

THE DEVELOPMENT OF A BLENDED LEARNING MANAGEMENT MODEL WITH SYNECTICS TEACHING AND OUT-OF-THE-BOX THINKING TECHNIQUES TO FOSTER CREATIVITY

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ABSTRACT

The objectives of this research are: 1) to develop and determine the quality of a blended learning management model using synectics teaching and out-of-the-box thinking techniques; 2) to compare creativity thinking score after receiving the blended learning management by teaching synectics and out-of-the-box thinking techniques to foster creativity and 3) to study the satisfaction of students learning with the blended learning management model. The sample group used in this research was the 1st year Bachelor of Education students, Faculty of Education, Rajabhat Nakhon Si Thammarat University including 60 students enrolled in the course of innovation and information technology for communication and learning in semester 2, academic year 2020. They were divided into experimental groups and control groups. The research tools included web-based lessons, lesson plans and satisfaction assessments including mean, S.D. and hypothesis testing with independent t-test. The results showed that: 1) the results of the development and quality assessment of the blended learning model by using synectic teaching and out-of-the-box thinking techniques to promote creativity were at a very good level; 2) comparison of creativity scores of the experimental group students after receiving the learning management with the developed instructional model were higher than the control group, indicating that the mean scores have statistically significantly different at .05 and 3) the overall student satisfaction assessment in all aspects was high level. It was concluded that the research results were in accordance with the hypothesis testing.

KEYWORDS

Blended Learning Management, Creativity, Synectics Teaching, Out-of-the-box Thinking

1. INTRODUCTION

1.1. Introducing the Problem

Technology plays an increasingly important role in education management in the 21st century as a tool to support learners in researching information based on their interests and to use technology to assist teachers in teaching management. Therefore, technology has become involved in teaching and learning models that support analytical thinking, problem solving, creativity. and interaction. By using flexible lessons emphasizing on searching activities which support the learners and based on learners as a priority. Blended learning is a form of teaching in which a variety of teaching materials are used, either in the classroom or face- to- face and teaching using computer media. [1] There are teaching activities and assessment measurements in various formats that occur in both Synchronous Mode and Asynchronous Mode to achieve common goals and interests. By using the same learning language, there are similar learning activities and may

also have the same believes to create a learning condition, which is known as a virtual community (Virtual Community), online community (Online Community) or cyber community (Cyber Community) that relies on the internet network as a communication channel between community members that can be linked at anytime and anywhere. [2]

1.2. Background

Teaching and learning that focuses on learners and creativity is important, which means the brain process that thinks in a multidisciplinary manner that leads to new discoveries through adaptation of the original idea. The emergence of new things, including the invention of things. The distinctive feature of creativity is multi-directional thinking or divergent thinking. [3] Creativity is the driving force for human beings to be able to develop and move forward Inventing new things. De Bono, E. , said, developing and encouraging people to be creative is very important because people will use those creativity to produce new things. Group teaching is a teaching and learning management that focuses on students to develop social skills and develop students' thinking skills. [4] A group approach can help you get more creative and able to organize learners to think and learn together in small groups, helping each other learn to reach the goals of the group. [5] It is a learning process where ideas and experiences are exchanged in small groups. Everyone has the opportunity to exchange ideas and foster critical thinking, creating creative thinking, problem-solving and decision-making abilities.

The Synectics Instructional Model will help develop students' creative skills, aiming for learners to come up with different ideas. and if learners have the opportunity to solve problems with a method that has never been thought of before giving students an opportunity to solve problems with new and unusual ideas. [6] Instead, try thinking as someone else or as something else. This situation encourages learners to come up with new ideas. [7] De Bono's Lateral Thinking is a popular concept that consists of two approaches: how to avoid obsession; and a conceptual way of thinking. If the technique of thinking outside the box is added, it will make the concept of thinking change from the original out of the obsession. Therefore, if wanting students to be creative. Teachers need to get rid of the idea that creativity is all about talent and see it as a way to use the mind to manipulate information, that is, to think outside the box. The current situation affects teaching management, unable to teach in the normal classroom can combined with modern technological changes making teaching changes rapidly. Choosing appropriate and effective teaching materials can stimulate creative skills. Blended teaching and learning management is one option. Combining online classroom learning with and without time- base synchronizing are the combination of innovation and technological advancement with interactive online learning, it's used with the computer device interface used to read and record brain ideas is to provide an independent environment to get away from manual control and replace it with creative thinking. [8]

