AN EDUCATIONAL DESIGN PLAN FOR PROFESSIONAL DEVELOPMENT ABOUT ONLINE LEARNING AND TEACHING: SCARIE!

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Abstract

This paper proposes an educational design plan for two modules within a professional development programme at UNITEC, about learning and teaching online. These modules address the areas of moderating online discussions, and online assessment. The application of the "SCARIE" model (a set of guidelines for effective online learning) to the educational design is described. Plans for the implementation of this design, and research on its effectiveness, are outlined.

Keywords

Educational design, online learning and teaching, professional development

Introduction

The process of introducing a new IT system for learning and teaching in a large tertiary institution is a many-dimensional undertaking. Alongside the hardware and software implementations that typically soak up large amounts of the institution's capital, the often under-funded staff development initiatives need special consideration.

The adoption of Blackboard as a Web Course Management System at UNITEC has evolved over the past four years (Northover and Donald, 2001). The initial uptake was primarily by tutors and lecturers with a special interest and enthusiasm for online learning and teaching. Professional development for these tutors and lecturers was in the form of *ad hoc* seminars, workshops and one-on-one consultation between tutors and members of online course development teams. The recent exponential rise in Blackboard usage has required a more comprehensive approach to professional development, which must clearly provide both face-to-face and online learning opportunities to meet the needs of our staff. This paper proposes an educational design plan for two modules within such a staff development programme.

Context of the modules

The full professional development programme for tutors using Blackboard at UNITEC has three stages; information, mechanical and pedagogical. Table 1 summarises the third pedagogical stage of the programme, which currently has five topics: An introduction to online learning and teaching using Blackboard, moderating online discussions, online assessment, group work, and designing and developing

effective online courses. The educational design plan proposed in this paper is demonstrated in the design of two of these topics: moderating online discussions and online assessment (shaded rows in Table 1).

	Module title	**Objectives**	**Content**
STAGE 3: *Pedagogy and design*	3.1 Teaching with Blackboard	To introduce academic staff to educational principles of online learning.	Translating effective teaching practice to the online environment. Methods of teaching online and how Blackboard supports this.
	3.2 Moderating online discussions	To provide staff with opportunities to create, moderate and participate in Discussion Boards for learning.	• Features of Blackboard's Discussion Board and how to use them. • Effective teaching using asynchronous discussion and current issues. • Maintaining individual and group feedback. • Using invited 'experts' from off-campus
	3.3 Online assessment	To provide staff with opportunities to use Blackboard assessment tools as learners and as teachers.	• Construct and answer Bb quizzes and surveys and course cartridge materials. • Use the Gradebook. • Plan formative and summative online assessments using a variety of assessment formats, eg self-assessed, peer-assessed, tutor-assessed, etc
	3.4 Group work	To explore the Group facilities in Blackboard and plan for their effective use.	• Creating and managing groups, their members and group tools • Using groups for discussions and formative activities and report-back • Summative group work – collaborative assignments
	3.5 Designing effective online courses	To plan an online course/unit using models for web-based learning.	• Review current models for the design of online learning. • Construct an educational design matrix to plan an online unit. • Review models of good practice. • Apply quality standards for effective online learning and teaching. • Use checklists and guidelines for meeting quality standards. • Enhance interactive learning online (e.g. online journals, portfolios, concept maps, animation, video, simulation, etc.).

Table 1: Third stage of the professional development programme on teaching online using Blackboard

Target audience

The target audience for this programme is tertiary educators, who range widely (from minimal exposure to expert levels) in terms of their knowledge and use of computers and the Internet for teaching purposes. This is reflected in the range of topics offered in the professional development programme shown in Table 1. Most of the participants in this programme are just starting to teach online, or have been teaching online for one or two years. Most of them have been using Blackboard as their course development tool, and few of them teach courses that are offered entirely online. Most courses are a combination of on-campus classes integrated with online components.

Proposed educational design for the module

The basis of the design plan

One of the challenges in compiling an educational design plan for modules about online learning and teaching, is making it sufficiently generic to be useful in a wide range of learning and teaching contexts, to a wide range of courses and disciplines, and yet specific enough to be of practical use to online tutors and development teams. It was considered important to make the learning environment of the professional development modules similar to the learning environments used by the UNITEC tutors. To ensure that our professional development modules are of "practical use to online tutors", we believe it is important that these modules:

1. use Blackboard as one of the main learning environments for the topics (so that staff are using the technology they have come to learn about, as a means to achieve their own learning outcomes);
2. provide online learning opportunities, resources and materials in combination with on-campus activities;
3. set authentic, contextualised tasks that offer staff opportunities to develop materials or skills for their own courses;
4. set an example by practising the online learning and teaching principles that we preach, for our online tutors to critique and experience first-hand as online learners.

