THE USAGE OF LEARNING ROOTS FOR INFORMATION SCIENCE COURSES IN MAHASARAKHAM UNIVERSITY, THAILAND

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ABSTRACT

Describes the use of learning root for Information Science undergraduate courses in Mahasarakham University, Thailand in terms of content, delivery, access, interaction, and assessment. This is an experimental research using Web-Based Instruction (WBI). A total of 244 questionnaires (97.21%) were analyzed. The results reveals that firstly, most students enter the root through the Language course, the students use the learning root in various styles, for example, students who study Computer and Business always spent more time with courseware module, the students who study Language and Internet enjoy reading magazine whereas the students who study Information Industry like to read about publishing. Secondly, most students agree that the content can be placed in server and delivered from website named noc.rimhk.ac.th/aom. Thirdly, most students access the learning root from their department's laboratory. The students in Languages course show more interaction by writing on electronic board to ask how to use webpage. Students score pass at 50% from the quiz, the traditional assessment after using learning root. The important problem of learning root is the format of web pages that are chosen.

Keywords: Information science courses; Web-based instruction; Computers in education; Learning root; Thailand

INTRODUCTION

Nowadays, Web-based instruction (WBI) is popularly used in educational institutions because it represents hypermedia efficiently. WBI enables continued involvement in the learning process at anytime and in anyplace. The growth of WBI is bringing mixed message of the educational benefits and learner's satisfaction.

Web-based instruction has evolved from a number of computer-based instruction method, often referred to as Computer-Assisted Instruction (CIA), Computer-aided Instruction (CaI), Computer-Managed Instruction (CMI), Internet-Based Instruction (IBI), or Web-Based Instruction (WBI), and collectively called Computer-Based Education (CBE). CBE uses the World Wide Web as a repository for instructional information and the Internet as the distribution

channel for that content will be referred to as Web-Based Instruction (WBI) (Mathew and Dohery-Poirier, 2003)

There are four components of WBI are (Roungrong, 2003)
- System : content, hardware, teacher, student
- Assessment : exam, homework, group presentation
- Interaction : e-mail, webboard, chat, conference, e-homework
- Learning root : web sources which give student the lesson content.

Learning root can support the WBI because there are million of webpages devoted to educational purposes, which are increasing and also there are increasing number of institutions seeking new ways to reach more learners (Hill, 2000). Then a lot of web pages will be the best choice of materials for WBI to choose for supporting class learning.

There are several LIS-related courses offered in Thailand. The first is the Information Science Curriculum of Mahasarakham University, Thailand, which integrates information science courses (classic library science) and information technology courses (modern technology). In this programme, students are given the chance to learn in classroom and practice in the department's computer laboratory. The Information Science courses encompass information services, research, language, information management, classification and cataloging, information source, and communication. The information technology courses include computer, office automation, system analysis, database, Internet and networking.

The Department of Library and Information Science in Mahasarakham University, Thailand also maintains their own website with Web-Based Instruction at www.is.msu.ac.th. However, this WBI is not completed because there is only course outline for each subject. The main problem is the lack of people who will assist lecturers to manage the website.

In Thailand, Internet has become important in supporting education and is called Web-based Learning, that means using the WWW to present lessons. The people who develop the Web-Based Instruction are instructors or anyone who is interested in technology. There are three styles of WBI in Thailand (NECTEC, 2003).
- Text Online: A WBI that has text, PDF, PPT files for downloads, for example, www.school.net.th/library
- Low Cost Multimedia Online: A WBI that has animation but do not use web programming and login system, for example, www.nectec.or.th/courseware

- Full Multimedia online: A WBI has multimedia and use web programming and login system for tests and assessments. An example is www.thaiwbi.com

However, the problems faced when developing the WBI in Thailand are identified as:
- Lack of budget, people and support from the head.
- Lack of knowledge about technology.
- Copyright of software and content.
- Lack of appropriate infrastructure
- Lack of a standard for webpage format in the Thai language.

The concept of how learning root can be applied in website research and WBI has been studied by a number of researchers in Thailand. Phaosiri (2003) found that the condition of utilizing library web sites is addition to class learning. The problem of using the website is due to its English content and he stressed the importance of updating the information. Sinthuphong (2000) found that most websites of the Governmental University libraries have plain layout and use thick letter for the agency's name. Frames are used in presenting information and various colors are used as the background. Multimedia and Interactive technology are rarely used.

