

E-learning Course Instructional Design: A Case Study of the Library and Information Studies E- learning Master's Program of National Cheng-chi University

Mei-Ling Wang

Graduate Institute of Library, Information and Archival Studies

National Cheng Chi University

E-mail : meilingw@nccu.edu.tw

2012/4/12

1

E-Learning is a New Trend

- E-Learning, Web-based Instruction, Online Learning....
- E-learning is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place.
- E-Learning is a new model of learning

2012/4/12

2



The Ministry of Education Launching E-learning Master Programs

- ▶ The ROC Ministry of Education established an e-learning accreditation mechanism in 2005 and encouraged the launch of degree programs for students in full-time employment in 2006
- ▶ Nine Universities provide 16 accredited E-Learning Master Programs.

2012/4/12

3



E-learning is a New Model of Learning

- ▶ E-Learning is basically learning that is facilitated and supported by information and communications technology
- ▶ E-Learning is a new way of learning
- ▶ Changes the relationship between of teachers and students ,
- ▶ Changes the nature of education

2012/4/12

4



E-Learning Needs a New Model of Instructional Design

- ▶ Students and teachers are not in the same space, lacking physical contact and the opportunity to interact
- ▶ E-learning instructional design is very important to help students have a good learning experience and achieve good results in an online environment.
- ▶ E-Learning needs new instructional design
- ▶ Web technology and good instructional design can facilitate a good relationship between teachers and students

2012/4/12

5



Library and Information Studies E-learning Master's Program , NCCU

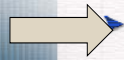
- ▶ The Graduate Institute of Library, Information and Archival Studies (LIAS) at National Chengchi University has provided the **Library and Information Studies E-learning Master's program** since 2007
- ▶ **73 masters's students enrolled, 16 graduates have gained their master's degree**
- ▶ The first Library and Information Science master's degree to use e-learning

2012/4/12

6



OUTLINE



Introduction

- ▶ **Instructional Design for E-Learning**
- ▶ **Library and Information Science E-learning**
Master's Programs and E-Learning Courses
- ▶ **E-learning Course Instructional Design Case Study**
- ▶ **Conclusions**

2012/4/12

7



E-learning and Instructional Design

- ▶ Instructional design is process to describe an instructional system planning,
- ▶ Instructional design plans instructional strategies and pedagogy in accordance with instructional objectives, and instructional design is key to successful instruction
- ▶ E-Learning is different from classroom teaching, it needs new instructional design

2012/4/12

8



Purposes of Study

1. To explore e-learning course instructional design theory and pedagogy.
2. To discuss the development of the Library and Information Science digital curriculum.
3. To apply theory to the design and implementation of Library and Information Science courses.

2012/4/12

9



Research Methods

- ▶ Case study method
- ▶ Case Study of “Information , Organization and Access” Course , NCCU Library and Information Studies E-learning Master’s Program.
- ▶ Follow Dabbagh (2005) Pedagogical Design Model

2012/4/12

10



E-Learning Course

- ▶ An e-Learning course is one in which learners learn with digital media
- ▶ Digital technology and E-Learning change teaching and learning
- ▶ An E-learning curriculum is composed of teachers, course content , and instructional methods

2012/4/12

11



Promising Practices in Online Teaching and Learning

Effective Concepts of E-learning :**Student centered and interaction between teacher and students**

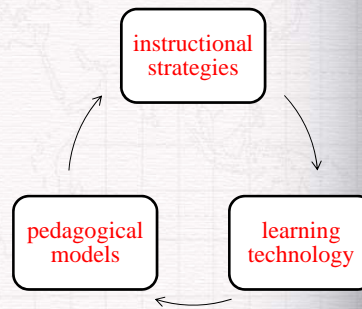
1. Good Practice Encourages Student-Faculty Contact
2. Good Practice Develops Reciprocity and Cooperation Among Students
3. Good Practice Encourages Active Learning
4. Good Practice Gives Prompt Feedback
5. Good Practice Emphasizes Time on Task
6. Good Practice Communicates High Expectations
7. Good Practice Respects Diverse Talents and Ways of Learning

2012/4/12

12

Dabbagh E-learning Pedagogical Models Design Framework

- Dabbagh proposed an E-learning pedagogical model design framework.
- Shows the e-learning instructional design framework by the interaction of pedagogical models, instructional strategies, and learning technology.



