

Final Report On

Capacity Building Using e-Learning Project

Skill and Competitiveness for Poverty Reduction in
Northeastern Thailand

Prepared for
The Ministry of Information and
Communication Technology



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Executive Summary

The poor productivity performance of Thai firms over the last decade, and gaps in international competitiveness, are now well understood as both causes of the 1997 financial crisis. The World Economic Forum, through its 2003/4 Global Competitiveness Report, ranks Thailand 32 out of 102 countries overall, but 37th in Innovation and 45th in Information and Communication Technology (ICT) diffusion.

The government has responded by establishing institutions and specific programs to address these weaknesses. Nowhere are these gaps more acute than in the Northeast of Thailand. The Royal Thai Government has focused particular attention on improving the competitiveness of the Northeast due to its high concentration of poverty. The proposed project utilizes ICT as an enabler to achieve poverty-reduction objectives. The Ministry of Information and Communication Technology (MICT) has received a grant from the World Bank to be used for the development of skills and competitiveness to reduce poverty in the Northeast region of Thailand.

In order to respond to the World Bank and the Ministry of Information and Communication Technology (MICT) request, **the Capacity Building Using E – Learning Project : Skill and Competitiveness for Poverty Reduction in Northeastern Thailand** was set up and implemented. The primary objective of this project is to provide better opportunities for people in the Northeast of Thailand by building e – learning skills and enhancing their productivity through the local education institutions. This was aimed at (a) developing understanding of e-learning tools, and (b) enhancing skills in creating an online course, in order to fulfill needs and plug the gaps that have been identified by the survey study.

In this project, the e-learning training program was designed, developed and provided for the benefit of the trainees who are teachers, government employees, laborers and interested people living in the Northeast of Thailand. In particular, there were three different courses (trainings). These were (a) an e – learning course (b) a Moodle course : Content Management Systems (CMS) , using Moodle software, and (c) a portal training. The portal training was provided separately from the e – learning training and Moodle training. The portal training was provided on August 07, 2006 but e – learning training and Moodle training were provided on April 17, 2006 – May 25, 2006.

The findings of the trainings indicated that they were successful in helping the trainees to gain understanding and knowledge related to e – learning and the features of the CMS (Course Management System) by using Moodle software. The trainees have acquired e – learning skills and have been able to develop their own online courses by using Moodle software. In addition, the present findings also indicated that the majority of trainees showed a relatively higher degree of satisfaction with both the e – learning course and Moodle course, regarding the effectiveness of the trainers, course contents, and teaching materials provided in the trainings. Moreover, the trainees showed very high degree of confidence in using the e – learning skills that they had learned from the trainings.

It is expected that acquiring e – learning skills may enable the trainees to get jobs or to work more efficiency. Additionally, the trainees who are teachers may now also have the ability to create their own online courses, so that they can teach their students any skills in any content areas. Therefore, the students will have the opportunity to learn any skills according to their needs from any location.

Furthermore, to assist and to support the development of e – learning, especially in creating the online course by using Moodle software, the portal or ICT site was also developed and made available to the trainees (users) and other interested users. The goal of the ICT site is to provide the users with the information or awareness of issues related to the institutions, employer organizations and students that were collected from the survey study. For instance, a manager of an employer organization can search for detailed information about the employees when he is looking for new employees. The ICT site also gives users opportunities to share their e – learning knowledge with the community. Many users and organizations in Thailand are at an early stage in adopting e – learning and may need such help in creating their online courses and searching for the information they require. Therefore, we believe that the users will obtain numerous benefits when visiting this site.

According to the findings of the current trainings, it is reasonable to conclude that building e – learning skills for the trainees, by providing them with e – learning training, Moodle training, and portal training may increase the quality of available human resources, particularly regarding people in the Northeast of Thailand. It is believed that when the knowledge, skills and abilities of these people improve, poverty in these regions will eventually decline.

Scope of Work

The scope of work of the consultant included the following :

- (1) Submitting the inception report.
- (2) Completing final syllabus of the trainings and online courses, according to the templates provided by the e – learning specialist.
- (3) Developing teaching materials and supplements required in the trainings.
- (4) Developing assessment materials on the effectiveness and usability of the materials and e – learning software, according to the guidelines set by the e-learning specialist.
- (5) Obtaining target group access for e-learning and portal trainings.
- (6) Developing training plans and schedules.
- (7) Providing e-learning training, Moodle training, and portal training.
- (8) Assisting the trainees in creating their online courses during the trainings.
- (9) Providing assistance and support to the local educational institutions in handling the e – learning software.
- (10) Following up on the knowledge-building process by obtaining feedback from the target groups.
- (11) Analyzing data and summarizing the findings of the trainings.
- (12) Writing and submitting the final report.

Description of the Findings of the Trainings

There were three different courses (trainings) for the current training program. These were (a) the e – learning training (b) the Moodle training and (c) the portal training. Therefore in this report, I begin with an introduction section, describing the reasons why this project was undertaken and implemented.

Secondly, I provide an overview of Internet and e – learning use and research in Thailand. In doing so, it will give the readers some understanding of Thai people in terms of using the Internet, e – learning, and Moodle software. Thirdly, I describe the training methodology, assessment materials and data analysis. Next, I present the findings of the trainings (both e – learning course and Moodle course) regarding the effectiveness of the trainings, evaluating the qualities of courses, and the confidence in using skills of e – learning and Moodle software. Then, I provide a discussion and conclusion regarding the training, and offer suggestions for future training.

Finally, this report ends with the portal training section, since portal training was provided separately from e – learning training and Moodle training. This part of the report describes the activities on the portal training day. The description of the findings of the trainings is as follows :

Introduction

The poor productivity performance of Thai firms over the last decade, and gaps in international competitiveness, are now well understood as both causes of the 1997 financial crisis, and central questions in sustainable recovery. Global assessments of Thailand's international competitiveness ratings, from such institutions as IMD and World Economic Forum, have improved slightly over the past few years. The World Economic Forum, through its 2003/4 Global Competitiveness Report, ranks Thailand 32 out of 102 countries overall, but 37th in Innovation and 45th in ICT diffusion.

The government has responded by establishing institutions and specific programs to address these weaknesses. Nowhere are these gaps more acute than in the Northeast of Thailand. Out of Thailand's 76 provinces, 17 of them account for 70 % of Thailand's poorest population. 15 of these provinces are located in the Northeast. The Royal Thai Government has focused particular attention on improving the competitiveness of the Northeast

due to its high concentration of poverty. The Royal Thai Government's strategy to address the competitiveness gap in the Northeast rests on building skills to increase the quality of human resources, regional economic integration, both of the local economy and with neighboring countries in the region, natural resources management and the creation of better opportunities for the poor to enhance their skills and competitiveness. The proposed project utilizes ICT as an enabler to achieve these poverty-reduction objectives.

The Ministry of Information and Communication Technology (MICT) has received a grant from the ASEM II Trust Fund administered by the International Bank for Reconstruction and Development. This fund is to be used for the development of Skills and Competitiveness to reduce Poverty in the Northeast region of Thailand. To carry out the activities under the grant with due diligence and efficiency, the MICT has established a Project Implementation Unit (PIU) within the Ministry.

The capacity building using e-learning was one of activities under this grant. The primary objective of this project was to support the capacity building of educational institutions, firms, and policy makers to utilize the ICT solution and to utilize e-learning as a method to promote integration in the Northeast of Thailand. In particular, the e-learning training was designed, developed, and provided to the teachers and people in the Northeast region of Thailand, and was aimed at (a) developing understanding of e-learning tools, and (b) enhancing skills in creating online courses, in order to fulfill needs and gaps that have been identified by the survey study.

From the above global view, in local aspects, it should be emphasised that, in ICT based learning, technology is a means and not an objective in itself. The real question is how the technology is used by teachers and students. In the very traditional model, each student had his/her own tutor. With the help of ICT, one teacher can assist many students in many places. This helps to reduce costs and increases the impact of the learning process, which eventually helps improve the human capacity building of the region.

E – learning in Thailand

E – learning has the potential to reach out to more people than hitherto possible with conventional learning methods, not only geographically, but demographically. E – learning is a valuable development tool that can reach out to the underprivileged and help build a culture of

life-long learning into society at large. It can give those too busy, too poor, too weak or too old an equal opportunity for education and a degree or diploma on which to build a better life for themselves (Rattakul & Morse, 2005).

Universities all over the world are offering e – learning so that students can study any subject from anywhere and at anytime. Many research studies in Thailand showed that e – learning has become an increasingly important delivery format and may even dominate training in the near future (Bong, 2002).

In Thailand, the Internet was first introduced by Asia Institute of Technology (AIT) in April 1988 and was first used in academic fields. According to the statistics of ITU in 2001, the number of Internet users in Thailand in 2001 was about 3,536,000 which means that the Internet diffusion rate in this year was about 5.77%. Comparing this figure with the results of an investigation by ITU in 1999, in which the number of Internet users was about 1.3 million, reveals that the number of Internet users in Thailand has been growing steadily. Moreover, with the boom of the Internet in 1994, many organizations, universities and governments have exploited the Internet to deliver educational and training programmes as they see some limitations in the usual face-to-face classroom environment.

In 1964 an IBM 1620 was installed at Chulalongkorn University and signified the Thailand' s entrance into the Computer Age (Charmonman & Chorpothon, 2002). At that time, an estimated three million computers have been purchased and deployed throughout the country. As a result of this ever increasing growth of networks and technologies, Thailand currently ranks 37th overall in terms of e – learning readiness when compared against other nations around the world (EIU, 2003).

In 2002, approximately 20% of Thailand' s 70+ universities were offering some form of E-Learning / Distance Education programs in Thailand with most of these offerings involving broadcasting of video from one institution to another versus utilization of Internet-based e-learning environments (Asian e – Learning Network, 2003). The 20% figure is continuously growing however as numerous higher education institutions are expanding their online presence.

