Research Article

THE EFFECTS OF USING ONLINE LEARNING WITH GOOGLE SITE PROGRAM ON COMPUTER LAWS FOR UNDERGRADUATE STUDENTS

Received: September 28, 2021 **Revised:** June 25, 2022 **Accepted:** June 25, 2022

Thunyavadee Gumjudpai[1] and Ketsarin Somrat[2*]

[1,2]Faculty of Education, Naresuan University, Phitsanulok 65000

*Corresponding Author, E-mail: ketsarins59@nu.ac.th

Abstract

The objectives of this research were to: 1) develop and assess the quality of an online lesson with Google site on computer Laws for undergraduate students, 2) implement and compare students' achievement before and after the implementation of the online lesson with Google site on Computer Laws, and 3) study students' satisfaction towards the online lesson with Google site on Computer Laws. The sample consisted of 49 students (four-year-curriculum) from the department of Educational Technology and Communication, Faculty of Education Naresuan University who studied in the first semester of 2020 academic year. The research instruments consisted of 1) online lessons with Google site on Computer Laws, 2) online lesson evaluation form 3) learning achievement test, 4) students' satisfaction assessment questionnaire. Data were analyzed using descriptive statistics, and t-test dependable. The study found that 1) The results of online lessons with Google site program on computer law and quality assessment revealed that the developed lesson was at the highest level of appropriateness ($\overline{X}$ =4.69, SD = 0.35). 2) Students' academic achievement after the implementation of the online lessons with Google site program on computer law was significantly higher than before at .05 level which meets the established hypothesis. 3) Students' satisfaction towards the online lessons with the Google site program was at the highest level ($\overline{X}$ = 4.84, SD = 0.36).

Keywords: Online Learning Management, Google Site Program

Introduction

Nowadays, information technology has been integrated in the teaching and learning process. In order to make the teaching -learning process effective, computer-assisted instruction has been used in developing lessons in order to help facilitate the process of instruction through video conferencing or instruction. Through satellites, knowledge dissemination wide and reaches the students quickly. Today, computer technology and internet networking have emerged and have caused the phenomenon of a world without borders. Personal computers have been developed with high efficiency and low cost easing the use of computer assisted lessons

and instruction to facilitate the teaching learning process. Educational opportunities and services have been expanded through the internet as various educational institutions have focused on the use of the internet network to expand educational processes. The Internet can serve as a multi-media lesson delivery medium consisting of letters, images, audio, video or live broadcasts, so learners can study anywhere comprehensively if the internet connection if made available (Laohacharasang, 2002; Niyaso, 2011).

Since information technology widens the education and learning process, online lessons have become interesting medium and are widely developed and utilized by many educational institutions. Online lessons are not only a for knowledge storage place but also, they help to promote effective and attractive learning processes as learners are given the opportunity to comprehensively follow the content because the Multimedia Intelligent System can provide a learning environment with a virtual nature that allows interactive behaviors in the lesson., between the instructors and the learners through communicate and thorough knowledge exchange. Additionally, learners can study content according to their own abilities and as many times as they want including a testing and evaluating their learning continuously as well. The design of online lessons makes real learning important (Thienthong, 2002).

Based on such importance, there is an interest in studying the results of developing online lessons with Google site program on computer law for undergraduate students, which is an appropriate teaching method for today's societal change. The online lessons with Google site program on computer laws can be useful in professional practices in all types of media design. The many involve producing public relations media, producing print media and producing video media which are of great importance as they provide learners with an opportunity to study from online lessons on their own and with more freedom. Online lessons respond to learners' needs comprehensively, thereby enabling learners to understand the content in detail anytime, anywhere, as well as creating interest in the learners in studying the content. The use of modern technology encourages learners to learn while thinking and making decisions that can be applied appropriately.

Objectives

1. To develop and assess the quality of an online lesson with Google site program on computer laws for undergraduate students
2. To study students' academic achievement after learning with the online lessons with the Google site program on computer law
3. To study students' satisfaction towards the online lessons with the Google site program computer laws.

Research Scope

This research is focuses on studying the effectiveness of developing an online lesson with Google site program on computer laws for undergraduate students using experimental research topic (Experimental Research).

Population and Sample

The population used in the research consisted of 249 undergraduate students from the Department of Educational Technology and Communication Naresuan University.

The samples used in the research included 49 first-year undergraduate students in the Department of Educational Technology and Communication Naresuan University who were studying in the first semester of the 2020 academic year selected using purposive sampling techniques.