2012/4/12

13

E-learning Constructivist Pedagogical Model

- To create a cooperative, self-consciousness, multiple perspectives, self-management learning culture.
- The teacher's role is to offer the feedback, support, and communication to the learner.
- To design effective and meaningful e-learning, instructional design is needed. Teachers must be able to flexibly apply theory and instructional design and implementation, and link the theory and the implementation in a systematic way.

2012/4/12

14



E-learning Instructional Strategies

1. Enhance or support real learning activities.
2. Promote students' problem solving, exploration, and assumption skills.
3. Promote cooperation, social networking, negotiation, and coordination.
4. Support role-playing activities
5. Support feedback and language presentation
6. Support for multiple perspectives
7. Support for modeling and interpretation
8. Provide learning scaffolding

2012/4/12

15



E-learning Course Delivery Mode

- ▶ **Asynchronous mode, synchronous mode, and hybrid mode.**
- ▶ Asynchronous mode: Put course content on the web for a long time; learners won't be limited by time, people can always choose their own time to learn.
- ▶ Synchronous mode: Emphasis on real-time communication and interaction
- ▶ Hybrid mode: teachers can select a mix of physical classroom, synchronous mode or asynchronous mode to teach according to their needs

2012/4/12

16



E-learning Pedagogies

- ▶ Constructivist Learning
 - ▶ most suitable in the e-learning environment.
- ▶ Online Collaborative Learning
- ▶ Project-based Learning.

2012/4/12

17



Constructivist Learning Theory

- ▶ Constructivism advocates that knowledge is active construction by the learner. Learning is based on the existing experience of learners, learning is the process of active construction of new knowledge.
- ▶ Learners are the center of learning, they interpret teaching materials based on existing experience, and actively participate in various learning activities, reflect on thinking about the original knowledge, and then construct new knowledge.

2012/4/12

18



Online Collaborative Learning Pedagogy

- ▶ Online Collaborative Learning(OCL) is a new theory of learning that focuses on collaborative learning, knowledge building, and Internet use as a means to reshape formal education for the Knowledge Age.
- ▶ OCL Pedagogy discusses a variety of online pedagogies that can facilitate knowledge building in educational settings, particularly group discussions, seminars, debates, problem-solving activities and teamwork related to invention and innovation.

2012/4/12

19



Project-based Learning

- ▶ Project-based learning is an instructional method centered on the learner.
- ▶ The learners are more autonomous as they construct personally-meaningful artifacts that are representations of their learning
- ▶ Learners typically have more autonomy over what they learn, maintain interest and are motivated to take more responsibility for their learning

2012/4/12

20



OUTLINE

- Introduction
- Instructional Design for E-Learning
- Library and Information Science E-learning
Master's Programs and E-Learning Courses
- E-learning Course Instructional Design Case Study
- Conclusions

2012/4/12

21



Library and Information Science E-learning Master's Program

- Graduate Institute of Library, Information and Archival Studies, NCCU found that there was a need amongst school teachers for Library and Information Science E-Learning Master's courses.
- Master courses have enrolled students since September 2009, the current is the third one.

2012/4/12

22



Program Objectives

1. Provide on-the-job training opportunities for school teachers and librarians.
2. Cultivate the leaders of information literacy and library management.
3. Cultivate the professional and managerial talents of various types of libraries and information institutions.
4. Cultivate digital libraries and digital archives talents.

2012/4/12

23



E-Learning Courses

- ▶ We currently offers 14 courses, online courses taught asynchronously and synchronously, with four weeks face-to-face learning or examination for each course.
- ▶ To graduate, students must have completed the required courses and complete a master's degree thesis in two to four years.
- ▶ 16 master's degrees have been awarded since 2009, when we started to enroll students.

2012/4/12

24

LIS E-Learning Program Providing 14 Courses					
課程名稱	必選修	學分數	授課學期	授課教師	教學方式
圖書資訊學研討	必	3	一上	蔡明月	數位
知識組織與資訊取用	必	3	一上	王梅玲	數位
研究方法	必	3	一上	楊美華	數位
讀者服務研討	選	3	一下	蔡明月	實體
資訊科技融入教學	選	2	一下	陳志銘	數位
學校圖書館管理	選	2	一下	楊美華	數位
檔案學研究	必	3	二上	薛理桂	數位
數位圖書館	選	3	二上	陳志銘	數位
數位學習教學設計	選	3	二上	洪煌堯	數位
電子文件管理專題	選	3	二下	林巧敏	數位
公共圖書館	選	3	二上	林巧敏	實體
校史館管理	選	3	二下	薛理桂	實體
閱讀與圖書館	選	2	二下	曾淑賢	實體
數位館藏發展與管理	選	3	二下	王梅玲	實體

Case Study

2012/4/12

26



Background of Case Study

- ▶ The E-learning course of “Information organization and access” was chosen as a case study.
- ▶ It was taught in 2011, by Dr. Meiling Wang, with a total of 27 students enrolled.