In 2004, Chorpothong and Charmonman' s research reported that in the year 1994, Assumption University of Thailand announced a project to increase the number of Internet users in Thailand from about 3,000 to 100,000. Many people thought it was too ambitious but the

target was achieved. In the year 2002, Assumption University of Thailand announced a project to offer e – learning to eventually 100,000 students per year. Again, some are skeptical but Assumption University goes ahead wholeheartedly by constructing Srisakdi Charmonman IT Building to house the College of Internet Distance Education to do the job. The main problem is that the government of Thailand has not established any law to allow universities to offer e – learning degree programs. So, the College has to start with classroom –based programs to be converted to e – learning later, as well as preparing to offer all kinds of short courses. It is hoped that by the year 2010 or before that, the target of 100,000 students, if not more, will be reached.

In 2005, Rattakul and Morse studied the e – learning market in Thailand. The intention of this research was to determine the market size of e – learning in the government sector in Thailand in the particular timeframe of the budget year 2005. The results revealed that currently 152 tertiary institutes, 413 vocational institutes, and 22,738 schools are wired onto the network. E – learning and Information and Communication Technology (ICT) have been introduced to more than 20,000 schools and academic institutes. Additionally, there are 37 IT campuses with approximately 9,000 students graduating each year. ICT capacity building has been provided to teachers in remote schools with 1,500 teachers trained in Thailand, and 700 trained in Singapore in 2004.

Moodle

Since a part of this training deal with the use of Course Management Systems (CMS) by using Moodle software. For the purpose of clarification, I provided the following definition of an CMS and features of Moodle software in this section.

A Course Management System (CMS) is different than a Learning Management System (LMS). An LMS focuses more on the students. An CMS focuses more on the learning content. An LMS schedules and registers students for full online and offline courses, launches e – learning courses, and tracks a student’s progress through a course. An CMS manages the creation of learning content, manages the personalized delivery of leaning content to student to students, and provides more extensive tracking of the student’ s interaction with learning content.

Moodle is a Course Management System (CMS) – a free, open source software package designed, using sound pedagogical principles, to help educators create effective online learning communities. Moodle supports more than 70 languages and its ease of

installation and maintenance has been the main reason for more than 100,000 official registered users of Moodle over 150 countries. Moodle has got one of the best support systems and with its online communities any question could be answered easily and promptly. It is easily customizable for different use and application.

Because of the features of Moodle, recently, the Moodle learning environment is becoming increasingly popular in Thailand, particularly in educational institutions. Therefore, in this training, Moodle software was selected to be introduced to the trainees.

In order to select the most suitable open source CMS for a particular e – learning environment, the organizations providing e – learning should consider the following points :

1. What are the program objectives for the individual learners, training institutions, and sponsoring organizations?
2. How will progress be measured, tracked, and reported?
3. What learning content will be required for each learner, now and in the future?
4. What support tools (labs, references, collaboration, etc.) will be required by the learners?
5. How well are the various components integrated?
6. How well does the platform (CMS) support a rigorous instructional design model?
7. Does the platform allow full exploitation of the qualities of the content?
8. How well does the platform manage professional development objectives including specified learning paths and bricks - and – mortar events?
9. How well does the platform support administrative objectives?
10. Is the platform secure?

Training Methodology

The training program consisted of three different trainings : (a) the e – learning training, (b) the Content Management Systems (CMS) using Moodle software training and (c) the portal training. The main objectives of e-learning training were helping the trainees to become familiar with : (a) major e – learning tools and (b) features of the major e – learning tools, including the benefits and weaknesses when using it for teaching. The main objectives of Moodle training were assisting the trainees : (a) to become familiar with the Moodle

environment, (b) to learn to use the fundamental features of Moodle and (c) to design online courses using Moodle software. In addition, the portal training was aimed at introducing the trainees to the ICT site.

To achieve the objectives of providing total concepts, skills, and knowledge through these trainings, a large variety of teaching methods were used. These were as follows :

1. Class room lectures using Power Point Presentations were used to teach the concepts, theoretical and technical knowledge.
2. Demonstration was used when the trainers taught how to use the fundamental features of Moodle, and how to design, organize, manage the online content on Moodle and etc.
3. Group discussion was used when the trainers and the trainees wanted to share their past experiences in using the Internet and Moodle software.
4. Practical hands – on activities were used when the trainees learned how to use the Internet, e – learning tools, and Moodle software.

Moreover, in the trainings, information technologies, audio – visual aids and networked microcomputers connected to the Internet were provided in order to facilitate file sharing, group work and information research for course presentations. The trainees were provided with supplementary materials and information on diskettes that enabled them to design and to develop course materials for their own online courses. It could be said that the training used a trainee or participant – centered approach which encourages the active participation of every trainee. It validates trade union experiences brought by the trainees to the courses. It also assists the trainers who deliver the technical components of the courses.

Assessment Materials

The assessment materials that were designed to measure the effectiveness of the training, including the usability of the materials and software, were (a) Demographic Survey (b) E-learning Training Assessment Items (c) Moodle Essential Training Assessment Items (d) Course Evaluation of the E-learning Training Course and (e) Course Evaluation of the Moodle Training Course (See Appendix C).

Data Analysis

A total of 251 participants or trainees enrolled in the five training sessions. These trainings were held at the Computer Center of the Faculty of Humanity, Khon Khan University, in Khon Khan Province, Thailand, from mid- April through the end of May, 2006. Each of these four- day trainings consisted of the e – learning course (introduction to e – learning, effective design of e – learning) and the CMS course (using Moodle software).

The details of each training is as follows :

1. Training I was provided on April, 17 - 20 of 2006 and there were 54 trainees attending the training.
2. Training II was provided on April, 25 – 28 of 2006 and there were 44 trainees attending the training.
3. Training III was provided on May, 01 – 04 of 2006 and there were 60 trainees attending the training.
4. Training IV was provided on May, 15 - 18 of 2006 and there were 52 trainees attending the training.
5. Training V was provided on May, 22 – 25 of 2006 and there were 41 trainees attending the training.

On the first day of each training session, prior to the training, the trainees were asked to respond to a questionnaire that consisted of all assessment materials to measure their prior knowledge in relation to the contents that were taught in the training. The scores of this test were obtained as pretest scores. Then, the same questionnaire on a separate sheet was provided at the end of the last day of the training, measuring the trainees' understanding of the course content that was taught during the training. The scores of this test were called posttest scores.

This report presents the results of the effectiveness of the trainings by a comparison of the pretest and posttest scores. Furthermore, demographic information regarding the trainees, the levels of the trainees' evaluations of the qualities of the courses, and the levels of the trainees' confidence in using e – learning and Moodle software are also reported.

Although there were 251 trainees participating in the training, there were only 189 trainees who completed all assessment items. Therefore, in the present report, the data of only these 189 trainees was analyzed by using SPSS software.

Demographic Information of the Trainees

According to the demographic survey data, there were 94 females and 103 males. Most of them were teachers (51%) and the highest degree that most had obtained was a bachelor's degree (62%). The average age of the trainees was 37 years with the maximum age of 57 and the minimum age of 16. The genders, education levels, and occupations of the trainees is presented in Table 1.

Table 1 shows genders, education levels, and occupations of the trainees

Variables	n	percentages (%)
1. Genders		
Female	94	37.50
Male	103	41.00
No specific	54	21.50
Total	251	100.00
2. Education Levels		
High School	4	1.60
Bachelor Degree	121	48.20
Master Degree	66	26.30
Other	60	23.90
Total	251	100.00
3. Occupations		
Teacher	129	51.40
Government Employee	5	2.00

Business person or merchandiser	1	.40
Private Company Employee	8	3.20
Laborer	9	3.60
Other	99	39.40
Total	251	100.00

Results of the Effectiveness of the Trainings

To investigate the effectiveness of the training, the project consultant developed the assessment materials, as mentioned before, to assess the trainees' understanding on the contents (both e – learning and Moodle courses) that were taught in the training.

In the present report, a paired samples t-test was performed (see Table 2). Based on this analysis, the trainees scored significantly higher on the posttest than the pretest. The result indicated that the current training (both e – learning and Moodle courses) has successfully enhanced the trainees' understanding of the course contents that they have learned from the training.

Table 2 shows the comparison of the trainees' mean scores on understanding the contents before and after the training

Training periods	Mean	S.D.	t
Pretest (before training)	18.21	4.03	4.812**
Post test (after training)	20.15	3.06	

** Significance at .01

Additionally, an independent t-test was also performed to assess the differences in the trainees' understanding of the contents for males and females, contrasting mean scores on the pretest and the post test for each gender (see Table 3).

Before the training, the difference of the pretest scores between males and females was small. Therefore, there was no significant difference in the trainees' understanding the contents between males and females.

Likewise, after the training, the difference of the post test scores between males and females was also small, therefore, there was no significant difference in the trainees' understanding of the contents between males and females. According to this analysis, it concludes that no significant gender difference was found either before or after the training.

Table 3 shows the comparison of mean scores on understanding of the contents for males and females

Training periods	Genders				t
	Males		Females		
	Mean	S.D.	Mean	S.D.	
Pretest (before training)	18.4	4.1	18.0	4.0	.719
Post test (after training)	20.0	2.9	20.9	3.2	.54

In summary, the results indicated that overall trainees demonstrated higher levels of understanding of the contents that were taught in the training. Moreover, there was no significant difference in the trainees' understanding of the contents between males and females either before or after the training.

Levels of the Trainees' Evaluations on the Qualities of the E-Learning Course and Moodle Course

At the end of each training session, the trainees were asked to indicate the levels at which they personally rated the qualities of the e - learning course and Moodle course. The rating scales for evaluating varied from 1 (poor) to 4 (excellent). According to the course evaluation data, most trainees evaluated the qualities of the e - learning course and Moodle

course as an “excellent”. The average levels of the trainees’ evaluations ranged from 3.17 to 3.54 for the e-learning courses as shown in Table 4 and ranged from 3.27 to 3.56 for the Moodle courses (see Table 5).

