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Preparing Academic Staff for e-Learning at the University of Botswana

by Dianne Thurab-Nkhosi, Marilyn Lee, and Daniela Gachago

The University of Botswana ([UB](#)), established in 1982, offers the majority of its courses in traditional classroom settings that incorporate limited use of information and communication technologies (ICTs). However, in 2001, UB implemented a university-wide e-learning initiative ([UBel](#)) that provided a strategic plan to develop technology-enhanced education. Created within the Educational Technology Unit ([EduTech](#)) in the Centre for Academic Development ([CAD](#)), this plan includes a comprehensive procedure for the use of e-learning technology in both graduate and undergraduate programs. Recognizing that decisions about technology should proceed from clear educational and policy goals (Bates 1992), university administrators and faculty define e-learning at UB as "the appropriate organisation of information and communication technologies for advancing student-oriented, active, open, collaborative, and life-long teaching-learning processes" (Centre for Academic Development [2004](#)). In accordance with this definition, UB recognizes a wide range of e-learning activities from incorporating PowerPoint presentations in traditional classes to offering online courses. The focus on e-learning at UB therefore reflects a blended approach to teaching and learning that integrates various modes, methods, and media.

However, like many academics in institutions of higher education, UB faculty members are experts in their disciplines but have limited experience with course design and with the use of ICTs in the delivery of courses and programs. For this reason, UB initiated a system of staff training through EduTech that would build faculty members' capacity for systematic course design and encourage the use of ICTs in the teaching and learning process.

This article provides an overview of the goals, structure, and implementation of faculty workshops in technology-enhanced course design at UB; descriptions and assessments of the e-learning pilot courses that were developed from these workshops; and a discussion of the challenges that still inform the implementation of e-learning at UB. While further initiatives have been planned for the future, this account may provide a helpful model for other institutions seeking to promote effective faculty adoption of technology in their courses.

The UBel Programme

One of the driving forces for e-learning at UB has been the university's vision of shifting its academic processes towards an increasingly technological base, and the UBel Programme has helped to give shape and structure to this vision. Phillip Uys, former deputy director of EduTech, has identified three critical factors in the implementation of the UBel Programme: clarity about the strategic imperative of technology use, consistency in using a map or model to guide the selection and implementation of e-learning strategies, and commitment to working with strategic partners in related systems ([2003](#)).

With regard to clarity in technology use, EduTech and other units in the Centre for Academic Development provide academic departments with information on the strategic imperatives for use of technology in programs through conducting capacity-building workshops for staff members. In turn, the Leadership, Academic and Student Ownership, and Readiness (LASO) model for technological transformation in tertiary education, which integrates top-down and bottom-up initiatives, has addressed the need for a consistent guide in selecting appropriate strategies ([Figure 1](#)). Finally, partnerships among UB's IT department, library, Centre for Continuing Education, and academic staff have promoted systemic technological change throughout the university (Uys [2003](#)). University administrators have also contributed to systemic change through

- introducing overhead projectors on a large scale;
- securing a licensing agreement for [WebCT](#), which facilitated 7 online courses in 2002 (with an enrollment of approximately 2,000 students) and over 170 online courses by May 2005 (with an enrollment of more than 20,000 students);
- creating an e-learning support center (equipped with state-of-the-art wireless network facilities, semi-embedded computers, a mimio-board, and a data-projector) that by May 2005 has been used to train 64% of the academic community; and
- establishing an e-learning "smart classroom" with a videoconferencing system as well as accommodation for 36 students at semi-embedded computers.

In keeping with UB's definition of e-learning, EduTech has focused on a sound educational rationale placing the student—rather than administrative desires or technological fads—at the center of the teaching and learning experience. Willmot and McLean (1994) and Caladine (1993) suggest that such a focus on educational rationale encourages academic staff involvement and enhances educational quality. In order to facilitate a collaborative process that would involve faculty in defining and implementing e-learning (even to the extent of deciding to write "e-learning" without the hyphen), UB established a committee comprised of two faculty representatives from each university department/school, who, in turn, have led the UBel Programme within the faculty through eTeams. Through participation in the UBel committee, faculty members have contributed significantly to the evolution of e-learning at UB, particularly in conducting a university-wide needs analysis, selecting a learning management system, and developing an e-learning pilot program in 2002 that ensured the creation of seven e-learning courses the following year.