Many teaching staff have only had face-to-face experiences as learners. Providing online teachers with the opportunity to experience being an online student is, we believe, important, as this experience can inform their online design and development practice.

The educational design plan being proposed in this paper attempts to apply principles for effective learning using the SCARIE model (Donald *et al*., 2001 which was derived from McAlpine *et al*., 2001). The SCARIE model is a set of guidelines for **student-centred** online learning and teaching which are grouped as follows:

Scaffolding
Collaboration
Activities
Resources
Integration
Evaluation

Each group of guidelines is expanded briefly in Table 2. Donald *et al*. (2001) provide a full explanation of these guidelines and their theoretical underpinning. While some of the SCARIE guidelines do not apply to the online environment only, they are important when learning and teaching online. Of particular importance to teachers when adapting from conventional to online teaching, is the opportunity to shift from didactic teaching approaches to a more facilitative, student-centred approach. This makes comprehensive support and guidance for the student essential. Each of the SCARIE guidelines focuses on student-centred learning, which is facilitated by means of authentic tasks in real-life contexts. This is supported by theories of situated learning (Brown *et al*., 1989) and applied in the instructional design framework for authentic learning environments proposed by Herrington and Oliver (2000).

We believe that the "SCARIE" acronym is relevant to many online tutors at present. What is "scary" about learning to teach online? Herrington and Oliver (2001) clearly portray the challenges that our teachers are faced with: perceived threats to the importance of their role as face-to-face teachers, the adoption of new teaching strategies, using unfamiliar technology and teaching tools, learning new competencies that only apply in online learning environments, and reservations about what are regarded as unproven online teaching methods. Our professional development efforts must address these fears and equip our teaching staff to face these challenges realistically, with confidence and enthusiasm (as some researchers suggest, enthusiasm is a "critical" attribute of effective online tutoring (Collis, 1996; Gunn, 2001)).

Scaffolding:
- Provide support, structure and clear expectations.
- Include a student session at the start to orientate students and introduce the technologies.
- Moderate online discussions
- Use online technologies for rapid feedback.
- Provide diagnostic quizzes for self-assessment.
- Ensure that students' needs are identified and catered for.

Collaboration and Discussion:
- Use asynchronous discussion forums.
- Use synchronous discussion for specific meetings and to provide direct response.
- Use collaborative group tasks to help develop teamwork skills.
- Establish effective group sizes
- Consider assessment carefully.

Activities:
- Design tasks to promote higher-order generic skills.
- Design tasks that recognise students' experience, interests and values.

Resources:
- Create a range of resources to support active learning.
- Provide electronic access to resources.

Integration:
- Integrate technology applications with the course.
- Actively use these technologies (as the lecturer) during the course.
- The application of technology must be pedagogically sound.

Evaluation:
- Elicit student feedback about their learning progress.

Table 2: Guidelines for online learning and teaching – the SCARIE model (Donald et al., 2001)

The application of the SCARIE model to the educational design plan.

The educational design plan for the two modules on moderating online discussions and online assessment is summarised in Table 3. The bold, underlined letter(s) in the "SCARIE" acronym after each item in this table indicates which particular set of guidelines are used. The guidelines in the SCARIE model are used as follows:

Scaffolding

Students (i.e. the online tutors) who register for the modules are first emailed individually to discuss the agenda for a forthcoming face-to-face session, to:

1. clarify the goals and expectations for each module,
2. ensure that the session will meet their needs (and tailor it accordingly),
3. invite the tutors to prepare and bring relevant materials for their own courses, that they would like to work on during the tutorial.

At the face-to-face session, tutors use Blackboard with guidance and support from the staff developers and their peers. They are introduced to examples of best practice in online learning and teaching, and identify the overlap with their own knowledge and experience of good learning and teaching. During and after the workshops, tutors have a "practice" area on the server so that they can develop their courses in a supportive environment, attempt unfamiliar activities and get feedback from the staff developers and their peers, before they embark on developing a "live" course. It is hoped that such scaffolding takes the "scare" out of "SCARIE" so that tutors go online with confidence and enthusiasm.

