

Factor Related to Satisfaction with Online Learning during COVID-19 Outbreak among Public Health Students, Thailand

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Abstract

During the outbreak, all educational institutions turned to online learning to reduce the risk of infection and prevent the spread of COVID-19. A cross-sectional study design aimed to study factors related to satisfaction with online learning during the COVID-19 outbreak among Public Health students. A total of 163 students of Bachelor of Public Health students from the Sirindhorn College of Public Health in Ubon Ratchathani province, Thailand, were included in our study. We gathered data from May to June 2021. An online survey for the COVID-19 outbreak was used to gather data. We calculated descriptive statistics; frequency, percentage, mean, and standard deviation. We analysed the data using descriptive statistics and computed the independent t-test to understand the relationship between variables. We found that majority of the participants were female (82.8%). Participants studied either a Community Public Health program (54.0%) or a Dental Public Health program (46.0%). Most participants used computer notebooks (79.8%) for online study. Google Classroom was the most frequently used online learning platform (98.2%). Overall, online learning was found moderately satisfying (mean=3.300, S.D.=0.920). There was a statistically significant difference ($p<0.05$) in the mean satisfaction scores compared to gender and two major programs. When comparing satisfaction with online learning between gender and two major programs, we found that there were statistically significant differences in online learning methods, contents of the curriculum, supporting factors, an evaluation, and the instructor. Additional supporting factors were no statistically significant differences between the two major programs.

Keywords: Factors, Satisfaction, Online Learning, COVID-19, Public Health student

A. Introduction

The pandemic of the Coronavirus disease 2019 (COVID-19), which originated in December 2019 in China, has made a huge impact on the daily life and overall structure and function of society. The infection is spread by respiratory contact or exposure to the patient's secretions. One effective strategy to protect yourself from the COVID-19 virus is to wash your hands frequently and use an alcohol-based rub. As well as avoid touching any part of your face (Almusharraf & Khahro, 2020). The COVID-19 pandemic increased morbidity and mortality worldwide. COVID-19 was one of the most feared pandemics in recent memory, affecting a variety of global sectors, including education.

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To prevent the spread and further transmission of COVID-19. The affected countries ordered the shutdown of academic institutions. Schools, colleges, and universities favor closing close in-person instruction and shift to online instruction (De, 2020; Baber, 2020). The COVID-19 outbreak and the closure of schools may have a lasting impact on pupils' academic performance and advancement in the future. As a result, educational institutions should take steps to assist pupils in overcoming COVID-19's effects (Mudenda, Zulu, & Phiri, 2020; Dhawan, 2020). The universities in many countries are taking rapid actions to ensure students have learning continuity and to secure the well-being of their students. COVID-19 has disrupted teaching and the institutions of schools (Alsoud & Harasis. 2021; Baczek, Zaganczyk-Ba, czek , & Szpringer, 2021). Some students have claimed that the COVID-19 epidemic has caused them to experience anxiety and increased stress (Cao, Fang, & Hou, 2020; Son, Hegde, & Smith, 2020). The decrease in schooling in tandem with the COVID-19 pandemic is now the topic of discussion. Mental stress is a significant idea relevant to the topic (Cao, et.al, 2020).

Many educational institutions refrain from teaching in regular classes to prevent the spread of COVID-19 educational institutions emphasize the use of social distancing measures. Because of the COVID-19 outbreak, many institutions are unable to supply onsite teaching and learning. Therefore, it's necessary to use online teaching models for continuity of learning and teaching. The online process consists of teachers, learners, content, learning materials and resources, learning management, learning process, communication system, information technology network system, measurement, and evaluation performed into internet teaching (Wayo, et.al, 2020). The replacement of in-person classes with online learning is an obvious necessity at this time but creates a loss of collaboration in education (Ferrel, et.al, 2020). Online learning systems are free of restrictions on time or place. This flexibility might encourage useful platforms for a variety of students. Some students may prefer to continue their education online when it may not be possible for them to attend a traditional, in-person university face to different reasons (Mustafa, et.al, 2021; Sharma, et.al, 2020). Students use technology and the internet to avoid infection and stop the spread of COVID-19. Classroom instruction has developed into online tutoring, where you can teach and study from the comfort of your own home. The students switched from on-site to online learning after the COVID-19 outbreak. Their mental health improved. Despite the awful conditions caused by the pandemic, online learning continued (Bolatov, et.al, 2021; Tarkar, 2020; Hamaideh, et.al, 2022).

