DISTANCE LEARNING COURSE ON

e-Learning
POLICIES

COURSE COMPLETION REPORT
16 October 2006–12 January 2007
Tokyo, Japan

ADBInstitute
Asian Development Bank Institute

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Distance Learning Course on E-Learning Policies:
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ADBI, Tokyo 2007

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Preface

Distance education, especially through the use of computer technology, is becoming a central focus of an increasing number of educational institutions, governments, non-governmental organizations, and private enterprises. Many institutes are using new technologies to improve teaching and learning, communication, and to increase the accessibility of information to a wider audience. E-learning increases access to education by making it possible for students to fit their education into traditional lifestyles and work schedules. E-learning can also overcome barriers of traditional learning where multimedia technology in education makes it possible to illustrate and teach complex processes. Computer courseware can be effectively designed using a systems approach as well as by integrating appropriate instructional systems design principles.

However, the choice of the type of technology or tool for developing e-learning is no simple task, and is often decided by personnel who are not equipped with the technical knowledge or appropriate educational background to develop a course. Making the right decisions from the start is essential as e-learning supporting products are expensive.

The E-Learning Policies course was developed to provide an opportunity for participants to gain a better understanding of the benefits and limits of e-learning programs. The course included topics on the approach to choosing proper equipment and software suitable for e-learning, the use of learning content management systems, and methods of evaluating commercially available computer course ware. Last but not least, it intended to teach participants how to draft a plan to develop a multimedia computer courseware based on sound learning theories and instructional strategies.

This course was the third distance learning course offered by ADBI via the website and was very well received by participants who were stimulated by the lectures and ready to transfer their courseware development plans into action. Many of them were also interested in borrowing ADBI lecture CD-ROMs for their e-learning curriculum. It is rewarding to see our efforts in building the capacity of ADB member countries making an impact in these countries.

Masahiro Kawai
Dean
Asian Development Bank Institute

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Abbreviations

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
APACC	Asia Pacific Accreditation and Certification Commission
CIS	community information services
CPSC	Colombo Plan Staff College for Technician Education
DLC	distance learning center
DLC Colombo	Distance Learning Center, Ltd., Colombo
DMC	developing member country
ELP	e-learning policies
IBM	International Business Machines
ICT	information and community technology
KRIVET	Korean Research Institute for Vocational Education and Training
LMS	learning management system
PIS	public information services
PREL	Pacific Resources for Education and Learning
UNESCO	United Nations Educational, Scientific, and Cultural Organization

HOW THE ELP COURSE STARTED

The E-Learning Policies (ELP) course was designed to encourage the sharing of knowledge and experience in the development of web-based training courses. A series of lectures were selected from past presentations delivered in various ADBI workshops. These presentations were recorded during the workshops and later developed into lecture CD-ROMs. To test the course content and materials, the ELP course was first launched as a pilot course through a workshop format in Colombo, Sri Lanka in May 2006 in collaboration with the Distance Learning Center Ltd (DLC Colombo) before being launched as a distance learning course via the online classroom in October 2006.

1.1. ADBI Workshops

The lectures included in the ELP course were based on three Asian Development Bank Institute (ADBI) workshops conducted in 2004 and 2005. The International Workshop on Improving E-Learning Policies and Programs was organized by the Asian Development Bank (ADB) and ADBI, and held on 9–13 August 2004 in Manila. The workshop was jointly coordinated and sponsored by the governments of Australia and the Republic of Korea and two private companies: International Business Machines (IBM) Corporation and Microsoft Corporation. Twenty-eight participants, including decision-makers in government ministries of education, economy, finance, or planning from 19 countries, participated in the workshop. There were also speakers and resource persons from IBM; Microsoft; the United Nations Educational, Scientific and Cultural Organization (UNESCO); Australia; and the Republic of Korea. Others from the private sector were also invited to share their knowledge in their specific fields of expertise.

The objectives of the workshop were to review, compare, and evaluate e-learning policies and programs in the selected countries and to draft action plans to improve them or to introduce e-learning policies and programs. The presentations were organized into three parts: macro analysis of components facing e-learning in countries, micro analysis of these components, and case studies. A forum was held during the workshop to share and discuss ongoing applications of e-learning projects in developing countries. A major outcome of the workshop was a series of 25 draft action plans prepared by the participants for their respective countries.

A Mobile Learning for Expanding Educational Opportunities Workshop was conducted on 16-20 May 2005 in Tokyo, Japan. It was organized by ADBI and the UNESCO with the support of the ADB; Paradise Patent Services; Pacific Resources for Education and Learning (PREL); Asia-Pacific Satellite Communications Council; Hewlett-Packard Asia Pacific Pte Ltd; Microsoft Corporation; and International Business Machines (IBM) in response to the many activities to introduce e- and m-learning services that are currently being sponsored by governments in the Asia-Pacific region. Participants from 12 countries in the Asia-Pacific region attended the workshop. Resource persons from the workshop included experts from academic institutions, development agencies, government ministries, non-profit companies, and multinational corporations such as Hewlett-Packard Asia Pacific Pte Ltd, Microsoft, and IBM.

The objectives of the workshop were to review recent trends of mobile and wireless learning programs, examine issues in introducing mobile learning programs in rural and remote areas, identify policies and strategies conducive for mobile learning, and draft action plans/project proposals to introduce mobile learning. The workshop participants also developed, shared, discussed and submitted proposals for implementing m-learning in their countries.

The International Workshop on Developing E-Learning Contents, jointly organized by Colombo Plan Staff College for Technician Education (CPSC) and ADBI, was held from 8-17 February 2006 at the CPSC Headquarters in Manila, the Philippines. The workshop was sponsored by ADB, the Asia Pacific Accreditation and Certification Commission (APACC), IBM, Korean Research Institute for Vocational Education and Training (KRIVET), FAO Regional Office for Asia and the Pacific, and the Microsoft Corporation. The objective of the workshop was for participants to learn to design, develop, implement, and evaluate technology based, content-intensive, and fully functional courseware. There were 24 participants from 15 countries who were mostly educators or IT professionals. Seventeen resource speakers from different government and private sectors shared their knowledge and expertise with the participants.

Participants were asked to present the outline of a courseware plan, which was the primary requirement of the workshop. Various authoring tools and media, to be used in the development of the courseware, were introduced to the participants. Different practice tasks and group outputs were also presented by the participants.

1.2. Production of Lecture CDs

All the presentations in the above mentioned workshops were recorded during the workshops and later made into CD-ROMs. The production of CD-ROM lectures is part of our strategy to widen our dissemination. Typically there are about 20 lectures in a workshop but only the good quality ones - in terms of content and clarity of presentation - are selected for reproduction. On average, about 10 out of 20 lectures are selected from each workshop.

Several consultants were hired back in 2004 to design the prototype and develop the lecture CDs. These CD-ROMs have been used by ADBI since then for various training sessions. A copy of each lecture CD-ROM is sent to ADBI depository libraries. These lectures are also available on ADBI DLC website for free downloading.

1.3. Pilot Workshop

The Pilot Course on ELP was held at the DLC Colombo from 17-24 May 2006. This was a national workshop organized and facilitated by the DLC in collaboration with ADBI and the Secondary Education Modernization Project (SEMP) of the Ministry of Education, Battaramulla, Sri Lanka. The workshop was sponsored by ADBI and SEMP. Thirty-five members, of whom 25 were participants and 10 were observers, were selected to participate in this course. The training methods of this course varied, including:

- Self-study with a set of eighteen pre-recorded lectures made available to all participants free of charge, and course-guides;
- Online video streaming, using a learning content management system;
- Face-to-face presentation and discussions with four lecturers;
- Video-conferencing with resource speakers;
- Small group brainstorming and creative activities; and
- Online discussion forum.

During the pilot course, the benefits and issues of e-learning were discussed. Relevant software, hardware, and courseware were reviewed with some hands-on practice sessions. The course also introduced a learning content management system to monitor the teaching-learning process. Twenty-seven courseware development plans were drafted based on sound principles of instructional systems design.

1.4. Designing of the ELP Course

The operation of this course continued to be commissioned to the Asian E-Learning Pvt. Ltd. based in Nepal. Additionally, as the vendor had expertise in the content area of this course, the responsibilities of preparing the course materials and answering emails, which had originally been assigned to an associate position, were transferred to the vendor. No Capacity Building and Training Associate was hired then for this course. Administrative matters, on the other hand, continued to be managed by administrative staff from ADBI.

Unlike the previous two courses, the registration quota for this course was reduced to a maximum of 300 participants, which made the management of the course easier. Moreover, to reduce shipping costs, the mailing of hardcopy certificates was eliminated. Instead, e-certificates were offered by default and hard copies were only available upon request.

To prepare for the ELP course, development of homepage and related informative pages started in Fall 2006. Development of the front-end web module was completed on 2 October 2006, followed by the administration module on 5 October 2006. On the same day, the extended Distance Learning Center (DLC) website was launched and readied for registration.

CHANGES IN THE DLC SITE

A new fully dynamic DLC website with enhanced features, as shown in Figure 1, was developed so as to remove all the inconsistencies in the previous sites. Several improvements were made with this new website. To eliminate redundancy in data, the database of the DLC and that of the classroom sites were integrated into a similar standard. This modification allows the administrator to update the site, move participants of the distance learning course to the online course, and closes the registration of the course compatibly. The new website also allows multiple nominations of participants. Furthermore, participants can register the course with their own username and password. Another improvement with the new system is that it can easily track participant's passwords, if they fail to remember them, using the forget password link.

Figure 1. New ADBI-DLC Website
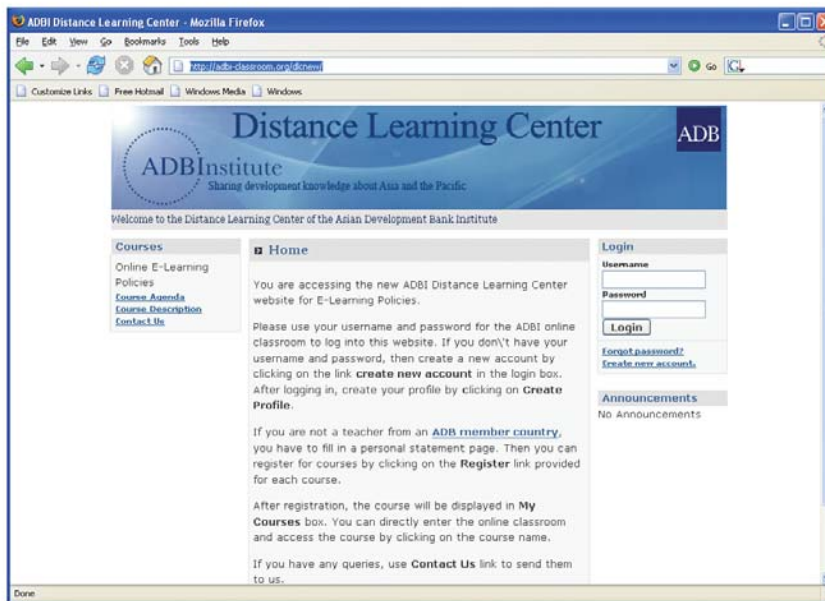
The new DLC website directs both the administrator and the participants to their respective classroom page after they log in with their username and password. The administrator can export all the details of the participants to an Excel Sheet very easily. The administrator manages the enrollment of all the participants in the course through this site. As for participants, they can edit their profile, change their password, and log in to the ADBI Classroom through this DLC site. The courses that they are enrolled in are revealed at the right hand side of the DLC site. This site also includes an announcements block for both the administrator and the users.

2.1. New Registration System

Participants can register for a course from the Create new account link in the DLC site by going through several steps. New participants need to create a user account first. After that they are asked to fill out a registration form and write a personal statement. Once these steps are completed, the administrator approves participants' registration and the account becomes active. Screenshots of the new registration pages are shown in figures 2-6.

Figure 2. Individual Registration Page

Figure 3. Nomination Page

Figure 4. Registration Form

Figure 5. Login Page to Enter ADBI-DLC for Registration

Figure 6. Personal Statement Page

2.2.Administration Control of the New DLC Site

The entire administrative work of the ELP course is controlled through this administration page, as shown in figure 7. Generating reports, managing the enrollment of the participants, and updating the records of the participants are carried out through this administrative module by the administrator. The administrator can view, edit, or delete participant's data from the site. The administrator can also approve or reject any participant from enrolling in the course.

Figure 7. DLC Admin Panel Page

The Admin Panel of the new DLC site is only accessible to the administrator. The Manage Participants function helps the administrator manage the enrollment of participants, monitors the course activity of the participants, and generates reports of all the participants.

The Search Participants function supports the administrator by allowing quick access to any participant using their User ID or their Email Address. This page also includes an Admin Control block comprised of System Users, Change Password, and DLC Classroom. The System Users can access the administration of the site; the Change Password link allows administrator to change participants' passwords; and the DLC Classroom link allow direct access to the DLC classroom.

In the Newsletter block, the administrator can compose newsletters and have records of the newsletters sent to the participants. The edit block allows the administrator to edit the email contents and the static page contents of the course. Messages to the administrator from the classroom are displayed in the Announcements block of this page. These are private announcements to the administrator.

2.3. User Interface

Figure 8 shows the new main page in which participants are directed to after they are enrolled to access the DLC site. The new system displays all the courses registered by the participants in the My Courses block. In the My Profile block, participants can edit their own profile as their wish, access and revise their personal statement, and change their password. The Announcement block displays the private message(s) of the respective participants in the course. This page also includes links to the Course Agenda, Course Description, and Contact Us pages.

Figure 8. User Page in the New DLC Site
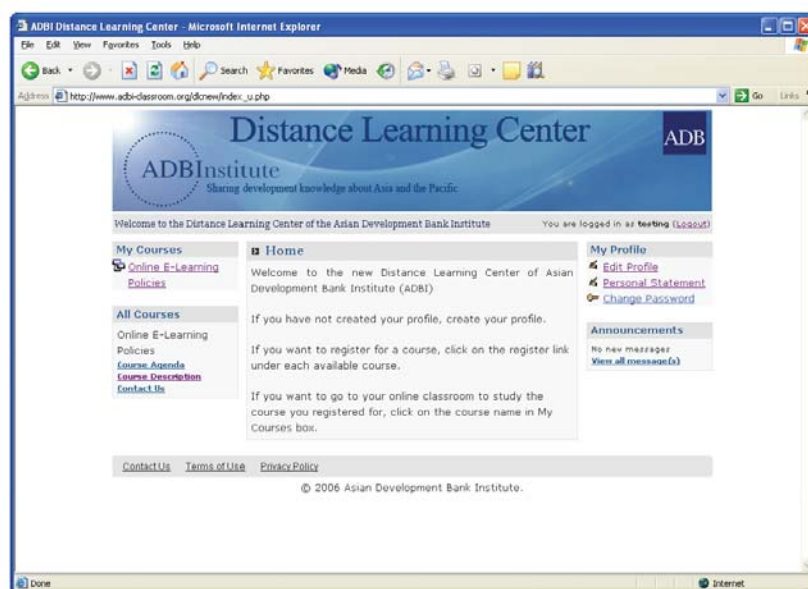
This course was offered free of charge to teachers and government officials in charge of e-learning. Interested persons from civil society and the private sector were also welcomed. Priority was given to applicants from ADB developing member countries (DMCs).

e prerequisites for this course were simple. Participants needed to be fluent in English, as the course was conducted in English (no interpretation was provided). They also needed to have access to a personal computer with multimedia functions (CD/DVD-ROM drive and sound card) and an Internet connection. Unlike for the previous two courses, participants did not have to complete an issues paper in order to receive their username and password to access the course. By eliminating the issues paper as a requirement for enrolling in the course, more registrants were encouraged to participate in the course. The rest of the course requirements were the same as for the first two. To complete the course participants had to view all lecture CD-ROMs at their own pace, go through the review questions for each lecture CD-ROM, participate in the online discussion forum (on a voluntary basis), and complete all required assignments, a final exam, and course evaluation. After all of the above tasks were completed, they would be able to download an e-certificate from the classroom site.

3.1. Background

Rapid innovation in information and communications technology (ICT) is transforming the way we work, the way we interact, the way we learn, and the way we live. In the educational sector, e-learning increases access to education by making it possible for students to fit their education into traditional lifestyles and work schedules and choose from a wide range of courses and learning opportunities. E-learning uses ICT to overcome barriers of traditional learning. Multimedia technology in education makes it possible to illustrate and teach complex processes. Computer courseware can be effectively designed using a systems approach as well as integrating appropriate instructional systems design principles.

The benefits and issues of e-learning will be discussed in the course. Relevant software, hardware, and courseware will be reviewed. The course will also introduce a learning content management system to monitor teaching-learning process. Finally, participants will learn to draft their own courseware development plan based on sound principles of instructional systems design.

3.2. Agenda

This distance learning course was offered from 16 October 2006- 12 January 2007. An online version was later launched from 20 November 2006 – 18 May 2007 due to high demand. There were altogether 20 lectures, three assignments and an exam. Below is the agenda of the course.

Opening Session

Opening Remarks by Peter McCawley, Dean, ADBI

Introduction to the Course by Jeoung-Keun Lee, Director, Capacity Building and Training, ADBI

Session 1:   Benefits, Issues and Constraints in E-Learning
Speaker: Vincent Quah, Microsoft

Session 2:   Current Status and Trends of E-Learning
Speaker: William A. Loxley, Former ADB staff

Session 3:   Opportunities and Issues of M-Learning in Developing Asia and the Pacific
Speaker: George E. Darby

Session 4:   New E-Learning Paradigm: Intellectual Capital Creation, Knowledge Management and Economic Competitiveness
Speaker: Jonathan Kushner, Microsoft

Assignment 1: Prepare an issues paper on e-learning and submit it.

Session 5:   Instructional Systems Design
Speaker: Albert Dean Atkinson, Records Management Specialist, ADB

Session 6:   Analysis of Learners
Speaker: Ligaya D. Valmonte, Faculty Consultant, CPSC

Session 7:   One-to-One Computing Paradigm
Speaker: Bruce Dixon

Session 8:   Designing Courseware for Mobile Devices
Speaker: William Horton

Session 9:   IT for M-Learning in Developing Countries
Speaker: Vinay L. Deshpande

Session 10:   Satellite Based Distance Learning Network
Speaker: Eui Kon Koh

Assignment 2: Visit a school nearby and observe what kind of e-learning courses are offered. Discuss with teachers, students and parents how to improve/introduce e-learning courses in this school. Submit your study tour report.

Session 11:   Exploring M-Learning Academic Initiatives in North America and Europe
Speaker: Judy Brown

Session 12:   Technological Aspects of E-Learning
Speaker: William Horton

Session 13:   Introduction to Mobile Learning Tools
Speaker: William Horton

Session 14:   Mobile Campus Solutions
Speaker: Yasunori Akenaga, IBM

Session 15:   Learning Management System
Speaker: Subodh Tripathee, First Vice Chairman, Forum for Information Technology, Nepal

Assignment 3: Submit your computer courseware development plan according to the template provided.

Session 16:   Conducive Environments for E-Learning
Speaker: Peter Moore

Session 17:   Evaluation of Computer Courseware: Methods, Procedure and Evaluation Checklist
Speaker: Ranjith Kumarasiri, Distance Learning Center, Sri Lanka

Session 18:   Customization of Computer Courseware
Speaker: Shyamal Majumdar, National Institute for Technical Teacher Training and Research, India

Session 19:   Future of E-Learning
Speaker: Khairiyatun Azlina Akhiruddin, IBM

Session 20:   Future Opportunities in M-Learning
Speaker: Judy Brown

Assignment 4: Take an online course examination.

Course Evaluation: Please complete the online course evaluation.

Closing Remarks by Jeoung-Keun Lee, Director, Capacity Building and Training, ADBI

3.3. The ELP Course Page

Once participants were logged onto the ELP Course Page, they had access to all the course materials described below.[1]

Course Lectures: the distance learning ELP course consisted of 20 lectures altogether. These lectures were prepared with the objectives of producing e-learning knowledge to the learners so as to have effective and efficient learning policies throughout the Asia and the Pacific regions. The twenty lecture CD-ROMs were converted into three different formats and uploaded onto the ADBI classroom site. Two formats, i.e., 56 Kbps and 128 Kbps, were streamed from the vendor's media server so that participants could view all the lectures without having to wait for the whole file to be downloaded to their computer's hard drive. Also they could select the format best suited to their connection type: broadband or narrowband. The third format was self-extracting zipped files. Once participants downloaded a lecture file and double clicked on it, the folder would be automatically unzipped and the lecture window would pop up.

Lecture Summaries: Participants were encouraged to read the summary prior to viewing a lecture so that they could have some concept of the lecture to be viewed and thus improve the learning process.

Review Questions: These were prepared to help participants gauge their understanding of the lectures and help them to prepare for the final course examination. These questions were of different types including both objective and subjective ones. Objective questions involved True, False or Debatable and Multiple Choices, whereas subjective questions involved short answer questions or discussion topic questions.

Course Forum: This acted as a discussion board for the participants to facilitate group activities. Participants could make queries and discuss them among themselves. Participants could find answers regarding the course and the classroom from the conversation among themselves. The forum served as a helpful resource for the participants. There were altogether 65 Discussion Forums posted for the course as of 14 January 2007. Participants mainly discussed the benefits of e-learning and m-learning and their implementation in their country. The discussion forums were the most accessed resources in the classroom. It showed that participants were actively participating in the course.

Course Chat room: This allowed participants enrolled in the classroom to have a live communication to share their views and opinions regarding the course. They could instantly interact with every logged in participants in the course chat room to exchange ideas and gain others' perspectives. They could also ask questions to each other and help to clear any confusion about the course.

Course Evaluation: This is a method for collecting feedback from participants regarding the course. Participants were asked to evaluate the course and provide suggestions for future improvement by completing a standard questionnaire.

Course Guidelines and Tutorials: These included tutorials to help participants navigate the classroom site and instructions on how to study and submit assignments.

Course exam: Questions included True or False or debatable, multiple choices, correct order arrangement questions, and essay questions. Participants were required to complete three out of five essay questions. There was no restriction on attempting the exam multiple times. Participants were encouraged to take the exam until they were satisfied with their score.

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[1]   Synopses of lectures, course assignment guidelines and sample assignments, course exam, and evaluation form are included in the appendices.

3.4. Facilitation by the DLC in Colombo

The Distance Learning Center in Colombo helped 225 Sri Lankan Government officials, university professors, teachers, and participants from NGOs and private sector to successfully complete the distance learning course on ELP. Including their participation, the total number of participants who completed the course on E-Learning Policies during the course period was 348.

The partnership with the DLC Colombo started in May 2006 when the pilot course on ELP course was held there. As e-learning is an area in which the Ministry of Education (MOE) of Sri Lanka is interested, facilitator Ranjith Kumarasiri offered at that time to facilitate a series of e-learning courses for the MOE. After one course was offered, an evaluation was conducted to assess the course content, facilitation skills, and the level of achievement of the participants. The MOE was very satisfied with the outcome of the evaluation and requested that Mr. Kumarasiri conduct 15 more courses for principals and teachers of eight provinces. In addition, Mr. Kumarasiri was also asked to offer two courses for curriculum developers of the MOE and a course to a private company.

For each five-day workshop, about 30 participants were summoned to DLC Colombo. They were given 20 ADBI e-learning CDs. There were 20 sessions (4 sessions x 5 days), each lasting for 1 hour and 45 minutes. During each session, participants were first asked to go through the CDs in the MM lab individually. Participants were also given the opportunity to access CDs in DLC Colombo's LMS so that they had some experience using a LMS.

Individual study with the CDs took about 30 minutes. Facilitator then discussed the content of the CDs with participants, relating it to the local context and participants' experience. Participants were encouraged to make comments and ask questions. Facilitation was conducted in both Sinhala and English as most participants were not fluent in English. The facilitator usually tried to provoke participants to think and discuss critical issues and trends. In some sessions, participants were grouped and asked to make presentations and posters. At the end of a session, the review questions that were provided in the hard copy with content summaries of each CD were answered. In addition to the main facilitator, Mr. Kumarasiri, a few helpers who had attended the pilot e-learning course were also invited to act as facilitators. Finally, to complete the course, participants were required to take the course exam.

During the workshop DLC Colombo also introduced the ADBI-DLC online classroom and encouraged participants to register and follow the course through the online classroom as well. However, very few people registered due to the language barrier. DLC Colombo provides extensive facilitation to assist participants with their study, as it believes that students are generally not self-motivated to study on their own at home or workplace with the CDs without guidance.

3.5. Statistics

3.5.1. Participants

There were altogether 306 registrants for this course. Of them, 39% were female. 50% came from the public sector, 41% came from the private sector, and only 9% were from the non-profits. Participants came from 34 countries. The country with the highest number of participants was the Philippines, with 94 participants, followed by Sri Lanka with 65 participants. The top ten participating countries broken down by gender are shown in figure 9. Among the top ten countries with high participation, only three countries – India, Japan, and Vietnam - had more female than male registrants.

Figure 9. Top Ten Countries Representing Higher Participation by Gender
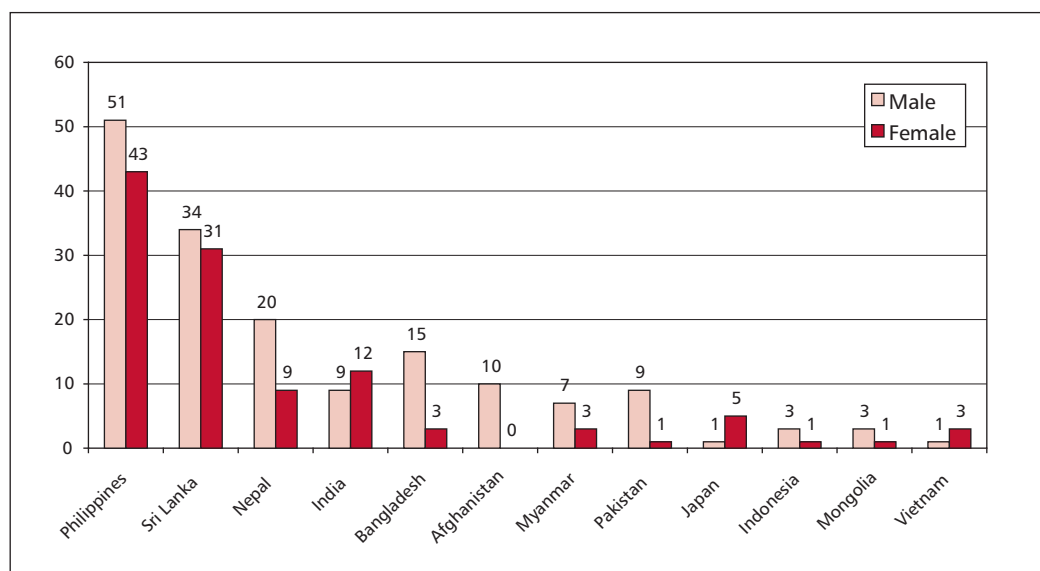
Figure 10 shows the number of participants by age group and gender. Participants ranged in age from their teens to fifties. The majority of participants were from the group in their twenties and thirties, comprising 37% and 36% respectively. There were more male than female participants in each age group. The twenties age group had most female participants, with 44. Most male participants were in their twenties and thirties; each of these age groups had 70 male participants.

Figure 10. Number of Participants by Age Group and Gender
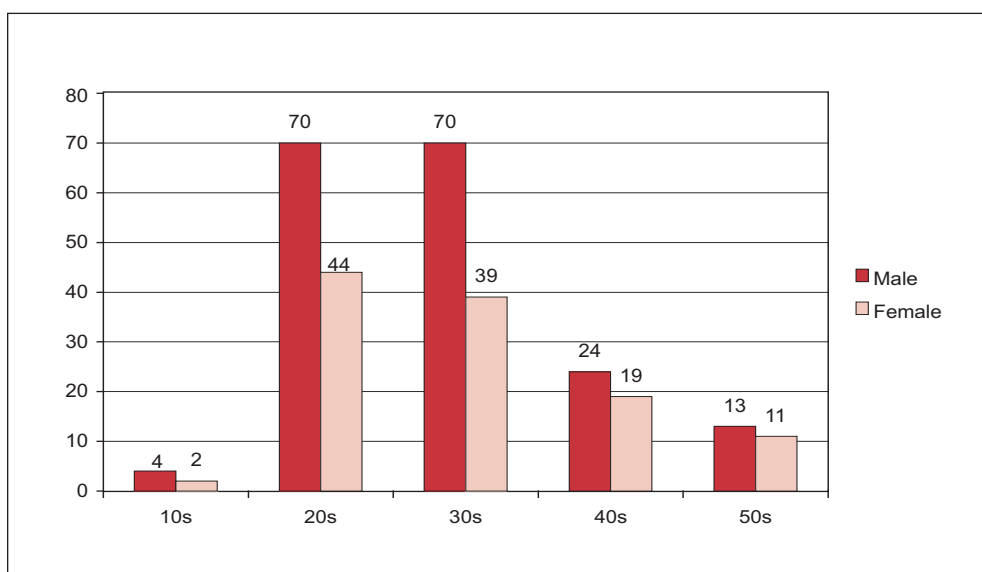
The completion rate of this course was 40%, with 123 participants successfully completing it. However, when including the total number of participants that completed the course through the facilitation from DLC Colombo as mentioned in section 3.4, the total number of completers was 348.

