pandemic. It was found that 62.5% of the students had no relevant experiences with online learning. The students faced many technical problems when they learned online, including poor internet connection and other technical errors.

In Indonesia, Amir et al. (2020) found that college students felt positive about online learning. However, they also found that Indonesian students had

difficulties in online learning. Three major challenges that were found included the limited availability of internet connection, difficulties in accessing the teaching media, and the incompatibility of digital tools to access the media (Agung et al., 2020). Besides, Syauqi et al.'s (2020) study with 56 Indonesian vocational students revealed students' dissatisfaction with switching from physical classes to online learning because they faced challenges such as internet connection and interruptions from their learning environment.

Eri et al. (2021) examined 687 tertiary students from Australia, Cambodia, China, and Malaysia about their perceptions of online learning during the pandemic. The findings revealed that junior students faced more problems than senior students did. Senior students faced fewer problems with online learning because they had more experiences with blended learning.

Another multi-contextual study with 242 undergraduate students from Cambodia, Nigeria, Oman, and Spain found that the pandemic had affected students' well-being, behaviors, and learning (Cifuentes-Faura et al., 2021). The students reported that the effect of the pandemic was antagonistic. As a result, they had inadequate social support and security protection regarding online learning. It was also found that Omani students had less social support than students from the other three countries (Cifuentes-Faura et al., 2021).

A review by Bilsland et al. (2020) concluded that the pandemic caused many severe problems, making undergraduate students in Cambodia, Vietnam, and Australia very frustrated with online learning. The authors recommended a new way of learning for students, such as blended learning and hybrid learning, to prepare them for unforeseen challenges in the future.

Overall, the COVID-19 pandemic has also disturbed every aspect of education in Asian contexts. The need to quickly move from physical to online classes has caused students and teachers many difficulties in learning and teaching.

Studies on students' perceptions of online learning in the Cambodian context

In Cambodia, a number of studies have explored students' perceptions of online learning during the pandemic. Em (2021) surveyed 80 high school students to discover the challenges they faced during the COVID-19 pandemic.

Ten challenges were found, with limited internet connection being the most challenging problem. The study showed that the students felt frustrated with online learning.

Chan and Sarik (2020), who conducted a study with 440 undergraduate students at a Cambodian university using a mixed-methods design, found that due to problems such as unreliable internet connection, poor learning environment, a lack of digital competency, inadequate self-direction, and limited understanding of device usage, the majority (70%) of the students did not wish to continue online classes in the following semester. The students' perceptions of online learning were somewhat above moderate. It was also found that senior students had a higher level of readiness to use technology for learning than freshmen. Another study by Sey (2021) with 110 Cambodian undergraduate students during the COVID-19 pandemic found that most students were only moderately prepared for Google Classroom.

In a recent study of 1,002 Cambodian undergraduate students, Chet et al. (2022) discovered that students' study commitment played an active part in fulfilling online learning throughout the pandemic. The researchers also discovered that 81.4% of the students would not want to continue online learning after the pandemic because it had negatively impacted their academic performance. Besides, 62.3% of them believed that online learning had a negative impact on their studies. These results suggest that the students had negative perceptions of online learning effectiveness.

Some Cambodian authors such as Chhoeurm (2020), Cheam (2021), Meng (2021), and Sun (2020a, 2020b) noted that Cambodian students disliked online learning because they could not afford the expensive internet services, and they were often interrupted while learning at home. Heng and Sol (2021a, 2021b) also noted that in Cambodia, the pandemic had brought many disadvantages to Cambodian students at all learning levels.

Despite the above studies, little research has explored students' perceptions of online learning effectiveness at the higher education level, especially in provincial contexts. Therefore, the present study aims to fill this knowledge gap by exploring provincial university students' perceptions of online learning effectiveness. It aims to answer the following research questions:

1. To what extent did the students perceive the online learning effectiveness they experienced during the COVID-19 pandemic?
2. Is there a statistically significant difference between male and female students' perceptions of online learning effectiveness?
3. Are there any statistically significant differences in students' perceptions of online learning effectiveness in relation to their years of study?

Methodology

Research design

This study employed a quantitative design to explore students' perceptions of online learning that they experienced during the COVID-19 pandemic by comparing their perceptions according to gender and years of study in a bachelor's degree program. A quantitative design was chosen because we were interested in conducting a study with large sample sizes and using statistical analyses. Students' perceptions according to gender were compared by using independent samples t-test, and students' perceptions among those studying in the second, third, and fourth years were compared by using a one-way analysis of variance (ANOVA) test.

