

The Using of Social Network for Instruction in Earth Science Subject.

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Abstract

The objectives of the research were: 1) to compare the learning achievement with the learning standard level; 2) to study the satisfaction of learners on social media network, Ning; 3) to study the skill of learning process in the project. The sampling of this research consisted of the 30 students in the first year (semester 1/2011) of Geographic Information Technology program, Faculty of Information Technology, Rajabhat Maha Sarakham university. The tools comprised the satisfaction questionnaire, the 4-choices questionnaire of 25 questions on learning achievement. The statistics used were Mean (\bar{x}), Percentage (%), Standard Deviation (S.D.)

The result showed that the learning process efficiency of the project approach ed in Earth Science, Unit 6 The Change of Plates Transformation was rated 79.90/79.58, compared to the standard level of learning efficiency (70/70). Average achievement scores of pre-test was 6.52 out of 12 (31.50%) and S.D. was 1.96. Average achievement scores of post-test was 9.61 out of 12 (46.16%) and S.D. was 1.42. There was statistically a significantly level at 0.05. The satisfaction of learning was at 4.25, which meant very satisfied for every questions. The skill of learning process in this project was between 3.86 and 4.38, and S.D. ranged from 0.44 to 0.95. Total means (\bar{x}) of satisfaction level was 4.14, and S.D. was at 0.68.

Keyword: Earth Science, social media network, Ning, and Project Approach

Introduction

Declaration of using National Education Act B.E.2542 (1999) and Amendment (second edition) B.E. 2545 (2002) in Thailand caused educational reform at all levels. As a result, technology has played a big role towards teaching and learning management in higher education. It was considered a new innovation for educational personnel in developing teaching and learning, as well as learners in higher education. Applying an up-to-date technology

has forced the personnel to improve their instructions following the standard-curriculum of Thai qualifications framework for higher education (TQF: HEd) to aim at students' management on learning outcomes in five aspects: ethics and moral, knowledge and wisdom, interpersonal skills, responsibility, and numerical analysis skills in communication and information technology (Higher Education Commission, 2009:6), particularly frame standard in computer such as the standard

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needed for Information Technology or IT:TQF (Wichian Chuttimasakun, 2009: 11)

A problem in learning and teaching process in higher education for prospective achievement, caused by students graduated in elementary to secondary school levels that cannot be failed in the test, has affected learning management and lead to less graduation in some academic fields. A study on lifestyles of the freshmen and the sophomores revealed that there were more students with uninteresting lifestyles (32.86%) than those who preferred diligence, activities, and morals by 28.86% (Chanachaichon Sarintip, 2009). This problem wastes budgets and students of the country in some fields by losing time and opportunities, including graduates' employments.

Consequently, modern media in teaching and learning management both in and out of classes is necessary for class management in higher education at high level. According to the study on Internet-Based Computer Instruction (Wanida Singhatam, 2009: abstract) and the study on Using Computer Technology for a variety of learning reforms, it was found that learning achievement of the students who studied via learning materials in Computer in Accounting System Design in class was statistically significant at .01 level. (Namtip Trakoonmekhi, 2009: abstract)

The researcher, as an instructor in Geographical Information Technology, faculty of Information Technology, Rajabhat Maha Sarakham University, has realized the importance of learning management emphasizing on cooperative learning skills via project method. The concept of learning through cooperation

was adopted because the freshmen in Geographical Information Technology, who enrolled Earth Science course (7030102) in the first semester of 2011, had different levels of learning ability and learning performances from elementary schools. Besides, the students also had different learning styles: some of them preferred inquiry but some preferred lecture. Therefore, brainstorming and discussion were needed in this course.

Due to learning management needed for the Geographical Information Technology to enhance cognitive skills, the students should have critical thinking skills, to find cause of a problem in order to find solutions by themselves, including abilities in resource searching, interpretation, information assessment used for solving problems creatively and being able to collect data, examine, analyze, and conclude the problem issue and requirement. (Faculty of Information Technology, 2000: 23-24)

Learning through project method gives learners opportunities to be participated in group work. The instruction goes along with authentic learning starting with problems and end up with solving them by self-experiments. (Chaiwat Suthirat, 2009: 48)

Due to problems and importance of using social network for instruction, the researcher, thus, had developed a project learning method in Earth Science course, applying Web 2.0 Technology which included Ning Social Network. The technology was adopted as a material in brainstorming and discussing about the assigned issues. It was expected by the researcher that benefits of

learning though social network and Ning social network application could enhance the learners' cognitive skills and performances.

4. Students' satisfaction questionnaires towards project Approach learning management
5. Assessment Form towards project approach learning process

Materials and Methods

Participants of the study were the freshmen in the faculty of Information Technology, Rajabhat Maha Sarakham University.

Samples of the study were 30 students who enrolled Earth Science in 1/2011.

