



E-Learning for the Librarians in Taiwan: the Experience at the National Central Library's E-Learning Campus

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Abstract

The National Central Library (NCL) initiates the E-Learning Campus (<http://cu.ncl.edu.tw>) to provide the continuing professional education for the librarians and to enhance the library and information literacy for the citizens in Taiwan. The E-Learning Campus is a collaborative effort by the library associations, the library and information science (LIS) departments of various universities, a variety of libraries and government agencies in Taiwan.

This paper aims to describe the important role of e-Learning in Taiwan throughout the first phase of the National Science and Technology Program for e-Learning from 2003 to 2007 and to discuss how the National Central Library's E-Learning Campus incorporates the e-Learning courses developed from the program into the Campus.

In addition to share the experience of the NCL's e-Learning Campus in offering online continuing education for the library staff in Taiwan in the paper, the LIS teachers and students, the general public are also welcomed to register on the Campus to enhance their research and stronger interest in pursuit of library related knowledge.

Introduction

The rapid development of e-Learning in the past years has compounded the importance of national competitiveness and innovation strategies. National e-Learning agendas and policies have become commonplace across much of the world. In 2002 Taiwan government planned a five-year national program for e-Learning “National Science & Technology Program for e-Learning (ELNP) from 2003 to 2007”.

In 2003 the first-ever e-Learning readiness ranking of the world’s 60 largest economies was published by the Economist Intelligence Unit in co-operation with IBM¹. The 2003 e-Learning Readiness Rankings concluded that there was no corner of the world without the need for e-Learning. According to the study, the utility of online learning becomes more apparent every day and e-Learning will become even more entrenched in all facets of society as political, and socio-economic factors continue to fuel the drive. The e-Learning readiness study ranks a country’s ability to produce, use and expand Internet-based learning — both formal and informal, at work, at school, in government and throughout society. E-Learning readiness is a nation’s ability to generate, disseminate and use digital information among its citizens to the betterment of the country’s economic activity. The rankings include nearly 150 qualitative and quantitative criteria divided into four categories: education, industry, government and society.

Within each of these categories, the 2003 study divided criteria into four components: connectivity, capability, content, and culture. The implications of the four Cs are as follows: Connectivity refers to the quality and extent of Internet infrastructure; Capability refers to a country’s ability to deliver and consume e-Learning, based on literacy rates, and trends in training and education; Content refers to the quality and pervasiveness of online learning materials; Culture refers to behaviors, beliefs and institutions that support e-Learning development within country. The study also points out that e-Learning readiness means more than connectivity.

Notwithstanding the world’s three largest economies or the best-connected countries, the top-ranked e-Learning readiness countries are still determined by the creativity and determination. Online content is one of the basic building blocks for e-Learning. It includes library materials, newspapers, corporate information, government databases with online format and in their native language.

Library materials made accessible online represent one of the key e-Learning resources for the citizen. The trends in e-Learning for library staff training and education can be considered as the important indicators of the progress of the e-Learning in each country. When the librarian's role is to help provide the e-Learning service to the users, it seems to be contradictory for them to have fewer opportunities to receive the e-Learning benefits themselves because of expertise, staff time, as well as insufficient funding.

Taiwan, in the 2003 e-readiness ranking, was placed 13rd, 9th, 25th, 17th, and 16th for the category of education, industry, government, society and overall ranking respectively. Based on the solid e-Learning foundation, thirteen government agencies have actively joined the national e-Learning program and each agency was in charge of different aspects of promoting e-Learning.

In terms of the education, industry, government, society aspects, the significant e-Learning progress has been made in Taiwan. For the past five years, it has helped to establish a better lifelong learning environment, improved the learning quality for civil servants, and created learning opportunities for the citizen. The various government agencies in particular have developed the most suitable applications and service models for their own specific field to realize the vision of a knowledge economy ².

In terms of education, the tertiary education system in Taiwan has begun offering e-Learning courses for credited courses and also in-service programs. The Ministry of Education supported the setup of e-Master's degree programs and has so far certified the quality of five programs at three institutions. The influence of National Science & Technology Program for e-Learning for academic research on education includes passing and revising of relevant legislation, promoting changes in teaching methods, formation of diversified learning environment, bridging the learning divide between the city and countryside, development of e-Learning techniques and expertise, improving e-Learning quality, digitization of language education³.

