THE RESULT OF STUDYING ON THE USE OF ONLINE KNOWLEDGE SHARING AND THE KEY FACTORS TO SUPPORTING OF ONLINE KNOWLEDGE SHARING IN THE CONTEXT OF UNDERGRADUATE MANAGEMENT STUDENTS*

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Abstract: The success of online learning thus depends on the participation, engagement, and social interaction, which leads to knowledge sharing**.** The concept of online knowledge sharing is online communication of learning and doing among students to share and exchange knowledge by using technology as a tool to share knowledge to create understanding or enhance performance**.** The purposes of this study were to investigate the current situations in the use of online knowledge sharing for teaching and learning in higher education in Thailand**.** This study has employed a mixed method research consisting of two parts**.** Part 1 involved a quantitative research to investigate the current situations of online knowledge sharing use among university students in Thailand. The sample group was composed of 421 students. Part 2 was a qualitative research to survey opinion of instructors on the key factors supporting their effective use in higher education. The results showed undergraduates' interest in using supporting program for online knowledge sharing system**.** The feature of online technology that their want to use were technology to a communication, technology to create knowledge and technology for knowledge sharing**.** The result revealed that the basic elements related to online knowledge sharing consists of participants, learning activities, online technology platforms**.** The factors to supporting of online knowledge sharing consists of preparing the students, motivational factors, individual participation, the support from the instructors and learning environment.

Keywords: Knowledge Sharing, Online Knowledge Sharing Technology, Learning Management Systems and Its Tools.

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Introduction

The process of studying was challenged by rapid changing situations of the world; economic growth, technology, social and human. Currently, there are various fields which relate to business management that are taught in Universities. Students must obtain diverse knowledge, develop creative thinking continuously. Especially, students who study in management field which is the field that focuses on developing students to be new businessmen with both theory and practice understanding. The students are able to use their knowledge to produce new products, know how to work, customer relations, customer services and innovation as well. The Learning activities should provide students-centered learning, group work, idea exchange, to learn new thing. To encourage the students to work together, encourage students to exchange their ideas, to promote knowledge sharing throughout activities, learning from real problem situations.

Knowledge sharing was the activity which divided students into small groups to support, promote and provide opportunities to create activities and share their ideas. The students could exchange their ideas to each other, share responsibilities both a person and a group to themselves and all members in the group succeed. According to the target set consistent with research of Zhen, Lu (2011) found that the development of new products and new services today; knowledge sharing influenced on the creative thinking development at high-level. The idea of designing process could get valuable work. Eddie (2013) defined that using online systems to use in teaching. It reduced the cost of communication. It helped to develop information technology skills. Zhiwei (2014) defined that online knowledge sharing which led to the result of daily behavior changing of users and learning could be moved outside the classroom more and stayed in an environment where learning is customized

The research study aimed to explore the current situation, the need of online knowledge sharing and technology for university students and to survey opinion of instructors on the key factors supporting the use of online knowledge sharing for teaching and learning, to identify strategy and technique appropriately to promote, stimulate and motivate university students. To conceptualize the motivation for knowledge sharing in online learning, it is important to gain a better understanding of students' needs. This study thus aims to determine the key factors that support online knowledge sharing for learning and teaching in higher education with efficiency.

Research Objectives

The following objectives were considered for the study:

1. To investigate the current situations on the use of online knowledge sharing in learning in Undergraduate Management Students.
2. To survey opinion of instructors on the key factors supporting the use of online knowledge sharing for learning efficiently.

Literature Review

1. Knowledge Sharing

There are many researchers defined knowledge sharing in different way for example: knowledge sharing has been described as the process of transferring knowledge from

one grouping to another (Vazquez et al, 2009). Lin and Lee (2006) defined that knowledge sharing as the activities of community members to facilitate the knowledge exchange in order to achieve the goals. In addition, Kumarand Ganesh (2009) proposed knowledge sharing as the exchange of any kind of knowledge between two parties. Ain Baig, Noor ul; Wahecd, Ajmal. (2016) proposed knowledge sharing is the intentional or unintentional process of mutual willingness of parties, one or more, in which one or many share knowledge regarding anything and the others seek it. To sum up, knowledge sharing is procedure to create student's knowledge and develop intelligence in a person by gathering, managing, and exchanging knowledge.