Table 4 shows means and standard deviations of the trainees’ evaluations on the quality of the e-learning course

Items	Mean	S.D.
1. How well did the overall course meet the objectives?	3.38	.594
2. How knowledgeable and effective was the trainer?	3.47	.541
3. How appropriate was the method of presentation?	3.23	.618
4. What was the quality of the course materials like?	3.54	.639
5. What was your overall rating of the course?	3.17	.624

Note : 1 = poor, 2 = adequate, 3 = good, 4 = excellent

Table 5 shows means and standard deviations of the trainees' evaluations on the qualities of the Moodle course

Items	Mean	S.D.
1. How well did the overall course meet the objectives?	3.42	.568
2. How knowledgeable and effective was the trainer?	3.55	.531
3. How appropriate was the method of presentation?	3.27	.607
4. What was the quality of the course materials like?	3.56	.571
5. What was your overall rating of the course?	3.31	.591

Note : 1 = poor, 2 = adequate, 3 = good, 4 = excellent

In summary, the findings indicated that overall trainees showed a relatively higher satisfaction with both the e - learning course and Moodle course, in terms of the effectiveness of trainers, course contents, and the materials that were provided in the trainings.

Levels of the Trainees' Confidence in Using E – Learning and Moodle

At the end of each training session, the trainees were also asked to indicate their levels of confidence in using the skills that they had learned from the training (both the e - learning course and Moodle course). The rating scales for the evaluations varied from 1 (not at all confident) to 4 (very confident). According to the course evaluation data, most of the trainees were very confident in using the skills from the e – learning and Moodle courses. The average levels of the trainees' confidence in using the skills taught in the e –learning course ranged from 3.19 to 3.44 (see Table 6) and ranged from 3.13 to 3.30 for the Moodle courses (see Table 7).

Table 6 shows means and standard deviations of the trainees' confidence in using e – learning

Items	Mean	S.D.
1. To explain what e-learning is to your students	3.44	.539
2. To explain features of some major e-learning tools to your students	3.21	.569
3. To evaluate strengths and weaknesses of existing online courses	3.24	.539
4. To design a syllabus for an online course that is to effectively support learning in your subject area	3.19	.553

Note : 1 = not at all confident, 2 = not very confident, 3 = moderately confident,
4 = very confident

Table 7 shows mean and standard deviations of the trainees' confidence in using Moodle

Items	Mean	S.D.
1. To create the Moodle environment by downloading and installing Moodle and necessary software	3.18	.604
2. To create online courses with Moodle	3.13	.589
3. To manage the online content that you have made with Moodle	3.22	.595
4. To visit Moodle communities to obtain helpful information	3.30	.559

Note : 1 = not at all confident, 2 = not very confident, 3 = moderately confident,
4 = very confident

In summary, the present findings also indicated that overall trainees showed very high confidence in using the skills that they had learned in the e-learning and Moodle courses.

Discussion and Conclusion

As a means of assessment, the findings suggested that the current trainings were successful in helping the trainees to acquire understanding or knowledge related to e-learning and the features of the CMS by using Moodle software. Moreover, the high levels of the trainees' evaluations of the courses and their confidence in utilizing e-learning skills learned during the courses have supported our belief that the current trainings were effective in promoting the trainees' understanding of the courses.

We believe that acquiring e-learning skills may enable the trainees to get a job or to work more efficiency. Additionally, the trainees who are teachers may also have the ability to create their own online courses. Teaching via online courses, they can teach their students any skills in any content areas. The students will also have the opportunity to learn any skills according to their needs from any location.

In the usual face-to-face classroom environment, each student has to attend the class at a certain time and he/she does not have many choices for learning. Therefore, teaching with e-learning, one teacher can assist many students in many places. This helps to reduce costs and increases the effectiveness of the learning process, which finally helps improve the human capacity-building of the region.

In other words, building e-learning skills for the trainees, by providing them with e-learning training, Moodle training, and portal training may increase the qualities of human resources, particularly regarding people in the Northeast of Thailand. It is believed that when the knowledge, skills and abilities of these people improve, poverty levels in those areas will eventually be reduced.

However, there are some limitations to consider when interpreting the present results. First, the degree of trainees' learning was measured only by a comparison between the pretest and post test scores, which would merely reflect a level of understanding of the course contents. It is recommended to measure whether and to what degree the training sessions have effectively helped each trainee learn to utilize the skills.

A second limitation is the way the questionnaires were administered. In this training, each trainee was provided with three different questionnaires: (a) a questionnaire consisting of demographic question items and the pretest items, (b) the post test items, and (c) the course evaluations. The trainees were asked to write down an identification number on each of the three questionnaires, so that these three questionnaires could be matched when they were collected. However, a substantial number of trainees (more than 50) failed to provide the identification number for the first (demographic information with the pretest items), the second (post test items), and the last questionnaire (course evaluations), which resulted in an exclusion of them from the data analysis. It is strongly recommended that a way be found for matching questionnaires that are separately provided. The following paragraph attempts to describe some suggestions for future training.

Suggestions for Future Training

Although e – learning has become an increasingly important delivery method in learning settings, there appear to be some issues that need to be addressed in delivering e – learning. Learners still face some barriers to e – learning, such as situational and technical barriers.

In the current trainings, the main barrier faced is the trainees' lack of background knowledge of computers, especially skills in using a computer. So there was a big gap on computer knowledge among the trainees. In order to let everyone have the opportunity to learn equally, therefore, the training was carried out rather slowly. In doing so, perhaps, some trainees who were good in using a computer may have got bored during the training. Therefore, for future training, it would be useful if the trainer could obtain necessary information from the trainees before providing the training. Particularly, there should have a screening test to measure the trainees' knowledge backgrounds. For the registration step, the application form to register for the training should have attached a questionnaire (a screening test) asking about the trainees' knowledge background on computers. With the benefit of this step, the trainer will be able to check the prerequisite knowledge of the trainees and be able to classify the trainee groups based on their knowledge background on computer and IT skills.

In addition, a training course, such as necessary computer skills for executives should also be provided. Hopefully, after attending the IT training, the executives would have a better

understanding of the advantages and potential of using IT skills for academic activities or in the work place. As a result, they will support and make investments in e – learning for their schools or organizations.

Importantly, in addition to the training sessions, formulation of a virtual community in the Northeast region of Thailand is recommended. By doing this, the community will enable the trainees to maintain knowledge and skills that they have acquired through the trainings. Clearly, from these activities, the trainees will have the opportunity to contact one another, to learn together, to exchange ideas and to work on joint projects that are used as effective strategies for utilizing technologies in the classrooms.

Finally, based on the trainees' oral evaluations that were carried out before closing each training session, most of them were happy and satisfied with the training and found that it was very useful, particularly in helping them to develop their own online courses. Also, they would like the Ministry of Information and Communication Technology to offer this kind of training again in the future, since these e – learning activities or skills can increase the quality of human resources, especially for those in the Northeast of Thailand. Hopefully, the results from this training will enable the other trainers to adapt future training as closely as possible to the trainees' needs.

Policy Recommendations for Ministry of Information and Communication Technology

There are policy recommendations for the Ministry of Information and Communication Technology to be considered for implementing e – learning. These are :

1. In most provinces of Thailand with high poverty rates the first requirement of e-learning is infrastructure. Funding of infrastructure for e-learning in those provinces in Northeastern Thailand requires contributions from both the public and private sectors. Even so, simple methods of distance learning are very good solutions in the region particularly for isolated rural communities.

2. E-learning is an alternative solution, which increases accessibility to training and becomes essential when other solutions (such as face-to-face learning) are not available. It is

recommended that the use of pure e-learning for “training the trainer” may not always be the right choice. In most cases, the blended model (mix of distance and face-to-face learning) is the most effective method.

3. Even though the training the trainer program has had a satisfactory result, this does not guarantee the sustainability of e-learning programs. This statement arises from the fact that any e-learning program for development must assure its own sustainability.

Sources of content must also be sustainable. To make it sustainable the Ministry of Information and Communication Technology should coordinate or call for the contribution of private sector companies. The content should be developed by universities, schools or institutions and paid for by private sector companies. In turn, the companies may enjoy the benefit offered by the government policy for exemption from income-tax in direct proportion to their support for, or donations to the community. To make this chain sustainable the students must partially cover the cost of participating in the e-learning program. Subsidies, fellowships, sponsoring reduced rates, etc. are often required from governments and private companies both in industrialized as well as in local administrations.

The Portal Training

To assist and to support the development of e – learning, especially in creating online courses using Moodle software. The portal or ICT site was also developed and made available to the trainees (users) and other interested users. This one-day training session was held at Sofitel Racha Orchid Hotel, Khon Khan Province, Thailand on August 07, 2006. There were 154 participants attending the training. The portal training was intended to introduce the ICT website that was developed by the project staffs of component 1 to the trainees or the users.

This portal training was primarily targeted towards teachers, educators, students, employees, institutions, employer organizations, laborers and interested people in the Northeast of Thailand. On the training day, the training started with the power-point presentations that covered the topics on the benefits of the portal and the introduction to using the ICT portal. Finally, the training ended with a discussion on the problems that had been faced when using e – learning, especially in teaching. In the discussion session, many competent trainees who

had attended the e – learning and Moodle trainings were willing to share their thoughts, experiences, and suggestions with the training group. By doing this, the trainee who has some problems or difficulties in using e – learning tools, especially in using Moodle software will be able to solve these problems and will become an effective user or instructor.

In general, a portal is a website that is designed to provide a sitemap which gives users an overview of what a site offers at a single glance, and to help them find the information that they are looking for on the site. For this portal training, it is expected that after the training, the trainees should be able (a) to explore and to search for the information that they require from the ICT site, (b) to gain a general understanding of the benefits of the portal and (c) to navigate to the other portal sites to locate the target information.

In particular, the ICT site provides useful information that was collected from the survey study. The goal of this site is to enable the users to research information or issues related to the institutions, employer organizations and students. It is believed that all institutions, employer organizations and students will obtain many benefits when they visit this site. For instance, when an employer organization is looking for new employees, the manager of the employer organization can search for detailed information on potential employees who want to apply for a job from the ICT site. Likewise, the students will also get the benefits of using this site. For example, they can check information about the areas with high job market demand before making a decision on their major studies. Therefore, these activities will prevent them from losing job opportunities after graduating. In addition, the ICT site also gives users the opportunity to share their e – learning knowledge with the community. Many users and organizations in Thailand are at an early stage in adopting e – learning and may need such help in creating their online courses and searching for their required information. It could be said that there are numerous benefits to be gained from the portal. These are as follows :

The Benefits of the Portal

1. The portal will actually help the users to improve their work and to work more efficiently.
2. Collaboration via the portal will also allow the users to get the information they need quickly

3. A key benefit shared by all users is that needed information is documented and can be accessed from one location.
4. The users can access the site at their convenience from any location.
5. The users can communicate and collaborate in real time using the portal and see the information they need.
6. The users will be able to collaborate more easily and get the information they need.

