

The Viewpoint of Knowledge-Sharing: Exploring the Limits of on-Line Digital Learning System of Main National Universities in Taiwan

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摘要

本文從知識分享觀點，探討目前國立大專院校線上數位學習系統。一個有利於知識分享的線上數位學習環境，能增進全國教師教學資源的分享，提昇教學品質，亦能彌補區域教育資源落差的問題，提供學生與大眾透過網路遠距獲取優質的學習內容。

優良線上課程的建置，在教師人力與課程教材製作上是需要投入相當的陳本的。然而檢視當前國內國立大學的線上數位學習系統，卻發現大部分的學校仍然只供校內使用。

另一個問題是如何在數量龐大的課程當中，找到優質的課程，以目前台大遠距課程超過 2000 門為例，部份課程只是將課程書面教材放置於系統中，但亦有包含完整的課程錄影的課程，在缺乏推薦機制下，要搜尋到適當優質的課程，亦是困難的。

綜上所述，現況國內國立大學線上數位學習系統是相當不利於知識的分享，本文提出以下三點建議：

- (1) 考量各校 IT 系統限制而無法對校外人士全面的開放，但可立即針對全國教師開放課程，使教師在能夠獲得充分的教學資源，進而整合提升原本個人的教學課程。
- (2) 對課程建立徵選機制，使得優質課程能夠快速被檢索，減少課程查詢時間。
- (3) 由國家圖書館建立全國聯合課程檢索系統。

關鍵詞：數位學習、數位學習系統、知識分享、高等教育

Abstract

This article explores the Learning Management systems of national colleges and universities from the point view of knowledge sharing. A good on-line digital learning environment can not only help teachers share teaching resources but also enhance teaching quality. It also can be beneficial to make up for insufficient teaching resources and provide better learning materials. While establishing excellent on-line courses, people need to involve a lot of effort and money on manpower and teaching materials. However, among of national colleges and universities, most of on-line digital learning systems provide a learning environment for their own student except National Sun Yat-Sen University and National

Cheng-Kung University. This article also aims at telling people how to find out good courses from lots of on-line digital courses. To take National Taiwan University as an example, there are more than two thousands of distance courses in their computer system. Some of the digital courses supply overall video tape records but the others are handouts and papers. Without a good searching system for on-line courses, it is difficult for students to find appropriate courses for themselves.

As what I mentioned above, digital learning courses of national universities in Taiwan may not be beneficial for knowledge sharing, and the sharing solution will be advanced to build a corporate searching and proposing environment.

- (1) The LMS is not accessible to students outside the campus due to the restriction of the IT system. However, the courses can be immediately opened to all teachers in the country. In this case, teachers are able to obtain substantial teaching resources and to further enhance individual course contents.
- (2) A good search mechanism should be established so that any well-designed courses can be instantly found by users
- (3) National Central Library should set up a nationwide search system on all courses offered by schools.

Keyword: Learning Management System(LMS), e-Learning, Higher Education, Knowledge Sharing, Higher Education

1. The benefit of Opened Course

Referring to this project, OpenCourseWare (OCW) of the Massachusetts Institute of Technology(MIT), the plan estimated opening more than 2000 curriculum accessed in Internet for world free use. MIT OCW is a large-scale, Web-based electronic publishing initiative funded jointly by the William and Flora Hewlett Foundation, the Andrew W. Mellon Foundation, and MIT. This hundred million Dollars plan obtained the support of the World Bank, and has joined African Virtual University which belongs to World Bank. Besides, it obtained the support of domestic Fantasy Foundation, and is still carrying out the Chinese-adapted work.

Table 1: Exploring the Limits of on-Line Digital Learning System of Main National Universities in Taiwan : (1) **The Abstract of course for Guest** (2) **To audit a class** (3) **Register for Guest and the LMS will have the record for personal learning process.** (4) **No limits to outside school student** (5) **Course Recommend** (6) **Web Entrance Accessibility Guidelines(The LMS link in the front-page is visible** (7) **Specification about LMS System**

