2006

Constructivist E-Learning for Continuous Professional Development of Academic Staff

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Biographical Details

Roisin Donnelly has been a lecturer/researcher in higher education since 1992. In 2003, she became a member of the professional body The Higher Education Academy. She has completed a number of online learning courses, including 'E-Moderating' from LTSN-ICS and Online Tutoring from Oxford Brookes University. A range of publications to date reflects her teaching/research interests, including E-Learning Pedagogy, Design, Collaboration, and Evaluation. Her continuing research in higher education is through the Doctorate of Education Degree (EdD) from Queen's University Belfast; her research specialism is an exploration of the role of the tutor in propagating a sustainable model of educational development based on blended problem-based learning.

Ciara O'Farrell works as an academic developer for Trinity College Dublin in the Centre of Academic Practice and Student Learning where she has responsibility for supporting the enhancing of learning, teaching and research within the university. She previously worked in DIT's Learning and Teaching Centre and before that with *Skillsoft*, the world's largest e-Learning company, where her role was to ensure the instructional integrity of educational software. She holds a PhD in English from University College Dublin, and her biography of Abbey Theatre playwright Louis D'Alton was published by Four Courts Press in October 2004. Her current research interests and publications focus on assessment and feedback practices, academic writing skills, critical thinking, academic mentoring, and postgraduate research supervision.

Abstract

Professional development for academic staff in e-learning is currently a priority for higher education institutions in the Republic of Ireland as lecturers in Irish Higher Education are experiencing increasing demands to incorporate e-learning into their teaching practice. This chapter reports on the design and implementation of a blended module in e-learning for the continuous professional development of such lecturers. In this chapter we evaluate the effectiveness of exposing our lecturers as online students so they can experience first-hand the advantages and disadvantages of e-learning. Further, we show how improvement in both teaching practice and student learning can be achieved through a constructivist, collaborative interaction that provides the scaffolding for lecturers' future journeys into e-learning and into constructivist practices within their own teaching. The blended approach is still in its infancy but important outcomes were achieved in terms of influencing lecturers' thinking and approaches to both their own and their students' learning. The chapter will thus highlight the need for social interaction and its provision online, and review participant response to this e-learning approach.

Keywords

Blended Learning, Constructivism, Continuous Professional Development (CPD) Learning Community, Reflection, Discussion Boards, WebCT.

Introduction

This chapter discusses and reflects of the challenges of designing and developing a blended learning module in e-Learning for lecturers' continuous professional development.

Higher education institutions worldwide are devoting considerable resources to the development of e-learning and e-teaching. Most are still working through the development of 'best practice' models for the use of web-based technologies in the delivery of educational programmes. In Ireland, like elsewhere, most institutions provide professional development but there are a wide variety of approaches to this in relation to the pedagogy and skills of web-supported teaching, and in relation to managing change required for staff to adopt technology in their teaching.

Like their counterparts abroad, academic staff members in Irish higher education are experiencing increasing demands to incorporate e-learning into their teaching practice. As a result, staff members are required to have a broad range of knowledge and skills to use software and must be able to adapt their skills to a diverse set of classroom situations. As educators, they are acutely conscious of the need to stay current with technology for many reasons. In our institution, most professional development for academic staff is provided through one-off workshops and training sessions, which can be provided in a central location across disciplines, or in a discipline-based setting (most often by request from a faculty, school or course team).

One of the main questions staff has at these one-off technology training events centres on their need to revise the way they teach or design the curriculum because of the influence of technology. However, they also find, by the nature of their varied work responsibilities, that demands such as curriculum development, lesson preparation, student support, staff meetings etc. pull them in many directions (Alstete, 2000; Lawler and King, 2000). Given these conditions, professional developers need to provide streamlined learning experiences so that they are delivering essential topics and learning materials in readily accessible formats.

Lecturers need to have opportunities to learn and experiment with the technology they will apply to their classroom practice and areas of subject expertise. But they also need to remember to prioritise their learners' educational needs, to experience e-learning beyond the technology. Thus, as educational developers, our remit in designing a blended e-learning module was to cultivate an environment where academic staff members were not just deluged with information, but involved in and challenged by an active learning process. Constructing a blended four week module, entitled, 'E-learning in Higher Education: An Engaging Introduction', was the first step in creating a complete professional development program that encourages educators to discover new possibilities for learning and teaching through technology. This chapter will explore this process.