Conclusions

In conclusion, the current portal training was carried out to utilize the resources, particularly the information from institutions, employer organizations, and students via the web. This activity has implemented a knowledge sharing paradigm, which allows the users to store and to share information through a resident knowledge based on the provided ports.

Therefore, it is reasonable to conclude that the ICT site is a useful portal that was developed for teachers, educators, students, employees, institutions, employer organizations, laborers and interested people in the Northeast of Thailand in order to provide better opportunities for these people by building e – learning skills and enhancing their productivity to increase the qualities of these people which will result in poverty reduction.

Policy Recommendations for Ministry of Information and Communication Technology

In order to fully utilize the ICT portal, this report makes several policy recommendations :

1. Enhanced coordination between ICT support projects and within the relevant government services
2. Better integration of communication channels and learning in the policy making process at the national level, either by continued funding of an effective portal training program or by encouraging existing ICT organizations to encourage the use of the portal

3. Increase resources for ICT priorities of interest to the majority of the users
4. Re-introduction of suitable instruments or methods for getting the most out of ICT provided by the portal
5. Take into account the financial situation regarding maintenance costs for better development of the portal by the local governments
6. Better integration of ICT clusters in consortia core teams

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APPENDIX

APPENDIX A. Inception Report and Progress Reports

Inception Report

1. Understanding of Project' s Needs

The main objective of this project is to provide better opportunities for the people in the Northeast of Thailand by supporting capacity building of education institutions, firms, and policy makers to utilize the ICT solution and to utilize e-learning as a method to promote integration in the target area. Particularly, the e-learning and classroom courses will be developed in order to fulfill needs that have been identified in the survey-based assessment. In addition, in order to prepare the target group to employ the e-learning tool needed to build the required skills, the portal and e-learning workshops will be provided for the target group in the Northeast of Thailand.

2. Proposed Framework

The e-learning program will be developed on an open source e-learning platform named Moodle by the e-learning specialist. For this component, the consultant will work several steps in the following :

- supports the e-learning specialist and manages information flow between the target group and the program' s stakeholders
- creates the learning materials and supplements required in the workshops and online courses, according to the templates provided by the e-learning specialist
- assists in the development of the e-learning and classroom courses and gives advice on the best practice to develop the needed skills of the local target group
- participates in the trainer workshops of the e-learning specialist
- prepares the local educational institutions to provide the target group with access to the e-learning portal

- provides assistance and support to the local educational institutions and target group in handling the e-learning software
- builds the capacity of the target group, as well as conducts various classroom course designed by the e-learning specialist
- obtains feedback of the target group and compiles their findings into reports for the Project Implementation Unit (PIU)
- coordinates and organizes training programs, evaluation and follow up to ensure maximum results
- assists and liaises with the e-learning specialist for the development and/or implementation of the mandatory regional programs or other relevant programs

3. Approach & Deliverables

3.1 Assessment on the effectiveness of the program : The consultant will provide the syllabus of the workshops and online courses, as well as complete learning materials and supplements for the workshops. Moreover, an assessment of the program will take into account the effectiveness and usability of the materials and e-learning software, the effectiveness of course contents, teaching material, and teaching methods. The consultant will also provide weekly reports on the progress of the target group's learning path.

3.2 Providing the trainings : The consultant will provide three sessions of trainings which are as the following :

3.2.1 Portal training : The main objective of this training is to provide knowledge and skills for using the database portal to the civil society organization and government officials. The training length will be approximately 4 hours.

3.2.2 E-learning training : The main objective of this training is to provide the best practice standards to the local trainers in order for them to make effective use of the e-learning tools and to prepare the target group with the prerequisite English and IT skills. This training will take approximately 24 hours (four days).

3.2.3 Assisting in development of the e-learning and classroom courses : The main objective of this training is to assist the target group in the development of the e-learning and classroom courses and to give them some advice on the best practice to develop the needs skills.

4. Scheduling

E-Learning Trainer Work Plan

Task	Duration	Start	Finish
Commence Work		23 – Jan - 06	21 – Jul -06
Inception Report	5 days	23 – Jan - 06	27 – Jan - 06
Complete Final Syllabus of the workshops and online courses	20 days	30 – Jan - 06	17 – Feb - 06
Develop e-learning training materials for workshops	10 days	20 – Feb - 06	3 – Mar - 06
Develop assessment material	5 days	27 – Mar - 06	31 – Mar - 06
Obtain e –learning training	3 days	06 – Mar - 06	08 – Mar - 06
Obtain portal training	2 days	09 – Mar - 06	10– Mar - 06
Develop portal training material for workshops	10 days	13 – Mar - 06	24 – Mar - 06
Obtain target group access for portal and e-learning	23 days	1 – Mar - 06	31– Mar - 06
Develop training plan and schedule	7 days	3 – Apr - 06	12 – Apr - 06
Train the target group on portal (Educational Institutes, Employers and others)	15 days	17 – Apr - 06	01 – May - 06
Train the target group on e-learning (Educational Institutes, Employers and others)	15 days	02 – May - 06	16 –May - 06
Assist in development of the e-learning and classroom courses	15 days	17 – May - 06	31 – May - 06
Assessment on the effectiveness and usability of the materials and software, according to the guideline set by the e-learning specialist	10 days	01 – Jun - 06	10 – Jun - 06
Assessment on the effectiveness of the	10 days	11 – Jun - 06	20 – Jun - 06

workshops and online course, according to the guideline set by the e-learning specialist			
Follow up on the knowledge building process by obtaining feedback from the target group	10 days	21 – Jun - 06	30 – Jun - 06
Develop lessons learned and road map for future program	10 day	3 – Jul - 06	14 – Jul - 06
Final report	5 day	17 – Jul - 06	21 – Jul - 06

5. Assumption

This project provides e-learning tools for the people in the Northeast of Thailand by supporting capacity building of education institutions, firms, and policy makers. The training the trainer program offers a simple and nice introduction to e-learning, which is excellent for the users to the subject of e-learning. The assumption of the workshop has been that face-to-face training -- with a human being actually providing the training workshop -- leads to greater interaction than computer-based training, and as a result, leads to greater success in building capacity for using e-learning tools.

6. Wrap Up

The involvement of a consultant in this project could provide several benefits. Firstly, the capacity building using e-learning project will be developed on Moodle that is an effective software. Therefore, the use of this software can ensure that the project could be effective. Secondly, the design of project will be based on the data collection in the survey that can identify the critical needs of the target group. Thirdly, assisting in development of the e-learning and classroom courses, the consultant can facilitate and assist the target group to do their performances accurately and effectively. Lastly, providing trainings will give them the opportunities to learn and to make effective use of e-learning tools.

To ensure the success of the project, it is essential for the training to be set up in order to provide understanding for the participants about relying both on the source and on the scientific validity of the learning contents offered. At the end of the program, the participants

should be able to deliver efficient e-learning environment, which follows the following criteria for the e-learning :

- User-friendly with secured learning environment
- Time and cost efficiency for content making
- Collaborative activities for enhancing communication skills and learning outcomes
- High-quality tutoring backed up by easy-to-access interaction
- Individualized and customized training

2nd Progress Report

1. Scope of work

- (1) Submit the inception report
- (2) Complete final syllabus of the trainings and online courses
- (3) Develop e-learning training materials for workshops
- (4) Develop assessment material
- (5) Obtain e-learning training
- (6) Obtain portal training
- (7) Develop portal training material for workshops
- (8) Obtain target group access for portal and e-learning
- (9) Develop training plan and schedule
- (10) Train the target group on portal
- (11) Train the target group on e-learning
- (12) Assist in development of the e-learning courses
- (13) Assessment on the effectiveness and usability of the materials and software,
according to the guideline set by the e-learning specialist
- (14) Assessment on the effectiveness of the trainings and online course according
to the guideline set by the e-learning specialist
- (15) Follow up on the knowledge building process by obtaining feedback from the
target group
- (16) Develop lessons learned and road map for future program
- (17) Submit the final report

2. Completed activities

- Activities for the month of March 04, 2006 through May 04, 2006

Activities	Completed Date	Outcomes
<p>1. Developed assessment materials to measure the effectiveness of the training, including the usability of the materials and software, according to the templates provided by the e-learning specialist</p>	<p>Mar 31, 2006</p>	<p>The assessment materials for each training were designed. Finally, there were five different assessment materials as follows :</p> <ol style="list-style-type: none"> 1. Demographic Survey 2. E-learning Training Assessment Items 3. Moodle Essential Training Assessment Items 4. Course Evaluation (E-learning Training Course) 5. Course Evaluation (CMS Training Course)
<p>2. Provided e-learning training and Moodle training as detailed in the following :</p> <p>2.1 Training I was provided on 17 - 20 April of 2006 and there were 54 trainees attending the training.</p> <p>2.2 Training II was provided on 25 – 28 April of 2006 and there were 44 trainees attending the training.</p> <p>2.3 Training III was provided on 01 – 04 May of 2006 and there were 60 trainees attending the training.</p>	<p>May 04, 2006</p>	<ol style="list-style-type: none"> 1. Three training sessions were provided. 2. The trainees were able to describe and explain the major principles and features underlying e-learning. 3. The trainees were able to develop their own online courses by using software “Moodle”.

3. Barrier

The barrier that has been met in the training was the trainees' lack of knowledge background on computer, especially skills in using a computer. In addition, there was a big gap on computer knowledge among the trainees. In order to let everyone had opportunity to learn equally, therefore, the training was carried out a little bit slowly. By doing this, perhaps, there were some trainees who were good in using a computer got boring during training.

