The study of students’ opinions on the knowledge management system to support online instruction for self-directed learning

Tipparat Sittiwonga, Wanitcha Manyumb*

**Department of Education Communication and Technology, Faculty Education, Naresuan University, Pitsanulok, Thailand

Abstract

This research paper focuses on students’ opinions towards knowledge management system for online instruction whose role is to enhance self-direct learning. The target group of this research work was the 43 graduate students who had been studied Master of Education in Educational Technology and Communications and undertaken professional training in the second semester in Academic Year 2011. Research tools conveyed to obtain data were 3 designed questionnaires: 1) an opinionating questionnaire inquiring the web site components for professional training, 2) a questionnaire collecting opinions towards the web site as a whole, and 3) a questionnaire to obtain satisfaction level of users. Statistical methods used in this research were and standard deviation, which presented in tabulated forms and descriptions.

Research findings reveal that students’ opinions towards the web site components for knowledge management system governed by online instruction is at the value of =3.97, SD=0.55. Students recommend there be an assigned individual user log, which used to track and update personal record and linked to YouTube at all times or a program that enable a user to present his/her own academic presentation. It is also found out that students are greatly satisfied with professional records employed in the web site at the value of =3.95 and SD=0.50. The focused group suggests the Google Map be used as a potential locator to pinpoint places for professional training. This could be very productive to explore surrounded environments, the neighborhoods, and modes of transportation when a supervisor pays a visit to the place for his/her supervision/assessment. More importantly, this will serve as key information for other students should he/she plan to conduct professional training at the site, for he/she will have a trusted resource as to what kind of positions and job descriptions at the training place will be like. Students’ satisfaction towards online instruction is of a high value at =3.83 and SD=0.65. There are 2 particular comments obtained from the audience:

1. Social media should be extensively used and site integration into the web site to achieve a better knowledge management system whether it is a purpose directed to peer to peer, student and supervisor, or student and mentor. This could prove to be an effective channel of communication yielding a number of solutions for unforeseen circumstance during an internship.

2. There should be a careful selection of application available in social media; it should efficiently contribute to development of knowledge management under a single accessible network where stakeholders can equally make use of.

* Corresponding author. Tel.: +6-655-962-411; fax.: +6-655-962-418
E-mail address: s_tipparat@hotmail.com

© 2015 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer-review under responsibility of the Sakarya University.

Keywords: opinions, Knowledge Management System, Self-Directed Learning
Introduction

According to the development of knowledge management system for teaching through internet based learning for self-directed learning in higher education, it has served as a supporting mechanism used as a guideline for development of teaching delivery to facilitate knowledge management networks for lecturers and students. Such development enhances knowledge management system and makes possible by an implementation of required evaluation process, which includes using of technological innovation and a promotion of cooperative knowledge management among universities (Tipparat Sittiwong, Anirut Satiman and Surapon Boonlue et al). The results lead to the development of students who are keen on lifelong learning and a better guidance of curriculum development among universities in pursuit of well-qualified graduates. The results also reveal that students are well familiar with website and knowledge management system for teaching through internet based learning, since the system has already been in the E-learning base form which is easily accessible. Clearer, students understand lectures, lessons, experiences, or attitudes than writing in conventional internship report, for the aforementioned system provides features like editing, adding images, and chatting. For these reasons, the Department of Educational Technology and Communication agrees that knowledge management system for teaching in self-directed learning could be benefit for senior students in the annual professional training. After the crucial innovation of information technology and necessities of knowledge management system, the monitoring process of knowledge management system should be performed annually to apply its results in program development.

The benefits of the monitoring process are to:

1. Identify potential problems and prioritize them in order to achieve required solutions.
2. Plan and develop the program in line with objectives and policies.
3. Implement the plan and effective solutions or adjustments.
4. Understand overall progress of the program, which serves as indispensable information for decision making of related problems.

Follow up and monitoring process, if practiced continually, could help to recognize forthcoming obstacles and resource requirements. The program is able to achieve goals and offer some suitable improvements and assessment results. As a result, the program would contribute to exact and up-to-date information, which considered a tool for effective management (http://wipharat0073.blogspot.com/2009/11/blogpost_05.html, retrieved on November 5th, 2012). Such process is deemed a guideline for up-to-date information management and that the students max out experiences from professional training. These experiences could become knowledgebase and learning resources for junior students and be used to develop curricula in the Department of Educational Technology and Communication to produce highly competent graduates for labor markets.

To collect required data, questionnaires will be used to gather students’ opinions towards the system whereas obtained information will be applied to a more up-to-date and efficient system, which significantly meets users’ requirements.

Research objectives

To query the opinions on knowledge management system using from the students for teaching support on internet based learning in self-directed learning in higher education.

