An e-learning experience – a written analysis based on my experience in an e-learning pilot project

Kabita Bose

The author

Kabita Bose is Lecturer, Department of Primary Education, University of Botswana, Gaborone, Botswana.

Keywords

Learning, Internet, Computers

Abstract

This article presents an insight into one of the e–learning pilot projects that were selected by the Educational Technology Unit (EduTech) of the Centre for Academic Development (CAD), University of Botswana (UB). This e-learning package was designed and delivered to meet the needs of the course "Issues and trends in early childhood education" (EPI-642), a three-credit course required for the Year One, Master's Programme, in the department of Primary Education, University of Botswana. A flexi-time, gradual, phase-wise transition from traditional face-to-face teaching, teaching with electronic medium and to a SMART classroom (e-learning lab) approach was followed to deliver this course. It resulted in a flexi-time, student-centred, e-learning package that retained the learning qualities of traditional teaching and personal guidance and mentoring and enabled enhancement of research skills and certain computing skills in students.

Electronic access

The Emerald Research Register for this journal is available at
http://www.emeraldinsight.com/researchregister

The current issue and full text archive of this journal is available at
http://www.emeraldinsight.com/1065-0741.htm

Campus-Wide Information Systems
Volume 20 · Number 5 · 2003 · pp. 193-199
 · ISSN 1065-0741
DOI 10.1108/10650740310507399

Introduction

E-learning is "the use of Internet and digital technologies to create experiences that educate fellow human beings" (Horton, 2001). E-learning was born during the dot-com frenzy. The term e-learning was not well known a few years ago. But now, it is very common, especially in the university community. Figures reveal that in 1999, more than 50 per cent of US college students were planning to have Internet access from their dorm rooms, and virtually all were planning to have some access from some campus location, and more than 90 per cent of students accessed the Internet with 50 per cent accessing the Web daily, and nearly 40 per cent of all college courses used Internet resources (OECD, 2001).

Network technologies, like the Internet, creates, fosters, delivers, and facilitates learning, anytime and anywhere. It helps in the delivery of individualized, comprehensive, dynamic learning content in real time, aiding the development of communities of knowledge. It links learners and practitioners with experts. It helps in delivering accountability, accessibility, and opportunity to allow people and organizations to keep up with the rapid changes that define the Internet world. It is a force that gives people and organizations the competitive edge to allow them to keep ahead of the rapidly changing global economy (www.learnativity. com, n.d.). Perhaps because of this, the penetration of the Internet in the post-secondary sector is marked.

An initiative was taken to introduce e-learning at the University of Botswana (UB). E-learning was defined in a little different way in UB. It read as:

> The appropriate organisation of information and communication technologies, for advancing student-oriented, active, open, and life-long teaching-learning processes (Thurab-Nkhosi, 2003).

With this guiding principle for e-learning, EduTech of the CAD, UB invited proposals from different faculties and departments to conduct a pilot study, in December 2003. The author of this article also sent a proposal for designing and delivering a three-credit course "Issues and trends in early childhood education" to the Year One, masters' students

Campus-Wide Information Systems
Volume 20 · Number 5 · 2003 · 193-199

of the Department of Primary Education by using an e-learning approach. It was approved, and a development team, led by the author, who was also the content expert, was set up. The course was developed in collaboration with the entire team. The author acted as the instructor and the moderator of the e-learning component of the course. The course was delivered successfully in January-May 2003.

Purpose of the e-learning course

A flexi-time approach

An e-learning course offers a flexi-time, flexi-location approach by changing the learning environment:

> It enables learning to take place in a variety of different places, both physical and virtual. Learners now have a choice and increasingly wish to combine the options, choosing when and where they study and learn. For education providers, the preparation and integration of materials and services become a challenge, since it fundamentally changes the learning environment (OECD, 2001, p. 22).

Students who have a full-time job and tight work schedules, who have young children, or disabilities and are unable to attend regular classes at a specific time and location often require and really appreciate a flexi-time flexi-location course like this. But such courses need self-motivated and independent learners (Mantyla and Woods, 2001).

In the present project, most of the students of the target group were part-time students at UB, as they were full-time working professionals, i.e. primary school teachers. It was felt that a flexi-time e-learning course would enable the delivery of the course material at their workplace, or at home, or at cybercafé, or at campus, according to their convenience and make it easy for teachers who have to carry out lifelong learning concurrently with their normal duties to learn in "flexi-time" at "flexi-location".