Research Variables

1. **Independent Variable**: the independent variable was online lessons with Google site program on computer law
2. **Dependent Variable**: including:

2.1 Students' academic achievement after studying with the online lessons with Google site program.

2.2 Students' satisfaction towards the online lessons with Google site program.

Content Scope

The content used in this research consisted of six units:

Unit 1: Definition of Law and Ethics

Unit 2: Rights and liberties of Thais

Unit 3: Printing Notification Act

Unit 4: Media law

Unit 5: Computer Crime Act 2017

Unit 6: Computer crime

Research Instruments and Data Collection Methods

1. Online lessons with Google site program on computer laws consisting of 6 learning units. The following methods were used in developing and assessing the quality of the research instruments.

1.1 The development of the online lesson with Google site program on computer laws for undergraduate students was done according to the ADDIE Model considering 5 steps (Tubpia, 2012)

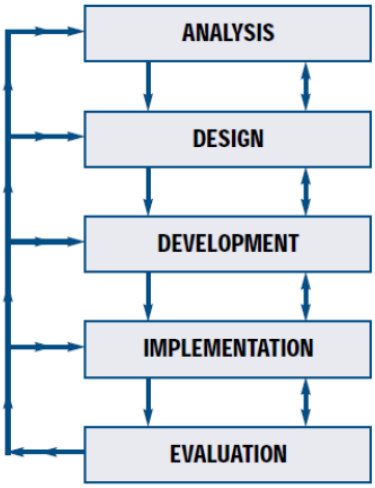

Figure 1 ADDIE Model (Grafinger, 1988)

Step 1: Analysis

1) Review literature on principles, concepts, and Theories related to online lessons with the Google site program on computer law

2) Analysis of concepts for the development of online lessons with the Google site program on computer law.

3) Analyze learners such as grade level, basic knowledge ability level and interest in learning He is a first-year student in the Department of Educational Technology and Communication, Faculty of Education. Naresuan University is a student who must use knowledge of the law related to the media and is part of the course.

4) Study how to develop an online Google Site program.

Step 2: Design

1) The information assessed by experts was used to design the online lesson Google Site program on computer laws in accordance with the content.

2) The online lesson was design according to a flow chart, ordering the screen and linking the with each lesson with illustrations according to the content.

Step 3: Development

Online lessons with Google Site program on computer laws was developed for students in the department of educational technology and communication, Faculty of Education Naresuan University studying in the first semester of the 2020 academic year. The developed Online lessons were submitted to four experts to assess the content and the media. Summarily, an assessment of the content and media by experts was at ($\overline{X}$ = 4.89, SD = 0.28) and ($\overline{X}$ = 4.69, SD = 0.35) respectively which were all at the highest level of appropriateness and can be implemented.

Step 4: Implementation

The online lessons with Google site program on computer law was implemented with a sample of 49 students from the department of educational technology and communication, Faculty of Education, Naresuan University in the first semester of 2020 academic year.

A pretest and posttest were administered to assess students' academic achievement before and after the implementation of the lesson.

After the post test, students completed a satisfaction assessment questionnaire to expression their satisfaction level towards the lessons.

Step 5: Evaluation

1. Students' academic achievement before and after implementing the online lessons with Google site program on computer laws was registered and compared to see the change.

2. The results from studying students' satisfaction towards online lesson with the Google site program on computer Law was analyzed.

2. The online lesson with the Google site program on computer Law consisted on six plans with 6 hours of teaching and learning process consisting of:

Unit 1: Definition of Law and Ethics (1 hour)

Unit 2: Rights and liberties of Thais (1 hour)

Unit 3: Printing Notification Act (1 hour)

Unit 4: Media law (1 hour)

Unit 5: Computer Crime Act 2017 (1 hour)

Unit 6: Computer crime (1 hour)

Data Analysis

1. The quality of the media and online lessons on Google site program on computer law was done based on the ADDIE model.

2. A comparison of students' academic achievement between pre- and post-test scores after learning with the online lessons on the Google site program on Computer Law was done using Mean and standard deviation and presented in the form of a table.

3. Analyze the results of students' satisfaction towards the online lessons with Google site program on computer laws using Mean and the standard deviation and present a table.

Research Results

The research results on the development of an online lesson with google site program with computer laws are presented as follows:

Part 1: The results of developing and assessing the quality of an online lesson with Google site program on computer law are presented on the table below as follows:

Table 1 Represents the result of development and quality assessment of an online lesson using Google site program on computer law for undergraduate students.