Research setting and participants

The study was conducted at the National University of Cheasim Kamchaymear, located in Kampong Cham province, Cambodia. This government-run university provides students with educational services from undergraduate to post-graduate degrees. The university has recently provided students with educational services ranging from associate's to master's degrees. Presently, the main majors at the university are Khmer, Mathematics, Physics, Chemistry, Biology, History, Geography, Accounting, and English. In the academic year 2021-2022, there were four classes for the English major. Those were the classes for the first, second, third, and fourth-year students. The total number of students from the four classes was around 200. There was no master's degree class for the English major.

A total of 150 students studying English as their major from different years (second, third, and fourth) were informed about the aims of the study and invited to participate in it. In the end, 117 out of 150 students volunteered to complete the questionnaires. Among them, 78 (66.7%) were female students. The participants came from three different years, including Year 2 (44 students), Year 3 (41 students), and Year 4 (32 students). Their ages were from 16 to 30. Table 1 shows the participants' demographic information.

Research instrument

The questionnaires used in this study contained two sections. The first section was about the respondents' demographic information, such as gender, age, and academic year. The second section aimed to find out students' perceptions of online learning effectiveness, and it contained five items (see Table 2). The scale used in each item was a Likert scale containing five options, including 1. Extremely ineffective, 2. Very ineffective, 3. Somewhat effective, 4. Very effective, and 5. Extremely effective. The questionnaires were adapted from Bączek et al. (2021). It took around 15 minutes to complete the questionnaires that were administered physically.

Data collection and analysis

Before the process of data collection was conducted, the first author sought permission from the university's executive director. Having been allowed to conduct the study, the first author informed all the target groups, Year 2-4 students of the English major, in advance about the dates of the meeting for the data collection process. Before proceeding with the process from each target group, the first author reinformed the students about the aims of the study.

The obtained data were collected by using a purposive sampling technique in order to meet the objectives of the study. According to Creswell (2012), purposive sampling, also known as judgmental, selective, or subjective sampling, is a sampling technique in which the authors rely on their judgment when choosing the participants from the population to partake in the study. As a result, the second, third, and fourth-year students were asked to join the study. The first-year students were excluded from the study because their learning experiences were not relevant to the research purposes. Moreover, the

students studying other subjects were not considered for the study because the research tools were only written in English.

Questionnaire completion was done in three phases which needed three weekends to complete. In the first phase, on the first weekend, the first author collected the data from the second-year students. In the second phase, on the second weekend, the first author collected the data from the third-year students, and in the final phase, on the third weekend, the first author collected the data from the fourth-year students. The students completed the questionnaires during their break time monitored by the first author.

The returned questionnaire sheets were 117. We analyzed the collected data using Statistical Package for the Social Sciences (SPSS) version 21. After testing Skewness and Kurtosis for normal distributions, and no data outlier was found, the questionnaires were all employed in the data analysis process. The analysis focused on the mean and standard deviation of each item. One-way ANOVA was used to determine whether there were any statistically significant differences among the reported levels of students' perceptions of online learning effectiveness. Independent samples t-test was also used to determine if there was a statistically significant difference between the reported levels of male and female students' perceptions.

Ethical considerations

The first author also told the participants that their data would be kept confidential and utilized solely for the study, and their names were not needed. Moreover, their responses would be destroyed five years after the study was completed, and it was made sure that the participants could withdraw themselves from the study if they felt uncomfortable, especially if they had privacy concerns with the study. In short, the ethical issues in this study followed the four standards of ethics that consist of (1) avoiding harm to participants, (2) ensuring that participants' consent is provided, (3) respecting participants' privacy, and (4) avoiding disappointment (Goldblatt et al., 2011).

Results

Demographic information of the participants

Table 1. *Participants' profile (n =117)*

Demographics	Values	N	Frequency (%)
Gender			
	Male	39	33.30
	Female	78	66.70
Age			
	16-20	27	23.10
	21-25	82	70.10
	26-30	8	6.80
Academic year			
	Second	44 (29 females)	37.60
	Third	41 (29 females)	35.00
	Fourth	32 (20 females)	27.40

The targeted students were asked to fill in the demographic information containing genders, ages, and academic years. The results revealed that 117 participants (78 females) joined the survey. Their ages were between 16-20 (27 participants), 21-25 (82 participants), and 26-30 (eight participants). The students were from three different year groups, as shown in Table 1.