A mixed-mode, blended approach

E-learning was misinterpreted after it was introduced. It was oversimplified and wildly optimistic. People described e-learning as putting all learning on computers. They felt, e-learning could bring the savings in instructor salaries, and could keep people out of the class! They felt students could learn anywhere, whenever they wanted and could save time by studying only what they needed and could learn at an optimal pace, neither held back nor bypassed by the rest of the class. But they forgot that learning is social. Even in the classroom, lots of learning takes place informally, between students. Most people learn well when computer-mediated lessons are combined with virtual classes, study groups, team exercises, mentors and help desks, off-line events, and on-line coaches. Learning has not changed. Computers can make aspects of learning more convenient but they do not eliminate the need for human intervention. The presumption that e-learning would automate every aspect of learning sounds unnatural (Internettime.com, 2003).

Thus a mixture of both face-to-face and distance mode was thought to be most appropriate for the target group. In fact, all "conventional" universities are becoming mixed-mode, where a convergence of distance education and conventional education is becoming apparent. In many countries, dual mode institutions are emerging and the distinction between traditional and distant mode is disappearing. The institutions are being replaced by a "mixed-mode" education system, which is substantially centred on communication and technology (OECD, 2001).

A student-centred approach

An e-learning package not only provides a marriage of Internet, digital technology and learning, but also facilitates student/learner-centred learning.

In recent years, there has been a shift from the teacher/instructor-centred approach to a student-centred approach. A teacher-centred approach believes in disseminating and pouring content into empty heads, where a student passively listens rather than engaging in an interaction between what is incoming and what is already there. With this approach the students ultimately recited verbally some concepts on examination scripts. In this form of instruction, teachers were seen as the "gatekeeper" of knowledge, which is acquired from textbooks. This teacher-centred

textbook-based learning was not fitting into our ever-changing information-rich, global society. As it is well said by Cook and Cook (1998), that:

> Rapidly changing political, social, and economic environments often made textbooks and articles outdated soon after they are published.

In a teacher-centred approach, the students never learned how to find out the right information and how to discover and learn to use higher level thinking skills, such as analysis, synthesis and evaluation to disseminate the information to others.

On the contrary, a student/learner-centred approach believes that students are active participants and construct their own knowledge by interacting with the information available. It believes in rewiring the brain by sculpting new pigeonholes and adding connections. It places students at the centre of a teaching/learning process and believes that the teachers are the mentors, navigators, facilitators or "guides" that help students to access, organize, construct and transfer information to solve authentic problems. According to Harmon and Hirumi (1996):

> Student-centred learning is where students work in both groups and individually to explore problems and become active knowledge workers rather than passive knowledge recipients.

In this approach, the students gain expertise not only in the content area being studied, but also in the learning process, i.e. how to learn through discovery, inquiry, and problem solving. Thus it was felt that a student-centred e-learning package would be appropriate for the target group.

ICT empowerment

E-learning generally promotes greater proficiency in information technology (IT) skills, which helps in personal employability and corporate competitiveness (Stephenson, 2001).

The whole world is changing towards an information age. The intention of Botswana not to be left behind in the use of the modern technology is clear in the government's Vision 2016 (Presidential Task Group, 1997), which states that:

> Botswana must recognise the importance of information and of developing efficient information systems and networks for the support of research, education, development and communication with the rest of the world.

This aim could only be realised by educating the nation on the importance and use of the technology by facilitating ICT empowerment. Use of information and communication technology (ICT) can be of great help in this regard. As it is stated in OECD (2001, p. 23):

> ICT can empower the learner by offering choice and potentially more engaging and effective means of learning. ICT can accommodate a whole range of different learning styles and preferences. Individuals differ markedly in their appreciation for ability to learn from different types of communications, learning processes and materials. Interactive multimedia and the opportunity to combine various media resources, styles and methods is a key feature of ICT-enabled learning.