Educational institutions in Thailand have responded to stop the incidence of COVID-19. As a prevention measure, the spread of COVID-19 can be lessened by social separation. Sirindhorn College of Public Health, Ubon Ratchathani province, is a higher education institution that has proclaimed teaching and learning management a key component of its COVID-19 prevention. The College will provide teaching management to support a new normal in teaching and social distancing during the COVID-19 outbreak. So, the administration of online learning was done in parallel with the COVID-19 outbreak. The objective of this study was to study factors related to satisfaction with online learning during the COVID-19 outbreak among public health students at Sirindhorn College of Public Health, Ubon Ratchathani, Thailand.

B. Methods

Study Design and Sample

A cross-sectional study was performed. We gathered data using an online survey from May to June 2021. The College had shifted suddenly during COVID-19. The population in our study were students in the Bachelor of Public Health program in Community Public Health and Dental Public

Health at Sirindhorn College of Public Health, Ubon Ratchathani province, Faculty of Public Health and Allied Health Sciences, Praboromarajchanok Institute, Thailand.

Sample size

We calculated the necessary sample size for our study. We utilized systematic random sampling to select a total of 163 students from a pool of 266 eligible students. The inclusion criteria were students who participated in online learning for at least one semester. The exclusion criteria were students who were not to cooperate in answering the online questionnaire.

Study tools

The instrument was tested for content validity by three experts. The index of congruence (IOC) was 0.89. Before the study was conducted, the questionnaire was also tested among 30 subjects for reliability. The Cronbach's alpha coefficient was 0.98. We collected data using an online questionnaire during the COVID-19 outbreak from May to June 2021. The three parts were:

Part 1: Demographic characteristics of the information included gender, age, program and year of study.

Part 2: Online learning behavior included communication tools for online learning, online learning method and the program for online learning.

Part 3: Satisfaction in online learning during the COVID-19 outbreak. The researcher developed the questionnaire using the Likert Scale technique. The questionnaire included 26 questions about online learning methods, contents of curriculum, supporting factors, evaluation and instructor. The scoring criteria were divided into five levels with the following rating scale: 5=most satisfied, 4=very satisfied, 3=moderately satisfied, 2=low satisfaction, and 1=very low satisfaction. The total score of satisfaction was divided into five levels: 1) very high: score ranged from 4.51-5.00 points, 2) high: score ranged from 3.51-4.50 points, 3) moderate: score range from 2.51-3.50, 4) low: score range from 1.51-2.50 points, and 5) very low: score range from 1.00-1.50 points.

Statistical analysis.

Data collection

After receiving permission from the director of Sirindhorn College of Public Health, Ubon Ratchathani, Thailand, the researcher clarified the purpose of the research and requested cooperation from the participants to answer the questionnaire. We gathered data from May to June 2021. The data were collected by online questionnaire during the COVID-19 outbreak.

Data analysis

We analyzed the data using descriptive statistics; frequency, percentage, mean, and standard deviation. We performed compared different variables using the independent t-test. Comparison of knowledge and attitude mean scores by participant personal characteristics ($p\text{-value}<0.05$). An alpha level of $p < 0.05$ is considered to be statistically significant.

C. Findings and Discussion

Part 1 Demographic characteristics of information

Most participants were female (82.8%), while a minority were male (17.2%). Most of them were an average of 23 years old. A majority of our participants were in the Bachelor of Public Health program within the community public health program (54.0%), followed by the Bachelor of Public Health program in Dental Public Health (46.0%), and most of the participants were second-year students (31.9%) (Table 1).

Table 1. Demographic characteristics of information (n=163)

Participant Characteristics	n	%
Gender		
Male	28	17.2
Female	135	82.8
Age (years)		
19	25	15.3
20	46	28.2
21	39	23.9
22	32	19.6
23	16	9.8
24	3	1.8
25	1	0.6
30	1	0.6
minimum=19, maximum=30, mean=22.5		
Program in study		
Community Public Health	88	54.0
Dental Public Health	75	46.0
Year level (year of study in program)		
1	27	16.6
2	52	31.9
3	49	30.1
4	35	21.5

Part 2 Online learning behavior

Communication tools for online learning

Most of the participants used notebook computers for online learning (79.8%), followed by smartphones (79.1%), tablets/iPads (55.8%), and desktop computers (5.5%) (Table 2).