Collaboration and Discussion

Discussion and collaborative learning are an integral part of both modules, where students use Discussion Boards to discuss issues, establish their own understanding of topics, practise online moderating techniques and strategies, or to provide peer review of each other's course development efforts. Collaborative tasks are set for tutors where appropriate, ie where such

collaborative work would take place in reality (e.g. two lecturers jointly developing a course or moderating an online discussion). Collaborative work is most used in peer-assessment of teachers' course development work. Email and the Discussion Board are actively used by the staff developers to encourage and maintain student participation, and to foster a sense of a learning community. Further expansion on experiences of using Discussion Boards as students and as online tutors at UNITEC is included in these proceedings (Northover, 2002).

Activities

The student activities involve teachers developing their online learning and teaching skills in authentic contexts (e.g. "moderate a discussion on how to encourage participation in online discussion forums"; or "build a self-testing quiz for your students in your subject area"). As described above, tutors are given "practice areas" on the Blackboard server to develop course materials before they feel sufficiently confident to develop "real" courses. They are also encouraged to make their online materials available to other participants on their module, to the tutor, and to a sample of their students, for peer, tutor and student review. Similarly, in the case of practising their moderating skills, tutors are encouraged to use the practice areas to trial their online moderating strategies and get feedback from peers and the staff developers, before applying these to their own courses and students.

Resources

A range of electronic and other resources are made available to tutors. They are also encouraged to "donate" the outcomes of their experimental course developments and online moderation efforts, with summaries of peer- and student reviews they received, as resources for future students of the unit. Tutors are also invited to contribute resources of their own to the "Resources" area of the website, with a short explanation of their relevance and usefulness.

Integration

A large part of each topic is devoted to designing ways of integrating online teaching practice with existing teaching methods so that online learning is perceived by students as an integral part of the course, directly relevant to their learning process. For example, when considering online assessment options, tutors are encouraged to think of ways that alternative types of assessment (such as self-diagnostic quizzes or online debates) might be used by their students as metacognitive tools during the learning process. Integration of technology-supported learning activities is also encouraged in such a way that learning is enhanced without technology intruding or detracting from the learning experience. Hence familiarity with the web course management system is believed to be a high priority so that when teachers start to think of online learning and teaching strategies they do not start with questions about what the technology can offer but about what they want to achieve, educationally, with their courses.

Evaluation

Both modules are evaluated by tutors using an online questionnaire. Feedback from these evaluations is used for research purposes and to inform future updates to the design and content of the modules. Ongoing evaluation is also provided by a discussion forum which invites immediate feedback to enable course modifications to made as required before the end of the course.

Module 3.2: Moderating online discussions *To introduce tutors to the concept of asynchronous discussions and how these can be used in online learning environments to achieve learning outcomes and foster a sense of belonging to a learning community.*	
Relevant course objectives	To introduce tutors to methods of moderating online discussions. To provide staff with opportunities to create, moderate and participate in Blackboard's Discussion Boards. To familiarise staff with issues in moderating online discussions.
Authentic problem description (activity)	Tutors use features of Blackboard's (Bb) Discussion Board to discuss: possible roles of asynchronous discussions in an online learning environment, effective methods of using asynchronous discussions, effective methods of moderating online discussions, maintaining individual and group feedback, current issues in online moderation (e.g. how to encourage participation; using structured, assessed tasks; whether "lurking" should be discouraged, etc) (SCARIE)
Collaboration communication tools	Student-tutor communications via *email* are used *prior* to the face to face session to negotiate details of the session agenda with staff who have enrolled. (SCARIE) Email is used to help tutors prepare for the task, create student logins to "practice" areas on the server ahead of the session, and to ensure tutors bring any relevant course materials with them that they may wish to use and extend during the session. (SCARIE) Blackboard's *Discussion Board* is used between tutors *during* and *after* the session, with active participation by staff developers, to discuss the relevant issues. (SCARIE) *Tutor*-initiated forums and *student*-initiated forums are used as vehicles for the session. (SCARIE)
Support provided by tutor	Set up "experimental" Discussion Board forums in preparation for the session, tailored in response to feedback from enrolled tutors re: agenda details. (SCARIE) Initiate contact with tutors who express interest in the sessions, and maintain dialogue with them during and after the session on the topic. (SCARIE) Keep resource material and website current (e.g. new literature, and contributions from tutors - particularly materials they have developed and posted for peer review and feedback). (SCARIE) Elicit feedback from tutors 3-6 weeks after the session on their progress as online moderators and issues they are facing. (SCARIE) Continue to moderate discussions initiated during the session for an extended period after the session until debates reach closure. Then summarise and post to professional development site as additional resource. (SCARIE) Evaluate session and website materials with online questionnaire. (SCARIE)
Review	Peer-, tutor- and self- review of moderation methods used during and after the session. (SCARIE)
Resources to be developed or located	Professional development website on Blackboard server for participants, as instructors, to create a Discussion Board, and as learners, to use a Discussion Board. Student-initiated and instructor-initiated forums on topics and issues of online moderation. Workshop handout and extra resources also on website. (SCARIE)