Knowledge sharing is administration which leads to factors and environment to promote people to share their knowledge to each other. The benefits of learning is circulating information, knowledge and exchanging knowledge. While knowledge sharing has been popularly emphasized in KM applications, knowledge internalization has been neglected **(**Yu-chuYeh, Yi-ling Yeh, 2012**).** Nonaka and Takeuchi **(**1995**)** also identified internalization as the key process of transforming explicit knowledge to tacit knowledge**.** Cherdwong (2015) defined that knowledge exchange, students have to learn new knowledge from knowledge sharing and from tacit to explicit knowledge to builds up their knowledge wider and clearer. Accordingly, knowledge internalization can be effectively facilitated when teaching strategies are appropriately used**.**

2. Online Knowledge Sharing Technology

Online Knowledge Sharing called "Virtual space" is a channel that allows people to exchange and share knowledge in various fields by using resources and services which available on the Internet. Presently, people attempt to create a channel for knowledge exchange in many departments. Syed Raiyan Ghani (2009) defined that knowledge sharing tools are requirement of KM tools, which can collect, catalogue, organize, and share knowledge or transfer information (the explicit knowledge) embedded in various forms and types of documents and media, which are 1) tools to access knowledge 2) tools for semantic mapping 3) tools for knowledge extraction 4) tools for expertise localization and 5) tools for collaboration work.

Therefore, based on above discussion it can be summarized that online knowledge sharing is an activity through which knowledge (idea, fact, expertise information and skills) is exchanged among people by using information technology (IT) systems are common tools that help facilitate knowledge sharing.

3. Learning Management Systems and Its Tools

The key challenge in online learning is to encourage knowledge sharing through social interaction, participation, and engagement in various forms**.** A Learning Management System are a web-based learning platform that manage and deliver educational material. They offer institution, student, and faculty support, teaching and learning processes, along with course development, evaluations, and assessments (Psycharis et al., 2013). LMSs or virtual learning environments also allow students to participate in asynchronous discussion threads, synchronous chat rooms, and other methods of communicating learning (Ssekakubo et al., 2013).

LMS can manage and deliver individualized instruction based on pace, path, and methods. The perceived functionality of any learning management system in on-line learning affects learner attitude to the usage. The survey by Berg and Lu (2014) indicated that the student satisfaction with LMS was mainly in the ease in searching for course information on the system, tools like the discussion forum are known to promote interaction and discussion as well as increase student engagement fostering critical analysis, reflection and the social construction of knowledge. The use of the forum enhances active learning and developing learner thinking capacity and motivates learners to learn more.

Research Method

This study was a mixed-method research divided into two parts. Part 1 involved a quantitative research to investigate the current situations of online knowledge sharing use among university students in Thailand. Part 2 was a qualitative research to survey opinion of instructors on guidelines concerning the use of online knowledge sharing and the key factors supporting their effective use in higher education. The details are illustrated below.

Part 1 study learning and teaching situations, students' needs and experience in knowledge sharing through online. The sample group was composed of 421 students, chosen by stratified sampling from 5 institutional categories of tertiary education in Thailand. These encompassed: 1) public universities, 2) autonomous universities, 3) private universities, 4) Rajabhat universities, and 5) Rajamangala universities of Technology. The samples from each category were then further selected based on the criteria under the following conditions: 1) They are the higher education which have management major, and 2) an educational institute that strongly supported the use of information technology for teaching and learning. The tools used to collect data were a questionnaire on "The current situations on the use and need of online knowledge sharing".

Part 2 was concerned with an investigation on opinions through in-depth interview of five instructors in related fields in order to formulate guidelines on the use of online knowledge sharing for learning, and key factors supporting effective use of online knowledge sharing for teaching and learning in tertiary education. The instructors were selected by purposive sampling with the criteria of having an expertise in teaching of management majored undergraduates and had specialized in technology teaching experiences. The tools used for data collection were semi-structured interviews on approaches and key factors supporting the use of online knowledge sharing for instruction in higher education.

