The Development of Web-Based Instruction on Research Proposal for Undergraduate Students at RMUTL

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Abstract

This action research aimed to study 1) the lesson effectiveness of Web-Based Instruction of Research Methodology subject with title "Research Proposal", 2) the learning achievement of Research Methodology subject with title "Research Proposal" of undergraduate students who learned by using the Web-Based Instruction Lesson, and 3) the achievement comparative of among undergraduate students between before and after learning by using Web-Based Instruction Lesson in Research Methodology subject with title "Research Proposal". The population student was 100 undergraduate students who registered the Research Methodology subject in the first semester year 2011. The instrument of this study was Web-Based Instruction Lesson, test, and questionnaires. Descriptive and inferential statistics, such as frequency, percentage, mean, standard deviation, and t-test were used in analyzing the data.
The result of this study found that:

1) The lesson effectiveness of Web-Based Instruction Lesson was 90.01/93.68

2) The before learning achievement of the undergraduate students was a lower than the standard of learning achievement (μ = 27.32), and the after learning achievement of the undergraduate students was higher than the standard of learning achievement. (μ = 65.58). For the learning achievement comparative between before and after learning of the undergraduate students found that the after learning was higher than before learning which is significantly different at .01

3) The satisfaction of the undergraduate students who learned by using a Web-Based Instruction Lesson is satisfied at a much level. (μ = 4.00)

Keyword: *Web-Based Instruction Lesson, Research Methodology, Research Proposal, Undergraduate Students, RMUTL*

1. Introduction

Education in nowadays focuses on skillful learners who is able to apply the knowledge obtained in their everyday life. Human resources development is important for developing country. Education is a tool for human developing. There are many factors concerned developing which the most significant factor is human resources. There would not be a complete development unless a fine quality of the human resources. Technology and network are required for human developing such as teaching by using computer. Individual learns differently based on his or her environment, characteristics, and emotion. The systematic knowledge transferring in the classroom and in everyday life help the learners to learn according to their group that have similar learning method as learning process (Craik and Lockhart 1972, cited in Pratchajanan Ninsuk, 2000, p-48-52) proposed that learning process consists of many steps. We can learn and remember any meaningful knowledge rather than motivated learning. Learning process contains many steps and focuses on learning through computer that can access information. The usage of computer by using internet for lesson developing is to set teaching and learning environment that apply internet features in World Wide Web for creating learning styles such as references, learning documents, lessons, curriculum because World Wide Web contains information resources such as letters, pictures, animation, or sound by using hyperlink both hypertext and hypermedia for information linkage. The usage of information technology for self learning focuses on individual which is not knowledge transferring only by the teacher but also knowledge obtained from variety learning styles and environment. Information technology is helpful for learners because of the dynamic information which the lesson is flexible that can either change or develop. Thus, web based instruction lesson is the information resource which is interesting as future trend. It can be developed as digital or digital convergence. Many schools and universities use web based instruction in teaching with hypermedia that learners can study by themselves. Learners can choose lesson with multimedia and sound with suitable timing also create human to human interaction.(Chai-yot Rueangsuwan, 2003, p. 131). Nowadays, teachers have to use variety teaching styles for preventing and improving inappropriate behave of the students. This can be found in the curriculum of the primary school, secondary school, and high school. So the students know and can use it properly. Therefore the instruction media can be used to help learners to learn effectively. It provides learning environment that help learner as John Dewey stated that the effective learning is learning by doing and individual learning.

The researcher developed web based instruction lesson for research proposal in research methodology subject for effectively teaching and learning and to help students to learn better because this subject is new and difficult. This subject is for graduate students which contains less students that creates effective teaching and learning. To teach this subject, the teacher have to use variety of teaching styles and instruction media because of the large number of students and most students do not know how to write research proposal, select the population and sample. The students can do random sample and random size but they cannot do that when they actually do research. From the reason mentioned above, the researcher who works as a teacher realized the usage of technology information in teaching so that the students can learn anytime and anywhere. Also focuses on student centered which students can learn better and live happily in the society.