From the above guidelines, the researcher is interested in studying the development of a blended learning management model using synectic teaching and out-of-the-box thinking techniques to promote creativity among the educational graduate students, from the importance and background above, the researcher has set the following objectives:

1.3. Research Objectives

- 1.3.1. To develop and determine the quality of a blended learning model with synectic teaching and out-of-the-box thinking techniques to promote creativity.
- 1.3.2. To compare creativity scores after receiving blended learning with synectic teaching and out-of-the-box thinking techniques to promote creativity.

- 1.3.3. To study the satisfaction of students studying with blended learning with synectic teaching and out-of-the-box thinking techniques to promote creativity.

From the introduction led to conceptual framework as show figure 1.

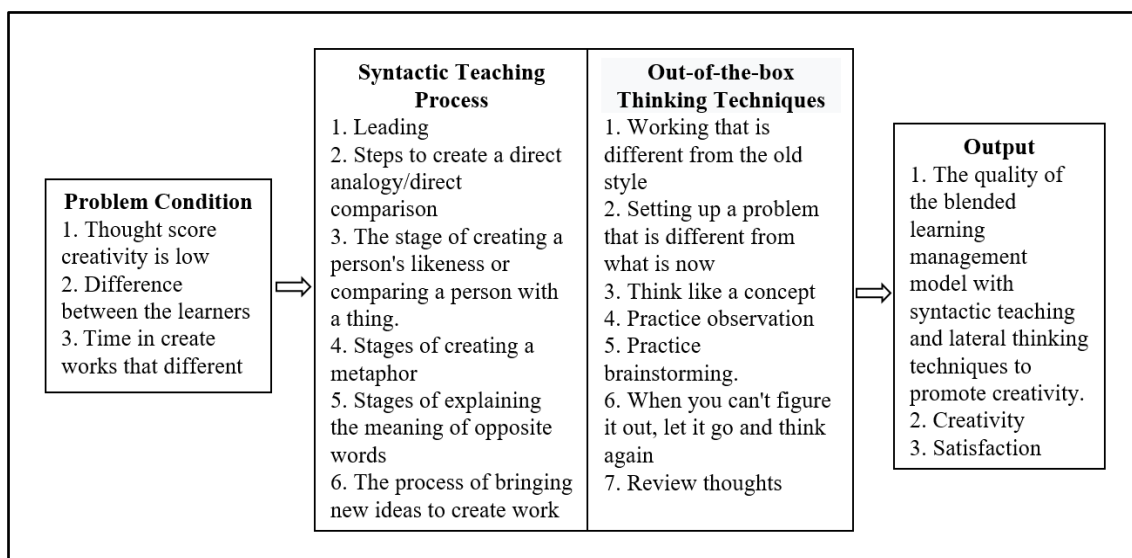


Figure 1. Conceptual framework

2. RESEARCH METHODOLOGY

2.1. Population and Sampling

The population and the sample group were the first year undergraduate students of the Faculty of Education who enrolled in the course of innovation and information technology for communication and learning in the second semester of Academic Year 2020 which consisted of 245 students.

The sample was obtained by Multi Stage Sampling by taking the Torrance Test of Creative Thinking and selecting a room with no difference in mean scores, 60 people were divided into 2 groups, 30 students each, were the experimental group and the control group.

2.2. Variables

- 2.2.1. The primary variable is the blended learning management by synectic teaching and out-of-the-box thinking techniques.
- 2.2.2. The dependent variables were:
- 1) Creativity
 - 2) Student Satisfaction

2.3. Research Tools

- 2.3.1. A blended learning management model with synectic teaching and out- of- the- box thinking techniques to promote creativity.

