

Knowledge Management on Teaching Profession According to Khurusapha* Content Standards Using Electronic Medias Enhancing e-Learning Knowledgebase.

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ABSTRACT

The "Knowledge Management on Teaching Profession According to Khurusapha Content Standards Using Electronic Medias Enhancing e-Learning Knowledgebase" was a master Research project funded in 2012 by Thailand Cyber University Office under the Commission of Higher Education with the following 3 subprojects: "Synthesis of Teaching Profession Learning Contents According to Khurusapha Content Standards for the Electronic Medias Enhancing e-Learning Knowledgebase"; "Development of Learning Objects on Teaching Profession According to Khurusapha Content Standards as Electronic Medias Enhancing e-Learning Knowledgebase" and "The Implementation Study of the Knowledge Management on Teaching Profession According to Khurusapha Content Standards Using Electronic Medias Enhancing e-Learning Knowledgebase". The objectives of the research were to: 1) analyze and synthesize the knowledge according to 7 Khurusapha Content Standards; 2) design and develop the learning objects on teaching profession according to Khurusapha Content Standards as electronic medias enhancing e-Learning knowledgebase; 3) design and develop the knowledge management system on teaching profession according to Khurusapha Content Standards; and 4) study the effects of the knowledge management on teaching profession according to Khurusapha Content Standards using electronic medias enhancing e-Learning knowledgebase. The two sample groups were selected from Bangkok and Korat provinces for the trial usage of the KMS website, using the multistage sampling. The 1st sample group consisted of 3 subgroups of 5 persons with different educational careers in each. The 2nd sample group was 100 teaching profession students in Nakhon Ratchasima Rajabhat University. The research tools were the questionnaires for the experts and for the sample

¹*Khurusapha, the Teachers' Council of Thailand had established 9 Standards of Professional knowledge and experience which are Language and Technology for Teachers, Curriculum Development, Learning Management, Psychology for Teachers, Educational Measurement and Evaluation, Classroom Management, Educational Research, Educational Innovation and Information Technology, Teacher Professionalism*

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groups. The findings were as follows: 1) the Knowledge Management System for Teaching Profession according to 7 Khurusapha Content Standards consists of the knowledgebase containing 50 learning objects and the electronic Thai and foreign learning resources supporting Khurusapha Content Standards: educational institutes, educational journal and research, mass media for education ; 2) the KMS website was composed of 3 main parts for the management of the explicit knowledge, the tacit knowledge and the communication channels (LeMill, 2009); 3) the trial usage of the KMS website revealed the satisfaction of the sample group at the high and the highest levels. They had good opinions with its usage as the open knowledge resources for teaching profession according to Khurusapha Content Standards. The solutions used for managing the problems while conducting subprojects could be benefit to further LO and KMS developers both for the content design and for the storyboarding. (Wiley, D.A.,2000 ; Susan E.Metros, 2005; EDUTECH Wiki, 2011)

