
LEARNING BY DOING – USING E-TECHNOLOGIES FOR ACADEMIC STAFF DEVELOPMENT

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Abstract

There are many challenges facing Academic Staff Developers in contemporary higher education, not the least of which is the rapidly changing field of eLearning, where new technologies are constantly appearing. One of the principle issues here is not just familiarity and competence with the technologies themselves, but also of how best to deploy them in a manner which truly supports student learning. Research on student learning indicates that active, engaged learners are more likely to succeed than those that take the more passive role that is common to “traditional” forms of teaching, such as in lectures. It would be ironic, therefore, if staff developers did not take these findings into account when devising the best means of training academic staff. Here, I present some examples of such “active learning” where the underlying philosophy is that teachers adapting to eLearning are best trained by using the technologies themselves (best of all, from a student’s perspective), developing peer support networks and in a context of continual personal development.

1. Background

The rapid pace of technological change is a challenge for any academic staff development unit within a modern university. With, for example, the advent of VLEs (virtual learning environments) such as Blackboard or WebCT, the increasing use of digital video and audio, the potential of videoconferencing and wireless broadband access, universities are continually investing in hardware and infrastructure, whilst students are increasingly technologically literate. Traditional approaches to staff development and training such as half-day or full-day workshops still have their place, but for the development of high level competency in the effective educational use of technologies, their potential is extremely limited. It is important to develop awareness, familiarity and comfort with a range of software and hardware tools and these can only develop through experience and experimentation. Consequently, staff development programmes are shifting towards more direct, hands-on experiences over a longer timescale, with a focus on deeper level, critical reflection on practice.

This paper provides a number of examples of approaches taken to enhance eCompetence at the National University of Ireland, Galway and some other partner institutions through the European eCompetence Initiative and other international projects in which we participate. The emphasis is on practical descriptions and critique of such training with a view to identifying best practice options for future development.

2. E-moderating: developing the skills of online tutoring

The uptake of VLEs (or Content Management Systems as they are also often called) across much of higher education has been substantial and is now reaching the stage where the majority of courses in

many institutions in the developed world have such an online component. One of the problematic aspects of this, however, has been the inherent focus on the delivery of content such as lecture notes, PowerPoint presentations, etc. Whilst this is no doubt useful for staff and students, it ignores the possibilities for greater interaction and communication that the systems offer. Indeed, a current trend in the development of higher education practice is to encourage a *shift from teaching to learning* (Barr and Tagg, 1995), a move away from the concept of an information focused curriculum (Prosser and Trigwell, 1999) to one which concentrates on critical thinking, dialogue, discussion and reflection. Too often, the Internet is viewed simply as a means of accessing information. Even when media such as audio and video are used, the tendency is to view the network as a *broadcast medium*, rather than seizing the opportunity for two-way (or multi-way) communications.

Further, if we consider distance learning, then it is even more important to address the issue of communication, to overcome the inevitable sense of isolation experienced by the student. There is a need to provide learning support from the tutor, but also there is tremendous scope to nurture student-to-student communication through online group discussion.

To this end, the *Centre for Excellence in Learning and Teaching* at NUI Galway, commissioned an external training organisation (<http://www.atimod.com>) to provide a five-week, completely online course on “e-moderating skills” to academic staff across the university. This course was run through our local VLE (Blackboard) with tutors from the UK or Australia (emphasising the “distance” aspect and reinforcing the potential of the technology to cross national boundaries and timezones). Each group of 15 participants was supported by a tutor as they worked their way through the course which was modelled on Gilly Salmon’s book (Salmon, 2004) on the subject (copies of which were provided), each participant being expected to contribute to online discussions and tasks for about an hour each day.

In this way, academic staff were being provided with first hand experience at using the system as a student - an extremely valuable opportunity that led many to reconsider their own teaching practice and approach to course design. In essence, then, what at first sight appeared to be a technology related training programme actually addressed more fundamental educational questions and has acted as a catalyst for discussion about student engagement.

