

A Course Design for Flexible Learning

Krassie Petrova
Auckland University of Technology

Auckland, New Zealand
Krassie.petrova@aut.ac.nz

ABSTRACT

Interpreting innovation as “combining information from diverse sources into new knowledge” this paper looks into the advantages which information and communications technology development can bring into the design of a more flexible mode of a delivery. An example of an undergraduate business degree technical course is described.

KEYWORDS

Online learning, distance learning, flexible course delivery, hybrid model

1. INTRODUCTION

Innovation is a synonym of “change” but also of “permutation”. It means “introduction” but also “deviation”. This paper presents an effort to combine two basic models of course delivery into a new and a slightly different teaching

model which behaves as a hybrid between distance and face-to-face learning, and has common features with both flexible and on-line learning. The model was developed in steps - starting from a traditional face-to-face learning environment and gradually adding flexible and distance learning components, and complementing class-based discussion and synchronous communication with a purpose-built on-line discussion environment. Various elements of the model were constructed and tested in the period 1998-2001. A Bachelor of Business course was used as a design vehicle (“Information technology Infrastructure for eBusiness”)(see also [13, [14]).

The next section of the paper presents some background assumptions and definitions upon which the model is built. A section describing the content and the structure of the course follows it. The paper ends with a brief conclusion.

2. BACKGROUND

Universities are facing challenges in the courses and programmes they offer: the increasing competition for students and the demand for improved access to resources drive the development of innovative

models [1] which incorporate emerging educational technologies. Teaching practices are opening themselves to alternative pedagogical approaches able to address concerns about student learning, engagement and participation [2].

2.1 Is Technology the Sole Answer?

Technology alone cannot provide a complete and satisfactory response to the demand for flexible learning environment offering high quality education. As Miesing [4] points out, computers can actually do more harm than good: instead of going through the difficult and “somewhat painful” process of learning, students might be misled to believe that finding clear-cut answers is more important than discovery and personal accomplishment. Plowman [5] suggests that the extended use of productivity and authoring tools creates an unprecedented opportunity for electronically enabled collaboration but might affect academic integrity.

One well-established model for flexible delivery - “distance learning”, has currently embraced the Internet as its technological vehicle of choice: the cyberspace can provide learning resources, a communication medium, interactivity and participatory tools. As Chappin mentions in [6], a number of major universities in the USA are “experimenting with, or offering” courses over the Internet (in about 75 percent of the North-American states). An impressive list of about eighty North-American universities offering on-line distance programmes and courses can be found in [18]- both at under- and postgraduate level. According to Miesing, about 35 MBA degrees were offered at least in part through distance education. An Internet search on “Web-based courses” reported in [17] resulted in more than 16 million hits.

2.2 Distance Education and Brick-and-Mortar Based Teaching

The literature on distance learning provides useful definitions and insights into the issues concerning distant course design, technology adoption and management. Hallmarks of distance education include: space/time separation of the teacher and the learner, and technology-mediated, non-contiguous communication between student and teacher [7]- also known as asynchronous communication. On

the other side, Web tools can permit synchronous communication and can be used to create an online learning environment which simulates a classroom. The opportunity to mix synchronous (face-to-face and online) and (on-line) asynchronous communication while offering a course in a traditional “brick-and-mortar” set-up gave me the idea to design a course with built-in flexibility, able to meet the needs of students who cannot attend classes regularly due to work commitments (typically part time students) while involving them as active participants in a discovery process.

2.3 Modes and Models for Course Delivery

Typical distance learning models are described in many literature sources. The case study presented in [10] involves an Internet-based graduate class with a short residency period (the subject taught is information systems analysis and design). The author concludes that there is a need for more in-depth empirical study of the relationship between technology and the nature of the subject matter - especially for more technical and ‘hands-on’ courses. Latchman & Latchman [11] propose the use of an asynchronous learning network (ALN) framework (see also [2]) for “lectures on demand” which allows students to take lectures synchronously in terms of time and “asynchronously” in terms of space, or entirely asynchronously. Noting that the experiences with ALN so far have been very positive the authors mention that various “incarnations” of the proposed scheme are being currently experimented with.

Several interesting examples from the literature are close to the approach I undertook (an example of which is described briefly in the next section). Ciglaric & Vidmar [8] developed an undergraduate course in computer communications and networking, which integrated classical and on-line lectures, video- and on-line tools and on-line assessment. The authors noticed an increased interest in the subject and more active participation. Miesing [4] split his post-graduate business ethics course into two halves - one with traditional readings and conventional discussions, and a second one, which involved Internet-based research and communication through a mainframe-based bulletin board system. Student feedback prompted him to conclude that students considered their experiences as “enormously

successful” (although the author found the student research work somewhat unsatisfactory and lacking in depth). Interestingly, both papers mention that in addition to the development of the new delivery mode itself, new forms for assessment should also be sought- with more emphasis on analytical and decision-making capabilities building.

Discussing the role of new information and communication technologies Langlois [9] predicts that more and more courses will be developed for flexible delivery, with “parts of the courses ... delivered traditionally, while others in WWW-based or other formats”. Dabbagh [17] suggests that Web based instruction can work hand-in-hand with traditional classroom instruction and coins the term “mixed mode” to describe it. Other authors introduce the term “hybrid model” to describe a teaching approach that combines some forms of face-to-face teaching with remote instruction in both synchronous or asynchronous modes ([16],[15]).

Although encouraged by the existing variety of models and cases, the innovative practitioner is nevertheless faced with basic questions such as “What is the right proportion of face-to-face and flexible components for “my” course”? What course design would be most appropriate for a flexible model applied to an undergraduate course in information technology?