Within industry, the Industrial Development Bureau (IDB) of the Ministry of Economic Affairs (MOEA) began implementing Phase 1 of the e-Learning Industry Promotion and Development Plan in 2003, more than 20 industries have benefited from the plan and 19 industry associations have adopted e-Learning. In total, over 700 companies and more than four million people have taken part in e-Learning, boosting the industry output from NTD 700 Million to NTD 12 Billion. At the same time, the assistance of the IDB has also encouraged e-Learning vendors to actively develop their capabilities and seek out opportunities for transformation. The integration of inter-agency resources with this

plan has been successful in stimulating demand for e-Learning services in the government, academic and corporate sectors, leading to a snowball effect⁴.

In the context of government, as the Executive Yuan's staff agency for human resources development, the Central Personnel Administration (CPA) actively promoted e-Learning for the civil service. A variety of supporting initiatives were implemented, including the unified login for learning websites, coordinating the development quality courses, training of e-Learning cadre and setting the minimum of hours of e-Learning. Overall, the government ministries and agencies in Taiwan have made use of e-Learning to provide more varied learning channels. This has benefited over 15 million people and made a significant contribution to raising the standard of artistic and cultural refinement among the general population⁵.

As the sole national library in Taiwan, the National Central Library (NCL) initiated its e-Learning project since 2000 and launched the e-Learning portal named the e-Learning Campus on December 25, 2000. The National Central Library is under supervision of the Ministry of Education. All over the country there are 547 public libraries, 164 university libraries, 728 special libraries and 3,867 elementary, junior and senior high schools libraries.

With the continuous funding from the Ministry of Education, the NCL was able to cooperate with the library professionals and associations to develop the e-Learning courses for Taiwanese librarians, especially for most understaffed rural and town libraries and school libraries.

In response to the above mentioned e-Learning websites or portals built for the National Science & Technology Program for e-Learning, the e-Learning Campus system has been upgraded with the "site links" new function to encompass the e-Learning resource websites developed by the government agencies. The coverage of the topics includes the employment, recreation, culture, medicine, and language.

E-Learning Campus : Online Courses for the Librarians in Taiwan

According to the Library Law, promulgated on January 17, 2001 by Presidential Order in Taiwan, the national library is the library established by the central competent authority to serve mainly government agencies (institutions), juridical persons, organizations and researchers; to collect, compile and store nationwide publication information; preserve culture, advance academy, study, promote and facilitate the development of various types of libraries throughout the country⁶.

As the sole national library of Taiwan, the National Central Library (NCL), established in Nanjing in 1933 and reopened in Taipei in 1954, has been making efforts to cooperate with other libraries to develop its role as a leading center for knowledge and information resources and services in Taiwan. The E-Learning Campus can be considered as the important synergy of the National Central Library and other cooperative partners in Taiwan, including the Library Association of the Republic of China (Taiwan), various types of libraries, government agencies and other organizations.

Before the Taiwan government set up a five-year national program for e-Learning in 2002, the National Central Library has started to initiate the Building an Asynchronous Distance Learning System for Information Literacy and Library Science Learning Resources Project in 2000. This pilot project was funded by the Ministry of Education. As a knowledge institution, the support of learning through library collections and services is a core element of library role. Library can become the best learning environment to promote information literacy and lifelong learning. Advances in technology are helping libraries to improve access and service provision to all their patrons. Today, acquiring new skills and keeping current on technologies, sources and trends is more important than ever for library workers.

The objectives of the e-Learning pilot project include promoting the information literacy of the citizen, enhancing the national competitiveness, the better application of information technology, bridging the learning divide between the city and the countryside, establishing the e-Learning platform, and building the online courses cooperatively. As result of the one-year project, the NCL has accomplished the following goals: to install the learning management system, to create 12 online courses with the collaboration of library and information science (LIS) professors and librarians⁷.

On December 25, 2000, the NCL launched the website of “e-Learning Campus” to start the first-ever e-Learning services to the library communities and the general public in Taiwan. In order to enhance the content of the e-Learning services to the library communities, the Library reapplied for the funding from the Ministry of Education. During the 2001 one-year project, the learning system was upgraded to better the learners’ function, and even to create 6 online courses.

In conjunction with a series of library activities organized for the Ministry of Education's 2002 Community Lifelong Learning Festival: Global Links, the NCL continuously received the funding to create the new courses focused on the theme in

relation to global links, such as the course entitled "Information Global Village" which highlights the importance and access of global e-resources from the national libraries, national archives, national museums, as well as the library use course series. Along with the ongoing development of the new courses, the NCL has also provided the various approaches of outreach services (promotional activities) to promote the e-Learning services to more libraries, librarians, and the wider audience.

In 2002, Taiwan introduced a Three-Year Library Development Plan: Building the Foundation of Knowledge Resources. The plan seeks to strengthen the functions of domestic libraries and enhance the information ability of the public. The program has seven specific objectives: to promote cooperative collections, convert Chinese documents to digital format, facilitate information use, develop professional standards for librarians, promote professional training, and pursue sound library development. One of the sub-plans is the library use and information education⁸.