Results

Part 1: Results from The Survey Distributed to University Undergraduate Students in Tertiary Institutes in Thailand about the Learning Situations, Students' Needs and Experience in Knowledge Sharing Through Online in Higher Education in Thailand.

1. Results from the Survey on Undergraduate Management Students Regarding the Use of Online Knowledge Sharing in Learning.

1.1. Background Information of the Respondents

Table 1: Background information of the respondents (N = 421)

Information	Number	Percentage
1) Gender		
- Female	279	66.3
- Male	142	33.7
2) Year of study		
- 1st year	0	0
- 2nd year	112	26.6
- 3rd year	259	61.5
- 4th year	50	11.9
- 5th year	0	0
3) Do you own a computer/laptop?		
- Yes	396	94.1
- No	25	5.9
4) In case you do, can you always access the internet connection?		
- Yes	365	86.7
- No	56	13.3
5) Which device do you have?		
- Desktop PC	192	45.6
- Laptop	267	63.4
- Tablet (Android)	49	11.6
- Tablet(iPad) (iOs)	148	35.1
- Smartphone (Android)	164	38.9
- Smartphone(iPhone) (iOs)	229	54.4

Table 1 shows background information of the undergraduate management students responding to the survey. There were 421 respondents included in this section of the study, 279 of which were female (66.3%), and 142 were male (33.7%). The majority were in 3rd year (61.5%) and 2rd year (26.6%). Most of the respondents (94.1%) had own a computer/laptop and their can access the internet connection (86.7%). The most three device that students use were 1) Laptop (66.3%), 2) Smartphone (iPhone)(iOs) (54.4%) and Desktop PC (45.6%).

2. Situations and Needs of Students in Using Technology as A Knowledge Sharing Tool.

2.1. General Information of Students' the Shared Knowledge through Online Learning.

Table 2: The Use of Online Knowledge Sharing for Learning (N = 421)

List of questions	Frequency	Percentage
1) Are you interested in using supporting program for online knowledge sharing system through online learning?		

Table 2: The Use of Online Knowledge Sharing for Learning (N = 421)

List of questions	Frequency	Percentage
- Yes	149	35.4
- No	272	64.6
2) How much do you understand about knowledge sharing through online learning?		
- a lot	68	16.2
- moderate	215	51.3
- little	109	25.7
- none	29	6.8
3) How much do you think knowledge sharing through online would help enhance cooperative learning between peers, students and instructors?		
- a lot	246	58.4
- moderate	102	24.2
- little	73	17.4
- none	0	0
4) Do you think you have enough knowledge on information technology to use knowledge sharing through online?		
- No or a little bit and be able to be further trained.	139	33
- Yes and no need to be trained.	282	67
5) In your opinion, to easily share knowledge with your peers through online, what should the online learning system be?		
- It should be in one learning management system	297	70.5
- It should not be in only one system.	124	29.5

As shown in Table 2, in terms of knowledge and understanding of online knowledge sharing, over half of the students, 64.6%, interested in using supporting program for online knowledge sharing system through online learning. Student had understood about knowledge sharing through online learning in moderate 51.3%. Most students, remarked that knowledge sharing through online would help to enhance cooperative learning between peers, students and instructors 58.4% and students have enough knowledge on information technology to use knowledge sharing through online (67%). Additionally, 70.5% agreed that to easily share knowledge with students' peers through online, it should be in one learning management system.