As shown in figure 12,[2] the majority of completers, 27, came from the Philippines. However, the completion rate of Filipinos was not high, standing at just 29%. Countries that had a 100% completion rate include Canada, the Cook Islands, Kenya, Maldives, Rwanda, Singapore, and Turkmenistan. Even though these countries had a perfect completion rate, they had few registrants, ranging from 1-3 people. Among the top ten countries with a large number of participants (shown in figure 9), Mongolia and Vietnam had the lowest completion rate, each with 25% only, or one out of four participants.

Figure 11. Course Completion by Country
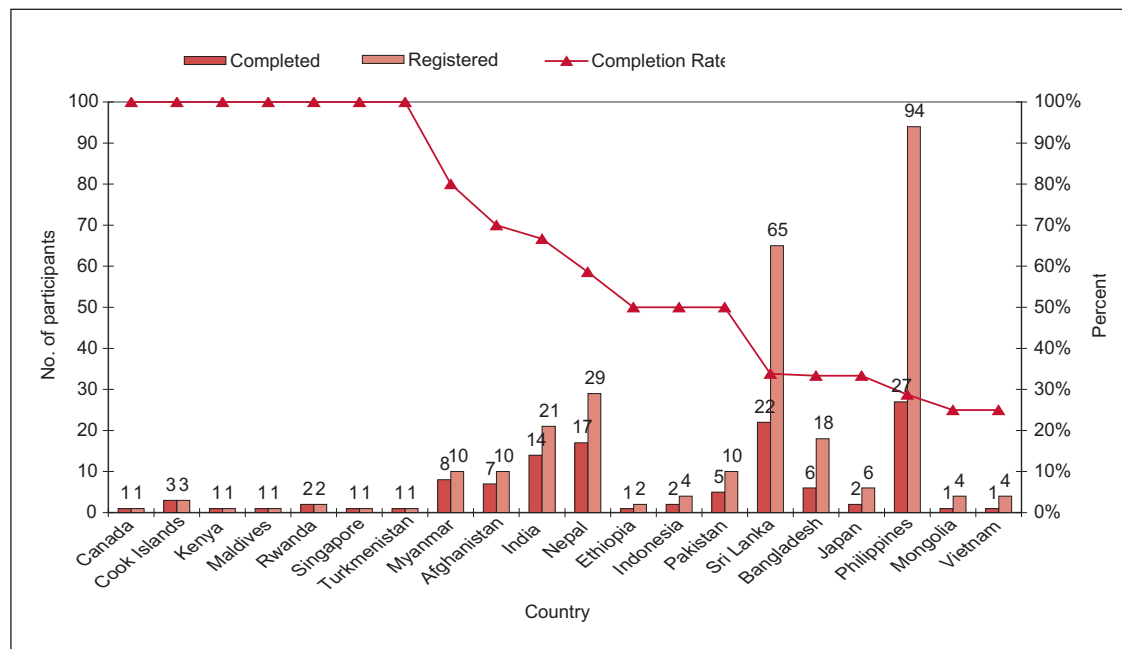
Of the 123 completers, 69 were male (56%) and 54 were female (46%). Even though overall female completion was lower than male, when looking at the completion rate by gender and age group, females in each age category (except the forties age group) outperformed males. The female completion rate in each age group was relatively consistent, ranging from 41% to 64%. Males on the other hand, ranged from 0% to 46%. The highest completion rate among female participants was in the fifties age group (64%) and the lowest was in the twenties age group (41%). The highest completion rate among male participants was in the forties and fifties age group (each with 46%) and lowest in the teens (0%).

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2   Does not include DLC Colombo participants.

Figure 12. Completion Rate by Gender and Age Group
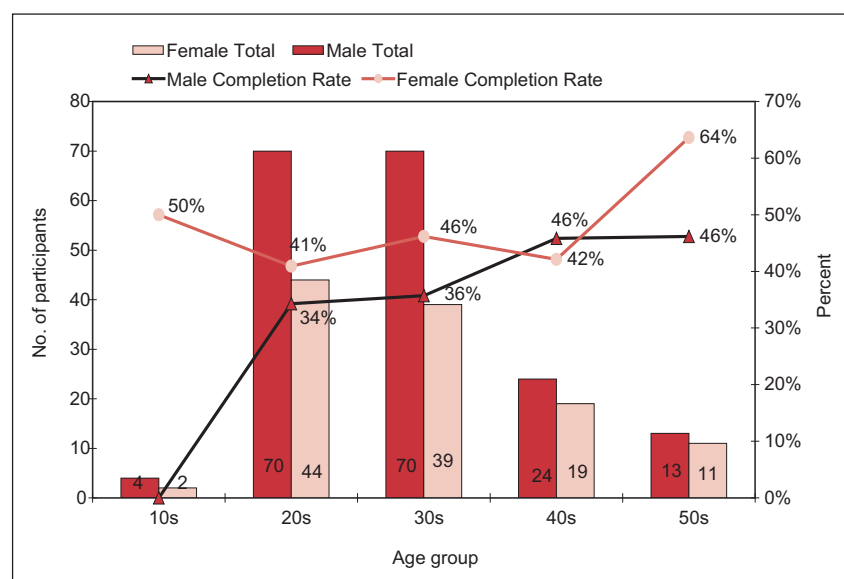
3.5.2. Level of Participation

The total number of registered participants for the distance learning ELP course was 306 (Table 1). Since the issues paper assignment was no longer required for official acceptance, all 306 registrants were directly enrolled in the ELP course. The course was completed by 40% or 123 participants. However, including completers from DLC Colombo, the total number of completers was 348. The rest of the 183 participants from the Distance Learning ELP not completing the course were automatically migrated to the Online ELP, which currently has a total of 392 participants. The Online ELP started on 20 November 2006 and will end on 18 May 2007.

Table 1. Number of Participants in the Distance Learning ELP and Online ELP

Distance Learning ELP		Online ELP	
Total Number of registered participants	**306**	Total number of participants for Online ELP	**392**
Number of registered participants accepted by ADBI	(306)	Number of participants registered for Online ELP	(209)
Number of participants that did not complete the course? moved to Online ELP	(183)	*Number of participants from Distance Learning ELP*	(183)
Number of participants completing	(123)		
Number of participants completing from DLC Colombo	(225)		
Total Number of Completers	**348**		

3.5.3. Web Traffic

The web traffic to the DLC and Classroom websites during the ELP course period is shown in Table 3 and 4. The number of pages, total hits, and bandwidth are listed month by month. Table 3 shows that web traffic on the DLC website was the busiest during October, with144,399 pages being accessed with a total of 293,268 hits. These numbers fell gradually as the months went by. By January, only 66,160 pages were accessed with a total of 126,312 hits.

Table 2 Web Traffic on the ADBI DLC Website

Month	Pages	Hits	Bandwidth
Oct 2006	144,399	293,268	8.66 GB
Nov 2006	120,183	291,618	7.13 GB
Dec 2006	108,217	274,523	6.28 GB
Jan 2007 (First 15 days)	66,160	126,312	4.97 GB

The active participation of participants could be demonstrated by the high number of hits in the ADBI Classroom website during the ELP course period. As shown in Table 4, in October when the course registration started, there were a total of 89,674 hits with 36,423 pages being accessed. These numbers tripled in November as the course started. Participants were most active during the month of December, as evidenced by the high number of hits and pages accessed.

Table 3 Web Traffic on the ADBI Classroom Website

Month	Pages	Hits	Bandwidth
Oct 2006	36,423	89,674	3.78 GB
Nov 2006	109,564	275,139	6.19 GB
Dec 2006	138,613	280,316	8.95GB
Jan 2007 (First 15 days)	65,490	125,786	4.81 GB

3.6. Evaluation

A course evaluation was one of the required tasks participants had to complete for this course. The evaluation form included five sections asking participants to rate the extent in which the course had met its objective, overall organization, course materials, course lectures, and the usability of forum. Participants were also asked to assess the time needed for them to complete each assignment. In addition, there were several open-ended questions asking participants to provide comments on how to improve the organization, communication, content, and material of the course; and a question on how they intend to put the knowledge and skills they had acquired into practice. Finally, they were asked about future courses that they thought should be offered via distance learning.

A total of 97 course evaluations were filled. The overall rating was very positive. In many instances, participants remarked on the excellence of the course and areas that they found satisfactory rather than criticizing or providing suggestions on how to improve the course. The results of the evaluation and participants' comments are summarized in the following sub-sections.

3.6.1. Objectives

The first part of the evaluation form asked participants to rate the extent in which the course objectives were achieved. As shown in figure 13, participants' overall response was fairly good. By and large, the objective, List key benefits and limits of e-learning programs was considered the most fully achieved, with 7% thinking it was partially achieved, 65% thinking it was fully achieved, and 28% thinking it was more than fully achieved. However, the objective with most votes in the more than fully achieved category was Use learning content management system (32%).

In terms of the objectives that were less achieved, two objectives received ratings in the not achieved category: 2% of participants thought the objective Evaluate commercially available computer courseware was not achieved and 25% thought it was only partially achieved. Though the objective Use learning content management system was considered fully achieved in general, it also received 1% of votes in the not achieved category. Overall, the objective Draft a plan to develop a multi-media computer courseware, based on sound learning theories and instructional strategies was the least achieved one with 30% of participants thinking it was only partially achieved, 54% thinking it was fully achieved, and only 16% thinking it was more than achieved.

Figure 13. Evaluation of Objectives
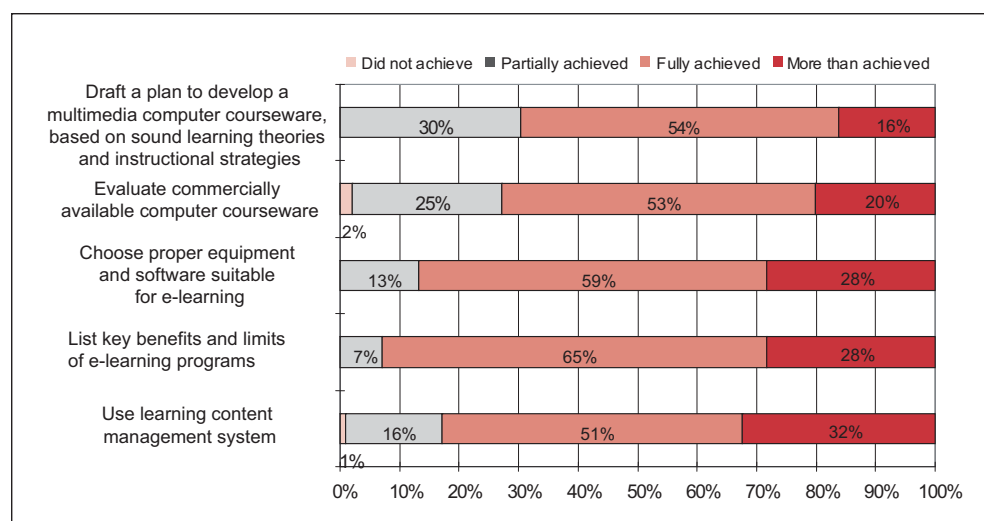
3.6.2. Organization

Five questions, including one open-ended question, were asked as ratings of the organizational component of the course. As illustrated in Figure 14, the organization of the course was well received. Overall, participants were satisfied with the Timely distribution of CD-ROMs with 69% rating it as excellent. This was followed by *Usability of distance learning website* with 57% thinking it was excellent.

Usability of online classroom was considered the weakest of all. It was also one of two areas that was rated as poor by 1% of participants.

Figure 14. Evaluation of Organization
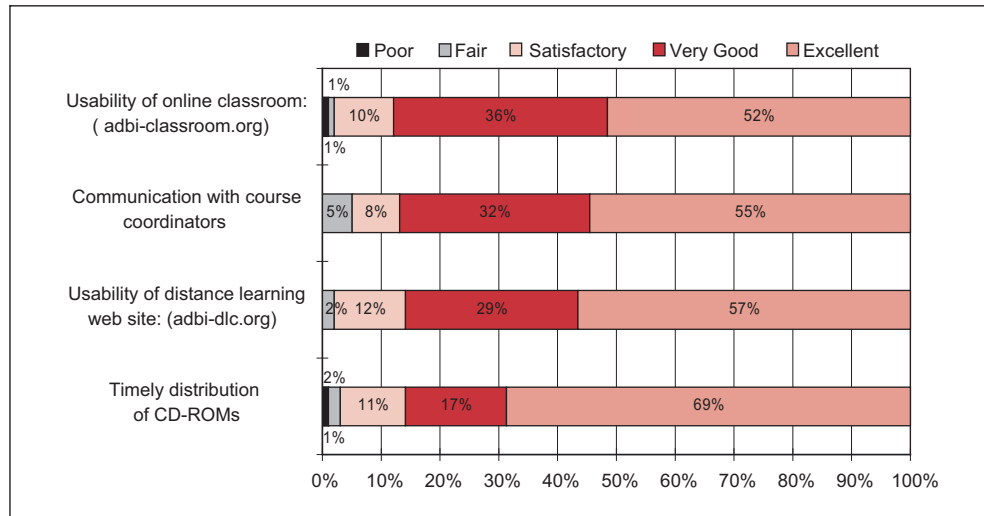
3.6.3. Materials

Seven questions were asked as ratings of the quality of the course materials. As shown in figure 15, Instructions on how to use online classroom was rated the highest, with 49% thinking it was excellent and 43% rating it as very good. This was followed by Guidelines for study visit to academic institution with 43% rating it as excellent and 42% rating it as very good.

Drafting a computer courseware development plan was least satisfactory, with 15% rating it as fair and 1% rating it as poor. Two other areas that were also rated as poor by 1% of participants were Guidelines for issues paper and Course examination.

Figure 15. Evaluation of Course Materials
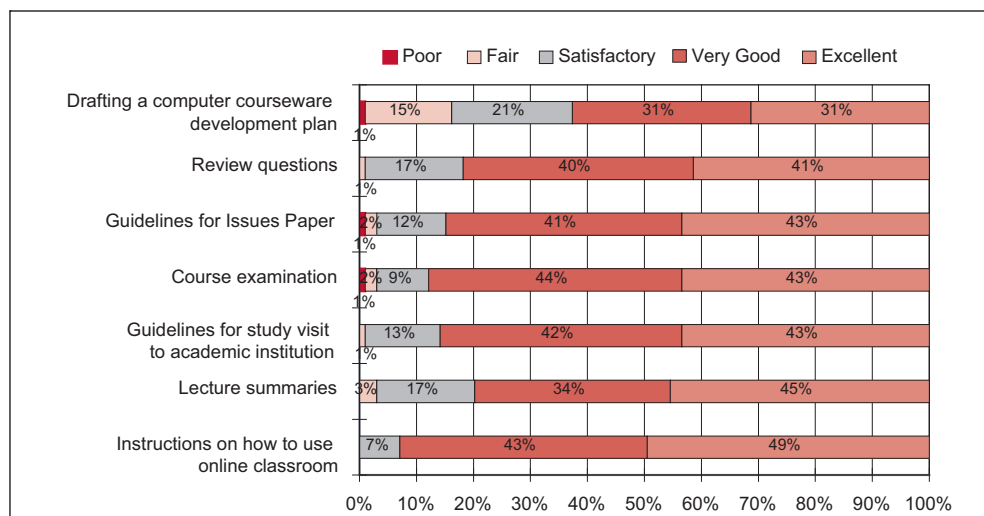
3.6.4. Lectures

In this section, each CD-ROM lecture was rated by the participants. As illustrated in Figure 16, the lecture Analysis of Learners had the highest percentage of people rating it as excellent (53%), with no one rating it as fair or poor.

In terms of lecture that received the most rating in the fair and poor category, Mobile Campus Solutions topped the list with 7% rating it as fair and 1% rating it as poor. No other lectures were rated by more than 5% of participants as fair or poor.

Figure 16. Evaluation of Course Lectures
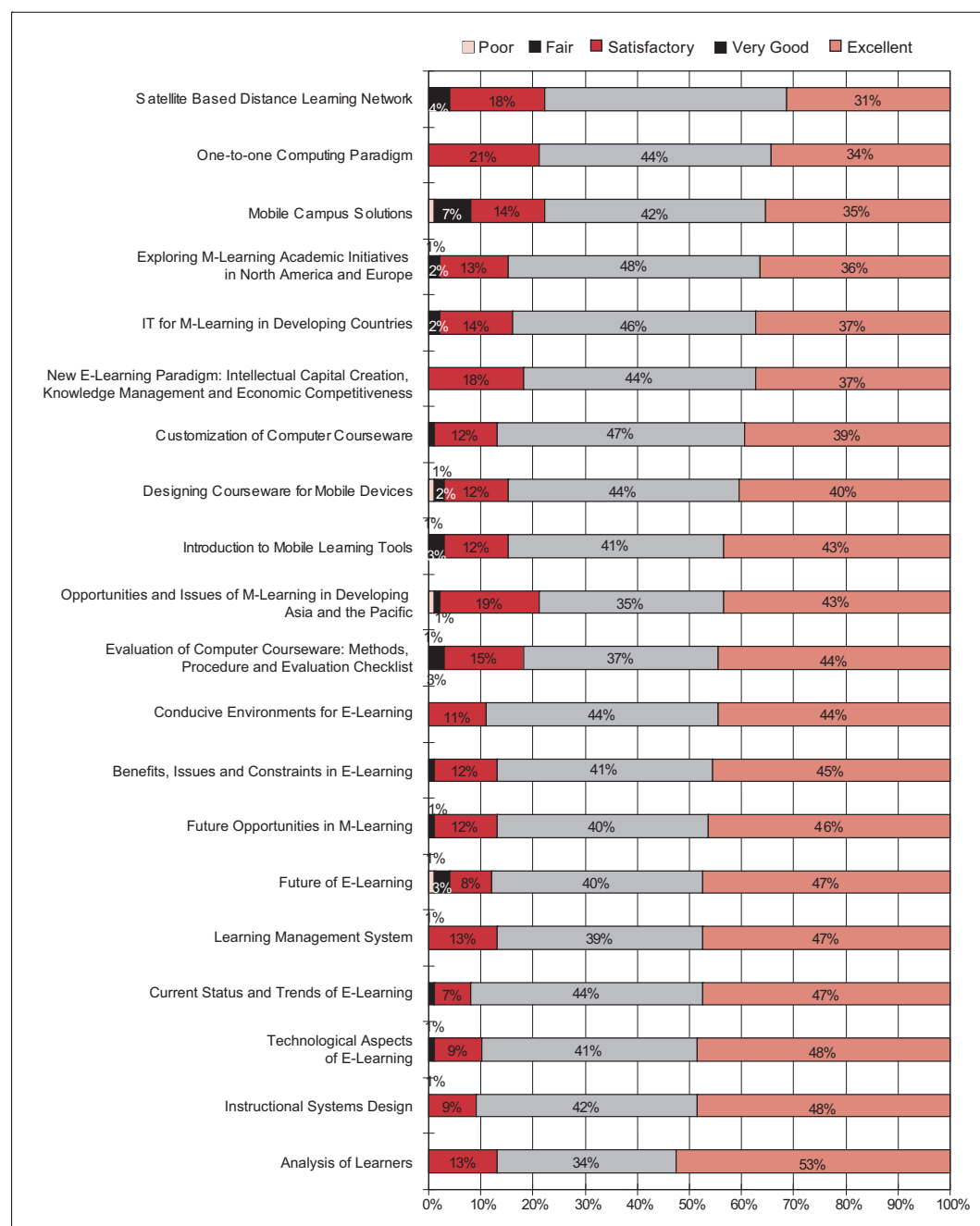
3.6.5. Forum

Three questions were asked about the usability of the forum. The area which most participants rated it as excellent was Communicate with course administrator (40%). When including the excellent and very good categories Answer contented-related questions you have was the most satisfactory (77%). However, both components were also rated poor, each with 1%.

Figure 17. Evaluation of Forum
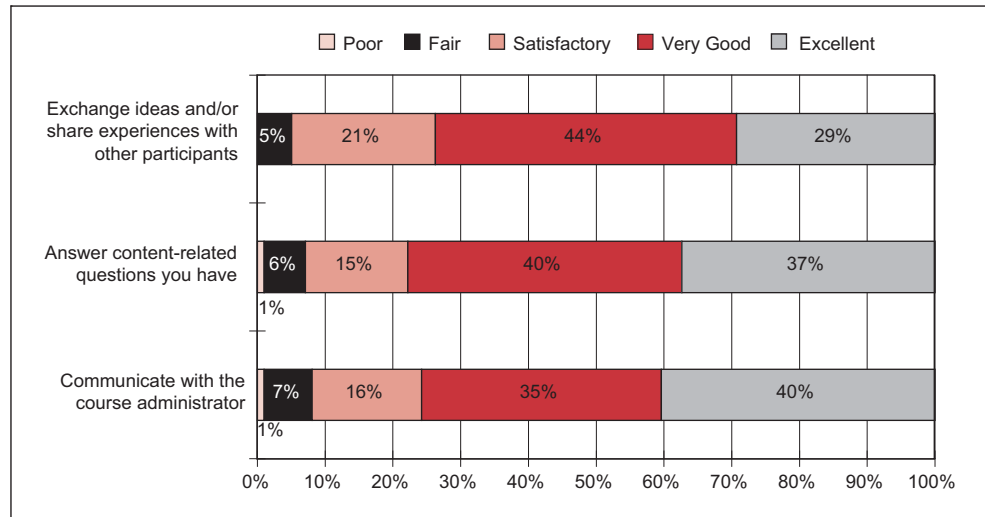
3.6.6. Transforming Knowledge and Skills into Practice

A question was asked about how participants intended to put the knowledge and skills they acquired from this course into practice. They were allowed to select as many options given in the form as desired. As illustrated in Figure 18, the statement most selected by participants was "This course helped me to form new goals and improve work practices," with 91%. This was followed by the statement "I will share the resources gained in this course with my colleagues and department" (82%). The least selected statements were "I will further develop an e-store for my business" with 23% and "I will refine my business plan and present it to my supervisor" with 29%.

Figure 18. Participants' Response to How They Will Transform Acquired Knowledge and Skill into Practice for PIS and CIS
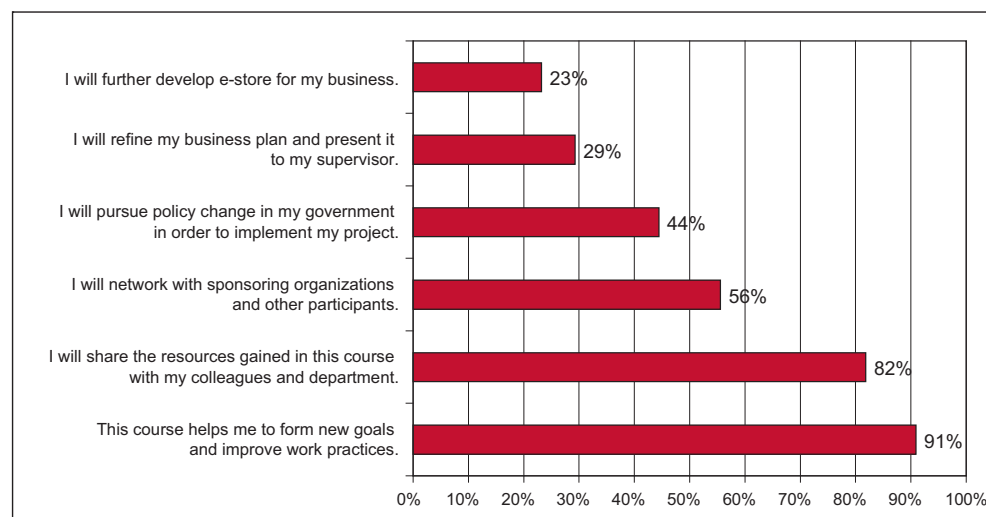
3.6.7. Time Required to Complete the Assignments

Participants were asked to provide an estimate of the time they had needed to complete the assignments and the course exam. Most participants did not provide an actual number of hours they had worked on each piece. Instead, they provided an estimate of the time it had taken them from start to completion.

By and large, participants were able to complete the first assignment, issues paper in two to three days. For those who provided exact hours spent, four hours were sufficient to complete the paper. The second assignment, the study visit report, required at least a few days to complete. Most people were able to finish it within a week. The third assignment, computer courseware development plan, which was also claimed as a very difficult assignment, required at least a week to complete. Two to four weeks was the norm for most participants. Finally, the majority of people were able to complete the course exam within two hours. Very few people spent more than a day to attempt the exam.

3.6.8. Ideas for Future Courses

A large number of participants suggested that more specialized courses on e-learning and m-learning should be offered in the future. They suggested that in-depth training on developing content for e-learning, including methods for conducting cost-benefit analyses of e-learning projects and evaluate the quality of e-learning programs and courses should be offered. Furthermore, courses on instructional designing systems and the use of multi-media resources for developing online resources were also recommended. Another important aspect of e-learning, that is, preparing leaders/managers for managing an e-learning program, could also be considered. Customized e-learning module for different levels such as basic education, secondary education, and tertiary education was also a topic area participants identified as worth considering. One participant from the Maldives suggested a course in how to form intranets for learning in closed spaces, such as in an island country like the Maldives where educational programs can be conducted more cost effectively using an intranet than through the Internet. Last but not the least, government policies on e-learning in relation to intellectual property rights were also suggested.

Several popular topics that were mentioned by CIS and PIS participants also appeared numerous times in the ELP evaluation. These topics include e-governance, e-business or commerce, project management, and web development.

There were also several uncommon topics that participants suggested, which also reflected the diversity of participants' interests. Topics included but were not limited to networking and lobbying techniques, health policies, environmental policies, peace and conflict resolution, and finance.

3.6.9. Remarks from Participants

Based on the two open-ended questions in the evaluation form and e-mails we received from participants, there were many positive comments about this course. Participants greatly appreciated the impact ELP course had on them, especially on those with very limited resources.

One participant commented that the course was a real success in providing education to people from different locations overcoming geographical and time differences and praised the high quality of the course content that was on par with credited courses offered by educational institutions. In addition, one university faculty member who was trying to establish e-learning in his institute recognized the value of this course and encouraged his colleagues to enroll in it. The courseware development plan assignment that participants were required to complete also encouraged one participant to design and implement an intensive course in Teaching Online (TOL) that would be executed soon. This person was also interested in using some of the ADBI pre-recorded lectures for his training course. Furthermore, the ELP course had also inspired a participant from the Maldives to initiate a project involving the facilitation of Maldivian youth to join the distance learning Commonwealth Youth Diploma and to collaborate with institute like Open University of Sri Lanka. Last but not least, the ELP course also benefited participants in the private sector. By taking this course one participant was able to help her company better prepare and design the e-learning courses that her company planned to put forward.

Apart from the compliments documented above, there were also many constructive suggestions and comments. They are briefly summarized below in four areas: organization, communication, content, and materials.

Organization

A suggestion was made to consider organizing the course into three or four categories so that it would easier for participants to follow and learn. In addition, some of the related modules could be combined to reduce the number of CDs and remove overlaps and inconsistencies.

On the other hand, the grading system continued to be an area in which participants would like to see modification. They asked that grades of all submitted assignments be published more rapidly. From the participants' perspective, it was frustrating not to be able to know how their papers and the essay questions in the course exam were graded. Furthermore, learning was not effective when no one was monitoring their progress or providing them feedback.

Communication

The chat room continued to be a tool that was not well utilized in the participants' opinion. Many of them hoped to see more efforts put into encouraging participants to use the chat

room. Moreover, the course facilitator needs to be available to respond to participants online via the chat room as a live session. Live consultation schedules with facilitators could be arranged by posting time slots in which they would be available for live chat so that communication and consultation could be more interactive. Additionally, a subject matter expert could also be provided to address content related queries. The use of instant messaging, such as Yahoo Messenger, was also proposed for use to answer participants' queries.

Another suggestion was made to have the course facilitator not only initiate a discussion forum for each lecture topic but also summarize the discussions in the forum into a readable format. Furthermore, participants that have successfully completed the course could be better utilized by offering them to act as facilitators in future courses.

Content

Participants would like to see the lectures be developed more interactively. For example, if a lecture was on developing courseware such as using Moodle, the learning interface could be designed so that participants could actually work on an exercise by clicking a link in the lecture that would direct to a demo for a hands-on exercise.

Another improvement participants would like to see is to have more case studies of successful e-learning projects from different countries. In addition, it would be better to provide more elaborate explanations of technical matters like courseware development, for not all participants have prior experience with such programs.

Finally, one participant stated that the duration of the present lectures was too long. The participant proposed to limit the duration of lectures to 45 minutes as length longer than that made it hard to concentrate.

Materials

Many participants felt that the third assignment, which involved preparing a courseware development plan, was very difficult. One participant commented that there were very few preparatory readings or lectures to equip participants with the necessary know-how and tools to complete the assignment. Some of the lectures only provided information and were not able to help with the preparation of the assignments. Furthermore, instruction on courseware development needs more clarity to ensure that participants can easily comprehend.

