

E-Learning: The Strategies of Learning Culture and Arts

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Abstract. Culture and arts could be very much of hi-tech. Taiwan government has announced that e-learning as the featured policy of Taiwan since 2003. Almost all culture and arts e-learning programs designed by Council for Cultural Affairs and National Palace Museum. Both of them have started e-learning programs and developed a series of e-learning courses in multiple languages, moreover, they keep update related art and literature knowledge which are embedded in the e-learning courses from year to year. The e-learning program of CCA and NPM offers the public opportunity to understand Chinese arts and culture virtually, furthermore, to learn the related knowledge about the collections online. This paper reveals the key issues of how CCA and NPM plan and runs the e-learning program and how this successful model can be apply to other culture organizations.

Keywords: NPM, CCA, e-learning, culture, arts.

1 Introduction

The information and communication technology has been vigorously developing since the end of the 20th century. Many countries, organizations, and businesses, have been put a large number of resources in the researches of learning, teaching, and training programs in order to prepare and improve their competitiveness. Experts and scholars believe that learning technologies would change human learning activities, and moreover, with the lifelong learning and the knowledge economy, learning technologies are creating a brand-new learning and training model.

Taiwan government has initiated the National Science and Technology Program for E-learning. There are many ministries and councils have joined the national program and developed corresponding e-learning systems, platforms, and courses, for educational training. Most of these outcomes are free for public even the cost is extremely high.

In order to help promote the National E-learning Program, the Council for Cultural Affairs (CCA), Executive Yuan has organized various e-learning activities since 2002. Integrating the nation's wish to develop digital learning and make true its own conception and policy. Five objectives have hitherto been given, the curriculum schedule including E-culture Policy, Cultural Creative Industries, Culture of Taiwan,

Civic Esthetics and Cultural Citizenship. In all, 261 subjects or 338.5 hours of courses have been launched, with more than two million visitors among whom over 100 thousand were enrolled. [1] The professional and elaborate e-courses, the teachers' online direction, the perfect management of the internet community and the teaching mode which aggregates the virtual and the actual, all these conduce to the establishment of fresh atmosphere for cultural learning.

Besides that, the other organizations to promote culture and arts e-learning are National Palace Museum (NPM). NPM has more than 650,000 artifacts which covering 7,000 years in Chinese history, including ceramics, bronzes, jades, calligraphy, and painting. In recent years, NPM has begun digitizing its collections in order to promote those fine cultural artifacts to the general public. Digitalizing the artifacts will make the public learning the related knowledge much easier. NPM has been used information technologies to develop the novel e-learning methodologies and courses. A number of educational multimedia and courses have been developed for on-line learning, mobile learning, and interactive learning.

This paper reveals the key issues of how CCA and NPM plan and run the e-learning program and how those successful models can be apply to other culture organizations. The following sections would like to describe the recent work of the project and several practical educational activities. Those programs are expected to offer lively and interesting cultural courses to people and to supply them with spiritual nurture. To students they supply information on cultural learning and their career project. To professionals they can give integrated and in-depth information on the culture and art of the whole nation. And teachers can also benefit from those plans and find up-to-date cultural and artistic materials fit for their subjects while cultural groups get a platform where conceptions, ideas, technologies and topics can be communicated and exchanged, and where cultural creation and learning can be animated. At last, those programs can help cultural offices at all levels not only with policy publication and execution but also with the propagation of local cultural information so that the best use of it can be achieved both in information industry and in education.

2 E-Learning Literature Reviews and National Program

There are many different definitions about e-learning: some researchers use it to refer to either packaged content pieces or technical infrastructures; some researchers think it is asynchronous self-learning but others think it can encompass synchronous learning and collaboration. Almost all researchers agree that e-learning is a way for learning. NCSA (the National Center for Supercomputing Applications) e-Learning group also provided a general definition: "E-Learning is the acquisition and use of knowledge distributed and facilitated primarily by electronic means. This form of learning currently depends on networks and computers but will likely evolve into systems consisting of a variety of channels (e.g., wireless, satellite), and technologies (e.g., cellular phones, PDA's) as they are developed and adopted. E-learning can take the form of courses as well as modules and smaller learning objects. E-Learning may incorporate synchronous or asynchronous access and may be distributed geographically with varied limits of time. [2]

Rosenberg addressed that e-Learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance. It is based on three fundamental criteria; e-Learning is networked, which makes it capable of instant updating, storage / retrieval, distribution and sharing of instruction or information ;It is delivered to the end user via a computer using a standard Internet technology ;It focuses on the broadest view of learning-learning solutions that go beyond the traditional paradigms of training. [3]