Certain studies advocate interaction as a key factor in the e-learning environment and the important role of staff professional development in developing lecturer presence online (Anderson et al, 2001; Murphy, Smith, Smith and Stacey, 2001). Research has shown that the online learning and teaching environment can be structured for effective social constructivist learning that requires an interactive online discussion (Stacey, 2002; Bonk and Cunningham, 1998). The metacognitive, reflective and social constructivist approach to professional development described in this chapter is a response to the limitations of directive approaches of e-learning within a context of rapid technological change.

Background

Although increasing numbers of learners are working online, few lecturers have themselves learnt this way. Therefore online tutoring is not a skill many lecturers have acquired and it should not be assumed that teachers in higher education automatically know how to communicate or behave online (Coghlan, 2001); many do not, and require professional development in the skills and techniques of facilitating in an online learning environment. Case studies reviewed endorsed our view that online tutors need to experience online learning as a student before they can effectively support online learners (Kempe, 2001; Salmon, 2000, Ambrose, 2001). Consequently, one of our key intentions

in designing this program was to highlight the challenges and advantages associated with teaching online by effectively emulating the student experience.

Our rationale supporting the Professional Development e-Learning program originated in a Constructivist approach framed within a Blended Learning environment. Cognisant of maximizing our participants' effectiveness as educators within an online environment, we needed to guide them away from the temptations of implementing content-high systems that would not engage and retain their learning, and from the perception that producing online learning is little more than converting lecture notes to the web. We wanted our participants to prioritise educational needs and to experience e-learning beyond the technology – after all, what's the point in having a have a rich technological environment if it fails to capture, motivate or retain learners?

Issues for a Blended Learning Approach

Forefront in our rationale was finding the instructional support to facilitate lecturers create an effective learning experience for students in a technology-mediated environment. Rather than opting for a fully online course for this CPD module, a blended learning approach was chosen for the design. We decided that a constructivist pedagogy operationalised through an inquiry/exploratory approach would be best suited for the participants at his stage in their development of e-learning. (A cognitivist pedagogy using direct instruction is under consideration for future modules.) On the one hand, we wanted to have some face-to-face contact with our learners/lecturers; given the independent nature of their work, if lecturers encounter difficulties in their teaching practice, there is often little support available to them. And for those lecturers new to the notion of e-Learning, to whom the course was aimed, we felt the notion of some face-to-face guidance would be reassuring. On the other hand, we felt a purely directive approach would have been incongruous to the very idea of an e-Learning program. E-learning professional development is essential but with technology evolving at a rapid rate, directive style training becomes inadequate or out of date in a short period of time – normally months, not years. Technology is very diverse and evolves too swiftly for lecturers to be reliant on workshops and seminars (Melczarek, 2000).

Issues for the Role of Professional Development

Esson, Johnson and Vinson (2002) highlight that, for too long, there has been a focus on 'training and development' rather than 'professional development'. Our aim in designing this program was to provide educators with professional development that went beyond skills training to maximise their effectiveness when working with an online environment. We believe that effective professional development requires more than skills training, that it involves changes in attitude, values and beliefs that develop confidence for ongoing learning. There was ample opportunity within our Institution for staff members to learn how to *use* the technology; in this module we wanted to focus on how to *translate* these new skills into a quality learning experience for students. We were thus seeking to improve both teaching practice and student learning, whereby participating lecturers would see the value of e-Learning, and embrace it as part of their constructivist practices within their own teaching.

Issues in Designing E-Learning CPD

This module was designed as an accredited short course for academic staff as a vehicle for diffusion of professional staff development in e-learning. It was delivered through WebCT, the institution's VLE of choice and support. In the past, studies have shown that many academics seem reluctant to adopt web-supported teaching (Dearn, Fraser and Ryan, 2002), and research indicates that a number of factors influence levels of adoption. These include inadequate access to staff development and training (Guthrie, 2003), high workload (Scribbens, 2002), lack of time and lack of adequate recognition and rewards (Alexander and McKenzie, 1998). These factors were all taken into consideration in the design of the module. Figure 1 shows the detail of the module design.