Evaluation components	Experts (n=3)		Level of appropriateness
	$\overline{X}$	SD	
1. Content			
1.1 Appropriateness of the content	5.00	0.00	Highest
1.2 Accuracy and clarity of the content	5.00	0.00	Highest
1.3 The content in each lesson is appropriate.	4.67	0.58	Highest
1.4 The content is within learners' level	5.00	0.00	Highest
1.5 The content is complete and up to date	4.67	0.58	Highest
Total	**4.87**	**0.32**	Highest
2. Language usage			Highest
2.1 Appropriateness of language	5.00	0.00	Highest
2.2 The language use is clear and easily understood	5.00	0.00	Highest
2.3 The language is appropriate with learners' level	5.00	0.00	Highest
Total	**5.00**	**0.00**	Highest
3. Benefits, information, content			
3.1 The content in each lesson fosters learning	4.67	0.58	Highest
3.2 Can be used in the teaching/learning process	5.00	0.00	Highest
3.3 Creates comprehensive understanding	4.67	0.58	Highest
3.4 Appropriate for publication	5.00	0.00	Highest
Total	**4.83**	**0.33**	Highest
Average total	**4.89**	**0.28**	Highest

From table 1 above, it was found that the results of assessing the developed online lesson with google site on computer law for undergraduate students from experts' evaluation revealed it was generally appropriate at the highest level with a mean values ($\overline{X}$ = 4.89, SD = 0.28). When considering each aspect, it was found that 1) overall content was at the highest level of appropriateness ($\overline{X}$ = 4.87, SD = 0.32), 2) Language use was generally at the highest level of appropriateness level ($\overline{X}$ = 5.00, SD = 0.00) and 3) Benefits, information and contents were at the highest level of appropriateness ($\overline{X}$ = 4.83, SD = 0.33).

The results of assessing the appropriateness of the instructional media and innovation for the online lesson development with Google site program on computer law for undergraduate students revealed that the media was at the highest level of appropriateness ($\overline{X}$ = 4.69, SD = 0.35). Considering each aspect, it was found that the content and presentation was at the highest level ($\overline{X}$ = 4.95, SD = 0.22). In consideration of the items, it was found that the quality of 7 items was the most consistent with the purpose ($\overline{X}$ = 5.00, SD = 0.00).

The appropriateness of the content on the online lesson was at the highest level ($\overline{X}$ = 5.00, SD = 0.00). Content arrangement and presentation was ($\overline{X}$ = 5.00, SD = 0.00), the clarity and understanding of content was at the highest level of appropriateness ($\overline{X}$ = 5.00, SD = 0.00), aappropriateness between content and illustrations ($\overline{X}$ = 5.00, SD = 0.00), appropriate between content and video ($\overline{X}$ = 5.00, SD = 0.00), appropriateness of content and student level ($\overline{X}$ = 4.67, SD = 0.58), the design was at the highest level of appropriateness ($\overline{X}$ = 4.33, SD = 0.24) and when considering each item, it was found that 2 items had the highest quality level, namely, font size was clear and readable ($\overline{X}$ = 4.67, SD = 0.58), the video used were clear and consistent with the content ($\overline{X}$ = 4.67, SD = 0.58), followed by 4 items at a high level. Grab attention ($\overline{X}$ = 4.33, SD = 0.24), text placement ($\overline{X}$ = 4.33, SD = 0.24), images used for illustration are clear, consistent with content ($\overline{X}$ = 4.33, SD = 0.24), appropriateness of color ($\overline{X}$ = 3.67, SD = 0.15). Based on the aspects of usability, the overall appropriateness was at the highest level ($\overline{X}$ = 4.75, SD = 0.29) and when considering each item, it was found that 4 items were at the highest level of appropriateness, i.e. learners were able to learn on their own ($\overline{X}$ = 5.00, SD = 0.00), the coherence of the parts is convenient ($\overline{X}$ = 4.67, SD = 0.58), easy for users to learn and understand ($\overline{X}$ = 4.67, SD = 0.58). This lesson is suitable for publication ($\overline{X}$ = 4.67, SD = 0.58)

Part 2: Comparison of students' academic achievement after the implementation of an online lessons with Google site program on Computer Law is presented as follows:

Table 2 Results of the comparison of students' academic achievement after online lesson implementation.

Test	N	$\overline{X}$	SD	t-test	Sig.(2-tailed)
Pre-Test	49	19.47	3.12	15.53*	0.00
Post-Test	49	24.51	2.90		

*0.05

Table 2 above represents students' academic achievement before and after the implementation of the online lessons with Google site program on computer law for undergraduate students. The results show an improvement in students' academic achievement from $\overline{X}$ =19.47 to $\overline{X}$ =24.51, respectively. A comparison revealed that students' academic achievement after the lesson implementation was significantly higher than before at .05 level.

Part 3: Results of students' satisfaction towards online lessons with the Google site program on computer law.

Table 3 Students' satisfaction towards online lessons with Google site program on computer law.

