THE RESULTS OF THE BLENDED LEARNING ACTIVITIES COURSE OF INNOVATION AND INFORMATION TECHNOLOGY FOR COMMUNICATION AND LEARNING

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ABSTRACT

The objectives of this research were: 1) to find the effectiveness of the blended learning management activity package 2) to compare the learning achievement 3) to study memory retention and 4) to study the satisfaction with the blended learning activities. The research sample consisted of 30 1st year students enrolled in the Innovation and Information Technology for Communication and Learning course in the 2nd semester of the academic year 2020 in the Major of General Science, Faculty of Education, Rajabhat Nakhon Si Thammarat University. The research tools were: 1) a blended learning management activity package, and 2) an online questionnaire on the satisfaction of the learners with the blended learning activities. The statistics used in the data analysis were mean, S.D. and hypothesis testing using t-test Dependent. 1) The developed efficiency was 80.58/87.67, which was the efficiency according to the specified criteria 80/80. 2) The statistically significant comparison of the learning achievement after receiving the learning management was higher than before the learning management at the .05 level. 3) The study of memory retention after 2 weeks of learning management was not significantly different at the .05 level and 4) The overall of the satisfaction blended learning activities were at the highest level.

KEYWORDS

Blended Learning Activities, Memory Retention, Satisfaction

1. INTRODUCTION

In the current epidemic of COVID 2019 situation, teachers have to modify their teaching strategies from the old classroom to online in parallel with the learning management model. Variety of Blended learning principles are used by combining face-to-face learning and online learning presented via the Internet network.[1] There was a change from the teacher-oriented to the student-oriented. The learning then comes from many parts of the content blended together and enabling learners to develop self-learning skills. By bringing Google Classroom to link different contents increasing teaching and learning quality. And online learning if developing a website to contain content for teaching and learning, it will make to give a positive impact in the learning process independently. [2] It also creates a lifelong learning tool and prepares for digital citizenship with media usage intelligence which includes 1) media access, 2) media analysis, 3) media assessment skills, 4) media creativity skills, and 5) media engagement skills. [3] Such blended learning management will allow the learners to easily access information any time both inside and outside the classroom.

The course of Innovation and Information Technology for Communication and Learning, it is a professional teaching service for 1st year students in the Faculty of Education, Rajabhat Nakhon Si Thammarat University. In the last 3 semesters the learning outcomes were in 6 areas: 1) knowledge 2) cognitive skills 3) interpersonal skills and responsibility 4) numerical analysis skills, communication and information technology 5) morality and ethics and 6) learning management skills. It was found that the learning outcomes in each aspect were at a good level but still lacking in adaptive learning in the New Normal era. As can be seen from several activity results, both online and offline, and the course assessment that the activity scores in some courses were lower than 60 % [4].

The researcher had reviewed the learning activities of the 1st year student in the Innovation and Information Technology for Communication and Learning course, Faculty of Education, Rajabhat Nakhon Si Thammarat University. The details of the learning activities, measuring and evaluating the learning outcomes were based on blended learning management by using Google Classroom as a media. By adding more blended learning activities, it will increase the learning outcomes and attract the attention from the learners. This will serve as a model for developing blended learning activities in other subjects as well.

1.1. Research Purpose

1.1.1. To determine the effectiveness of the blended learning management activities package, Innovation and Information Technology for Communication and Learning.
1.1.2. To compare academic achievement, Innovation and Information Technology for Communication and Learning.
1.1.3. To study the memory of retention, Innovation and Information Technology for Communication and Learning.
1.1.4. To study the satisfaction with the blended learning activities, the course of Innovation and Information Technology for Communication and Learning.

2. POPULATION AND SAMPLE

2.1. Sample Selection Procedure and Method

The population is the 1st year students of the Faculty of Education, Rajabhat Nakhon SiThammarat University who registered for the course of Innovation and Information Technology for Communication and Learning in the 2nd semester of the academic year 2020, total of 210 students.

The sample group was the 1st year students in the General Science program, Faculty of Education, Rajabhat Nakhon Si Thammarat University who registered for the course of Innovation and Information Technology for Communication and Learning in the 2nd semester of the academic year 2020, total of 30 students were selected by Simple Random Sampling.

2.2. Research Tools

2.2.1. A package of Blended Learning Management Activities in the course of Innovation and Information Technology for Communication and Learning.
2.2.2. Online questionnaire on satisfaction on the blended learning activities in the course of Innovation and Information Technology for Communication and Learning.

2.3. Reliability and Accuracy

This research was conducted in the course of Innovation and Information Technology for Communication and Learning by collecting data from the sample group, with the following steps:

2.3.1. The researcher explained to the sample group the purposes and learning process by using a blended learning management activity package.

2.3.2. The researcher asked the sample to do a pretest via Google Form from the blended learning management activity package and record. The researcher has downloaded the score files from Google Sheet to store for the students' pretest scores processing.