2. Objective

1. The lesson effectiveness of web based instruction of research methodology subject with title 'Research Proposal'

2. The learning achievement of Research Methodology subject with title 'Research Proposal' of undergraduate students who learned by using web based instruction lesson

3. The achievement comparative of among undergraduate students between before and after learning by using web based instruction lesson in research methodology subject with title 'Research Proposal'

Research framework

Research framework of the development of web based instruction on research proposal for undergraduate students at RMUTL focuses on student learning on how to write research proposal in Research Methodology subject also motivated student learning according to their aptitude and interest that can be applied for their future career

Hypothesis

1. The lesson effectiveness of web based instruction of research methodology subject with title 'Research Proposal' is 80/80.

2. The learning achievement of Research Methodology subject with title 'Research Proposal' of undergraduate students who learned by using web based instruction lesson after learning is higher than before learning with significantly different at .01

3. The satisfaction of the students who learned by using a web based instruction with title 'Research Proposal' is satisfied at a much level.

3. Research methodology

The research 'The development of web based instruction on research proposal for undergraduate students at RMUTL' is a quasi experimental research the pre-test, post-test, randomized group design is as follows:

Sample	Pretest	Treatment	Posttest
S_1	O_1	X_1	O_2

S_1 = undergraduate students
O_1 = Pretest
X_1 = the study of web based instruction on research proposal
O_2 = Posttest

Population

Population is 100 undergraduate students who enrolled the subject 'Research Methodology', first semester on 2011

Variable

Independent variable is the undergraduate students who study by using web based instruction on research proposal

Dependent variable

1. The achievement of the undergraduate students who study by using web based instruction on research proposal, first semester on 2011.

2. The satisfaction of the undergraduate students for the web based instruction on research proposal

Content of the study

There are seven units which are

Unit 1 Introduction
Unit 2 Objective and Hypothesis
Unit 3 Scope and Variable
Unit 4 Key words and Benefits
Unit 5 Literature review
Unit 6 Research methodology
Unit 7 Bibliography and references

Research Tools

There are four types of research tools which were developed by the researcher

1. Web based instruction on research proposal
2. Achievement test before and after using web based instruction on research proposal
3. Exercises for web based instruction on research proposal consisting of seven units
4. Questionnaire for satisfaction of web based instruction on research proposal

Collecting data tools are:

1. Computer assisted instruction. It is web based instruction on research proposal which was developed from Adobe Dream Weaver. It presents teaching activities and description of letters and animated characters.

2. Achievement test before and after study

The test is multiple choices with four choices. It contains seven units for seventy items. Each item is one point.

3. Achievement test while studying

The test is multiple choices with four choices. It contains seven units for seventy items. Each item is one point.

4. The satisfaction of the undergraduates who enrolled the subject 'Research Methodology', first semester on 2011 for the web based instruction on research proposal. There are 15 items which is rating scale of Likert, 1967 with five scales:

Most satisfaction	=	5 points
Much Satisfaction	=	4 points
Moderate satisfaction	=	3 points
Less satisfaction	=	2 points
Least satisfaction	=	1 points

Research tool preparation

The preparation of web based instruction on research proposal is below:

1. Study course outline, objective, and how to produce the tools from 'Research Methodology' on Research proposal based on the curriculum of Rajamangala University of Technology, Lanna, 2005

2. Study web based instruction and relevant researches as well as computer assisted instruction for accurate information

3. Create 100 items of standard test for study achievement to test for simply and difficulty (p) and classification (r). The test is selected for 70 items by p is between 0.20 and 0.80 and r is more than 0.20. This test is use before and after study.

4. Study web based instruction by using Adobe Dream Weaver program with the program 'help' for lesson manual, outline, and storyboard of web based instruction on research proposal.