An e-learning course, which requires a repeated use of ICT resources like computers, floppy discs, printer, multimedia projector, Internet connection, e-mail and discussion forum to retrieve information, process it to use it, would ultimately empower a student with computing skills. After all, the only way to learn a skill is to practice it. One may not have any interest in how a system works, but might be interested in knowing how to use it to receive information The essence of real education is repeated practice (Schank, 2002). The author was thus interested to establish the best practices that are required to create high-quality e-learning packages, because this would not only cover the important issues of the subject area but would also enhance the basic computer skills in the students through the use of computer resources.

Enhancement of research skills

A key component in an e-learning approach is the student's ability to obtain information and research materials (McVay Lynch, 2002). The authors felt that an e-learning course, with an Internet access and a lot of materials like Web site links would encourage the students to actively participate in searching materials for their active learning and would enhance their research skills.

With these in mind, the author felt that it would be beneficial to establish a phase-wise, student-centred, flexi-time course in order to optimise resource management through

interaction, counselling, coaching, assessment and evaluation. She also felt that the university would be able to make better use of their resources in terms of physical place and human resources and update the course to take care of advances and development and delivery of the same through an electronic medium. She felt that the propagation of such courses would increase the market opportunities for the ICT industry in terms of hardware, software and services, including ISPs. Thus a phase-wise, mix-mode/blended e-learning course, which strives to be individualistic, flexible, competency-based, varied in methodology and not always constrained by time or place was proposed for the target group, with a plan to achieve it by using a variety of instructional tools and methods, as well as flexible arrangements of time and place. The course was evolved and delivered in three phases by using a face-to-face approach and independent/online learning time.

The objectives of the proposed e-learning course were as follows:

- To provide the basic contents of the course "Issues and trends in early childhood education".
- To provide a flexi-time course to the students.
- To provide a mixed-mode/blended course in phases.
- To provide student-centred teaching/learning processes.
- To provide ICT empowerment to the students.
- To provide and enhance research skills of the students.

The objectives of the basic contents of the course were formulated.

Course development

> The most effective e-Learning, whether it is delivered as an e-Learning solution or conventional face-to-face instruction, occurs as a result of careful planning derived from the needs of the organisation and learner (Syracuse University Continuing Education, 2001, p. 1).

This statement states how it is important to design a course systematically. In the present project, an attempt was made to design the course systematically. Once the course was approved, an EduTech team was formed which consisted of the following members:

- project leader/content expert/author;
- instructional designer;
- graphic designer;
- library representative;
- editor;
- research assistant; and
- research project leader.

The team worked in a collaborative manner to develop the course.

A rough course schedule and a curriculum/topic structure were developed. The structure of the Web site was finalised, which actually determined the structure of the Web page, the areas, and the pages under each of those areas that the course would need. The proposed structure consisted of a home page with icons for establishing links with course outline, course schedule, course content, e-mail, discussion board, and research.

Content of Web pages was created in-house. The content expert, with the help of the research assistant and library representative, searched and extracted the right list of readings, list of Web sites links, handouts and presentation material. The instructional material was generated electronically by using ICT resources. The created material was then converted to html format, and was uploaded to the WebCT platform with the help of the instructional designer. The graphic designer provided the logo, and icons to be added to the page, which actually made the WebCT course look very striking. The content of the course material was regularly up-graded. The e-learning package thus developed was hosted on the WebCT platform in the UB server.

Course implementation

The course was launched and the students met at the SMART classroom (e-learning lab) of EduTech, CAD. The SMART classroom had a sufficient number of computers with a WebCT platform and the instructor had an access to a multimedia projector for delivering the required material. The lab had every facility that could

be required by the students and the instructor. The course consisted of six modules and was delivered in three phases. A mixed-mode, blended course approach was observed. There was a gradual shift from teaching face-to-face to on-line presentations by using WebCT tools. In the first phase the face-to-face contact was for about three hours per week, in the second phase it was reduced to two hours and in the third phase it was reduced to one hour only. The first phase continued for just one session, as the students were curious to use the on-line material. The second phase continued for about eight sessions and the third phase continued for about three sessions. Every session was a blend of both face-to-face and online teaching. The students spent the first part of the session face-to-face in accessing course material, in making classroom presentations and discussions and in receiving the summarised version of the content of a module through a Power Point presentation (using a multi-media projector) from the instructor. After summarising the content, the instructor uploaded the Power Point presentation to the WebCT platform for students' access. The second part of the session was spent on making preparations for the next classroom presentation. This was done both face-to-face and online. During second and third phase, the students accessed course material and made preparations mainly on-line, either during the class timing or any other time convenient to them, as the preparatory materials like references, Web site links, and handouts were provided on the WebCT platform.