The definition of e-learning in the national program is defined as the learning ways, which makes students learning better and teachers teaching more effective. In general speaking, e-learning presents several benefits: lowers the costs of teaching and training in organizations, including schools, government agencies, businesses, and organizations; stimulates learners' learning motivations and interests; and, provides an interactive learning channels and flexible learning platforms to both students and teachers [4] Because e-learning has these benefits, many developed and developing countries allocate funds and resources to encourage researches in e-learning fields. In Europe, the Commission of the European Communities [5] announced the guideline of e-learning policy, The e-Learning Action Plan-Designing tomorrow's education; the Secretary of Commerce in the United States [6] published "2020 Visions-Transforming Education and Training through Advanced Technologies" report; and Taiwan Government [7] also initiated the five-year National Science and Technology Program for E-learning and allocated four billions NTD to promote e-learning in Taiwan.

3 Development of CCA E-Learning Program

For promotion of the program, CCA encourages academia, industrialists and cultural agencies to develop cultural and artistic teaching materials and to make improvement in scope and profundity. Within the framework of the promotion program itself; there are five sub-plans that will be concretized year by year.

As to the execution, four steps are to be followed, namely, infrastructure construction, training & formation of the staff, application and marketing & promotion. The infrastructure construction consists in developing teaching and learning materials within local cultural offices under the Council for Cultural Affairs. The second step will be ensured by digital learning and training in cultural establishments accompanied by digital organization of international seminars and digital artistic learning in elementary and secondary schools. The application lies in good running of CASE (Cultural Affairs, School of E-learning) databank publications. As to the last one, on the one hand it consists in producing and promoting teaching materials merging practical information, and on the other hand cross-ministry and cross-council exhibitions should be organized so that Taiwan will be able to link up with the world and advertise its exquisite culture and art to the world. The CASE plan is the prime task to accomplish for the execution of the whole program of the Council for Cultural Affairs. See Fig.1 for more points. The CASE e-learning website can be found from <http://learning.cca.gov.tw/>



Fig. 1. CASE e-learning website

In response to the future demand, CCA also made another program, which is composed of three parts: E-learning school, exterior environment and interior environment. To carry out the E-learning school plan, it is necessary to associate cultural organisms of different counties and cities of the whole country, to transform cultural and historical data into digital teaching materials so as to enrich the latter. The second part is to plan sharing digital learning platforms which are intended to afford local cultural organisms resources and technology and to help them as well as professionals make full use of the factors like texts, pictures, graphics, audios and animated cartoons when they design. It is as important to help them develop all-around and smart contents. All those actions lay the basis and framework for the promotion of E-learning.

As concerning exterior environment and resources, ministries and councils will join efforts and exchange experience and resources to solve puzzles that digital learning has to confront, such as infrastructure building, normalization of users' software and hardware and computer ability. The integration of interior resources involves a lot of work and cost, so it requires close collaboration between the central and local authorities concerned. The development of the learning contents on websites in Chinese should move toward multimedia. That is the only way to attract more and more people. Evidently, it is costly; however, it can maximize the overall utility. The problem is that, usually, local authorities do not have sufficient finances and the cultural expense budget is still lower, let alone the information budget. Hence the CCA will assist local cultural centers and cultural establishments to produce, pool and digitize courses fit for e-learning so that cultural and historical data will be transformed into teaching materials and enrich teaching stuff of liberal arts.

4 Development of NPM E-Learning Program

NPM has been planning and implementing a medium-term project, the "National Palace Museum e-Learning", from 2003 to 2007. By using the plentiful cultural resources of the NPM's artifact collections and the newest multimedia information and networking technologies, various digital learning resources and services are being

developed to construct a superior digital learning environment. NPM also establishes a demonstration model for e-learning in museums.

The Learning Management System (LMS) in NPM has the following features: teaching management subsystem covers homework collection, experience sharing, result management, and announcement modules; course management subsystem covers course contents, teaching material management, and questionnaire management modules; and, e-learning activity subsystem for improving teaching and learning efficiency. The NPM e-learning website can be found from <http://www.npm.gov.tw/elearning/en/index.htm>



Fig. 2. The National Palace Museum e-learning website

NPM developed e-learning courses about those most popular artifacts to general audiences. In the last four years, NPM's e-learning courses cover themes such as bronzes and ceramics. The e-learning courses include more than 53 courses in both Chinese and English. In planning the course contents, NPM considers the learners with different backgrounds and ages when selecting materials and designing the teaching materials in order to make all learners learning something easily. All of teaching materials are done by using rich multimedia methods to stimulate learning motivation. Furthermore, all of e-learning courses have self-evaluation in order to improve the learning effectiveness.