With the funding of this sub-plan, the e-Learning Campus has increased 3 new courses with 30 modules, including the topics of "Primary & Middle School Library Management," "Rural & Township Library Operations & Management," and "Reading Method." These programs were invited to take part in the 2003 National Digital Learning & Educational Resources Exhibition sponsored by the Ilan County Government under direction of the Ministry of Education.

Since 2006, in accordance with the e-Learning Project for the Civil Servants of Executive Yuan, the NCL was enabled to get the online courses on the topics of information and computer technology application, from the other government agencies, such as Directorate-General of Budget, Accounting & Statistics, Executive Yuan. In addition, the other focus of the e-Learning Campus task is to facilitate the NCL staff to apply the e-Learning method to produce the e-Learning courses or resources for the readers and to take the online courses themselves, to meet the requirement of the minimum number of e-Learning hours per year for the civil servants.

In the past years, the other important resource of the e-Learning Campus online courses is from the Library Association of the Republic of China (Taiwan). Since the summer of 1956, the Association has been organizing on-the-job training sessions annually on different topics according to the recent professional developments of the library and information science. The sessions were held in cooperation with different institutions, such as the NCL, the LIS graduate schools and public libraries⁹. In cooperation with the Association, the NCL was authorized to provide online training sessions on the

Campus with the advanced e-Learning technologies.

Mission of the Campus

The aim of the Campus is to provide online courses for library staff and library users. Our goals are to create network learning environment, to realize the ideal of distance education, to enhance the library staff on job training, to build online repository of educational resources, to promote library and information literacy, and to advocate the public lifelong learning.

The E-Learning Campus provides the new avenue for the Library to reach the wider audiences. Thanks to the invention of Internet and e-Learning technologies, the network learning environment makes it possible for the library to serve readers under 19 years old. Therefore the Grade 1 to 9 educational courses produced in 2001 were the first experiment to cooperate with the teachers from the primary and secondary schools. The use of library materials included in the course content was the requirement. These online courses are Chinese, English, Taiwanese Folklore, Taiwanese Humanities and Science.

The successful continuing education for library staff is the key to keep the best quality of library service. In addition to the professional education systems, on the job training and continuing education could be traced back to 1956 when the Library Association of the Republic of China (Taiwan) organized summer sessions of continuing education for library staff in Taiwan. From 1956 to 2007, more than 12,000 librarians participated in the workshops during the past years.

The benefits of e-Learning include consistency of training, reaching remote library staff unable to attend face-to-face workshops, and reducing staff time away from work. To take advantage of the e-Learning, since 2001 has the NCL started to work together with the Association to make some onsite course content available on the Campus after the workshop was held.

As the limitations with the face-to-face workshop include the time, funding, location, the Campus with the free online courses service can provide more e-Learning opportunities to satisfy the needs of library professionals from remote area. Up to date, over 20,000 registered online learners on the Campus. According to the online survey conducted on the Campus in 2008, 85% respondents among 4,147 learners are satisfied with the overall service on the Campus. The most needed courses are focused on the topics on library and information use.

As to building online repository of educational resources, the Campus aims to provide a platform based on Sharable Content Object Reference Model (SCORM) standard to support the discovery and sharing of e-Learning resources held both within the repository and at external locations. By working together with different partners to build the learning resources repository, such as the Library Association of the Republic of China (Taiwan), Taipei Municipal Public Library, National Taiwan Normal University and special library, the Campus aims to provide training and ongoing support to the Campus learners and course partners., once the selected Repository service is in place, and to develop a community of practice around e-Learning resource sharing.

In order to promote library and information literacy, the Campus provides the access not only for the library staff, but also the general public. Along with the development of the national e-Learning strategy in the government official training in Taiwan, the NCL started new service of e-Learning-hour- credit for civil servants.

This service has effectively facilitated the library staff in the government settings to register the courses on the Campus with the support of various supervisory agencies. According to the result of online survey, 4,147 civil servants completed the courses with e-Learning-hour-credit from March to December 2008, 490 of them are librarians. It indicates that the knowledge of library and information science has been delivered to a good proportion of non-librarians among the civil servants around the country. In addition, the same 13 courses without e-Learning-hour-credit are also free accessible to the general public. Evidently, the power of e-Learning encourages more and more self-learners to continue lifelong learning without the limitation of space, time and profession.