3. COURSE DESIGN

AUT offers a well-developed learning environment with a fast intranet, fast Internet access, E-mail facilities, a range of Web servers, computer aided training software, a good range of productivity software, and at least two different Web environments for designing and conducting on-line courses. The development of even more sophisticated information technologies will continue as the knowledge industry undergoes cycles of rapid change [12]. A flexible course design needs to be adaptable to the advances in information and communication technologies and it seems that a modular structure would facilitate that need. A three-prong hybrid teaching strategy was developed, based on student participatory and tutorial activities, the use of Internet-based tools and

resources, and class contact hours.

3.1 Student Participation

Two different types of student participation are incorporated into the fabrics of the course: on-line, asynchronous, and synchronous (in class, face-to-face). The face-to-face participation is a traditional and is readings-based. The asynchronous participatory activities are more complex in their design.

3.1.1 Asynchronous Participatory Activities

Each activity involves an individual component and a group component. Students are asked to research a topic and contribute individually to the on-line forum on a regular basis during the discussion. At the end of the discussion students collaborate (in small groups) and create and post to the discussion forum either a summary of the discussion points, or an insightful statement about an aspect of special importance or interest. The discussion topics are chosen to be especially suitable for Internet-based research. The activities are allocated six weeks each. “BuinessOnLine” - a Web application available off- and on campus, was used as a discussion database.

3.2 Unit Based Tutorials

Seven tutorial units were designed and tested: three units cover HTML basics and on-line document design, two units explore networking, network security and Internet and intranet connectivity, one unit is dedicated to IT infrastructure acquisition and interactive RFP formats, and one unit introduces and develops the concept of Web site evaluation. All units are self-contained and are structured into activities, a significant portion of which is Internet-based. All units except the networking ones can be studied and completed in a flexible mode - working from any Internet-enabled PC-compatible computer environment.

3.2.1 Assessment

The course assessment structure incorporates a final exam. The rest of the assessed work is distributed as follows:

- a Individual research report on a technology-related topic, to be presented as an HTML document (publishable online)

- b Two individual/group on-line activities
- c A group multi-component assignment, which includes: three reports (the business case, a Web site evaluation report and an acquisition planning report), a live, fully functional electronic storefront prototype, an interactive publishable RFP, and a Web evaluation tool.

3.3 Teaching and Learning in Class

The course is usually taught with at least two parallel streams running. While the online discussions and the tutorial units are strongly structured, the class contact hours are more loosely defined as a combination of lectures and seminars. Each stream creates its own atmosphere and working space.

4. CONCLUSION

The course described is neither an on-line nor a distance one. It features distance and on-line learning components and can be easily converted into a course taught within four weeks of class contact, followed by seven weeks of distance learning and a finishing two-week block. Such a hybrid structure would meet student demands for flexibility without compromising the quality of intramural learning and will be in line with the movement from campus-based learning to Web-based education [3]. New educational technologies can be incorporated into the model, and a similar mode has been adopted by some leading academic institutions in the USA [15].

REFERENCES

1. **Zirkle, C. (2000)**. "Preparing Technical Instructors Through Multiple Delivery Systems: A Working Model". T.H.E Journal, 28(4).
2. **Jaffee, D. (1997)** "Asynchronous Learning: Technology and Pedagogical Strategy in a Distance Learning Course", Teaching Sociology, 25(4).
3. **Breuleux, A. et al. (1999)**. "CollabU: A Design for Reflective, Collaborative University Teaching and Learning" in Hoadley, C. & Roschelle, J. (eds), Proceedings of the Computer Support for Collaborative Learning 1999 Conference, Stanford University.
4. **Miesing, P. (1998)**. "B-Schools on the I-way: Avoiding Potholes, Dead ends, and Crashes", Journal of Management Education, 22(6).
5. **Plowman, T. (2000)**. "Academic Integrity and Information Technology", TechTrends, 44(1).
6. **Charp, S. (1998)**. "Distance Learning", T.H.E. Journal, 26 (4).
7. **Sherry, L. (1996)**. "Issues in Distance Learning", International Journal of Educational Telecommunications, 1(4).
8. **Ciglaric, M & Vidmar, T. (1998)**. "Use of Internet Technologies for Teaching Purposes", European Journal of Engineering Education, 23(4).
9. **Langlois, C. (1998)**. "Universities and New Information and Communication Technologies: Issues and Strategies", European Journal of Engineering Education, 23(3).
10. **Zhang, P. (1998)**. "A Case Study of Technology Use in Distance Learning", Journal of Research on Computing in Education, 30(4).
11. **Latchman, H. & Latchman, S. (2000)**. "Bringing the Classroom to Students Everywhere", Journal of Engineering Education, 89(4).
12. **Leonard, D. (1999)**. "The Web, the Millennium, and the Digital Evolution of Distance Education", Technical Communications Quarterly, 8(1).
13. **Petrova, K. (2000)** "Teaching Electronic Commerce: An IT Infrastructure Design and Management Approach", JACIT 4(1).
14. **Adamson, B. & Petrova, K. (1998)** "Team Collaboration on a Newly Developed Paper", JACIT, 2(2).
15. **Estabrook, L. (1999)** "Will Distance Education Destroy the University?", <http://alexia.lis.uiuc.edu/~estabrook/willdistance.html>.
16. **Grycs, C. (1999)** "Experiences with a Hybrid Distance Education Model in Central and Eastern Europe", <http://eu.uci.edu/programs/ifipconf/>.
17. **Dabbagh, N. (2000)**. "The Challenges of Interfacing between Face-to-Face and On-line Instruction", TechNews, 44(6).
18. **Hutchison, C. (2001)** "The ICP Online: Jeux sans Frontiers on the CyberCampus", Journal of Computer-Mediated Communications, 1(1).