5. Create web based instruction on research proposal according to its content by describing with animated figure or character.

Evaluation of computer assisted instruction

The web based instruction on research proposal was evaluated by five experts with the following scales:

Excellent	=	5 points
Good	=	4 points
Fair	=	3 points
Poor	=	2 points
Fail	=	1 points

Data interpreting criterion based on Kannasute (1995, p.17)

4.50-5.00	=	the best
3.50-4.49	=	good
2.50-3.49	=	fair
1.50-2.49	=	less
1.00-1.49	=	the least

Web based instruction on research proposal must have mean more than 3.50 in every aspects with explanation 'good' and the overall evaluation must have mean more than 3.50 which imply good quality and can be used.

Data collecting

1. Explained web based instruction on research proposal to the undergraduate students who enrolled subject 'Research methodology', first semester on 2011

2. The undergraduate students who enrolled subject 'Research methodology', first semester on 2011 did the achievement before study for 30 minutes. The students have to pass 60 percent.

3. Conducted research by using web based instruction on research proposal with the undergraduate students who enrolled subject 'Research methodology', first semester on 2011. The content divided into seven units for seven weeks. Each week has three periods. One hour for one period with twenty-one in total. The students have to do exercises. The web based instruction has a role as a teacher. The students study in the self-access room , information Centre, Rajamangala University of Technology Lanna, Chiang Rai. Teacher has a role as the consultant.

4. The undergraduate students who enrolled subject 'Research methodology', first semester on 2011 did the achievement test after study for 30 minutes. The students have to pass 60 percent.

5. Marked the test by using Zero-One Method which one point for the correct answer and 0 for incorrect, blank answer, or choose the answer more than one item.

6. Students evaluated their satisfaction to web based instruction on research proposal.

Data analysis

1. Statistic for analysis web based instruction on research proposal is 80/80

First 80 is effective of process
Second 80 is effective of result

2. Figured out the reliability of achievement test by using formula KR-20 of Kuder Richardson (Boonrieng Kajornsilp, 2000. p.163)

3. Compared study achievement of the undergraduate students who enrolled subject 'Research methodology', first semester on 2011 before and after study by using t-test for dependent samples.

4. Result

1. The effective of web based instruction on research proposal is 80/80 which can be concluded that web based instruction on research proposal for the undergraduate students; Rajamangala University of Technology Lanna is 90.01/93.68 which is according to the hypothesis of 80/80

Table 1 the effective of web based instruction on research proposal

Content of web based instruction	E_1	E_2
Unit 1	89.90	93.90
Unit2	91.10	94.60
Unit3	89.90	92.90
Unit4	89.30	93.60
Unit5	90.20	94.30
Unit 6	89.70	92.90
Unit 7	90.00	93.60
Total of the average	**90.01**	**93.68**

2. The comparison for study achievement before and after study for the undergraduate students, Rajamangala University of Technology Lanna who study with web based instruction on research proposal. It was found that the students had higher achievement after study than before study with significant different 0.01 which was according to the hypothesis. This implied that their study had improved.

Table 2 the comparison for study achievement before and after study for the undergraduate

students who study with web based instruction on research proposal.

Content of web based instruction	**N**	**Total the scored of pretest**		**Total the scored of posttest**		**t**
		μ	**σ**	**μ**	**σ**	
Unit 1	**100**	**4.59**	**1.85**	**9.39**	**.49**	**.00****
Unit 2	**100**	**3.58**	**1.97**	**9.46**	**.52**	**.00****
Unit 3	**100**	**3.68**	**1.32**	**9.29**	**.57**	**.00****
Unit 4	**100**	**4.19**	**1.91**	**9.36**	**.50**	**.00****
Unit 5	**100**	**3.68**	**2.05**	**9.43**	**.51**	**.00****
Unit 6	**100**	**3.91**	**1.33**	**9.29**	**.59**	**.00****
Unit 7	**100**	**3.69**	**1.28**	**9.36**	**.59**	**.00****
Total of the average		**3.90**	**1.67**	**9.36**	**0.53**	