To make the lectures more interesting, extra practice session materials could be provided. In addition, include more usage of visual aids such as photos and provide downloadable text of the lectures. The lectures could also be further improved by improving the quality of the sound.

A series of online courses were launched after the end of the distance learning CIS course, due to many requests for an extended period of time to complete the CIS course as well as numerous interests to enroll in CIS and PIS courses. Though the course content and materials of the distance learning courses and online courses are identical, the courses themselves are markedly different. Firstly, participants of online courses do not receive supplemental lecture CD-ROMs mailed by ADBI. Secondly, instead of receiving hard copy of the certificate mailed by ADBI as in the distance learning CIS and PIS courses, the participants of the online courses are authorized to print e-certificate after course completion.[3] Finally, minimal assistance from course administrators to participants of online courses is provided.

Three online courses have been offered so far, including CIS, PIS, and ELP. The first two courses have been completed while the online ELP is still ongoing. Course statistics from these courses have been collected and are shown in the following sections.

4.1. Online CIS

This course was offered between 20 July 2006 and 13 January 2007. There were altogether 809 registrants. Of the participants, 56% came from the public sector, followed by the private sector with 24%. The rest of the participants worked for the non-profit sector (20%).

The majority, or 60%, of the participants were from ADB developing member countries. The top ten countries with high participation are shown in figure 19. Sri Lanka, the country with most participants, was the only country with more than 300 participants. Three countries had between 50 and 100 participants; they were the Philippines, Nepal, and Bhutan. The rest of the countries represented had less than 50 participants enrolled in the course.

Figure 19. Top Ten Countries with a High Rate of Participation for Online CIS
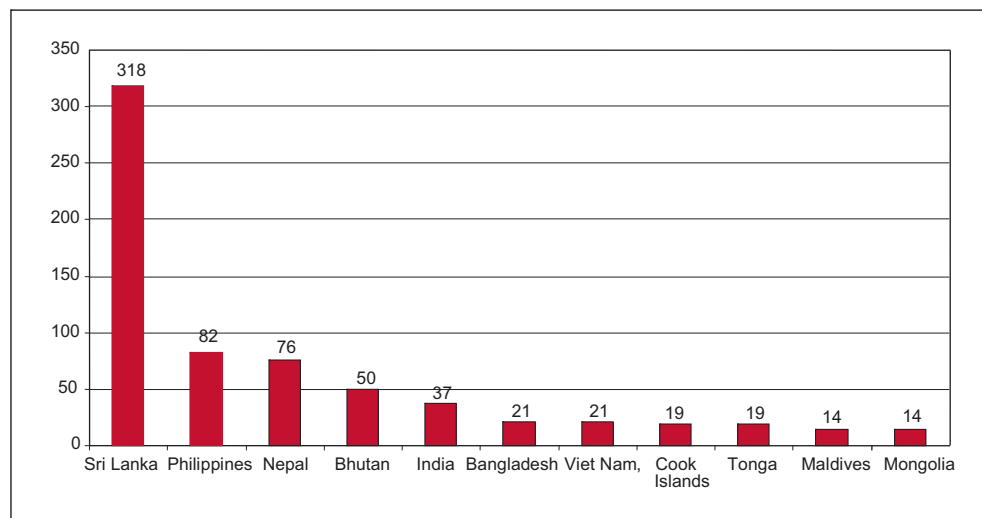
Gender-wise, 43% of the participants were female and 57% were male. As shown in Figure 20, the majority of the participants were in their twenties, with females dominating this age group. There were fewer females than males in the groups from their thirties onwards, and no female participants in the age groups from their seventies to eighties. Most of the male participants on the other hand, were in their thirties and forties.

Figure 20. Participants Based on Age Group and Gender for Online CIS
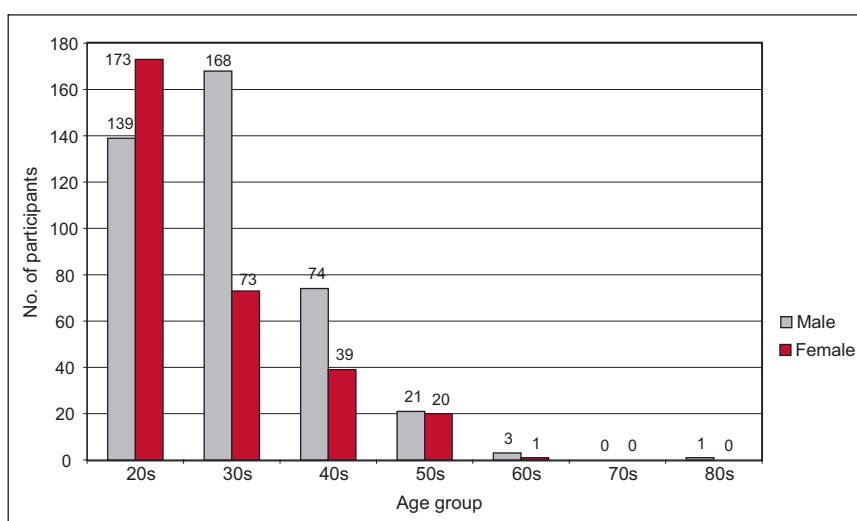
Many people registered for this course, but the completion rate was relatively low. Only 54 people, or 7%, completed the course. Forty-three percent of the completers were female and 57% were male. As illustrated in Figure 21, the country with the most completers was Sri Lanka, with 11 male and 15 female. This was followed by Nepal, with 5 male and 3 female. Only two countries, Sri Lanka and Cook Islands had more female than male completers. Three countries that were also in the top ten list of countries with high participation (see Figure 19) – the Maldives, Tonga, and Viet Nam – did not have any participants completing the course.

4.2. Online PIS

This course was also offered between 20 July 2006 and 13 January 2007. There were altogether 780 registrants. Though the Online PIS course targeted the public sector, only 48% of participants were from the public sector, less than that of the Online CIS course. This course attracted high interest from the private and non-profit sectors, with 30% of participants from the private sector and 22% from the non-profit sector.

Of the participants, 63% were from ADB developing member countries. The top ten countries with high participation are shown in Figure 22. The ranking of the top five countries is similar to the Online CIS course. Again, Sri Lanka was the only country with more than 300 participants. In fact, there were more Sri Lankan participants in Online PIS than Online CIS.

Figure 21. Completers by Country and Gender for Online CIS
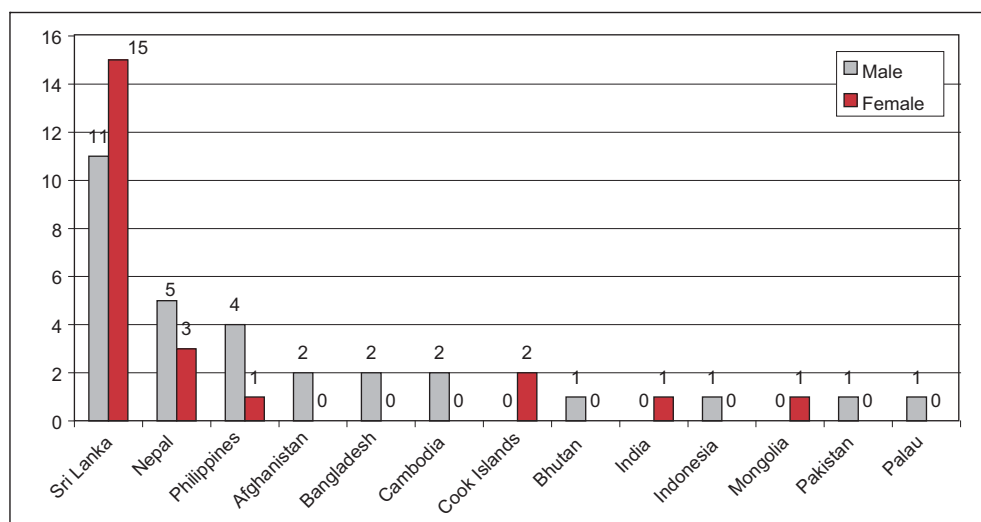
Figure 22. Top Ten Countries with High Rate of Participation for Online PIS
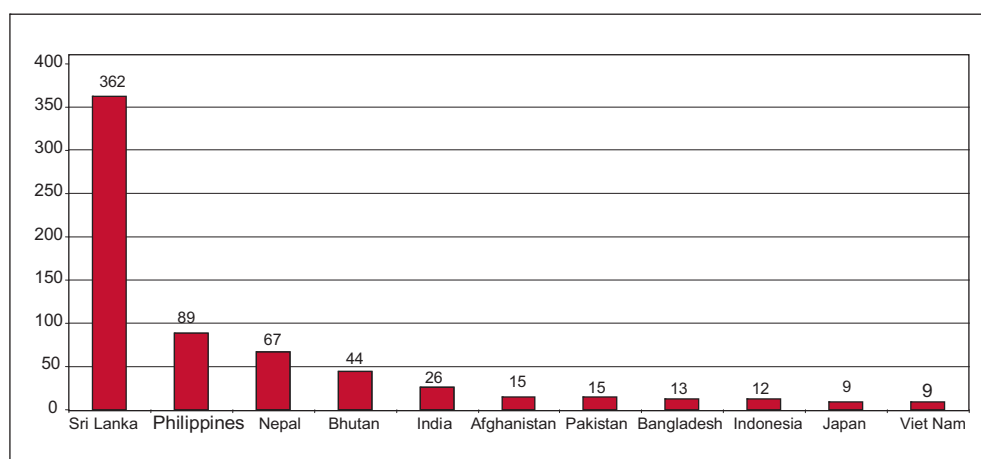
Gender-wise, online PIS had a slightly higher percentage of female participants than online CIS, with 45%. As illustrated in Figure 23, like online CIS, the majority of participants were in their twenties, with females dominating this age group. There were fewer female than male from the groups in their thirties onwards and there were no female participants in the seventies age group.

Figure 23. Participants Based on Their Age Group and Gender
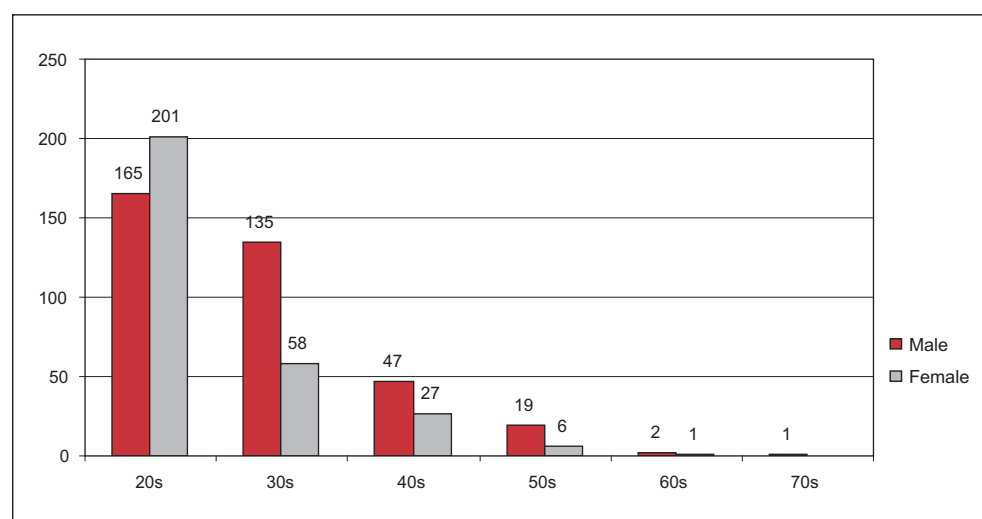
The completion rate of Online PIS was similar to that of the Online CIS, around 7%. Unlike Online CIS, however, there were more female than male completers, with 51% of the completers being female and 49% male. As illustrated in Figure 24, the country with the most completers was Sri Lanka, with 10 males and 19 females. This was followed by Nepal, with 5 males and 3 females. Three countries had more female completers than male. They were Sri Lanka, Japan, and the Philippines. Bangladesh, Indonesia, and Pakistan, which were in the top ten list of countries with high participations (see figure 22), did not have any participants completing the course.

Figure 24. Completers by Country and Gender for Online PIS
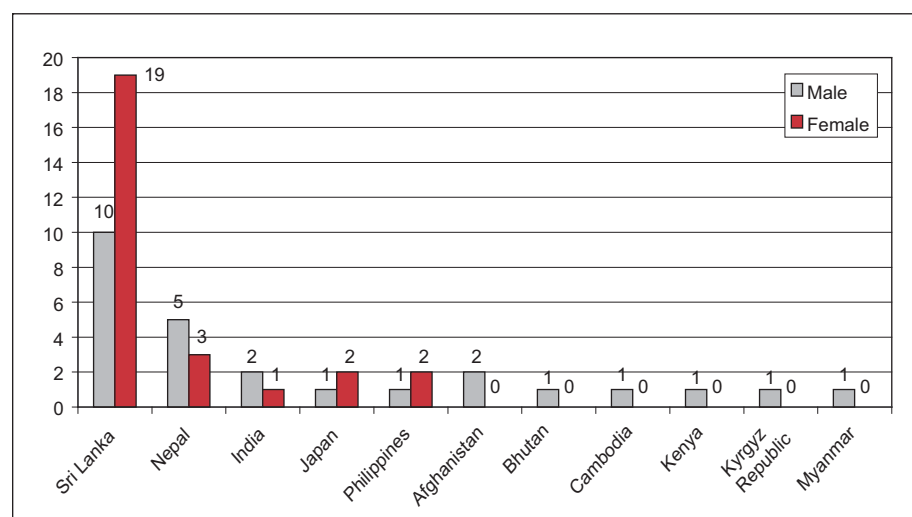
4.3. Online ELP

This course is being offered between 20 November 2006 and 18 May 2007. Currently, there are 392 registrants with 40% of them being female. The participants come from 39 countries, with 23 of them being ADB DMCs.

DEVELOPMENT OF THE ADBI DLC PROGRAM

5.1. Progress Thus Far

The first two distance learning courses, CIS and PIS, were extremely popular with over 600 registrants and online courses being offered to satisfy the demand. However, the large number of participants was an administrative challenge and as a result, registration was limited to 300 for the ELP course. With the reduction in registration, the total number of countries covered was also reduced: from over 40 countries in CIS and PIS to 34 countries in ELP.

In terms of the type of organizations participants came from, all courses were dominated by people serving in the public sector. The CIS course attracted the most participants from this sector, with 59%, followed by PIS with 52%, and the ELP course with 50%. Conversely, CIS attracted only 20% participants from the private sector, whereas PIS had 26% and the ELP course had 40%. Though both CIS and PIS had about 22% of participants from the non-governmental sector, in the ELP course only 9% were from that sector. Gender-wise, all three courses attracted more male than female participants. However, in both the CIS and PIS courses there were more female than male participants in the twenties age group. Participants' age on the other hand, ranged from their twenties to seventies in the CIS course, twenties to eighties (no participants in their seventies) in the PIS course, and teens to fifties in the ELP course.

The completion rate improved from 40% in CIS to 56% in PIS but dropped to 40% in the ELP course.[4] The increased completion rate from CIS and PIS was a result of various improvements made in PIS plus the reduction of the required assignments. The lower completion rate in ELP may be due to the difficulty in the last assignment as expressed by many participants. In all three courses, female participants in their thirties and fifties had higher completion rate than male participants in their respective age groups. Female participants in their fifties also consistently outshined females in other age groups.

The results of the evaluations filled out by participants reflected much improvement in the distance learning program over the three courses. Generally speaking, the level of achievement of the course objectives increased over the three courses. There was also a gradual improvement in the overall organization of each course. However, the component *Timely distribution of CD-ROMs* and *Usability of online classroom* improved in rating from the CIS to PIS course, but dropped in the ELP course. Participants' positive evaluation of Communication with course coordinators and *Usability of distance learning website* demonstrated noticeable progress in these two components from course to course, indicating that many of the improvements and effort done by the vendor had been effective.

The overall rating of course materials also showed improvement from course to course. Three areas that constantly improved based on participants' evaluation were instructions on how to use online classroom, review questions, and the course exam. Lecture summaries on the other hand, were best rated in ELP, followed by CIS. In terms of the course assignments, drafting a computer courseware development plan in ELP and developing an e-store/portal in CIS/PIS were considered the least satisfactory by participants.

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[4] This excludes completers through the facilitation by DLC Colombo.

Many changes have been made since the first course, CIS, was launched. The extensive improvements in the website's user-interface as well as its administrative capability were appreciated by participants. Based on participants' evaluation of the courses and the increasing compliments received from course to course, despite some of the issues that occurred along the way, this distance learning program is continuously improving and gaining growing support from participants.

5.2. Upcoming Courses

With the success of the first three distance learning courses - CIS, PIS, and ELP - four more courses will be offered in 2007. These courses will include E-Business Strategies, E-Governance, Workforce Development, and Computer Courseware Development.

i. E-Business Strategies

Duration: 29 January – 27 April 2007

This course is being offered in partnership with the Asian and Pacific Training Center for Information and Communication Technology for Development (APCICT), Incheon, Korea.

The main participants are private sector business people in Asia and the Pacific. Government officials in charge of e-business and interested persons from civil society are also welcome. Priority has been given to applicants from ADB developing member countries.

At the conclusion of the course, each participant will be able to:

- Identify the issues and trends in e-business and commerce,
- List best practices of e-business,
- Correctly identify transaction processes of e-business,
- Identify hardware and software requirements for e-business,
- Draft a business plan with realistic strategies,
- Develop an e-store website, and
- Promote conducive environments for e-business.

ii. E-Governance

Duration: 30 April – 31 July 2007

This course is organized by ADBI and APCICT.

Participants are decision-makers in government ministries of rural development, economy, planning, communications, and local governments. Interested persons from civil society and the private sector are also welcome. Priority has been given to applicants from the developing member countries of ADB and the member countries of UNESCAP.

After completing the course successfully, the participants will be able to:

- Identify successful e-government services for poverty reduction;
- Identify issues in providing e-government services in rural areas;
- Develop an e-government portal with video conferencing system;
- Develop project proposals for introducing e-procurement system; and
- Develop appropriate strategies for implementing e-government programs.

iii. Workforce Development

Duration: 16 July – 12 October 2007

This course is organized by ADBI.

Participants are decision-makers in government ministries of education, labor and local governments. Teachers and trainers of technical schools and vocational training centers are entitled to enroll in the course. Interested persons from civil society and the private sector are also welcome. Priority will be given to applicants from ADB developing member countries.

The goal of this course is to upgrade the skills and knowledge of government officials and technical teachers to effectively meet the demands of learners, workers, and employers in a knowledge-based economy. The course will also review new instructional technologies that will increase learners' retention and skill acquisition capabilities, along with policies for workforce development in selected countries. In support of that goal, the specific objectives of the course are as follows:

- To identify competencies of workforce required in a knowledge-based economy;
- To examine new paradigms for training technical teachers;
- To review recent developments in information and communications technology that can be used in workforce development;
- To compare strategies and options available for workforce development; and
- To draft action plans to improve the current technical teacher training programs, after reviewing case studies in other countries.

iv. Computer Courseware Development

Duration: To be announced

This course is organized by ADBI.

This course will introduce skills, tools and procedures of developing multimedia computer courseware to the participants. The education and training community has the opportunity to benefit from this course and learn how to profit from this new education tool.

At the conclusion of the course, each participant will be able to:

- Utilize instructional systems design;
- Choose proper equipment and software suitable for developing multimedia computer courseware;
- Use learning content management system;
- Draft a plan to develop a multimedia computer courseware, based on sound learning theories and instructional strategies; and
- Evaluate commercially available computer courseware.

5.3. Future Plan

With the intention to continue offering distance learning courses in the future, ADBI is exploring a larger diversity of course topics that would benefit our clientele within the ADB member countries. By reviewing the course topics suggested by past participants,

a few themes have emerged, such as e-health and financing, that would be appropriate to offer via the distance learning mode that has been utilized thus far. For areas where ADBI has in-house specialists, such as financing or urban development, the course curriculum can be developed by ADBI staff. However, in areas that lack in-house specialists, such as e-health, it will require collaboration with other institutions with the needed area of expertise to develop and over see the course content and materials. Effort to identify and initiate contacts with prospective institutions in both Japan and other countries will need to be done before long to ensure that a series of courses can be designed well in advance so that new courses can be offered smoothly without interruptions, in order to keep the momentum of the program going.

CONCLUDING REMARKS

The three distance learning courses have proven to be cost effective and well received by participants. There is much potential in the distance learning platform, which can be integrated with other forms of training or further utilized for various purposes. For example, it can be followed up with face-to-face training to provide more in-depth training to selected participants with the interest. It can also be used for purposes other than conducting courses, such as updating information, continuum of forum discussions, and networking among participants.

Nevertheless, the sustainability of the distance learning program will require a major commitment by the institute to elevate the capacity of ADBI in this area. First of all, the institute as a whole needs to understand the theoretical framework of distance learning course development and set realistic goals to achieve. In addition, a generous budget, which includes funding to hire professional technicians to oversee technical issues and a project manager that have an understanding of distance learning and knowledgeable about the use of ICT for distance learning, is needed. Furthermore, purchasing necessary hardware and software to operate the program is essential. To ensure the quality of recorded lectures, investments must be made into studio and related equipments to develop recorded lectures. The long-term plan should be to eliminate outsourcing of the operation of the courses to contractors. Outsourcing is cost effective during the pilot phase but will be ineffective and expensive in the long run.

On the other hand, the content of the courses will also need to be expanded to better meet the clientele's need. The current topics offered are limited to areas of expertise of in-house CBT professionals. However, there are many critical topics that ADB DMCs can benefit from, and thus should be considered for the DLC program. To do so, ADBI can collaborate with other institutions with the identified areas of specialty to develop and oversee the content of the courses.

Based on the statistics from the two completed online courses, the completion rate of these courses is too low to make the investment worthwhile. The outcome of these two courses shows that with no monitoring and regular communication with participants, the motivation to complete the course is extremely low. Thus, offering online courses should not be considered in the future since it is not cost effective and does not have as much impact as the distance learning courses.

A vision for the future could be to develop ADBI's DLC program into a distinguished distance learning platform for the Asia-Pacific region, comparable to the African Virtual University (AVU) that is known as an online distance educational program that provides countries of sub-Saharan Africa with direct access to learning resources. Since ADBI is not an educational institution and has limited specialists, the ADBI DLC program can distinguish itself from most university distance learning programs by purely focusing on non-degree professional development. However, extensive collaboration with universities and research institutes should take place to develop the quality content that is in demand. The distance learning program should produce an immersive learning environment that is learner-centered and collaborative.

RECOMMENDATIONS FOR FUTURE IMPROVEMENT

Summary and Transcript of Lectures:

Provide both summary and transcript of each lecture in an E-Book format. Transcripts of lectures can be easily prepared by extracting them from past workshop proceedings. The E-Book can be sent to participants along with the lecture CDs.

CD-ROMs:

Interactive review questions could be included in the CD-ROMs so that participants can practice them offline.

Many participants have complained about the low audio/video quality of the recorded lectures used in the CDs. To improve such quality, lectures could be recorded in a studio rather than at the venue of a workshop.

Grading System:

The grading system should be made transparent so that participants are aware what is expected from them. Grading criteria should also be kept simple so that grades can be issued out sooner.

Chat Room:

There are several ways to improve the usage of the chat room. One way to encourage usage is to first allow participants be able to see one other online in the chat room. With the existing system, when a person log into the chat room, he/she only sees him/herself online. However, to initiate a chat, it is essential to know who else is online.

Another improvement that can be made is to organize scheduled chat sessions so that participants can have live chats with course facilitators. Moreover, these scheduled chats could also include sessions with guest speakers and experts for content-related discussions.

Duplication of ADBI Produced Lectures:

Many organizations (including international organizations such as the Arabic Development Bank) and educational institutions from various countries have requested permission to use the ADBI Lecture-CDs and DLC system for their own e-learning projects. The duplication of lectures should be permitted with proper acknowledgement. This can be made known to participants by including a statement of such approval in the course description page of the DLC website.

Assignments:

Since participants do not receive much advice or guidance in completing the course assignments, the level of difficulty of some assignments should be reduced to a realistic level that is achievable by participants working on their own. By doing so, a more positive learning experience can be created.

APPENDIX I

Synopses of Lectures

Title of Lecture : **Benefits, Issues, and Constraints in e-Learning**
Presenter   : Vincent Quah

Content Outline:

E-learning is learning experiences that are delivered to remote locations through the use of technology and real time collaboration. E-learning is not about posting contents on the web; there must be engagements and interaction between learners and contents. The function of e-learning is to empower educators and learners to express their ideas easily, interact with others, explore and discover the world, manage the learning process, and finally assess its quality and quantity.

   The benefits of E-learning include: supplementary and complementary to learning, able to free precious time, provide fundamental grounding and mass training, and geographically unlimited access. Constraints of e-learning system include: learner management, content creation and delivery, and administration management system. There are some key problems learners face when they participate in e-learning, such as: lack of personal touch, control, supporting infrastructure, access, and frequent changes in the role of instructors. From an implementation perspective, there are some considerations that need to be addressed. They include providing proper training for instructors and users, launching pilot phases, developing clear defined deliverables, goals and objectives, and providing communication lines.

Review Questions (True or False):

1. Most institutions today no longer support traditional educational approaches. False
2. When we implement e-learning, the role of instructors and students have changed dramatically. True
3. E-learning should be approached in a holistic way. True

Suggested Reading Materials (Website):

Knight, Jane. 2003. Why is E-LearningIimportant. Available: http://www.janeknight.com/articles/whyelearning.htm

Borotis, Spiros Ap. and Poulymenakou, Angeliki. 2004. E-Learning Readiness Components: Key Issues to Consider Before Adopting E-Learning Interventions. Available: http://www.eltrun.gr/papers/eLReadiness_ELEARN2004.pdf

Gunawardana, Kennedy D. 2005. An Empirical Study of Potential Challenges and Benefits of Implementing E-learning in Sri Lanka. Available: http://www.journal.au.edu/ijcim/2005/specialaug05/PP33.pdf

Title of Lecture : **Current Status and Trends of e-Learning**
Presenter   : William A. Loxley

Content Outline:

As seen from profiles of sector and country income in the national labor market, low-income workers dominate most Asian countries. This is due to the fact that the source of their employment is mainly agriculture, which makes it difficult for organizations and institutions to spread e-learning to rural areas. Information and communications technology (ICT) plays an important role in the development of countries in the 21st century. ICT represents a means of technology that can combine with human capital to create the synergy needed to drive nations to a higher level. ICT development in developed economies is comparatively fast and smooth, since they have set realistic education standards for ICT, developed content to international standards, and have expert know-how. Developing economies on the other hand, will face a long and gradual process in ICT development since they have little political commitment to sustainability, inadequate budgets, cumbersome bureaucracies, and inappropriate policy and implementation mechanisms. In order to shorten the ICT development process in developing economies, it is necessary to have an appropriate policy environment.

This lecture introduces six aspects of ICT development in which education and technology issues come into play: teachers, students, school administration, learning materials, evaluation, and costs. The merger of education and technology can bring great advantages to the learning process, providing an economic and efficient means to acquire information and knowledge. ICT is changing the developed world's attitudes and approaches to education. By transcending traditional physical and spatial constraints, ICT brings to millions of people of all ages, ethnic groups, and socioeconomic levels unprecedented educational opportunities.

Review Questions (True or False):

1. Developing economies have set realistic education standards for ICT. False
2. The basic components of ICT are becoming more affordable and integrated over time. True
3. Whether or not e-learning will effect growth or poverty reduction is still to be determined. True

Suggested Reading Materials (Website):

Dr. Finn, Amy. Date unknown. Trends in E-Learning. Available: http://www.trainingreference.co.uk/e_learning/elearning_trends.htm

Md. Islam, Tofazzal. and Md. Selim, Abu Sadeque. Date Unknown. Current Status and Prospects for E-learning in the Promotion of Distance Education in Bangladesh. Available: http://tojde.anadolu.edu.tr/tojde21/articles/islam.htm

Kim, Kyoung-Jee., Bonk, Curtis J., and Zen, TingTing. Date Unknown. Surveying the Future of Workplace, E-learning: The Rise of Blending, Interactivity, and Authentic Learning. eLearn MAGAZINE. Available: http://www.elearnmag.org/subpage.cfm?section=research&article=5-2

Title of Lecture :   Opportunities and Issues of M-Learning in
                       Asia-Pacific Development
Presenter   :   Mr. George Darby, President, Paradise Patent Services

Content Outline:

M-learning depends upon the broader phenomenon of Internet Protocol (IP) convergence – i.e., data, voice, or video travel over one single channel, and devices sitting on the IP networks convert them into the right presentation. There are various terminals available to access the network, but the focus of this lecture is on the Pocket PC, for it has finally been developed with the required screen resolution and auto-handling capability to use normal web content. M-learning has several advantages over e-learning, such as lower cost, simpler pre-training process, and of course, mobility.

