




Comparison of Levels of Satisfaction between Online and Classroom Learning Among Physical Therapy Students, Srinakharinwirot University, Thailand

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Abstract:

Objective: The study aimed to compare the levels of satisfaction and determine factors influencing satisfaction with learning, between online and classroom learning.

Methods: This cross-sectional questionnaire survey included 195 students of the Faculty of Physical Therapy, Srinakharinwirot University, during the 2021 academic year who had experienced online/on-site learning. Data (including demographics, learning style, and factors affecting learning) were collected by a questionnaire, which had a Cronbach's alpha of .94. Descriptive statistics such as frequency distribution, percentage, mean, and standard deviation, were reported. Analytical statistics such as the paired t-test, Pearson correlation, and linear regression were used to report associated factors of satisfaction with learning (the outcome).

Results: The participants showed different satisfaction levels with online and classroom learning ($p < .05$). The extent to which learning factors (student, family, teacher, and environment) predicted levels of satisfaction for online learning were $R^2 = .59, .48, .64, .82$, respectively and for classroom learning were $R^2 = .70, .51, .71, .79$, respectively.

Conclusion: The levels of satisfaction with online learning differed from those of classroom learning. Factors related to being a student, family, teacher, and environment predicted the level of satisfaction with learning.

Keywords: Satisfaction, Online learning, Classroom learning, Factors of learning, Physical therapy students, Health promotion student.

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1. INTRODUCTION

1.1. Background/Rationale

The Coronavirus Disease 2019 (COVID-19) outbreak directly affected all schools and universities, causing them to change the default learning style to e-learning [1]. However, this reform accelerated the rate of "education" globally, by the application of technology to the education system. However, it affected the education system extensively due to the level of readiness of students'

learning equipment and teaching efficiency problems since the teachers' were unfamiliar with

new tools or technologies. It also resulted in less interaction between learners and teachers, as well as a reduction in the number of learners in the class compared to during ordinary learning (studying onsite). Online education, is an emerging phenomenon, which requires learners and teachers to adapt to the COVID-19 outbreak [2, 3, 4, 5, 6, 7].

Student satisfaction is an indicator of education

effectiveness. Understanding the factors contributing to student satisfaction can lead to improved education. Input on students' positive feelings is related to their well-being regarding academic and social experience gained from learning. The level of student satisfaction in the institutions is one of the most important issues. Factors determining the success of higher educational institutions help in identifying areas requiring improvement. Data must therefore be collected at the institutional level to determine student satisfaction. This can improve the quality of services offered and provide sustainable high-quality education [7].

Therefore, we sought to perform a comparative study on the level of satisfaction between online and in-class learning styles and determined the relationship between various factors (student, instructor, family, and environment) affecting learning in 195 students from the Faculty of Physical Therapy, University Ongkharak Campus, through a satisfaction questionnaire survey. We assessed online and onsite learning styles to provide useful information for changing the current teaching and learning model, and as a guideline for developing a blended teaching and learning model, for more effective learning in the future.

1.2. Objectives

The purpose of this study was to compare the satisfaction levels and identify factors influencing learning satisfaction between online and classroom learning.

2. METHODS

2.1. Ethical Statement

This research was considered and approved by the Human Research Ethics Committee of Srinakharinwirot University, (approval number: SWUEC-059/2565E). The research was conducted according to the Declaration of Helsinki. All enrolled participants were informed of the purpose of the study and their participation was voluntary. No incentives were provided for participation. Participants' consent was secured and anonymity was ensured.

2.2. Study Design

This study used a cross-sectional study design.

2.3. Study Population

The inclusion criteria for selecting the research participants were as follows:

1. Students in academic year 2021 (in the Physical Therapy and Health Promotion program) at the Faculty of Physical Therapy, Srinakharinwirot University.
2. Had experienced online and in-class learning at the Faculty of Physical Therapy, Srinakharinwirot University, for at least one semester.

2.4. Sample Size

This study was conducted among students at the Faculty of Physical Therapy, Srinakharinwirot University.

The number of students in the second to fourth year at the Faculty of Physical Therapy, Srinakharinwirot University, was 379. The sample size was calculated using Taro Yamane's formula. The researcher used the multistage and random sampling method to obtain a sample of 195 students.

2.5. Variables

The independent variables were categorized as follows:

1. Demographics
 - 1.1 Sex
 - 1.2 Age
 - 1.3 Branches
 - 1.4 Year class
 - 1.5 Equipment used in online learning
2. Learning style
 - 2.1 Online format
 - 2.2 Classroom layout
3. Factors affecting learning
 - 3.1 Student factors
 - 3.2 Instructor factors
 - 3.3 Family factors
 - 3.4 Environmental factors

The dependent variable is:

1. Satisfaction with online and in-class learning styles

2.6. Data Sources/Measurement

The questionnaire developed for this study was validated by face and content validation experts, and reliability was assessed using the test-retest method. The Cronbach's alpha of the questionnaire had an overall reliability value of 0.8.

