Development of Web-Based Instruction model using Social Media Application to enhance Knowledge Management skills on Computer Tablet for teachers

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Abstract

The purposes of this research were to develop the Web-Based Instruction model using Social Media Application to enhance Knowledge Management skills on Computer Tablet for teacher and study the effects of Web-Based Instruction model using Social Media Application upon Knowledge Management skills on Computer Tablet for teacher. This research was a quasi-experimental, randomized one group pre-test post-test design. The subjects were forty-eight teachers in North-East of Thailand, during 2011 academic year. They were randomly grouped, by their basic information which sex, age, academic level and school size, into one treatment group. The research instruments were Web-Based Instruction entitle ‘Introduction to Computer Tablet’ by five online learning units in five weeks and about 45 minutes per week, and the knowledge management skills on computer tablet test which was 4-multiple choices online test about 40 items for pre-test and post-test. The Data would be analyzed by dependent t-test at the .05 level of significance. The research results were as follows: (1) A model for the Web-based Instruction using social media application to enhance knowledge management skills on computer tablet for teachers consist of three major cycle components: 1) Google in 3-basic steps; Searching, Mailing, and Analyzing, 2) Facebook in 3-basic steps; Adding, Grouping, and Posting, and 3) YouTube in 3-basic steps; Creating, Sharing, and Evaluating. The core components of Google, Facebook, and YouTube cycle applications were Creating, Evaluating, and Sharing. (2) The Efficiencies of the Web-based Instruction using social media application to enhance knowledge management skills on computer tablet for teachers were 84.25/82.75. (3) There was significant different effect between pre-test and post-test knowledge management skills on computer tablet for teachers at the .05 level of significant, which the mean of post-test scores were higher than the mean of pre-test scores.

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1. Introduction

Nowadays, information technology has been developed rapidly. The resource-based communications internet called World Wide Web is a two-way communication that web 2.0 is being used in popular education, about

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revolutionary new ways of creating, collaborating, editing and sharing user-generated content online, which was the most of all e-learning. (Charmonman, 2010) Social media is media that is designed to be distributed through social interaction to create highly accessible and scalable. Google, Facebook and YouTube with ease of use, comfort and rich for knowledge management on Tablet Computer of the teachers, the skills will result in a PC tablet of the teachers more effective teaching and learning. (Brahmawong, 2012)

2. Objectives

1) To develop the Web-based Instruction model using social media application to enhance knowledge management skills on computer tablet for teacher.
2) To study the effects of Web-based Instruction model using social media application upon knowledge management skills on computer tablet for teacher.

3. Methodology

This research was a quasi-experimental, randomized one group pre-test posttest design, which shown in Fig 1.

![Fig. 1 Research Design (William & Stephen, 2009)](https://ssrn.com/abstract=2494173)

3.1 Subjects setting

The subjects were forty-eight primary school teachers in North-East of Thailand, during 2011 academic year. They were randomly grouped, by their basic information which sex, age, academic level and school size, into one treatment group was shown in Table 1.

| No. of Samples (48 persons) | Male 24 |
|----------------------------|---------|
| Undergraduate 12           | Small school 6 |
| Graduate 12                | Large School 6 |
| Female 24                  | Small school 6 |
| Undergraduate 12           | Large School 6 |
| Graduate 12                | Large School 6 |

3.2 Research Instruments

The research instruments were developed in Learning Management System (Moodle):
1) Web-based Instruction (WBI) entitle; ‘Introduction to computer tablet’ by five online learning units in five weeks and about 45 minutes per week.
2) The test for knowledge management skills evaluation of computer tablet which was forty items of four multiple choice online tests for pre-test and posttest.

3.3 Data Collection

1) Orientation among the sample teachers through the use of social media and WBI and online testing by pre-test and posttest.
2) Pre-test the basics of knowledge management skills about computer tablet of primary school teachers.
3) Treatment by using WBI entitle; ‘Introduction to computer tablet’ by five online learning units in five weeks and about 45 minutes per week.
4) Posttest the achievement of knowledge management skills about computer tablet of primary school teachers.
3.4 Data Analysis

The Data would be analyzed by dependent t-test at the .05 level of significance.

3.5 Research results

The research results were as follows:

1) A model for the Web-based Instruction using social media application to enhance knowledge management skills on computer tablet for teachers consists of three major cycle components: (1) Google in 3-basic steps; Searching, Mailing, and Analyzing, (2) Facebook in 3-basic steps; Adding, Grouping, and Posting, and (3) YouTube in 3-basic steps; Creating, Sharing, and Evaluating. The core components of Google, Facebook, and YouTube applications cycle were Creating, Evaluating, and Sharing. As shown in Fig. 2.

![Fig. 2 A WBI model called “GFY model”](image)

2) The Efficiencies of the Web-based Instruction using social media application, “GFY model” to enhance knowledge management skills on computer tablet for teachers were 84.25/82.75, which was higher than the general standard criteria 80/80, as shown in Table 2.

| Testing          | N  | E1    | E2    | Update   |
|------------------|----|-------|-------|----------|
| One to one       | 3  | -     | -     | Revised  |
| Small group      | 9  | 77.67 | 79.23 | Revised  |
| Field Testing    | 30 | 84.25 | 82.75 | -        |

3) There was significant different effect between pre-test and posttest knowledge management skills on computer tablet for teachers at the .05 level of significant, which the mean of posttest scores were higher than the mean of pre-test scores, as shown in Table 3.

| Evaluation | N   | X    | S.D. | t-test | Sig. |
|------------|-----|------|------|--------|------|
| Pre-test   | 48  | 30.62| 1.52 | .00    | .00* |
| Post-test  | 48  | 32.23| 1.64 |        |      |

*p < .05

Electronic copy available at: https://ssrn.com/abstract=2494173
4. Conclusions

1) The model for the Web-based Instruction using social media application to enhance knowledge management skills on computer tablet for teachers consists of 3-components: Google for Searching, Mailing, and Analyzing, Facebook for Adding, Grouping and Posting and YouTube for Creating, Sharing and Evaluating, was called “GFY model”.

2) The Efficiencies of this Web-based Instruction model were 84.25/82.75, which was higher than the general standard criteria 80/80.

3) And there was significant different effect between pre-test and posttest knowledge management skills on computer tablet for teachers at the .05 level of significant, which the mean of posttest scores were higher than the mean of pre-test scores.

5. Discussions

The important result of this research is a Web-Based Instruction using social media application to enhance knowledge management skills on computer tablet for teachers consists of 3-components: Google for Searching, Mailing, and Analyzing, Facebook for Adding, Grouping, and Posting, and YouTube for Creating, Sharing, and Evaluating, was called “GFY model”, which was pedagogical design of technology-enhanced collaborative online activities of learner, similarity the digital Bloom’s Taxonomy in the higher order thinking: Analyzing, Evaluating, and Creating. (Churches, 2009). The Efficiencies of the Web-Based Instruction, “GFY model” using social media application to enhance knowledge management skills on computer tablet for teachers were 84.25/82.75, can be used to support knowledge management skills on computer tablet for teachers. And this model, which Google, Facebook, and YouTube, could make significant different effect between pre-test and posttest of another online learning environment. (Brahmawong, 2008).

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