M-learning combines two new technologies: WiMax and Pocket PC. WiMax provides IP multimedia services and can help to accelerate IP convergence because it brings high data rate services to a relatively inexpensive portable computer device. Pocket PCs can use satellite or wire line connectivity, or simply a DVD to deliver content. The use of WiMax and Pocket PCs for m-learning not only enables a new way of delivering education, it can also overcome spatial barriers and resource constraints, allowing teachers and learners in remote and developing communities to engage in learning effectively. The Pocket PC devices themselves and the WiMax hotspots are affordable, and the cost of maintenance, storage, and repair is low. M-learning provides multiple services; it can be effectively utilized in education, e-government, community, telephone, internet, and private networks services. Although m-learning offers numerous opportunities, it also poses several operational and policy issues, which policymakers will have to carefully assess. Nevertheless, the "multi-services" function of m-learning will definitely be a backbone for regional economic development.

Review Questions (True or False):

1. M-learning requires teachers to become Information and Communication Technology (ICT) experts. False
2. Once m-learning and its broadband network is set up, the network backbone can be utilized for other services such as e-government and e-communities. True
3. For content authoring, it is important to consider and know the skills of the user. True

Suggested Reading Materials (Website):

Thomas, Michael. 2005. E-Learning on theMove. Available: http://education.guardian.co.uk/elearning/comment/0,10577,1490476,00.html

Naismith, Laura., Lonsdale, Peter., Vavoula, Giasemi., and Sharples, Mike. 2005. Literature Review in Mobile Technologies and Learning. Available: http://www.nestafuturelab.org/research/reviews/reviews_11_and12/11_01.htm

Becta Government and Partners. 2005. Portable ICT Devices. Available: http://www.becta.org.uk/research/research.cfm?section=1&id=541

Title of Lecture	:	The New e-Learning Paradigm: Intellectual capital creation, knowledge management, and economic competitiveness
Presenter	:	Jonathan Kushner

Content Outline:

E-learning technologies create a new type of asset. Intellectual assets are intangible assets that can be more important than tangible assets. However, the value of intellectual assets can be substantially reduced through copying and piracy. Thus, harnessing IT potential for economic growth in the knowledge economy is a key challenge. Local businesses nowadays are increasingly reliant on their ability to create and utilize knowledge and intangible assets, and exploit these assets to create value. Intellectual property rights (IPRs) are among the most important mechanisms for realizing a return on such intangible assets. Many multinational corporations view the strength of IPR protection as an important factor in their investment decision. IPRs can be used to promote technology access, but affordable access to IPR is a challenge, especially for developing countries.

Creating a public-private partnership can lead to the joint development of intellectual property assets in research institutions. This partnership can lead to training of local knowledge workers in managing and exploiting these assets. It can also create corporate-sponsored programs at schools and universities to share their expertise in intellectual property asset development and management. Public-private partnerships are essential in increasing the affordability of IPR.

Review Questions (True or False):

1. Tangible assets are more important than intangible assets. False
2. IP creation is ultimately linked to the quality of innovation and creativity. True
3. A public-private partnership accelerates the development of an IP culture. True

Suggested Reading Materials (Website):

Sheetz, Allen. 2005. E-learning 101 at Microsoft: A Best Practice to Boost Intellectual Capital and Drive Success. Microsoft. Available: http://www.microsoft.com/learning/MELL/archive/030702.asp

Sampson, Demetrios., Karagiannidis, Charalampos., Schenone, Andrea., and Cardinali, Fabrizio. Date Unknown. Knowledge-on-Demand in E-Learning and E-Working Settings. Educational Technology & Society. Available: http://ifets.ieee.org/periodical/vol_2_2002/sampson.html

Dr. Khan, Habibullah. Date Unknown. E-Learning and Economic Growth. T-Systems Global Learning. Global Learning FachNews. Available:
http://www.global-learning.de/g-learn/cgi-bin/gl_userpage.cgi?StructuredContent=m130358

Title of Lecture : Instructional Systems Design
Presenter : Albert Dean Atkinson
Running Time : 38 minutes and 39 seconds

Objectives:

- Allow one to get an overall view of designing an e-learning content.
- One will be able to know how to gather and analyze collective and individual performance requirements and identify required needs.

Content Outline:

1. Instructional Systems Design

It started in the1950s and 1960s, when people were looking at faster ways to train staff. It is more like developing an instructional structured material. It is simply a way of making sense of the data and information that exists, be it in Internet or any other media for users for the simplicity.

2. Learning

Learning is not limited to schools, institutions, or universities, as it can even be acquired through electronic media, for example e-learning (Distance Learning Course). There are other different kinds of learning — face-to-face learning, blended learning, and computer-based learning. And today, technology has become far more advanced, and as a result we see an 'E' in front of everything: Shopping, Commerce, Governance, Business, etc. Accessing data and information through the Internet has become an important means to users. So every module to be included in the Internet should be well structured for its effective use. And this is where the Instructional Systems Design needs to be implemented.

3. Instructional designing steps

Here we are considering the case for developing an E-Learning Course

- Analysis: getting contents to be included in the subject from the subject matter expert- Comparing the contents of past and present course, their effectiveness, and the system of delivering it;
- Design: Structuring the contents or at what level it need to be presented;
- Development: Tools to use like HTML editor, Macromedia Dreamweaver, etc. and considering Directory structure, Consistency- text color, size, etc., and Deployment;
- Implementation: Testing phase; and
- Evaluation: Getting feedback

Discussion topics:

a. What are the steps that can be implemented in designing an E-learning Course module?

Review Questions

True, False or Debatable
   a. Computer based Training/Learning is the same as E-Learning. False
   b. Gap analysis is a part of analysis phase. True
   c. E-Learning is better than face-to-face learning. Debatable

Fill in the Blanks
   a. Educational Soundness should be included in any E-leaning.
   b. ISD stands for Instructional Systems Design.

Suggested Reading Materials

Books:
Walter Dick, Lou Carey, James O. Carey. 2000. The Systematic Design of Instruction 5th Edition. Boston: Addison-Wesley Pub Co.

Ruth Clark. 1999. Developing Technical Training 2nd Edition: A Structured Approach for Developing Classroom and Computer-Based Instructional Materials. Silver Spring, Maryland: International Society for Performance Improvement.
Available: http://id2.usu.edu/MDavidMerrill/IDREAD.
PDF#search=%22books%20on%20Instructional%20systems%20design%22

Articles:
Bartley, S. J., & Golek, J. H. 2004. "Evaluating the Cost Effectiveness of Online and Face-to-Face Instruction." Educational Technology & Society, 7 (4): 167-175. Available: http://www.ifets.info/journals/7_4/16.pdf#search=%22Articles%20on%20Instructio nal%20systems%20design%20.pdf%22

Websites:
Wikipedia. March 2007. Instructional Design. Available: http://en.wikipedia.org/wiki/Instructional _design

Title of the Lecture : Analysis of the Learners
Presenter : Dr. Ligaya D. Valmonte, Faculty Consultant, CPSC
Running Time : 36 minutes 59 seconds

Objectives:

- Understand the factors that are considered in the analysis of the learners.
- Know and learn about the theories of learning.

Content Outline:

1. Introduction

Analysis of learners is a basic for instructional Systems Design. Learners are the most important actors in the educational arena. Learners' needs, preferences, and their requirements have to be satisfied. The analysis of the learners plays a vital role in any online courseware because learners' skill levels, such as whether they know basic computer skill operations like web browsing and using e-mail, all helps to systematize the development of the courseware. It is the learner analysis along with content analysis that will provide the key performance objectives. The instructional designer must study the environment of the learner when it comes to available resources. For example; is there an Internet connection in the area of the intended clients or his intended learners? Are the hardware and software that are used in the development of courseware available for the learners? And the other most important thing is meeting learner's desired outcomes.

2. Characteristics of Learners

Generally learners are characterized in terms of Biological and physical development, Individual differences, Emotions, and finally, Personality. In the Biological and Physical development aspect of learners there are different stages — from pre-natal stage, infancy, early childhood, late childhood, puberty, early adolescence up to old age. So in each stage of development, there are developmental tasks that are to be performed by the learners. In the Individual Differences, no two things are alike yet; no two things are alike, even identical twins. So there is a need to consider when courseware and training are to be developed. Emotions involves reconditioning the courseware so that it appeals the learners, so this more about understanding learners' moods. And the final issue, Personality, is categorized into three faces: Id, Ego and Super ego. The Id is the biological self; this is the primitive mind and everybody has this. Ego is the psychological mind it rationalizes, and superego is the moral mind, this is the conscious one.

3. Theories of Learning

This explains how a learner learns. In matters of stability, theories are the least stable although somehow they help in guiding what type of strategies, methodologies, and content are included in the courseware. Learning theories is divided into three groups

- Behaviorism: the simple association between the stimulus and the response. Under this there is connectionism, classical conditioning and operant conditioning.
- Cognitivism: an advancement of the behaviorism. It's not just the simple connection between the stimulus and response that causes learning, but there is something in the inner mind that stimulates us to think and to learn.

- Constructivism: this emphasizes experiential learning, i.e. learning based on experience.

4. Learning Domain

Benjamin Bloom classified learning into three domains.

- Cognitive Domain: it is for the mind, it's for the mental process.
- Psychomotor Domain: it is for the hands, it's for the skills.
- Effective Domain: it is for the values, which is for the attitudes.

5. Models of learning Theories

MBTI (Meyers-Briggs Type Indicator) Model is developed to analyze the learners. There are standardized tests that would analyze the type of the learner based on the MBTI. There are four classifications whether the person is sensing or intuitive, whether he is thinking or feeling, whether the person is introvert or extravert and whether he is judging or perceiving. Using four classifications, sixteen combinations can be made.

6. Steps to Learners Analysis

Learner analysis can be conducted through the following steps:

- Define the purpose of the analysis
- Choose the assessment method — for example; what type of data should be collected. Develop a timeline for data collection
- Conduct learners analysis — how would you conduct it? May be through survey, Questionnaire, telephone, face-to-face conversation, etc.
- Analyze data — qualitative or quantitative data
- Match learner needs with the environment

Discussion Topics

a. What do you understand by reconditioning of courseware?
b. What are the steps to learners' analysis?

Review Questions

True, False or Debatable
a. The analysis of learner is the basic element in instructional design. True
b. While developing a courseware, the learner need not to be considered. False

Fill in the Blanks
a. Behaviorism is more oriented toward rote learning and cognitivism toward directed learning.
b. 18 to 21 years is the late Adolescence stage of biological development.

Suggested Reading Materials

Articles:

Inaba, Akiko, Taketoshi Tamura, Ryoji Ohkubo, Mitsuru Ikeda, Riichiro Mizoguchi, and Jun'ichi Toyoda. Date Unknown. Design and Analysis of Learners' Interaction based on Collaborative Learning Ontology. Available:http://www.ei.sanken.osaka-u.ac.jp/pub/CSCL/inaba-CSCL01.PDF#search=%22Books%20on%20%22analysis%20of%20learners%22%20%22

Books:

Cumming, Geoff, Toshio Okamoto and Louis Gomez, eds. 2000. Advanced Research in Computers and Communications in Education. Amsterdam: IOS.

Title of Lecture :   The 1:1 Computing Paradigm: Lessons Learned, Wisdom Shared on the Learning Journey

Presenter   :   Mr. Bruce Dixon, Chair, International Advisory, Partners in Learning

Content Outline:

When developing an m-learning project, it is important to first establish and define a context for m-learning. The focus of m-learning should not be on the technology, but on the content. M-learning enables the creation of a personal, relevant and authentic learning experience. Mobile technology expands educational opportunities, increases efficiency, and can enhance the quality of teaching and learning. While technology is useful in education, evaluation should be conducted continuously to determine whether the use of the technological devices is delivering a more powerful and effective learning experience than a lesson delivered in traditional classroom mode. The reasons for implanting the technology must be clearly established and students should be expected to produce higher quality results as a result of using this technology.

An m-learning project begins with a clear vision and a set of objectives. This vision includes a clear definition of digital literacy. Digital fluency entails knowledge on how to use the tools to construct significant products. Although excellent content is a priority, pedagogy is the critical support factor. The role of the teachers becomes indispensable for they assist in the design of a more powerful learning experience for the students. One-on-one learning and teaching is about capturing the unique and different dimensions of each individual learner and personalizing learning in ways never possible before.

Review Questions (True or False):
1. 1:1 computing gives us a way of creating a more valuable, powerful and relevant learning experience for students. True
2. Teaching of meta-cognitive skills should not be integrated into the curriculum in a variety of subject areas. False
3. The fundamental element for a one-on-one m-learning program is to ensure careful project management. True

Suggested Reading Materials (Website):

Briggs, L. Linda. 2006. A Mobile Cause. Available: http://thejournal.com/articles/18036

Chloe Veltman. 2005. Education-to-Go is More Than an Academic Matter. Available: http://www.chloeveltman.com/features/technology/mobile_learning.html

Alexander, Bryan. 2004. Going Nomadic: Mobile Learning in Higher Education. Available: http://www.educause.edu/pub/er/erm04/erm0451.asp?bhcp=1

Title of Lecture : **Designing Courseware for Mobile Devices**
Presenter : Mr. William Horton, President
William Horton Consulting, Inc.

Content Outline:

Successful m-learning projects always start with clear goals that have worthwhile and achievable purposes. Once goals are established, the next step is to ensure that m-learning software is designed for the learners rather than the devices. To do so, first, evaluate the learner's needs by examining their technical skills, experience with computers, and task-performance ability. Second, the m-learning program should be designed for the specific conditions in which the learning is intended to occur. Conditions that must be taken into account are noise, vibration, brightness, dust, moisture, and temperature. Third, it is important to give the learners alternatives so that they can choose how they consume information, for example, a choice of pictures, audio, and written content. Finally, consider how the learners' time will be used and try to ensure that they can learn efficiently and minimize non-learning time, including time spent moving between locations, and dealing with equipment failures.

Mobile learning can enable new styles of learning such as collaborative learning in which learners share, compare, and refine ideas. To ensure the acceptance of m-learning, it may be best to use it in teacher education, and then gradually expand the use of m-learning to classrooms and community-learning centers.

Review Questions (True or False):

1. M-learning is learning from mobile devices. False
2. Mobile learning entails doing activities rather than absorbing knowledge. True
3. A goal of instituting m-learning is to reduce the costs of infrastructure. True

Suggested Reading Materials (Website):

Upadhyay, Nitin. 2006. M-Learning – A New Paradigm in Education. Available: http://itdl.org/Journal/Feb_06/article04.htm

Good, Robin. 2006. Learning ON The Move: M Learning is Next. Available: http://www.masternewmedia.org/news/2006/01/17/learning_on_the_move_mlearning.htm

Dye, Aleksander. 2006. Designing for Mobile Devices – on the Traditional Web Page. Available: http://www.dye.no/articles/mlearning/designing_for_mobile_device.pdf.

Title of Lecture	:	IT for M-Learning in Developing Countries
Presenter	:	Mr. Vinay L. Deshpande, Chairman & CEO, Encore Software Ltd., Managing Trustee, The Simputer Trust

Content Outline:

Today's personal computer (PC) is a general-purpose machine, which integrates computing, VCD/DVD functions, TV, and audio system. This complexity makes PCs unsuitable for some developing regions. Most of the capacity and capabilities remain unused and the excessive complexity has made software "buggy" and unstable. Most importantly, the complexity of PCs makes the learning cycle too difficult and time-consuming. Other disadvantages of current PCs include the continuous threat of viruses due to security lapses, and the need for a continuous power supply, something that is often not possible in unstable and rural regions. In addition, there is the issue of cost. PC owners must pay for hardware, software, power supply, maintenance, and internet connection which can be very high in rural areas. Furthermore, the primary interface is generally in English, not in local languages.

Research has been conducted on the technological needs of people in developing regions. With an understanding of the particular needs, designers developed simpler devices, such as the Encore Simputer and Mobilis. The Simputer is a low-cost Linux-based mobile device with multiple input, local-language interface, and connectivity options, and its applications can be platform independent. The Mobilis has similar features to the Simputer, but it is larger in size and has lower power consumption.

Review Questions (True or False):

1. Normal PCs are always useful in developing countries. False
2. A desirable feature for a computer in developing regions is Internet connectivity with a built-in modem. True
3. The developing world needs simple, easy to use, and affordable technology. True

Suggested Reading Materials (Website):

Kanellos, Michael. 2006. PCs for the Poor: Which Design Will Win? Available: http://news.com.com/PCs+for+the+poor+Which+design+will+win/2100-1003_3-6040019.html

Foremski, Tom. 2006. Scoop: Wyse Says in Talks with Google and Yahoo on Thin Computing. Available: http://www.siliconvalleywatcher.com/mt/archives/2006/03/scoop_wyse_says.php

Barker, Andrea., Krull, Greig., and Mallinson, Brenda. Date Unknown. A Proposed Theoretical Model for M-Learning Adoption in Developing Countries. Available: http://www.mlearn.org.za/CD/papers/Barker.pdf.

Title of Lecture : Satellite-Based Distance-Learning Network
Presenter : Mr. Eui K. Koh, President, The Asia-Pacific
Communications Council

Content Outline:

Satellite services include broadcasting and video services, and broadband services. They are a valuable means of enabling the wide distribution of educational content. Broadband satellite applications have the potential to facilitate distance learning. Apart from providing Internet access to remote and underserved areas, they provide intranet, LAN, and WAN connectivity; enable Voice over Internet Protocol (VOIP); and facilitate commercial services including enterprise video distribution.

Satellite broadband services are currently offered in a variety of ways, such as distance learning, distance medicine programs, digital media streaming, and the monitoring and control of traffic and natural disasters. Furthermore, new mobile services, such as Satellite Digital Multi-media Broadcasting (DMB), can further enhance the future of distance learning, for this new broadcasting service emphasizes mobility, personalization, and interaction.

Even though some regulatory hurdles exist in certain countries, there are many opportunities for acquiring affordable satellite capacity in Asia, as there are numerous competing satellite operators within the region. Satellites are easy to install and scalable for growth. Therefore it is considered a viable and effective form of educational technology for the Asia-Pacific region.

Review Questions (True or False):

1. To have good educational system (DL contents), we should lower the regulatory barriers. True
2. Satellite applications are a viable option to complement PDA or WiMax applications for m-learning. True
3. Satellite networks are hard to install. False

Suggested Reading Materials (Website):

Cohen, David. 2002. Satellite-Based Computer Network Serves Students on Remote Pacific Islands. Available: http://chronicle.com/free/v48/i18/18a04101.htm

Radvision. Date Unknown. Alaskan Schools Satellite Distance Learning Network with RADVISION's Videoconferencing Solution. Available: http://www.radvision.com/NR/rdonlyres/9E527779-C532-4566-BB34-1E0CA68C80D7/0/AlaskaSchoolCaseStudy.pdf.

Kirk, Jeremy. 2005. South Korea to Launch Massive Test of Mobile Entertainment. Available: http://www.pcworld.com/news/article/0,aid,119932,00.asp

Title of Lecture : Exploring M-learning: Academic Initiatives in
North America and Europe
Presenter : Ms. Judy Brown, Director, Academic ADL Co-Lab,
University of Wisconsin System

Content Outline:

There is a wide selection of mobile applications available, several of which are suitable for and useful in the classroom. One example is a mobile device classroom-response system in which all students can answer the teacher's questions, thus enabling a teacher to monitor the level of each student's understanding. Mobile devices are also being used to improve communication and efficiency where location-based information is available on handheld devices, enabling staff and students on campus to locate each other immediately. At some universities, mobile devices are actively encouraged. Medical schools are especially active in utilizing handheld devices.

There are a number of m-learning projects underway which aim to utilize mobile devices to improve learning. A project sponsored by the European Union found that m-learning helps learners to improve literacy and numerical skills, remain focused, and identify areas where they need support. It also raises learner confidence, encourages independent and collaborative learning, removes formality from the learning experience, and helps combat resistance to the use of ICT. Some projects currently being implemented explore augmented reality such as superimposed information diagrams and scientific role-playing programs.

Review Questions (True or False):

1. M-learning content should be translated into various local languages so that teachers and learners won't be restricted by language barriers. True
2. M-learning won't help learners to improve their literacy and numeric skills. False
3. M-learning can be used to encourage both independent and collaborative learning experiences. True

Suggested Reading Materials (Website):

Jumani, R. Rajesh. 2005. M-Learning - Learning on the Move.
Available: http://www.etqm.net/elearning_digest/april2005/Article_2.htm

Roschelle, J. 2003. Keynote Paper: Unlocking the Learning Value of Wireless Mobile Devices. Available:
http://www.blackwell-synergy.com/doi/full/10.1046/j.0266-4909.2003.00028.x?cookieSet=1

Ebi, Kevin. 2006. Windows Mobile in the Classroom. Available: http://www.microsoft.com/windowsmobile/articles/classroom.mspx

Title of Lecture	:	Technological Aspects of e-Learning
Presenter	:	William Horton

Content Outline:

In e-learning, there are three processes : create, offer, and access. These processes have corresponding participants, which are producer, host, and learner. Unless all participants are present, e-learning will not exist. These three processes create a range of tasks and levels. To make the system work, people, network, software, and hardware have to work together.

A learning management system (LMS) has an interrelated, cross-functional, and multi-oriented learning structure that affects and coordinates the three processes and tools. LMS assembles, delivers, reuses, and customizes lessons and content to different types of learners. This collaboration results in a virtual school system that assembles, conducts, and administers courses. An action plan should be created for launching an e-learning program, including the following recommended strategies:

- Spell out your vision for e-learning,
- Design and pick tools to realize that vision,
- Fit tools to consumers, not vice versa,
- Focus on tools for your organization's role,
- Evaluate value, not just price.

Review Questions (True or False):

1. In the creation process, the producer authorizes, integrates components, and transfers the resulting product to the host. True
2. LMS does not affect and coordinate the three processes and tools. False
3. The producer performs the activity of offering the product and making it available to many different learners. False

Suggested Reading Materials (Website):

Hall, John. 2003. Assessing Learning Management Systems. Chief Learning Officer. Available: http://www.clomedia.com/content/templates/clo_featureasp?articleid=91&zoneid=29

Garret, Bernie. 2003. Evaluate E-Learning. Teaching Forum. Available: http://www.brookes.ac.uk/virtual/NewTF/51/garr51.pdf

Frydenberg, Jia. 2002. Quality Standards in eLearning: A Matrix of Analysis. International Review of Research in Open and Distance Learning. Available: http://www.irrodl.org/content/v3.2/frydenberg.html

Title of Lecture : Introduction to Mobile-Learning Tools
Presenter   : Mr. William Horton, President,
                     William Horton Consulting, Inc.

Content Outline:

Mobile learning or e-learning tools are the result of two converging technologies: computers and mobile phones. When selecting tools for m-learning projects, three types of tools need to be considered:

- Platform — mobile devices used to deliver a broad m-learning program,
- Hardware — add-ons for the computer (in other words, capabilities valuable for m-learning),
- Software — tools for creating and viewing content, and collaborating.

Numerous platforms are available, such as wireless laptop, tablet, PDA, smart phone, and mobile phone. Each one has its own advantages, technical specifications, and cost. A variety of hardware can be utilized for m-learning, depending on the purpose of the learning program. For example, a global positioning system (GPS) can be used to guide learners to locations and objects, record data, and teach navigation skills; a radio frequency identification (RFID) is used for detecting and retrieving data such as lesson plans from a designated object.

Web browsers and Macromedia flash are the most common types of software used in mobile devices. When selecting tools for m-learning, it is important to consider the life of the battery, as well as issues related to health concerns, intellectual property protection, theft of devices and identity, privacy, cheating, and the cost of updating technology. The following guidelines are recommended for selecting appropriate tools for m-learning projects:

- Start with your educational goals: what sort of technology is required?
- Do not forget learners: what are their needs, how does the technology assist them?
- Pick a practical platform;
- Choose tools that have been proven to be useful; and
- Budget for peripherals, software and maintenance.

Review Questions (True or False):

1. The mobile phone is the most expensive alternative, and is adequate for exchanging complex messages. False
2. One cost-effective method for updating technology is mixing and matching parts between different devices to build a functioning usable computer. True
3. A tablet computer has been used successfully for the teaching and learning of visual subjects. True

Suggested Reading Materials (Website):

Attewell, Jill. Date Unknown. From Research and Development to Mobile Learning: Tools for Education and Training Providers and their Learners. Available: http://www.mlearn.org.za/CD/papers/Attewell.pdf.

Kumagai, Henry. 2004. Mobile Technology Security Considerations. Available: http://www.techsoup.org/howto/articles/connections/page1309.cfm

Holzinger, Andreas., Nischelwitzer, Alexander., and Meisenberger, Matthias. Date Unknown. Lifelong-Learning Support by M-learning: Example Scenarios. Available: http://www.elearnmag.org/subpage.cfm?section=research&article=6-1

Title of Lecture :   Mobile-Campus Solutions
Presenter   :   Mr. Yasunori Akenaga, Senior Manager, Wireless
                   Broadband and Sensing Solutions, IBM Japan

Content Outline:

The Internet revolution has led to significant developments in the communication and exchange of information. During this revolution, the concept of e-business was introduced. E-business has improved intra-organizational productivity, streamlined business processes between organizations, and introduced new business models such as supply chain management. Modern ICT has had a significant impact on university campus systems. On many university campuses today, wired and wireless technology is creating a community of connected constituents. An increasing majority of students are using wireless devices such as notebook PCs and PDAs. Today's students seem more technology savvy than the university staff and officials, and they expect their needs to be met anywhere, anytime, and with any device. There are a number of challenges involved in meeting the needs of students, such as mobility, device, and application challenges. In order to meet these challenges, educational institutions should consider pursuing a variety of opportunities, such as:

- Developing new business models that will increase revenue for the institution;
- Future-proofing the campus network infrastructure;
- Focusing on the integration of essential public safety solutions; and more.

A typical roadmap to a wireless campus has six phases. To reach the target, it is important that universities understand how they want to be in the future and the business value they want to appeal. Finally, adequate infrastructure should be introduced to enhance campus services. The campus infrastructure needs to support and impart application delivery and messaging, commerce, personal safety and security, and digital media.

Review Questions (True or False):

1. Mobility Challenges include connectivity, security, and scalability. True
2. On campus and off campus transactions through the university can generate revenue while building brand loyalty for the university. True
3. The information technology revolution in the 1990s was called the mainframe revolution. False

Suggested Reading Materials (Website):

Villano, Matt. 2006. Mobile Computing>>Imagination on the Move. Available: http://www.campus-technology.com/article.asp?id=11359&p=1

Hagen, Bill. 2004. Windows Mobile Solutions in a K-12 Environment. Available:http://www.pocketpcmag.com/_archives/Sep04/K12Environment.aspx

Brown, Mary Daniels. 2001. Handhelds in the Classroom. Available: http://www.educationworld.com/a_tech/tech083.shtml

Title of the Lecture : Learning Management System
Presenter : Subodh Tripathee IT Consultant, Asian Development Bank Institute, Vice Chairman, FIT Nepal

Running Time : 36 minutes 50 seconds

Objectives:

- Understanding the complete LMS (Learning Management System) and its advantages over E-Learning.
- Learn how to install and configure Moodle step by step.
- Learn about technical tools such as MySQL, PHP, Apache, and HTML.

Content Outline:

1. Introduction

The Learning Management System or LMS is a system for the management and tracking the involvement of learners in a learning plan. If the participants or the students or the learners themselves are to participate in learning specific content, then Learning Management is required. LMS tracks how the participant is interacting with the specific content. LMS is a reporting system that includes tracking registration, attendance, class lists, grades, test results, class scheduling, and other administrative requirements. And most importantly, it does not include ways to create or deploy new contents.

2. Features of LMS

- Managing training administration
- Managing and deploying E-learning
- Consolidation of all the training initiatives within one system
- Required to meet various compliance requirements to meet various quality standards
- Reduces training costs and meeting of regulatory compliance
- Implement skills and competent management programs
- Align training processes with general business and HR processes

3. System Requirements to Deploy LMS

- High Availability: The system should be highly available; it should be able to meet the requirements of many thousands or even more than that.
- Scalability: A LMS deployed for 20 employees at a smaller company should be scalable to one hundred, one thousand or even more than that because the company may grow.
- Usability: Must be easy to use and spontaneous.
- Interoperability: Interoperable with other systems
- Stability and Security: The system should be highly stable with proper backup, a disaster recovery system and various other things, and should be highly secure with multiple layers of access levels.
- LCMS: Learning Content Management System

- LCMS focuses on managing the content itself in the form of learning objects. In this system, there is no pre-developed courseware. It also includes authoring and managing contents.

4. Moodle

Moodle is a free LCMS and open source course management system. It can be freely downloaded, used, modified and even distributed. It runs without modification on UNIX, Linux, Windows, Mac OS X, Netware or any other system that supports PHP, including most web host providers. Data is stored in a single database MySQL and postgreSQL are best supported. But it can also be used with Oracle, Access, Interbase, ODBC and others.

5. Example of a Moodle based Package

ADBI E-Classroom: it is a Moodle based LCMS package with an installer. It automatically installs PHP, MySQL, Apache, and PhpMyadmin. It has a complete tutorial and LCMS can be deployed with just 3-4 mouse clicks. The ADBI classroom was developed by ADBI and the CD-ROM itself is again distributed under GNU GP license.