2012/4/12

27



Course Objectives

1. To discuss the theories and practices about the organizing and accessing of a variety of information resources and information systems in information society.
2. To understand the information and knowledge life cycle, the production and use of a variety of information resources, and a variety of information resources and information systems.
3. To investigate the statistics and access theory of library automation systems, information systems, and database systems.
3. To explore the theory and practice of collection development and management.
4. To explore information organization theory and methods to support information retrieval and access.

2012/4/12

28

Course Content		
時間/課程傳授模式	主題	作業與活動
一、實體課程	數位課程平台介紹與政大圖書館資料庫介紹	作業與活動 分組/破冰
二、數位課程	單元1資訊組織與取用概論	作業一
三、數位課程	單元2資料庫與系統設計	
四、數位課程	單元3資訊查詢/使用者資訊行為	
五、數位課程	單元4出版與館藏發展概論;數位出版	
六、數位課程	單元5圖書資訊選擇與館藏政策	
七、實體課程	臺灣大學圖書館參訪	參訪學習單
八、數位課程	單元6圖書資訊採購與館藏建設	作業一報告
九、數位課程	單元7資訊組織概論	作業二
十、數位課程	單元8資訊組織表述的結構與標準	期末報告
十一、數位課程	單元9資訊描述	
十二、實體課程	演講 張慧銖教授[數位典藏與資訊組織]	演講學習單
十三、數位課程	單元10分類系統	作業二報告
十四、數位課程	單元11主題語言與權威控制	
十五、數位課程	單元12metadata概論	
十六、數位課程	單元13知識組織與取用新發展趨勢	課程總結與複習
十七、數位課程	期末報告(I)	期末報告
十八、實體課程	2012/4/14 期末報告(II)	期末報告

Implications of Constructivist Learning

- ▶ This course use a constructivist learning theory in the class and one assignment. the theme is "exploration information system and its collections and users', members of the group selected one subject areas (such as the history of Taiwan) to introduce the features of this theme, and pick three high-quality database system or a digital archive system to explore.
- ▶ Hope that students can build their understanding of the information system by learning contexts.

2012/4/12 30



Exercise I: Information systems with Subject topic

組別	主題知識資料庫
第一組	資訊科學
第二組	數位典藏
第三組	電子商務
第四組	台灣文學
第五組	新聞傳播
第六組	中國古籍
第七組	教育
第八組	台灣歷史
第九組	投資理財

2012/4/12

31

Implications of Online Collaborative Learning

- ▶ The teachers use the Internet, emphasizing learning and knowledge construction, learner co-operation online.
- ▶ After class, the teacher will design weekly course unit topics, and encourage students to participate, post the answers and their questions.
- ▶ Teacher responds to students, and students have dialogue with each other, too.

2012/4/12

32

國立政治大學數位學習平台 - Windows Internet Explorer

http://wm3.nccu.edu.tw/learn/index.php

Online Collaborative Learning Implications

國立政治大學數位學習平台

102058 您好！您正在[教室環境]中 全校 137 人 | 全班 1

e-Learning

學習互動區 評量區 資訊區 社交討論區 個人區 校園廣場

1001 知識組織與資訊取用_六 | 課程公告 | 開始上課 | 課程討論 | 線上討論 | 議題討論 | 分組討論 | 歷史會議錄影列表 | 好站連結

板名：單元四、館藏發展與管理

篇數/總數：43 / 87

張貼者：100913006 (陳芳雅)

張貼時間：2011-10-15 19:47:34

標題：100913006~大雄的哆啦A夢；我的大河馬書房

在學校我是設備組長
也負責學校圖書館營運
當然就包括閱讀及圖書館利用教育的推動
因為6月多剛好是我們學校圖書館閱讀推動教師的訪視
我利用了一個下午將訪視ppt重新整理
加入學校社群及館藏分析並刪除及修正了一些資料
最後還做了一點不甚精確的成效調查
覺得這樣做~有圖有真相~哈哈
也附上一份圖書館閱讀推動計畫[簡案]

33

Student presenting and sharing her library services

建立閱讀基地

推動閱讀教育

歡迎光臨~大河馬書房

34



Implications of Project-based Learning

- ▶ The final report presents as project proposal and by group cooperation, entitled: "Special Collection Digital Archives Project".
- 1. To select a special collections theme,
- 2. Planning and Implementing Digital Archives Project,
- 3. To collect at least 20 items of digital objects, including information documents or artifacts made to be digitized as digital objects
- 4. Including all digital objects with metadata in the collections of the Digital Archives website, offering functions of searching and browsing.