2.2. Situations and Needs of Students in Using Technology as A Knowledge Sharing Tool.

Table 3: The Use of Technology to Explore or Create Knowledge

Statement	Do you actually use?		Do you want to use?	
	$\overline{x}$	S.D.	$\overline{x}$	S.D.
1.1 Learning Management System (LMS)	2.28	1.06	4.86	0.42
1.2 Study Online	2.93	1.21	4.22	0.49
1.3 Streaming Video	2.91	1.08	4.74	0.46
1.4 Search Engine (Google)	2.29	1.06	4.78	0.42
1.5 Open Education Resources (OER, MOOCs, iTunes U)	2.78	1.09	4.27	0.35
Average	2.64	1.10	4.57	0.43

Table 3 shows the results of technology to explore or create knowledge that most of the students actually barely practice in their real life ($\overline{x}$ = 2.64, S.D. = 1.10) but they need to use it a lot ($\overline{x}$ = 4.57, S.D. =0.43). The most three technology to explore or create knowledge that students want to use were 1) Learning Management System, 2) Streaming Video and 3) Search Engine.

Table 4: The Use of Technology as A Communication and Cooperative Work

Statement	Do you actually use?		Do you want to use?	
	$\overline{x}$	S.D.	$\overline{x}$	S.D.
2.1 Discussion Forum	2.71	0.90	4.81	0.51
2.2 Video conferencing	2.13	0.94	4.63	0.77
2.3 Chat room	3.04	1.16	4.61	0.56
2.4 Instant messaging	2.79	1.09	4.56	0.36
2.5 E-mail	3.36	1.12	4.63	0.48
2.6 Weblog	2.52	1.21	4.78	0.40
2.7 Social network such as Facebook, Instagram, Line	4.23	0.89	4.98	0.64
2.8 Cloud Service such as Dropbox, Google Drive, I Cloud, Slide Shard	3.27	1.11	4.84	0.72
Average	2.93	1.03	4.71	0.57

Table 4 shows the results of technology as a communication and cooperative work that most of the students actually barely practice in their real life ($\overline{x}$ = 2.93, S.D. = 1.03) but they need to use it a lot ($\overline{x}$ = 4.71, S.D. =0.57). The most three technology as a communication and cooperative work that students want to use were 1) Social network such as Facebook, Instagram, Line, 2) Cloud Service such as Dropbox, Google Drive, I Cloud, Slide Shard, and 3) Discussion Forum.

Table 5: The Use of Technology for Knowledge Sharing

Statement	Do you actually use?		Do you want to use?	
	$\overline{x}$	S.D.	$\overline{x}$	S.D.
3.1 Video sharing such as YouTube	3.87	1.14	4.81	0.86
3.2 Wikis	2.81	0.98	3.93	1.12
3.3 File and document sharing	2.78	1.12	4.78	0.68
3.4 News sharing	2.51	1.21	4.22	0.49
3.5 Weblog	2.48	0.86	4.71	0.31
3.6 Social network such as Facebook, Instagram, Line	2.93	1.08	4.69	0.46
Average	2.89	1.06	4.52	0.65

Table 5 shows the results of technology for knowledge sharing that most of the students actually barely practice in their real life ($\overline{x}$ = 2.91, S.D. = 1.08) but they need to use it a lot ($\overline{x}$ = 4.64, S.D. =0.56). The most technology for knowledge sharing that students want to use were 1) Video sharing such as YouTube, 2) File and document sharing and 3) Weblog.

2.3 Situations and Needs of Students in Using and Knowledge Sharing through Online Learning.

Table 6: Situations and Needs of Students in Using and Sharing Knowledge through Online Learning

Statement	Do you usually do?		Do you want?	
	$\overline{x}$	S.D.	$\overline{x}$	S.D.
1) You learn by communicating among your group work to enhancing learning.	2.45	1.18	4.81	0.35
2) Every member of a group helps each other to achieve learning goals rather than does individual.	2.53	1.30	4.79	0.40
3) You use technology and internet for learning.	2.55	1.13	4.63	1.09
4) You are aware of the significance of knowledge sharing through online	2.67	1.26	4.60	0.62
5) Your instructors provide activities that create learning for students to share knowledge in class.	2.45	1.09	4.01	0.39
6) You share knowledge among one another in your group to produce the product from the new knowledge	2.67	1.21	4.78	0.50
7) You exchange information and listen to peers from different groups to develop your group product.	2.98	0.95	4.72	0.46

Table 6: Situations and Needs of Students in Using and Sharing Knowledge through Online Learning