Sasoda (2002) found that most undergraduate students used the information in text format. Most students use computers in Internet shop. The problem with WWW services is that the information did not meet their information need, as there were too many advertisements on web pages. Most students selected information by considering authors associated with government organizations. Liamthaisong (2003) and Wanpan (2003) designed an instrument as Web- Based Instruction programme and found that learners decreased their learning retention. The learners had satisfaction after learning. So, instructors are able to design an instruction programme by presenting contents through WBI but they must adhere to the correct principles of design.

This paper attempts to describe the development of a WBI learning tool and the user feedback after using the tool. There are two parts this research: (a) designing webpage with learning roots and (b) the survey of using the learning root.

THE DESIGN OF WEB- BASED INSTRUCTION (WBI)

Leaning root, a part of WBI, is the webpage source which gives the lesson content. Because of this meaning, the researcher begins by designing a webpage that links to 5 courses, Language, Computer, Business, Internet and

Information Industry, and add web pages or learning root that have the content to support each courses. The layout uses the frame technique design the webpage.

The processes of the instrument design used are:
(1) Content: The researcher develops the Webpage by using the web developer in Macromedia Dreamweaver using PHP language, so that many browsers could support this webpage
(2) Delivery: The researcher places content on a server at the college institute which supports PHP language and named of website **noc.rimhk ac.th/aom** (Figure 1 and Figure 2)
(3) Access: Students who use this webpage can access it through the Internet from anywhere, department's laboratory, dormitory, Internet café, and places which have Internet connection.
(4) Interaction: The researcher provides electronic board in each page to provide an interactive environment so that students could write any comment about the webpage.
(5.) Assessment /Feedback: Assessment is still in the traditional form as the researcher provides the quiz on each webpage.
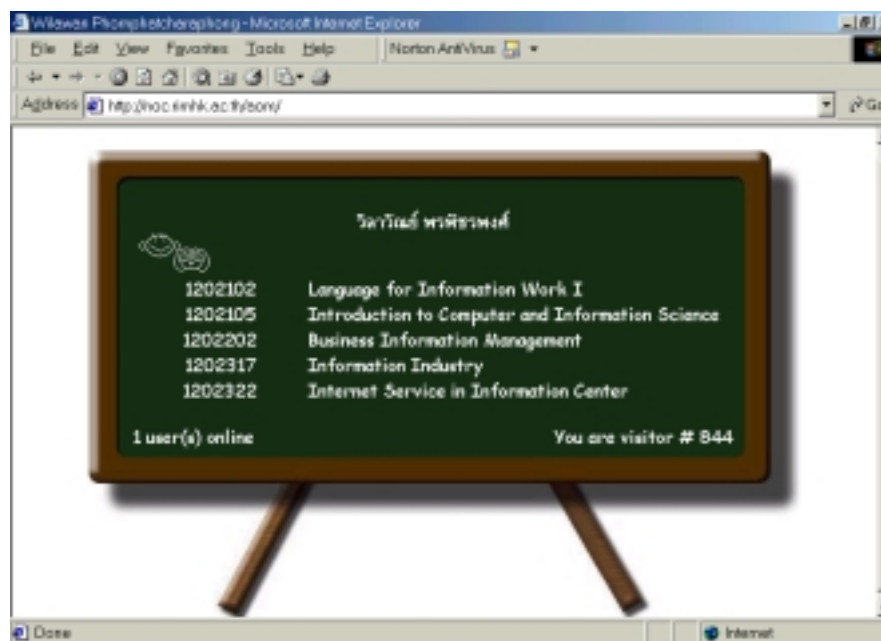

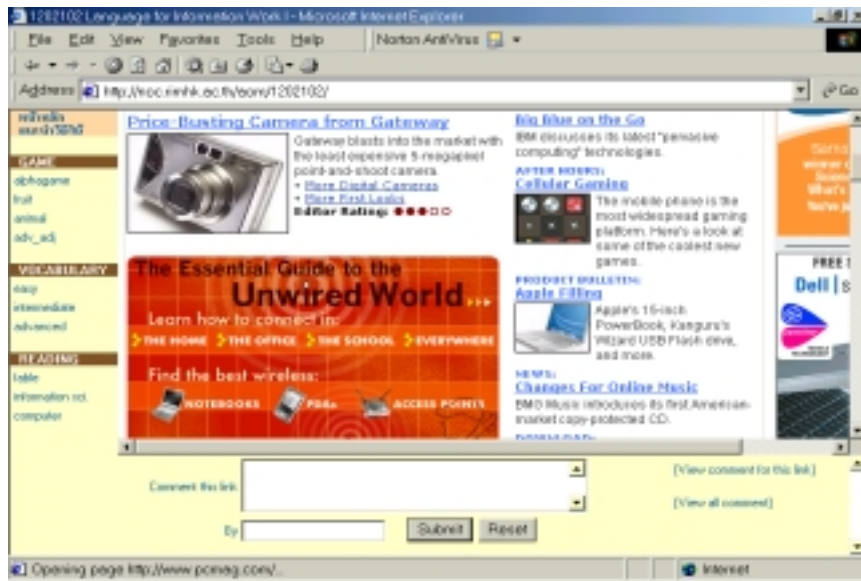Figure 1: Main Page of Learning Root (noc.rimhk ac.th/aom)

