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Procedia - Social and Behavioral Sciences 174 (2015) 674 – 679

Procedia
Social and Behavioral Sciences

INTE 2014

E–learning system in virtual learning environment to develop creative thinking for learners in higher education

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Abstract

The objective of this research was to study e–learning system in virtual learning environment to develop creative thinking for learners in higher education. This e–learning system was built up from theories, principals and research in educational background and then it was tested with thirty undergraduate students in Social Sciences and Humanities disciplines. The quantitative data was statistically analyzed using mean, standard deviation, and t –test. For the qualitative data they were collected by attitude questionnaire. The improved system was approved by the groups of e-learning system and creative thinking skills experts as detailed in the article.

Peer-review under responsibility of the Sakarya University

Keywords: E-Learning System, Virtual Learning Environment , Creative Thinking, Higher Education

1. Introduction

It can be seen that the education reform that occurred more than a decade which focused on learners by using technology to support the learning process and need to develop about higher order thinking.(National Education Act B.E, 1999) Creative thinking skill, which are under consideration by the National Qualifications Framework for Higher Education 2552, is a one of the five important higher- order thinking skills that focus on the skill-development of all learners. Therefore, the development of learning with e-learning on a virtual environment for creative development is considered a necessary which confirm by the survey of the Ministry of Education, 2552

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Peer-review under responsibility of the Sakarya University
doi:10.1016/j.sbspro.2015.01.600

which found that the creative thinking skill of young learners was low by creativity test. Thus, when student enters the learning in higher education institutions, it is necessary to accelerate development and to build on the basic policy of the Commission that focuses on the students developing their creativity. E-learning system on the virtual learning environment, which means the environment to teaching and learning activities via the Web, focusing on teaching the students to participate in a virtual reality classroom to help enhance learning anywhere and anytime and to encourage formal learning. Besides, learning with e-learning system on a virtual learning environment to promote creative thinking to students by supporting communications between students and instructors, students and students, reflecting of tacit and explicit knowledge both learners and instructors, collaborating and acquiring knowledge, which there are online tools to support instruction. Thus, in designing of e-learning system, model of e-learning is very important to enhance creative thinking by including teaching techniques, teaching methods, innovation creation, and pedagogy in the model of learning (Songkram, 2013). Therefore, in this research it was studied, experimented and monitored effectively and reliably in the e–learning system in virtual learning environment to develop creative thinking for learners in higher education.

2. Objective

The purposes of this research were as follows:

1. to investigate components, processes of e–Learning system in virtual learning environment to develop creative thinking for learners in higher education
2. to create e–Learning system in virtual learning environment to develop creative thinking for learners in higher education
3. to study the results of e–Learning system in virtual learning environment to develop creative thinking for learners in higher education
4. to propose e–Learning system in virtual learning environment to develop creative thinking for learners in higher education

3. Research Question

1. What and how are the components and processes of e–Learning system in virtual learning environment to develop creative thinking for learners in higher education?
2. Can undergraduate students create knowledge construction and creative problem solving ability using this model?

4. Hypothesis

The creative thinking posttest of students in the sample group after learning by using create e–Learning system in virtual learning environment to develop creative thinking was higher than the pretest at the .05 level of significant.

5. Research Method

The e–learning system in virtual learning environment to develop creative thinking for learners in higher education was R&D research. The methodology consisted of the following; the researcher

Phase 1. Analyzed and synthesized information and research about components and processes of e–learning system ,virtual learning environment , creative thinking

Phase 2. Created the e–learning system in virtual learning environment to develop creative thinking for learners in higher education

Phase 3. Studied the results of using the e–learning system in virtual learning environment to develop creative thinking

Phase 4. Proposed the e–learning system in virtual learning environment to develop creative thinking for learners in higher education.

In the details as follows:

Phase 1: Analyzed and synthesized information and research about components and processes of e–learning system, virtual learning environment, creative thinking

The study was conducted by analyzing and synthesizing information and research about components and processes of e-Learning system which consisted of components and processes. For virtual learning environment, there were studied in learning platform, pedagogy, online collaborative tools, synchronous and asynchronous web-based application.

Phase 2: Created the e–learning system in virtual learning environment to develop creative thinking for learners in higher education

2.1 A beta e–learning system in virtual learning environment to develop creative thinking for learners in higher education was reviewed by five experts monitoring this model for. The experts examined the components, processes, content covering, and the appropriateness of using the system. Also, comments were made about e–learning system in virtual learning environment to develop creative thinking for learners in higher education before testing.

2.2 Designing a draft of e–learning system in virtual learning environment to develop creative thinking for learners in higher education.

2.3 Developing the research instruments, there were a creative assessment, lesson plans, and an opinion questionnaire. The data was statistically analyzed using mean, standard deviation, and t –test.

Phase 3: Studied the results of using the –learning system in virtual learning environment to develop creative thinking for learners in higher education

E-Learning system was experimented in higher education with 30 undergraduate students, major in educational technology from the Faculty of Education, Chulalongkorn University, academic year 2012. The subjects were similar in terms of age (ranging from 20-21) and educational background by purposive sampling method with the required qualifications. After trial, the researcher revised, modified this system and followed by considering and approving by five experts in the educational field.