The students took an orientation course on the first session. They were given an account and password to access the course from any Internet resource available. They were given a special training on how to use the WebCT platform, how to use diskettes to copy and print, and how to access the course information on-line. On the first day of the commencement of the course, some of the students could not even hold the mouse. So the author spent extra time and effort and managed to boost their enthusiasm and motivate them to use the computer effectively.

Communications between teacher and students through a discussion forum was an important aspect of this course, as the discussion forum allows to post learning event information, or announcements or questions, which the facilitator and other learners can answer (Jolliffe *et al.*, 2001). During the second and the third phase, the students participated in discussions and made comments on the issues that were posted on the discussion forum.

Use of e-mail by the instructor is a common event, which occurs a number of times per week, because e-mail can inform students about activities, student grades, remind about upcoming events (Stephenson, 2001). In this project, also, the students received and sent mails to the author quite regularly. The author was in contact with the students through e-mails to make an announcement, or to receive assignments or to post their grades and so on.

The nature of the course made it *per se* active and encouraged them to participate in active research. A good amount of personal tutoring took place along with face-to-face teaching. The students searched relevant materials, made copies on the floppies, printed them and used them in classroom presentations. Towards the end of the third phase the students were found to be quite confident working with the Net alone.

In a student-centred approach, the instructor evaluates the student's progress towards learning objectives and helps students acquire the basic skills to learn, and provides a basis for learning throughout life. In this course, the students were assessed at a regular interval. The students were encouraged to submit assignments through e-mail and write quizzes/tests online, because a combination of an online-quiz and tests determine if the students are, in fact, learning the material that is required in the course (Mantyla and Woods, 2001). At the end of the course they presented an electronic version of a research paper, with a hard copy. The assessment criteria were as shown in Table I.

Table I The assessment criteria

	Per cent
Assignments/tests	30
Presentations/discussions	20
Research paper	50
Total	100

Course outcome

Most of the desired objectives of this pilot project were achieved. A blended, mixed-mode course was provided with a balance between content and process. It offered student-centred, active, open and life long teaching/learning environment. The main focus was on, to maximize student productivity, knowledge acquisition, skills augmentation and development of personal and professional abilities (Arizona State University/Northern Arizona University/The University of Arizona, 2003). The process implied active involvement by the student and the integration of academics with the student's total development. The students performed quite well in this course. Two students achieved "A" grade, two achieved "B" grade. And one managed "C+" only, as she could not be regular due to some personal problems and could not take part in some of the quizzes, presentations and discussions. The students were engaged in active research of content materials, provided on the WebCT platform. They enjoyed the course and found it "educative", "informative" and "facilitator" of research skills. They searched and selected the topic of their research paper independently.

The students enhanced their basic computing skills. The same students who could not hold the mouse prior to the course, could later access the materials on the Web site, take part in discussion forum, send e-mails, type documents, though slowly, attach files/documents and mail it, could take part in quizzes/tests and could copy information to disks and use it. They assessed themselves as "computer illiterate" prior to the attainment of the course and as "good" in computing skills after the delivery of the course.

The design of the course and the architecture of the Web had made the course accessible from any computer anywhere as long as it was connected to the Internet and the user had an account and the password. All that was required was access to computers that work, and are compatible to WebCT and have a moderated Internet connection. But the external limitations did not permit the students to have access to a computer and the Internet outside the university. The access to computers, let alone Internet, was absent in any of the primary schools where the students worked. Access to cyber café or public Internet outlet was not available or was exorbitantly costly.

There was a problem in UB also. There was limited access to computers in good working condition outside the SMART classroom. Thus, the students could access the course materials, anytime, in the SMART classroom only. Another problem was the access to the Internet was not uniform and, in many cases, so slow that the page could not be downloaded and often a display appeared as "page cannot be displayed". This is not surprising as Internet penetration in Botswana is very low.