3. The satisfaction for 100 undergraduate students, Rajamangala University of Technology Lanna for web based instruction on research proposal found that the web based instruction on research proposal was highly satisfied as in hypothesis

Table 3 the satisfaction for 100 undergraduate students for web based instruction on research
proposal

Item	**Details**	**μ**	**σ**	**Level of satisfaction**
1	clear and consistent of objective and course content	4.06	.69	Much
2	correlate and comprehensive of objective and tests	4.10	.70	Much
3	accuracy of language explained	4.01	.77	Much
4	sequence of the presentation	4.01	.758	Much
5	clear pictures in the lesson	3.96	.75	Much
6	proper font used	3.95	.70	Much
7	document linkage	4.10	.68	Much
8	clear instruction and questions	3.96	.63	Much
9	result declare immediately	4.02	.65	Much
10	fine format display	4.03	.71	Much
11	easy to process	3.87	.69	Much
12	interesting presentation	3.99	.64	Much
13	knowledge obtained from using web based instruction	4.03	.65	Much
14	can be used for writing research paper	3.91	.60	Much
15	assist in research topic decision	4.05	.57	Much
Total of the average		**4.00**	**.13**	**Much**

5. Discussion

1. The effective of web based instruction on research proposal is 80/80 which can be concluded that web based instruction on research proposal for the undergraduate students; Rajamangala University of Technology Lanna is 90.01/93.68 which is according to the criterion. This is because the use of browser those learners can access information at anytime and anywhere. Teacher and students interacted through computer network. This was relevant to the research of Kittisak Wannatong (2002, p. 47-57) which is the learning model for subjects Information technology and computer on software for Matayom 4 students, Anukulnaree school, Muang District, Kalasilp. Research sample was 47 students. The achievement analysis was E1/E2=86.42/83.14 and the index is 0.67

2. Achievement of the undergraduate students, Rajamangala University of Technology Lanna who studies from web based instruction on research proposal was progress. This is because teaching by using computer can solve the problem of

teaching and learning as well as motivated by technology and new teaching styles. Students have skill and can study by themselves. This was relevant to the research of Rung-roj Kaew-u-rai (2000, p.53-60) which is the development of teaching and learning through web network. It was found that the comparative of the students who learned through web network and who did not with the significantly different is 0.01

3. The comparison for study achievement before and after study for the undergraduate students. It was found that the students had higher achievement after study than before study according to the criterion with was 60 percent. This is because web based instruction contains animated figure and character with no calculation. The students have to concentrate on the lesson which can create motivation that the students can know their score. This is relevant to the research of Akekarin Vijitpan (2003, p. 73-82) who studied e-learning for subject 'Information communication' for 40 diploma students majored computer, faculty of Electical Power. The result was the achievement after study was higher than before study with significantly different 0.01

4. The satisfaction for undergraduate students, Rajamangala University of Technology Lanna of web based instruction on research proposal was highly satisfied. This is because of motivation that the students used all sensations such as look, touch, and listen. The content concerning the matter that can be applied in everyday life. The students like to study. This is relevance to the research of Pornphom Chupwa (2004, p.87-90). She studied the development of web based instruction subject 'Operating system', parts of computer for diploma students, Yasotorn commercial technology, Muang district, Yasotorn. It was found that the satisfaction to web based instructor was highly satisfied.

6. Suggestion

1. Compare E-learning and computer assisting instruction such as internet or intranet in the other subject.

2. Compare achievement of web based instructor every units of each subject

3. Compare the students who are going to continue their study and who are going to work by using web based instructor

4. Conduct research regarding the development of web based instructor as stand-alone or internet or intranet.

5. Conduct collaboration research for web based instructor for teacher and students in all subjects.

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