2012/4/12

35

Project-based Learning Process(cont'd)

1. **Introduction.** Teacher uses an introduction "to set the stage" for the project, this often contributes to motivating learners
2. **Task.** Teacher guided question or driven question explicates what will be accomplished and embeds the content to be studied.
3. **Resources.** Teacher provides related resources and data to be used.
4. **Process.** Teacher initiated processes should include activities that require higher-level and critical thinking skills, such as analysis, synthesis and evaluation of information.

2012/4/12

36



Project-based Learning Process

5. **Guidance and scaffolding.** As learners need help, guidance and scaffolding will be needed..
6. **Cooperative/Collaborative learning.** Final projects include groups or teams.
7. **Reflection.** The superior examples of project-based learning offer an opportunity for closure, debriefing or reflection.

2012/4/12

37



Instructional Strategies(cont'd)

- ▶ Four instructional strategies were used
 - ▶ Promotion of student problem-solving, promotion of cooperative learning, interactive communication and discussion, as well as support for multiple perspectives.
- ▶ Promotion of problem-solving by students: Design assignments, asking the students questions.
- ▶ Promotion of cooperative learning: one assignment and the final report are the group assignments.

2012/4/12

38



Instructional Strategies

- ▶ Interactive communication and discussion: students listen to other people's introduction to the book website, and respond with their opinions actively.
- ▶ Supporting multiple perspectives: the students often raised different views and answers with the teacher and other students in the weekly discussions.

2012/4/12

39



E-learning Course Delivery Mode

- ▶ The course uses the NCCU e-learning platform
 - ▶ the system features included individual learning, cooperative learning, assignments and tests, teaching management.
- ▶ The course use synchronous mode, lectured by the teacher, and shared the literature jointly with students.
- ▶ Synchronous courses go through by Joinnet video system
- ▶ After school, students have an explore- the- issues- forum to put forward their views.

2012/4/12

40

JoinNet - 線上人數 (29)

檔案(F) 工具(T) 設定(S) 說明(H)

白板 共同瀏覽網頁 桌面共享 遠距離操控

功能表 圖片 清除標記 檢視 上頁

Synchronous course go through by Joinnet

使用者研究 User Study

資訊行為 Information Behavior

資訊需求 Information Needs

資訊尋求 Information Seeking

資訊使用 Information Use

搜索 Search

取用 Access

使用 Use

瀏覽 Browsing

閱讀 Reading

數位閱讀 Digital Reading

管理 Manage

2012/4/12

41

01:34:07 19:00 9/27/2011 144 min 312Kbps 用戶名單

Interaction of Teacher and Students

1. Course Announcement

2012/4/12

2. Teaching Materials

42

3. Course discusses



序号	讨论主题	时间	状态
1	讨论主题1	2012-09-27 18:00	进行中
2	讨论主题2	2012-09-27 18:00	进行中
3	讨论主题3	2012-09-27 18:00	进行中
4	讨论主题4	2012-09-27 18:00	进行中
5	讨论主题5	2012-09-27 18:00	进行中

4. Online discussion



序号	讨论主题	时间	状态
1	讨论主题1	2012-09-27 18:00	进行中
2	讨论主题2	2012-09-27 18:00	进行中
3	讨论主题3	2012-09-27 18:00	进行中
4	讨论主题4	2012-09-27 18:00	进行中
5	讨论主题5	2012-09-27 18:00	进行中

5. Subject discussion



序号	讨论主题	时间	状态
1	讨论主题1	2012-09-27 18:00	进行中
2	讨论主题2	2012-09-27 18:00	进行中
3	讨论主题3	2012-09-27 18:00	进行中
4	讨论主题4	2012-09-27 18:00	进行中
5	讨论主题5	2012-09-27 18:00	进行中

6. Group discussion



序号	讨论主题	时间	状态
1	讨论主题1	2012-09-27 18:00	进行中
2	讨论主题2	2012-09-27 18:00	进行中
3	讨论主题3	2012-09-27 18:00	进行中
4	讨论主题4	2012-09-27 18:00	进行中
5	讨论主题5	2012-09-27 18:00	进行中

2012/4/12

43

The Effectiveness of Learning and Teaching Evaluation

- The course uses multiple types of assessment, including two assignments, final reports, tests and examinations, cooperative learning, group discussions, online discussions, and individual reports, group reports and class participation.
- Except the general examination, the teacher will also assess the effectiveness of student learning by the way of dynamic assessment, including the professor's observation of students learning attitude, students' implementation of portfolio assessment, and peer assessment of student learning performance.