Whilst the course was demanding (and a small number of participants “dropped out”, typically 2-3 per cohort), the feedback was extremely positive and subsequent demand from other staff is very high and we continue to use this company’s services. We used a range of evaluation techniques including mapping links between messages, analysis of the “level of reflection” of contributions to the discussion boards, feedback questionnaires and individual interviews¹. A number of quotes from participants offer a flavour of the experience:

“Very often as tutors or as course directors, we ... have this idea that students are just here to do nothing else but learn, that they don’t really have a life outside your particular course. So the time constraints I was under as a “student” in the emoderating course brought that home for me.”

“It was great to be in an online discussion with people that were interested in teaching. From learning from the course content, in terms of pedagogy and how other people teach and how they might do it, I think it was useful.”

“There was an element of learning and an element of “floundering around”, so that you understand what students go through...I’ve got to be much more explicit in terms of what I want from students.”

¹ A number of which were used as the basis for the an edition of European eCompetence Initiative magazine (<http://www.ecompetence.info/index.php?id=110>)

“When you use the online environment, you have to be aware of the different cultures that may be participating.”

3. Other External Training Provision

In Ireland, we have been able to benefit from funding made available as part of a strategic government initiative known as the *National Development Plan* (NDP, 2002). This funding² (the “Training the Trainers” scheme) has ensured that universities are able to finance a number of training workshops provided by external agencies or consultants. In the area of eCompetence we have commissioned Netskills³ and VideoActive⁴ from the UK to run a number of programmes on topics such as using virtual learning environments, digital video materials production, interactive animations, computer aided assessment, etc. Subsequently, we have subscribed to Netskills’ membership scheme which provides free access to all training materials for all students and staff. Such materials include notes, exercises and PowerPoint presentations – an invaluable set of resources for local training delivery. In particular, the self-teaching modules are popular with staff who feel that time constraints prevent them from attending scheduled workshop sessions.

Whilst this type of external training provision can be expensive it ensures that staff are exposed to a high quality, professional programme that has been developed over a number of years by a full-time training organisation. Indeed, in the case both of Netskills and VideoActive, each are based in UK universities and have developed from original government funded projects, the fees and licences they charge being used to sustain their work. They are also willing to travel outwith the UK and hence our ability to make use of them in Ireland.

4. International Videoconference Seminar Series

Videoconferencing technology has been in existence for at least the last two decades, however, despite this, its use in education has been somewhat limited. Traditionally, the expense of connection and hardware probably ensured that it would remain within the niche areas of international business and medicine, but with the advent of IP (Internet protocol) based videoconferencing solutions it is now inexpensive and increasingly ubiquitous. Over the last 10 years we have used videoconferencing technology in projects in Scotland, Ireland, the US and Europe to provide access to seminar presentations by experts in fields related to higher education teaching and learning. Following on from a pilot use in supporting specialist postgraduate teaching (Duncan et al, 1997; MacLaren et al, 1998; Ritchie, 2002), an initial series of monthly seminars was launched in 1997 under the auspices of the Scottish Higher Education Funding Council’s “Use of MANs Initiative”⁵ (SHEFC, 2000) and the ScotCIT programme (SHEFC, 2001) to encourage use of the, then, recent investment in high-bandwidth metropolitan area networks. This series included speakers from institutions around the world and the presentations were shared by participants in a number of Scotland’s (13) universities, with considerable time for discussion and live debate. The project was then extended in a link with Ireland in 2002 and has since developed into a series of seminars hosted by the European eCompetence Initiative (eCompInt, 2006).

Although not overtly part of a training course, these events do appeal to academic staff since they communicate in the familiar context of a research seminar. The speakers and topics have been carefully chosen to appeal to a wider audience of staff who might not be particularly familiar with technologies, and have emphasised pedagogical themes rather than being purely for technologists.

² Typical funding levels are approximately 100,000 – 120,000 Euros, per university per year, for quality, staff training and teaching related courses

³ <http://www.netskills.ac.uk/>

⁴ <http://www.videoactive.ac.uk/>

⁵ a combination of acronym and pun!