University or College Name	(1)	(2)	(3)	(4)	(5)	(6)	(7) Specification about LMS System
National Sun Yat-Sen University	Yes	Yes	Yes	Yes	No	Yes	Wisdom Master 2.1 outsourcing
Tzu chi College of Technology	Yes	Yes	Yes	Yes	Yes	Yes	Wisdom Master 2.1 outsourcing Recommend to the latest course
National Cheng-Kung University	Yes	Yes	Yes	No	No	Yes	LMS developed by the school itself. abundant courses and limited to in-school audition, and outside audition two kinds.
National Chengchi University	Yes	No	No	No	No	Yes	Wisdom Master outsourcing (The school had ever developed LMS and it didn't use anymore.)
National Tsing Hua University	Yes	No	No	No	No	Yes	Blackboard outsourcing. using for Tsing Hua, Yang-Ming, Chiao Tung, and Central 's students
National Taiwan University	Yes	No	No	No	No	Yes	LMS developed by the school itself. more than 2000 courses.
National Yang-Ming University	No	No	No	No	No	No	Blackboard outsourcing using for Tsing Hua, Yang-Ming, Chiao Tung, and Central 's students
National Chiao Tung University	No	No	No	No	No	Yes	Blackboard outsourcing. E2, E3, Writing, and Language Learning Manage System have developed by the school itself.
National Central University	No	No	No	No	No	No	Blackboard outsourcing. using for Tsing Hua, Yang-Ming, Chiao Tung, and Central 's students
National Chung Cheng University	No	No	No	No	No	Yes	LMS developed by the school itself. build up the digital learning center to support teachers and publish the matters for teaching. Now The center have published the teaching materials

Therefore we may accept the first-class professor's program in any network place which contains teaching material, discussing progress, outline, booklist, examination questions, exercises, teaching video and so on. World Bank President the James D. Wolfensohn said the greatest plans in the current proposing the knowledge, the experience and education expansion of school. Simultaneously the homepage was visited by students are scholars all over the world. The courses have been improved by opinions which accelerated the courses progressing.

MIT Principal Charles thought “build us a nation and a world community that consider knowledge a gift to be shared...a healthy planet a place to be cherished...and human dignity and opportunity fundamental conditions to be enjoyed by all people.” Opened course led educates the powerful enlightened will of the people and the common people tendency new entrance. This has given domestic first-class universities development, educating discrepancy elimination, and the city and countryside education resources uneven a reform direction.

2. The Limits of on-Line Digital Learning System of Main National Universities in Taiwan

Reviewing on the statistical data ended on February 2004, 81% of domestic universities, colleges and institutes had established several studies systems (Tim Chun-Hao Chang, 2004), however, according to the author actually only National Sun Yat-Sen University and Naional Cheng-Kung University provides on-line course registration for people of outside school. Cheng-Kung enhances over 600 courses divided into audited and non-audited; the audited one can directly take on the homepage. The other one needs to contact teaching assistant by email for courses qualifications. National Cheng-Kung University further limited to in-school audition, and outside audition two kinds. Below are investigation of on-line learning limitations for outside school:

3. Knowledge Sharing Structure

3.1 The Advantage of Knowledge Sharing

During the knowledge sharing process, information and experiences can be enlarged. If knowledge would be exchanged continuously, it will get extend feedback and equal the growth of expansion.(Yi-Min Wang, 2000); Quinn, Anderson and Finkelstein, 1996) .

Arthur Anderson Consulting proposed the knowledge management equation, pointing out the important of knowledge shared element is $K = (P + I)^S$. Referring that a knowledge shared organization which coordinated with people and knowledge simultaneously will achieve the growth of knowledge.

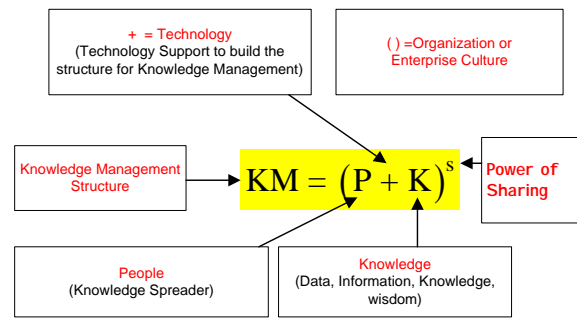


Fig.1 : Arthur Andersen's KM Definitions(Arthur Andersen Business Consulting, 2000)

3.2 The Element of Knowledge Sharing

Scholar Eriksson & Dickson proposed Shared knowledge creation model, contains four factors:

- (1) IT Infrastructure: instrument that supporting information circulation.
- (2) Catalysts: media to promote shared knowledge.
- (3) Shared knowledge process: shared and created process of knowledge.
- (4) Values, standard and procedure: Contains social and cultural values, and affects personal mental pattern.