Resources
- **E-learning definitions**
- **Web site critique**
- **Simulations**
- **Collaborative Learning**

Discussion and Reflection
- **Paired and Collaborative**
- **Guided Reflection: Prompts**

Activities
- **Orientation and Familiarisation**
  (With peers / module structure / concepts)
- **Web Resource Exploration**
- **Collaborative Knowledge Building**

Module Information

Module Evaluation

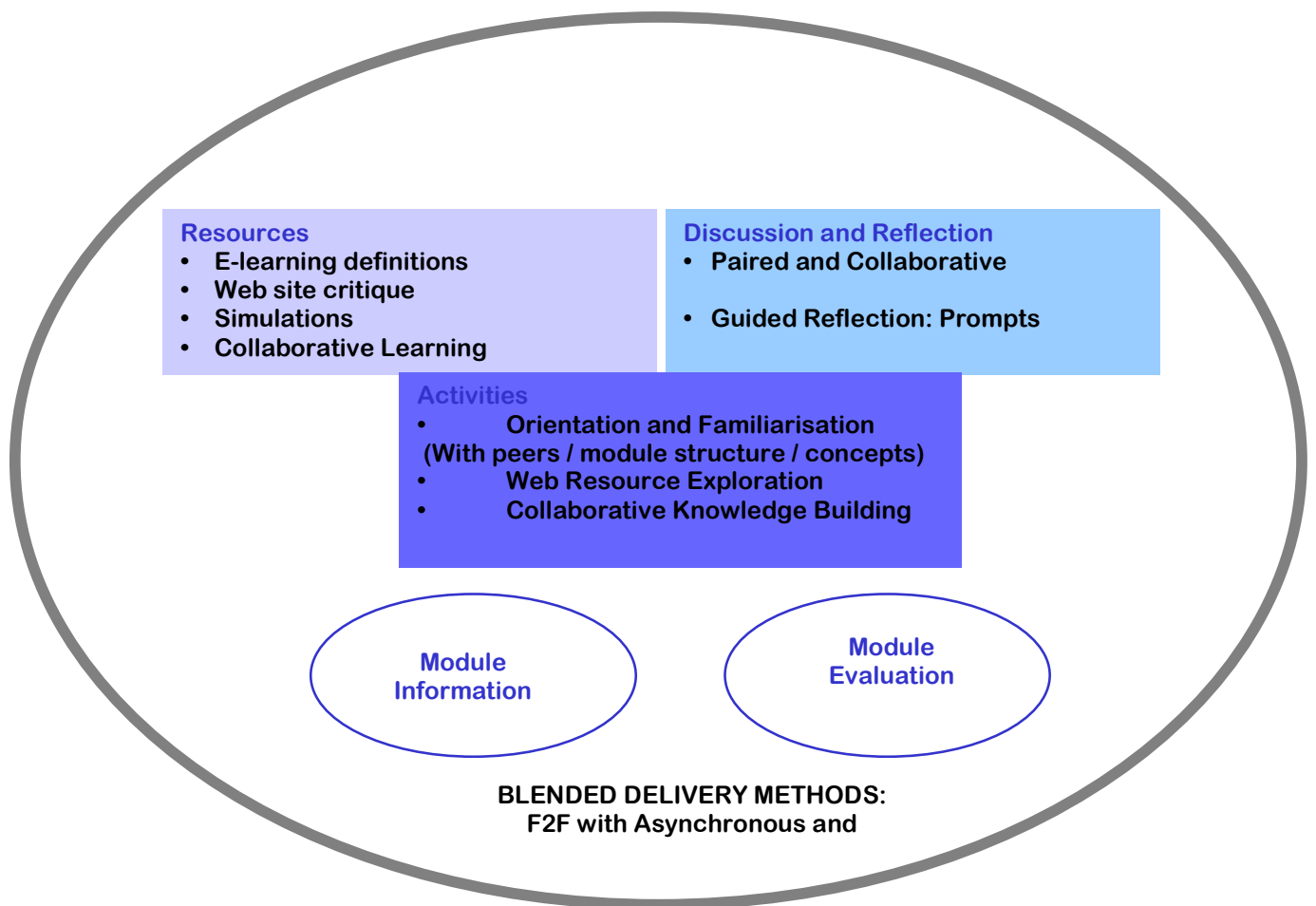**BLENDED DELIVERY METHODS:**
F2F with Asynchronous and

Figure 1   A Blended Model for Staff Professional Development in E-Learning

The early design and structure of the module were identified through an online needs questionnaire to participants. The first section was aimed at collecting background and demographics. The second section asked the respondents to think about their preferred learning styles and motivation for doing the module. The third section asked about their access to appropriate technology and finally, they were asked about their prior knowledge and practical experience of e-learning in higher education. We then translated these answers into a set of learning outcomes, specifically tailored to the needs of the cohort.

