Benefits and Barriers Through e-Learning Among Nursing Students in The Introduction to Nursing Profession Course

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ABSTRACT

E-Learning is a learning method that utilizes computer networks and electronic media in the learning process. The purpose of this descriptive study was to examine the benefits and barriers of e-Learning among baccalaureate nursing students in the Faculty of Nursing, Chiang Mai University (CMU). Study population consisted of 74 first year nursing students enrolled in the first semester Introduction to the Nursing Profession course at CMU in 2008. Data were collected using the Benefits and Barriers of attending an e-Learning course developed by the researchers. Content validity of the questionnaire was established by a panel of three experts prior to use. Internal consistency reliability of the questionnaire using Cronbach’s alpha was 0.91. Data were analyzed by the SPSS/FW program and included frequency, means and standard deviation.

Findings were organized into the two categories of benefits and barriers of attending an e-Learning course. Benefits of e-Learning were rated as high (\(\mu=90.57, \sigma=7.17\)) by participants. Themes identified as benefits of e-Learning include: 1) interactive learning; 2) innovative teaching; 3) promoting self-directed learning; 4) convenience; 5) safe time and place for learning; 6) enable to enhance data-search by hyperlinks; 7) self-paced learning; 8) availability of help when needed; 9) promote internet use; and 10) building responsibility and self-confidence. Three ranks of benefit items were identified: 1) ability to repeat content until understood (50%); 2) ability to study anywhere and anytime that computers and internet are available (36.5%); 3) eliminates need to travel to physical classroom (36.5%).

Barriers to e-Learning were rated as low (\(\mu=29.86, \sigma=15.39\)). Themes identified as barriers include: 1) readiness and capability of systems and equipment; 2) readiness of student for e-Learning; and 3) adequacy of budget to support e-Learning. Three ranks of barrier items are: 1) insufficient computer resources (48.6%); 2) Lack of personal computers (31.1%); and 3) low-speed internet access (28.4%).

Results of this study suggest that while e-Learning is highly valued by undergraduate nursing students, institutions must provide the equipment and network support required for this learning modality.

Keywords
Benefits, Barriers, e-Learning, Nursing Students, The Introduction to Nursing Profession Course

1. BACKGROUND

The educational Development, which intends the graduates have the multi-knowledgement (multidisciplinary), has the learning-teaching by using students as center (student-centered). It emphasizes the creation of learning process, idea, data information and technology exchanging together between teacher and students. There is Information Technology identification to be used as equipment to make new knowledgement from basic knowledgement to make Thai Society to be knowledge-based society. Including to emphasize the course’s learning-teaching substances to intend to the graduates to have the innovative capability and knowledgement to adapt themselves in using it to make a living, educational management should have an idea that all students are important and should use an appropriate learning-teaching process to support them can develop their skill naturally and full capability (National Education Committee Administration B.E, 2542), which learning-teaching as e-learning is a selective way to promote the self-study, the learning as student-centered type, which has each types of information content transmission
through the internet network by learning-teaching process using technological equipment to make flexibility in learning. Nursing Management Department, Nursing Faculty, Chiang Mai University has opened the subject 558112 The Introduction to the Nursing Profession Course for first year students; Nursing Graduate Course by having subject content consists of: Health service system, History and evolution of nursing career both in Thailand and abroad, The idea of nursing conceptual theory, the role and job responsibility of professional Nurse, including to morality principle. Each morality in career, which is theory subject, which has contents with highly abstract and is the first subject to bring nursing students understand the career.

To arrange learning-teaching as e-Learning will be able to help students enter to study the content details, which are benefit to their learning and students can arrange time to study or review the contents according to their need by themselves because each student has different ability and capability in learning. Including to the students has their opportunity to consult teacher in the studied content easier via electronic email or web board of e-Learning (T. Laohajarassaeng, 2545). But on the other hand, Learning-teaching as e-Learning may not success completely if there is some part as barriers to study such as the institution lack of internet network system availability in sending through data too slowly speed especially photos and moving pictures and lack of the equipment availability. Especially, the quantity of good quality computer is not enough for student quantity or students are not ready i.e. lacking of computer and internet network using skill. Using time in studying through internet network outside the class has limitation because having many subjects. It makes the loss of motivation to study outside the class to additional study again, etc. (Assavinee Namagunkham and group B.E. 2550).