Features of the Campus

The features of the Campus are as follows: first online repository of online courses for library professionals in Taiwan; over 100 library professionals and professors joining to develop the courses cooperatively; nearly all of the courses free for librarians, teachers, students, and the general public.

In the initial stage to implement the e-Learning Campus website, the course creation was a big challenge. The foundation of building the LIS professional online courses was based on the NCL's partnership with the professional groups and associations. As the course creators were not familiar with the e-Learning technologies, "teach the tutors" was the prerequisite to produce the course.

In the recent years, more and more convenient e-Learning tools and LMS were developed to enhance the effectiveness of e-Learning both for teachers and learners. Indeed, new technologies really can provide shortcuts.

On the Campus the method of course production can be divided into internal courses, outsourced courses, shared courses, and purchased courses. At present, over 150 e-Learning courses are available and free access for librarians, teachers, students, and the general public. The length of each course is 1 to 2 hours in average. Along with the advance of e-Learning technologies and related standards, the requirements for each course creation or e-Learning resources varied depending on the topic of content, budget and targeted learners.

Before the topic of the new courses is decided, the NCL has to review the feedbacks from the Campus learners and the library communities, specific research report (or study) about the Campus service, as well as the NCL advisory group on the development of the e-Learning courses. The above mentioned theme of funding activities is also the important factor to affect the topic of online course content.

After the topics of new online courses are selected, the tutors of new courses have to be recommended or invited to join the process of course production. Today, there are 10 higher education institutions that offer LIS programs/courses in the undergraduate and graduate levels in Taiwan. The teachers or experienced professionals specializing on the topics we have invited to jointly produce the online course are mostly from these institutions or the various types of libraries, including the National Taiwan University, Taipei Municipal Library, and special libraries.

According to the initial guidelines of course creation, each course ranges from 5 to 10 modules for the first few years. The leading tutor usually cooperated with several assisting tutors to design each online course. Therefore, almost all the LIS schools have participated to produce the online courses for the Campus. There are over 100 teachers, graduate students, librarians who have teamed up to create the courses for the past years.

Following are the top-used courses listed by the name of course, number of modules, number of tutors or authors, number of civil servants completing the courses with e-Learning-hour-credit during the learning period from March to December 2008.

Name of Course (in Chinese)	No. of tutors	No. of modules	Learning hours	No. of Civil Servants
Library Administration	6	7	3	657
Reading Method	5	11	4	526
Library Outreach & Marketing	3	5	2	477
Children Library & Information Literacy	6	8	3	367
National Central Library E-Resources: Local History	4	8	2	365
Subject Analysis: Current Status & Development	1	1	2	346
School Library Management	5	6	2	340
Library Materials Selection & Acquisition	3	10	7	327
National Central Library E-Resources: Business	5	6	2	309
Rural & Township Library Management	10	10	7	274
Qualification issues in Digital Long-Term Preservation: Experience from Germany (in English)	1	2	1	217

Table 1, The top-used e-learning courses for civil servants on the e-Learning Campus
(from March to December 2008)

**Source: the National Central Library's e-Learning Campus website.

The core courses designed for fostering library professionals are now focused on the LIS, library & information use, application of the information and computer technology. In order to utilize the LMS as the knowledge management tool for the NCL staff, some courses designed only by the NCL divisions started to be developed, including the Global Sinology Seminar series and NCL Staff Learning Zone.

The Global Sinology Seminar series aims to preserve the cultural context for the lectures, topics discussed in the conferences, held by the NCL Chinese Studies Center, are recorded as e-Learning resources and placed on the Campus website to enable scholars from everywhere as well as the general public to share the achievements of Sinology Studies. The Center frequently invites scholars locally and abroad to give scholarly lectures on Chinese literature, history, philosophy, languages, anthropology and Taiwan Studies and related topics.

E-Learning Platform

The e-Learning Campus portal is a web-based, single point of access that serves as a gateway to a variety of e-Learning resources on the Web (Internet, intranet, or both), It can bring order and easier access to an increasing array of information and learning choices. The learning management system (LMS) is supported by the local e-Learning platform vendor Sun Net. There are many types of interactions and functionalities that can be deployed and coordinated by this system, including online course catalog, online registration system, ability to launch and track e-Learning, learning assessments, management of learning materials. As this system is also widely used in the government agencies and universities in Taiwan, the advantage of the same LMS e-Learning environment make the learner learn online more easily.

The Campus LMS uses Internet technologies to manage the interaction between learners and learning resources. As all forms of learning become more costly, both in direct costs and learner time, management needs more information not only on the performance of the learners, but on what they are doing, how many qualified (or certified) learners or NCL staff are available for any specific courses. In addition, the system is essential for creating an environment where learners can plan, access, launch, and manage e-Learning on their own. Currently, the new version of the LMS provides the functions which can be operated both for Chinese and English languages. All the learners are required to make registration on the learning portal website before taking courses.