6. Technical Tools

PHP: A scripting language. It provides some dynamic features to web pages.
MySQL: An open source SQL relational database management system.
Apache: A web server application that accepts HTTP requests and sends responses to the client.

Discussion Topics:

     a. What is the difference between LCMS and LMS?
     b. List some of the advantages of LMS.
     c. What is meant by open source system?

Review Questions

True, False or Debatable
     a. LMS supports a collaborative learning community offering multiple modes of learning. True
     b. Training expenditure cannot be optimized through LMS. False

Fill in the blanks
     a. If you want to manage student access and records for courseware that has already been developed, then you need LMS only.
     b. Modern LCMS also has built-in LMS features.

Suggested Reading Materials

Books:
Lewis, Quentin A Whitlock. 2003. How to Plan and Manage an E-Learning Program. Hampshire: Gower Publishing, Ltd.

Nicholson, Paul, Brian J. Corbitt, Joseph Fong, and Wanlei Zhou. 2003. Advances in Web-Based Learning. New York: Springer.

Websites:
Online Education and Learning Management Systems. Date Unknown. Global E-learning in a Scandinavian Perspective.
Available: http://www.studymentor.com/studymentor

Adobe. 2006. Learning Management Center.
Available: http://www.adobe.com/resources/education/hed/lms_rc/

Title of Lecture :   Conducive Environments for e-Learning
Presenter   :   Peter Moore

Content Outline:

E-learning technology has the potential to expand learning opportunities to a larger audience. The transition to the information age affects learning and education in two ways. First, rapidly improving technology enables higher quality learning to be made available to an ever-growing audience through increasingly sophisticated modes of presentation. Second, education requires a different kind of preparation from the industrial age, thus demanding a suitable environment for incorporating e-learning technologies.

This lecture introduces nine critical components of an e-learning strategy. These are training, technical support, standards, innovative software, digital content, research, telecommunication and power, policy and development, and access. All components are interrelated and essential to the success of e-learning. However, in order to establish e-learning in the information age, three challenges must be addressed: are coordination, connection, and creation. If these challenges are overcome, e-learning can become a powerful tool for improving the effectiveness and efficiency of learning.

Review Questions (True or False):

1. Not all critical components of an e-learning strategy are related.   False
2. The information age requires a different kind of preparation from the industrial age. True
3. E-learning may cause inconsistent experiences for students. True

Suggested Reading Materials (Website):

Murphy, Sheldon. Date Unknown. E-learning Comes of Age. Pittsburgh eLearning Society. Available: http://www.pittsburghelearning.com/articles/age.html

Shepherd, Clive. Date Unknown. Somewhere a place to learn. Fastrak Consulting Ltd. Available: http://www.fastrak-consulting.co.uk/tactix/Features/aplacetolearn.htm

T-Sysytems Global Learning, Global Learning FachNews. 2005. E-Learning in Developing Countries. Available: http://www.global-learning.de/g-learn/cgi-bin/gl_userpage.cgi?StructuredContent=m130361

Title of the Lecture	:	Evaluation of E-Learning
Presenter	:	Ranjith Kumarasiri Business and Curriculum Development Manager, Distance Learning Center, Colombo Sri Lanka
Running Time	:	30 Minutes and 8 Seconds

Objectives:

- Understanding the factors considered in evaluating e-learning content.

Content Outline:

1. E-Learning

Although the definitions are not very clear, we all are quite used to the following set of words: Web-Based Learning (WBL), Web-Based Instruction (WBI), Web-Based Training (WBT), Internet-Based Training (IBT), Distributed Learning (DL), and so on. Of course with the newest set of these Mobile Learning (or m-Learning) or Nomadic Learning like gypsies and remote learning, off-site learning is learning anytime, anyplace, anywhere. E-learning is a type of engagement with computers, ICT (Information and Communication Technology) and equipment gadgets such as personal computers, CD-ROMs, digital televisions, PDAs and so on. Also, e-learning can be used for distance learning thanks to wide area networks and satellite communications WiFi, the newest technology.

2. Evaluation

Evaluation plays an important role in the courseware development cycle. Evaluation is a form of systematic determination of the merit, worthiness, and significance of a particular learning delivery system. So how do we decide or check the merit, worthiness and significance? There are various questions that can be asked to find out the appropriateness, or the significance and worthiness of the particular E-Learning content. If one reaches reasonable answers, it is possible to decide the merit and worthiness.

3. Purpose of Evaluation

The main purpose of evaluation is to improve the e-learning products and versions and to determine the accountability and justification, and to diagnose or weigh the advantages and disadvantages. The evaluation is needed by the researchers, teachers/trainers, trainees/learners, product developers, educational economists, etc.

4. Major Aspects of E-learning

The major aspects of e-learning include:

a. Learner: Under learner, the physical characteristics such as age, sex and learning history and level of attainment, learner attitude and learner motivation, and familiarity with the technology are important.

b. Learning environment: This is the immediate physical learning environment where the learner is learning, be it at home or in a classroom, at a cyber cafe, university, or whatever. It is also the organization that supports the learner for registration or counseling, and the subject environment, what options the

learners have for various subjects, and whether that is the only subject they have to learn or whether it is optional.

c. Context: This is the particular environment where the E-learning is taking place and the socio-economic factors, the language of the context and the cost of alternative learning. This is very important.

d. Technology: In the areas of hardware, software, and connectivity, we have to consider whether we have access to the Internet, how to solve the last mile problem, the mode of delivery, whether it is online/offline, whether it is on CD ROM or web-based, through the Internet, as well as the infrastructure planning and of course the software standards, such as whether they support SCORMs.

e. Pedagogy: This is the most important item pertaining to the content. So we need to look at content, the curriculum area, the grades, and vocation. In the audience analysis, is the particular e-learning content for a single user or a group class or small group; is it an e-learning content for a teacher?

f. Interface design: What is the connection with the user? How is the page designed? How are the particular e-learning content page and site designed?

g. Assessment of the learner: In e-learning content, there is high dropout rate. Students register, start and drop out. In order to keep them throughout the entire learning activity, feedback and tracking are important.

h. Resources support: Resource support such as manuals, workbooks, CDs and technical support; and sometimes face-to-face support.

i. Ethics and cost: The sociopolitical influence, cultural diversity and controversies should also be considered. Possible costs involved in e-learning content should be assessed and evaluated.

Discussion topics
a. What is the purpose of the evaluation in e-learning?
b. What are the major aspects of e-learning?

Review Questions

True, False or Debatable

a. Evaluation should be ethical and professional but not responsible. False
b. Advanced e-learning applications use testing results to design custom learning programs for learners. True
c. The quality of the e-learning depends on the standards. True

Fill in the Blanks
    a. The best element in multimedia is Interaction.
    b. CD, manuals, guides and workbooks come under offline resources.

Suggested Reading Materials

Websites:
Evaluating E-Learning. http://www.cedma- europe.org/newsletter%20articles/ Training%20Magazine/Evaluating%20e-Learning%20(Sep%2005).pdf

Books:
Horton, William. 2001. Evaluating E-Learning: Here is How You Can: Predict Success, Measure Value, Prove Worth. Alexandria: American Society for Training and Development.

Title of the Lecture   :   Customization of Computer Courseware
Presenter   :   Dr. Shyamal Majumdar, Former Faculty Consultant,
CPSC, Professor and Head CSE, NITTTR,
Regional Vice President, IVETA
Running time   :   49 minutes 12 seconds

Objectives:

- Learn about the techniques and generic requirements for developing customized courseware.
- Learn how to customize courseware according to the needs of learners.

Content Outline:

1. Dimension of customization

It can be described using four points: pedagogical, ICT environment, usability, and administrative. The pedagogical dimension is the key to customization, and contains all the learning materials. The pedagogical dimension includes three important elements: Content and Context, Learning Style and Strategies, and Navigation and Control. The ICT dimension involves questions such as whether you are using the courseware in a network or over the Internet or an intranet. For example; what kind of operating system are you using? Is it Linux or Windows XP or another model of UNIX? Usability in terms of language and personalization considers the mother language and learners' personal preferences, because this plays a vital role in developing any courseware. The Administrative dimension is all about registration: how you are going to do it, the security features and the management aspects.

2. Courseware Developmental Model

The courseware model includes the following steps

- Concept definition
- Storyboard Design
- Development of multimedia Building Blocks
- Authoring
- Testing and Revision
- Delivery

3. Authoring Environment

The customization of the course depends on:

o The programming language: Is it flexible, i.e. no restrictions, it is open architecture i.e. architecture independent software? For example, if you develop courseware using programming language, you can put in on any machine. If it is an IBM machine, it can be Windows based; it can be Linux based whatever the kind: everyone has translator or compiler in their own version.

o Authoring system: For an authoring system, Director, ToolBook or Authorware Professional can be used. These are most popular authoring software packages.

The authoring metaphor of Director is a timeline. Basically, Flash and Director all both timeline. Time by time it is happening. So time can be controlled.

o   Learning Content Management System (LCMS): This is much easier to learn than the authoring system. Design templates are included in the learning management track, and include, for example, evaluations, online registration, online testing, etc. Customization depends on the architecture of the learning content management system, and this is its one of the disadvantages. LCMS requires less development time.

4. Requirements for the Authoring environments

The basic requirement for the Authoring environment is the standardization of the content and software to allow learning objects and technology to be reusable, interoperable and easily manageable at many different levels of complexity throughout the courseware. People are thinking of using the SCORM (Sharable Content Object Reference Model) specification.

5. The SCORM model

It consists of three parts: (1) An Extensible Markup language (XML) based specification for representing the course structures; (2) A set of specifications relating to a runtime environment including API content to data model and content launch specification; and (3) A specification for creating meta data records for the courses, content, and raw data. However, architecture is necessary to get a 100 percent adaptive courseware. Therefore, learning resources and learning records are the key contents of the architecture. The SCROM standard has to be adhered to when developing content.

6. CBT provider for Customization

It consists of four parts. They are:

o   Course content and Design: The provider must be knowledgeable about the content. The provider will be aware of the lesson plan and objectives.

o   Course Delivery: When carrying out the course delivery, see whether the provider has a history of a good reliable courseware delivery.

o   Course Implementation: This provider adheres to the time schedule

o   Support Services: Once the courseware is developed, it doesn't mean that there is no need for any further updating. It has to be updated time and again. So the provider must have updating capability. The provider can develop documentation, including source code. This is very important.

Discussion topics

a. What is pedagogical learning?
b. In your opinion, how should the content expert be?

Review Questions

True, False or Debatable
a. To carry out any modifications in the LCMS, you have to know that particular architecture. True
b. Based on a free browser is one of the competition items among LCMS software. True
c. Everything on the Internet involves e-learning. False

Fill in the Blanks
a. The disadvantage of LCMS is that it is architecture dependent.
b. Linux based architecture is an open based architecture.
c. Reusable learning objects should be used for the customization.

Suggested reading materials

Articles:
Kumar, Amruth N. and Mahwah. Date Unknown. "Pedagogical Dimensions and the Evaluation of Multimedia Courseware for Computer Science." Available: http://fie. engrng.pitt.edu/fie97/papers/1121.pdf

Books:
Berg, Gary A.2003 The Knowledge Medium: Designing Effective Computer Based Learning Environments. Hershey, Pennsylvania: Idea Group Inc.

Title of Lecture : The Future of Learning
Presenter : Kihairiyatun Azlina Akhiruddin

Content Outline:

Learning is a lifelong process of skill and knowledge acquisition that is critical in an era of rapidly increasing global innovation. E-learning will change the way people acquire new skills and access knowledge. It will eliminate barriers that have prevented people from accessing high-quality education. It will also enable organizations to be more responsive in a changing environment. Through e-learning, learning will become more pervasive, continuous, relevant, and collaborative.

There are two factors that will shape the future of learning. One is workforce. Multitasking, which can facilitate the improvement of skills. It has become a common practice among the new generation. The second factor is technology, which can create pervasive and intuitive innovations. Learners are empowered to shape their learning experiences through the use of technology. The next generation of the workforce is knowledge hungry, interactive, and values time, all of which imply that learning will be relevant and available to a diverse workforce, increase performance and productivity, be accessible beyond institutional boundaries, integrated and flexible, and will be dominated by collaboration. Organizational performance will depend on learner empowerment, embedded learning, and organizational learning. Collaborative learning is the key for enabling innovations in organizations, but for it to happen, professional development will have to start from the individual, and then build individuals into teams that can foster the creation of ideas and growth at the organizational level. Finally, it is important to determine the "e-status" of the organization or institution and its priorities, because this will determine where to start transforming innovations.

Review Questions (True or False):

1. A confluence of trends and events has created increased demand for e-learning across all industries. True
2. The next generation workforce will not be multi-generational and knowledge-hungry. False
3. The 21st century requires high productivity and effective communication skills. True

Suggested Reading Materials (Website):

Corollis. 2002. The future of E-Learning. Available: http://www.corollis.com/article_future.htm

Pantazis, Cynthia. 2002. Maximizing E-Learning to Train the 21st Century Workforce. Available: http://www.ipma-hr.org/newsfiles/2002_1_pantazis.pdf.

Schuur, Kees. 2003. A Holistic of Vision of the Future of E-Learning. Available: http://www.theknownet.com/ict_smes_seminars/papers/Schuur.html

Title of Lecture : Future M-learning Opportunities
Presenter : Ms. Judy Brown, Director, Academic ADL Co-Lab, University of Wisconsin System

Content Outline:

It is possible that there will be one global mobile campus within 10 to 20 years. Devices are rapidly evolving, size is decreasing, capabilities are increasing, and cost is decreasing. However, battery life is still an issue, and needs to be extended. Examples of future devices that may truly impact learning and lives include: the talking pen-top computer which can draw a calculator and translate Spanish; pocket projectors that eliminate the need for a screen; and handheld game players which offer large video capabilities.

Mobile devices can be useful in education for several reasons: they can be used when needed or when the time is available; they can provide modular content, wireless access, automated delivery, convenience, performance, and information on-demand; and they are personal and responsive. Below are some recommendations for harnessing the potential of mobile devices to enhance teaching and learning:

- Look for opportunities; follow the market and be ready to move,
- Focus on user context and needs,
- Build content in modular formats,
- Assess readiness and begin with pilot initiatives.

Review Questions (True or False):

1. M-learning depends on time and place. False
2. Audio and video also offer future possibilities for m-learning. True
3. Podcasting is a relatively inexpensive means of storing audio files of information. True

Suggested Reading Materials (Website):

Houston, Douglas. 2006. M-Learning- the Way of the Future? Available: http://technologyweekly.mad.co.uk/Main/Home/Articlex/9477c9182e914d26825b4ae9ad5361a8/mLearning--the-way-of-the-future.html

Koschembahr, Von Christopher. 2005. Mobile Learning: The Next Evolution of Education. Available: http://www.clomedia.com/content/templates/clo_article.asp?articleid=849&zoneid=71

Dye. No. 2003. Mobile Education- A Glance at theFuture. Available: http://www.dye.no/articles/a_glance_at_the_future/abstract.html

Course Assignment Guidelines and Sample Assignments

Issues Paper Instruction

Guidelines for Issues Paper

You are required to prepare an issues paper according to the format provided. The paper should contain at least three critical issues in e-learning. There is no limit for the length of the paper. However, it should be at least two pages long.

> Name:
> Date of submission:
>
> First issue:
> Why is it an issue?
> Write your position and your ideas for resolving this issue.
>
> Second issue:
> Why is it an issue?
> Write your position and your ideas for resolving this issue.
>
> Third issue:
> Why is it an issue?
> Write your position and your ideas for resolving this issue.

Issues Paper Sample 1

DISTANCE LEARNING COURSE ON E-LEARNING POLICIES

Issues Paper

Name: Ramon R. Yap
Date Submitted : November 19, 2006

First Issue: ICT Accessibility

Why this is an issue

While Information and Communications Technology (ICT) is available in the Philippines, ICT accessibility is still limited to the upper income bracket of society and mostly concentrated in urban areas, particularly Metro Manila, Metro Cebu, Metro Davao and other highly urbanized areas. This is due to the fact that the cost of ICT is still beyond the reach of the majority of Filipinos.

While a computer with Internet connectivity is now almost standard equipment in American homes (some even have two or three computers) as well as in more developed countries, home computers in the Philippines are still not common.

Thus as in the case in of knowledge acquisition and education using the traditional classroom method, there is a widening gap in ICT-based learning between the rich and the poor, and between urban and the rural folks.

Position/Ideas

The gap in knowledge acquisition in both the traditional method and e-learning will continue to widen unless intervention is applied.

The intervention may firstly be done by the government.

Firstly, the government should allocate a large part of its education budget to the acquisition of the latest ICT (computer systems with internet connections) for public schools and the training of teachers to maintain and to teach such systems.

Currently, the government is trying to supply public schools, as early as the elementary level with computer hardware and the required software. However, the level of supply is very inadequate. Often, computers supplied to schools are obtained from donations and these hardware items more often than not are discards from donors who have upgraded their own systems. Thus, students are left to tinker with obsolete equipment.

Secondly, the government can provide incentives to private entrepreneurs who are willing to put up ICT Centers where students will gain access to computer systems and the Internet. The incentives could include the following:

- Duty free importation of computer systems
- Income tax holiday for, say, five years

The scope of development needed to make ICT affordable and accessible to the majority of the populace makes it imperative for the government to work hand in hand with the private sector. This can be done through a public-private partnership.

The private sector is very important, as it has the resources to provide funds for ICT development. For as long as the enterprise has the potential for profit, the private sector will not hesitate to go into it.

ICT development in the Philippines to provide access to the majority of the people who needs it most, has still a long way to go. However, with proper focus and coordination, this can be achieved in a short time.

Second Issue: Education and Educational System

Why this is an issue

There are two issues related to education in the Philippines.

Firstly, the budget for education is very inadequate. Every year, the problems of lack of classrooms, lack of teachers and lack of educational materials crop up. In the face of the inadequacy of basic educational facilities, the use of e-learning has not even been seriously considered.

Secondly, education in the Philippines is still primarily based on traditional classroom type instruction. While e-learning is not intended to replace the traditional classroom type, there is great potential in the application of e-learning to supplement it. To develop e-learning requires massive training and educational support in order to overcome resistance from all players in the educational system, namely: the top officials of the Department of Education, school administrations, teachers themselves, and even the students.

Position/Ideas

The Philippines cannot afford to be left behind in the global advances in education.

On the issue of lack of budget, the country can do well to reallocate its budget towards education. In fact, the Philippine Constitution mandates the prioritization of education in government spending.

To jumpstart e-learning in the educational area, the government can allocate a significant budget for its development and develop pilot projects in each major region. The project could include the following:

- Acquisition of the right ICT facilities
- Training of technical and teaching staff to develop pilot courses
- Selection of students to undergo the pilot courses

The success of the pilot project can motivate all players – school administration, teachers and students – to actively participate in e-learning programs.

Third Issue: Intellectual Property Rights

Why this is an issue

Companies and individuals who are engaged in the development of software, and other intellectual assets do so in order to make profits out of their endeavor. However, they also realize that their potential for making money is greatly threatened by "intellectual piracy." With the new and advanced ICT, it has become very easy to copy software and even e-learning courses.

Position/Ideas

While the Philippines already has adequate laws protecting intellectual property rights, enforcement of these laws is still very inadequate. For as long as "intellectual piracy" continues, software development necessary to support ICT and e-learning will remain snail-paced.

Enforcement of intellectual Property Laws is hampered by corruption at all levels of enforcement agencies. This is one area that the government has to address.

Issues Paper Sample 2

E-LEARNING POLICIES ISSUE PAPER

Title	:	Critical issues faced by e-learning in Sri Lanka
Author	:	T. R. Waruna Sri Dhanapala
Position	:	Assistant Secretary to the President
Institution	:	Policy Research & Information Unit, Office of the President
Address	:	Colombo 0100, Sri Lanka.
Date of Submission	:	27 November 2006

Issue One: Lack of professionals in the field of e-learning

This has become an issue because:

Even with the increased ITC literacy among many segments of Sri Lanka's population, it still lacks personnel competent with e-learning skills. This hinders the development and application of e-learning courses in the formal and informal education sectors.

Remedy:

1. Identify teachers who are competent in ICT and train teachers who are ready to apply ICT in their education and to create e-learning materials.
2. The results of the recent island-wide Census of the Dept. of Census & Statistics can be used as a source to select both teachers and other resource personnel to create an e-learning culture in the school education system.
3. Also identify education experts in the field of traditional distance learning activities in the public education system (mostly in teacher training).
4. Expose these personnel to other successful ICT-based interactions (e.g. e-business and e-government applications) to inspire them to adopt new technologies for distance learning.

Issue Two: Difficulty in developing course material for schools in native languages

This has become an issue because:
More than 95% of schools in Sri Lanka conduct education activities in native languages (Sinhala and Tamil). However, the quality of the native language fonts is not as good as that of English fonts. Therefore it creates many technical constraints when producing visuals in e-learning course material such as web content and CD-ROMs.

Remedy:

1. Extensive application of images with embedded texts
2. Convert text into PDF format is one solution but it lacks many animated features.

3. Encourage software developers to develop compatible fonts of high quality that can be used in developing e-learning materials.

Issue Three: Insufficient financing to support Internet usage for educational purposes

This has become an issue because:

Although schools in urban areas can access the Internet at a relatively low cost due to the availability of leased lines, ADSL, and telecommunication facilities, remote schools have to depend on dial-up facility where telephone connections are available.

There are constraints in financing the telephone/Internet costs of schools because the government budget for telephone bills may not sufficient to run successful e-learning programs, thus there is no assurance for sustainability.

Remedy:

1. Provide special free Internet connectivity for each school through the proposed island-wide data network.
2. Until this infrastructure is set up, provide a special budgetary provision for funding Internet connectivity.
3. Liaise with Internet service providers to get Internet connectivity at concessionary rates for educational purposes, thus supporting e-learning by solving the above issues.

Study Visit Guidelines

Please visit an academic institution near your locality which offers e-learning courses or an institution that uses computers for teaching or learning. It could be a school or a university or any other institution. Meet a teacher, a student and a guardian and complete the three different questionnaires given below to prepare a study visit report. Inclusion of photos, graphs, charts or any other supporting documents will be a complement to your visit report.

For teachers:

1. Does your institution make use of computers for teaching/learning? If yes, for what kind of teaching/learning?
2. Is computer usage more effective and easy to manage compared to face-to-face teaching/learning?
3. Technology is penetrating every sector including education, which has drastically reduced social interactions (for example the interaction between the teacher and the student). Do you think this is sufficient ground to discourage the initiatives of using computers for teaching/learning?
4. What are the current issues and challenges for promoting the computer culture in teaching/learning in your context/country? How can those prevail?
5. Have you planned any significant e-learning programs in the future?

For students:

1. Are computers assisting your learning? If yes, for what type of learning/course(s)?
2. Is learning through computers more effective and easy to follow than face-to-face learning?
3. Which type of learning do you prefer most? Why?
   a. Face-to-face learning   b. Computer-based learning (CBT) c. Blended learning
4. Technology is penetrating every sector including education, and this has drastically reduced social interactions (for example the interaction between the teacher and the student). Do you think this is sufficient ground to discourage the initiatives of using computers for teaching/learning?
5. Do you have any suggestions for effectively implementing computer usage in teaching/learning at your institution?

For guardian:

1. Have computers ever assisted your learning? If yes, for what type of learning?
2. Do you think using computers helps you or your ward learn things easily and more effectively than face-to-face learning? Why?
3. Which type of learning do you prefer? Why?
   a. Face-to-face learning   b. Computer-based learning (CBT) c. Blended learning

4. Technology is penetrating every sector including education, and this has drastically reduced social interactions (for example the interaction between the teacher and the student). Do you think this is sufficient ground to discourage the initiatives of using computers for teaching/learning?

5. What are your suggestions for the effective implementation of computer usage in teaching/learning in your country or your context?

Study Visit Report Sample 1

E-LEARNING POLICIES

Study Visit Report

By: Emmanuel Habumuremyi

Name of the Institution visited: The Center for Instructional Technology (CIT)

Address of the Institution:
The Center for Instructional Technology (CIT)
National University of Rwanda
Main Campus Ruhande, next to AVU Center
Ext phone (+250) 530 364
Int Phone: 3434
Fax: (+250) 530 121
P.O Box: 460, Butare-Rwanda
E-mail:cit@nur.ac.rw
URL: www.nur.ac.rw/cit
Date of Visit: 11.12.2006

Introduction

The Center for Instructional Technology supports the academic mission of the National University of Rwanda by helping faculty find innovative ways to use technology to achieve their teaching goals. Drawing on expertise in both technology and pedagogy, the CIT staff members assist faculty with projects, share information across the university about effective practices and examine the effect of technology on teaching and learning.

The centre works in the framework of meeting the expectations of the National University of Rwanda (NUR) in improving the national education system as stated below:

The vision of the CIT is:
- Education for All;
- Gender Equity.

The mission of the CIT is:
- To increase access to education;
- To provide Quality Education;
- To support our National and Regional Objectives.

E-learning courses or usage of computers with future plans

The National University of Rwanda has been following the development of e-Learning over the last five years. It is aware of the opportunities which this new medium of education presents. The Institution is mindful of the need to expand access to quality education in Rwanda and is seeking mediums and modes that will facilitate this.

Through rapid technological development, particularly through the extension of the Internet as a medium of communication and a business tool, a new medium of learning has been developed, which provides significant opportunities to the National University

of Rwanda. There is already a wide acceptance of this new medium of education as an acceptable and viable mode of education.

At the CIT, the staff believes that instructional technology can contribute to the academic excellence of the National University of Rwanda (NUR) by increasing student engagement with course materials, supporting active learning strategies, better matching, teaching and learning styles, fostering communication and collaboration, streamlining course administration and developing students' skills for future learning and work.

In most cases, this new medium of education will be used alongside the traditional mediums of education in a manner which has become known as "blended learning."

Advantages of offering e-learning courses

At CIT, the main justification for e-Learning is provided through the opportunities which it presents to the University, including:

- The potential to enhance traditional face-to-face education;
- The ability to develop e-learning material, known as learning content, in a form that can be reused over and over;
- The ability to deliver content to increasing numbers of students electronically at no incremental cost;
- The increasing availability of electronic learning material such as e-journals and e-books to support an e-learning approach;
- The opportunity provided to students and lectures to define the time frames for education allowing for increasing flexibility of teaching and learning times;
- Significant cost reductions in the teaching and learning processes including the ability to teach students who are remote from the institution and making use of their own facilities rather than consuming University facilities;
- Reduced requirement for physical teaching facilities;
- Reduced travel and accommodation costs for students and lecturers.

In all cases, the teaching staff at CIT sees the use of e-learning as an approach or mechanism for achieving learning objectives where defined outcomes needs to be carefully considered to ensure that the highest possible quality of education is provided.

Stumbling blocks for offering e-learning courses

As mentioned by the CIT staff, the most critical points in e-learning at CIT are related to the understanding of what e-learning is and how it can be a solution to the whole learning process of Rwanda.

CIT and the University itself face a number of challenges. These challenges include:

- Limitations on financial resources available to the NUR;
- Increasing cost of education;
- Demands for education which exceed the centre's current ability to deliver (limited places and offices);
- Geographic conditions require alternative mediums to enable access to education in remote areas of the country;
- Difficulties in attracting and retaining qualified and competent staff to the NUR;
- Limited physical facilities available to the Institution.

The National University of Rwanda believes that a number of these challenges can be addressed in part by the use of e-learning as an additional and extended medium of education.

From the students' point of view, there is a problem of inadequate tutor support. Besides, they encounter difficulties in accessing the Internet: most of the time there are power cuts and poor Internet connectivity, and where available the price is high.

As for the teachers, there is a lack of adequate training in teaching the virtual communities. Also, finding designers, content developers, and programmers who could help to develop better courses is a big problem.

The are no points of view from parents, since the majority of the learners are undergraduate and postgraduate students.

E-learning programs be improved

Even though no substantial progress has been made with the use of e-Learning at CIT in the educational programs of the National University of Rwanda, the development of e-learning policy will promote and inform the development of and use of e-learning at the National University of Rwanda. The policy will be the basis on which the NUR will be adopted as a standardized and structured approach to the use of this new medium in teaching daily activities.

It is believed and recommended, under this policy, that the use of e-learning can support the vision and mission of the NUR with additional capability and more effective utilization of resources to meet its challenges and achieve its vision and mission.

There, the Center for Instructional Technology (CIT) will play a major role by:

- Diffusing the use of Instructional Technology in Teaching and Learning at the National University of Rwanda, and
- Training teachers in designing and delivering online courses.

1. Justification for e-Learning

After pointing out that many institutions and corporate entities all over the world have adopted e-learning as a successful means of transferring knowledge to their staff, and that there is already a large global community of on-line learners, the NUR has chosen this medium as one solution to the different education challenges it faces.

Through the rapid technological development, particularly through the extension of the Internet as a medium of communication and a business tool, a new medium of learning has been developed, which provides significant opportunities to the National University of Rwanda. There is already wide acceptance of this new medium of education as an acceptable and viable mode of education.