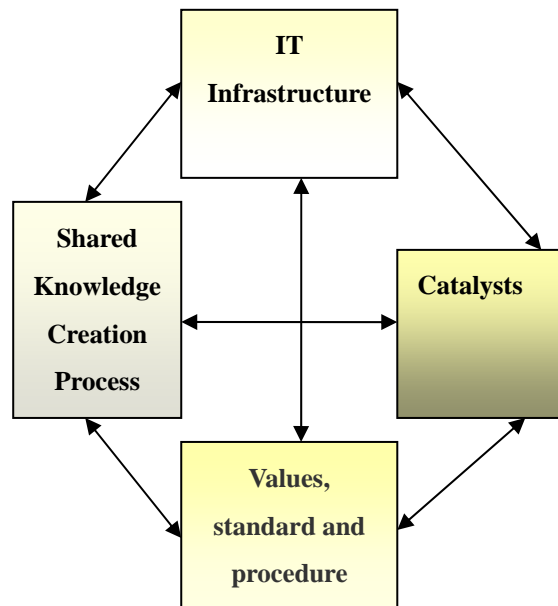


Fig.2 : Shared Knowledge Creation Processes (Eriksson& Dickson, 2000)

Eriksson & Dickson (2000) and Harry (1999)'s findings shows IT is the key element of shared and created, but the movement of sharing cannot be reformed only by IT. As the fact of that, sharing must interact both technologically and socially. Like National Sun Yat-Sen University and National Cheng-Kung University, although the system has been supported, some course still have divided into audited and non-audited by lector. Therefore courses are open or not, all decided mentally.

4. Conclusion : An Instantly-Established Open-Course Structure

4.1 The Courses Can be Immediately Opened to All teachers

Considering the network bandwidth and IT Infrastructure of school, all schools may open courses for teachers only at the beginning for collecting different teaching methods by surfing all kinds of classes.

4.2 completing national level foundation course

Ministry of Education now positively promotes university fundamental education for further studies. From various schools on-line systems, double courses can be found. So bunching up studies and exploring achievement could be the solution. Taking overseas courses as reference, completing national level foundation course, and authorized schools for national use, can help the student have high quality and the free teaching material and lifelong study.

The current national Ministry of Education positively impels the promotion university elementary education plan, but from various schools on-line in several studies systems, the curriculum which all detectably duplicates, therefore may concentrate studies and develops the achievement, and even to the reference overseas curriculum, completes the national level foundation curriculum, is authorized various schools and even the open national use, can help the student to have high quality and the free teaching material and even to is helpful to the common national's lifelong study.

4.3 Establishing a Search and Recommended Mechanism

Schools like Taiwan University have over 2,000 courses; the differences are owing to the maturity. Some on-line platforms are only for discussing and the information exchanging some of them digitalize the contents and save into the system. As the result, it needs evaluation and recommendation. Users can locate high-quality course according to this.

4.4 National Central Library should set up a nationwide search system on all courses offered by schools.

From Table 1 various schools system tabulating, Wisdom Master was used by threes schools, Black system was used by four schools. Four schools have developed platforms by self. Chiao Tung develops special learning platform for writing and language. In addition, each schools develops the specific platform to manage speeches. **Because of the exorbitant cost, the united platform is nearly impossible. If**

national educated institution could build up this system established the union curriculum table and entrance-link and curriculum comments. For instance The system can likes the Electronic Theses and Dissertations System of National Library with the recommendation mechanism about the large doctoral dissertation retrieval system that can include the citation information for the reference book and referent number. Then commendably courses can be revealed.

Hence users can find the adaptable course from the system entrance and click the course link into the course of LMS belonged to the university. If the course has be authorized, it may be conformed to SCORM or other international contents curriculum standard and implant into the system.

A such platform, it will become the nation large knowledge base to support researching, teaching, and learning.

4.5 Encourage the populace to Use and Share on the Open Course

Various schools may refer to the MIT OpenCourseWare, directly encourages the populace to the campus home page indication to glance over the curriculum, its curriculum links should be obvious, links to the curriculum content way is direct-viewing but does not need to study. Ministry of Education should give the reward regarding the high quality curriculum, enhanced the teacher in teaching curricula investment and the share motive.

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