2.3.3. The researcher then described and demonstrated the learning process by using a blended learning management activity package as well as explains the learning purposes and conditions to the sample group. This was an online learning through the Internet using a computer and mobile phones together face-to-face classrooms learning.

2.3.4. Conducted an experimented using a series of learning activities. It took about 2 months, March - April 2021 with the content of research in the course of Innovation and Information Technology for Communication and Learning, It consisted of 4 content: 1) communication 2) learning 3) learning media and 4) website development. In each course, the students had to do a posttest via Google Form, where the researcher had then downloaded the score files from the Google Sheet for posttest score processing.

2.3.5. After 2 weeks of the experiment, the researchers used the same test again as the learning achievement testing to study memory retention.

2.3.6. Then assessed the satisfaction of the blended learning activities in the course of Innovation and Information Technology for Communication and Learning.

2.4. Statistics used in Research

2.4.1. Analyzed the efficiency of the blended learning management activities package, according to 80/80 criteria, using mean and percentage.

2.4.2. Comparative analysis of learning achievement, before and after using mean, S.D., and t-test Dependent.

2.4.3. Analysis of memory retention using mean, S.D., and t-test Dependent.

2.4.4. Satisfaction analysis of the blended learning activities using mean and S.D..

2.4.5. Take the score file data from Google Sheet in the online questionnaire for statistical analysis by using the SPSS Statistics 24 programs to analyze the data.

By analyzing the satisfaction with the blended learning activities, the criteria for analysis and interpretation is the average level of satisfaction which has a value between 1-5 points, divided into 5 ranges as follows:

> Mean 4.51-5.00 means the highest level of satisfaction.
> Mean 3.51-4.50 means high level of satisfaction.
> Mean 2.51-3.50 means moderate satisfaction.
> Mean 1.51-2.50 means low level of satisfaction.
> Mean 1.00-1.50 means the lowest level of satisfaction.

3. RESEARCH METHODOLOGY

The research was carried out according to the ADDIE Model instructional design which consisted of 5 steps: 1) Lesson Analysis 2) Lesson Design 3) Lesson Development 4) Lesson Trial and 5) Lesson Assessment [5]. The details are as follows:

3.1. Lesson Analysis

The researcher analyzed and studied various related data, namely: 1) determining the subject's content. 2) study tools for lesson development with Google Classroom. 3) learning purpose analysis to define content and quizzes according to the course description and 4) the test was analyzed in accordance with the learning purpose.

3.2. Lesson Design

The researcher conducted a lesson design in a blended learning management activity package series which is the content of this research in the course of Innovation and Information Technology for Communication and Learning with 4 content, consisting of 1) communication 2) learning 3) learning media and 4) website development. It is designed are as follows:

3.2.1. Pretest to test students' knowledge before learning management, 40 items.
3.2.2. Textbooks for the students to use in learning, consisting of content documents, videos, info graphics, and end-of-chapter questions, etc.
3.2.3. The activity sheet to test students' knowledge during the learning process is 4 content questions.
3.2.4. Posttest to test students' knowledge after learning management, 40 items.
3.2.5. Satisfaction assessment form to find students' satisfaction with the blended learning management, 10 items**.**

3.3. Lesson Development

The researcher had developed a learning activity package with the following steps:

3.3.1. Online Classroom Development Lesson development using Google Classroom consisted of 1) lesson content 2) pretest 3) instructional textbook 4) activity sheet 5) posttest and 6) satisfaction assessment form.
3.3.2. Developing an online pretest Develop lessons with Google Forms
3.3.3. Development of textbooks by uploading various information through Google Classroom, including content documents, activity sheets, videos, infographics, etc.
3.3.4. Developing an online posttest Develop lessons with Google Forms
3.3.5. Development of an online satisfaction assessment form Develop lessons with Google Forms
3.3.6. Dissemination of blended learning management activities through Google Classroom, Innovation and Information Technology for Communication and Learning course. Let students study the details for teaching both in the regular and the online classroom.

3.4. Lesson Trial

The researcher carried out a try-out of the blended learning management activities with the 1st year students who had previously studied the Innovation and Information Technology for Communication and Learning course.

3.5. Lesson Assessment

The researchers used an trail and improved series of experimental learning management activities with the sample group by inserting an activity-based learning to present the reflections on the

learning outcomes in front of the classroom, both in normal and online class, then summarize the evaluation together.

4. RESULTS AND DISCUSSION

4.1. Results

The researcher presented the results, divided into 4 parts. The details are as follows:

Part **1** The results of the efficiency of the blended learning management activity package in the course of Innovation and Information Technology for Communication and Learning, presented in Table 1.

Table 1. The results of the efficiency of the blended learning management activity package

Testing	n	Total Score	Mean	Percentage
During class (E_1)	30	40	32.23	80.58
After class (E_2)	30	40	35.07	87.67

The results were shown to determine the effectiveness of the blended learning management activities, developed with efficiency equal to $80.58/87.67$, which meets the specified efficiencies of 80/80.

Part 2 The Results of Comparison of Learning Achievement in Innovation and Information Technology for Communication and Learning Courses, presented in Table 2.

