EMPOWERING INFORMATION PROFESSIONALS : A TRAINING PROGRAMME ON INFORMATION AND COMMUNICATION TECHNOLOGY (EIP-ICT) FROM UNESCO BANGKOK AND JAPANESE FUNDS IN TRUST (JFIT)

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Introduction. UNESCO and Japanese Fund in Trust (JFIT) launched in 2007 a training packet of nine face-to-face modules and one Online Distance Learning (ODL) template on Empowering Information Professionals: A training Programme on Information and Communication Technology (EIP-ICT). The modules cover various aspects of ICT used in information settings. Practitioners who require update in their profession will find that this training programme respond to their need.

Method. Different methods were employed through the years for various components of the EIP-ICT package. A test method resulting in both qualitative and quantitative answers and including personal observations was utilized for validating the contents of the modules. Structured interviews and a questionnaire were developed for an evaluation resulting in revising the modules. Between the different stages of development there were expert meetings assessing the packet and making recommendations for its improvement. To deal with the digital divides a recommendation was to develop an ODL module. As an ODL course has no effect if a country is not "E-ready" an assessment study was performed in the Asia-Pacific region employing a questionnaire with quantitative questions. The region was divided into 3 groups according to their E-readiness status. Another ODL module was developed and tested. Questions were designed to provide quantitative and qualitative data on which to base the evaluation of the learning module. Where possible, respondents were asked to select from multiple response options. Textboxes were provided for written responses to enable additional information to be gathered to support the multiple choice options selected. Result. The result was a final version of the EIP-ICT packet which is presented at UNESCO Bangkok website.

Conclusion. The aim of the project was to produce a training package based on "face-to-face" instruction and a distance learning template. The production of EIP-ICT has reached this goal. UNESCO and JFIT are now focusing on advocating EIP-ICT maintaining that any profession requires continuing education in order to update their skills and apply new ideas especially in a digitised world.

Background

A UNESCO/Japanese Fund in Trust (JFIT) project about teaching and learning ICT for library and information professional (ICTLIP) started with an Expert Meeting held in Bali, Indonesia, in March 2000, which was organized by UNESCO in cooperation with the Indonesian Institute of Sciences (LIPI). But there were some earlier joint initiatives in the region, which led to the evolution of the ICTLIP Project.

Beginning in l994 the Ministry of Education, Science, Sports and Culture of Japan provided a research grant for a three years regional joint study on the infrastructure development in the Asia/Pacific with a view to support UNESCO's activities in this region. The study was known as SISNAP (Study on Information Systems and Networks in Asia and the Pacific). Following the study was a series of regional/international workshops and conferences held from 1997 through 2001, on the

subjects such as the strategic planning for the advancement of information society and digital content development.

The experiences gained with those workshops led to an initiative to develop some form of training package, which had been discussed for some time. Accordingly UNESCO and JFIT organized the first Expert Meeting in Bali in 2000. Thus, ICTLIP project started and has since been progressing successfully.

The Asia and Pacific Region is known for great diversity in culture, especially in language, which is indeed a key factor in information and communication, and also the diversity in social and economic developments among member states. It is extremely difficult to meet the diversified needs arising from such conditions. The ICTLIP started primarily as a face to face training course, which was thought to be the appropriate approach in order to reach larger audience. However, the digital age is progressing fast, and today the training course has been developed into a new packet called Empowering Information Professionals: A training Programme on Information and Communication Technology (EIP-ICT) which consists of face-to-face trainings and online distance learning (ODL) modules.

The Japanese government believes that education and training, in all forms and in all fields, are one of the most important areas within the fields of competence of UNESCO and provides support for activities in these areas. It is rewarding to see that a modest JFIT seed has grown to bear a fruit, but this was possible only on the fertile soil of solid joint efforts and cooperation of all concerned people in and outside the Region.

Development of the package

In December 2007 UNESCO launched nine face-to-face modules and one ODL template of a training package on EIP-ICT. The package can be viewed and downloaded from UNESCO's website (2008) or can be made available, for free, on CD-ROM or in print (Empowering Information Professionals, 2007).

All the modules have a Teacher's Guide and a Student's Text. The teacher and the students must have the facilities and technical support required to carry out the course. They must have CD-ROM drives and online access to the Internet. The teacher must be knowledgeable and skilled in using computers, the Internet, CDROMs and a variety of software and other electronic resources. The lessons are presented to the students as PowerPoint slides. The Teacher's Guide provides all the information and tips on how to explain each slide. It also incorporates exercises/activities that the students can be asked to do. At the end of each module the students can be asked to evaluate it. The evaluation of the module is meant to help the teacher to improve the teaching.