So, teacher team has arranged the learning-teaching as e-Learning; media type to support students in this course. By the educational year 2551, there is the course in first semester, total narrative hour is 30 hrs per semester (2 credits) and has the method of learning-teaching both in classroom by lecturing, discussion and dividing group to analyze case study about main topic, interesting topic i.e. role, duty and responsibilities of professional Nurse. Creating good attitude to the career, Moral problem, etc. together with making a study trip an interview patients in their dormitory, Including to the media presentation as power point, video and other from internet network. Answer questions by teacher via email and to let students have participated in suggestion from case study analysis or question topic through the web board of A-Tutor’s the administrative management system. For the subject evaluation, it has the mid-term and final exam evaluation. To Make analysis report of making a study trip with patient interview at their dormitory compare with concept in nursing and making report of interesting case study.

The Researching Group has interested in evaluate the learning-teaching with e-Learning as additional media type. After finishing learning-teaching already, it will be evaluated in utility, problems, barriers in learning through e-Learning of Nursing students to bring the case study result to be developed the learning-teaching as e-Learning in this subject, Including to be the basic data to Nursing Administrative person to use the educational administration, which support the learning-teaching as e-Learning more appropriately in the next time.

2.OBJECTIVES
1. To study the benefits in learning through e-Learning of Nursing students in The Introduction Profession Nursing Course
2. To study the barriers in learning through e-Learning of Nursing students in The Introduction Profession Nursing Course

3.METHOD
This research is the descriptive research (descriptive research). The population in this case study is first year nursing students, who register to learn the subject 558112 The Introduction to Profession Nursing; Semester 1 Part 1 quantity 74 persons
The Research Equipment are divided as 3 parts as personal data questionnaire,
Benefits from learning through E-learning questionnaire, and Barriers of learning through E-Learning Questionnaires in The Introduction Profession Nursing Course by classifying as ideal frame as 2 groups as benefits and barriers. Benefits compose of 10 sub items are: Interactive learning, New learning-teaching format, promoting self learning, convenience, save time and place, Enable to enhance data-search by Hyperlinks, ability to choose as his capability, knowing how to use support equipment, promoting to use internet, building self responsibility and self-confident quantity 23 items. Barriers are divided as 3 sub items are: Readiness of system and equipment, Readiness of learners and budget quantity 23 items by both 2 groups are selective answer with estimate scale as 5 levels, which create from literature review and related job.

Finding the correct messages as content by passing the inspection from 5 high qualified persons to have corrected index according to the content of questionnaire as 0.76.

To find Self-confident by bringing questionnaire to study with 30 nursing students, who are similar as population. Then, find out the self-confident value by using Cronbach’s alpha coefficient. It gets the questionnaire confident by including to total issue as 0.91 and when separate into 2 sections, benefits of learning through e-learning section is 0.88 and Barriers of learning through e-learning is 0.93. The researchers collect data by him in total population. He has the completely questionnaire feed back totally 74 issues as 100% and data analysis by using program SPSS/PC to find frequency, percentage, average, standard variation.

4. RESULTS

Most population are female (91.9%) average age 19.14 year. Now use computer, which is the university asset (77.1%) and by wireless (47.1%) PC+LANS (43.9%), using program web browser to log in web site 3-5 times per week (31.1%) Use internet average 7.8 hours/ week. By using activities in travel to entertainment website (77.1%) Study as e-learning (46.4%) and investigate data information to make report (33.8%) used to study in e-learning in other subject before (51.4%) which population has studied passing the lesson in The Introduction Profession Nursing Course through e-learning as A-tutor some weeks (82.7%) About 0-2 times per week (52.7%) by learning about 1.35 hours per week.

Benefits in learning through e-learning of Nursing students by total is in high level (µ = 90.57, σ = 7.17) when let the student rank the benefits as 3 items; found that the first item is the learner can repeat studying lessons until their well understanding (50%) second item is the learner feel convenient to learn anytime and anywhere if they have computer and internet network (36.5%) third item is the learning is no need to travel to enter the classroom in some identified online hour (36.5%) Barriers in learning through e-learning of Nursing students by total is in small level (µ = 29.86, σ = 15.39) when we let students classify barriers to be 3 items, found that first 3 levels are no enough computer quantity for learner quantity (48.7%) Item no.2 Have no own computer (31.1%) third item: Internet Network system send data slowly (28.4%) When separate benefit and barriers as by item, it gets the results as below:

Table 1 Average, Standard variation and score level of benefits in learning through e-learning of nursing students in The Introduction to the Nursing Profession Course by total and by item
Table 2 Quantity and percentage of barriers in learning through E-learning of nursing students of The Introduction to the Nursing Profession Course