Students' perceptions of online learning effectiveness

Table 2. *Students' perceptions of online learning effectiveness*

	N	*Mean*	*SD*	*Minimum*	*Maximum*
Students' perceptions	117	3.36	0.50	1.20	5.00
Valid N (listwise)	117				

Note: Mean scores of 1.00-1.80 = Lowest; 1.81-2.60 = Low; 2.61-3.40 = Moderate; 3.41-4.20 = High; and 4.21-5.00 = Highest

As shown in Table 2, the overall mean score of the students' perceptions of online learning effectiveness was moderate (M = 3.36, SD = 0.50). This result indicated that the students' perceptions of online learning effectiveness were somewhat positive.

Descriptive statistics of students' perceptions of online learning effectiveness

Table 3. *Descriptive statistics of students' perceptions of online learning effectiveness*

No	Students' perceptions	N	Mean	SD
1.	Rate the effectiveness of online learning in terms of increasing knowledge.	117	3.42	0.75
2.	Rate the effectiveness of online learning in terms of increasing intrapersonal competence.	117	3.42	0.86
3.	Rate the effectiveness of online learning in terms of increasing learning skills.	117	3.41	0.71
4.	Rate the effectiveness of online learning in terms of increasing personal competence.	117	3.23	0.73
5.	Rate the effectiveness of online learning in terms of increasing social competencies.	117	3.32	0.78

As shown in Table 3, the students reported high perceptions of online learning effectiveness in items 1, 2, and 3. They also reported moderate perceptions of online learning effectiveness in items 4 and 5. These results showed that students perceived online learning during the pandemic somewhat positively in the studied context.

Mean scores of students' perceptions according to gender

Table 4. *Inferential statistics of students' perceptions according to gender (N =117)*

	Male		Female					
	M	SD	M	SD	df	t	Sig.	Std. Error
Students' perceptions	3.34	0.52	3.37	0.49	115	-0.286	0.393	0.09865

Note: The confidence interval of the difference is 95%

As shown in Table 4, there was no statistically significant difference in the reported levels between male and female students' perceptions of online learning effectiveness, $t(115) = -0.286$, $p>0.05$. This result showed that male and female students had the same moderate perceptions of online learning effectiveness.

Mean scores of students' perceptions according to years of study

Table 5. *Descriptive statistics of students' perceptions according to years of study*

Years	N	Mean	SD	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Second	44	3.31	0.48	0.07337	3.1702	3.4662
Third	41	3.28	0.39	0.06091	3.1647	3.4109
Fourth	32	3.53	0.61	0.10793	3.3174	3.7576
Total	117	3.36	0.50	0.04632	3.2758	3.4593

As shown in Table 5, the fourth-year students reported higher mean scores for online learning effectiveness. The second- and third-year students reported somewhat moderate mean scores for online learning effectiveness. These results indicated that the student preferred the online learning mode, but not very much.

A comparison of students' perceptions from different years

Table 6. *One-way ANOVA analysis of students' perceptions from different years*

	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Between Groups	1.292	2	0.646	2.65	0.075
Within Groups	27.824	114	0.244		
Total	29.117	116			

Note: Male = 39, Female = 78, confidence interval of the difference is 95%

As shown in Table 6, there were no statistically significant differences in the reported levels of students' perceptions of online learning effectiveness among those studying in the second, third, and fourth years, F (2,114) = 2.65, p>0.05, Sig = 0.075. These results indicated that the students from different years had similarly moderate perceptions of online learning effectiveness.

Overall, the study revealed that Cambodian EFL university students had moderate perceptions of online learning effectiveness. It was also found that there were no statistically significant differences in the students' perceptions of online learning effectiveness vis-à-vis their gender and year of study.

Discussion

Because of the pandemic, all learning platforms have been transferred to online modes. There have been many challenges with the effectiveness of online learning (see Heng & Sol, 2021b). The current study showed that Cambodian EFL university students sampled from a provincial university had somewhat moderate perceptions of the effectiveness of online learning during the COVID-19 pandemic. The study also found no statistically significant difference in terms of gender and years of study.