Data were collected through an online survey. E-forms were developed and sent *via* email to the participants. First, to fourth-year students were enrolled in the study. Explanation was provided on the purpose of the study to the participants and they were asked to complete the form. No records were excluded because there were no missing data.

For the data collection, a structured questionnaire, based on 5 point Likert scale structure was used. The Likert scale ranged from dissatisfaction (1) to strong satisfaction (5). To calculate the mean score of the scale, the scores of all items were summed up and re-ordered from 0 to 3. High mean scores were considered indicative of positive health behaviors. The mean score of the scale indicated healthy behaviors: scores 0-1.00 indicated poor behavior, scores 1.01-2.00 indicated moderate behavior, and scores 2.01-3.00 indicated good behavior.

2.7. Bias

None.

2.8. Statistical Analysis

Descriptive statistics were reported and the chi-square test, paired t-test Pearson correlation coefficient, and linear regression analysis were performed. Statistical significance was set at <.05 Completed questionnaires by the students at the Faculty of Physical Therapy, on the level of satisfaction with online and in-class learning were collected, verified for correct information, coded, and stored in a computer. Data analysis was performed using the PSPP package program. The data were analyzed to compare the scores indicating learner’s satisfaction with online and classroom learning using paired t-test. Furthermore, to determine the relationship of factors influencing satisfaction between online and in-class learning Pearson correlation coefficient and linear regression analysis were used.

3. RESULTS

The participants were mostly female (n=158 [81.03%]) and males were 37 (35.80%). Among the participants, 70 (35.90%), 63 (32.31%), and 62 (31.79%) were in the second, third, and fourth academic years, respectively. Overall, 123 (63.08%) and 72 (36.92%) students were from the Department of Physical Therapy and the Department of Health Promotion, respectively. Most students (93 [47.69%]) studied online by using a smartphone, computer/laptop, and tablet/iPad, smartphone and tablet/iPad (39 [20.00%]), computer/laptop and tablet/iPad (37 [18.97%]), tablet/iPad only (11 [5.64%]), and smartphone and computer/laptop (9 [4.62%]). The device used the least by the participants was either a smartphone or computer/laptop alone, each used by three (1.54%) students only.

Table 1. Comparison of the level of satisfaction between online and classroom learning.

Satisfaction	Mean (SD)		Mean (SD) Difference	p
	Online	Classroom		
Student factor	3.93 (0.50)	4.15 (0.55)	-0.22 (0.40)	0.000
Family factor	4.01 (0.79)	4.08 (0.77)	-0.08 (0.37)	0.004
Teacher factor	4.16 (0.55)	4.01 (0.61)	-0.06 (0.29)	0.004
Environment factor	3.89 (0.62)	4.01 (0.61)	-0.13 (0.38)	0.000
Total	3.98 (0.48)	4.11 (0.51)	-0.13 (0.25)	0.000

Abbreviation: SD, standard deviation.

Table 2. Correlation coefficients of factors of learning with satisfaction between online and classroom learning styles.

Factor	Pearson Correlation Coefficient	
	Online learning	Classroom learning
Student	.77	.83
Family	.69	.71
Teacher	.80	.85
Environment	.90	.89

Table 3. Linear regression analysis results of factors of learning predict satisfaction with online and classroom learning.

Factors	Linear Regression	
	B	R ²
Online learning		
Student	.73	.59
Family	.42	.48
Teacher	.70	.64
Environment	.70	.82
Classroom learning		
Student	.78	.70
Family	.47	.51
Teacher	.73	.71
Environment	.74	.79

The level of satisfaction differed between online and in-class learning styles by 0.13 ± 0.25 points with statistical significance ($p < .05$), with the group less satisfied with the online than in-class learning style (Table 1).

The learners, family, teachers, and environment factors with learners' satisfaction scores between online and in-class learning styles indicate a statistically significant high and positive correlation ($p < .05$) (Table 2).

The factors of learner, family, teacher, and environment statistically significantly predicted the learners' satisfaction with online and in-class learning styles ($p < .05$) (Table 3).

4. DISCUSSION

This research aimed to compare and determine the relationship of factors affecting satisfaction scores between online and in-classroom learning styles. The participants were second-fourth year students of the Faculty of Physical Therapy, Srinakharinwirot University, during the 2021 academic year.

When considering the level of satisfaction with learning either online or in class, the overall satisfaction score with online and in-class styles was high. This result is consistent with that of satisfaction research on online teaching and learning during the COVID-19 pandemic among students of Rajamangala University of Technology, Phra Nakhon [8]. Furthermore, factors such as learners, family, teachers, and environment affect the level of satisfaction [9]. The student's level of satisfaction with the online learning style varied by factors in the order of teachers, family, learners, and environment. Moreover, regarding the in-classroom learning style, they were satisfied in the order of instructor, learners, family, and environment factors, respectively. Our findings also showed that the group's level of satisfaction with online and in-class learning styles differed significantly ($p < .05$). However, there was less satisfaction with online than with in-class learning styles. This result is consistent with another that examined the attitudes and perspectives of female Saudi Arabian medical students [10], where 39.96% of students expressed dislike for the online learning style. Online learning is very convenient because the students can study anywhere, any time, and can watch video clips of recently presented lectures to review the course contents or teaching. However, students can do other activities along with studying as well. For example, they can choose to keep open the teaching lectures video clips while focusing on mobile phone content. Thus, the focus on other activities besides studying as well as online learning can result in both physical and mental health problems, including those related to the physical and social environment. However, if online and classroom learning can be applied as a combination in future lectures and theoretical courses, the quality of the online learning

style may be comparable to that of in-class learning, which can improve the efficiency of learning [10].