To further encourage faculty involvement, EduTech implemented a training course to assist lecturers with planning, developing, and running e-learning activities. The course was developed with the assistance of a support team employed by EduTech—including a full-time instructional designer, an online media developer, and a graphic designer—whose concept of instructional design as a sequential, flexible, practical, and non-linear process reflected UBel's educational rationale and the context of the UB environment. The course consisted of two workshops entitled Introduction to eLearning Part I: Principles of eLearning Course Design (Workshop One) and Introduction to eLearning Part II: Course Planning for eLearning (Workshop Two).

The Instructional Design Process at UB

In order to ensure that faculty members consider critical elements of course design, EduTech's e-learning development team requires completion of a course concept checklist ([Exhibit 1](#)) that includes specific prompts regarding

- target group characteristics;
- learner-centered course objectives;
- course content, concepts, and copyright issues;
- technologies, media, and course delivery methods;
- relevant assessment and evaluation methods; and
- student support strategies such as tutoring, communication, and collaboration.

In emphasizing these elements, the course concept checklist requires lecturers to consider the factors that contribute to a successful e-learning course during the design phase. While lecturers can complete the checklist independently, EduTech encourages enrollment in either the traditional or online Introduction to eLearning training workshops. Those lecturers who opt to complete the training workshops can complete the sections of the course concept checklist from target group characteristics to assessment during Workshop One and then explore communications, assignments, online resources, quality assurance activities, and other planning options in Workshop Two.

Workshop One: Principles of eLearning Course Design

Although this workshop has changed significantly since 2002-2003, Workshop One continues to provide theoretical training in course development with emphasis on e-learning, introducing lecturers to instructional design principles at a basic level. Guiding participants through student analysis, student assessment, and learning objectives, Workshop One encourages good course design focused on student-centered learning. EduTech offers Workshop One as either a half-day traditional course or an online course that can be completed in four weeks ([Exhibit 2](#)). By the end of the workshop, participants can expect to be able to

- define e-learning within the context of UB;
- describe the main differences between an instructor-centered and a student-centered approach to teaching and learning;
- assess the value of a student-centered versus instructor-centered approach;
- identify the stages in the course design process;
- conduct a student/target group analysis;
- write clear, student-centered learning objectives;
- identify appropriate concepts/content areas/issues linked to learning objectives;
- identify appropriate assessment tools linked to learning objectives;
- describe the role of ICTs in student-centered e-learning; and
- identify factors to consider in developing successful e-learning courses or activities.

In order to address these objectives, Workshop One includes seven modules:

- Defining eLearning,
- Student-centered versus Instructor-centered Learning,
- Course Planning for eLearning,
- The Structure of Learning Objectives,
- How to Write Learning Objectives,
- Student Assessment, and
- Information and Communication Technology.

Workshop Two: Course Planning for eLearning

Workshop Two provides participants with the necessary information to plan e-learning activities. Like Workshop One, Workshop Two is offered as a half-day traditional course or as an online course that can be completed in four weeks ([Exhibit 3](#)).

By the end of the workshop, participants can expect to be able to:

- define various e-learning terms;
- select appropriate learning scenarios, including content, tutoring, communication, collaboration, and assessment; and
- develop an e-learning course concept using existing examples and following the checklist.

In order to address these objectives, Workshop Two includes six modules:

- Content,
- Tutoring,
- Communication,
- Collaboration,
- Online Testing, and

- eLearning Scenarios.

In both the traditional and online versions of these workshops, modules include PowerPoint presentations that detail each phase of the course design process and guide lecturers through the course development checklist ([Exhibit 4](#)). After completing the course concept checklist, lecturers work with the instructional designer, graphic designer, and online media developer in an ongoing process of planning appropriate course structure and design.

Modeling e-Learning in Faculty Training

The Web-based versions of Introduction to eLearning emerged in response to faculty evaluations suggesting that online training might be more convenient for some individuals—especially those with computer savvy—and less threatening for senior academic faculty members who were uncomfortable sharing views and ideas in traditional workshops. Beyond convenience and reassurance, however, online training courses potentially increase lecturers' understanding and appreciation of students' experiences with e-learning, encouraging lecturers to incorporate appropriate strategies in their own e-learning courses.