The rationale behind our choice of online activities was to encourage participants to explore the rich resource repository of the WWW for learning through flexible interaction with fellow teachers from a variety of different subject disciplines. The prior knowledge

of the teachers in e-learning would guide the web exploration and the resulting dialogue, following a constructivist orientation, thus allowing the tutor's facilitation to be more developmental and nurturing. The activities were also designed to allow participants actively connect their learning with the potential for their own student learning, to incorporate their learning into practice, and to stimulate new perspectives of teaching with technology.

The small collaborative groups, when committed to regular online interaction, shared with the tutors the diverse perspectives of the group members, sought feedback and clarified ideas. Online discussion and sharing of resources gave them an environment for actively constructing new ideas and concepts and enabled them to learn effectively. It was found that learning collaboratively through interaction was achieved by the development of a communal consensus of knowledge, through communicating different perspectives, receiving feedback from other participants and tutors, and discussing ideas, until a final negotiation of understanding was reached within the time set for such activity.

Collaborative learning was included as the culminating activity for the module. As the participants discussed how to use technology in their work, they discovered new perspectives and points of application. By tying cooperative learning and application to practice, we achieved a greater impact than when learning is confined to formal, isolated training sessions. It was this final face-to-face activity that sparked the continuation of a community of practice where, as group of learners, they began thinking of the next stages of their professional development, and moved from just considering the theory covered in the module, into planning how they could use it to transform their practice. The module was designed to help participants learn from experience, to begin to integrate knowledge and to think reflectively about using e-learning in their teaching practice. Our hope is that their experience of a learner-centred blended learning environment will encourage them to develop more learner-centred delivery models with their own students.

Constructivist Framework for design and delivery

To orientate lecturers to the online environment, we used a constructivist instructional framework within a blended learning context. The revival of interest in Vygotskian social constructivism as an explanatory theory for the effectiveness of e-learning claims that interactive learning, as achieved by the process of communicating online, enables learners to actively construct their own perspectives which they can communicate to a small learning group of peers. As educational developers, we viewed constructivism as an underlying way of thinking that informed our instructional activities and decisions, and throughout the module design and implementation, we focused on the best ways to facilitate our learners to construct meaning. Our intention was to organize a learning environment that would contribute effectively to our participants' individual competencies and learning, but within the context of group participation – in this case specifically within a learning community.

While it is beyond the scope of this article to fully elucidate the practices of constructivism, what we can do is highlight how we took the main fundaments of constructivist theory and applied them pedagogically to the online environment. Constructivist theory states that learners construct meaning through self-directed enquiry, guided activity, or community-based co-participation. To apply these theories to an online environment, we were careful to design a module set in a real-world environment that involved social negotiation and mediation, with multiple paths for learners to explore, and with the tutors providing a facilitative rather than directive role.

This presented numerous challenges. Our first was to convince our learners of the benefits of collaborative learning. Peer learning is a valuable component of student success, with learners exposed to multiple points of view, perspectives, and experiences. There was concern, however, that our lecturers might not wish to collaborate, that they might be more used to/prefer to work individually, or that they would worry about 'sharing' ideas or being judged by other colleagues. Indeed, some of these concerns did materialize. However, by making the focal point of the module the WebCT discussion board where all activities had an individual and peer component, we maximized

collaborative learning. Each activity was designed to engage learners in peer feedback, and we encouraged learners to participate on discussion boards by emailing those who were slow to appear on the first week, and by replying to initial comments ourselves when other were slow to do so, using a friendly tone and always posing further questions in our comments. To counter the concern that some students would 'lurk' rather than participate in discussion, we made it compulsory to engage in discussion and reflection of other participant's thoughts and ideas as well as their own. Finally, we made it clear up front that if participants did not contribute to the discussion board, they would not receive their certificate of completion.

Using the asynchronous discussion forums of WebCT as the central communication space provided a means of enabling the groups to socially construct knowledge. By its nature, the technology of a discussion board supports interactive communication and reflection; therefore it was important to infuse this interaction with learning activities that supported good constructivist practice. The focal point of all the activities designed was thus interpersonal exchange, with individuals talking and reflecting electronically with other individuals. Thus, while many of the activities began with information collection, comparison, analysis, and individual reflection, students were also expected to read the multiple perspectives on any given topic, and review and comment on at least some of them. This shift, essentially from objectivist to constructivist, fostered a connection with peer knowledge and experience, where participants gave and received feedback, reflecting on learning both within their individual contexts and outside of them. The synergizing potential of this strategy was to encourage a community of learners to begin the trail of seeking learning opportunities, applications and resources together.