Benefits

The benefits from the study are to obtain information in order to improve the knowledge management system using from the students, to develop the teaching through internet based learning in self-directed learning of the Department of Educational Technology and Communication in the response of social requirements, and to reach the target of Quality Assurance of Faculty and TQF Standard of the university.
Methods

The population of this study was the 43 graduate students from Department of Educational Technology and Communication in the Naresuan University in the 2nd semester of the 2011 academic year.

Variables

The variables were students’ opinions on the teaching through internet based learning in self-directed learning.

Tool

The tools were the professional training website structure questionnaire, the opinions on professional training questionnaire, and information technology system questionnaire.

Statistical tools

The descriptive statistical tools used in the study were mean and standard deviation.

Data collection

- The questionnaire collected from 43 students (100 % feedback) in professional training program of the Department of Educational Technology and Communication, the 2nd /2011 academic year.
- Students ‘opinions analysis and conclusion following the research method.

Results

Table 1. The opinion analysis results on the professional training website structure questionnaire, 2nd /2011 of the knowledge management system development for teaching through internet based learning.

| Assessment title                                                      | Mean | SD  | Level |
|----------------------------------------------------------------------|------|-----|-------|
| 1. Public relation page – news, announcements, teaching and examination information, etc. | 3.98 | .77 | Good  |
| 2. User account access system to log in to study provided lessons in the web page. | 4.28 | .66 | Good  |
| 3. The online internship report in each semester and description of page usage. | 4.09 | .72 | Good  |
| 4. The knowledge on professional training page.                       | 3.91 | .68 | Good  |
| 5. The knowledge management activities on professional training page. | 4.14 | .67 | Good  |
| 6. Types of knowledge documentation – e.g. image, html, pdf, PPT, etc. | 3.81 | .64 | Good  |
| 7. The knowledge management activities on professional training – i.e. duties, training details, work presentation. | 4.19 | .70 | Good  |
| 8. Communication channel.                                             | 4.02 | .74 | Good  |
| 9. The self-directed learning help desk and manual                    | 3.81 | .63 | Good  |
| 10. Discussion page.                                                  | 3.86 | .71 | Good  |
| 11. The related context on support learning resources page.            | 3.79 | .77 | Good  |
| 12. The assessment result page.                                       | 3.86 | .74 | Good  |
| 13. The data collection of the professional training page.            | 4.07 | .80 | Good  |
| 14. The statistics on the system accessing.                           | 3.81 | .73 | Good  |
| Average                                                              | 3.97 | .55 | Good  |
The table 1 displays the opinions on the professional training website structure questionnaire, 2nd /2011 for the knowledge management system development for teaching through internet based learning. The average of total result is in good level ( = 3.97, SD = 0.55). Each item analysis results are all in good level following these details: User account access system to log in to study provided lessons in the web page ( = 4.28, SD = 0.66), the knowledge management activity on professional training – i.e. duties, training details, work presentation ( = 4.19, SD = 0.70), the knowledge management activity on professional training page ( = 4.14, SD = 0.67), the online internship report in each semester and description of page usage ( = 4.09, SD = 0.72), the data collection of the professional training page ( = 4.07, SD = 0.80), communication channel ( = 4.02, SD = 0.74), Public relation page – news, announcements, teaching and examination information, etc. ( = 3.98, SD = 0.77), the knowledge on professional training page ( = 3.91, SD = 0.68), the assessment result page ( = 3.86, SD = 0.74), the discussion page ( = 3.86, SD = 0.71), The statistical usage on the system accessing ( = 3.81, SD = 0.73), the types of knowledge documentation – e.g. image, html, pdf, PPT, etc. ( = 3.81, SD = 0.64), the self-directed learning help desk and manual ( = 3.81, SD = 0.63), and the related context on support learning resources page ( = 3.79, SD = 0.77).

The students recommend on the professional training website structure for the knowledge management system development for teaching through internet based learning that the system should be able to update the multimedia daily journal by its users and enable them to connect to YouTube or other presentation software.