Current experiences from 2004/2005, however, have shown that faculty still prefer the face-to-face training sessions over the online courses. This could be due to the potential shorter period of time for completion: the face-to-face workshop can be completed in one morning session, whereas the online course can take up to four weeks if participants are not focused.

e-Learning Courses at UB

As part of the e-learning initiative at UB, the UBel committee selected eight courses developed between January and August 2003 as e-learning pilot courses; these courses received the full support of CAD for development and implementation as well as the support of a research assistant. The rationale for conducting these pilots included testing and developing best-practice approaches (including development strategies) in the UB and wider Botswana context, building up successful representative role models across campus, creating an experiential awareness of the issues and advantages of e-learning, and creating a written analysis of collaborative learning. Because of the resignation of one course developer, seven of the eight courses selected were eventually completed:

- CLS018: Development of Information Sources,
- GEC111: Essay Writing,
- GEC121(CS): Computer Skills Fundamentals I,
- GEC121(IS): Information Skills Fundamentals I,
- EEB211 Electrical Principles,
- EPI642 Issues and Trends in Early Childhood Education, and
- PAD618 Human Resource Management.

Although these e-learning pilots varied in class size, goals, media, delivery approaches, and students' academic and computer literacy levels, all of these courses focused on the experiential and appropriate use of information and communication technologies ([Exhibit 5](#)).

Assessment of Pilot Courses

Quality assessment was moderately high for these pilot courses. Out of a maximum total score of 120 on the Draft Quality Assessment for Online Learning Rubric—a rubric designed and undertaken in 2002-2003 by the

Academic Programme Unit (APRU) to measure the effectiveness of the e-learning pilot courses ([Exhibit 6](#))—scores ranged from 64 (53%) to 96 (80%), with a mean score of 85 (71%).

The draft quality assessment rubric, student questionnaires, and focus group discussions with students and course designers all indicated that both students and course designers reacted positively to the pilot courses in which they participated. Courses that received the highest ratings (over 70%) on the draft quality assessment rubric scored particularly well in Domain 3: Active Learning, Domain 4: Organisation and Course Delivery, and Domain 5: Student Support. Specific traits of the courses in these domains that received high mean scores in the student questionnaires ([Exhibit 7](#)) included the following:

- the use of tools such as e-mail and online discussion boards to encourage student participation outside the face-to-face environment (a mean score of 92%);
- an appropriate, well-planned course design that allowed easy navigation (a mean score of 71%); and
- the presence of a dedicated lecturer who gave students all the support they needed, so that even technophobic students with modest computer skills progressed in the course (a mean score of 71%).

As a further refinement of these assessment methods, EduTech, in cooperation with APRU, has recently developed a final rubric ([Exhibit 8](#)) that incorporates elements from the draft rubric as well as the student questionnaire and focus group discussion questions—resulting in an instrument that provides a more holistic assessment of the development and delivery of an online course. At the end of course delivery, an external reviewer now conducts this assessment; in addition, interviews are held with the course designer/ instructor, students, the instructor's colleagues in the content area, and the e-learning support team. Where perceptions differ, the external reviewer moderates the final score based on his/her professional judgment. This 360-degree feedback ensures that all aspects of online course planning, development, and delivery are reviewed for quality. This holistic rubric is currently being used to assess quality in courses delivered in 2005.

Challenges to e-Learning at the University of Botswana

Although UBel's e-learning course development process is collaborative, EduTech has experienced a number of challenges in involving academic staff. In 2002 one of the main challenges was faculty unwillingness to participate in instructional design training. Instead of viewing instructional design as a process that ensures consistency and cohesion between elements of a course and that facilitates course evaluation, many faculty members viewed the instructional design process as unnecessary and time-consuming, asking, "Why can't I just develop my e-learning course in my own way?" Although the e-learning training courses were widely publicized on internal notice boards, in individual e-mail invitations, and in departmental invitations, participation was low. Out of a total of 760 UB faculty members, 28 lecturers (3%) registered for the e-learning training courses during the Semester II time period (January to June 2003). Of this number, 17 lecturers (60%) attended the traditional course, while 11 (40%, or slightly more than 1% of the total faculty) registered for the online version of the course.