Table 3: Educational design plan for selected modules on "Teaching online with Blackboard"

Module 3.3: Online assessment ***To introduce tutors to Blackboard's Gradebook, quizzes and surveys, and to other methods of online assessment.***	
Relevant course objectives	To promote a range of assessment roles that may promote learning outcomes and be an integral part of the learning process. To consider how a range of assessment types may be integrated with current teaching approaches that tutors use. To provide staff with opportunities to use Blackboard assessment tools as learners and as teachers. To refer staff to other online assessment tools (besides Bb's) that may better suit their requirements. **To familiarise staff with issues of online assessment.**
Authentic problem description (activity)	Construct and answer Bb quizzes and surveys. (SC**A**RIE) Use Bb's Gradebook and course cartridge materials. (SC**AR**IE) Plan formative and summative online assessments using a variety of assessment formats, eg self-assessed, peer-assessed, tutor-assessed. (SC**A**RIE) Debate issues peculiar to online assessment. (S**C**ARIE) Experiment with a variety of assessment types. (SC**AR**IE)
Collaboration communication tools	Student-tutor communications via *email* are used *prior* to the session to prepare students (ie staff) for the tasks, create student logins to 'play' areas on the server ahead of the session, and to ensure students bring any relevant course materials with them that they may wish to use during the session. (**S**CAR**I**E) Blackboard's *Discussion Board* is used between tutors *during* and *after* the session, with active participation by staff developers, to discuss assessment issues. (S**C**ARIE) Tutor-initiated forums are used to elicit feedback from peers on assessment tasks they create using the Bb tools (which can be used by fellow participants during and after the session). (S**C**ARI**E**)
Support provided by tutor	Set up "experimental" online assessments (quizzes, survey, debate, course cartridge test banks, Gradebook data, Discussion Board forums, student groups, student drop box) in preparation for the session, in response to feedback from enrolled staff re: agenda details. (**SCA**RIE) Initiate contact with staff who express interest in the sessions, and maintain dialogue with them during and after the session on the topic. (S**C**AR**I**E) Keep resource material and website current (e.g. new literature, and contributions from staff - particularly materials they have developed and posted for peer review and feedback). (SC**A**RIE) Elicit feedback from staff 3-6 weeks after the session on their progress using online assessment and issues they are facing. (S**C**AR**I**E) Continue to moderate discussions initiated during the session for an extended period after the session until debates reach closure. Then summarise and post to professional development site as additional resource. (S**C**ARIE) Evaluate session and website materials with online questionnaire. (SCARI**E**)
Review	Peer- and self- review of assessment items created during and after the session. (SC**A**R**IE**) Self-, peer- and tutor- review of staff approach to use and integration of online assessment strategies. (SC**A**R**IE**)
Resources to be developed or located	Professional development website on Blackboard server for participants, as instructors and students, to use quizzes, surveys, course cartridges and the Gradebook. 'Practice' quizzes, surveys, course cartridge test banks and Gradebook containing dummy data. Student-initiated and instructor-initiated forums on topics and issues of online assessment. Workshop handout and extra resources (also available on website). (SCA**R**IE)

Table 3 (cont): Educational design plan for selected modules on "Teaching online with Blackboard"

Conclusion

The next step towards implementing this design plan will be to incorporate feedback from usability tests and field trials in the ongoing design and development of the modules. It is expected that the design plan will be modified and refined substantially during this next phase. In addition to feedback obtained from our own staff and students during the pilot, specific recommendations made in recent publications will be applied and tested, such as: the attributes of effective online teachers and the importance of experiential learning online (Gunn, 2001); competencies for online teachers (Goodyear *et al*. 2001); moderating online discussions (Salmon, 2000); and elements of the instructional design for authentic learning environments (Herrington and Oliver, 2000). This will yield important data to inform future professional development programmes for online learning and teaching.

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