The National University of Rwanda has already established a support unit, known as the existing e-Learning department of the Center for Instructional Technology (CIT), which will primarily function as a supporting, standard-setting and capacity-building body. The specific objectives of the unit are:

- To promote the use of e-learning in current and future programs of the NUR;
- To provide training and development to lectures and facilitators of online learning programs;
- To set and monitor standards for the use of e-learning from a technological, content and quality perspective;

- To seek opportunities for collaboration and cooperation with other institutions inside and outside of our borders, and particularly with other higher institutions in the East African Community and the African Virtual University;
- To monitor the use of external providers of services to ensure standards are adhered to and that quality of service is received.

2. Vision for e-Learning

The e-learning vision for the NUR is to make effective use of this new medium of education to significantly expand the number of its students and increase access to education while maintaining the standards and quality of the institution's educational system. This will support the national and the international goals of "education for all."

The specific vision for e-learning at the university is:

- E-learning will form a component of all programs, where appropriate, by 2008;
- The university will expand its enrollment through the use of e-learning by 100% by the year 2020;
- The university will integrate e-learning into all programs by 2010.

3. Barriers to Implementation to be addressed

Two main categories of barriers exist to the implementation of e-learning at the National University of Rwanda and generally in the country: external and internal barriers.

3.1. External Barriers

The main external barrier is the limitations on access to technology and basic infrastructure such as electricity and telecommunications for the students who are the target market for e-learning. In the short-term, alternative strategies will need to be put in place to overcome this barrier. These strategies will include the use of **learning centers** and the provision of technology access to students both on campus and in these learning centers. For that, the involvement of the Ministries of Education, Infrastructure, Energy and Telecommunications is highly needed.

3.2. Internal Barriers

The main internal barrier is the lack of willingness to change and adopt e-learning as an effective part of both the existing and proposed new programs. Until the potential of this medium is understood and internalized by the leadership and academic staff, and until effective and successful examples of the use of technology enabled learning has been seen at the university, the staff of CIT will struggle to see the benefits of broad scale adoption of e-learning.

The second major barrier may be access to the seed funding required to develop the first programs that will demonstrate the value of this medium to the institution. This program includes training of course designers, content developers, course administrators and facilitators.

Other barriers may include:

- The perception that e-learning may not be an acceptable medium to provide quality education.

- The challenge of managing e-learning, and particularly the impact of managing remote students.

The E-Learning Unit will ensure that its role remains that of a support unit to the Faculties and Schools presenting programs on this new medium. The unit will at no stage take direct responsibility for the creation of e-learning programs or the delivery of e-learning programs.

4. Dependencies

A key dependency for the effective implementation of e-learning is support and integration with the ICT policy of the University. The ICT Policy will need to make specific provisions for technology access for on-campus and distance education students and provide the supporting technology infrastructure to facilitate the development and delivery of e-Learning programs.

A second dependency is the relationship between this policy and the Intellectual Property Right (IPR) Policy of the University. Here, decisions need to be made regarding the IPR. In some cases where co-development of content is desirable, issues regarding IPR may need to be negotiated among the partners.

5. Standards for the Institution

The implementation of e-learning in the NUR will largely be new to most users. As such, this implementation involves the risk that multiple approaches and different methodologies will be applied, creating limitations on stakeholders' ability to share knowledge, skills and even content, across the University. Accordingly, a key responsibility of the e-Learning Department will be to ensure the development of, and adherence to, a defined set of standards and processes which will guide the development of e-learning content, the structuring of programs, the technology to support this new medium and the quality of e-learning programs.

6. Program Selection

The selection criteria for programs for e-learning may include the following:

- Demand for programs that exceed the university's ability to deliver;
- Demands for increased flexibility in learning and teaching schedules;
- The opportunity to significantly extend access to learners normally engaged in full-time work and requiring increased flexibility in learning times in the ability to learn at a distance;
- The opportunity to students who are in remote locations from the institution to learn making use of their own facilities rather than consuming the university's facilities.

The nature of the e-learning in the in each programs will depend on the requirements of that specific program. Individual programs could range from only a small component of the program being technology enabled, to a program which is offered entirely online.

7. Incentivization for e-Learning Participation

The University defines a standardized approach to incentivizing the participants to e-Learning which includes the following:

- No additional incentives will be provided to lecturers or staff that participate in e-learning. The benefits to these individuals will accrue through more effective use of their time and teaching efforts in the medium term.
- Lecturers and content providers will be remunerated for the assistance and additional effort put into the creation of e-learning material and conversion to e-learning programs, where this is outside to the normal responsibilities and workload of the individuals. This remuneration will be in line with the university's existing policies for overtime and extra workload;
- The University can engage, if necessary, an external party to assist the university with the development of content for the university.

Guidelines will be developed to cover the following processes:

- The assessment of programs to consider their suitability for e-learning;
- The process of content creation and content conversion;
- The process to be used for the presentation of e-learning programs;
- The administration process for e-learning programs.

Done at Butare, 14 December 2006
Last modified: 17 December 2006

Study Visit Report Sample 2

E-LEARNING POLICIES COURSE

Oct 2006 – January 2007
Distance Learning Centre
Asian Development Bank Institute, Tokyo, Japan

Assignment 2: Study visit report

Name: Arundhati Seigell
Date of submission: 11 January 2007

Name of school: MAHARAJA SAWAI MAN SINGH VIDYALAYA (MSMSV)
Address of school: Sawai Ram Singh Road
                   Jaipur 302004
                   Rajasthan, India
Date of visit: 15 December 2006

1. Describe the e-learning courses or usage of computers with future plans.

MSMSV aims to give its students a head start in life. Computers are a part of the curriculum from class I onwards. In class XI and XII it becomes an elective subject and the Central Board of Secondary Education (CBSE) syllabus is followed.

The use of ICT for learning has been introduced in MSMSV to create an opening learning environment and develop a vision for the future. As the world is becoming a knowledge society, the school feels that its students should be trained and equipped with appropriate skills and knowledge to be able to live in a technologically dominated socio-economic milieu.

MSMSV ICT facilities: MSMSV school students working in their computer laboratory.

For enabling an ICT in education, students have ready access to Pentium machines with colour monitors, multimedia and internet facilities. To keep up with the latest software demands the school has revised its computer curricula to include Windows 95/98, MS-Office 2000, Informatics Practices, etc., along with some computer languages like Logo, C++. Audio Visual Instruction is well integrated with the school curriculum .The AV room is equipped with a TV, Video Cassette Recorder, LCD Projector, Overhead and Slide projectors and collection of educational AV cassettes. The school plans to set up videoconferencing facilities in the near future.

Computers are used as teaching aids. MSMSV also plans to use computers for remedial teaching. The school is yet to finalise its plans in this area.

The school has facilitated learning, teaching and adapting new schooling methods with current demands in education. Both teachers and students are learners in the process, learning new methods of teaching, using new technology for learning and interacting. The use of computers has helped students of MSMSV explore their creativity and adapt to new learning styles along with the traditional methods of learning and compete with peers across

different schools in the country and the globe. They are more adept at using technology – the Internet – for searching, meeting friends and other school students virtually and learning new software.

One of the reasons ICT based learning was introduced in MSMSV is to provide the following opportunities:

- Facilitating learning for students who have different learning styles
- Making learning more effective, involving multimedia and hypermedia
- Providing a broader international context for approaching problems

One of the key learning changes seen among students is the ability to search effectively. Searching for information is not a popular activity in traditional schooling. Today the search and retrieval of needed information is becoming a core activity in work and learning. Asking an expert is a special case of information search. ICT tools such as the Internet, use of CD ROMs, chat and discussion forums are now enabling students to do their class work and projects in discussion with various students across the globe. This enables them to network better, get new ideas and be innovative and learn from others experiences. This is a totally new way of learning compared to traditional classroom learning where students are restricted to not more than 3-4 classrooms in a school or at a maximum of interaction with other schools once or twice a year. This does not necessarily bond or create a healthy learning environment.

Parents' contributions have been immense. Most parents interviewed said they appreciate the facilities in the school. They too contribute by encouraging their children to learn new skills. Several parents seemed to recognize the importance of learning computer skills and the advantages of the Internet. Some of them were, however, skeptical about the distractions caused by computer games and the Internet. They suggested that the school monitors children's actions and access to online resources.

ICT through international links

Another significant dimension of ICT for MSMSV is its strong learning partnership with a school in the UK that further contributes to the development of better and more effective ICT skills for communication. The focus for our visit to our link school in India was to develop ICT links in English and through the E-learning project in Religious Education. The two schools have been working on joint projects, under which students had exchanged ideas on aspects of Hinduism with the UK students through online polls, online discussion and the sharing of presentations. In this way, the schools are attempting to promote independent learning and encouraging students to draw on information at the source.

UK school visits MSMSV: MSMSV school students and teachers interacting with a UK school teacher.

In summary, MSMSV believes that ICT enable teachers and students to construct rich multi sensory, interactive environments with almost unlimited teaching and learning potential.

Some plans for the future are:

- Enable teachers to be able to teach a whole class or part of a class, assisted by technology as appropriate;
- Develop online curricula to enable students to learn the same way or to choose ways that suit their individual learning styles, assisted by technology as appropriate;
- Introduce assessment of progress, managed by technology;
- Equip the school with a large screen video display (projector) for group learning purposes than just audiovisual rooms.

2. What are the advantages of offering e-learning courses?

MSMSV does not offer any e-learning courses. It has computer labs and ICT learning and audiovisual facilities for its students and teachers. Computers are an integral part of the curriculum and help children to learn from class I onwards with the idea of introducing online learning and teaching methodologies.

Some of the advantages of the ICT facilities acknowledged by teachers, students and parents include:

Students

Inter-school networking: UK student interacting with MSMSV students on the Internet (photo from school archive).

- Students are enthusiastic to learn new skills using computers including using the Internet, e-mail, different software for mathematics, word-processing, programming and spreadsheets.
- Access to a variety of online resources helps them learn to adapt their class work and projects with different ICT tools such as presentations, multimedia narrations and animations and videos.
- Exposure to the Internet has enables the students to learn about new technology and use it to search for information online, collaborate with project teams across schools and network virtually.
- Students feel that e-mails have helped them learn a new and faster mode of communication.
- Students welcome online learning as it enables them to learn anytime, anywhere, and they will not miss classes if they are out of town.
- Students find it easier to repeat tasks and improve their skills.
- Interactive audiovisual packages are used by students for their projects. Students with computers at home are also able to issue CDs to view at home to prepare for lessons and projects.
- Students enjoy exploring their creativity and using it in presentations. This has also helped to improve their communication skills and public speaking.
- Students welcome computers as a learning mode but are more confident when their teachers explain those lessons. They do not prefer a total online learning option. They feel interaction and guidance from their teachers by approaching them directly is immensely important.

- Has technology reduced social interactions? Students of MSMSV do not think so as they continue to have their traditional classrooms and interaction s with family and friends. Technology, they agree, has helped them to reach out to friends and family they use to see or interact with only sometimes in a year. Most students were well versed with e-mails, and used them to connect to other students, family and friends across the globe.

Teachers

- Most teachers are well trained in the use of computers in the school.
- Teachers are now able to use a variety of methods to teach.
- Teachers have seen a marked difference in the learning styles of students and their enthusiasm to use computers.
- Computers have helped teachers in repeating tasks or making correction without wasting time and energy.
- Exposure to new technology and trainings has kept the teachers abreast with new trends.
- Teachers are now able to interact with other schools in the country and abroad.
- Internet resources have helped them to understand different teaching styles and some teachers are trying to adopt easier methods of learning.
- Some teachers download or scan the latest articles, new inventions and news and ask students to adapt it to their projects. They encourage students to research and be innovative.
- Teachers feel that teaching-learning trends have changed drastically with computers.

Parents

- Most parents are well educated and encourage children to learn new skills.
- Parents appreciate the use and teaching of computers and ICT tools in the school.
- Parents feel that their children have become more productive and creative in their project work. They extensively use computers to develop presentations and artwork, and to interact with friends and classmates for ideas.
- Parents do feel that face-to-face learning should continue, as it is an important aspect of learning and understanding and bonding with one's teacher. Most of them do not like the idea of a total online learning concept. They feel that it is important for their pupils to interact with teachers, classmates and other students of the school, and to use the playground to get an all round development.
- Parents are learning a lot from their children. They are learning more about using digital equipment and technology from their children. This role reversal is being accepted in a positive way which is socially encouraging.

3. What are the stumbling blocks for offering e-learning courses?

MSMSV has computer labs and audiovisual facilities but no e-learning courses yet. However, the teachers feel that providing e-learning courses for school students has advantages and disadvantages. Some of the stumbling blocks include:

- The additional time teachers will have to spend in designing and developing online courses.

- Schools will need to have better IT infrastructure and students will need to have easy, cost-effective Internet access at home (not very common yet). This can cause a lot of disparity between students with access to the Internet at home and those without access.
- Teachers above 40 years of age are resistant to change. Training and changing their behavior or style of teaching can be a difficult task.
- More funds will have to be allocated for ICT facilities, software and maintenance.
- Students will need to be monitored when accessing courses at home.
- Unlimited access to information can lead them to wrong information, distractions and bad habits.
- Not all information on the Internet is accurate or credible and students tend to copy information from the Internet rather than try to solve the problem or be creative on their own.
- Spending too much time on computer games or sitting too long in front of the computer can cause health problems.
- Students may also become less sociable.
- Parents are of the opinion that e-learning courses may lead to lesser concentration in classes as children feel they can cover it up when at home.
- Children may not have proper guidance in solving problems and may have to go through several iterations before getting it correct.
- Parents would like a good blend of face-to-face and online learning options. But, they feel that it will take some time before all students will have access to computers at home.

1.   How can the e-learning programs be improved?

Some teachers are interested to explore new ways of using different media for teaching. They agree that more time is required to develop e-learning programs but it will benefit the students. The school will have to undertake extensive training programmes for teachers and students on developing and using e-learning programs. Teachers agree that it will be a useful tool for learning from home, doing homework and projects and assessing the progress of children and studying patterns of learning. Some of the initiatives that the school will have to undertake are:

1. Understand student learning styles and pattern in order to develop or buy modules for learning.
2. Adapt existing educational learning materials students are familiar with into e-learning modules.
3. Facilitate students to do their homework and project work using online methods. Training is another aspect teachers would appreciate to deliver quality ICT learning.
4. Online courses or curricula should be developed with different difficulty levels to assess student's learning curves.
5. Student surveys should be conducted before and after the introduction of online modules to evaluate performance and changes in learning with new systems.
6. Broadening the range of materials used in classrooms is another approach that can improve courseware or e-learning programmes. With facilities like

copying machines, scanners, etc., teachers can now show articles of interest or relevance to students by making copies and sharing them. These methods can be used to improve the students' creative skills by helping them rewrite, edit or add research material to the story, etc.

7. With access to the Internet, students can be encouraged to use encyclopedias, or to link to art museums and other online reference materials to build projects.

8. Certain fundamental concepts of mathematics and science can be explained using visual realization (modeling) that ICT tools can reproduce. This can help students to freely manipulate objects representing these concepts on a computer, experiencing in different ways the dynamic relations between their actions and the visible behavior of the model.

2. List of computer courseware (programs) being used.

MSMSV has ready access to Pentium machines with color monitors, multimedia and internet facilities.

The latest computer programmes introduced include:

- Windows 95/98 – Students are taught the basics of the Windows operating system and its operations in the computer classes.

- MS-Office 2000 – Students learn to use a word processor, spreadsheet, power point presentations and image editing.

- Informatics practices are used to improve students' skills in information processing, data analysis and mathematics.

- Computer languages like Logo and C++ are taught for those students who have taken up programming as an option for learning.

Audiovisual facilities include:

- Television
- Video Cassette Recorder (VCR)
- LCD Projector, overhead and slide projectors
- Educational Audio-visual cassettes

AV facilities are used during presentations, educational movies and documentaries, to run lectures and inter-college competitions.

Teacher Courseware Development Plans

E-LEARNING POLICIES
COURSEWARE DEVELOPMENT PLAN TEMPLATE

Cover page

You can include following in the cover page:
1. Courseware Title
2. Submitted by (Your name, position, organization, e-mail address)
3. Country
4. Date of Submission

Executive Summary

Write an overview of your courseware development plan (CDP). Summarize the contents of your CDP.

Introduction

Give an introduction of your courseware briefly: what it is about?

Objectives and Purpose

Define the aim of the courseware being developed and give reasons; why are you developing the courseware?

Begin with the following four major steps for your CDP.

Step 1. Analysis

1.1   Feasibility study

Specify the market demand of your courseware. Identify the needs and describe how those needs will be addressed by your courseware.

1.2   Analysis of learners

Target population data: This includes:

- The size of the target population and the expected annual throughput;
- The location(s) of the intended learners; and
- Any other information which may affect courseware design such as location, access to computers, military environment, age and sex.

Data gathering methods: If information from existing sources is not sufficient, you may obtain further information from the target population through the below given methods and include it here:

- Questionnaires;
- Placement tests;
- Structured interviews;
- Focus groups; and observations.

1.3   Project Management

1.3.1   Resource requirements

Identify the resources required for developing the courseware. Give the hardware and the software requirements, and define any other inputs required, if any, for your courseware development.

1.3.2   Risk management

Perform SWOT Analysis for your courseware. Using SWOT Analysis, discuss about the strengths, weaknesses, opportunities and threats for your courseware

1.3.3   Project Schedules

Plan a proper schedule for your project; allocate timing (how many days?) for deliverables, set deadlines for each deliverable and give a graphical representation of how your workflow will proceed. You may wish to use a Gantt chart here. (Place a Gantt chart here)

Gantt Chart - Project Schedule

	10/6/2002	10/13/2002	10/20/2002	10/27/2002	11/3/2002	11/10/2002	11/17/2002
Task 1							
Task 2							
Task 3							
Task 4							
Task 5							

Completed ■   Unfinished ☐
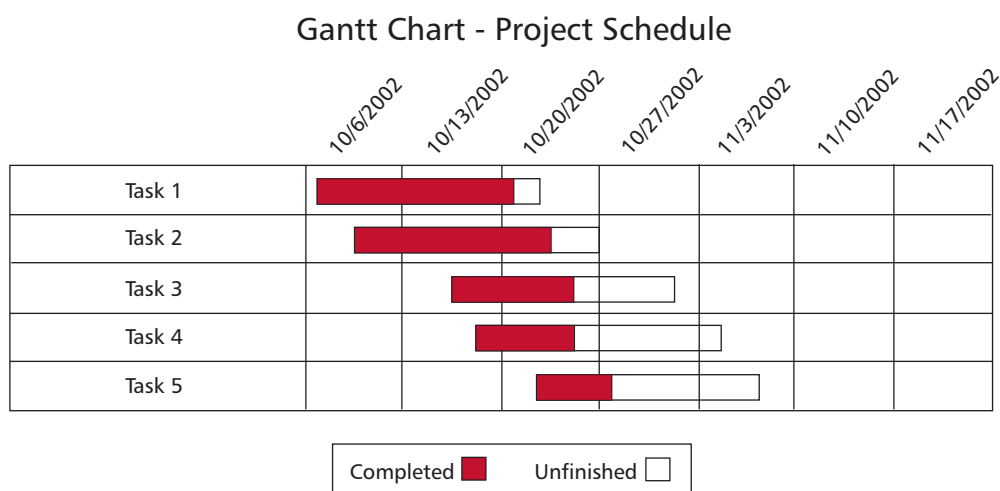
Here,

Task1, Task2, Task3……… refer to those tasks, completed in the days referred in the chart above. For example-

Task1: Determine business needs

Task2: Completion of analysis step and so on.

1.3.4   Development Team (Describe your development team, which may include following):

Instructional Designer (ID): Conducts the needs-and-audience analysis and designs basic content structure.

Subject Matter Expert (SME): Works to ensure the accuracy of technical instructional materials and appropriateness for the audience as required.

Content Author/Developer: Writes all instructional text or scripts.

Programmer/Developer: Responsible for creating the content package required by the courseware design.

Graphic Artist/Media Producer: Responsible for graphics design or media production.

1.3.5   Production budget and/or project costing

The following formula may be used to determine the approx. per-course costs for developing self-paced courseware from conception to execution.

Length of course in hours X development time rate X development cost rate

---

Here,

Length of course in hours = the duration of courseware measured in hours

Development time rate = how many hours does a person work (in average) to complete the course i.e. the number of person-hours of development required to complete the courseware

Development cost rate = the cost of each person per hour i.e. the cost of each person-hour of development work

Example: cost for a course consisting of 3 modules that takes the average learner 8 hours to complete with development time rate and development cost rate 150 person-hours and $100/person-hour

Measure	Estimate (units)
Length of course in hours	8
Development time rate	150
Development cost rate	$100
Per-course cost (Total)	$120,000

Step 2. Design

2.1   The instructional strategy/Content structure

Describe the components and sub-components required to determine the subject matter and the pattern of those contents. You can also develop a scalar diagram to document the content and structure. A scalar diagram depicts the direction of the workflow. If say the topic is Vector, a scalar diagram would look like this-

Vector, → The definition and examples of vector will appear here. → Visual aids
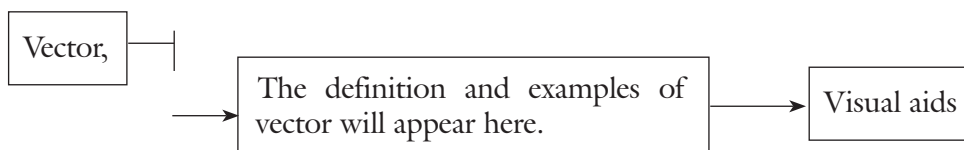
2.2   Design Structure

How will your content be displayed on screen? Describe if there will be only plain text, or designs, animations effects, etc., as well.

2.3   Design Storyboard

A storyboard is a combination of outlines and visual sketches that map out the contents or sequence of ideas. It helps to create the direction (flow), the structure and the sequence for the instructions. For example, if you open your Flash movie with an interface of an accelerating cart, you'd draw a rough sketch or write a description of the scene accompanied by a list of the images or animations, sound, words, music, etc., that you'd need. You may also want to note how long you'd like to remain on that screen before moving to the next screen. Below are simple examples of a storyboard template. However it can vary significantly depending on the nature of the courseware being developed.

A storyboard for multimedia development

Lesson Title: Sequence number:
Screen Title:
Type:
Audio:
Notes:
Branching: back   next   variable
Video in: Video out:
Files required: graphic   audio

Graphic (Text)

Storyboard template no. 1

A storyboard for multimedia development

Title for the Multimedia Script

Text of topics you want to cover.

Graphics, videos or animations you want to use.

Script: detailed description of the elements on the screen.
- ✓ Color scheme
- ✓ Text attributes
- ✓ Audio
- ✓ Camera angle
- ✓ Interaction of buttons and text
- ✓ Details for the programmer, etc

Storyboard template no. 2

A storyboard for multimedia development

Sequence no.:	Type:	Branching	Back:	Next:	Variable:
Lesson Title:			Screen Title:		
Notes	Text		Graphics	Audio	Video

Storyboard template no. 3

2.4   Flow chart the content

Here you will illustrate the flow of control within the courseware over any user input. It can demonstrate "what comes next after you click this icon" and so on and also describe each workflow. For example, clicking on next button will navigate you to the next page and you will see three options. Click on install to install your product. Now the flow chart for above example will look like as shown below:
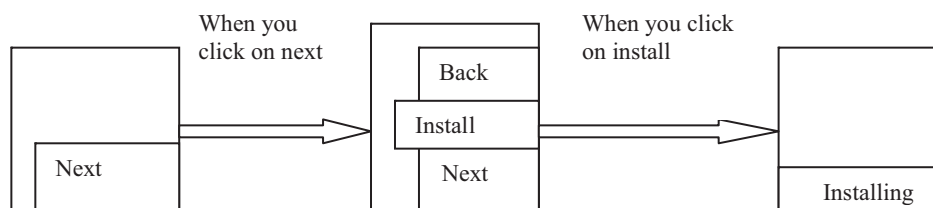
2.5   Visual Aids

Mention if you are providing any visual aids to demonstrate your notes and examples.

Step 3. Develop and Implement

3.1   Development

Here you have to include how you will develop your courseware. You can include details such as: either you will build a prototype or directly go for the development and documentation. You can also describe the authoring tools required that you plan to use for your courseware development. Authoring tools are for example, Macromedia Flash Player, Netscape Instant Messenger, Microsoft Internet Explorer, Macromedia Dream Weaver, Apache Server, etc.

3.2   Implementation

Describe the setup environment to run your courseware.

Step 4. Validation and Evaluation

4.1 Validity test

Describe what methodologies will you use to test your product for validation. For example, testing occurs during or at the end of the development task. You can test your courseware by the following methods:

- **Alpha testing**- the final testing before the software is released to the general public. It includes unit testing, component testing, and system testing where you will compress files, edit for misspelled words and unclear directions, broken links, and syncless audio and video.
- **Beta testing**- the second phase of courseware testing in which a sampled group of the intended audience tries the product out and gives feedback on it.

4.2 Evaluation

4.2.1 *Evaluation of the courseware*
Describe how your courseware will be evaluated.

4.2.2 *Evaluation of the learner*
Describe the method for evaluating the learner's progress, achieved through your courseware.

4.2.2 *Calculate Return on Investment (ROI)*
ROI (%) = (benefits - costs/costs) * 100

Costs to consider while calculating ROI:
- Purchase of new equipment and new equipment upgrades over time.
- Web site development, ongoing maintenance and revision.
- End-user technical support costs.
- Telephone, network access and stationary expenses.
- Development costs, cost of delivery, wages of trainees and trainer, travel costs.

Benefits to Consider:
- Reduced turnover – determine if the full cost of hiring, training, outfitting, and supporting replacement personnel can be calculated accurately

Conclusion

Write conclusion for your CDP.

References

(Write the references for your CDP)
1. Hyunjeong Lee, Krivet 10th Feb. 06. Presentation on: Developing Storyboard
2. Advance distributed Learning, The SCORMTM Implementation Guide: A Step-by-Step Approach

3. Volume 3: SCORM based courseware development guidelines. A Roadmap to successful implementation.
4. ISD Guidelines Version 1.0, March 2004. Courseware Development Guidelines Volume 1: Defence Learning Network Project
5. M.K.L. Pinto, Computer Courseware Development Plan: E- Learning Policy Workshop, Distant Learning Centre
6. Alpha, Beta and Pilot Testing, http://www4.nau.edu/azregions/Testing/beta.htm
7. Gantt chart-Project schedule: http://www.rff.com/ganttcharts.htm

Glossary

Give definitions of keywords included in your CDP

Appendices

Include additional information on your Courseware. You can attach the screenshots or any other relevant data on CDP or the courseware itself.

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Distance Learning Course

TEACHER COURSEWARE DEVELOPMENT PLAN

SUBMITTED

BY

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January 25, 2007

TEACHER COURSEWARE DEVELOPMENT PLAN

EXECUTIVE SUMMARY

The TDCP is a teacher's courseware development plan intended for teachers who need to be computer literate in order to be able to apply their knowledge in enhancing the teaching and learning process. The final output expected of the plan is a software for teacher development in ICT ultimately aimed at using the same in advancing education through the use of modern technology, i.e. e-learning.

The objectives of the TDCP are three-fold:

1. Provide a courseware designed for the targeted audience;
2. Serve as a venue for ICT education among teachers of different levels;
3. Prepare for a collaborative learning environment.

The TDCP is being envisioned to fill the gap that exists. The number of teachers who are not computer literate and those who are computer and digital literate is perceived as wide. The TDCP hopes to fill this gap through a program for teacher development which provides a courseware for a particular group of teachers based on their literacy levels.

The TDCP involves two courses. One is for the beginners and another one for those who are computer literate but lack digital literacy. The program will be stratified to provide a progressive development of the learners through the basic and post-basic courses.

The target beneficiaries or the learners being tapped for this program and for which the courseware is being created are teachers at all levels in the Universidad de Sta. Isabel. Available facilities and ICT teachers will be on hand to complete the infrastructure needed to implement the TDCP.

These target teachers were identified as a result of the survey conducted in December 2006 to get a profile of the computer requirements of the institution. For a more complete database on the institution's computer literacy requirements, a more in-depth survey has been planned for next month to find out the e-readiness of the institution for the network world.

The rest of the plan describes its project management in terms of resources, risks involved, schedules, and project team. Other components of the plan such as production costs, project costs, the courseware design, its development and evaluation, as well as the return on investments, like reduced turnover, have not been described fully as the undersigned is a non-technical person. The technical details shall be worked out together with the rest of the team members who are specialists in ICT when an appropriate situation present itself. The present situation does not provide for a venue to collaborate with the rest of the team concerning such details.