The results of this study corroborate those of Amir et al. (2020) and Khan et al. (2020) who found that Indonesian college students had similarly moderate perceptions of the effectiveness of online learning. This study's results are also consistent with Sey (2021) who found that Cambodian university students had moderate perceptions of Google Classroom as an online learning platform.

The results from the study are also somewhat similar to those of Chet et al. (2022) who conducted a study with 1,002 Cambodian university students and found that because of the challenges of online learning during the COVID-19 pandemic, Cambodian students did not really like online learning. In addition, the present study's results are also similar to those of Chan and Sarik (2020) who found that many Cambodian university students did not want to enroll in online courses because of the many challenges associated with it.

The results of the present study are, however, different from those in other contexts, such as Indonesia (Agung et al., 2020), Sri Lanka (Akuratiya & Meddage, 2020), Poland (Bączek et al., 2021), and Saudi Arabia (Shawaqfeh et al., 2020), which found that the students had low perceptions of online learning effectiveness.

Moreover, the current study is also different from the study of Gismalla et al. (2021) with Sudanese students. They found that Sudanese students felt highly positive about online learning effectiveness. Likewise, this study's results are also different from a study by Olayemi et al. (2021) with Nigerian students which found that the students perceived online learning very positively due to a high level of their readiness.

Conclusion

The results of this study revealed that Cambodian EFL university students had moderate perceptions of the effectiveness of online learning. There were no statistically significant differences according to their gender and year of study. This study has some implications. To improve the education process, all parties involved should establish appropriate mechanisms to tackle difficulties and prepare for future unprecedented crises. The Ministry of Education, Youth and Sport (MoEYS) and other concerned education stakeholders should consider the problems associated with online learning seriously and take urgent actions to solve them. For example, promoting the integration of information communication and technology (ICT) subjects into schools and universities' curricula as well as practicing or using ICT on a regular basis is urgently needed. Although ICT subjects are introduced in the curriculum, they are not required. As a result, many students do not learn them. Thus, MoEYS and the other concerned stakeholders should provide support to teachers and students to make them ready for unforeseen challenges in the future.

In addition, online learning can be considered a lesson learned for MoEYS, school principals, teachers, students, and students' guardians to strive for betterment through the implementation of hybrid learning. Besides, two of the most important actors in the learning and teaching process are teachers and students. Thus, students should be taught how to use online platforms effectively, and teachers must have appropriate knowledge of technology.

Finally, the present study was conducted with only 117 EFL university students from one provincial university in Cambodia. Its results cannot be generalized to the whole country or at all educational levels. Therefore, future research with a larger sample size should be conducted with students studying at other educational levels or university types. Teachers' perceptions of online teaching effectiveness during or after the pandemic should also be examined. A qualitative study regarding online learning effectiveness during or after the pandemic is also recommended.

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The authors

Sereyrath Em is a Cambodian government teacher of English with a higher education degree, a visiting lecturer at the National University of Cheasim Kamchaymear (NUCK), and a PhD student at Western University, Cambodia. He is also an Associate Managing Editor of the Cambodian Education Forum (CEF). He holds two master's degrees, an MEd from the National Institute of Education (NIE), Cambodia, and an MA in TESOL from Human Resource University (HRU), Cambodia. His research interests include English language teaching, educational leadership, learning and teaching motivation, and learning and teaching challenges.
Email: sereyrathem.edu@gmail.com

Sophea Phann is currently the Head of the ASEAN Office, an English curriculum developer at the Ministry of Education, Youth and Sport (MoEYS), and an Associate Editor at the Cambodian Education Forum (CEF). He has served as a Governing Board Member of SSEAYP International Cambodia since 2017. He earned an MA in TESOL from the Institute of Foreign Languages (IFL), Royal University of Phnom Penh (RUPP) in 2009. His research interests include TESOL, TEFL, EIL, EMI, types of motivation, and educational management.
Email: phannsophea.moeys.cam@gmail.com

Somphors Khan is a Cambodian government teacher of English with a higher education degree, an education inspector at MoEYS, a contracted lecturer at the Royal University of Phnom Penh (RUPP), and a PhD student at the National Institute of Education, Cambodia. He is also an Associate Editor at the Cambodian Education Forum (CEF). He holds two master's degrees, an MEd in Educational Management and Planning from RUPP, Cambodia, and an MA in Curriculum and Chinese Studies from Zhejiang University, China. His

research interests include educational leadership, educational management, educational evaluation, and school-based management.
Email: khansamphors@gmail.com

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