Table 1 A t-test comparison of post-test scores and pretest scores in creative thinking

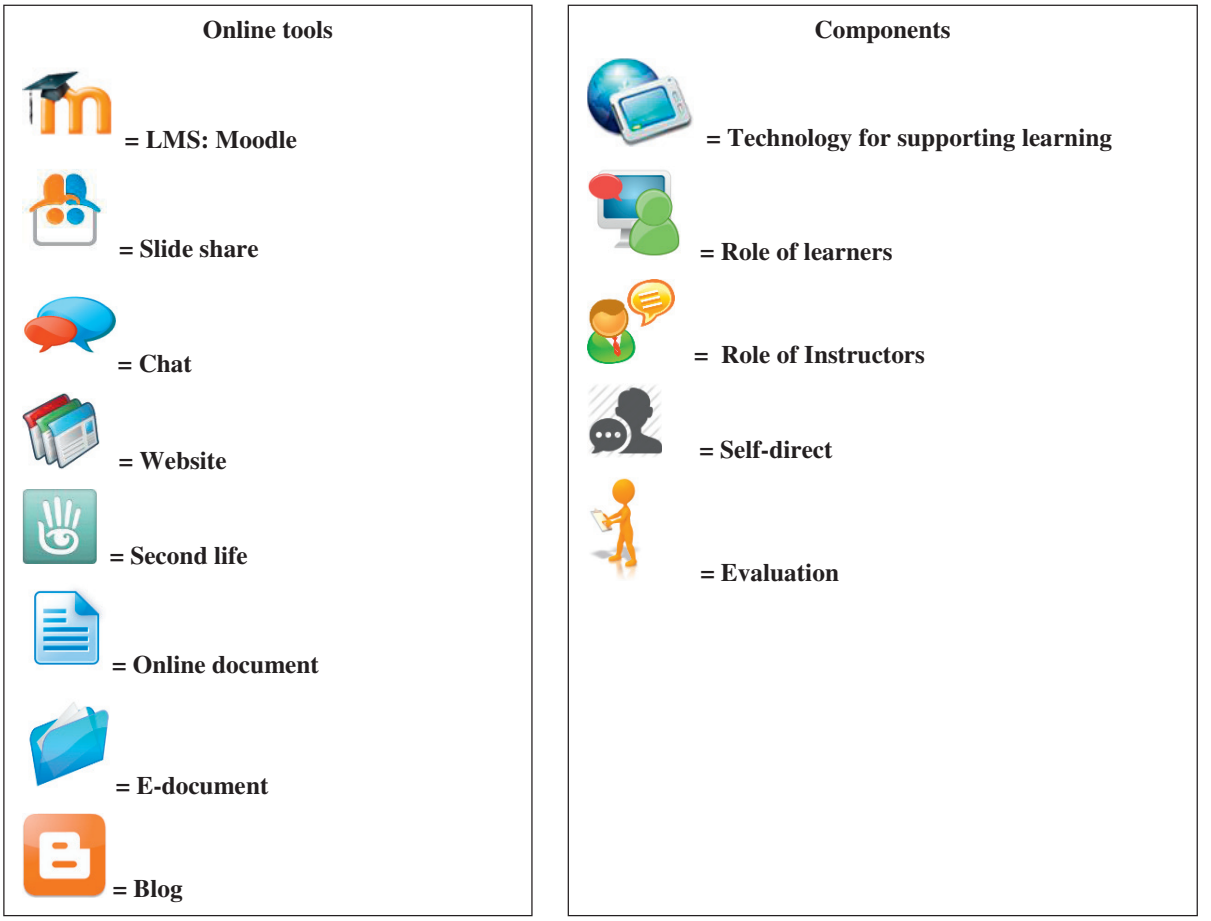
Mean	S.D	t	df	Sig.
-46.50	62.43	-4.07	29	.000

A t-test comparison of post-test scores and pretest scores of the samples showed statistically significant difference at. 05 level between creative thinking and satisfy with the systems in high level. E–learning system in virtual learning environment to develop creative thinking for learners in higher education consisted of five components: 1) Technology for supporting learning 2) Role of learners 3) Role of Instructors 4) Self-direct 5) Evaluation and eight processes: 1) Preparation of the learners 2) Identifying objectives 3) Finding the fact 4) Finding the ideas 5) Finding problem solutions 6) Creating productivity 7) Evaluation 8) Accepting productivity.

Phase 4: Proposed the e–learning system in virtual learning environment to develop creative thinking for learners in higher education

After collecting experimental results and comments from the subjects, the researcher improved the system. The system was approved by five experts in the field before achieving the final proposed the e–learning system in virtual learning environment to develop creative thinking for learners in higher education.

Fig. 1 The e–learning system in virtual learning environment to develop creative thinking for learners in higher education.



Research result can answer research questions as follows:

1. E–learning system in virtual learning environment to develop creative thinking for learners in higher education consisted of: 1) Technology for supporting learning 2) Role of learners 3) Role of Instructors 4) Self-direct 5) Evaluation and eight processes: 1) Preparation of the learners 2) Identifying objectives 3) Finding the fact 4) Finding the ideas 5) Finding problem solutions 6) Creating productivity 7) Evaluation 8) Accepting productivity.
2. A t-test comparison of posttest and pretest of the sample group showed statistically significant difference at.05 level in creative thinking and the sample group revealed that they were satisfied with e–learning system in virtual learning environment to develop creative thinking for learners in higher education.

Acknowledgements

This paper was a part of the project funded by Chulalongkorn University in 2013. The author would sincerely thank to Chulalongkorn University . Sincerely thanks must also go to Faculty of Education. Special thanks also go to all advisors, scholars, and experts for their help and support in creating new knowledge via this paper to strengthen the educational technology and communications field.

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