Statement	Do you usually do?		Do you want?	
	$\overline{x}$	S.D.	$\overline{x}$	S.D.
8) You reflect their thoughts in class to enhance their creativity by practicing from new knowledge.	2.28	0.90	4.71	0.54
9) You define the agreement within your group work so as to create learning atmosphere.	2.24	1.16	4.62	0.52
10) You accept the individual difference so as to create learning atmosphere.	2.93	1.21	4.69	0.49
Average	2.57	1.13	4.63	0.54

As shown in Table 6, in terms of situations and needs of students in using online knowledge sharing, most of the students actually barely use in their current situations) $\overline{x}$ = 2.57, S.D. = 1.13(but they want to use it a lot) $\overline{x}$ = 4.63, S.D. =0.54(. Most students want to learn by communicating among your group work to enhancing learning) $\overline{x}$ = 4.81, S.D. =0.35(but their barely use in their current situations) $\overline{x}$ = 2.45, S.D. =1.18(. Every member of a group wants to helps each other to achieve learning goals rather than does individual part/role) $\overline{x}$ = 4.79, S.D. =0.40(but their barely use in their current situations) $\overline{x}$ = 2.53, S.D. =1.30(. Additionally, most students want to share knowledge among one another in their group to produce the product from the new knowledge) $\overline{x}$ = 4.78, S.D. =0.50(but their barely use in their current situations) $\overline{x}$ = 2.67, S.D. =1.21(.

Part 2: Opinions of The Instructors on The Guidelines and The Factors Supporting the Use of Online Knowledge Sharing for Learning and Teaching in Higher Education with Efficiency.

Data from instructor interviewing was collected and analyzed as qualitative data based on the interviews, then factors of online knowledge sharing were appropriately considered.

1. The result revealed that the basic elements related to online knowledge sharing consists of 1(participants, 2(learning activities, and 3(the technology which is used on online knowledge sharing systems. The details are as follows;

1.1. Participants consists of

The students: The Management students who study the forms of online knowledge sharing. The purposes of the group that are everyone participate to identify the target of groups which related the needs of everyone. Identifying schedule and standardize of working successfully. The activities should be group which identify characteristic of each group. In each group should be composed of various specialist members. The size of each group is appropriate. The groups' roles are defined and had clearly defined the purposes of the groups

Instructors: Instructors of Management faculty serves as advisors, provide knowledge to the students, advice and encourage the students to find answers quickly, listen to students' ideas. Instructors support learning and assist their learning and use online knowledge sharing, solve problems and give a chance to find the answers.

System administrator: System administrators of online knowledge sharing who are coordinators, related to online knowledge sharing and promote online knowledge sharing activities which every state of the process of online knowledge sharing with the instructors. They also prepare technology to get ready to work.

1.2. Learning activities to support online knowledge sharing

Classroom activities to support online knowledge sharing should be chosen by areas, validity, reliability and appropriateness of online knowledge sharing activities, using resources effectively to enhance learning for students)Scaffold(. The students can practice by exchanging their ideas to promote knowledge sharing through activities, example situations or challenge situations which are from real situations. The students will be provided with some advices and feedback from teaching activities.

1.3. The technology which is used on online knowledge sharing systems.

Technology is a tool for online knowledge sharing to enable the students to search, store, exchange ideas. Technology provided should be easy to access and use. The students can share their knowledge anytime and anywhere which emphasize flexible online knowledge sharing activities on laptop or mobile devices)smart phone/ tablet(. The important characteristics of technology used on online knowledge sharing are as follow; 1(ease of using technology, 2(facilities of online knowledge sharing

2. The key factors supporting the use of online knowledge sharing for learning and teaching in higher education with efficiency as follows.

2.1. Preparing the students to realize the importance of online knowledge sharing.

Preparing the students to realize on the importance and benefits of online knowledge sharing. Knowledge sharing is import which is shared through the society by experts or technique of new creating projects. The students' knowledge sharing and their experience in sharing ideas within and between groups will be beneficial for learning and developing learning outcome. Knowledge sharing can be various activities such as discussion, knowledge exchanging, brainstorming on main points or interested topics, transferring and sharing knowledge on many forms like documents, ideas or reports as database in online knowledge sharing systems.