With the support of National Science & Technology Program for e-Learning, a public education industry supply chain was set up to encourage this e-Learning platform vendor Sun Net and content providers Kang Hsuan and Inteserv to modularize learning content and set up a complete division of labor model for the e-Learning industry in Taiwan¹⁰.

Benefits of the Campus for the Librarians in Taiwan

The National Central Library is the partner of the Library Association of the Republic of China (Taiwan) to hold on-the-job training sessions annually for the librarians in Taiwan . As there are limitations with the face-to-face workshops, the NCL's e-Learning Campus provides the e-Learning opportunities for more librarians to self –learn the continuing professional education. Now the Association has become the NCL's partner to jointly develop the online e-Learning courses. The advantages of the e-Learning for the librarians are the irrespective of place and time, unlimited access, multiple communication possibilities available (e-mail, discussion forum) ,various numbers of participants involved, self-paced learning speed, etc. According to the study which has conducted an online Web-based survey of the online training and education needs of 587 library staff in Taiwan in 2001, 94.5% of the respondents say the continuing professional education is helpful for their work, and 71.3% report that the asynchronous distance learning system for continuing professional education is workable¹¹.

From March 1 to December 31, 2008, of the 4,147 registered learners reported in replies to the online survey on the Campus, 85% were satisfied with the Campus asynchronous distance learning system. All the respondents were civil servants and 490 of them were librarians. After the Campus had installed the new version of the Learning Management System in March 2009, a new online survey of the satisfaction with the Campus new system was conducted in April. 121 librarians responded to this survey, with 114 of them being satisfied with the new system. In terms of the new classification of the online courses available on the Campus, 111 of them agreed. In respect to the content of 180 courses, 113 of respondents were satisfied. Following are some feature benefits appreciated by the online learners of the Campus in the recent years:

- The library and information professional courses series with theory and practice features are very helpful for the new librarians to apply to their work;
- The introduction of free education, accessible 24 hours a day;
- Extending the online learning opportunities to the library staff who are not able to attend the same face-to-face workshop;
- The useful learning aid to the LIS students for further study or preparing examination;
- The useful teaching aid to the LIS teachers to serve as the exercises for the students;
- Enhancing the library and information literacy for the civil servants, and general public.

Moreover, the other benefits that the Campus participants have not yet become aware of may result in librarians favoring the construction of other courses addressed to library users and their own professional community.

Conclusion

Currently, there is no national e-Learning program promoted by government around the world. Most large e-Learning programs are supported by research organizations, non-profit organizations, and corporations; furthermore, it is rare that an e-Learning program involves so many government agencies as the national program for e-Learning in Taiwan does.

Just like the e-Learning program for library staff in other country are supported by the research organizations, non-profit organizations, and corporations, for example, bibweb (Internet training course for German public libraries) promoted by the Bertelsmann Foundation and ekz.bibliothekservice GmbH, and WebJunction by the Bill & Melinda Gates Foundation and OCLC, here in Taiwan, the National Central Library e-Learning Campus is supported by the government department, Ministry of Education¹².

The different approaches of e- e-Learning strategies for the government or professional developments have their own advantages and disadvantages. Taiwan government demands different participating agencies to work together and/or support each other. Thus, the e-Learning Campus is now one of the nine government department s' learning websites to join one single login entry integrated scheme and provides the e-Learning courses for the library professionals.

The significant advantage of sharing the courseware among the government agencies is to avoid the duplication of the course production and expense. One third of the Campus courses for the topics on information technology application are from the Civil Servants' Information Learning Website supported by the Directorate-General of Budget, Accounting & Statistics, Executive Yuan.

Today the e-Leaning Campus is still the only website to provide free online professional courses for the library staff in Taiwan. In order to promote the Campus service, the Central Personnel Administration of the Executive Yuan's guideline for the minimum hours of e-Learning per year for civil servants has offered to help increase acceptance of e-Learning among civil servants and librarians.

As the various types of libraries in Taiwan have different supervisory authority, the central government's regulation becomes effective motivation for the librarians in public service to have the equal obligation and opportunities to access the e-Learning courses to enhance their professional knowledge and skill. Above all, the Campus serves as an e-Learning network portal for the nationwide libraries to train their staff. It also help the libraries to bring more learning resources to the wider audience. Collaboration and support from the government and the library communities are the keys for the Campus to continuously increase the e-Learning courses to serve as the online repository of library-related educational resources in Taiwan.

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