The nine modules are:

Module number and name	Content of the module
1. Introduction to Information and Communication Technologies	Basic concepts of information and communication technologies, and the impact of ICTs on society.
2. Introduction to Library Automation	Basic concepts of library automation and the factors to be considered in planning and implementing library automation.
3. Information Seeking in an Electronic Environment	Basic concepts of how ICT has affected the information-seeking behaviour of users and what principles and skills they require in searching information systems?
4. Creation and Management of Databases Using CDS/ISIS	Basic concepts involved in the creation of databases using UNESCO's CDS/ISIS software, the advanced features of CDS/ISIS, and how to convert data from other software.

5.	The Internet as an Information Resource	Basic concepts of how to search for information on the internet, and what the issues and concerns are when using internet.
6.	Web Page Concept and Design: Getting a Web Page Up and Running	Basic concepts of how the World Wide Web functions, the principles of Web design, and the creation of a Web page using HTML.
7.	Library Management and Promotion	Basic contents of strategic library management, and introduction to marketing and promotion.
8.	Digital Libraries and Open Access	Basic contents of what is a digital library, how a digital library is built, and what is open access?
9.	Intellectual Property Rights in the Digital Age	Basic contents of what are intellectual property rights, and if existing copyright laws are applicable in the digital age?
	Online distance learning (ODL) template. The Internet as an Information Resource	This module examines online distance learning (ODL) technique. The ODL approach uses a technology-mediated or technology-based learning method, and specifically computer- and Internet-assisted learning.

To assist in the development of the package UNESCO's Communication and Information (CI) unit in Bangkok, Thailand brought together a group of experts from Canada, Estonia, Fiji, Indonesia, Japan, The Philippines, UK, and US for a week-long meeting in Bali, Indonesia in 2000 for discussions (Ornager, 2000). The meeting concluded with an aim to produce the first two modules towards the end of 2000 and to pilot these in the region in early 2001. A further meeting of the experts (now joined by colleagues from Australia and Sri Lanka) took place in 2001 in Thailand at which the results of the pilot were reported and discussed. Following this phase the first two modules were revised and the remaining modules were completed (Ornager, 2003). All material has been prepared in English and the material can be translated, as have been done in Vietnam, by trainers for use with specific language groups.

The development of some form of package to assist with training in ICT in libraries and information centres in the Asia Pacific region had been considered for some time. The development of this package would not have been possible without the financial support from the JFIT programme.

Studies during the advance of the modules

In the nature of things, growth requires that educational objectives be regularly revisited and updated and in 2004/05 it was decided to do an assessment of all the modules based on the accumulated experience of the last years. See figure 1.

Evaluation of the training package

The results of the evaluation were presented at an expert meeting in Vietnam. The evaluation of the education package was based on group discussions and interviews with users of the package in Jakarta and Colombo and responses from 28 library and information personnel in four regional countries: India, Indonesia, Nepal and Thailand. The package was evaluated in its entirety, at the programme level and individual modules using the formative and summative evaluation approaches (Henczel & Lahiri, 2004). Findings were presented in the form of key suggestions and comments made by respondents and the evaluators to the programme and to individual modules. It was interesting to note that the modules were used by different groups in different ways other than that for which it was intended.
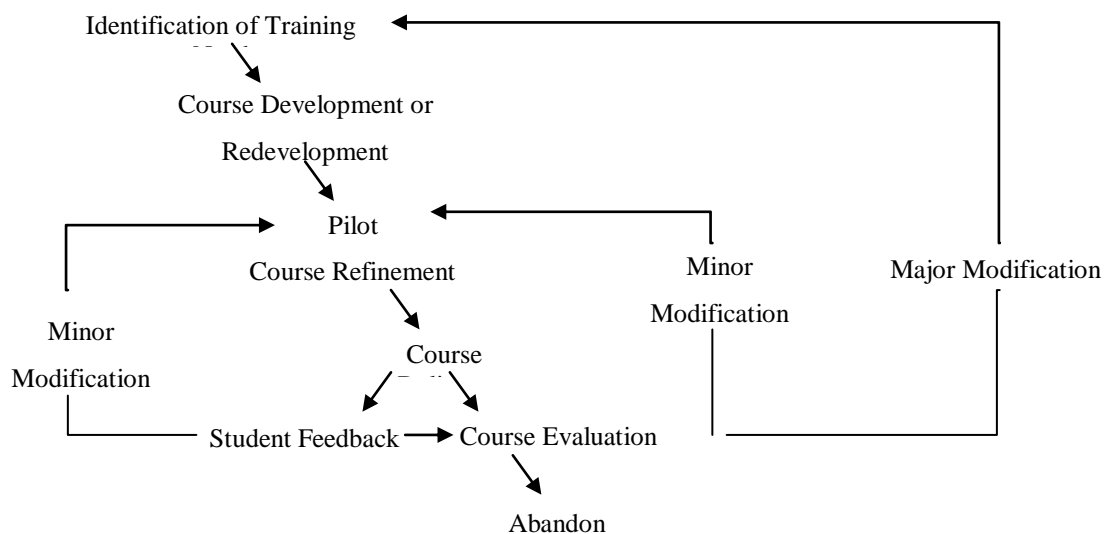
Identification of Training