Five materials used in the study were as follows:

1. A learning management plan for Earth Science, unit 6, on Deformation of the Earth's Crust
2. Learning activities through Ning Social Network
3. A learning Achievement Test in Earth Science, unit 6, on Deformation of the Earth's Crust, with 4-multiple choice examination for 25 items

Results

The results of the study revealed that the efficiency of learning management through project Approach in Earth Science course, unit6, on Deformation of the Earth's Crust, was 79.90/ 79.58 that followed the set standard.

A comparison on learning performances of the students before class to after class showed that the students' average score was 6.52 out of 12 (31.50%, S.D.= 1.96) before class; whereas, it was 9.61 out of 12 (46.16%, S.D. = 1.42) after class. It was found that the average score after class was higher than that before class with statistical significance level at .01.

	Source	N	\bar{X}	S.D.	Percent	t-test
Learning performance score	Before class	30	6.52	1.96	31.50	7.90**
	After class	30	9.61	1.42	46.16	

* Statistically significant difference at .01, df=30 equals 2.473

The satisfaction of students towards using Ning Social Network for instruction showed high level of satisfaction (\bar{X} =4.25). Likewise, for process learning in project Approach, it revealed high level of satisfaction (\bar{X} = 3.86 -4.38, S.D.= 0.44- 0.95). Total average value was found in high level (\bar{X} = 4.14, S.D= 0.68).

Conclusion and Discussion

According to an investigation on learning management achievement in Earth Science course, unit 6, on Deformation of the earth's Crust, by Ning Social Network, it was indicated that:

1. Learning achievement of the students who effectively studied through learning management plan in Earth Science,

unit 6, on Deformation of the earth's Crust, was 79.90/ 79.58 which was higher than the set standard (75/75). The achievement was high as the project approach enhanced cooperative learning in students, brainstorming, sharing opinions, and discussion. This learning method helped the students enjoy learning and gain knowledge through brainstorming: some students in group might be a representative in answering questions and the answer would belong to the group. So, everybody in the group must know the answers in their assignments. This was relevant to the Areerat Witthaya (2006: abstract)'s study which examined cooperative learning and found that E_1/E_2 standard efficiency was higher than that in the set standard.

2. The students who studied through Ning Social Network in Earth Science, unit 6, on Deformation of the earth's Crust, gained the higher average score after class than that before class with statistical significance level at .01 because the project approach enhanced cooperative learning, especially mix-ability in group work which helped students with low ability gain knowledge better from their peers. Moreover, Adopting Ning Social Network as a learning material gave students chances to share their ideas, present their knowledge, or discuss on several issues, as well as to apply knowledge from their peers' discussion. This caused higher learning performance than that in the set standard in students. The explanation agreed to Witthaya Areerat (2006: abstract)'s study which examined cooperative learning and found that students' learning

performances was higher with statically significant level.

3. The students who studied through Ning Social Network in Earth Science, unit 6, on Deformation of the earth's Crust, had a satisfaction in high level at 4.35 (S.D.= 0.65) because the project approach enhanced cooperative learning, sharing ideas, and discussion. This learning method helped the students enjoy learning and gain knowledge through brainstorming: some students in group might be a representative in answering questions and the answer would belong to the group. So, everybody in the group must know the answers in their assignments. Furthermore, the activity also gave the students chances in sharing ideas, presenting knowledge, and discussion on various issues via Ning Social Network, contributing self-esteem in students as well. The results agreed to Witthaya Areerat (2006: abstract)'s study which examined cooperative learning and found a high satisfaction in students.

4. The students were skilled in learning process of every step of project approach at high level between 3.86-4.38 (S.D.= 0.44-0.95). The mean score was found at a high level (\bar{X} = 4.14, S.D. = 0.68). The satisfaction was high because the project approach enhanced cooperative learning, sharing ideas, and discussion; thus, it helped the students enjoy learning and gain knowledge through brainstorming: some students in group might be a representative in answering questions and the answer would belong to the group. Everybody in the group must know the answers in their assignments.

Besides, the activity also gave the students chances in sharing ideas, presenting knowledge, and discussion on various issues via Ning Social Network, contributing self-esteem in students as well. The results agreed to Witthaya Areerat (2006: abstract)'s study which examined cooperative learning and found a high satisfaction in students.

Acknowledgement

According to the study of learning management in Earth Science Subject, unit6, on Deformation of the Earth's Crust, by using Ning Social Network, the researcher had some suggestions as follows:

1. General suggestion

Before class, students should be explained about perception of project approach learning process and their participation so that they will realize on their proper roles. In addition, steps and methods used in the activities should be completely explained.

2. Suggestions for further study

Learning through project approach varies in techniques and strategies, depending on how difficult the course is. Thus, searching for the proper techniques that suits students in different fields is recommended due to their different preferences, styles, and characteristics.

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