To determine the relationship of factors influencing the level of satisfaction between online and in-class learning styles, the factors of learners, family, teachers, and environment were highly statistically positively correlated ($p < .05$) with learners' satisfaction scores on online and in-class learning styles. Furthermore, factors of students, family, teachers, and environment predicted learner satisfaction scores significantly with the online learning style ($p < .05$). The following may be used to explain the relationship of the factors affecting learning between the online and in-class learning styles.

4.1. Factors Affecting the Online Learning Style

Environmental factors predicted a satisfaction score of 82% ($R^2 = .82$) at a regression coefficient of 0.70, especially fellow students' support and mutual assistance in learning [7].

The instructor factor predicted a satisfaction score of 64% ($R^2 = .64$) at a regression coefficient of 0.70, especially when the teachers had good knowledge of the subject they teach.

Student factor predicted the satisfaction score of 59% ($R^2 = .59$) at a regression coefficient of 0.73, especially absent from class, students will be able to follow up by asking questions about the lesson from their friends or instructors [5].

Family factor predicted 48% of satisfaction score ($R^2 = .48$) at a regression coefficient of 0.42, especially for families or parents who consistently supported financially.

4.2. Factors that Affect the Learning of Studying in the Classroom Style

Environmental factors predicted a satisfaction score of 79% ($R^2 = .79$) at a regression coefficient of 0.70, especially fellow students' support and mutual assistance in learning [9].

The instructor factor predicted a satisfaction score of 71% ($R^2 = .71$) at a regression coefficient of 0.73, especially when the teachers had adequate knowledge of the subject they teach.

The learner factor predicted a satisfaction score of 70% ($R^2 = .70$) with a regression coefficient of 0.78, especially homework or assignments submitted on time [9].

Family factor predicted the satisfaction score of 51% ($R^2 = .51$) at a regression coefficient of 0.47, especially for consistency in maintaining financial commitments by family or parent, such as internet charges, cost of learning, and communication tools. This motivates the students and ensures readiness to study the lessons maximally [9].

5. LIMITATIONS

However, this research had a limitation related to the collection of data on satisfaction, or learning either online or in-class for the same individual. Moreover, because part of the preferences for learning in the classroom model was retrospective, recall bias may have resulted in inaccurate recall from memory about their perception.

CONCLUSION

The students' level of satisfaction differed between online and in-class learning styles. The factors influencing satisfaction scores included those related to being a student, family member, instructor, or environment. Similar factors influenced the level of satisfaction with online or in-class learning style with family factor (consistent financial support) and instructor factor (teachers having an adequate level of knowledge of the subject they teach). They also had distinct differences in environmental factors (including social environments, such as the lack of interaction between peers and teachers, and physical environment, such as the allocation of device that supports learning in a place used for classroom-style learning). However, their online learning format differed because they were studying at home. Regarding the different learner factors: for example, when studying online, students tend to have stimuli that distract them from concentrating on learning, including smartphones. Besides, they do not have lesson clips to encourage learning whenever they want. Because the student's learning occurs in the presence of the teacher during in-class learning, the students are forced to focus on their study based on their scheduled arrangement, according to the factors mentioned above. Thus, a positive relationship was shown with the student satisfaction score. Therefore, the findings of this study can serve as a guide to adjust the current teaching and learning model such that a blended teaching style can be developed before a more effective style in the future.

AUTHORS' CONTRIBUTIONS

The research concept was formulated, liaised with the experts and Human Ethic Research Committee by Ormjai Taejarernwiriyaikul, Kanninnuch Kitjawasombut jointly formulated the research framework concept, designed research, planned and analyzed data, and wrote research reports. Mareena Binhasan jointly formulated the research framework concept, designed the research, planned analyze data, and wrote research reports. Oraphin Ninpradap jointly formulated the research framework concept, data collection planner, and administrator of data collection and data analysis.

ABBREVIATION

COVID-19 = Coronavirus Disease 2019

ETHICAL STATEMENT

This research was considered and approved by the Human Research Ethics Committee of Srinakharinwirot University, (approval number: SWUEC-059/2565E).

HUMAN AND ANIMAL RIGHTS

The research was conducted according to the Declaration of Helsinki.

CONSENT FOR PUBLICATION

All enrolled participants were informed of the purpose of the study and their participation was voluntary.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in the source of data and materials mentioned at https://drive.google.com/file/d/1rbsy6uC9VRH7zF18f9TsDxC_2AXg7x/view?usp=sharing, reference number 11.

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CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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