Course Development or
Redevelopment

Pilot

Course Refinement

Minor
Modification

Minor
Modification

Major Modification

Course

Student Feedback → Course Evaluation

Abandon

Figure 1. Course lifecycle

The findings indicated that the training package was a success. The conclusion reached by the evaluators was that `*the product, in its present form, was an excellent one provided it is regularly updated in keeping with ICT trends - and promotion and distribution, however, do need improvement'* with the latter being strongly emphasised.

The expert meeting supported the evaluators' findings that the programme is a success and provides a solid foundation. With minor modifications, taking into consideration the need for translations and inclusion of local examples and experiences, it would continue to be a successful programme. The meeting recommended development in three areas of: (a) extending the general content relating to information, users, rights and responsibilities and information content relating to organisation and structure, qualitative and quantitative analysis and presentation and design; (b) stimulating awareness and use through higher promotion, workshops for educators and trainers and an exchange of experience forum; (c) sustainability by ensuring regular updating of content, providing additional support materials.

Based on the recommendations it was agreed that the existing modules should be revised and that three new ones were to be developed. The newcomers should be about management and promotion, about digital libraries and open access and about intellectual property rights.

The expert meeting next discussed the various modes of delivery - face-to-face, online, open learning manual and mixed - that were available to the programme. In each case the implication that each will have on the programme was presented. The face-to-face mode was considered the most successful for presentation of the programme, in outlining the advantages and disadvantages of the various modes, it was concluded that *open learning courses may be the best compromise* as it reaches the largest number of people and does not require sophisticated ICT support though it lacks the contact of the online and face-to-face modes.

It was decided by the expert meeting to have one module developed as ODL and additionally to make a survey of the e-readiness in the Asia/Pacific region.

E-readiness survey in Asia and Pacific

The survey became part of a wider effort by the UNESCO ICT group to collaboratively work with each country to improve their ICT skill capabilities. The vision was to enhance ICT infrastructure and build capacity within the population.

The white paper by the Economist Intelligence Unit (E-readiness rankings 2008) describes e-readiness as, "*...... essentially a measure of its e-business environment, a collection of factors that indicate how amenable a market is to Internet-based opportunities. E-readiness is not simply a matter of the number of computer servers, websites and mobile phones in the country, but also things such as*

its citizen's ability to utilise technology skilfully, the transparency of its business and legal systems, and the extent to which governments encourage the use of digital technologies"

UNESCO regards e-readiness as an essential and integral part of any society attempting to organize itself to work towards a common goal.

The objective of the survey was to:

- Determine the infrastructure in each participating country including hardware and Internet Service Providers (ISP)
- Determine potential applications and services including ICT in libraries
- Determine current human resource capacity including ICT literacy, ICT education, training etc.
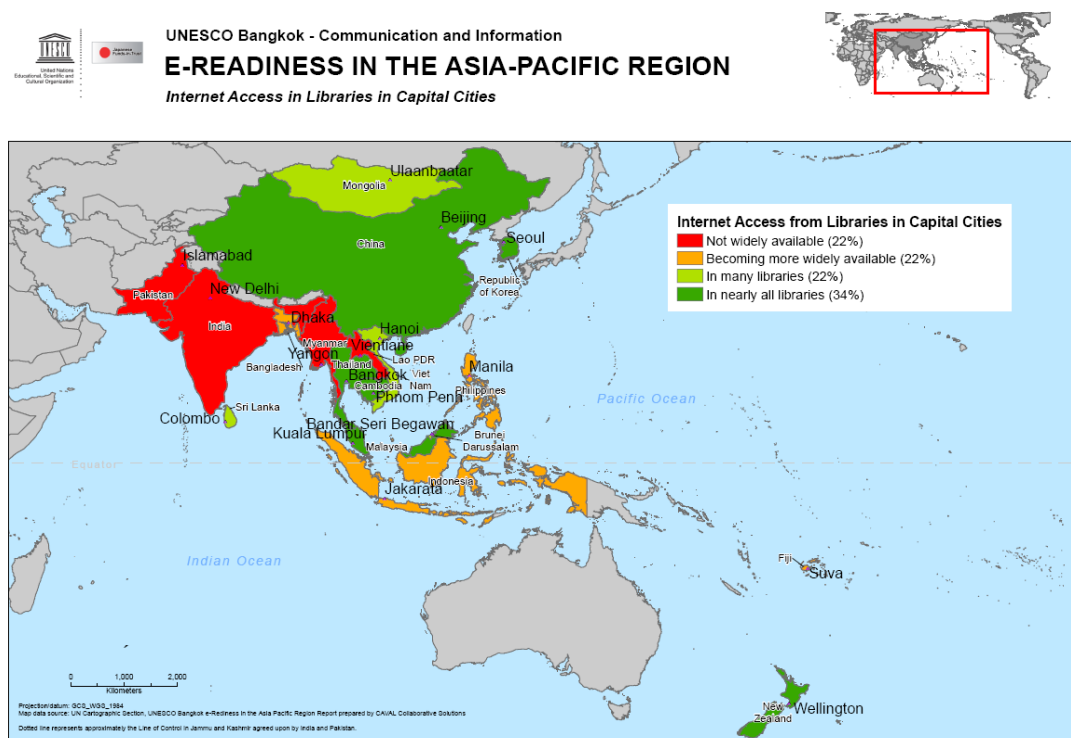

Figure 2. GIS map showing Internet access from libraries in Asia/Pacific in capital cities

E-readiness surveys were conducted in Asia-Pacific countries in 2005 and 2006 (Maresco & O'Connor, 2006). Research focused on criteria such as internet-based opportunities, the number of computer servers, websites or mobile phones in each country, as well as the citizen's ability to utilize technology and the transparency of businesses and legal systems. The data collected for the e-readiness survey was drawn on to determine each country's level of e-readiness in the Asia/Pacific region. See figure 2.

The survey responses indicated significant variations in knowledge of, and access to, the Internet and the required technology and infrastructure from country to country. They also indicated significant variations between rural and urban areas within each. Unfortunately the responses also indicated that the infiltration of the knowledge, skills, technology and infrastructure from the urban to the rural areas is either not happening at all, or not as quickly as would be expected.

A Geographical Information System (GIS) is utilized to visualize the results for easier reading and comparison within the region. Geospatial information is increasingly being used to understand development issues and improving decision-making. GIS is a tool for efficient data capture, data storage, management, analysis and visualization.

Two things that are critical to the establishment of the necessary connectivity, infrastructure and skills are investment in education and strong industry leadership. Providing ICT education to those

who do not have access to the necessary technology or who lack connectivity is difficult if not impossible. It is necessary, however, if the information professional is to have transferable skills from rural to urban areas and from country to country.

This provides a challenging direction for those developing academic curricula, skills-based training courses and self-paced instructional packages. It also provides a clear role for national and regional library associations that are involved in the education and professional development of their members. See table 1 for e-readiness in some Asia countries.

Country	Ranking (out of 70)	2008 score (out of 10)	2007 score
Singapore	(6)	8.74	8.6
Malaysia	(34)	6.16	5.97
Thailand	(47)	5.22	4.91
India	(54)	4.96	4.66
Philippines	(55)	4.90	4.66
China	(56)	4.85	4.43
Sri Lanka	(60)	4.35	3.93
Vietnam	(65)	4.03	3.73
Indonesia	(68)	3.59	3.39

Table 1. E-readiness in some Asia countries (E-readiness rankings 2008).

The training package in print and as an Online Distance Learning (ODL) Module

In October 2006, a group of experts met in Hua Hin, Thailand. Their aim was to look at the way ahead for the EIP-ICT package. The meeting focused on the findings of the survey. It was agreed that the countries be categorized into three groups as follows [countries in **bold** participated in the E-readiness survey]:

(i)   Advanced connectivity, skills and expertise, equipment and infrastructure namely, Australia, **New Zealand**, Singapore, Hong Kong, **S Korea**, **Malaysia**, Japan.