4. Recommendation

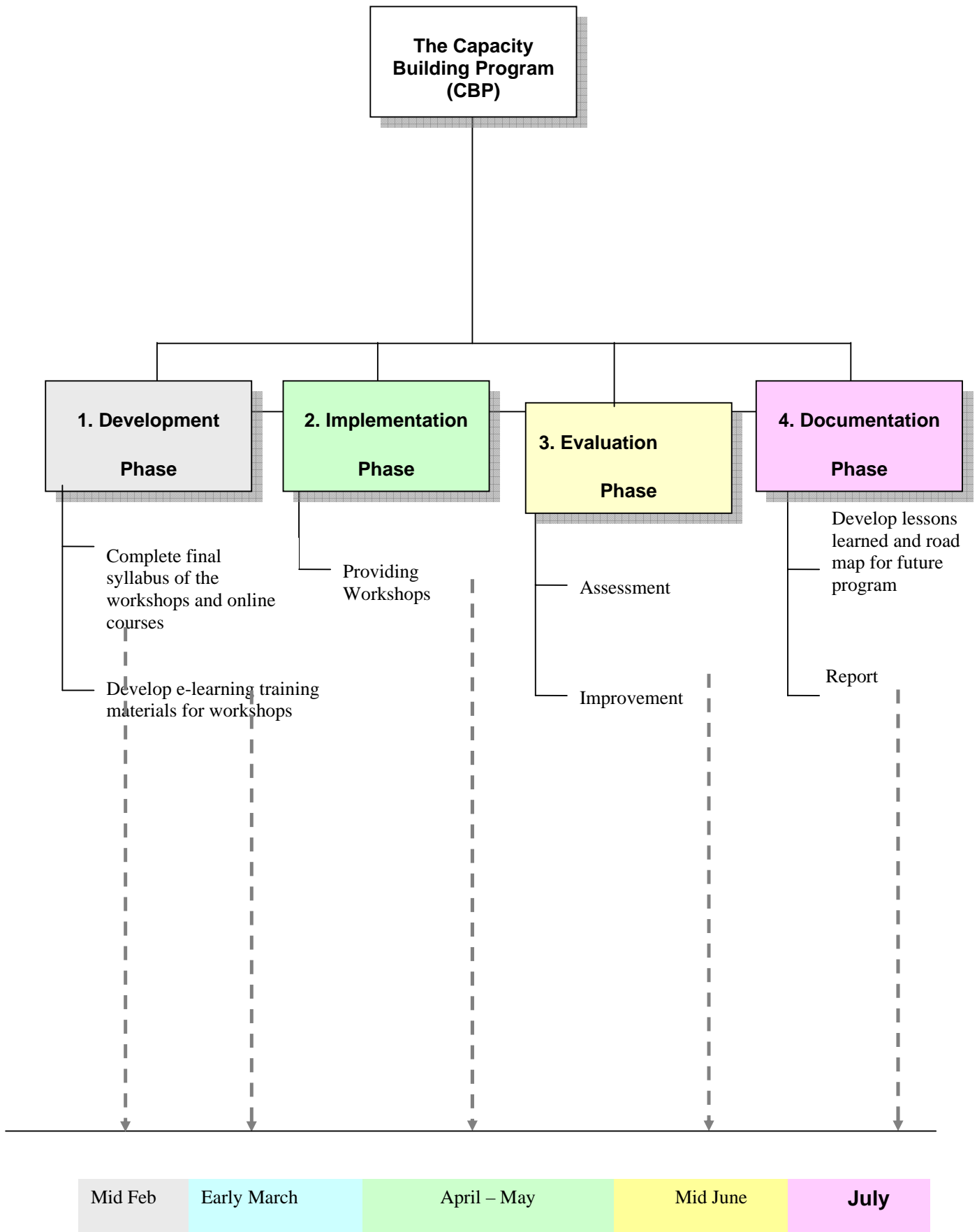
For the future training, it would be useful, if the trainer could obtain necessary information from the trainees before providing the training. Particularly, there should have a screen test to measure the trainees' knowledge backgrounds. In order to get the best benefit, the training should be provided according to the trainees' abilities or knowledge background.

5. Work for next phase and expected outcomes

- Activities for the month of May 04, 2006 through May 25, 2006

Activities	Completed Date (planned)	Expected Outcomes
<p>Provide e-learning training and Moodle training as detailed in the following :</p> <p>1. Training IV will be provided on 15 - 18 May of 2006 and there will be 30 trainees attending the training.</p> <p>2. Training V (the last session) will be provided on 22 – 25 May of 2006 and there will be 25 trainees attending the training.</p>	<p>May 25, 2006</p>	<p>1. The trainees should be able to describe and explain the major principles and features underlying e-learning.</p> <p>2. The trainees should be able to develop their own online courses by using software “Moodle”.</p>

6. Project Timeline



7. Conclusion

According to my observation and trainees' evaluations, I could say that these first three training sessions were carried out smoothly and successfully, although there was a little bit slowly sometimes. Nevertheless, the trainers also conducted the training in the second and the third session much better than the first one in both clear contents and interactive pedagogies.

However, for the future training, there should have a screen test to measure the trainees' knowledge backgrounds and should provide the training according to their abilities or knowledge backgrounds.

In addition, based on the trainees' oral evaluations that were carried out before closing each training session, they were happy and satisfied with the training and found that it was very useful, particularly, helping them to develop their own online courses. Also, they would like the Ministry of Information and Communication Technology offering this kind of training again in the future.

Currently, I have been working on data analysis. To finish this task, I also need to obtain all data form the last two training sessions. Hopefully, I could use these data to adapt the future training as close as possible to the trainees' needs.

3Rd Progress Report

1. Scope of work

- (1) Submit the inception report
- (2) Complete final syllabus of the trainings and online courses
- (3) Develop e-learning training materials for workshops
- (4) Develop assessment material
- (5) Obtain e-learning training
- (6) Obtain portal training
- (7) Develop portal training material for workshops
- (8) Obtain target group access for portal and e-learning
- (9) Develop training plan and schedule
- (10) Train the target group on portal
- (11) Train the target group on e-learning
- (12) Assist in development of the e-learning courses
- (13) Assessment on the effectiveness and usability of the materials and software, according to the guideline set by the e-learning specialist
- (14) Assessment on the effectiveness of the trainings and online course according to the guideline set by the e-learning specialist
- (15) Follow up on the knowledge building process by obtaining feedback from the target group
- (16) Develop lessons learned and road map for future program
- (17) Submit the final report

2. Completed activities

- Activities for the month of May 05, 2006 through May 25, 2006

Activities	Completed Date	Outcomes
<p>1. Provided E-learning training and Moodle training as detailed in the following :</p> <p>1.1 Training IV was provided on 15 - 18 May of 2006 and there were 52 trainees attending the training.</p> <p>1.2 Training V (the last session) was provided on 22 – 25 May of 2006 and there were 41 trainees attending the training.</p>	<p>May 25, 2006</p>	<p>1. Two training sessions were provided.</p> <p>2. The trainees were able to describe and explain the major principles and features underlying e-learning.</p> <p>3. The trainees were able to develop their own online courses by using software “Moodle”.</p>

3. Barrier

The following situations could be recognized as barriers encountered during conducting Training IV and V :

3.1 Like any common problems in the previous sessions, the trainees' lack of knowledge background on computer, especially skills in using a computer in both batches had been distinguished. Some trainees had been exposed to Moodle prior attending the workshop ; whereas, some of them were not even able to use the Internet effectively.

3.2 The number of trainees in the fourth and fifth batches was less than the previous ones. According to the interviews with the trainees, this was because the training periods were close to the beginning of new semester for all schools.

4. Recommendation

For the future training, in order to cope the above problems, the recommendations are proposed according to the barriers as follows :

4.1 The application form to registrar for the training should be attached a questionnaire (a screen test) asking the trainees' knowledge background on computer. In doing so, the trainer will be able to scan the prerequisite knowledge of the trainees and be able to classify the trainee groups based on their knowledge background on computer and IT skills.

4.2 The training periods should be provided during the summer vacations, at least two weeks before the beginning of new semester.

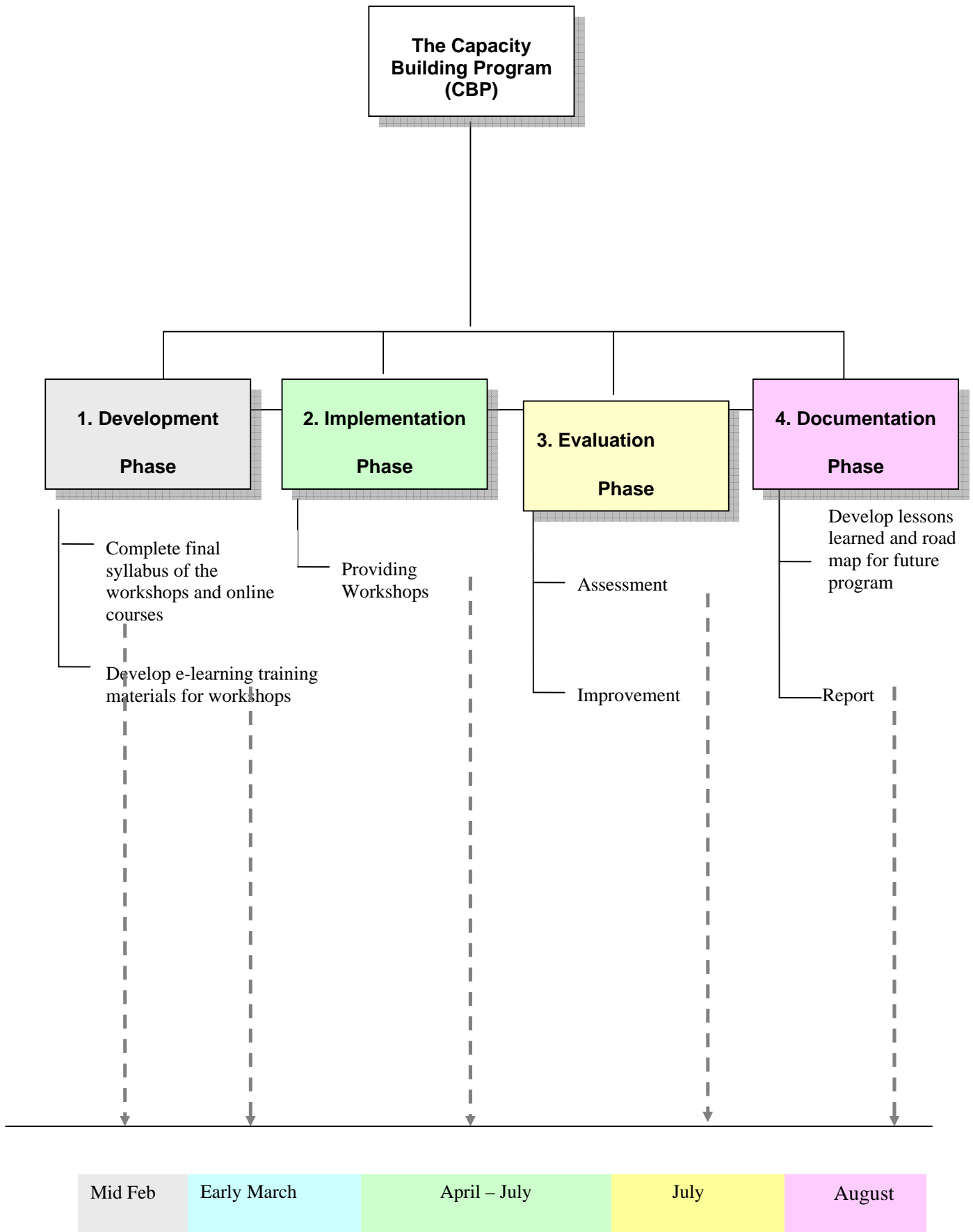
4.3 The training course, such as necessary computer skills for the executives should also be provided. As a result, the executives would have a better understanding the advantages and potentials of using IT for academic activities.