The Role of Reflection and Discussion
Esson, Johnson and Vinson (2002) point to the potential value of reflective approaches which are part of an everyday process of improvement in the natural setting. According to Dobrovolny (2003), reflection is an interpretative process that allows learners to, "visualise using what they learned by solving a problem or improving something with

their new skills; understand the big picture; compare their use of information with how others use the same information; recall a section in the course."

Dialogue and reflection assumed a critical role in our module's activities by facilitating the development of a critical conscience through collective enquiry with peers and tutors. To integrate a strong interpretative process to the learning experience in this module, participants were encouraged to reflect on the critical attributes of concepts and theories, on how they might use the content, how it might fit into a larger framework, and how it might be applied within their individual contexts. As facilitators, we played a role in facilitating reflection by encouraging experiential learning in our activities, and by asking pertinent questions at appropriate times during discussion board conversations. Also, we provided a weekly summary of the main themes covered in the discussion threads, facilitating the sharing of student's ideas and new insights, and highlighting areas for further reflection.

The reflective focus of the course was positively remarked upon by the participants, who gave feedback that they found it "*most useful and interesting to think about*" what they had done and why they had done it, noting also, "*the activities were useful in encouraging reflective thinking about the design and implementation of e-learning resources in general*". Reflection helped our learners contextualize the content. Throughout the module, they interpreted many different examples of how e-learning can stimulate the learning experience across a variety of contexts; reflection enabled them to think about applying their new skills on a subject-specific level. Indeed, the whole structure of the module centred on the discussion board which became the intellectual hub from which spokes of discussion threads emanated and dispersed. It was in this portal that reflection and learning took place, and where ideas were translated into practice.

At first, participants were unsure of the merits of discussion, and were slow to use the discussion board either to present their own ideas or to comment on others. Perhaps this is because most of this particular cohort of participants knew each other on a professional

basis, but now encased in an environment where they were considered fellow students, they were reticent to seem critical of another colleague's work, or to be judged themselves. Also, participants expressed concern at the validity of discussion compared to the straight presentation of facts, an unease that perhaps arose from their Scientific background. One student summed this feeling up well in feedback saying, "*Discussions were difficult to adjust to. I would have liked more information and less discussion.*"

However, firm in our belief, we adhered by our rationale for the duration of the module, and made a conscious decision to lead by example where discussion and reflection was concerned, all the time taking care to remain facilitative and resist falling into an instructional role. As constructivist facilitators, we saw our role as tailoring our teaching strategies to our learners' needs, whilst encouraging them to maximise interaction. We thus moderated through facilitative questions that were used to fuel critical thinking, commented and reflected when others were slow to do so, encouraged discussion, and practiced constructive criticism at all times. The final result was that the level of tutor facilitation was one of the most consistently favoured aspects of the course in participant feedback, with students commending the "*prompt and thorough responses*", and remarking on the "*excellence*" of "*facilitation and comments on our work*". As one participant observed, "*It was crucial to see that tutors were reading the posts regularly, and responding where appropriate*".

Indeed, by the end of the four weeks participants were notably more comfortable with the discussion forum and, indeed, it became a feature of the course praised in feedback. One participant noted that even though the course had initially seemed unstructured because of the discussion format, in retrospect it was indeed well-planned and fully addressed the learning outcomes. And interestingly, the participant who observed that he would have liked "*more information and less discussion*" went on to note, "*However, in hindsight I probably learnt more the way it was done.*"

A Learning Community Approach

While one of the advantages of online learning is that it allows learners the flexibility to pace their own learning at their own convenience, a fundamental disadvantage is when learners have to learn alone, separated by time and/or distance. Working with other learners can provide the scaffolding for a journey into learning, affording the opportunity to learn from alternative perspectives, as well as providing support and encouraging other more social aspects of construction. Interaction with other learners and with facilitators thus not only provides learners with a sense of community, but is fundamental to the tenets of constructivism.

In this module we wanted to offer students more than a technologically advanced, faceless, solitary e-Learning experience. Our blended learning approach to this program ensured that learners would meet at least twice during the program – once at the beginning and once at the end and, indeed, all participants commented favourably on the given mix of face-to-face and blended learning. However, when designing the module we realized we needed something more than this to maximize that learner-learner dialogue collaboration to make best use of the benefits of social negotiation. As educational developers, we needed to show the importance of a move away from a focus purely on content development – after all, our rational stressed the tenets of constructivism, and the importance of social interaction within the learning process. Ultimately, we wanted our learners to fully experience the importance of sharing knowledge and practical experiences.