บทคัดย่อ

การจัดการความรู้ด้านวิชาชีพครูตามมาตรฐานความรู้ครูสภาด้วยคลังสื่ออิเล็กทรอนิกส์ส่งเสริมการเรียนรู้แบบอิเล็กทรอนิกส์เป็นแผนงานวิจัยหลักซึ่งได้รับทุนอุดหนุนการดำเนินงานจากโครงการมหาวิทยาลัยไซเบอร์ไทย สำนักงานคณะกรรมการการอุดมศึกษาประกอบด้วยโครงการวิจัยย่อย 3 โครงการคือ “การสังเคราะห์สาระความรู้ด้านวิชาชีพครูตามมาตรฐานความรู้ครูสภาสำหรับคลังสื่ออิเล็กทรอนิกส์ส่งเสริมการเรียนรู้แบบอิเล็กทรอนิกส์” “การพัฒนาสื่อการเรียนรู้ดิจิทัลด้านวิชาชีพครูตามมาตรฐานความรู้ครูสภาสำหรับคลังสื่ออิเล็กทรอนิกส์ส่งเสริมการเรียนรู้แบบอิเล็กทรอนิกส์” และ “การศึกษาผลการจัดการความรู้ด้านวิชาชีพครูตามมาตรฐานความรู้ครูสภาด้วยคลังสื่ออิเล็กทรอนิกส์ส่งเสริมการเรียนรู้แบบอิเล็กทรอนิกส์” การวิจัยครั้งนี้ มีวัตถุประสงค์เพื่อ 1) วิเคราะห์สังเคราะห์ สาระความรู้ด้านวิชาชีพครูตาม 7 มาตรฐานความรู้ครูสภา; 2) ออกแบบและพัฒนาสื่อการเรียนรู้ดิจิทัลสำหรับคลังสื่ออิเล็กทรอนิกส์ส่งเสริมการเรียนรู้แบบอิเล็กทรอนิกส์; 3) ออกแบบและพัฒนาระบบการจัดการความรู้ด้านวิชาชีพครูตามมาตรฐานความรู้ครูสภาและ 4) ศึกษาผลการจัดการความรู้ด้านวิชาชีพครูตามมาตรฐานความรู้ครูสภาด้วยคลังสื่ออิเล็กทรอนิกส์ส่งเสริมการเรียนรู้แบบอิเล็กทรอนิกส์กลุ่มตัวอย่าง 2 กลุ่มซึ่งได้จากการสุ่มแบบหลายขั้นตอนจากจังหวัดกรุงเทพมหานครและโคราชเพื่อลองใช้ระบบการจัดการความรู้ด้านวิชาชีพครูตามมาตรฐานความรู้ครูสภาได้แก่ (1) บุคลากรทางการศึกษาด้านวิชาชีพครู 3 กลุ่ม ๆ ละ 5 คนแต่ละกลุ่มประกอบด้วยครูอาจารย์นิสิตนักศึกษาวิชาชีพครูศึกษานิเทศก์และผู้บริหารสถานศึกษาและ (2) นักศึกษาวิชาชีพครูระดับปริญญาตรีในมหาวิทยาลัยราชภัฏนครราชสีมาจำนวน 100 คนเครื่องมือวิจัยได้แก่แบบสอบถามสำหรับผู้ทรงคุณวุฒิและกลุ่มตัวอย่าง ผลการวิจัยพบว่า 1) ระบบการจัดการความรู้ด้านวิชาชีพครูบรรจุส่วนการจัดการความรู้ชุดแจ้ง คือ คลังสื่ออิเล็กทรอนิกส์ส่งเสริมการเรียนรู้แบบอิเล็กทรอนิกส์ประกอบด้วยสื่อการเรียนรู้ดิจิทัลตามมาตรฐานความรู้ครูสภา 7 มาตรฐาน จำนวน 50 บทเรียน และแหล่งทรัพยากรการเรียนรู้ที่สนับสนุนการพัฒนาสมรรถนะตามมาตรฐานวิชาชีพครู ได้แก่เว็บไซต์หน่วยงานทางการศึกษาวารสารทางการศึกษาและการวิจัยสื่อมวลชนเพื่อการศึกษา; 2) เว็บไซต์ระบบการจัดการความรู้ฯ ประกอบด้วย 3 ส่วนหลัก คือส่วนจัดการความรู้ชุดแจ้ง ส่วนจัดการความรู้ยังเล็กและส่วนช่องทางติดต่อสื่อสาร (LeMill, 2009) ; 3) จากผลการลองใช้พบว่า กลุ่มตัวอย่างผู้ใช้ส่วนใหญ่มีความพึงพอใจในระดับมากถึงมากที่สุดมีความคิดเห็นเชิงบวกต่อความสอดคล้องกับมาตรฐานความรู้ครูสภาของระบบการจัดการความรู้ฯ และต่อลักษณะของคลังความรู้แบบเปิดสำหรับการพัฒนาวิชาชีพครูตามมาตรฐานความรู้ของครูสภาองค์ความรู้ที่เกิดขึ้นจากการแก้ไขปัญหาในการดำเนินงานวิจัย สามารถเป็นประโยชน์ต่อผู้ที่ต้องการพัฒนาสื่อการเรียนรู้ดิจิทัล(LO)และระบบการจัดการความรู้(KMS) ทั้งในส่วนของการพัฒนาเนื้อหา และการพัฒนาสตอรี่บอร์ด (Wiley, D.A., 2000 ; Susan E.Metros, 2005; EDUTECH Wiki, 2011)