5. Work for next phase and expected outcomes

- Activities for the month of May 25, 2006 through July 31, 2006

Activities	Completed Date (planned)	Expected Outcomes
<p>Provide four portal training sessions as detailed in the following :</p> <ol style="list-style-type: none"> 1. Training I will be provided on 21 July of 2006 at Udomthanee province and there will be 30 trainees attending the training. 2. Training II will be provided on 24 July of 2006 at Khonkan province and there will be 30 trainees attending the training. 3. Training III will be provided on 28 July of 2006 at Roied province and there will be 30 trainees attending the training. 4. Training IV will be provided on 31 July of 2006 at Nakhonratchasima province and there will be 30 trainees attending the training. 	July 31, 2006	<ol style="list-style-type: none"> 1. The trainees should be able to explore and search for what they would like to obtain at the beginning at the provided web-ports to reach the target web-site or on-line knowledge sources. 2. The trainees should be able to develop their own links or mark the useful links to create their own ports.

6. Project Timeline



7. Conclusion

The fourth and fifth batches of training had been finished. For the training, overall performances of the trainees were significantly improved. This remark was drawn from the smoother operation from the first day of each batch till the last one. However, some barriers were still remained yet were solvable provided by the recommendations.

To support the e-learning activities in creating the on-line classroom and to use other features of Moodle learnt from the training, a portal training will be carry out to utilize the resources via the web. This activity will be implemented a knowledge sharing paradigm, which allows the user to store and share information through a resident knowledge based on the provided ports. Such features will be mentioned in the portal training.

APPENDIX B. Syllabus

Syllabus for E-Learning Training

Title : Introduction to e-learning

Duration : 3 hours

Trainer : Pasana Chularut, Ph.D

e-mail : pasana_c@yahoo.com

Phone : 01-427-2540

1. Training Descriptions :

The purpose of e-learning training is to provide the learners with a basic introduction to e-learning and online teaching. Learners will explore applications for e-learning and understand how constructivist learning theories apply in online environments. In addition, the learners will also gain practical, hands on experience with a wide variety of online communication tools.

2. Training Objectives :

In this training, topics include definition of e-learning, types of e-learning tools, constructivist learning theories, basic instructional design, and creating e-learning course syllabus. Upon completion of the workshop, learners will be able to :

1. List major e-learning tools
2. Describe each e-learning tool' s features including benefits and problems in their words
3. Understand how constructivist learning theories apply in online environments
4. Evaluate strengths and weakness of an existing online course
5. Create a syllabus for an effective online course

3. Training Formats :

A variety of formats will be used throughout the training including lecture, discussion, and small group activities.

4. Training Materials :

In this training, the learning materials will be handouts provided by the trainer. Moreover, if the learners need more information about e-learning, a textbook on instructional principles is recommended. Its name is "E-Learning and the Science of Instruction" by Ruth Colvin Clark and Richard E. Mayer. This text is an excellent introduction to the practical issues of creating effective computer-based instruction, including recent research in the field. The textbook is available in the bookstore as well as online through Amazon, Barnes and Noble, and many others.

5. Evaluation :

Participation and performance will be evaluated based on multiple choice examination, checklists, and small group activities.

**Syllabus for Content Management Systems (CMS)
by Using Moodle Software**

Title : Developing Online Course Using Moodle Software

Duration : Three days (18 - 20 hours)

Trainers : 1. Pasana Chularut, Ph.D

e-mail : pasana_c@yahoo.com

Phone : 01-427-2540

1. Training Descriptions :

The purpose of this training is to introduce the learners to Moodle as the software tool to create online course. The learners will learn how to use the fundamental features of Moodle, and develop their online contents on Moodle environment. In this training, the course activities will enhance and expand learners' understanding of course management tools. Additionally, activities will be differentiated so the learners can explore ideas that appeal to learners' interests and course development needs.

2. Training Objectives :

In this training, topics include Moodle essentials, Working with Moodle, and Moodle advanced. Upon completion of the training, learners will be able to :

1. List Moodle features
2. Describe how Moodle supports teachers to design online course
3. Visit online courses using the tools provided by Moodle
4. Create the Moodle environment by downloading and installing EasyPHP and Moodle
5. Develop online course on Moodle

3. Training Formats :

During the training, we will be focusing on designing and developing online course using Moodle. Each class session will consist of lecture, website exploration, self-paced training, and discussion. In order for this training objectives to be reached, all learners must read the assigned topics and handouts before class. The trainers will talk about the major points to be covered the following day at the end of each class period. By doing so, the trainers expect all learners will be prepared to discuss those points in the following day.

4. Training Materials :

In this training, the learning materials will be handouts and guidelines provided by the trainers. Moreover, if the learners need more information about Moodle, a textbook “Go E-Learning Moodle” by Wimonluck Singhanart is highly recommended. This text is an excellent introduction to the practical use of Moodle. The textbook can be purchased through direct sale at 01-4564-152 as well as online through order@tentc.com.

Additionally, there are some useful Moodle websites in the following :

- www.easyphy.org
- www.appservnetwork.com
- www.Health-edreform.net
- www.moodle.org
- www.Thaimoodle.net
- www.kwc.ac.th/moodle/

5. Training Schedule :

Day I : Introduction to Moodle (Topic : Moodle Essentials)

On this day, the learners will explore examples of online courses that are developed in the Moodle environment in order to understand how Moodle' s features support teachers to design online courses.

Day II : Working with Moodle

On the second day, the learners will work on hands on experiences for navigation on Moodle assisted by the trainers.

Day III : Moodle Advanced

On the thrid day, the learners will have opportunities to develop their online courses in the Moodle environment, following the given guidelines and their online course syllabus. During this time, the trainers will be available to assist the learners.

6. Evaluation :

Participation and performance will be evaluated based on multiple choice examination, checklists, individual online course project, and peer review.

APPENDIX C. Assessment and Handout

Demographic Survey

Please provide the following information :

Age: | under 25 (under 25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, over 60)

Gender: | female (female, male)

Occupation: | teacher (teacher, school administrator, local government officer, other)

If it is **other**, please indicate your occupation: _____

If you are a teacher or school administrator, please indicate the type of school

| kinder garden (kinder garden, elementary, middle, high school, junior college, college or university, occupational school, prep school, other)

If it is **other**, please indicate the type of your school: _____

In a typical week, how many hours do you spend working on a computer?

| Less than 1 hour (1 to 4 hours, 5 to 10 hours, 11 to 20 hours, 21 to 30 hours, 31 hours or more)

In a typical week, how many hours do you spend working online?

| Less than 1 hour (1 to 4 hours, 5 to 10 hours, 11 to 20 hours, 21 to 30 hours, 31 hours or more)

Choose all that apply to you.

I use a computer for :

- teaching in class
- preparing for teaching outside class
- working on the administrative stuff
- others ... please indicate the purpose: _____
- none... I do not use a computer.

I use the Internet for:

- teaching in class
- searching for the information that can be used in class
- communicating with other teachers
- communicating with administrative staffs
- communicating with students
- communicating with students' parents
- others ... please indicate the purpose: _____
- none... I do not use the Internet.

Please indicate your current level of

confidence in the following skills:

	Very confident	Moderately confident	Not very confident	Not at all confident
1. To create a text document by using a word processing software (such as Microsoft Word)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. To create a presentation material by using PowerPoint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. To send an e-mail message	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. To attach a file and send it via an e-mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. To use online search engine (such as Yahoo,google etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. To create a website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. To create an online course content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

E-learning Training Assessment Items

1. What is the definition of E-learning ?

- a. learning that is facilitated by the use of information system.
- b. an approach to facilitate and enhance learning through the use of devices based on computer and communications technology.
- c. learning that involves some form of interactivity, which may include interaction between the learner and their teachers.
- d. training or learning that takes place via the email and computer assisted learning.

2. Which of the following users can E-learning be beneficial? Choose all.

- a. Slower learners who need the extensive remediation
- b. Fast learners who want to speed through the course, unencumbered by their classmates
- c. Learners who are “technology challenged”
- d. Learners who are high in self-directedness

3. Which of the following correctly describes the term asynchronous?

- a. Communication in which each party would be required to wait a specified interval before speaking.
- b. A type of two-way communication with virtually no time delay, allowing participants to respond in real time.
- c. Communications in which data can be transmitted intermittently rather than in a steady stream.
- d. Communication in which interaction is simultaneous.