Evaluation components	n=49		Satisfaction level
	$\overline{X}$	SD	
1. Content, language and exercises			
1.1 The presentation is appropriately sequences, continuous, interesting and easy to follow.	4.78	0.42	Highest
1.2 The content in each lesson is appropriate.	4.78	0.42	Highest
1.3 The language used in the presentation is easy to understand and clearly conveys meaning	4.90	0.30	Highest
1.4 The images and videos are appropriate and in accordance with the content.	4.84	0.37	Highest
1.5 The exercises and quizzes and appropriate	4.90	0.30	Highest
1.6 The exercises are not too easy or difficult for learners.	4.90	0.30	Highest
Total	**4.85**	**0.35**	Highest
2. Instructional design			
2.1 The lesson is well designed, easy to use and not confusing.	4.80	0.40	Highest
2.2 The lessons are beautiful	4.80	0.40	Highest
2.3 Amount of information in each lesson is appropriate.	4.86	0.35	Highest
2.4 The size, color and fonts are appropriate and clear.	4.86	0.35	Highest
2.5 Images and videos used in the lessons are clear and appropriate	4.88	0.33	Highest
2.6 the lessons are easy-to-use, convenient and fast.	4.92	0.27	Highest
Total	**4.85**	**0.35**	Highest
3. Learning satisfaction			
3.1 Lessons make me more enthusiastic to learning.	4.92	0.27	Highest
3.2 Learners are satisfied with learning interactions.	4.78	0.42	Highest
3.3 Students have the freedom to learn and are satisfied with self-directed learning.	4.80	0.40	Highest
3.4 Lessons are in accordance with learners' learning ability level.	4.84	0.37	Highest
3.5 Knowledge gained by learners can be put into use	4.84	0.37	Highest
Total	**4.83**	**0.37**	Highest
Average total	**4.84**	**0.36**	Highest

From Table 3 it is found students' satisfaction towards the online lessons with the Google site program on computer law was at the highest level ($\overline{X}$ = 4.84, SD =0.36). When various aspects are considered, such as content ($\overline{X}$ = 4.85, SD = 0.35), language use ($\overline{X}$ = 4.85, SD =0.35) and learning exercises ($\overline{X}$ = 4.83, SD = 0.37), it is revealed that all were at the highest level of satisfaction.

Summary and Discussion

1. The results of developing and assessing the quality of an online lessons with Google site program on computer law. The researcher developed the materials and were summited to three experts to evaluate the validity and appropriateness of the online lessons. It was divided into 3 aspects. The content and presentation were at the highest level of appropriateness, which revealed that the overall average was at the highest level with a mean of 4.69 and a standard deviation of 0.35. The online lessons were developed according to the ADDIE model. The media and lessons were well design and interesting, uncomplicated, easy to understand with well-structured content and clear and authentic examples and clear illustrations, use of appropriate colors and the development took into consideration learners' age and level. The research results were consistent with Namkong (2015) who studied the learning management of Buddhism for elementary school students in the first grade using virtual image technology and found that the content and multimedia used was appropriate. The results were also consistent with the study conducted by Phima (2017) who studied the development of application with virtual reality technology to promote learning of arts and culture in Ban Bat community and found that the this developed application was at the high level of appropriateness.

2. A comparison of students' academic achievement from the pre-test and post-test scores revealed that Students' academic achievement after the implementation of the online lessons with Google site program on computer law was significantly higher than before at .05, which supports the research hypothesis. The content was consistent with appropriately design lessons which were modern leading to the enhancement of learners academic achievement. The results were in line with Khanthree (2015) who compared students' academic achievement after before and after using E- learning lesson and the results revealed that students' academic achievements after learning were significantly higher than before at 0.1 level. The results were also in line with Dewilaphorn (2020) who found that students' academic achievement after using online teaching materials with Google Site for third year vocational students was significantly higher than before at 0.05 level.

3. Students' satisfaction towards the online lessons with Google site program on computer law revealed that the satisfaction was at the highest level ($\overline{X}$ = 4.84, SD = 0.36). The reason for this level of satisfaction was because the online lessons enhanced students' academic achievement, the lessons were well organized, students could study at their convenience and the learning activities were interesting. The lessons were easy to use and follow. The findings were in accordance with Prasarnwong (2007) on online lessons on physics and electrical chemistry in technology which found that students were highly satisfied with the online lessons $\overline{X}$ = 4.66 and also consistent with Nittaya Nakongsri (2010) who developed lessons on internet network based on project-based learning with Adobe Flash CS3 program, and a study of satisfaction revealed that students' satisfaction towards the lesson was high ($\overline{X}$ = 4.32).

Recommendations

General Recommendations

1. Instructors should study and make a comprehensive understand of how to use the Google site program in order to ease implementation as well as seek additional knowledge and ways of implementation to develop expertise on how the program can be used to enhance learning.

2. When using the online lessons with Google Sites, instructors and learners should discuss common ways to handle problems in case of any.

Recommendations for further research

1. Online learning lessons with Google site program on computer law should be developed with a varied learning activity during the learning process in order to create comprehensive content knowledge and understanding for learners.

2. Further research should be conducted to develop online lessons with the Google site program in order to develop modern and appropriate teaching approaches instruction in a given era.

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