Rational and Backgrounds

The Teachers Council of Thailand (TCT) had set up the Teachers and Educational Personnel Council Act B.E. 2546 (2003) consisting of 3 following standards: Standards of Professional Knowledge and Experience; Standards of Performance and Standards of Conduct. As provided by the law section 48, persons who practice the licensed profession shall conduct themselves following the professional standards and ethics. The qualifications for those who practice the profession were that they must hold at least a degree in Education or its equivalent or other related fields accredited by the TCT. Based on the above criteria, teachers shall have one year teaching experience and 9 areas of necessary knowledge as follows:

- 1) Language and Technology for Teachers
- 2) Curriculum Development
- 3) Learning Management
- 4) Psychology for Teachers
- 5) Educational Measurement and Evaluation
- 6) Classroom Management
- 7) Educational Research
- 8) Educational Innovation and Information Technology
- 9) Teacher Professionalism.

These requirements had caused the spread of information on the Internet, related to teacher professional knowledge, which are not all reliable nor haven't good quality. Moreover, since there were not any research in Thailand on knowledge management for teacher professional standards, Thailand Cyber University Project Under the Commission on Higher Education agreed the fund for the master research project called "Knowledge Management on Teaching Profession According to Khurusapha Content Standards Using Electronic Medias Enhancing

e-Learning Knowledgebase" aiming to provide persons in educational careers with the related electronic medias and learning resources that will give them the opportunity to develop and get the lifelong knowledge for their own profession. The master research project was made up of three following subprojects:

1. Synthesis of Teaching Profession Learning Contents According to Khurusapha Content Standards for the Electronic Medias Enhancing e-Learning Knowledgebase
2. Development of Learning Objects on Teaching Profession According to Khurusapha Content Standards for the Electronic Medias Enhancing e-Learning Knowledgebase
3. The Implementation Study of the Knowledge Management on Teaching Profession According to Khurusapha Content Standards Using Electronic Medias Enhancing e-Learning Knowledgebase"

Research Objectives

- 1) To analyze and synthesize the knowledge according to 7 Khurusapha Content Standards.
- 2) To design and develop the learning objects on teaching profession according to Khurusapha Content Standards as electronic medias enhancing e-Learning knowledgebase.
- 3) To design and develop the knowledge management system on teaching profession according to Khurusapha Content Standards.
- 4) To study the effects of the knowledge management on teaching profession according to Khurusapha Content Standards using electronic medias enhancing e-learning knowledgebase.

Research Methodology

This R&D research projects had the instruments and procedures as follows:

Population and Sample

The populations of this research were people in educational careers and the teaching profession students.

The two sample groups were selected using the multistage sampling as follows:

1) Bangkok and Nakhon Rachasima Provinces were selected for the 1st and 2nd sample groups using the cluster sampling method

2) For the 1st sample group, 15 people in 5 different educational careers: teacher, lecturer, school administrator, inspector, teaching profession supervisor, forming 3 subgroups of 5 people in each were selected from schools and universities in 2 Educational Service Areas of Bangkok, using the stratified sampling method.

3) For the 2nd sample group, 100 teaching profession students were selected from Nakhon Rachasima Rajabhat University, using the sample random sampling by draw.

Research Instruments:

1. Analysis tables of 7 Khurusapha Teacher Profession Content Standards.

2. Electronic medias enhancing e-Learning knowledgebase containing 50 learning objects (LO) and the electronic learning resources.

3. Knowledge Management System Website.

4. Evaluation questionnaire for the experts.

5. Opinion and satisfaction questionnaire for the sample groups.

Research Procedures:

1. The 1st subproject researchers prepared the analysis tables of the 7 Khurusapha Teacher Profession Content Standards in order to determine the expected learning outcomes, the learning and assessment activities and the forms and roles of 50 learning objects (LO) using for the scripting of the LO learning contents. The researchers presented the analysis tables and the scripts to teaching profession experts in order to evaluate the compliance with Khurusapha Teaching Profession Content Standards and brought back the suggestions to edit the scripts until completeness.

2. The scripts were gradually delivered to the 2nd subproject team who used them to design and develop the storyboards of 50 learning objects, the electronic learning resources and the knowledge management system website. All of them were presented to the experts for the evaluation and brought back for the correction until completeness.