2012/4/12

44



Conclusions

- ▶ NCCU made three years' effort into provide school teachers a new way to learn e-learning, information literacy and LIS new knowledge and skills .
- ▶ Digital technology opens up a new learning environment, e-learning, which is the learner-centered, interaction, cooperation, open, and innovative. However, e-learning needs new instructional design to achieve new type of learning.

2012/4/12

45



Key Concepts for Effective E-learning Instructional Design

- ▶ Best Practices of E-learning Course
 - ▶ **Learners centered and good student-teacher interaction**
- ▶ Effective E-learning instructional design
 - ▶ Constructivist Learning, Online Collaborative Learning, and Project-based Learning are the three suitable pedagogy for e-learning courses in instructional design
- ▶ Effective instructional strategies
 - ▶ promotion of student problem-solving, promotion of cooperative learning, interactive communication and discussion, as well as support for multiple perspectives

2012/4/12

46



Suggestions for Future Research

1. E-learning Master's programs are learners-centered, there should be teacher-student cooperation to develop e-learning curriculum and instructional strategies; and e-learning platforms designed to enhance students' learning outcomes should be reinforced.
2. Library and Information Science schools actively offer a number of e-learning courses to cultivate students' e-learning knowledge, and promote the implications of library and information services.

2012/4/12

47

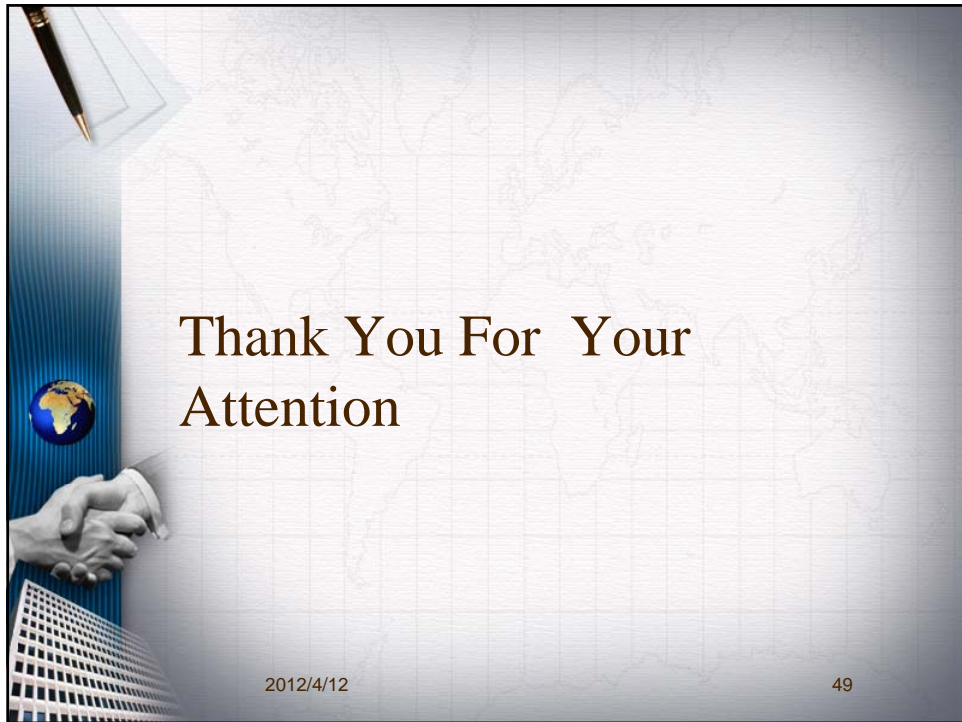


Suggestions for Future Research

3. More research into whether e-learning certification available to instructional design and learning outcomes.
4. Need more empirical research with respect to the student learning outcomes of a variety of instructional methods, comparison of classroom and e-learning differences on student learning effectiveness, and the evaluation principle and practice of various instructional methods is to be carried out in the future.

2012/4/12

48



Thank You For Your
Attention

2012/4/12

49