They have served an important purpose in raising awareness of how technologies are being used in other institutions as well as developing familiarity with (and consequently reducing fear of) videoconferencing. Indeed, a number of participants have subsequently gone on to use videoconferencing in either their own area of teaching, or for research seminars, as a consequence of being an audience member in some of these events.

Whilst point-to-point videoconferences are relatively straightforward to organise, multi-point, multi-site events provide a number of potential areas of difficulty. Not the least of these, is the challenge of chairing and coordinating discussion across venues and particular skill and experience is required to do this effectively. In addition, on a more technical level, it is vital to ensure that connecting systems have their audio levels set appropriately in order to minimise feedback, etc. We have found, in practice that it is preferable to provide such seminars using a mixture of videoconferencing and live streaming. In this way, only a limited number of sites (2 or 3) are actually connected to the videoconference itself and hence able to ask questions, interrupt, etc. The other participants, instead, can watch a live stream of the event through an Internet browser. This means that they cannot ask questions or be seen on video, but by combining with a communication tool such as an instant messaging system it is possible to ask questions of the speakers through text, or, if audio is really required, it is possible to use a telephone or VoIP connection. This hybrid model is much easier to manage and places less demand on the technology infrastructure, ensuring that the audience can be as wide as possible and not limited to only those with access to full scale videoconferencing specialist hardware.

Further, the streaming aspect means that the event can also be recorded and made available at any time afterwards as part of an archived collection. An example of what a participant viewing the event through a web-browser would see is as shown in figure 1.