3. The 3rd subproject team conducted the research by creating the questionnaires for the two sample groups and let them do the trial usage, using the KMS website containing the electronic medias enhancing e-Learning knowledgebase. The 1st sample group consisted of 3 subgroups of 5 persons with different educational careers in each: teacher, lecturer, school administrator, inspector and teaching profession supervisor. The 2nd sample group consisted of 100 teaching profession students.

The fulfilled questionnaires on opinions and satisfaction after the trial usage of the KMS website were analyzed and the conclusions were drawn upon the master project, "Knowledge Management on Teaching Profession According to Khurusapha Content Standards Using Electronic Medias Enhancing e-Learning Knowledgebase".

Data Collection and Data Analysis:

The researchers of the 1st subproject analyzed and synthesized the collected knowledge and resources from the Internet according to 7 Khurusapha Teaching Profession Content Standards, making them in the form of content scripts and delivered them to the 2nd subproject team for the creation of storyboards and the knowledge management system.

50 learning objects (LO) and the electronic learning resources were developed as the explicit knowledge part of the KMS: the Electronic Medias Enhancing e-Learning Knowledgebase. The 3rd subproject team of researchers collected data from the two sample groups on their trial usage of the KMS website, using the questionnaires for opinions and satisfaction survey.

The data collected from the online questionnaires were analyzed, using data distribution and percentage. The findings upon "Knowledge Management on Teaching Profession According to Khurusapha Content Standards Using Electronic Medias Enhancing e-Learning Knowledgebase" were drawn from all 3 subprojects, using the descriptive analysis.

Research Findings:

The research findings were as follows:

1. The Knowledge Management System on Teaching Profession According to 7 Khurusapha Content Standards was composed the Electronic Media Knowledgebase Enhancing e-Learning containing 20 packages of 50 learning objects and the electronic Thai and foreign learning resources supporting Khurusapha Content Standards on the following topics: educational institutes, educational journal and research, mass media for education.

2. The KMS website comprises 3 main components for the management of the explicit knowledge, the tacit knowledge and the communication channels as presented in Figure 1 and 2.

3. The trial usage of the knowledge management system website revealed the satisfaction of the two sample groups at the high and highest levels of satisfaction. The two sample groups had good opinions and the high to highest levels of satisfaction towards the KMS website as open knowledge resources for teaching profession according to Khurusapha Content Standards.