- 2.3.2. The quality assessment form of the model for developing a blended learning management by using the synectics and out-of-the-box thinking techniques to foster creativity is a 5-level rating scale, divided into 2 aspects:
 - 1) content and evaluation, the tool quality was obtained by taking the questionnaire created to 5 content and measurement experts. The quality of the questionnaire was examined with a consistency index between 0.60 to 1.00.
 - 2) Media and presentation, to determine the quality of the tools, the questionnaire created was given to 5 media and presentation specialists. The questionnaire quality was examined in terms of content integrity. The results of media audits and presentations are consistent with the content.
- 2.3.3. Torrance's Creativity Quiz using images as a medium
- 2.3.4. A student satisfaction assessment form through education using a blended learning management development model with synectic teaching and out-of-the-box thinking techniques to promote creativity. It was a 5-level rating scale with a consistency index between 0.60 and 1.00.
- 2.3.5. A learning management plan, a model for developing blended learning management by teaching Synectics and out-of-the-box thinking techniques to foster creativity. The researcher collected data from the sample group via online examination of the specimen. The total duration of data collection was 8 weeks. The quality assessment results were analyzed using basic statistics: frequency, Percentage, Mean and Standard Deviation (S.D.) using SPSS packaged program. [9]
- 2.3.6. Evaluate and certify teaching styles, lesson plans, and manuals by 5 experts, certifying assessment, consisting of measurement and evaluation experts in the design of learning materials technology and communication education Curriculum and teaching and creativity.

2.4. Procedures

Research and Development are divided into 3 steps as follow:

2.4.1. Teaching and learning model development consists of sub-steps as follows:

- 2.4.1.1. Study a blended learning management model with synectic teaching and out-of-the-box thinking techniques to promote creativity.

As a result of this step, the attributes that influence creativity are obtained to be synthesized together with the teaching and learning model.
- 2.4.1.2. Study related theories, documents and research, including concepts of creativity. Blended learning management, creativity, synectic teaching techniques, out-of-the-box thinking and design techniques, which at this stage will bring about the elements, content and activities of the teaching style.
- 2.4.1.3. Identify the main elements of the teaching style as an instructional model by the way of organizing Focus Group Discussion with experts to consider the synthesis of attributes towards creative design in conjunction with teaching and learning styles, considering the appropriateness and feasibility of the teaching style both in terms of elements, content and activities of the teaching style as well as receiving additional suggestions.

The group of 5 participants consisted of measurement and evaluation expert, design of learning materials expert, technology and education communication expert, curriculum and teaching expert, and creativity expert.
- 2.4.1.4. Evaluate and certify teaching styles, lesson plans, and manuals by 5 experts, certifying assessment, consisting of measurement and evaluation expert, design

of learning materials expert, technology and education communication expert, curriculum and teaching expert, and creativity expert.

- 2.4.2. An experiment with a blended learning management model with synectic teaching and out-of-the-box thinking techniques to promote creativity. The experiment was conducted in the innovation and information technology for communication and learning course of the second semester of the academic year 2020 with 60 students with the following steps:
- 2.4.2.1. The students were divided into 30 student in the experimental group and the other 30 students in the control group based on creativity scores obtained from the Torrance test of creative thinking and proceeded according to the instructional model developed.
- 2.4.2.2. Measure creativity after learning management and measure the design of learning media
- 2.4.2.3. Assess students' satisfaction with the developed teaching and learning style.
- 2.4.3. Improve the blended learning management model with synectic teaching and out-of-the-box thinking techniques to foster creativity for the improvement consideration as follows:
- 1) Preparation.
 - 2) Implementation of the developed teaching and learning model.

3. RESULTS

Present the results by research objectives as follows:

3.1. The results of the development and quality assessment of a blended learning management model with synectic teaching and out-of-the-box thinking techniques to promote creativity show below:

Table 1. The results of the quality assessment of the learning management model

Assessment Item	Assessment Result		
	Mean	S.D.	Level
Content and teaching style	4.33	0.70	Good
1. Teaching style	4.40	0.49	Good
2. Lesson plan	4.40	0.80	Good
3. User Manual	4.20	0.75	Good
Media and presentation	4.65	0.57	Very good
1. Section of the website page	5.00	0.00	Very good
2. Part of the learning management system	4.40	0.80	Good
3. Parts of the picture and sound	4.80	0.40	Very good
4. Part of the alphabet	4.40	0.49	Good
Average	4.51	0.53	Very good

From table 1, when considering the results of the quality assessment of the learning management model by 5 experts, the results showed that the average of all aspects The evaluation results were at a very good level (Mean = 4.51).

The assessment results were at a very good level (Mean = 4.65) and in terms of content and teaching style. The evaluation results were at a good level (Mean = 4.33).