4. Which of the following is NOT one of the characteristics of distance learning?

- a. Place, time, or both separates instructor and learner
- b. Interaction between instructor and learner is conducted through one or more media.
- c. Use of the Internet is not necessary required.
- d. All participants attend training at the same time.

5. In which of the following examples is e-learning the most effective mode of training?

- a. Teaching prerequisite materials
- b. Teaching psychomotor skills
- c. Stimulating interpersonal exchanges
- d. Teaching learners with low self-directedness

6. The cost of distributing technology-based learning programs is often lower than those for instructor-led courses because : (correct answers more than one)

- a. More people can be trained more often with different online courses.
- b. Travel costs can be reduced.
- c. Costs for development courses can be reduced.
- d. Teaching materials can be reduced.

7. Choose the e-learning tool that corresponds to (a) – (d).

Options : TV, Videotapes, Radio, Computers (without the Internet connection), and Internet

a. It has a long history of providing educational programs for distant learners who may not have skilled teachers in specific subjects. It provides both visual and auditorial information and may require lower cost and less constraints. However, interactions between the learner and the program are limited.

Answer is

b. It has a long history of providing educational programs for distant learners who may not have skilled teachers in specific subjects. It can carry out only auditorial information and may require lower cost and less constraints. However, interactions between the learner and the program are limited.

Answer is

c. It is highly interactive, and thus capable for facilitating collaborative learning. One of the major difficulties of using this tool in education is that it requires technical support and user training.

Answer is

d. It requires technical support and user training. Also, interactivity is limited to this tool as well, a number of software applications are available that are intended at enhancing interactivity.

Answer is

8. The e-mail tool enables you to send emails to: (choose all)

- a. All groups
- b. All users
- c. Selected unit leaders/students
- d. No-one. You can only receive e-mail in Blackboard.

9. Which of the following is also called a threaded discussion and is the computer equivalent of a public note board where messages can be posted for viewing by other users?

- a. Browser
- b. Chat room
- c. EPSS
- d. Electronic bulletin board

10. Which of the following is a key constraint to consider before adding a bulletin board to an e-learning program?

- a. Scheduling of learners' and instructors' real-time interaction
- b. Learner time to view information on the board
- c. Learner time to post questions on the board
- d. Instructor time required to monitor the board

11. When you make a plan for using an e-learning tool for your class, which of the following tools do you want to choose? (choose one)

- a. e-mail communications
- b. Web Based Instruction
- c. video conference
- d. electronic notice board
- e. virtual classroom

12. Regarding your selected e-learning tool in Item 11, what feature(s) do you think you can use to enhance the effectiveness of your instruction?

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Moodle Essential Training Assessment Items

1. What "Moodle" stands for?

- a. Modular Object-Oriented Dynamic Learning Environment
- b. Massachusetts Oracle Openly Distributed Learning Environment
- c. Martin's Online Open Distributed Learning Environment
- d. Manufactured Online Open Demonstrated Learning Environment

2. The advantage of Moodle over other course management systems such as WebCT and Blackboard is that it is an open-source system. Which of the following correctly characterizes the open-source system?

- a. No license fee is required.
- b. License fee is required but is relatively lower.
- c. Distribution is free for educational institutions.

d. No platform is required.

3. Moodle has been developed based on the social constructionist philosophy. Does each of the following statement correctly describe the constructionist philosophy or approach? (true or false)

- a. Knowledge is constructed in the learner's mind.
- b. The primary role of teachers is to organize the information that their students need to know.
- c. Teachers should create a student-centered environment that teachers are to help students build upon their existing skills and knowledge.
- d. Learning occurs particularly well in a collaborative environment that everyone builds together.

4. Which of the following is one of the essential differences between Moodle and WebCT or Blackboard regarding the creation of the layout?

- a. Specific sections can be hidden when required.
- b. All course elements are presented in a "flat view".
- c. There can be many "Chinese boxes" with content inside folders at various levels.
- d. All elements on the page can be modified, repositioned or deleted.

5. Which of the following correctly describes the Moodle's features? Choose all.

- a. Moodle is suitable for 100% online classes, but not as supplementing face-to-face learning.
- b. Moodle can be installed on almost any platform that supports PHP.
- c. Moodle requires only one database.
- d. One Moodle site can support maximum up ten courses.

Course Evaluation (E-Learning Training)

Select the column to indicate your evaluation of each item

E-Learning Course	Excellent	Good	Adequate	Poor
1. How well did the overall course meet the objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. How knowledgeable and effective was the trainer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. How appropriate was the method of presentation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. What was the quality of the course materials?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. What was your overall rating of the course?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please indicate your level of confidence in the following skills:	Very confident	Moderately confident	Not very confident	Not at all confident
1. To explain what E-learning is to your students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. To explain features of some major E-learning tools to your students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. To evaluate strengths and weaknesses of existing online courses

4. To design a syllabus of an online course that is to effectively support learning in your subject area

Please indicate if you experienced any difficulties in the course.

Do you recommend this training program to others? If so, to whom?	
Please provide any additional comments about the training.	

Thank you for having contributed to the improvement sessions

Course Evaluation CMS Training

Select the column to indicate your evaluation of each item

Moodle Course	Excellent	Good	Adequate	Poor
1. How well did the overall course meet the objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. How knowledgeable and effective was the trainer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. How appropriate was the method of presentation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. What was the quality of the course materials?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. What was your overall rating of the course?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please indicate your level of confidence in the following skills:	Very confident	Moderately confident	Not very confident	Not at all confident
1. To create the Moodle environment by downloading and installing Moodle and necessary software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. To create the online course with Moodle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. To manage the online content

that you have made with Moodle

4. To visit Moodle communities to

obtain helpful information

Please indicate if you experienced any difficulties in the course.

	▼

Do you recommend this training program to others? If so, to whom?

	▼

Please provide any additional comments about the training.

	▼

Thank you for having contributed to the improvement sessions

Handout for E-Learning Training

1. Definitions of e-learning

Nothing is changing as fast as all the terms related to e-learning. And there is even a lot of unclarity about the same terms. The use of the term e-learning is even more rapidly changing than the content and approaches to e-learning. Many people define E-Learning as :

a. “The delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material”

(<http://derekstockley.com.au/elearning-definition.html> ; 2006)

b. “ The use of information and communications technology (ICT) to enhance and/or support learning in tertiary education. But this covers a wide range of systems, from students using e-mail and accessing course work online while following a course on campus to programmes offered entirely online” (Carlson and Gadio, 2002)

c. “The delivery of formal and informal learning activities, processes, communities and events via the use of all electronic media like Internet, intranet, extranet, CD-ROM, video tape, DVD, TV, cell phones, personal organizers et cetera. The terms are not all the same. E-Learning is a broader term a online learning. Online learning is using only Internet/intranet/LAN/WAN learning so it excludes the use of CD-ROM” (<http://www.e-learning-site.com/elearning/basics/basics.htm>: 2006)

d. E-learning definitions abound in the following :

(<http://agelesslearner.com/intros/elearning.html>;2006)

* The convergence of the Internet and learning, or Internet-enabled learning.

* The use of network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere.

- * The delivery of individualized, comprehensive, dynamic learning content in real time, aiding the development of communities of knowledge, linking learners and practitioners with experts.

- * A phenomenon delivering accountability, accessibility, and opportunity to allow people and organizations to keep up with the rapid changes that define the Internet world.

- * A force that gives people and organizations the competitive edge to allow them to keep ahead of the rapidly changing global economy.

2. Types of e-learning

E-learning is comes in many variations and often a combination of the following :
(<http://www.worldwidelearn.com/>: 2006)

- * Purely online – no face – to – face meetings
- * Blended Learning – combination of online and face – to – face
- * Synchronous
- * Asynchronous
- * Instructor – led group
- * Self – study
- * Self – study with subject matter expert
- * Web-based
- * Computer – based (CD-ROM)
- * Video/audio tape

Features of major types of e-learning tools

The benefits and limitations for each of the following e-learning tools

(<http://empresas.sence.cl/documentos/elearning/E-learning> ; 2001)

E-learning tools	Benefits	Limitations
Radio	<ul style="list-style-type: none"> ● Distant learners can learn a specific subject through a program. ● Electricity is not required. ● Relatively Inexpensive. ● Having been used as a distance learning tool for long. 	<ul style="list-style-type: none"> ● No visual images. ● Interactions between learners and instructors are not immediate when used as a distance learning tool.
TV	<ul style="list-style-type: none"> ● Both audio and visual images are available. ● Having been used as a distance learning tool for long. 	<ul style="list-style-type: none"> ● Requires electricity. ● Interactions between learners and instructors are not immediate when used as a distance learning tool.
Videotapes	<ul style="list-style-type: none"> ● Allows repeated Viewing. ● Hold both audio and visual images. 	<ul style="list-style-type: none"> ● Requires video Player. ● Capacity is limited compared to CD-ROMs or

		DVDs.
CD-ROMs	<ul style="list-style-type: none"> * Hold text, graphics, sound, and video. ● Have larger capacity than videotapes. 	<ul style="list-style-type: none"> ● Requires computer or CD player.
Computers (without Internet connection)	<ul style="list-style-type: none"> ● Software applications facilitate work and learning. 	<ul style="list-style-type: none"> ● Interactivity is Limited. ● Requires electrification, technical support, user training. ● Relatively Expensive.
Internet	<ul style="list-style-type: none"> ● Highly interactive . ● Facilitates collaborative learning. ● Increase understanding of other cultures. 	<ul style="list-style-type: none"> ● Requires connectivity, electrification, technical support, user training. ● Relatively Expensive. ● Limited in most developing countries (especially in rural areas in those countries).

In the narrower definition, e-learning refers to “teaching or/and learning that takes place with the Internet (Capper, 2001). Here are a quite number of different types of e-learning tools, such as e-mail communication, chat rooms, discussion boards, news

boards, conferencing, threaded discussion forums, self-test centres, on-line counseling centres, student support services forums, and virtual classrooms.