Figure 2: Example of Learning Root in the Business Course

USAGE SURVEY

Survey on using learning root for 255 information science undergraduate students was carried out in 2003.The respondents are information science undergraduates of Mahasarakham University, Thailand who are studying in Semester 1 of 2003. The respondents are registered for five courses, namely Computer, Language, Internet, Business and Information Industry. These courses comprise both information science and information technology courses (Table 1). However, the usable of questionnaires is only 244 (97.21 %).

Table 1: Information Science Undergraduates Students in
Mahasarakham University, Thailand.

Course	Male		Female		Total Surveyed	Total Usable	%
	Surveyed	Usable	Surveyed	Usable			
Computer	19	19	58	55	77	74	96.10
Language	19	19	58	56	77	75	97.40
Internet	3	3	24	23	27	26	96.30
Business	15	15	52	51	67	66	98.51
Information Industry	0	0	3	3	3	3	100.00
Total	56	56	195	188	251	244	97.21

The questionnaire is given to respondents after they use the webpage which have learning root. There are three parts in the questionnaire comprising background of Information Science undergraduate students, their computer and Internet

skills: Usage of learning root, content, delivery, access, interaction and assessment; and problems as well as suggestions and attitudes towards using learning root.

ANALYSIS AND DISCUSSION

(a) Computer Skills Among Information Science undergraduate students

Most information science undergraduates begin use computer when studying in high school (84.43%) (Table 2). In Thailand, there is computer curriculum in high school and most schools have their own computer laboratories. Most students use Windows and the application widely used is Microsoft word (89.75%). Other word processing software is used are CW, and RW.

Table 2: Experiences of Computer Skills and Using Software

Education		Male	Female	N=244	%
Primary school		6	27	33	13.52
High School		48	158	206	84.43
University		2	3	5	2.05
	Total	56	188	244	100.00
Software		Male	Female	N=244	%
Windows (MS word)		46	173	219	89.75
Dos (RW, CW)		10	15	25	10.25
	Total	56	188	244	100.00

(b) Internet Skill

Most information science undergraduates begin using the Internet when studying in high school (90.98 %) (Table 3). Most students also use the WWW services (67.62%) (Table 4). Most high schools in Thailand have their own computer laboratories and are connected to the Internet. Students also found using the WWW services easy.

Table 3: Experience of Internet Skill by Level of Education and Gender

Education		Male	Female	N=244	%
Primary school		2	5	7	2.87
High School		50	172	222	90.98
University		4	11	15	6.15
	Total	56	188	244	100.00

Table 4: Types of Internet Services Used by Gender

Internet Service	Male	Female	N=244	%
WWW	39	126	165	67.62
e-mail	4	27	31	12.71
Chat	13	35	48	19.67
Total	56	188	244	100.00

(c) Usage of Learning Root Contents

Five courses are used in the research. Most students are registered in the Language course (41.40%) and some are enrolled in the Computer (26.80%) and Business course (17.52%) (Table 5). More students are registered in the Language and Computer courses because they are core (compulsory) courses.

Table 5: Students Enrolment in Sample Courses

Course	N=244	%
Computer	1,038	28.60
Language	1,503	41.40
Internet	283	7.80
Business	636	17.52
Information Industry	170	4.68
Total	3,630	100.00

Most students who study in the Computer course enter the learning root through the courseware (59.54%) (Table 6) because most students know that the assessment will be the quiz, and therefore courseware is generally read.

Most students who study in the Language course enter the learning root through the Magazine (37.13%), as well as the game and vocabulary resources. The magazine contains a lot of stories that they must spent a lot of time to read.

Those who are enrolled in the Internet course enter the learning root through News (42.05%), as well as read courseware and HTML from other books.
Similar to those enrolled in the Computer course, most Business course students enter the learning root through Courseware (55.35%) to access the quizzes.

Most students who study Information Industry course enter the learning root through Publishing (34.12%) resources. Table 6 presents the findings.