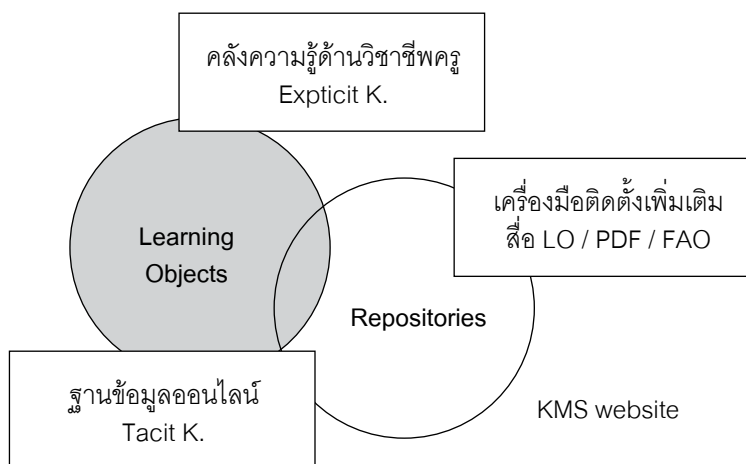


Figure 1 Structure of the KMS website

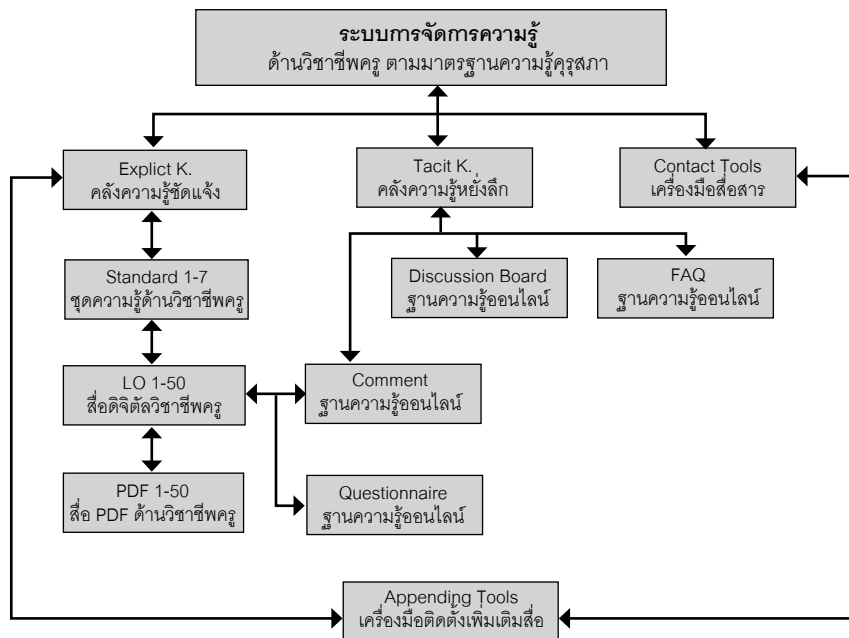


Figure 2 Components of the KMS website in details.

The 3 main components of the KMS website:

- 1) Explicit Knowledge Databank: 20 packages of 50 LOs.
- 2) Tacit Knowledge Databank:
 - LO Comment and Questionnaire
 - Discussion Board
 - FAQ
- 3) Communication Channels/ Contact Tools
 - About Us & Manual
 - Appending Tools

Research Finding Implementation:

This research was featured on the following outputs: 1) the synthesis of teaching profession knowledge scattered on the internet, leading to the design and development of the Electronic Medias Enhancing e-Learning Knowledgebase (20 Packages of 50 Learning Objects and Related Learning Resources) that were compliant with Khurusapha Content Standards; 2) the KMS website development and 3) the study of the opinions and satisfaction of the sample groups after the trial usage of the KMS Website

containing the Electronic Medias Enhancing e-Learning Knowledgebase.

The findings could be implemented in the following ways:

- 1) The output of the research, the KMS Website, can be used to improve the profession of many educational personnels according to Khurusapha Content Standards like school administrators and teachers, teaching profession educators, and especially the undergraduate students

in teacher profession program. It can be used within various forms of education: the formal, non - formal and informal. (Wiley, D.A.,2000) For example:

- Supporting learning and teaching activities in various curriculums
- Improving the basic knowledge of the students who lack of educational background but need to continue studying in the field in order to have promotion in their work related to education.
- Supporting self-study of professional development in order to reach the same teaching profession content standards channels and exchange system, consisting of the easy-to-add and change tools and data storage for the important new knowledge, the tacit knowledge.

2) The knowledge management system developed in form of website with the database supported by the open source software will ensure the continuous and sustainable use of the developed e-medias knowledgebase as explicit knowledge in KM on Teacher Profession. By using the supported components on communication channels and exchange system, consisted of the easy-to-add and change tools and data storage for important body of knowledge, the tacit knowledge will be added and changed regularly into explicit knowledge to share and vice versa.

Reflections and Conclusion:

The Research Design and Findings

The master research project was planned in the way that all subprojects were the main research procedures and had their outputs to implement to each other until the last output and outcomes. The idea of doing this kind of research, using the nested research and methodology to support each other like the

documentary research, the R&D, and the survey research will increase not only the potential of the researchers in conducting different types of research but also the values of each research output itself.

The process and solutions used to manage the problems found while conducting the 3 sub research projects could be benefit to people in many fields related to KM projects as follows:

- 1) Further developers of the LO according to educational standards on the LO content design, the LO content scripting and the LO storyboarding.
- 2) Further developers of the KMS website on the design including 2 important parts for the explicit knowledge repository in form of knowledgebase and for the tacit knowledge repository in form of e-communication tools.
- 3) Further users of the KMS website and their roles knowledge workers and knowledge Contributors.

The Dissemination of Research Findings

The production of digital learning media and knowledge management system is a high investment both in time and money, especially when they were medias with academic contents compliant with some standards. Thus, the output of this research should be continuously distributed and improved to worth the investment. Widely distribution of the research products needs the collaboration and support from many parties, particularly the investors in collaboration with the researchers for planning the support system in the way that is appropriate to the nature of different types of research findings. This research output can have the same contribution to the world trends on open education and open learning in the same way as the OEC: Open Educational Courseware and the OER: Open Educational Resources. (Susan E.Metros, 2005)

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Teacher Profession KM: Web and LO Design and Screen Examples