The benefits and limitations for each of the following e-learning tools

E-learning tools	Benefits	Limitations
e-mail communication	<p>* Can send letters, notes, files, data, or reports quickly.</p> <ul style="list-style-type: none"> ● The recipient isn't interrupted by the arrival of email. ● Can deal with email at a convenient time. ● Can be sent to many people at once. ● Don't have to be shy about using email to communicate with anyone. ● The cost to the sender for email has nothing to do with distance. 	<ul style="list-style-type: none"> ● Email isn't necessarily private. ● It's difficult to express emotion using email. ● Can receive too much or unwanted email. ● May not know about the person with whom you are communicating.
Chat rooms	<p>* Can bring immediate interactivity to discussions between many people, who may or may not know each other personally in advance.</p>	<p>* May not appropriate for long-term working discussions, which need a clear, precise, automatically maintained history of</p>

		interactions.
Video conference	<ul style="list-style-type: none"> ● Provide the ideal means of reaching large numbers of students in distant and widely dispersed locations. 	<ul style="list-style-type: none"> ● Expensive and difficult to arrange, requiring students to move to a video conferencing site.
Electronic notice board	<ul style="list-style-type: none"> ● Can be emailed and faxed to locations where recipients have such facilities. ● When there are a large number of learners in an institution, contents of the board can be sent to a central point in the institution for it to be redistributed. 	<ul style="list-style-type: none"> ● Expensive and resource intensive.
Virtual classrooms	<ul style="list-style-type: none"> ● Rapid synchronous exchanges of information facilitate electronic collaborative learning. ● Teachers can replay and improve their presentations. ● Teachers can observe the practices of 	<ul style="list-style-type: none"> ● Students must have adequate typing skills and communication skills as the majority of learning is text-based and self-paced. ● Some communication tools may not suit some students. ● There are

	their colleagues in a non-intrusive manner.	technological requirements to enable full participation in the virtual classroom. <ul style="list-style-type: none"> ● It is challenging for teachers to develop educational content that is interesting, relevant and important to students.
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3. Benefits of e-learning

The effectiveness of an e-learners experience is greatly enhanced through student-centered (usability) design. For example, students remember more information from a text book that is well organized, with extensive visuals, reflection/interaction points, clear headings, etc. The same concepts exist for online courses—learners learn better through use of clear headings, limited distracters, visuals, screen-friendly fonts, appropriate white space, web safe colors, etc. Basically, usability is the process of testing (through observation) how students behave with a course---what works, what doesn't , what confuses.” (<http://agelesslearner.com/intros/elearning.html:2006>)

References

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[//people.umw.edu/~ernie/cpsc104/emailadl.html](http://people.umw.edu/~ernie/cpsc104/emailadl.html)

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Handout for Creating a Syllabus

A syllabus is a basis for a common understanding between instructor and student. There are key components of a syllabus in the following :

(<http://teaching.berkeley.edu/bgd/syllabus.html;2006>)

1. Provide basic information : This includes the current year and semester, the course title and number, the number of units, the meeting time and location, instructor' office phone number.
2. Describe the prerequisites to the course.
3. Give an overview of the course' s purpose : Explain what the course is about and why students would want to learn the material.
4. Clarify the conceptual structure used to organize the course.
5. Describe the format or activities of the course.
6. Specify the textbook and readings by authors and editions.
7. Identify additional materials or equipment needed for the course.
8. List assignments, term papers, and exams.
9. State how students will be evaluated and how grades will be assigned.
10. List other course requirements.
11. Discuss course policies.
12. Provide a course calendar or schedule.

Easy Steps to Creating Online Course

Taking your course online may seem like a daunting task, but it can be simple. Just follow these easy steps, and you will be on your way to creating a successful online component for your course (www.blackboard.com; 2006)

1. Prepare Yourself

- Educate yourself by reading articles about web-based training, instructional design, technology education, and online learning.
- Practice using the software. Take a training course, do a tutorial, or explore the program.
- Locate and introduce yourself to the Blackboard System Administrator on your campus.
- Ask the System Administrator to create a user account, password, and a blank course Web site for you.
- Understand hardware and software specifications. Make sure your computer is set up with the correct requirements (such as browser). Again, refer to your System Administrator if you need assistance.

2. Prepare Your Materials

- Gather your course materials and content in a central location. Include items such as handouts, slide shows, syllabus, overheads, lecture notes, projects, assessments, and discussion topics.
- Determine what formats your materials exist in. Take note of items already in electronic formats such as word processing documents, spreadsheets, and slides.

- Accommodate different types of learners. Make sure visual learners have graphics and text they can see foster learning. Provide narration and text for verbal learners.
- Identify measurable course objectives. These should incorporate materials delivered both in class and online. Determine what core competencies and knowledge students will need to meet these objectives.

3. Make an Outline

- Make an outline that matches each course component with associated date, lecture materials, labs, assignments and corresponding items. This comprehensive outline can be very helpful in step 5 – Building a Course Skeleton.

4. Determine How to Deliver Materials

- Determine which materials should be delivered in the face-to-face component of your course (if your course has one) and which items can be delivered online. Select items that are relevant to course objectives and student learning experiences.
- Prepare the materials for electronic delivery. This may include scanning graphics, creating files in a word processor, developing web pages in a web authoring tool, or creating slides in presentation software.

5. Build a Course Skeleton

- Create the organization (or skeleton) structure of your course. This involves creating a series of clearly labeled folders that will hold course materials.
- Make a folder for every item in your outline (from step 3) or mimic the structure of your syllabus.

- Enter the Course Information area and create folders for the syllabus, grading policies, and other basic items relating to course management.
- Enter the Course Documents area and create folders that correspond with the main topics or sections of your course. Create sub-folders for sub-topics as necessary.
- Enter the assignments area, and create folders that correspond with your assignments.

6. Add Staff Information

- Enter the staff information content area and create an entry for yourself. If you have a picture of yourself, include that too!

7. Fill in the Content

- Enter each folder and add the content
- Include a short description for each item. Indicate what the item is and how it is relevant to the lesson. This description helps students understand how to associate (frame/attend to) this item in relation to rest of the course materials.

8. Incorporate the Technology into other Course Components

- Enter the Discussion Board, create a Forum, and post an introductory assignment.
- Locate at least three external websites that relate to information you are teaching. Place these in the External Links area and recommend students explore these sites on “virtual fieldtrips” .

9. Create an Introductory Announcement

- Post an introductory message in the announcements area. Welcome the students to your course, direct them to the course information area to obtain the syllabus.

10. Complete the Process

- Preview course materials by checking each link, proofreading descriptions, and viewing the course from a student perspective.
- Instruct students on how to get a Blackboard account and log in.
- Enjoy teaching your first online course!

References

Davis, G. B. (2006). Creating a Syllabus. Available at

<http://teaching.berkeley.edu/bgd/syllabus.html>

----- (2000). 10 Easy Steps to Creating Your Online Course. Available at

www.blackboard.com

Handout for Using Moodle Training

Moodle is a course management system (CMS) – a software package, designed to educators create quality online courses. Such e-learning systems are sometimes a Learning management systems (LMS), Virtual Learning Environments (VLE), and via computer – mediated communication (CMC) or education online

(http://www.indiawebdevelopers.com/articles/online_course/moodle.asp; 2006)

1. Some Possible Uses of Moodle

- Corporate Computer Based Training (CBT)
- Colleges courses for non residential students

- Websites selling online courses
- Online courses to build website traffic and corporate good will
- Corporate Universities providing ongoing distance education for employees
- Provide student collaboration for Home Schoolers

2. Features of Moodle

- Moodle is user-friendly and flexible
- Teacher has full control over all settings for a course
- Choice of course formats such as by week, by topic or discussion-focused
- Course activities-Forums, Journals, Quizzes, Resources, Choices, Surveys
- Course listing shows descriptions for every course on the server
- Strong security throughout
- Student can store online notes and a journal
- Testing true false, multiple choice, short answers
- Automatic or manual scoring of testing
- Grading kept in organized system
- Student can create a personal profile with list of the student's online communication
- Students can upload their assignments
- Access can be assigned to instructors, student, administrators and guests
- Instructors can keep track of student interaction with content
- Instructors can get instructional design help from within the software
- Browser-based and runs on Linux, Php and mySql
- 30 language translations are available as plug-in packs
- Easy to modify to meet specific needs
- Social constructionist pedagogy (collaboration, activities, critical reflection)

3. Installing Moodle

Below are the steps for installing Moodle:

1. Download Easyphp from <http://www.easyphp.org> to your laptop (Select the latest version)
2. Click the easyphp setup program to install it to your laptop (Follow the instruction on the screen) Once the EasyPhp installation is completed, you will see an "e" symbol on the taskbar.
3. Download Moodle from <http://moodle.org> to c:\Program files\easyphp\www (If the file is zip, unzip it)
4. Create a moodle database:
 - * Right click on "e" symbol on the taskbar
 - * Select Configuration>PhpMyAdmin
 - * Enter "Moodle" for database name
 - * Click "Create"
5. Goto <http://localhost/moodle>.
6. Follow the instruction on the screen
7. There will be warning sign on GD version and Memory Limit
 - * Open the php.ini file and search for memory_limit. Change the memory_limit to 20M
 - * Right-Click "e" on the task bar.

- * Select Configuration > PHP → PHP file is opened.
 - * Find the command for memory_limit. Change it from 8M to 20M.
 - * Save the PHP file.
 - * Click "e" on the taskbar
 - * Select Configuration>PHP Extension.
 - * Select "php_gd2" and "php_zip" from the list
 - * Click "e" on the taskbar and select "Restart"
- * Refresh the Moodle Installation page. There should be a word "success" after GD version and Memory_limit.

8. Continue with the installation until the installation is completed.

Type: mysql

Host: localhost

Name: moodle

User: root (check the moodle database's privilege on the EasyPHP site)

Password: None (ditto)

References

_____(2006). A Learning Management System for the Rest of Us. Available at
http://www.indiawebdevelopers.com/articles/online_course/moodle.asp

APPENDIX D. Training Material (Presentation)