Table 2. The result of opinion analysis on professional training questionnaire in 2nd/ 2011 academic year for journaling the training experiences.

| Assessment title                                      | Mean | SD  | Level |
|-------------------------------------------------------|------|-----|-------|
| The knowledge management system access                |      |     |       |
| 1. Web page using manual                              | 3.84 | .52 | Good  |
| 2. Simplicity and convenience.                        | 3.91 | .68 | Good  |
| 3. Teaching and Learning instruction.                 | 3.95 | .58 | Good  |
| 4. The clarity of teaching documents.                 | 3.65 | .78 | Good  |
| Web page designs                                      |      |     |       |
| 5. The decency of page designs for target users.      | 3.91 | .75 | Good  |
| 6. Attractiveness of page designs.                    | 3.72 | .75 | Good  |
| 7. Website navigation links.                         | 3.74 | .79 | Good  |
| 8. External links to supported documents.             | 3.81 | .79 | Good  |
| 9. Buttons and Icons.                                | 3.79 | .77 | Good  |
| 10. Context exhibition technique.                     | 3.77 | .88 | Good  |
| 11. Graphical designs                                | 4.07 | .80 | Good  |
| 12. Rapidity of lesson access and document download. | 3.93 | .80 | Good  |
| Learning lesson design                               |      |     |       |
| 13. The clarity of lesson objectives.                 | 4.28 | .73 | Good  |
| 14. Instruction, description, and example in the lessons. | 4.21 | .64 | Good  |
| 15. The clarity of learning activity process.         | 4.12 | .66 | Good  |
| 16. Suitability for self-learning of the context.     | 4.07 | .63 | Good  |
| 17. The clarity of the title.                         | 3.98 | .74 | Good  |
| 18. The suitability of the quantity, frequency, and length of time. | 4.02 | .80 | Good  |
| 19. The appropriation for self-learning of the pre-post evaluation. | 3.88 | .76 | Good  |
| 20. The clarity of the process of learning activity determination. | 3.98 | .67 | Good  |
21. The context appropriation for self-learner. 4.05 .69 Good
22. The clarity of each activity. 4.12 .66 Good
23. The suitability of the quantity, frequency, and length of time. 3.95 .69 Good
24. The appropriation for self-learning of the pre-post evaluation. 4.00 .62 Good
25. Benefits of learning activities for self-learners. 4.14 .74 Good
26. Participation between the students and lecturers on the learning activities 3.86 .67 Good
27. The clarity of each activity. 4.12 .66 Good
28. The suitability of the quantity, frequency, and length of time. 3.95 .69 Good
29. The appropriation for self-learning of the pre-post evaluation. 4.00 .62 Good
30. Benefits of learning activities for self-learners. 4.14 .74 Good
31. Participation between the students and lecturers on the learning activities 3.86 .67 Good

**Table 2.** Exhibits the opinion on professional training assessment in the 2nd semester of the 2011 academic year. The average of total result is in good level ( \( = 3.95, SD = 0.50 \)). Each item analysis results are all in good level following these details: the knowledge management system access ( \( = 3.84, SD = 0.52 \)), web page designs ( \( = 3.84, SD = 0.62 \)), Learning lesson design ( \( = 4.05, SD = 0.51 \)), and the communication and interaction between students and examiners ( \( = 3.95, SD = 0.57 \)).

Except from the questionnaire, students recommend that application of Google Map to locate the places and environments of the company could be convenient for examiners and other students to access to details of the professional training.

**Table 3.** The result of opinion analysis on information technology system

| Assessment title                                      | Mean | SD  | Level |
|-------------------------------------------------------|------|-----|-------|
| 1. The up to date of information                       | 3.60 | .69 | Good  |
| 2. The clarity and reliability of the information      | 3.88 | .66 | Good  |
| 3. The comprehension of Information system             | 3.72 | .77 | Good  |
| 4. The benefits of the information in operation        | 4.00 | .98 | Good  |
| 5. User’s demand response of the information           | 3.81 | .73 | Good  |
| 6. Categorization of the information                   | 3.86 | .80 | Good  |
| 7. The systematic and ordering information presentation| 3.81 | .85 | Good  |
| 8. The rapidity of the searching engine.               | 3.72 | .88 | Good  |
| 9. Accessibility of information                        | 3.95 | .90 | Good  |
| 10. Simplicity of the information                      | 4.07 | .88 | Good  |
| 11. Satisfaction on system overview                    | 3.86 | .86 | Good  |
| 12. Convenience of information using                   | 3.95 | .75 | Good  |
| 13. Rapidity of using                                 | 3.74 | .87 | Good  |
| 14. Accuracy of the system                            | 3.91 | .81 | Good  |
| 15. The comprehension of system                        | 3.79 | .80 | Good  |
| 16. Consulting and solution providing                  | 3.70 | .74 | Good  |
| Average                                               | 3.83 | .65 | Good  |