Introduction

Background

During the course of the e-Learning training conducted by the ADBI for the period November to January 2007, issues involving the trends and prospects of e-learning surfaced. It was during this time that I became fully aware of the potential benefits of e-learning in

education, particularly its application in the teaching-learning process. From the exercises, which were part of the learning activities, the problem of ICT awareness and the limitations of its application in the Philippine setting was identified. To give credence to this point, a visit to two schools, on top of my observations obtained from years of exposure in academe, was conducted and a school survey was administered using the guide questions provided by the course administrator. The results of this study confirmed the initial observation that most teachers lack the necessary IT skills, hence the IT competence to apply the same in teaching. Although the study has scratched only the surface of the population, it can be seen as demonstrating the current need for ICT literacy in the country among teachers. Filipino participants in the same forum expressed this point in not so many words.

Although I am aware of the many programs of government like the Department of Education, or DepEd, and other local and foreign agencies, such as Coca Cola Ed Venture, SEAMEO INNOTECH, World Links, FIT-ED Foundation of IT Educational Development, Japan Social Development Fund, Intel Worldwide Professional Programme, Internet Learning Academy of Japan, UNESCO, etc., towards ICT education for teachers, most of these efforts have only benefited public school teachers. Teachers in the private schools or universities, if at all, may have been partaking through limited slots, but the progress in ICT education has been slow. Only the more affluent of private universities can afford to have ICT programs for their teachers and ICT infrastructure for their institution.

Much have been said about the potential benefits and opportunities of being computer and digital literate and their attendant constraints and problems. This TDCP attempts to go beyond the problems and constraints of ICT and to pursue a proactive approach to minimize the effects of these real or perceived barriers. The key to a successful endeavor is to rigorously pursue the objectives set forth and not look back, except to monitor progress.

It is in the light of this that I have chosen to develop a plan for a computer-based course for teachers. As my line of interest is in teacher education and training, I deemed it a more productive endeavor to focus my courseware development plan on addressing teachers' need for ICT training and development in an identified educational sector, such as the Universidad de Sta. Isabel which is a non-profit educational institution that relies on donations from the government and other interested agencies to support and maintain expensive projects such as ICT programs.

At this juncture, let me express a limitation of this TDCP, which is its lack of collaboration with other key players. I believe what the experts say that in developing a courseware plan, it is best to involve other ICT specialists in the planning stage, such as a subject matter specialist, instructional designer and a web developer. My role, therefore, is limited to being a planner with only a basic knowledge of computing. I am alone in this endeavor and therefore, this plan will be subject to a refinement and critiquing by colleagues who are ICT-based.

Objectives

The teacher courseware development plan (TCDP) generally aims to strengthen teachers' training and development in ICT in order to apply the same in education.

Specifically, the TDCP has the following purposes:

- Provide an appropriate courseware for in-service teachers that will strengthen their ICT literacy;
- Enhance the ability of teachers in using ICT as a tool, as a subject, and as an educational source.

- Develop teachers' awareness of ICT as a potent tool in the teaching-learning process;
- Develop teachers' understanding and appreciation of the global role of education in participating in technological changes for productivity and economic self-sufficiency;
- Prepare learners' readiness for e-learning and m-learning instructional modes.
- Set the pace for a cooperative learning environment.

Instructional System Design

Gap Analysis

The problem of computer literacy among teachers at all levels has continued to plague developing nations. In the Philippines, the same is true. While there are teachers who are literate in the basics of computing, there are many who have never touched a computer. I have no statistics on the percentage of those who have never touched a computer and those with basic computing skills like MS Word and Excel, MS Access Basics, MS Powerpoint, Internet and e-mail. Perhaps, there is a need to determine this in order to come up with a definite number for future planning.

The TCDP shall be designed to suit both novices and interns. By novices, I refer to those who are zero literate. By interns, I refer to those who have basic computing skills, but are not digital literate, that is, have not developed the ability yet to use computers and technology efficiently. The modules for this training and development course shall be stratified in order to accommodate the novices into the mainstream of the training – which is the application of their learning into the classroom, whether physical or virtual.

For the novices, the TCDP shall involve a module on basic computing competencies as mentioned above. For the interns, the module will be on an advanced plane. It will specifically focus on the training of teachers on how to apply various educational software packages in teaching and learning and how to integrate these resources into their classroom activities and school routine. This will prepare the teachers in the digital world.

As developing countries are now alerted to this global change, we have no choice but to move forward with the rest of the world and join in the journey to cyber space technology.

One way to do this is to train teachers in ICT who will train others, too.

Learner Analysis

A. Target Population Data

The teacher population that is being targeted is the one from the Universidad de Sta. Isabel in the Bicol Province, specifically, in Naga City. The number of teachers would be in the vicinity of 200.

The facilities are quite adequate. There are classrooms filled with computers (these are currently used by the MIS students), multi-media facilities and library facilities are equipped with computers and other devices that will facilitate the learning of the targeted beneficiaries.

IT teachers are also available. Other experts may be invited as resource facilitators and mentors for more enriching and fuller sessions.

The target learners are of mixed types: young, not-so-young, and older. The population is both male and female.

B. Data Gathering Methods

The planned research proposal to be conducted in February 2007 may be used to provide a more accurate data for the characterization of the learners. The study is being undertaken "to establish appropriate baseline information on the state of information and communications technology in said university in terms of a) hardware, b) software; c) ICT professionals and users; d) network capability, in order to find out the electronic readiness of the university for the network world – a basic prerequisite for offering distance education or blended learning mode of instruction." From the title and statement of the problem of said study, I surmise that the existing gap is present; hence, this plan.

For now, the available data are those taken from the survey administered during my visit to the institution in December 2006. The research methods employed were questionnaires and structured interviews. The responses have given me adequate bases for forming the following assumptions:

- That teachers themselves see a need for computer literacy;
- That students see their teachers as lacking competence in ICT;
- That some teachers are using only the computer-aided instruction mode and computer-based instruction mode; and
- That other teachers are still in the face-to-face traditional mode of teaching.

Project Management

A. Resource Requirements

Table 1

RESOURCES	DESCRIPTIONS
Peopleware	**Target audience:** Primary, Secondary, College teachers. **Prerequisite level of computer knowledge:** Zero and Basic **Language:** English; **Subject:** Multidisciplinary **Specialists:** Available
Hardware	**Minimum computer requirements:** Pentium, Windows 95/98/ME +, 32 MB + RAM, 292MB HDD **Installation type:** Either LAN or single user **Media format:** CD-ROM, Download, Floppy, DVD-ROM **Additional hardware requirements:** Internet resources, such as e-mail, chat, world wide web
Software	**Software types:** tutorial, games, drill and practice, tools, simulation, graphic organizer, and others (to be identified later). **Software titles:** to be identified later **Software programs:** Microsoft Word, Microsoft Excel, PowerPoint **Software applications:** Digital Video Camera, Scanner, iMovie
Others	**Network capability:** Capable; **Others** – to be identified

B. Risks Management

Table 2

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
• User friendly • Content sequenced • Encourages critical thinking • Encourages Interaction • Modifiable Resources • Available basic facilities • Enthusiastic participants	• Costly • Limited resources • Not well-planned due to lack of technical proficiency	• Other schools in Manila are offering ICT programs for Teachers. • Local and Int'l agencies are available for funding support.	• Funding support • Sustainability • Maintenance • Implementation

The SWOT analysis described above is an attempt to determine the negative and positive aspects of the TCDP. It is made to identify possible risks to the management of the TDCP.

The strengths of the TDCP lie in its user friendliness, content sequencing, encouragement of critical thinking, interactivity, modifiable resources, availability of basic facilities and enthusiastic participants.

The weaknesses of the TDCP are that it is costly in terms of implementation, maintenance, and therefore, sustainability. Limited resources such as a solid infrastructure and network connectivity pose a barrier to achieving optimum utilization. The TDCP itself is limited by its weak plan due to lack of sufficient technical knowledge required to formulate a good developmental plan.

Opportunities, however, abound, with regards to the TDCP. There have been other schools implementing similar courseware development plans located in Manila and other major provinces like Cebu City. These schools find support from other funding agencies such as UNESCO partnering with government agencies such as the Department of Education or DepEd.

Threats are a natural result of the TDCP's weaknesses. Due to the lack of other external funding support, a threat to sustainability and maintenance is foreseen. Any program that is capital intensive will surely face threats to its continued viability.

C. Project Schedule

Project scheduling is a must in any developmental planning. It serves as a tool for monitoring progress and lapses in the pre-operational and operational stages of the project. It is to be assumed that the personnel to be involved in the execution of these plans are part-timers, in the sense that this shall be an added function to their main function. As part of cost-cutting measures, personnel are multi-tasked. The following Gantt charts reflect this situation:

GANTT CHART 1 – TDCP PROJECT

Pre-Operational Stage

Activities	Week 1	Week 2	Week 3	Week 4
A. Administrative Requirements:				
1. Announce the program to targeted audience across academic levels	→			
2. Prepare schedule of courses: Beginners' Course and Post-basic Course, including facilitators' schedule	→			
3. Prepare facilities: Room assignments equipped with computers with specified requirements	→			
4. Categorize registered participants: Novices and Interns	→			
5. Prepare notes and other training paraphernalia	→————————————————→			
B. Technological Requirements				
6. Check availability of computer hardware counted in ratios of computers/student, computers-classroom, computers/teacher.	→————→			
7. Check global connectivity and bandwidth and availability of broadband networks	→————→			
C. Human Resource Requirements				
8. Identify development team and their functions		→		
9. Meet development team for the course design		→——→		
D. Course Requirement				
9. Draft design of training modules for Beginners' course.			→——→	
10. Draft design of training modules for Post-Basic Course.			→——→	
11. Draft design of training evaluation tools				→——→

LEGEND: Green arrow takes a week to complete to allow for interventions.
Brown arrow takes two weeks to complete to include requests and installation tasks and other unplanned situation due to unforeseen events or other possible intervention.
Blue arrow takes one-a-half weeks to complete;
Orange arrow takes beyond four weeks to complete

GANTT CHART 2 – TDCP PROJECT

Development Stage

Weeks in Months

Activities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	-21
A. Course Design 1. Brainstorm on draft of course modules initially made during operational stage.	➡																
2. Formulate instructional objectives		➡															
3. Determine course contents		➡															
4. Determine ICT teaching and learning strategies & tools			➡														
5. Determine learning activities and learning outcomes				➡													
6. Create rubrics – an evaluation tool				➡													
7. Finalize design of course modules: Beginners' and Post-Basic				➡													
B. Dry run 8. Pre-test ICT teaching tools					➡												
C. Run the Course						➡➡➡➡➡➡➡➡➡										
C. Course Evaluation 9. Evaluation by learners 10. Evaluation by specialists															➡		
D. Modification 11. Change, modify, improve as needed.																	➡

D. Development Team

The members of the development team may be the following:

- Instructional Designer (ID). His/her task is to conduct the needs-and-audience analysis and to design basic content structure. A more detailed job description shall be made.

- Subject-Matter Expert (SME). His/her task is to ensure the accuracy of technical instructional materials and appropriate for the audience as required. A more detailed job description shall be made.

- Content Author/Developer (CA/D). He/she will be tasked to write all instructional text or scripts.

- Programmer Developer (PD). His/her job will entail creating the content package required by the courseware design.

- Graphic Artist/Media Producer (GA/MP). When required by the courseware, he/she will handle graphics designing or media production.

E. Production budget/project costing

This plan shall attempt to project the cost of the production using the formulation provided by the course organizers. The project costing and production budget will be refined together with the other members of the development team. They will make up the technical staff and will be in a better position to identify items for costing purposes.

In estimating the project cost, the following items shall be considered:

- Cost of personnel to be involved, such as the teachers and other support staff, both administrative and technical support personnel.
- Cost of facilities in terms of computers, authored software, connectivity fees, and administrative office physical structure.
- Cost of miscellaneous others that may generate expenses.

In estimating the development cost, a tentative formulation has been attempted for purposes of showing how costing shall be arrived upon. The following illustrates it as suggested by the ELP guideline on courseware development.

Measure	Estimate (Units)	Total
Number of modules (6x) per course (2x)	6	12
Length of course in hours	9	18
Development time rate	972	1944
Development cost rate	Php. 70.00	Php. 70.00
Per course cost (Total)	Php.68,040.00	Php.136,080.00

Table 3

Explanatory Notes

There are two courses being conceptualized. One is for the beginners and the other is the post-basic course. Each course contains about six modules, for a total of 12 modules. It is estimated that the average Filipino will spend three hours a day, thrice a week, for two months, to complete the course. Nine hours a week for 12 weeks totaling 72 hours, will be required to complete the course.

2. Design

In designing the TDCP, a customized courseware will be considered for cost effective purposes and to fit available resources. The following are initial thoughts pending the ICT specialists' participation in the planning:

The instructional strategy/Content structure

Beginner's Course – e-BasicTeach

MODULES
1. Introduction to Computers
2. Introduction to Microsoft Office
3 MS Word and MS Excel
4. MS Basic and Advanced Access
5. MS PowerPoint
6. Internet & E-Mail

This course shall be designed to provide teachers with the basics of computing.

It will introduce them to the world of computers and give them familiarity with the parts and uses or functions of computers.

It will allow them to make the best use of their PC in writing reports, performing grade computations, analyzing tabular data, creating charts, creating databases, making presentations and using e-mail and internet.

Post-Basic Course - eAdvancedCom

MODULE NO.	MODULE TITLE	MODULE DESCRIPTION
1	Windows XP - basic and advanced	This module presents both the basic and advanced concepts of Windows XP. Windows XP features and the steps required to use the features correctly shall be introduced, as well as the use of Outlook Express including creating, sending and receiving messages.
2	Advanced Excel	This module will provide competency in organizing and consolidating data from multiple worksheets, adjusting the screen display, working with advanced functions, using advanced formatting features, etc. as well as publishing worksheets and workbooks to the WEB.
3	Advanced PowerPoint	This module will provide competency in formatting, reviewing, delivering, customizing, animating and printing presentations; exporting presentations to Microsoft Word; and preparing presentations for delivery in different formats
4	Basic Web Development	This module will provide essential information on web page creation such as the details of HTML language and various tools which users can use in creating static web documents.
5	E-Learning Policies 1	This module will introduce the participants to the basic concepts of eLearning Policies, such as the benefits, issues and constraints in e-learning; current status and trends in e-learning; opportunities and issues of m-learning in developing Asia and the Pacific; and e-learning paradigm: intellectual capital creation, knowledge management and economic competitiveness.
6	E-Learning Policies 2	This module will present courseware development guides and will cover the following topics: instructional systems design; analysis of learner; one-to-one computing paradigm; designing courseware for mobile devices; technological aspects of e-learning; introduction to mobile learning tools; evaluation of computer courseware, customization of computer courseware.

Design Structure

The content as envisioned will have both texts and designs with animations and effects. The ICT personnel will work on the design structure in consultation with me, the proponent of the project.

Design Storyboard

The design storyboard will be chosen from among templates available that will fit the requirements of the courseware. The ICT personnel in charge of design will work on this.

Visual Aids

There will be visual aids throughout the course to demonstrate the teacher's notes and examples.

Develop and Implement

In the development and implementing phase of the TDCP, a schedule and flowchart will be structured with the assistance of ICT personnel knowledgeable in the creation of the courseware.

Validation

I should like to make use of the suggested methods of testing the product TDCP for validation, that is:

- Alpha Testing. Here, there will be unit testing, component testing, and system testing where files shall be compressed, misspelled words edited and other editing works such as, unclear directions, broken links, and syncless audio and video.
- Beta Testing. This is the second phase wherein a sampled group of the intended audience will try the product out and gives feedback on it.

Evaluation

An evaluation tool, and perhaps the use of a rubric, will be used in evaluating the courseware. The same shall be true of the learner's progress. A rubric shall be designed to consider those factors suggested for a good evaluation tool.

Return on Investment (ROI)

Since the production costs and project costs have not been completely planned, the ROI cannot be determined yet. This will be accomplished in consultation with an accountant well versed in costing and projections. Only then can benefits be determined.

Conclusion

After the above attempt at conceptualizing this plan for a teacher courseware, I hope to be able to zero in on the details of the plan later so that full implementation can be effected. This courseware for teachers is a serious attempt at bringing about the much desired computer literacy among those who have not had the opportunity to be informed of the latest in ICT and the wonders that it could bring to the function of teaching and effecting learning among the targeted beneficiaries of this technology.

At the outset, I have indicated a limitation on my part to map out the technical aspect of the plan. Courseware development, as in other development planning, requires a team of people. It cannot be done alone by a single person without the assistance of an ICT specialist trained to do this sort of thing. As a proponent, who is trained in administration and planning, I can only go as far as conceptualizing those areas under my league. The rest I have to delegate to the specialists. No one has a monopoly on expertise. A collaborative effort is needed for a successful undertaking.

This TDCP is written for the purpose of complying with the ADBI requirements as a test of my learning level in courseware development. Without prejudice to the lack of technical details, I am submitting this TDCP, which is the result of late nights of Internet browsing, reading, and much thinking. The exercise has really left me exhausted and sick, but it was worth all the effort. The exercise is a preparation for a real technical paper that I will propose to the Universidad de Sta. Isabel in Naga City. I hope to be able to launch this project with the full support of the university administration within the year.

With that, I take this opportunity to express my appreciation for the opportunity made open to me to participate in this online course. The experience was a novelty and I shall treasure and share such experience.

References

Many of the references were sourced from the web to give me ideas on how to proceed in the task of developing a plan for a courseware. The following are some of these sources:

- Custom Courseware Examples: http://customprep.computerprep.com/titles/details.asp?pid=12464
- Educational Software Evaluation: mailto:webmaster@unescobkk.org
- Preparing Urban Teachers: A TQE Course Development Grant, TQE Upper Division Work Team Members: iteckri@ilstu.edu
- RMIT ICT DLS Competency Framework: A Basis for Effective Staff Development – http://ultibase.rmit.edu.au/araticles/nov02/kenny/html#about
- Project for Teacher Courseware Development Plan: http://unescodelhi.nie.in
- ICT Skills Level of Educator in the Philippines: http://seameo-innotech.org/frames.html
- A Course Evaluation Surveys: http://www.questionpro.com/ahira/showSurveyLibrary.do?
- A Collaborative Learning Environment for Educational Technology Centers (1999 ICDE Conference – Poster No. s2b0 1686). URL not recorded.
- MindFlash e: http://mindflash.coursehost.com/Groups/Config/FreeTrial.asp?
- Self-Directed Professional Development: http://educ.queensu.co/prof/190-191/191/assignments/selfdirected.html#contentStart
- Online Course Development Guidelines and Rubric: mailto:wahlm@mccvle.org

- Information and Communication Technology: The Role of Teacher Education Division: http://www.moe.gov.my/

Other material references are:

- M.K.L. Pinto. Computer Courseware Development Plan. E-Learning Policy Workshop, Distance Learning Centre
- Albert Dean Atkinson. 2006. Instructional System Design. ADBI Lecture Series. E-Learning, Asian Development Bank Institute.
- Ranjith Kumarasiri. 2006. Evaluation of Computer Courseware: Methods, Procedures and Evaluation Checklist. ADBI Lecture Series. E-Learning. Asian Development Bank Institute.
- Ligaya Valmonte. 2006. Analysis of Learners. ADBI Lecture Series. E-Learning. Asian Development Bank Institute.
- William Horton. 2006. Designing Courseware for Mobile Devices. ADBI Lecture Series. E-Learning. Asian Development Bank Institute.
- Shyamal Majumdar. Customization of Computer Courseware. ADBI Lecture Series. E-Learning. Asian Development Bank Institute.
- Other ADBI Series of Lectures on e-Learning that provided insights and ideas to be able to come up with this initial plan for a teacher courseware.
- ADBI course guidelines, specifically the Template for Courseware Development Plan.

More material references are:

- Informatics Computer Institute: Various course pamphlets. www.informatics.edu.ph
- University of the East. Course curricula. College of Computer Science. Recto, Manila

ASIAN DEVELOPMENT BANK INSTITUTE
E-Learning Policies-2006
Distance Learning Courses

Courseware Title

COMPUTER COURSEWARE FOR BUSINESS MANAGEMENT

SUBMITTED BY

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January 10, 2007

EXECUTIVE SUMMARY

Course Title

Computer Courseware for Business Management

Target Audience

Students/Teachers of Bachelor of Business Management

Objectives

Helping the teacher/learner to teach/learn using new learning methods with the help of computers and ICT technology.

Content Description

This course will cover modern technologies of ICT applications for learning and teaching business management. The necessary steps guidelines are:

1. Find out the necessary steps of course content of Business Management with the online tools.
2. Use of experimental component in Business Management in the electronic forms.
3. Application of computers for learning
4. Software needed for the development
5. Hardware implementation
6. Hardware and software interfacing
7. Content credibility

The facilities available under each item above are:

a. A basic description of the course technique will be given as an audio clip.
b. Each learning technique will be explained to be applied in different circumstances. (There will be two sub options for Theory and Lab where each teacher/learner has to select one.)
c. For each sub option of any technique, there will be animations in three different forms where the learner/teacher can select the desired one. The animation types will be:

- Animation with devices attached to standard shapes
- Animations with wireless connectivity of devices
- Animations with size of the area of connectivity

d. Each sub option of any learning techniques will have five different types of coding. The teacher/learner can select one option to view.

- Code written in pseudo code
- In C++, Java, Pascal and Visual Basic

e. There will be a video clip of a play attached to each sub option of any techniques. This play will dramatically demonstrate the use of computers for Business Management.

INTRODUCTION

In the science curriculum there are subjects/subject areas where just face-to-face learning and explanations are not adequate. The application of computers and ICT applications to the learning of Business Management is new. This involves the explanation of a new shift in learning methods. These subjects/subject areas have dynamic behaviors, which need more explanations. The teacher has to make a big effort to visualize the model and also help the student to visualize it. To do so, the teacher has to do one or more of the following:

- Draw everything on the board. To explain the nature of a movement or a behavior the teacher may have to draw a sequence of diagrams explaining each state of the motion.
- Give a comprehensive note set which will have a series of diagrams to explain each state of the behavior
- Prepare a presentation (at least using PowerPoint) to explain the behavior

Students have to be induced to understand state-of-the-art technologies through many visual instructional methods. Online course content will demand high integrity of the practical based instruction together with lots of tutorial and theoretical classes. So, this courseware will be designed to meet the expectation of learners to adopt the new technologies, and will focus on the consideration that teachers should be able instruct the learners in a very effective way optimizing the learning performance.

OBJECTIVES AND PURPOSE

The main objectives of this courseware will be the following:

1. Assist teachers/learners to understand the new technologies.
2. Visualize the concept of learning new things
3. Exploit the possibilities of application of new technologies
4. Present the new instructional methods

STEPS OF CDP

1. Analysis

1.1 Feasibility Study

The course topic presented above has high demand in the market. It involves the adoption of entirely new technologies for the computer courseware in universities, schools, etc. Everybody (learner/teacher/professional, etc.) needs to understand the new methods. So considering the demand in the market for this new course, the title can be designed and brought in to the market for implementation. This course will help students to learn everything using electronic and computer technology, and help teachers to deliver their knowledge through secure but fast computer technologies.

1.2 Analysis of the Learners

A. Target population data:

    i.   Size of the target population: 2 million
   ii.   Expected annual throughput: 200,000
  iii.   Location(s) of the intended learners: Throughout the nation
  iv.   Other information which may affect courseware design such as location:

- Inaccessible areas in Nepal,
- Lack of access to computers,
- Age group: 20 years and above
- Sex: Both male and female

Language of Instruction: English, Nepali and Hindi

B. Data gathering methods:

If information from existing sources is not sufficient, we may obtain it from the target population through the methods explained below:

i. Questionnaires

The data about the analysis of learners can be best obtained by the questionnaires to the learners. The question format may be as follows:

1. Are you interested in this course?
2. For how many of the applications in daily life do you need this course?
3. How useful is this course for modern society?
4. How many professions have a direct implication for this course?

ii. Placement tests

The placement test will help us to determine the interest of learners: do they really like the courses, will the course be suitable for them, and will their background be suitable for the course?

iii. Structured interviews

The interview with the learners is a highly regarded methods of the data collection. We can get some psychological implications of the data collected. Learners will be asked preformatted interview questions and data statistics will be prepared accordingly.

iv. Focus groups and observations

The focus of the course will be planned based on the perspective of a focus group of application so that the maximum benefit can be sought. The identification of the focus area and the observations of the market condition will give validated data, which will go further in the course design.

Problem Statement: Teachers have to draw many diagrams on the board when they teach Business Management. The students have to visualize this process with a big effort. If the student is poor at visualization, it may be very difficult to understand the process and hence to be in a position to write the coding in any computer language. On the other hand, when there is a visual, especially for techniques such as theory and laboratories in Business Management, no explanation is necessary. The animations themselves give a complete understanding.

Gap: Any teacher who wishes to teach this subject will prepare a PowerPoint presentation which covers the basics. But the question is whether all the teachers have the skills to create the necessary animations. Even on the Internet, it is not possible to get all these facilities such as animations, coding in five forms, etc., on one web site. And also it is very difficult to find one web site which covers all these techniques graphically. On the other hand, all the presentations available are purely in English. Therefore the need is there for a collection of animations and codings both in one product.

1.3 Project Management

A. Resource requirements:

Resources required for developing the courseware:

1. Computer and other hardware
2. Linux, Unix and other operating software
3. Visual modeling tools
4. Animation tools and multimedia technologies
5. Instructional software

B. Risk management:

SWOT Analysis

1. Strengths:

- High usability factor
- Easy interfacing techniques
- Easy to navigate into the system
- User adaptability
- Environmental friendly

2. Weaknesses

- The new system may have some technical weaknesses
- Learners must be computer and language literate

3. Opportunities

- The CDP will have more applications in the practical field.
- Conducive government policy to adopt e-learning in the schools.
- People love to adopt new paradigm in education.

4. Threats

- Lots of technology involved
- Cost of the system
- Competition with the offline and face-to-face learning modes.

C. Project Schedules

The project scheduling for the CDP will be as follows:

Activity Number	Description	From Week	To Week	No. of Weeks
1	Design a Concept Storyboard	1	1	1
2	Design the Prototype using a presentation tool (e.g. MS PowerPoint) No. of presentations = 18,	2	13	12
3	Convert the Presentations to Macromedia Captivate	14	16	3
4	Convert all the Text into the other 2 languages	17	20	4
5	Recording Audio Clips in all 3 languages No. of Audio Clips - 27 (Basics 9, With the sub option - 18)	17	19	3
6	Organize, Rehearse and Record Dramas No. of Dramas = 18,	2	25	24
7	Preparing the Questions and Answers	19	21	3
8	Combine Text, Videos, Animations and Audio clips using an appropriate tool (e.g. Macromedia Director)	26	27	2
9	Contents Evaluation by a team of lecturers	28	31	4
10	Testing the timing and effectiveness with different audiences	32	34	3

Ganntt Chart for Development Schedule

114
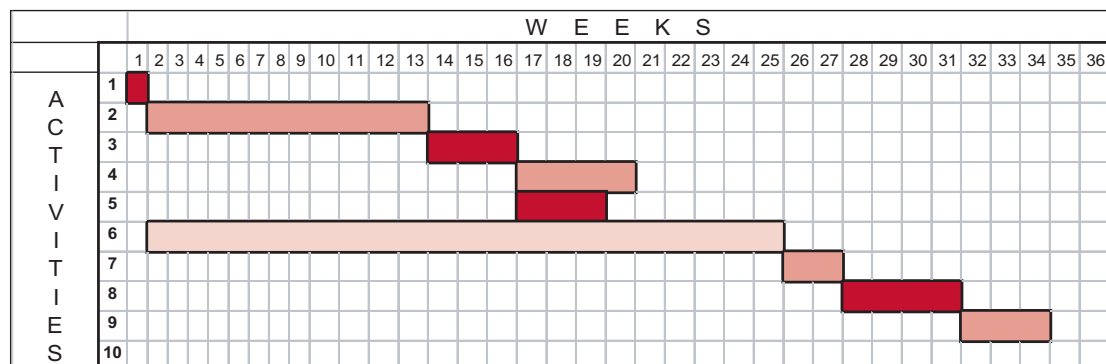
D. Development Team

1. Instructional Designer (ID): He/she conducts the needs-and-audience analysis and designs basic content structure. Responsible for the instructional materials and navigation.
2. Subject Matter Expert (SME): He/she works to ensure the accuracy of technical instructional materials and appropriateness for the audience as required. Responsible for the appropriate design of the course.
3. Content Author/Developer: He/she writes all instructional text or scripts.
4. Programmer/Developer: He/she is responsible for creating the content package required by the courseware design.
5. Graphic Artist/Media Producer: He/she is responsible for graphics design or media production.

E. Production budget and/or project costing:

The following formula may be used to determine the approximate per-course costs for developing self-paced courseware from conception to execution.