3.2. Comparison results of creativity scores after receiving a blended learning management with synectic teaching and out-of-the-box thinking techniques to promote creativity show below:

Table 2. The results of the comparison of creativity scores after receiving the learning management.

Group	n	Total Score	Mean	S.D.	t-test	Sig.
Experimental	30	50	45.67	1.29	19.57	.00
Control	30	50	37.43	1.91		

Statistic Significant Level of .05

From table 2, the results of the comparison of creativity scores of the experimental group students after receiving the learning management with the developed instructional model.

Creativity scores were higher than the control group, indicating that the mean scores have statistically significantly different at .05.

3.3. The results of a study of the satisfaction of students studying with blended learning with synectic teaching and out-of-the-box thinking techniques to promote creativity. show below:

Table 3. Student satisfaction study results

Assessment Item	Assessment Result		
	Mean	S.D.	Level
Instructor/Teacher	4.53	0.50	Highest
Subject content	4.45	0.83	High
Learning activities	4.65	0.63	Highest
Factors promoting learning	4.42	0.59	High
Learning evaluation	4.37	0.60	High
Average	4.48	0.63	High

From table 3 , the results of the study on the satisfaction of students studying with blended learning with synectic teaching and out-of-the-box thinking techniques to promote creativity were satisfied in all aspects at a high level (Mean = 4.48).

When considering each aspect, it was found that the students' satisfaction was at the highest level in the learning activities (Mean = 4.65) and the instructor (Mean = 4.53). The satisfaction level was at a high level in the subject content (Mean = 4.45), learning support factor (Mean = 4.42), and learning evaluation (Mean = 4.37), respectively.

4. CONCLUSION AND DISCUSSION

4.1. The results of the development and quality assessment of a blended learning model with synectic teaching and lateral thinking techniques to promote creativity were found. The average evaluation results were at a very good level; the evaluation results are at a very good level in the media and presentation section and the evaluation results were at good level in the sections of content and teaching style. The researcher has analyzed and designed the lesson structure from the experts by analyzing the important elements and contents before creating a lesson resulting in lessons that meet the actual needs of users. Examining

opinions from experts in designing various activities results in activities that meet the objectives of the lesson by the development of continuous improvements. Then, in the lesson assessment step was followed by a synectic teaching method that included outside-the-box thinking and quizzes which then used in the experimental groups using web-based tutorials. Therefore, it is a stimulus for students to learn and create true creativity.

- 4.2. The results of the comparison of creativity scores of the experimental students after receiving the learning management with the developed instructional model show that the creativity scores were higher than the control group. This indicates that the management of blended learning with web-based lessons using synectic teaching and out-of-the-box thinking techniques resulted in statistically significant differences in creative thinking between students who took web-based lessons and those who studied with the conventional method at the .05 level, consistent with research by the development of Web-based instruction to promote creative thinking. [10]
- 4.3. The results of the study on the satisfaction of students studying with blended learning management with synectic teaching and lateral thinking techniques to promote creativity show that the overall average score are at a high level. When considering each aspect, it was found that the students' satisfaction was at the highest level in the learning activities and the instructor. As for the students, their satisfaction was at a high level in they the subject content, factors promoting learning and learning evaluation, respectively. This is in line with the research of observing the learning behavior of students who study with fun using teaching media according to the new and interoperable way through the Internet network without face to face causing excitement and create creativity. [11]

The results comparison of creativity scores of the experimental group students after receiving the learning management with the developed instructional model were higher than the control group, indicating that the mean scores have statistically significantly different at .05. Blended learning it's a teaching method that is well suited to the development of the Thai's student for education in the 21st century, [12] and it was concluded that the research results were in accordance with the hypothesis testing.

5. SUGGESTION

- 5.1. The Development of a blended learning management model with synectics teaching and out of the box thinking techniques to foster creativity can be applied in other subjects because it is a lesson that focuses on students' creative skills.
- 5.2. Learning styles should be developed by supplementing other techniques to assist in learning activities. There will be a variety of learning activities to promote learning potential so that students can coordinate their ideas and participate in learning activities.

ACKNOWLEDGEMENTS

This research was supported by Faculty of Education, Rajabhat Nakhon Si Thammarat University.

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