The table 3 presents the opinion on information technology system. The average of total result is in good level ( \( = 3.83, SD = 0.65 \)). Each item analysis results are all in good level following these details: Simplicity of the information ( \( = 4.07, SD = 0.88 \)), the benefits of the information in operation ( \( = 4.00, SD = 0.98 \)), accessibility of information ( \( = 3.95, SD = 0.90 \)), convenience of information using ( \( = 3.95, SD = 0.75 \)), Accuracy of the system ( \( = 3.86, SD = 0.87 \)), the systematic and ordering information presentation ( \( = 3.81, SD = 0.85 \)), the comprehension of system ( \( = 3.79, SD = 0.80 \)), and rapidity of using ( \( = 3.74, SD = 0.87 \)).
system (\(= 3.91, SD = 0.81\)), the clarity and reliability of the information (\(= 3.88, SD = 0.66\)), satisfaction on system overview (\(= 3.86, SD = 0.86\)), categorization of the information (\(= 3.86, SD = 0.80\)), the systematic and ordering information presentation (\(= 3.81, SD = 0.85\)), user’s demand response of the information (\(= 3.81, SD = 0.73\)), the comprehension of system (\(= 3.79, SD = 0.80\)), rapidity of using (\(= 3.74, SD = 0.87\)), the rapidity of the searching engine (\(= 3.72, SD = 0.77\)), the comprehension of Information system (\(= 3.72, SD = 0.77\)), consulting and solution providing (\(= 3.70, SD = 0.74\)), and the up to date of information (\(= 3.60, SD = 0.69\))

**Other recommendations**

The knowledge management system should be applied by the social media for interaction between lecturers, students, and mentors in order to effectively improve the communication process. The problems occurred in the mid of training program will be resolved instantly by the cooperative management of students, lectures, and mentors.

The use of internet-based tool as social media online should be applied in order to narrow up the inequalities of training program knowledge access to use in the teaching entirely. The descriptive statistical tools used in the study were mean and standard deviation.

**Discussion**

As above research results, there are issues to discuss as follow.

1. While the overview opinions of students on the professional training website structure questionnaire, 2nd /2011 of the knowledge management system development for teaching through internet based learning exhibit in good level (\(= 3.97, SD = 0.55\)), there are points to be discussed from the opinions. Online internship report should be more convenient to use as a study result of Naowarat Jankomol (2011) on the staff promotion decision support system for administrators in Bangkok, which assisted the administrators to assess the employee performances conveniently. The study found that the system should be included with working performance index, staff performance records, and the performance evaluation. The staff performance records are similar to the internship report in the professional training which is able to report the brief details to whom concerned.

2. The overview opinions on professional training system in the 2nd/2011 school year for journaling the training experiences reveal a good level (\(= 3.95, SD = 0.50\)). The analysis in each title also appears all in good level as follows: the knowledge management system access (\(= 3.84, SD = 0.52\)), Web page designs (\(= 3.84, SD = 0.62\)), Learning lesson design (\(= 4.05, SD = 0.51\)), the communication and interaction between students and examiners (\(= 3.95, SD = 0.57\)). These are the basic elements of knowledge management system design for the endless development of professional training website. The further recommendations from students are Google Map as its properties are able to locate the organizations or companies and to explore environment nearby. This could facilitate the examiners and could be necessary information for the junior students who desire to be trained there. Boontham Kaewpeng (2002)’s study explored the pilot project of the 9 years compulsory education by Chiang Rai primary education office and found that the facility preparation for instant teaching resources and textbooks were insufficient for students. Hence, the professional training website should meet the user requirements as much as possible.

3. The opinions on information technology system are in good level (\(= 3.83, SD = 0.65\)) in consideration that the system could reciprocate their requirements well. Additional requirements are the practicable features and tools in order to use the professional training knowledge management for further progress.
Suggestion

1. Under the knowledge management system, the social media application for the knowledge interaction between students to students, students to examiners, and students to mentors should be considered in order to improve the communication process effectively, be able to resolve problems instantly, and initiate the cooperation between students and students, students and examiners, and students and mentors.

2. The online tools of social media technologies should be applied in order to develop the knowledge management networks and narrow the inequalities of professional training knowledge access for effective teaching.

3. The application of knowledge management system should have publication to related people. They should realize the method and process of the system for the purpose of participating and discussion preparation

Suggestion for further study

1. The pursuance of the knowledge management system development for teaching through internet based learning should be attached to improve and update the system and its elements.

References

Tipparat Sittiwong, Anirut Satiman and Surapon Boonlue. (2011). A Development of Knowledge Management System for Online Instruction Supported by Self Directed Learning for Higher Education Students. Educational Journal. 9(1), 126-132.

Naovarat Jankomol. (2011). Decision Support System of the Management Bangkok to consider the salary. Thesis of Walailak University.

Boontum Kaewpeng. (2002). Tracking pilot operation management 9-year compulsory education. The primary office. Thesis. Master of Education. Educational administration. Chiang Rai Rajabhat University.

The advantage of monitoring and evaluation. Available from http://wipharat0073.blogspot.com/2009/11/blog-post_05.html. (Retrieved November 5, 2012.)