The most important outcome is that the quality is standardised in this e-learning package. Now a relatively new instructor will be able to deliver the course as correctly and accurately as possible, with this package. The author feels that it would be feasible to offer the same course much in the same way next year. But to design and develop another e-learning course, the author would need a similar kind of support and infrastructure; because it demands a lot of extra time, effort to design and administer an e-learning course like this. It has been correctly said by Mantyla and Woods (2001, p. 330):

> Whether you are developing the course, reading a Web-based article, doing an assignment, or grading a project, it will take twice as long as you think. Although there are many times when technology can be a time saver, at least in the beginning, technology can be a time drainer

Conclusion

The quality of the e-learning course was standardised. It was feasible and possible that the complete programme at the academic year of this offering was delivered using e-learning approaches. Most of the desired objectives of this pilot project were achieved. It was possible to design and deliver a mixed-mode, blended, flexi-time, student-centred course, which empowered the students with basic computing skills, enabled them to enhance their research skills and provided them with the basic content material of the proposed course. It is believed that this attempt to initiate a step-by-step approach with student-oriented-active learning,

to encourage and explore the material available on a wider spectrum like Internet and to provide an active participation in collaborative life-long teaching-learning processes would enable one to achieve the real essence of an e-learning course. This may be popularised. It is worth mentioning at this point, that e-learning requires planning, a planning which is especially important for courses that are dependent on a particular technology (Mantyla and Woods, 2001). Perhaps, the Government of Botswana could plan and increase access to computers and Internet to the common man. This would be necessary to get the total advantage of an e-learning course like this.

References

Arizona State University/Northern Arizona University/The University of Arizona (2003), "Definition of learner-centered education", Arizona Faculties Council (AFC), Learner-Centered Education in the Arizona University System, available at: www.abor.asu.edu/4_special_programs/lce/afc-defined_lce.htm (accessed 11 June).

Cook, J. and Cook, L. (1998), "How technology enhances the quality of student-centred learning", *Quality Progress*, Vol. 31 No. 7, pp. 59-63.

Harmon, S.W. and Hirumi, A. (1996), "A systemic approach to the integration of interactive distance learning into education and training", *Journal of Education for Business*, Vol. 71 No. 5, pp. 267-71.

Horton, W. (2001), "Leading e-learning", American Society for Training and Development, available at: www.elearninggurus.com/articles.html (accessed 16 May 2003).

Internettime.com (2003), "How people learn", Internet Time Group, available at: www.internettime.com/Learning/How%20People%20Learn.htm (accessed 18 June).

Jolliffe, J., Ritter, J. and Stevens, D. (2001), *The Online Handbook: Developing and Using Web-Based Learning*, Kogan Page, London.

Learnativity.com (n.d.), "e-Learning", available at: www.learnativity.com/elearning.html (accessed 18 June 2003).

McVay Lynch, M. (2002), *The Online Educator: A Guide to Creating the Virtual Classroom*, RoutledgeFalmer, London.

Mantyla, K. and Woods, J.A. (2001), *The 2001/2002 ASTD Distance Learning Yearbook*, McGraw-Hill, New York, NY.

Organisation for Economic Co-operation and Development (OECD) (2001), *E-Learning: The Partnership Challenge*, Centre for Educational Research and Innovation, Paris.

Presidential Task Group (1997), *Vision 2016: Towards Prosperity for All Long-Term Vision for Botswana*, Presidential Task Group, Botswana.

Schank, R.C. (2002), *Designing World-Class e-Learning: How IBM, GE, Harvard Business School, and Columbia University are Succeeding at E-Learning*, McGraw-Hill, New YorK, NY.

Stephenson, J. (2001), *Teaching and Learning Online: Pedagogies for New Technologies*, Kogan Page, London.

Syracuse University Continuation Education (2001), "Discover a new world of instructional solutions", available at: Syrtis.com (accessed 29 June 2003).

Thurab-Nkhosi, D. (2003), "WSI educational principles of e-learning", University of Botswana, available at: http://webct.ub.bw:8900/SCRIPT/EDT118/scripts/serve_home (accessed 28 May).

Further reading

Georgia State University (n.d.), "Criteria of student-centred learning", available at: www.gsu.edu/~mstswh/courses/it7000/papers/student-2.htm (accessed 18 June 2003).

Siemens, G. (2002), "Instructional design in e-learning", Elearnspace: Everything e-Learning, availble at: www.elearnspace.org/Articles/InstructionalDesign.htm (accessed 13 June 2003).