(ii)   Those that do not have the infrastructure but likely to get most value from the programme namely, **Bangladesh**, **Brunei**, **China**, **India**, **Indonesia**, Iran, Khazekistan, **Thailand, Vietnam**, Philippines, Sri Lanka, **Mongolia** , **Pakistan** (urban based) and the Pacific.

(iii)   those lacking basic infrastructure to enable the programme to run namely, Afghanistan, Bhutan, **Cambodia**, East Timor ,**Laos**, **Myanmar**, Nepal, PNG, North Korea, Stans of the former Soviet Union that we might target.

It was recommended that the implementation of the training programme would be focused on the countries in Group (ii).

Module 5 was presented as the template for a possible distance learning programme and included the Rationale, Description, and Modules with an Index provided for each module, inclusive of the Teachers Guide/Accompanying materials etc. It was noted that module 5 did not include powerpoint presentations, using Internet links instead. It is available as pdf files on CD and in print format.

The discussions at the expert meeting dwelt on issues of assessment and whether the programme was a self–instruction programme (no instructor/no certification) as opposed to a distance learning module (has an instructor but not face to face/award) where modules can be delivered by distance. The Meeting clarified that in terms of the findings of the survey that in countries where e-readiness criteria were not in place, that to offer the programme as ODL, would be difficult. Some of the issues related to:

- reliable connectivity and technology, compatibility
- high level of staff resources to respond
- easy access to a centre of some kind

- technology backed by reliable postal service
- money to pay for the course

The programme (module 5) was ready to be used as a self-instruction programme and that in its current form, the Programme was workable as an ODL one.

Due to the unique nature of module 5 (internet links based as opposed to powerpoint content), consideration was given to developing a second module that has a common format to the other 9 modules as this could/will facilitate the adaptation of the programme by countries that are in early stages of the development of ODL programmes.

The University of the East, Philippines ventured to develop module 2 *Introduction to Library Automation* as an ODL course based on the face-to-face package. The course was tested in ten countries (Pakistan, Bangladesh, India, Sri Lanka, China and Hong Kong, Singapore, Vietnam, Philippines and Australia) and the results evaluated by the Australian expert who did previous assessments (Henczel, 2007).

UNESCO chose to show the report and the results of having the ODL course at its website using GIS maps (Henczel & Maresco, 2008). The purpose of the evaluation report and the supportive visualizations is to assist in determining the suitability and effectiveness of the module 2 content structure, delivery, timeframe and communication components. The evaluation responses from fifty-nine (59) participants across ten (10) countries were put into an updateable database and participant responses were mapped. The results, design of forty (40) maps, are disseminated online and available for use in presentations and as a future reference for the purpose of raising awareness of regional technology, ICT skills, effectiveness of prescribed resources, module and lesson structure and the preparedness of Asia Pacific countries for online learning environments. See figure 3.
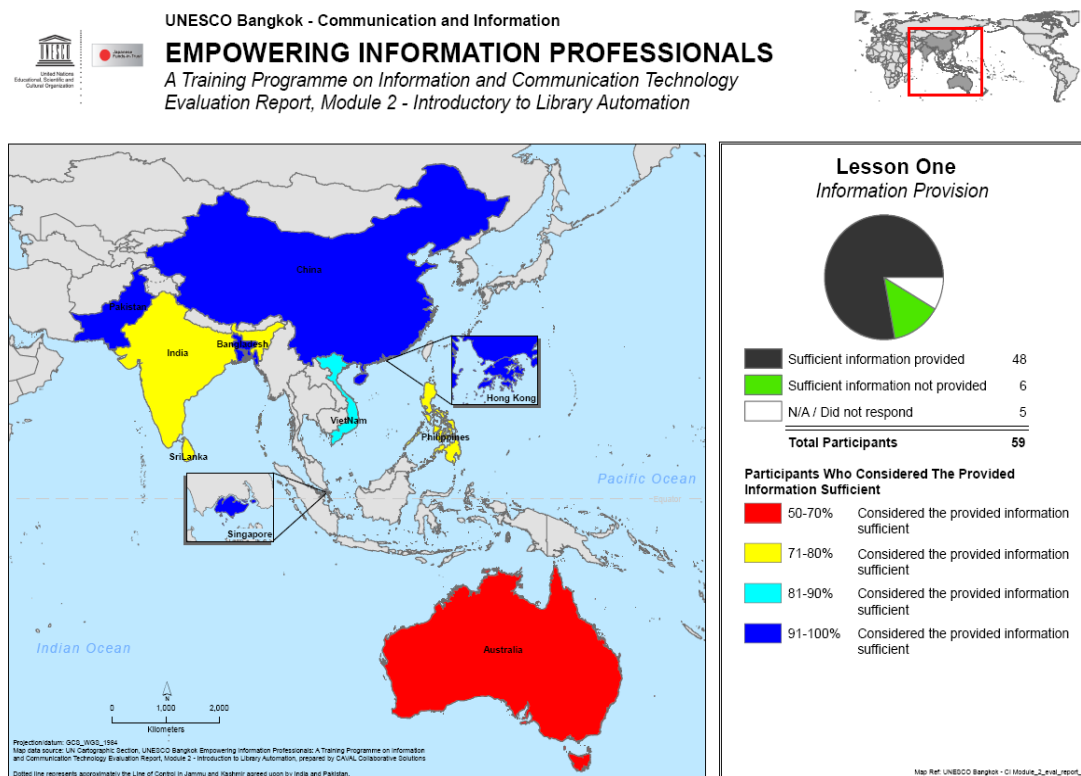