Table 2. The Results of Comparison of Learning Achievement in Innovation and Information Technology for Communication and Learning Courses

Learning Activities	n	Total Score	Mean	S.D.	t-test	sig
Before class	30	40	30.03	0.72	33.17	.00
After class	30	40	37.27	0.98		

[*]Statistic Significant Level of .05

Presented that the learning achievement after the learning management is higher than before the learning management with the statistic significant level of .05, consistent with the hypothesis.

Part 3 The Results of a study on memory retention, innovation and information technology for Communication and Learning, presented in Table 3.

Table 3. The Results of the study of memory retention in the course of Innovation and Information Technology for Communication Learning

Learning Activities	n	Total Score	Mean	S.D.	t-test	sig
After class	30	40	37.27	0.98	5.97	.00
2 weeks after class	30	40	35.70	0.79		

[*]Statistic Significant Level of .05

Presented that there was no statistically significant difference in memory retention after 2 weeks of learning retention at the .05 level, consistent with the hypothesis.

Part **4** The results of the study of satisfaction with the blended learning activities in the course of Innovation and Information Technology for Communication and Learning, presented in Table 4.

Table 4. The results of the study of satisfaction with the blended learning activities, subject Innovation and Information Technology for Communication and Learning

Evaluation Item	Mean	S.D.	Level
1. Blended learning management	4.59	0.70	Highest
1.1. Correspondence of learning activities with purposes	4.57	0.57	Highest
1.2. Correspondence of course content and learning activities	4.73	0.69	Highest
1.3. Appropriateness of time spent on learning activities	4.47	0.90	High
1.4. Satisfaction with learning management	4.60	0.62	Highest
2. Teacher's learning activities organization	4.51	0.63	Highest
2.1. Appropriateness of teaching techniques of teachers	4.47	0.90	High
2.2. The attractiveness of the teacher's presentation of content	4.77	0.57	Highest
2.3. Appropriateness of teachers' time management	4.30	0.53	High
2.4 Completion of the learning activity package	4.50	0.51	High
3. Benefits obtained from the blended learning activities	4.76	0.52	Highest
3.1. Benefits obtained from learning activities	4.83	0.53	Highest
3.2. Orderliness of the learning activity package	4.50	0.68	High
3.3. Appropriateness of knowledge application	4.90	0.40	Highest
3.4. Overall satisfaction with the learning activities	4.80	0.48	Highest
Total	**4.62**	**0.62**	**Highest**

The results of the study of satisfaction with the blended learning activities in the subject of Innovation and Information Technology for Communication and Learning was at the highest level (mean = 4.62). When considering each item, it was found that the benefits received from the blended learning activities (mean = 4.76) were followed by the blended learning management. (mean = 4.59) and the teaching activities of teachers (mean = 4.51), respectively.

4.2. Discussion

Research on the results were discussed as follows:

4.2.1. The results of the lesson development from learning activities in the course of Innovation and Information Technology for Communication and Learning included 1) lesson content 2) pretest 3) instructional textbook 4) activity sheet 5) posttest and 6) satisfaction assessment form. The results of the efficiency of the blended learning management activity package 80.58/87.67, which were effective according to the 80/80 criteria, showed that blended learning management activities package developed with efficiency according to the set criteria. This is in line with research studies on blended learning activities. The research revealed that the development of blended lessons provides the learners with knowledge and understanding and can create a mechanism for improving the learning skills when doing activities [6]. And the results were effective according to the 80/80 criteria, because development of activities package follows the ADDIE model's design principles, that's a systematic process for develop. [7]

4.2.2. The learning achievement in Innovation and Information Technology for Communication and Learning course was higher than before. It was statistically significant at the .05 level, which was consistent with research studies on blended learning management.

4.2.3. The study of memory retention from studying in the course of Innovation and Information Technology for Communication and Learning was measured using the same test as the learning achievement test. The memory retention test after 2 weeks of study showed that there was no statistically significant difference between the memory retention immediately after and 2 weeks after learning at the level. .05. This is consistent with the research study on learning durability. It was found that because the learners have learned and practiced the same things slowly, while the learners have learned by themselves, have practiced many times, causing the learners to truly learn [8].

4.2.4. Satisfaction results on the blended learning activities in the course of Innovation and Information Technology for Communication and Learning was at the highest level (mean = 4.62), which was consistent with research studies on the blended collaborative learning. The results showed that learners were able to review lessons whenever they wanted. They were able to search for knowledge and practice. There are various learning activities that are not boring which resulted in the students' satisfaction at the highest level [9].

5. CONCLUSIONS

Blended learning, it is a combination of learning management styles, both offline and online learning. The blended learning management had been applied to manage learning at all levels in educational institutions. To enable learners to develop necessary knowledge and skills to their full potential leading to lifelong learning, blended learning management is therefore a teaching method that is well suited to the development of the quality of Thai education in the 21st century.

ACKNOWLEDGEMENTS

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