> Length of course in hours X development time rate X development cost rate

Here,

Length of course in hours = the duration of courseware measured in hours

Development time rate = how many hours does a person work (on average) to complete the course i.e. the number of person-hours of development required to complete the courseware

Development cost rate = the cost of each person per hour i.e. the cost of each person-hour of development work

Detail Costing

Course consisting of 4 modules that takes an average learner 6 hours to complete with development time rate and development cost rate 200 person-hours and $10 person-hour respectively costs:

Measure	Estimate (units)
Length of course in hours	6
Development time rate	200
Development cost rate	$15
Per-course cost (Total)	$18,000

Description	Cost (NRS.)
Content Development Expert	200,000.00
Subject Matter Expert	100,000.00
Development	540,000.00
Software	100,000.00
Hardware	178,000.00
Evaluation	100,000.00
Other Overheads	60,000.00
Total	1278,000.00

2. Design

2.1 The instructional strategy/ Content structure

```
┌──────────────┐      ┌────────────────────┐      ┌──────────────┐
│ Enter the    │─────▶│ Click if you need  │─────▶│ Visual Aids  │──▶
│ System       │      │ animated course    │      │              │
│              │      │ content about      │      └──────────────┘
│              │      │ Chemistry, may have│
│              │      │ several options of │
│     │        │      │ course contents    │
└─────┼────────┘      └────────────────────┘
      │
      │               ┌────────────────────┐      ┌──────────────┐
      └──────────────▶│ Click if you need  │─────▶│ Text Based   │──▶
                      │ text based course  │      │ Interaction  │
                      │ content            │      │ will appear. │
                      └────────────────────┘      └──────────────┘
```
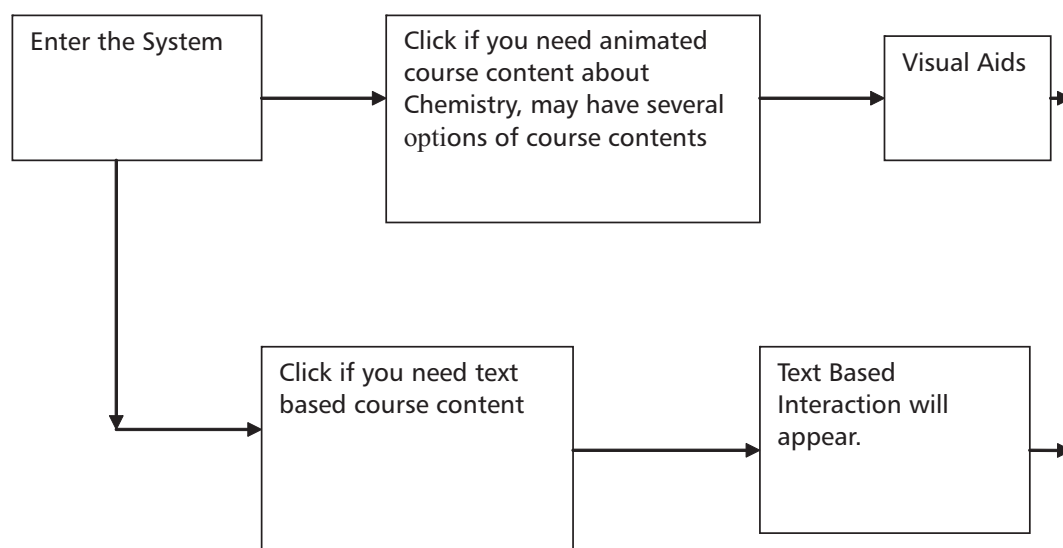
2.2 Design Structure

Either the product can be used by the teacher for collaborative learning, or students can use it without the guidance of a teacher. In fact, by asking an average undergraduate who has to learn these sections, we will learn about the efforts he/she has to put to have a clear vision of these sections. After a complete walk-through of this product, the learner will be in a position to either visualize or teach any of the sections covered here.

Affective Characteristics: The following forms will be used:

- Text – For five types of coding
- Audio – To describe the basics of the technique
- Animated Graphics – To show what exactly happens
- Video – To demonstrate the algorithm with human actors

Additional Resources: At the end of each technique, a list of the related web sites, and a list of reference books with page numbers will be given for further reference.

2.3 Design Storyboard

Flow Chart No.	Audio Clip	Video Clip	Text	Graphics/ Animation	Learning
0	-	-	Other than the languages to be selected and the main heading, there will be no other text	A simple animation in the main area	-
1	-	-	Other than the options to be selected and the main heading there will be no other text.	A simple animation in the main area	-
2	When the Audio option is clicked, a brief description of the general algorithm of the selected technique will be played.	-	Other than the options tobe selected and the main heading there will be no other text.	-	The core of the algorithm selected will be learned through the Audio clip.
3	When the Audio option is clicked, a brief description of the selected algorithm of the selected technique will be played.	-	-	An array of equipment before presenting for the connection	The actual implementation of the method selected will be learned through the Audio clip. The learner can select 1 out of 5 codings, a Video or 1 out of 3 animations.
4	When the Audio option is clicked, a complete description of the desired coding of the selected technique will be played.			A complete listing of either the pseudo code form or a program in the desired language will be displayed.	The complete understanding of the coding in any of the 4 languages or in pseudo code form will be gained.
5	When the Audio option is clicked, a complete description of the Video of the selected technique will be played.	A video clip of about 5 minutes will dramatically demonstrate the selected techniques in selected option.			A live example which will make it much easier for the learner to understand. This will be very useful for those who prefer live examples and visuals.
6	When the Audio option is clicked, a complete description of the desired animation of the selected technique will be played.	-	-	An animation either coupled with PowerPoint and Captivate or created in Flash will be displayed.	The best way of learning any technique.
7	-	-	A list of questions will be extracted from the past papers of BE. At the end additional references will be given.	-	An awareness of the contents the learner has to gain will be given.

2.4 Flow chart of the Content

0

Language	Main Title
English Hindi Nepali	

When a language is selected

1

Techniques	Main Title
--- --- ---	

When a technique is selected

2

Options	Technique
Audio Video Test	

When a sub option is selected

3

Facilities	Technique Sub Option
Coding (5) Video Graphics (3)	Audio

When a Coding method is selected

4

Facilities	Technique Sub Option Coding in C++
Audio Video Graphics (3)	

When the Video is selected

5

Facilities	Technique Sub Option Video
Audio (5) Video Graphics (3)	

When a Graphic method is selected

6

Facilities	Technique Sub Option Graphics Std.
Audio (5) Video Graphics (3)	

When a Test is selected from Screen 2

7

Facilities	Technique Sub Test.
Option Audio (5)	

2.5 Visual Aids

The instructional methods will be supported by many visual aids like visual animation and visual interactivity so that user can pay good attention to the course. Multimedia visual tools will be used.

3. Development and Implementation

3.1 Development

A prototype will be developed in Microsoft PowerPoint. For the final product either the prototype developed in Microsoft PowerPoint coupled with Macromedia Captivate can be used for Animations, or else Macromedia Flash can be used to develop the animations again. In Version 1.0, the platform, which will combine the Text, Audio, Graphics and Video, will be Macromedia Director.

3.2 Implementation

There are three avenues for this product to be used. They are:

1. The product can be used by the teachers. It can make available for all the institutions conducting classes for technologies.
2. The product can be released for the students at a very nominal fee. Generally in Kathmandu, almost all the students following the course are using their own PCs. Therefore this product will definitely help them a lot.
3. If the final product meets international standards, we can translate it into as many languages as possible and make it available on a web site for a fee which is almost free (e.g. two dollars per copy)

4. Validation and Evaluation

4.1 Validity test

Alpha Test

In the courseware development, the alpha test will be a test among the teams to confirm that the product works. Originally, the term alpha test meant the first phase of testing in a software development process. The first phase includes unit testing, component testing, and system testing. During this time, we will compress files, edit for misspelled words and unclear directions, broken links, and sync audio and video. We will also test our product on lowest common denominator machines to make sure download times are acceptable and pre loaders work.

This is the final testing before the software is released to the general public. It includes unit testing, component testing, and system testing where you will compress files, edit for misspelled words and unclear directions, broken links, and syncless audio and video.

Beta Test

In the courseware development, a beta test is the second phase of software testing in which a sampling of the intended audience tries the product out. Beta testing can be considered

"pre-release testing." Beta test versions of software are now distributed to curriculum specialists and teachers to give the program a "real-world" test and partly to provide a preview of the next release.

Pilot Test

For the pilot test, we will give our product a "real-world" test as well as collect data on the use of the product in the classrooms. Here are the steps we will follow for our pilot test.

1. We will recruit test-run professors and teachers who are similar to our intended audience.
   The important thing here is that the test audience should, as much as possible, be like our "real" audience so we get the most accurate information.
2. Have the test-run participants use or watch the product.
   It is not necessary to bring the whole group together at once. It might be better to only have one or two participant test run the product at a time.
3. Observe the test-run participants as they use/watch the product.

The important thing here is to try not to interfere. In order to get accurate information, we must not jump in to "help" as soon as we spot an apparent problem. Of course, if participants really get stuck, we will want to work with them so they can continue to test our product.

a. Make notes.
Our notes should include information about where problems occurred, under what circumstances, and how the person attempted to resolve or actually did resolve the problem. We should include any participant reactions, both positive and negative, which we observe. Our notes should include information such as "Screen #10 - both participants clicked on the big picture of the car instead of the first small picture" or "the right arrow button on screen #3 sends user to screen #4 instead of screen #7."

b. Ask questions.
Our questions should help clarify why people are doing what they're doing (i.e., When we got to the screen with the one big and several small pictures of cars, why did we click on the big picture first?). Our questions should also help us make changes (i.e., what suggestions can be made to make this screen, page, frame, etc. less confusing?).

4. Have the test-run participants make notes as they use/watch our product.
   This is a good way for the test-run participants to capture things as they happen. We will likely get confirmation of problems we observed as well as some on-the-spot thinking which we cannot observe very easily.
   This is also a useful time to collect information if we are unable to directly observe the test-run participants.
5. Have the test-run participants complete a survey.
   This is a more systematic way to collect the information. All test-run participants answer the same questions, and we can quickly see any trends that develop. Like the test-run participant notes, a survey is also a good way to get information if we are unable to observe the participants ourselves.
6. Conduct interviews/focus group after the test-run.

4.2 Evaluation

A. Evaluation of the courseware

The accuracy of the contents can be evaluated either by the subject coordinator or by a panel of lecturers appointed by universities in Nepal.

B. Evaluation of the Learner

Since the initial platform used is Macromedia Director, hardly any evaluation methods will be included. At the end of each technique, a few questions from past papers can be included as text. But there will be no online evaluation.

In the higher versions, the product will be re-developed in Macromedia Authorware. At this stage, at the end of each technique, a few multiple choice questions will be included. After covering all the sorting techniques, there will be more complex questions where the student has to compare the methods with each other.

In the final Version, this product will be re-developed as a web-based product. At this stage a LMS will be incorporated to monitor the performance of each user.

C. Return on Investment (ROI)

ROI (%) = (benefits - costs/costs) * 100

Costs to consider while calculating the ROI:

      i. Purchase of new equipment and new equipment upgrades over time=NRS: 500,000.00
      ii. Web site development, ongoing maintenance and revision=NRS: 100000.00
      iii. End-user technical support costs=NRS. 200000.00
      iv. Telephone, network access and stationary expenses=NRS. 100000.00.
      v. Development Costs, cost of delivery, wages of Trainees and trainer, travel costs =NRS. 3, 78,000.00
      Total Cost=NRS.12, 78000.00

Benefits to Consider:
      i. Reduced turnover – can be determined if the full cost of hiring, training, outfitting, and supporting replacement personnel can be calculated accurately. =Nrs. 10, 00,000.00 (assumed)
      ii. Annual Return from the users=NRS.4,00,000.00(assumed)
      ROI = (122000/1278000)*100
        =9.5%

Conclusion

The courseware designed under the before-mentioned title will be much benefit to the students and the teachers. The cost of the system has been structured in such a way that the learners will be able to afford it. The navigational and instructional techniques are designed on the basis of a user-friendly way.

Course Exam

Essay Questions:

1. Describe the steps that are needed to design an E-Learning Course Module.

2. What are the challenges and opportunities faced while introducing/promoting E-learning in your country?

3. Which types of learning do you think is most effective? Why?

   - Face-to-face learning
   - Computer-based learning
   - E-learning
   - M-learning
   - Blended learning

4. What are the differences between the Learning Content Management System (LCMS) and Learning Management System (LMS)?

5. How can we use and what are the challenges in using mobile devices in the teaching and learning process?

True/False Questions:

1. Computer-based training or learning is the same as e-learning. F
2. The focus of m-learning should be on technology. F
3. Managing and deploying e-learning is a feature of Learning Management System (LMS). T
4. Analysis of learners is a basic for Instructional System Deigns (ISD). T
5. Coordination, connection and creation are the three challenges that must be addressed in order to establish e-learning in the information age. T
6. Evaluation plays an important role in the courseware development cycle. T

Matching Questions

1. Arrange the following steps of instructional system design for developing an E-Learning Course in proper order.

   - Analysis
   - Design
   - Evaluation
   - Development
   - Implementation

2. Arrange the following steps of learner analysis process in proper order.

    - Define the purpose of the analysis
    - Match learner needs with the environment
    - Choose the assessment method
    - Conduct learners analysis
    - Analyze data

Multiple Choice Questions:

1. Which of the following is a major aspect of e-learning?

    - Learner
    - Learning environment
    - Context
    - Ethics
    - All of the above

2. Which of the following IS NOT an important property of the Learning Management System?

    - Scalability
    - Usability
    - Interpretability
    - Productivity

Course Evaluation Form

Distance Learning Course on E-Learning Policies

Course Evaluation

We would appreciate it greatly, if you could take time to fill out this evaluation. Your input will help us improve the quality of our future courses.

Your Name (optional): _____

To what extent did the course meet its objectives?

1.) List key benefits and limits of e-learning programs
- More than achieved
- Fully achieved
- Partially achieved
- Did not achieve

2.) Choose proper equipment and software suitable for e-learning
- More than achieved
- Fully achieved
- Partially achieved
- Did not achieve

3.) Use learning content management system
- More than achieved
- Fully achieved
- Partially achieved
- Did not achieve

4.) Draft a plan to develop a multimedia computer courseware, based on sound learning theories and instructional strategies
- More than achieved
- Fully achieved
- Partially achieved
- Did not achieve

5.) Evaluate commercially available computer courseware
- More than achieved
- Fully achieved
- Partially achieved
- Did not achieve

Please rate the organizational components of the course.

6.) Timely distribution of CD-ROMs
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

7.) Communication with course coordinators
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

8.) Usability of distance learning web site (adbi-dlc.org)
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

9.) Usability of online classroom (adbi-classroom.org)
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

10.) How can we improve the organization and communication for the next course?

Please rate the following course materials.

11.) Instructions on how to use online classroom
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

12.) Lecture summaries
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

13.) Review questions
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

14.) Guidelines for study visit to academic institution
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

15.) Course examination
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

16.) Guidelines for Issues Paper
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

17.) Drafting a computer courseware development plan
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

Please rate each CD-ROM lecture.

18.) Benefits, Issues and Constraints in E-Learning
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

19.) Current Status and Trends of E-Learning
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

20.) Opportunities and Issues of M-Learning in Developing Asia and the Pacific
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

21.) New E-Learning Paradigm: Intellectual Capital Creation, Knowledge Management and Economic Competitiveness
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

22.) Instructional Systems Design
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

23.) Analysis of Learners
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

24.) One-to-One Computing Paradigm
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

25.) Designing Courseware for Mobile Devices
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

26.) IT for M-Learning in Developing Countries
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

27.) Satellite-Based Distance Learning Network
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

28.) Exploring M-Learning Academic Initiatives in North America and Europe
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

29.) Technological Aspects of E-Learning
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

30.) Introduction to Mobile Learning Tools
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

31.) Mobile Campus Solutions
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

32.) Learning Management System
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

33.) Conducive Environments for E-Learning
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

34.) Evaluation of Computer Courseware: Methods, Procedure and Evaluation Checklist
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

35.) Customization of Computer Courseware
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

36.) Future of E-Learning
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

37.) Future Opportunities in M-Learning*
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

How long did it take you to complete the following?

    38.)   Assignment 1 (Issues Paper):_____
    39.)   Assignment 2 (Study Visit):_____
    40.)   Assignment 3 (Computer Courseware Development Plan):_____
    41.)   Course Examination:_____

Please rate the usefulness of the forum for the purposes below.

    42.)   Answer content-related questions you had:
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

    43.)   Exchange ideas and/or share experiences with other participants:
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

    44.)   Communicate with the course administrator:
- Excellent
- Very Good
- Satisfactory
- Fair
- Poor

    45.)   How can we improve the content and materials for the next course?

          _____
          _____
          _____
          _____

    46.)   How do you intend to put into practice the knowledge and skills you have acquired from this course? Please check all boxes that apply.
- This course helped me to form new goals and improve work practices.
- I will share the resources gained in this course with my colleagues and department.
- I will refine my business plan and present it to my supervisor.
- I will further develop an e-store for my business.
- I will pursue a policy change in my government in order to implement my project.
- I will network with sponsoring organizations and other participants.

47.) What kind of courses should we offer in the future?

_____
_____
_____
_____

APPENDIX IV

List of Completed Participants

A. List of Completers from Distance Learning ELP Course

Surname	First Name	E-mail	Country
Abeysiriwardana	Prabath Chaminda	abeysiriwardana@yahoo.com	Sri Lanka
Adhikari	Shobhan	shobhan.adhikari@ntc.net.np	Nepal
Ahmad	Gulzar	gulzar_e_madina@hotmail.com	Pakistan
Ahmed	Faisal	faisal1222000@yahoo.com	Bangladesh
Ali	Mahmud	ali2123m@yahoo.com	Bangladesh
Amarakoon Kankanam P	Rasika Nilanthi	akprasika@yahoo.com	Sri Lanka
Aminzada	Mohammad Sadeq	sadeqaminzada23@hotmail.com	Afghanistan
Asienyo	Benard Odero	oderoboa@yahoo.co.uk	Kenya
Awan	Aurang Zeb	zebgul@gmail.com	Pakistan
Ayyagari	Ramani	ayyagariramani@gmail.com	India
Azizi	Naser	abdulnaser.azizi@mof.gov.af	Afghanistan
Barekzai	Zabiullah	zabiullah_barekzai@yahoo.com	Afghanistan
Beliaco	Stephanie	sbeliaco@yahoo.com	Philippines
Bhandari	Krishna Raj	krish034_mcse@yahoo.com	Nepal
Bhetwal	Ishwor	ishwor.asian@gmail.com	Nepal
Cagara	Paulo	pdcagara@yahoo.com	Philippines
Calub	Elisabeth	bethcalub@ubaguio.edu	Philippines
Chagapuram	Amulya	amul_devaraj@yahoo.com	India
Chaudhary	Ambika	sham_mot@yahoo.com	Nepal
Chhetri	Chola Pratapa Singh	cpsingh44@gmail.com	Nepal
Daluwatte	Priyanthi	priyanthidaluwatte@yahoo.co.uk	Sri Lanka
Dambugolle Widanelag	Chandrika Padmini Da	dambugolladw@yahoo.com	Sri Lanka
Das	Anup Kumar	d.anup-kumar@unesco.org	India
Dash	Babita	babitadash@yahoo.com	India
Destura	Fe	f_destura@yahoo.com	Philippines
Deweddana Gamage	Sirima	dgsirsma@yahoo.com	Sri Lanka
Deweddana Gamage	Jayatissa	dgjayatissa@yahoo.com	Sri Lanka
Deweddana Gamage	Ishara Nuwandara	dginuwandara@yahoo.com	Sri Lanka
Deweddana Gamage	Sanka Sunimal	dgsanka@yahoo.com	Sri Lanka

Surname	First Name	E-mail	Country
Deweddana Gamage	Nilusha Shinari	nilushagamage@yahoo.com	Sri Lanka
Deweddana Gamage	Nisansala Sandakelum	dgnsandakelumi@yahoo.com	Sri Lanka
Dhanapala	Waruna	warunatr@gmail.com	Japan
Diansuy	Maria Ailynn	adiansuy@yahoo.com	Philippines
Dissanayake	Chaminda	wmcdissa@yahoo.com	Sri Lanka
Dmp	Dissanayaka	dissa@tradenetsl.lk	Sri Lanka
Fernando	Nirushika Kaushani	Kaushani_fernando@yahoo.com	Sri Lanka
Fernando	Sheryl	jagfdo@gmail.com	Philippines
Gamolya	Svetlana	svgam@mail.ru	Turkmenistan
Gautam	Samridhi	samridhi.asian@gmail.com	Nepal
Gupta	Prakash	prakashgupta99@gmail.com	Nepal
Gupta	Rajesh	rajesh_1961gupta@yahoo.co.in	India
Habumuremyi	Emmanuel	emmahab@yahoo.fr	Rwanda
Hada	Durga Laxmi	durga.asian@gmail.com	Nepal
Hakuzimana	Dr Alex	alexhak75@yahoo.co.uk	Rwanda
Halover	Ellen	ehalover@yahoo.com	Philippines
Hettiarachchi	Gayani Jeevika	gayanijeevika@yahoo.com	Sri Lanka
Hettiarachchi	Jayantha	hajayantha@yahoo.com	Sri Lanka
Hilyard	Maureen	mhilyard@education.gov.ck	Cook Islands
Htay	Thein	edutd@mptmail.net.mm	Myanmar
Htun Pe	Thida	thida@cytroncomputing.com	Myanmar
Jha	Nirja Rani	nirja_5@hotmail.com	Nepal
Jha	Shailja Rani	shailjarani142@hotmail.com	Nepal
Jha	Shambhu Nath	shambhu.jha.np@gmail.com	Nepal
Jotic	Rommel	rnjotic@ceu.edu.ph	Philippines
K	Rajani Priya	dearrajani_hai@yahoo.co.in	India
Kannimuthu	Arivazhagan	arivazhagank1@yahoo.co.in	India
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Khaing	Tun Tun	tuntunkhaing2006@gmail.com	Myanmar
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B. List of Completers from DLC Colombo

S.N.	Name	S.N.	Name
1	C A N Fernando	19	M S Sanka
2	E M A Vasana Surangi	20	Maneesha Jinadasa
3	L Sandya Kumari	21	Nirmala Baskaran
4	M G S Panditharathna	22	Yamuna Gunawardena
5	S R Hasanthi	23	Nimali Zoysa
6	Inoka Shymalie Gamage	24	Thilini Amarasinghe
7	Perlin Geethani Satharasingha	25	Gayathri Gunawardena
8	W M B J Wijesekara	26	Pamali Kirjarachchi
9	A M Jayaratna Kanthi	27	Nirosha Moonasinghe
10	D D Lellupitiya	28	Jayani Warnakulasuria
11	W K Nandawathi	29	T G A Eroni
12	A C L S De Silva	30	B A N D Samarasinghe
13	T K Abeygunaratne	31	D S K Waragoda
14	S L Senadeera	32	D Abimani Jayamaha
15	R N Pawanwenna	33	B P M Rodrigo
16	M A Samarakon	34	E A C N Perera
17	P S Fonseka	35	D C A C Indumathi
18	P W K Srivalatha	36	T P K Gamage

S.N.	Name	S.N.	Name
37	A Anoja Nishani De Silva	76	K.S. Weerarathne
38	H M U S N Hettiarachchi	77	C.R. Weeramuni
39	H P J Damavanthi	78	R.M.K. Kumari Ranasinghe
40	I A Nilusha Sanjeevani	79	A.M. Sumana Kumari
41	P W G N Sudarshani	80	S.R.J.J. Senevirathne
42	J M S Priyanka Jayathilaka	81	M.M.U. Menike
43	J T C Nishani	82	A.G.C.T. Abayagunawardana
44	K A Lalani Priyangika	83	R.M. Gaya Chandanie
45	T M Munasingha	84	W.A.D.A.P. Weerapperuma
46	Rohini Ranchagoda	85	S.N.D. Premadasa
47	R A A P S Ramanayaka	86	M. Sasika Wimukthipriya Fernando
48	A H M P S Wadigamanagawa		
49	W M M P Seneviratne	87	R.M. Thushari Rathnayaka
50	M A A S Dias	88	K.P.S.V.K. Karunanayaka
51	G H R T De Sliva	89	M.M.T.M. Madurasinghe
52	D J Y Pathiranage	90	M.N.M.Yahya
53	Saman Kumari Ranasinghe	91	M M Sarath Mahindapala
54	W A C Kumuduni	92	K G W K Katukurunda
55	K H S S De Silva	93	S Garigaraganapathy
56	R.M.C.N. Rathnayake	94	A L S Abevwickrama
57	Y.S. Rathnayake	95	H P Sushil Sirisena
58	R.M.D.G.K. Gannoruwa	96	L H Wijesinghe
59	M.W.S.K. Wijethilaka	97	A H M R B Abhayarathne
60	L.R. Jayasinghe	98	A J M Kumarasiri Wijerathna
61	K.C.N. Perera	99	Leonard Lenarolle
62	G.N.S. Ariyarathna	100	Ajantha Nimirathna
63	P.C. Puswella	101	K P Sunil
64	Y.M.C. Wijerathne	102	A M Jayaratna Banda
65	M.W. Senevirathna	103	Sarath Padmasiri
66	D.M.K. Ariyaratne	104	Chandananda Thera
67	Mrs.H.B.C Mallika	105	U W A Jayantha
68	W.K.B Perera	106	U P Basnayake
69	M. Siyeni	107	Ruwan Kumara
70	W.A.S.P Jayarathna	108	R P Ranjan
71	V.G.I. L. Vithana	109	W D Pathmasiri
72	K.M.M.I. Rodrigo	110	B D Chitthananda Biyanwila
73	G.W.D. Dayarathne	111	S A D Samarweera
74	M.K. Somalatha	112	M K Kingsly Priyantha
75	W.P.D.S. Dissanayake	113	K G S K Perera

S.N.	Name	S.N.	Name
114	M B Samarasinghe	152	Thilak Thilakaratna
115	Lalith Rajakaruna	153	Upul Herath
116	H M Gunarathna Banda	154	Amila Seneviratna
117	Y Kirubananthan	155	Ruchira Karunaratna
118	R H N Nandasiri	156	GDP Samarasiri
119	E R Nirmal Premakumara	157	G K B Sameera
120	K A R Kodikara	158	Naveen Embuldeniya
121	T A R Jayasena	159	B Ramesh
122	Mulavipathrina Pathmasiri	160	Kosala Weerasena
123	M K D Deshapriya	161	Saman Kandanarachchi
124	W M A B Wijesooriya	162	Asela Galappaththi
125	M Ananda	163	Janaka Harambearachchi
126	Nihal Tissa Kumara	164	M Manoshan
127	G H Mahindarathna	165	C P Basnayake
128	W V Singhanatha	166	T D Lokubalasuria
129	M H Somasiri	167	H C Vidanapathirana
130	W S Nandasiri	168	K P W A Indika
131	N Nobel Ravi	169	N R Navagamuva
132	G M Chandrakantha	170	M N R Wijayanayaka
133	H W S K Welikala	171	W S A Perera
134	I D Maithreepala	172	U U K I Perera
135	G M S Weerasinghe	173	B N Wikum Perera
136	G Subasinghe	174	J W K K Shayamlal
137	T Theiveegarajan	175	G G I Edirisinghe
138	M.M.T.M Senevirthna	176	N Kolitha Thero
139	W D Premathilaka	177	W R S Senarathna
140	W.M De Jayarathna Banda	178	P Senevirathna
141	M L Wimaladasa	179	Indika Wijebandara
412	W K A Induruwage	180	Gamini Aberathna
143	G Anton Silva	181	Nalin Ekanayaka
144	D M Wimalarathna	182	P G R C Piyadasa
145	A M Vazeer	183	P A Kodippili
146	S M Jayawardena	184	G.G.S.S. Chandrasiri
147	P J Punchihewa	185	K. Selvakumar
148	Lakmal Jayasinghe	186	G.H.D. Ranjith Pathmasiri
149	Nishantha Ratnavake	187	S.P.K. Rathnasooriya
150	R P D C Kaushalya	188	M.K. Munasinghe
151	S N P Suriyaarachchi	189	M.M.M. Mazeen

S.N.	Name	S.N.	Name
190	J. Noel Sylvester	208	U.D.I.C. Silva
191	H.M. Chaminda	209	P.A. Wimalarathne
192	W.M.S.S. Aberathna	210	H.D.D.K. Gunasekara
193	K.S. Ehala Arachchi	211	W.S.D. Weerasinghe
194	K.P.P. Iroshan Kumarasiri	212	N.H.G.J.W. Lankapriya
195	S.M. Wasantha Bandara	213	I.A.S. Jayantha
196	P.W. Chandana Perera	214	M.R. Jayasinghe Bandara
197	A.S.M. Munas	215	M.R.S. Gunasekara
198	T.T. Chandana Tissa	216	L.H.M. Sunil Santha
199	J.S.K. Dassanayake	217	R.M.S. Aruna Kumara
200	S.K.M. Darmawardana	218	A.M. Farook
201	A.G. Upali Karunarathne	219	R.M.N.S.B. Rathnayake
202	P.H. Karunasena	220	B. Mohamed Farzan
203	P. Piyarathne	221	H.P. Wimalasiri
204	H. Sumanasena	222	H.M.S.S.B. Herath
205	E.J.A.P. Karunadasa	223	J.S.W. Welikumbura
206	Y. Yasarathna	224	A.R.A. Aazeer
207	D.M. Gunawardane	225	H.D.S. Nishantha