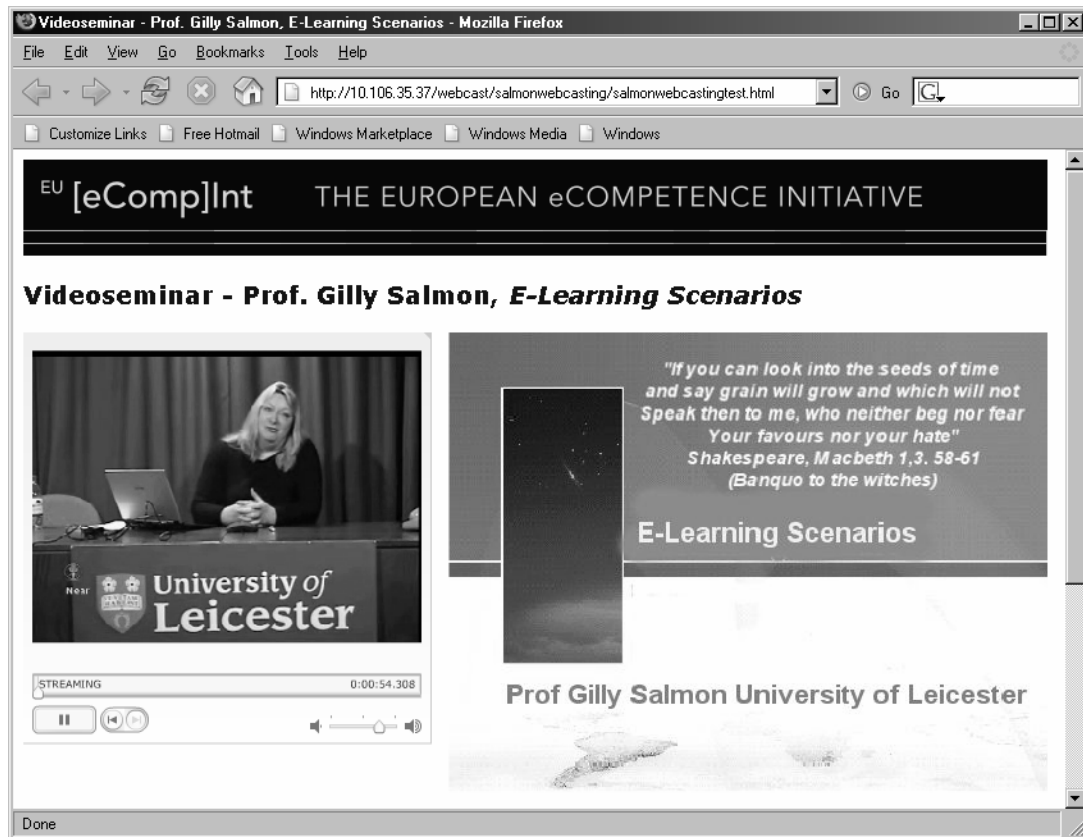


Figure 1: Video-seminar presentation as part of the European eCompetence Initiative. The video is on the left hand side, whilst the associated PowerPoint slide is shown on the right.

Access to archive materials at a time and place that is convenient will, of course, maximise the audience for such events as well as contributing to a wide pool of learning resources for future training events.

5. Project Based Approaches to Developing eCompetence

Considerable educational research and evaluation has pointed to the benefits of educational processes and methods that promote *active* learning, whereby the student is fully engaged in projects, problem solving and task resolution. Often described as *Enquiry Based Learning* or *Problem Based Learning* (see, e.g., Barrett *et al*, 2005), these pedagogies are considerably well developed in a large number of higher education establishments worldwide. It would be ironic, therefore, if such ideas were not transposed to the area of academic staff development, particularly in those areas in which we see advantage in the nurturing of reflective and critical perspectives. At its highest level, eCompetence, it can be argued, is such a concept. The definition that we have adopted (Schneckenberg, 2006; Mac Labhrainn *et al*, 2006) for this type of “competence” goes beyond mere technical proficiency, incorporating a professional confidence and comfort in making decisions about the most appropriate use of technologies in teaching and learning.

We should, therefore, consider the possibility that an effective means of developing eCompetence amongst academic staff might be to involve peer groups in project-based work, taking them through the specification and implementation of a learning technology implementation. In practice, informal self-training can often take a similar form, but what we mean here is something more developed, a project with external constraints including resources, timescales and dependencies, all of which will act as motivating factors (or “stressors!”).

An illustrative example is the case of a recent implementation of Microsoft’s *Conference XP* and *One Note* software in a business information systems course at undergraduate level where the overall intention was to exploit technologies to enable students studying at a US university to work in teams with peers in NUI Galway (Isenberg, 2005). This project, which was funded by *Microsoft Research Labs* and coordinated by Gino Sorcinelli of the *Isenberg School of Management* at the University of Massachusetts, Amherst, took place over 2005-2006. Students in Galway and Amherst took an identical module, the assessment for which was based around group projects. Groups were composed of equal numbers of Irish and American students and they used *Conference XP*, a desktop videoconferencing and document sharing programme, to communicate with each other on a regular basis throughout the semester. In addition, access was provided to commercial level business information sources and students were provided with either tablet PCs or wireless laptops.

This project, then, presented a number of technical challenges:

1. the network configuration to support *Conference XP* (2006) required multicasting and a connection to the US’s Internet 2;
2. the implementation of wireless hotspots in both campuses running appropriate services;
3. the use of a range of new (and in some cases “beta” versions) software.

Whilst the first two of these took considerable effort from the computer support services of each institution, the issues were ultimately resolved in time for the start of the semester. The issue of eCompetence in this case, was in terms of the staff teaching the module. For all concerned the technology was completely new and was to have a significant effect on the delivery of the course itself, with shared teaching, frequent conferencing and a variety of means of accessing and sharing information such as financial reports, presentations and assignments. The lecturers were provided with some funding to employ a part-time assistant to help prepare materials and support tutorial sessions with students, but all the development of the necessary technical skills had to be done on the basis of

self-teaching and experimentation. The timescales imposed created some very strict deadlines adding to the pressure, however, in such circumstances this type of externally imposed framework is actually beneficial. For self-learning there is a natural tendency to vary the pace and deprioritise training relative to other work, so a tight schedule certainly helps.