> *"I know the pitfalls of the e-learning process at different levels of student learning and how to strategize e-learning into my courses."*

> *"I think it was good to interact with WebCT as would a student; very useful to explore being an e-learner."*

"I got a lot of useful information regarding how students will learn online, how to design online learning and how interaction online might work, all which was good."[1]

We thus decided to encourage an online community through the use of asynchronous tools such as email, chat rooms, and discussion boards. After a slow start we found that threaded discussions helped to develop kinship and camaraderie – by the end of the second week, learners were beginning to write more, in a less formal tone, and even began gentle repartee each other at one stage. However, there was a problem of procrastination for some participants: these had trouble managing time and activity requirements; it was somewhat overwhelming in terms of balancing the module activities with their work. Comfort level, interest, technology access and time are very important determinants of any individual's time line for learning. Feeling 'involved' became crucial to feeling successful in the course. Interestingly, the two learners that dropped out before completing the course both expressed that they had fallen behind in the discussions, had lost the sense of community and as a result were feeling ineffective. Both said they would re-do the course when there was more time to participate in discussion.

Taking the premise that "Communities of Practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting *on an ongoing basis*" (Wanger, Mc Dermott & Snyder, 2003) then it remains to be seen whether our approach worked. Certainly for the four-week duration of the program, the learners interacted with each other progressively more, sharing opinions, problems and passions. And in the final face-to-face session, the group made the unanimous decision to avail of further consultancy and professional development from both our Institute's Learning and Teaching Centre, and our Learning Technology Team. Further, rather than working on individual teaching projects, they expressed a strong interest in working together as a community to maximize their experiences and ultimately to create a more valuable learning experience for their students.

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[1] Comments from feedback of cohort members, 2004

It seems that the community of practice created in this program will continue on an ongoing basis with this particular cohort, certainly in the short term. However, the fact that the group members were all from the Science discipline, will have made this transition into a community easier; future runs of this program will encourage a multi-discipline cohort, and our initial construction and encouragement of a community of practice may have to be more stringent. And while we as educational developers cannot control a community (even as facilitators, the function of the guide should be distributed among the group participants), our hope is that our learners' communities of practice will foster self-directed continuous learning, that members will continue to engage in reflective dialogue and to receive and provide support to fellow members, and that they stay connected to new knowledge in education, and not just in their content field.

Future Trends

When academic staff members are given professional development experiences that engage them in discovering educational technology, the stage is set for them to consider principles of instructional design and practice. A follow-on module in instructional design is planned for the coming academic year with the aim of supporting online course design by those staff participating in the module. This new module will continue to provide opportunities for online dialogue and reflection amongst participants, using activity-based learning as the framework. Participants can avail of creating subject-related materials and gain assistance from instructional technology experts; it is hoped that this will lay the foundation for self-directed instructional design in the future.

In this institution, there has been a history of academic staff not adequately accessing currently available opportunities for professional development. This is being confronted by providing a greater variety of opportunities for such development and training and providing a greater variety of local and central activities. To complement this module on e-learning, exemplars of other activities are short, specific workshops, refresher courses, sharing of experiences, mentoring from staff who have used web supported teaching, and

the provision of templates with built-in guidelines for the creation of educationally-sound e-learning content.

Delivering staff development online is just another strategy to develop the skills and knowledge of online teachers. We have found from our experiences that there are limitations of face-to-face, centralized workshops; participants need more flexibility in when and where they can learn, along with increased opportunity for communication with other staff located in different campuses across the institution. This blended learning module is an exercise in empowering the academic staff members to make connections with their own experience and knowledge and putting them in the position of the online student, advocated by Devonshire and Philip (2001).

Conclusion

It is our contention that the online professional development now in place needs to continue to encourage deep learning approaches through a thorough motivational structure, a well-structured knowledge base, learner activity and peer interaction. The programme will continue to focus on subject-specific authentic contexts and resulting workplace practices as well as sharing the pooling of knowledge and resources amongst participants. Embedded within will be opportunities for participants to critically reflect on their learning as they progress through the module, and multiple teaching methods will be combined to demonstrate a broad display of the potential of the technology. However, a greater variety of staff development opportunities alone are unlikely to induce overworked and temporal-troubled staff to participate. The institutions need to provide incentives and support for staff to attend. Time release and local management support are necessary. Constructing knowledge and developing necessary skills to use technology in order to impact on learning and teaching does not happen overnight; rather it becomes the product of a common vision and a set of experiences that prepare educators to embark together on a journey of learning.

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