Table 2. Communication tools for online learning

(The participants allowed to select more than one response)

Instruments for online learning	n	%
Smart phone	129	79.1
Computer notebook	130	79.8
Personal computer	9	5.5

Online learning method

A majority of students (98.2%) studied online by Google classroom. This was followed by 49.7% of participants watching the teacher's video clip of their instruction at any available time, and 46.0% of participants watching live teacher instruction on a class schedule (Table 3).

Table 3. Online learning methods

(The participants allowed to select more than one response)

Online learning methods	n	%
Google classroom	160	98.2
Live instruction on class schedule	75	46.0
Video clip at any available time	81	49.7

Program for online learning

The most popular programs used for online learning included Google Classroom (98.8%), followed by Google Meet (94.5%), Facebook (31.3%), Zoom (25.2%), Loom (8.6%), and Line and YouTube (6.7%) (Table 4).

Table 4. Program for online learning
(The participants allowed to select more than one response)

Program online learning	n	%
Google Classroom	161	98.8
Google Meet	154	94.5
Zoom	41	25.2
Facebook	51	31.3
Line	11	6.7
YouTube	11	6.7
Loom	14	8.6

Part 3 Satisfaction in online learning during the COVID-19 outbreak

Overall, the participants were moderate satisfaction with online learning during the COVID-19 outbreak (mean=3.205, S.D.= 0.661). Most of the participants had satisfaction with the instructor at a moderate level (mean=3.383, S.D.= 0.620), followed by satisfaction with an evaluation at a moderate level (mean=3.185, S.D.= 0.577), contents of curriculum at a moderate level (mean=3.178, S.D.= 0.723), online learning methods at a moderate level (mean=3.153, S.D.= 0.702), and supporting factors at a moderate level (mean=3.128, S.D.= 0.696) (Table 5).

Table 5. Summary of satisfaction in online learning among Public Health students (n=163)

Satisfaction toward online learning	Mean	S.D.	Level
Online learning methods	3.153	0.702	Moderate
Contents of curriculum	3.178	0.723	Moderate
Supporting factors	3.128	0.696	Moderate
Evaluation	3.185	0.577	Moderate
Instructor	3.383	0.620	Moderate
Summary	3.205	0.661	Moderate

We compared each item satisfaction online learning between the variable gender and program study. We found online learning methods, contents of the curriculum, the supporting factors, the evaluation, and the instructor were statistically different ($p < 0.05$) between gender. The instructor, curriculum material, online learning methods, and evaluation were statistically different ($p < 0.05$) between program studies. While the supporting factors were not statistically different between program studies (Table 6).

Table 6. Comparison of variable factors in satisfaction with online learning among Public Health students during the COVID-19 outbreak (n=163)

Satisfaction online learning	Variables	N	Mean	S.D.	t	p-value
Online learning methods	Gender					
	Male	28	3.543	1.137	2.152	*0.019
	Female	135	3.086	0.602		
	Program in study					
	Community Public Health	75	3.011	0.703	-2.163	*0.016
	Dental Public Health	88	3.295	0.701		
Contents of curriculum	Gender					
	Male	28	3.536	1.198	1.916	*0.032
	Female	135	3.118	0.624		
	Program in study					
	Community Public Health	75	3.023	0.745	-2.310	*0.011

Satisfaction online learning	Variables	N	Mean	S.D.	t	p-value
	Dental Public Health	88	3.332	0.701		
Supporting factors	Gender					
	Male	28	3.536	1.349	2.155	*0.020
	Female	135	3.044	0.512		
	Program in study					
	Community Public Health	75	3.118	0.660	-0.153	0.439
	Dental Public Health	88	3.138	0.711		
Evaluation	Gender					
	Male	28	3.530	0.814	2.231	*0.016
	Female	135	3.125	0.521		
	Program in study					
	Community Public Health	75	3.071	0.527	-1.918	*0.028
	Dental Public Health	88	3.299	0.626		
Instructor	Gender					
	Male	28	3.679	0.973	1.744	*0.045
	Female	135	3.337	0.581		
	Program in study					
	Community Public Health	75	3.220	0.444	-2.661	*0.004
	Dental Public Health	88	3.545	0.795		