Whilst the process no doubt generated some degree of stress on the participants, the project itself was a success and the module ran well, with students being highly appreciative of the opportunity to participate in such a new venture. For the staff concerned it has had the added advantage of developing research/scholarly interests in this area of networked learning and they have been able to publish papers and make conference presentations based on the experience. Their level of “eCompetence” has been substantially developed and they are now in a position to act in a mentoring capacity for colleagues in this area.

Additional examples of problem or project based approaches to eCompetence development, where staff have had to respond to new technological innovations by working as a team include:

1. the strategic decision to develop distance learning versions of some degree programmes and the consequent implication for staff to rapidly upskill and develop peer support networks;
2. the advent of Ireland’s *National Digital Learning Repository* (NDLR, 2005), where a range of multimedia teaching materials is being made available across the entire higher education sector, providing an entirely new set of resources for teaching;
3. the shift in language teaching from analogue to digital language laboratories;
4. the use of videoconferencing to share teaching across campuses;
5. the introduction of new classroom technologies such as smartboards and electronic voting systems.

It is simply not possible, or appropriate, to deal with such developments through traditional training sessions alone. Clearly, a team based approach with a common goal and a necessity to experiment is not only an effective means of tackling such situations but is also more in tune with a research disposition. To this end we have encouraged staff to explore the possibility of using such experiences as the basis for action research case studies. This provides an additional motivation and reward with a potentially publishable outcome. Indeed, a number of our formal training workshops have actually focused on how to undertake action research and how to evaluate educational innovations, rather than concentrating on the technology *per se*.

6. Reflective Journals and Portfolios

Key to the development of higher levels of competence is critical reflection. In our Centre, we have adopted a strategic aim of ensuring that academic staff are empowered as professionals to make decisions about the use of particular teaching methods and technologies in their own courses. This, by necessity, means that emphasis needs to be placed on technical competence, professional confidence, reflective practice (Schön, 1983; Moon, 1999) and critical judgement. In addition to eCompetence development, we make extensive use of reflective journals and teaching portfolios for our professional training programme in teaching and learning in higher education. These two tools (journals and portfolios) have been found to be particularly effective and when combined with a range of evaluation instruments in an action research context, can prove to be transformative in nature and a powerful means of moving towards our goal of building a community of eCompetent reflective practitioners.

We would contend, therefore, that any strategy to develop eCompetence should incorporate such dimensions. Further, the development of a personal portfolio will provide staff with tangible evidence

of their own record of professional development and if it is updated regularly, will serve as a means of “taking stock” and identifying new areas for exploration. Some institutions also provide access to a more public version of such portfolios through their publication on the web and whilst this is a matter of choice for the individual concerned, the availability of such materials is potentially beneficial in creating a supportive and nurturing culture in the institution, lending support to newcomers and acknowledging the efforts of those undertaking such training. The KEEP tools, for example, provided by the *Carnegie Foundation for the Advancement of Teaching* (CFAT 2006) are particularly simple to use although many institutions now have their own e-portfolio software.

7. Conclusions

In this brief paper we have presented snapshots of a few examples of practices in the development of eCompetence in academic staff, most of which are still ongoing and subject to continuous evaluation. Nevertheless, we feel able to draw out a number of key factors for success from our experience. The items that we have identified are:

1. setting an appropriate “tone”, distinguishing ongoing professional development from one-off training sessions, which, in our view, have only limited potential;
2. establishing a context for such development, through, for example, a project, or a set of specific tasks closely related to the discipline areas and teaching challenges faced by each participant;
3. encouraging the maximum use of peer support and facilitating cross-disciplinary communication;
4. being committed to the use of a variety of technologies to provide support and deliver training, including digital video and audio materials delivered over the campus network, programmes run through the institutional VLE, etc;
5. seeking opportunities to adopt a research-oriented and research-informed approach;
6. encouraging reflection and critical judgement via the construction of journals and portfolios;

All of these reflect the need for flexibility and continuous evaluation of training opportunities. There is also a serious need to ensure that the local cultural context is well understood and that the perceived needs of academic staff in their individual professional and career development are properly addressed.

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