Table 6: Types of Contents Frequently Accessed by Course Enrolment

(a) Computer		N=74	%
Magazine		197	18.98
Courseware		618	59.54
News		223	21.48
	Total	1,038	100.00
(b) Language		N=75	%
Magazine		558	37.13
Game		505	33.60
Vocabulary		440	29.27
	Total	1,503	100.00
(c) Internet		N=26	%
News		119	42.05
Courseware		95	33.57
HTML		69	24.38
	Total	283	100.00
(d) Business		N=66	%
Magazine		190	29.87
Courseware		352	55.35
E-commerce		94	14.78
	Total	636	100.00
(e) Information Industry		N=3	%
Publishing		58	34.12
Entertainment		50	29.41
Voice		16	9.41
Data		33	19.41
Image		13	7.65
Total		170	100.00

(d) Language of Resources Preferred

Most students enjoy using learning root in the Thai language (229, 93.85%) as they believe that hey understand content easily and they can read quickly if they do not have much time. Only a few respondents read contents in English (15, 6.15%)

(e) Location of the Contents

Most students agree that content can be placed in the web server at noc.rimhk.ac.th/aom (243, 99.60%) as they believe that they can follow the content in each website and they can enter any server name. Only one respondent shows disagreement.

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f) Location of Access

Most students access the learning root from Department's laboratory (74, 30.33%) because these students come to class everyday and spent their free time to use the computer in the department's laboratory. Other locations used to access the learning root are from computers at the Computer Centre (64, 26.23%), home (62, 25.41%), Internet Café (26, 10.65%) and Dormitory (18, 7.38).

(g) Frequency of Interaction

More students who study in the Language course indicate interacting more with the learning root (Table 7). The web pages of the Language resources are in English and students frequently write comments about how to read each page. .

Table 7: Frequency of Interaction with Learning Root by Course Enrolment

Course		N=142	%
Computer		52	36.62
Language		71	50.00
Internet		16	11.27
Business		1	1.41
Information Industry		2	0.70
	Total	142	100.00

(h) Performance on the Quiz Module

Most students score passes with 50% (70.50% of respondents) when they take the quiz (Table 8), because these students know that they will have quiz from learning root in each course, and hence they study hard till they pass the quiz.

Table 8: Performance on the Quiz Module

Score		Male	Female	N=244	%
Less than 50%		19	53	72	29.50
Pass 50 %		37	135	172	70.50
	Total	56	188	244	100.00

(i) Problems When Using the Learning Roots

Most students face problem with the format (71.31%) of the resources (Table 9). The reason being most web pages became learning root have complex formats, such as having small font size with bright background. Students feel that these formats reduce their level of concentration. However, because of copyright reasons, the researcher cannot change the style of any of the learning root.

Table 9: Problems Faced When Using Learning Root

Problems		Male	Female	N=244	%
Format		38	136	174	71.31
Content		18	52	70	28.69
	Total	56	188	244	100.00

(j) General Assessment

All students feel that the learning root is very useful (100.00 %) because they can read a lot of resources anywhere and at anytime. Moreover, they feel that they can handle easily the content which they learn.

Most students suggest that learning root be adapted in some courses (143, 58.61%) since they want to practise their lesson which they have learned in each semester on their own. About less than half of the respondents (101, 41.39%) made suggestions for the learning root to be used in every course.

CONCLUSION

The WWW allows developers to create link between text and other media not only within an individual document but also between documents riding on any computer in the world which have access to the Web. One approach to using these features for teaching /learning is to create documents which contain hypertext or hypermedia links, so that the learners could follow in a sequence which is often unique to the individual learner. The provision of this kind of facility has provided a number of advantages to learning (Alexander, 2003).

Student need not follow a lock-step regimen to learning but are able to pursue learning in a self-paced manner. There are number of reasons why a teacher might choose Web-based Instruction, which include (Mathew and Dohery-Poirier, 2003):
- It enhances student learning
- Students are given more time to work on their own.
- It reduces repetitive teaching task
- It reduces paper flow and management
- It provides improved instructional material

There are four basic components of WBI, and those are the availability of a system, assessment, interactive and learning root. Learning root helps to support the WBI for courses. In the case study of Mahasarakham Unversity, Thailand, undergraduate students of Library and Information Science show that learning

root is useful and help them to meet various reading materials, magazine, courseware, news and know the location of information used. However, the problem of learning root is the format, font and background of web pages. Finally, most students believe that learning root is helpful and suggest that more courses should use the learning root approach.

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