**p-value* < 0.05

The COVID-19 outbreak was still going strong, with no signs of it stopping. We hope not to wreak havoc on the educational system. As a result, the educational system continues to strive for the best possible outcomes for the students. Supporting students' access to internet media and expanding contact may lead to greater student satisfaction with online learning. However, successful adoption of online learning in the COVID-19 outbreak will require a well-thought-out plan and improvements in student motivation. As a result of COVID-19, the College is now delivering online learning for the first time. The outbreak was severe and long-lasting throughout the year 2021. Both teacher and the student learned how to adapt and improve their online teaching and learning. Since the epidemic of COVID-19, the entire traditional educational system has been interrupted. In the aftermath of the COVID-19 epidemic, online learning is a good option for workplace learning. The COVID-19 outbreak has affected the teaching style. Colleges have had to change to online teaching to reduce the risk of COVID-19 infection. Learning has changed from a regular in-person classroom to online learning. The readiness of both the learner and the teacher affects the satisfaction of learning online at this time. Many students have limited communication tools for online learning in each subject, such as having only one smartphone. Some students have to adjust their behavior from sitting in class. Students need to study on their own, which takes inspiration. The students also need to have known about modern technology and media. In addition, the online teaching model of each course is different depending on the teacher.

According to our research, public health students used notebooks for online courses. Because of a computer notebook is available for online learning anywhere, including a library, restaurant, or café, where a suitable place to learn online. While the study of Baticulon *et al* (2021) discovered that 83% of medical students used desktop computers, and 93% used smartphones to access internet information. We discovered that the majority of participants utilized Google Classroom as their primary online learning tool. One of the simple-to-use online learning tools is Google Classroom. Each student can handle their classwork, and the teacher can provide classwork for group learning.

A study by Almusharraf *et al* (2021) found that the participants were most satisfied with Google Hangouts for lecture delivery, followed by Google Classroom and LMS (Moodle) for course management and assessments. However, a different study by Chung *et al* (2020) discovered that I-Learn and WhatsApp are the most popular online approaches (89.0%). Another popular internet learning tool is YouTube (40.7%). It is ubiquitous and allows learners to access it several times. Such features also made the use of Google Classroom (37.4 %), Zoom (34.1%), and Google Meeting (5.5%) were the popular in this study.

Since the COVID-19 outbreak, this is the first instance of online learning in the year. Due to the students' unhappiness and decision to move to an online learning lifestyle, the participants believed that the degree of online learning satisfaction was moderate. The pupils had previously taken classes in traditional settings. According to learning theory, this happens during the learning process when the students get used to new environment and group. As students become proficient with the online learning model, they may change their behavior in developing links or connections between new information. A typical classroom serves as the current learning environment. After that, the learners have become accustomed to the online learning environment and access to online resources for communication. As a result, the online learning environment will enjoy and well-liked by learners. Learners' satisfaction with online learning is one of the consequences.

We compared the variable gender and program study to each item's satisfaction; online learning methods, contents of the curriculum, the supporting factors, the evaluation and the instructor in online learning. We found that all variables were statistically different, except supportive factors, which were not significantly different between program studies. A different study by Meesomsak and Aphai (2021) found overall the satisfaction with teaching and learning during the COVID-19 Epidemic, Case Study: Fundamentals of Western Dance Course, Performing Arts Program, Chiang Mai Rajabhat University, Thailand. The participants were satisfied with the content and practiced at the highest level from the full score. In online teaching and learning models, the interpretation value was high level. Measurement and evaluation from the survey on the satisfaction level was at the highest level from the full score. Information technology from the survey on the satisfaction level was a high from the full score. Overall scores in all four areas were at the high level. Learner motivation had a significant impact on students' satisfaction, according to a prior study by Hettiarachchi *et al* (2021). The interaction of a substantial effect on the student's satisfaction with their new online learning environment. While Elshami *et al* (2021) showed no statistically significant difference between males and females, proving that gender has no bearing on faculty satisfaction.

D. Conclusion

The participants had satisfaction with online learning moderate during the COVID-19 outbreak. Gender and major program studies were associated with student satisfaction with online learning in the Public Health field. Gender showed statistically significant variations in online learning methods, the curriculum of contents, supporting factors, an evaluation, and the instructor. Major program studies found statistically significant variations in the online learning methods, curriculum of contents, evaluation, and instructor.

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