2.2. Creating a motivation in online knowledge sharing.

A motivation in online knowledge sharing can be created by seven strategies as follows 1(show the students the usefulness of self-learning; 2(show the students the value of system; 3(demonstrate the students the characteristics of knowledge sharing; 4(let students see that it is alright to make mistakes; 5(show the students the necessities of knowledge sharing; 6(let the students know how useful knowledge is and how to use it; and 7(make the students see that technology works for us.

2.3. Individual Participation

Individual participation in online knowledge sharing system involves with learners, instructors and system administrators. Defining objectives and methods on knowledge sharing clearly and appropriately for learning activities helps learners to control knowledge sharing behaviors which they require. The best knowledge sharing culture is making the students to believe that their knowledge is valuable, accepted, realized and used for decision making. Individuals are composed of 1(the frequency of sharing knowledge; 2(The feeling about not losing the power of sharing knowledge; 3(The high level of trust; 4(the frequency of interaction between the instructor and learners and between peers; and 5(the understanding within the team.

2.4. The Support from The Instructors

The instructor plays the important role in supporting the learners share more knowledge by positively influencing learners to be willing to share knowledge with classmates. The instructor should support students to share knowledge and encourage them to trust one another and work together more. The instructor support includes 1(The frequency of the instructor's support; 2(The willingness in helping learners to share knowledge to one another; 3(The encouragement in helping learners to make learning progress; 4(The support by giving a reward; and 5(The support by giving a compliment.

2.5. Learning environment should be provided to support and respond the students' needs and the students' willingness to learn.

Learning environment is the key factors for learners to share knowledge through learning activities such as changing students' attitudes to learn all the time because if students do not have this attitude, it is difficult for them to share knowledge. Having students with different skills and abilities to work in the same group will help creating knowledge sharing between peers who have different skills and experiences. Asking students to record and transfer knowledge through online knowledge sharing system by organizing them systematically will be easier to share knowledge.

Discussion

Results of the research on use and need of online knowledge sharing and the key factors to supporting of online knowledge sharing in the context of higher education in Thailand were able to discuss in following topic.

1. The current situations on the use and need of online knowledge sharing for learning and teaching in higher education. Overall undergraduate students had commented online knowledge sharing for enhances learning of undergraduate students was very important. The results of a questionnaire also shown the undergraduate students gave importance to online knowledge sharing, 64.6%, interested in using supporting program for online knowledge sharing system through online learning. The students also pointed out that online knowledge sharing can be learning tools that most of the students actually barely use in their current situations but they want to use it a lot. The feature of online technology that their want to use were technology as a communication and cooperative work, the most three technology that students want to use were 1(Social network such as Facebook,

Instagram, Line, 2(Cloud Service such as Dropbox, Google Drive, I Cloud, Slide Shard, and 3(Discussion Forum. Technology to explore or create knowledge, the most three technology that students want to use were 1(Learning Management System, 2(Streaming Video and Search Engine)Google). Technology for knowledge sharing, the most three technology that students want to use were 1(Video sharing such as YouTube, 2(File and document sharing and 3(Weblog. Additionally, 58.4% agreed that knowledge sharing through online would help to enhance cooperative learning between peers, students and instructors and 70.5% agreed that to easily share knowledge with peers through online, it should be in one online learning management system.

2. The key factors that support online knowledge sharing for learning and teaching in higher education with efficiency. The components of online knowledge sharing are participants, learning activities, and the technology which is used on online knowledge sharing systems. Factor that affect the development of online knowledge sharing is preparing the students to realize the importance of online knowledge sharing, creating a motivation in online knowledge sharing, individual participation, the support from the instructors and learning environment should be respond the students' needs and the students' willingness to learn. In addition, technology should be prepared to be used in time and it should be presented with many forms and channels for students to improve themselves, their group works and present their knowledge to others.

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