Figure 3. GIS map of the evaluation of module 2.

Summary - future matters

As stated, the aim of EIP-ICT was to produce a training package for developing countries based on "face-to-face" instruction and a distance learning (template) package for ICT training. Although EIP-ICT is available on the web it must be emphasised that giving access to the content of a website is not to give access to a distance learning module which involves both institution(s) and lecturers.

Distance learning describes a teaching-learning relationship where the learners and teachers are geographically separated and communication between them is through technical media such as computers and multimedia systems. The principal technology of current research interest is the Web, supplemented by CD-ROMs.

UNESCO has utilized several advocacy measures to raise awareness of the EIP-ICT but has realised that raising public awareness of any issue is not an easy undertaking and achieving lasting behavioural change is harder still. However, with a basic understanding of human communication, some knowledge of effective approaches to awareness-raising, and a measure of simple planning, it is possible to affect positive, equitable and sustainable changes.

To boost advocacy of the EIP-ICT package UNESCO is having a training course to provide Library Associations (LAs) in Asia with guidelines for developing a process of awareness-raising for the nine modules of the packet. Theories, principles and techniques will be offered in the course based on the experiences of those who have developed practices that were successful and that met certain expectations. As a personal approach is often an effective means of selling a good idea, particularly if the approach is sponsored by an organisation with recognised credibility, the LAs in Asia is being involved in an awareness-raising contests for the nine modules.

UNESCO and JFIT are now focusing on advocating EIP-ICT maintaining that any profession requires continuing education in order to update their skills and apply new ideas especially in a digitised world.

References

Ornager, S. (2000). Report on UNESCO's meeting of experts for the preparation of a training package on library automation/ICT for developing countries. *Program*, 34 (4), 397-401.

Ornager, S. (2003). Development of ICT for library and information professionals: a training package for developing countries in Asia and Pacific from UNESCO. *Program: electronic library and information systems*, 37(2), 109-112.

Henczel, S., & Lahiri, A. (2004). Information and Communication Technology for Librarians and Information Professionals (ICTLIP) Learning Modules. Evaluation report. [Prepared for] Bangkok: UNESCO Bangkok.

Maresco. L. & O'Connor, S. (2006). E-readiness in the Asia Pacific region and maps using geographical information system (GIS). http://www.unescobkk.org/index.php?id=6415

Henczel, S. (2007). Empowering Information Professionals: A Training Programme on Information and Communication Technology. Module 2-Introduction to Library Automation. Evaluation Report – Final. [Prepared for] Bangkok: UNESCO Bangkok.
http://www.unescobkk.org/fileadmin/user_upload/ci/maps/ODLevaluation/UNESCO_Module_2_ODL_Evaluation_Report.pdf

Large, A. (Ed.). (2007). Empowering Information Professionals: A Training Programme on Information and Communication Technology. 9 modules. Bangkok: UNESCO Bangkok.

Economist Intelligence Unit. (Ed). (2008). E-readiness rankings: Maintaining momentum.
http://a330.g.akamai.net/7/330/25828/20080331202303/graphics.eiu.com/upload/ibm_ereadiness_2008.pdf

Henczel, S. & Maresco, L. (2008). Online Distance Learning (ODL) evaluation and maps using geographical information system (GIS). http://www.unescobkk.org/index.php?id=7834

UNESCO Bangkok website. (2008). http://www.unescobkk.org/index.php?id=6398

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