<table>
<thead>
<tr>
<th>Description</th>
<th>Be Barriers</th>
<th>No Barriers</th>
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</thead>
<tbody>
<tr>
<td>1. Difficulty of system and equipment</td>
<td></td>
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<tr>
<td>Item 1. Computer quantity is not enough for learner quantity</td>
<td>30</td>
<td>20</td>
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<tr>
<td>Item 2. Weak network connection is not enough for learning quantity</td>
<td>20</td>
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<td>Item 3. Computer maintenance cause up disturbance in using the internet</td>
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<td>Item 4. Network system error often in using it at home</td>
<td>30</td>
<td>20</td>
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<tr>
<td>Item 5. Inadequate learning system from home when study lesson</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Item 6. Inadequate learning system from educational institution in practice</td>
<td>20</td>
<td>20</td>
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<tr>
<td>Item 7. Educational institution system error often</td>
<td>30</td>
<td>20</td>
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<tr>
<td>Item 8. Inadequate learning system in learning system</td>
<td>20</td>
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<td>Item 9. No access the support from educational institutions in practice</td>
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<td>Item 10. No access the support from educational institutions in practice</td>
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<td>Item 11. No access the support from educational institutions in practice</td>
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<td>Item 12. No access the support from educational institutions in practice</td>
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<td>Item 16. No access the support from educational institutions in practice</td>
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<td>Item 17. No access the support from educational institutions in practice</td>
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<td>Item 18. No access the support from educational institutions in practice</td>
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<td>Item 19. No access the support from educational institutions in practice</td>
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<td>Item 20. No access the support from educational institutions in practice</td>
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<td>Item 21. No access the support from educational institutions in practice</td>
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<tr>
<td>Item 22. No access the support from educational institutions in practice</td>
<td>20</td>
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</tbody>
</table>

Table 3 Average, standard variation and score level of barriers in learning through e-learning of nursing students in The Introduction to the Nursing Profession course

<table>
<thead>
<tr>
<th>Barriers</th>
<th>range</th>
<th>μ</th>
<th>σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Availability of system and equipment</td>
<td>0.74</td>
<td>16.12</td>
<td>2.2</td>
</tr>
<tr>
<td>2. Readiness of learner</td>
<td>0.18</td>
<td>10.03</td>
<td>3.0</td>
</tr>
<tr>
<td>3. Budget</td>
<td>0.05</td>
<td>1.42</td>
<td>1.4</td>
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Table 2 (continued) Quantity and percentage of barriers in learning through E-learning of nursing students of The Introduction to the Nursing Profession Course

5. DISCUSSION

1. The benefits in learning through e-Learning of nursing students in The Introduction to the Nursing Profession Course

Study result found that the average, benefits in learning through e-learning of Nursing students by totally is in high level (μ = 90.57, σ = 7.17). When consider it, I found that every sides are in good level (Table1). It shows that there is relation with Asvinee Namagunkham B.E. 2550, which found that nursing students has positive ideas to learning-teaching arrangement as e-learning, which can self-direct learning anytime, and has freedom in learning, to practice investigation by them to let them learn how to be self-responsible. It is modern learning and creative method. Moreover, it makes more active and feel that is new learning-teaching to make them no sleepy.

And when we let the population classify benefit to be 3 ranks, we found that first rank is the learner can repeat studying the content until they understand (50%). Second Rank is the learner feel comfortable to learn anytime, anywhere if they have computer and internet network (36.5%). Third rank is the learner does not have to travel to enter the classroom in
It shows that nursing students have the developed learning path as Adult learning. The average age as 19.14 year with responsibility, love freedom, who can self directed learning, try to study the content repeatedly until they understand it from having teaching document and other teaching medias, which are in e-learning system, if it has computer and internet network system, including to having interested in learning through new communication as chatting online in some hours, which identify to study as online, which the learner has no waste the time to travel to come to the class because most of the first year nursing students has learning calendar in morning period in Teak Garden and have to travel by bus to study at Suan Dok (The university geographic condition is divided the area to be 2 sides as 1. Teak Garden means the area close to Huaykaew Street. It is located for Scientific and Technology major, Humanities and Social Science Faculty, Male and Female Dormitory, Combining learning Building, Dean Office and Central Service Department 2. Suan Dok means the location of Health Science in every faculties, Health Science Student Dormitory, Hospital and Clinic. Even there is public service bus to deliver, students have to spend the time to wait for the bus and that delivery takes time at least 15-20minuts and sometimes there are a lot of passengers so that they have to wait the next bus come, which match with S.Sukhaninthara and K.Wongphanit. (2545) they presented that the learning as e-Learning with slow internet network system, including to having no enough good working computer quantity. 