Beside these traditional e-learning technologies, e-learning materials and mobile learning environment, NPM uses the latest information and multimedia technology to develop advanced interactive learning equipment. In order to provide museum visitors personalized learning guidance, NPM creates "digital tour service" which uses ICTs (information technology and communications) and hand-held computer to allow visitors learning in the museum according to their preferences freely. The digital tour service is composed of a tablet PC, wireless earphones, radio frequency identification (RFID) sensors, and straps. Using visitor's preference as the learning setting, visitors not only can select different presentation ways, text, pictures, and audio, but also can choose their favorite learning route.

Based on the learning preferences, the digital tour service offers visitors two main tour-learning scenarios. The first one allows visitors to follow pre-planned learning routes; there are three pre-planned learning routes currently, including "30-minute focus learning route", "60-minute selected learning route", and "120-minute full learning route". The computer will suggest the learning route depending on the artifacts that the visitor wishes to see. In addition, visitors can also do self-learning via RFID sensors. NPM has attached many RFID tags to exhibition items to allow visitors using personalized learning tablet PCs to receive signals from the artifacts and to retrieve related learning materials via wireless network. Visitors can use notebook or tablet PC in the galleries and connect to a NPM's mobile learning portal via wireless network to retrieve learning materials about artifacts. At meantime, the mobile learning portal also provides related e-learning courses and resources. The e-learning courses and resources are presented with varied and highly interactive multimedia forms.

5 Educations and Promotion from the Program

To promote CCA and NPM e-learning projects, they encourage academia; cultural organizations to develop cultural & artistic related teaching materials. For example, NPM follows three steps to do the e-learning project; the four steps are infrastructure construction, staff training, marketing and promotion. The infrastructure construction includes teaching materials development; the staff training holds seminars and digital artistic training courses for elementary and secondary school teachers; The marketing and promotion takes industry's power to promote teaching materials meanwhile to cooperate with other ministries and government agencies in Taiwan, and furthermore advertises to the world.

Taking Taipei city government's case as an example, National Palace Museum cooperates with the Department of Education, Taipei city government in 2005 in the "Wireless Taipei, Unlimited Learning". Taipei city government establishes the wireless networks which are covered all of primary and middle schools' campuses. The Department of Education, Taipei has chosen the NPM e-learning courses and digital tour service to create practice a mobile learning model in primary and middle schools. The mobile learning model involves three stages: "before the visit", "during the visit", and "after the visit". In the "before the visit" stage, instructors compose their teaching materials for students and allow students to access via wireless devices in class; in the "during the visit" stage, the class goes to NPM for experiencing digital tour and advanced interactive learning equipment; and, in the "after the visit" stage, students access the Internet for extended post-class learning anywhere to complete the process.

The works on digital promotion started by the CCA from 2003 are also fruitful. CASE is a more prominent case. The current number of students amounts to 37000 and that of discussers on the bbs 16000 while over 1 million people have visited the website of the school. An online learning community has already been constructed.

6 Conclusion

The main objective of CCA and NPM's e-learning project are to develop e-learning courses for learners with different needs. Furthermore, they also consider the

e-learning project as its vocation to gather and connect talents and amateurs in art, Chinese culture, history and education through Internet. The influence of their e-learning project spreads to the most far away and to the ordinary people to construct their culture and art knowledge. This paper describes the recent work of CCA and NPM e-learning project and introduces the advanced learning technologies in museum learning developed by NPM. A number of educational multimedia resources, courses, and systems, have been developed, such as digital tour guide and interactive learning equipment, which can support different learning styles. In this respect, they contribute to technology diffusion and coming from this virtual platform vivified by culture knowledge and art life.

References

1. Council for Culture Affairs for e-Learning Information (2009),
<http://learning.cca.gov.tw/>
2. Wentling, T.L., Waight, C., Gallaher, J., La Fleur, J., Wan, C., Kanfer, A.: e-learning - A Review of Literature (2000),
<http://learning.ncsa.uiuc.edu/papers/elearnlit.pdf>
3. Rosenberg, M.J.: e-Learning. McGraw-Hill, New York (2001)
4. Hwang, R.H.: Web-based Distance Learning. The Minister of Economic, Taipei (2003)
5. Commission of the European Communities, The e-Learning Action Plan-Designing tomorrow's education (2001), http://www.ntua.gr/dep/old/International/Europe/com2001_0172en01.pdf
6. The Secretary of Commerce, Visions 2020 - Transforming Education and Training Through Advanced Technologies (2002),
<http://www.technology.gov/reports/TechPolicy/2020Visions.pdf>
7. National Science and Technology Program for e-Learning Information (2009),
<http://elnpweb.ncu.edu.tw/old/english/english3.htm>