In order to address this challenge, EduTech has worked in collaboration with APRU and the Teaching and Learning Unit ([TLU](#)) both to build the capacity of the academic staff to use the strategies they learn in the workshops and to emphasize the importance of using a systematic instructional design approach. In addition to the seven funded UBel pilot courses, the resulting Guidelines for eLearning Course Development ([Exhibit 9](#)), and the additional funds that have been allocated to assist departments wishing to develop online courses in 2005, the APRU and the TLU have offered modified e-learning workshops to new faculty members in their orientation to teaching, research, and service at UB. These e-learning workshops have been established in conjunction with the CAD eLearning Certificate in 2003 as a further incentive for faculty to develop the skills, knowledge, and attitudes that promote the use of ICTs in teaching and learning.

The CAD eLearning Certificate requires the completion of 8 of EduTech's 17 faculty development workshops; two of the workshops (Workshops One and Two) can be completed online. The eight required workshops

are:

- Principles of eLearning Course Design (Workshop One),
- Introduction to eLearning (Workshop Two, formerly known as Course Planning for eLearning),
- Teaching in the SMART classroom and Video Conferencing,
- Information and Computer Skills,
- Management Techniques,
- Online Information Gathering and Copyright on the WWW,
- Multimedia Production, and
- WebCT Refreshers.

This strategy of offering workshops as part of a certificate course has achieved great success; while 6 lecturers obtained certificates in 2003, 17 lecturers obtained certificates in 2004, and it is expected that 25 staff members will receive such certificates in 2005. Furthermore, since the introduction of the CAD eLearning Certificate, total faculty participation in e-learning workshops has increased from 96 lecturers attending in 2002, to 221 lecturers attending in 2003, and 207 lecturers attending until June 2004. (The decrease in participants between 2003 and 2004 can be explained by fewer workshop offerings in 2004.) The average attendance of faculty members per workshop has increased from 8.5 in 2003 to 13.6 in 2004 while the average number of workshops that each lecturer attended rose from 3.4 in 2003 to 4.6 in 2004.

Another major challenge to the UBel initiative has been faculty computer proficiency. Many of the participants in the traditional workshops have reported limited computer skills, and very few have described their proficiency as excellent. For some participants in the e-learning certificate workshops, exposure to the use of computers in a course context has diminished their technophobia and has increased their general computer skills. Although participants in the online course obviously have indicated a higher level of computer proficiency than participants in the traditional course, faculty members' inadequate computer skills remain a challenge to the infusion of ICTs into teaching and learning. In order to address this challenge, EduTech initiated a budgeting process to secure the license for the [International Computer Drivers License](#) training course. However, this faculty training initiative has been transferred to UB's Centre for Continuing Education and has not yet been implemented.

Conclusion

Although initial faculty reaction to training in e-learning course design has been cautious, younger, mid-career academics in particular have responded with enthusiasm to the UBel initiative, and faculty members who have attended the e-learning training workshops have been very involved and committed. Course evaluations of the first training sessions in 2003 have indicated that all of the participants in the traditional course considered the training interesting and relevant. While faculty members indicated a preference for face-to-face training sessions, those participating in the online version felt that within this environment the ability to make decisions about when and where to access learning materials was essential to them and highly influenced their decision to opt for online teaching.

When asked what they would adopt from the workshop in their own practice, 80% of participants indicated that they would rewrite course objectives to ensure that they were clear and consistent with both course content and student assessment. When asked about their plans for e-learning following the course, participants indicated that they felt they were at the stage of planning but not implementing an e-learning course. However, as of May 2005, 74 lecturers at the University were using e-learning in their teaching and learning—approximately 10% of the academic staff.

As UB continues to encourage e-learning approaches, EduTech plans to implement further incentives and training strategies. In the coming year, for example, EduTech plans to emphasize the online version of the e-learning training workshops by offering the traditional course less regularly, by encouraging lecturers to

complete all e-learning certificate requirements online, and by providing greater support and more stringent time frames for these training programs. Furthermore, CAD has developed a proposal to study certificate holders' e-learning activities and to examine reasons for these faculty members' use or non-use of e-learning strategies in their teaching. Teaching excellence awards and teaching improvement grants will further encourage academic staff members to introduce e-learning strategies in their courses. Through these incentives and training strategies, UB hopes to foster greater awareness of the benefits of e-learning and learner-centered course design throughout the university community.

[This article was modified from a presentation at the [E-learn](#) conference in Phoenix, AZ, November 2003.]

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