Readiness of learner has 4 items are: 1. No having own computer (74.3%), which may involve with system and equipment of university no enough so that students try to find supportive things to study by themselves, but having no enough money to have own personal computer, then they evaluate this item is barrier. 2) having many subjects to study so that it causes them to have less time to learn from e-learning(70.3%) and 3) having many university activities to join so that it cause them to have less time to study from e-learning, this additional media. (63.5%) which in these 2 items are shown that to promote students to self-direct learning through this media-e-learning, the teacher must arrange more suitable time to support students to study. 4) Inconvenience in reading lesson through computer monitor (62.2%) shows the teacher or teamwork produce computer media must consider in some technique to increase

2. Barriers in learning through e-learning of nursing students in The Introduction to Nursing Profession Course

Study result is founded that the Barrier average in learning through e-learning of the nursing students by total will be in low level (µ = 29.86, σ = 15.39). When consider it, found that every sides are in low level (Table 3), but when consider in barrier details by side, it found that 50% up of students identified some items, which were their barriers to learn through e-learning in each side(Table 2) as below: Readiness in system and equipment has 5 items are: 1) computer quantity is not enough with student quantity (86.5%) 2) Internet Network system error often in using at home (50.0%) 3) Internet network system at educational institution error often (63.5%) 4) Computer Service Centre limit the using time in the institution (64.9%) 5) Internet network system data delivery is slow (70.3%), has related to the research of Asvinee Namagunkham. (2550), which found that nursing students have negative ideas to learning-teaching as e-Learning with slow internet network system, including to having no enough good working computer quantity. 

Readiness of learner has 4 items are: 1) No having own computer (74.3%), which may involve with system and equipment of university no enough so that students try to find supportive things to study by themselves, but having no enough money to have own personal computer, then they evaluate this item is barrier 2) having many subjects to study so that it causes them to have less time to learn from e-learning (70.3%) and 3) having many university activities to join so that it cause them to have less time to study from e-learning, this additional media (63.5%) which in these 2 items are shown that to promote students to self-direct learning through this media-e-learning, the teacher must arrange more suitable time to support students to study 4) Inconvenience in reading lesson through computer monitor (62.2%) shows the teacher or teamwork produce computer media must consider in some technique to increase
learner’s capability in reading together e-learning design (Thanormporn Laohajarassaeng B.E.2545). Learner must pay the expense of teaching involved printing documents (60.8%) which may cause from inconvenience in reading lesson through computer monitor basically so that they print teaching involved printing document to read and waste the expense.

When we let the population to classify the barrier ranking as 3 levels, we found that first level is having no enough computer quantity with learner quantity (48.7%) second level is having no own personal computer (31.1%), third level is internet network system delivery is slow (28.4%) show that basic infrastructure facilities are important to support learning through e-learning. The Result Study of Theera Tungwicharn and group B.E.(2545) has surveyed the production problem and using teaching assisting lesson onto internet in learning-teaching at university level shows that problem of technology basic system has no solution or have slow development because there is problem since year B.E. 2545 to present, which composes of :slow network, computer quantity is not enough, internet system limitation and error sometimes. So, if we want to develop system, e-learning must consider this matter and develop better i.e. promoting students to have own computer in special price for students to reduce using the central computer or develop media in type of Live Online during teacher is teaching, also can live online teaching through e-learning network or expand the network as Intranet to cover all area to be more convenient for students especially participating with many departments to push the hi-speed internet network i.e. 3G, etc.

Benefits from Research
1. Be data for teacher in developing type of learning-teaching arrangement of The Introduction to Nursing Profession Course by using e-Learning later.
2. Be fundamental data to Nursing Faculty Administrator manage for adding supportive factors or manage to reduce matters, barriers, which effect to learning-teaching as e-Learning of nursing students in Nursing Faculty or present to university level to provide computer equipment, which has quality and hi-speed internet network system to cover usage sufficiently and appropriately later.

Suggestion in bringing Research result to be used
1. The faculty and university should prepare the readiness in internet network system by solving the delayed internet network transmission, signal error when use both in the institution and from home. Together with increasing point of wireless internet network for group of people, who have own personal computer, too.
2. Faculty and University should provide the readiness of equipment to be useful in learning by providing efficient computer to learn as e-Learning to be enough quantity for student quantity in many areas of university such as student dormitory, library, computer service centre, etc.
3. Faculty and university should arrange the system of using central computer of faculty or university in case of having limit time to use internet service to expand more time to use
4. In case of arranging the learning as e-Learning as additional media, which qualify with first year student already, but the faculty and university should set up additional course activities both in faculty level, university level to have no much quantity. So, to support time management to students to be able to manage their learning time
5. The teacher may select learning arrangement as e-Learning to be main media : Learning through internet network without coming to attend the class for some lessons in subject 558112 so that it should develop computer media in teaching appropriate to have high quality, too.

Suggestion for next time research
1. Teaching Computer Media Development for e-Learning
2. Readiness Study, Achievement and satisfaction of nursing students in learning through e-Learning as main media.

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