Changing the perspective of postgraduate learners using e-learning tools

Martin Maguire, Australian Catholic University, Australia
Des Matejka, Australian Catholic University, Australia

Abstract

The policy which has led to the growing trend to offer postgraduate continuing learning programs online has transformed the context in which many practising teachers continue their learning. The use of information and communication technology (ICT), particularly e-learning tools, has increased the opportunities for groups of geographically dispersed adult learners to participate in formal professional development. In addition, it has presented extra challenges for students with significant professional commitments who undertake part time studies.

The Faculty of Education at Australian Catholic University offers an online postgraduate course that focuses on the use of selected ICTs in the school curriculum. This incorporates project-based learning that requires participants to learn how to apply selected ICTs to improve student learning in their classrooms. They also use ICT e-learning tools in their own learning.

Ongoing evaluations have been carried out to determine the ways in which ICT has brought about change in the learning perspectives of postgraduate learners studying online. These have identified factors which inhibit as well as promote their learning. They demonstrate that competency with ICT e-learning tools affects progress in the learning programs. As well as acquiring new ICT competencies to meet course objectives, participants develop ICT e-learning competencies which have applicability for life long learning. The most significant changes to the perspectives of individual learners occur when effective supported learning structures using ICT e-learning tools are provided.

The Study

Ongoing evaluations of the e-learning program since its inception in 1998 have identified that there is a change in learning perspective of participants as a result of their online study, that ICT factors are both promoters and inhibitors of learning performance, with ICT competence being a critical factor in e-learning. Importantly, these ICT competencies have applicability for life long learning.

Changes in learning perspectives

The change in the participants' perspective on learning is a significant outcome of the on-line experience. The data have identified that learning becomes more outcomes focused, that the e-learning informs their teaching and that collaborative learning is a feature of their studies.

Our participants conclude that learning becomes more outcomes focused. They report a close link between the outcomes of the project-based learning tasks they perform and the outcomes of their roles as educators and leaders. This is because they are engaged in authentic problem solving with direct applicability to the workplace.

The participants report levels of empowerment and increased capabilities to take on new roles as ICT leaders and mentors among their peers. They use their new knowledge to inform decisions about their own teaching and leadership roles. Participants report that the solutions to these work-based problems earn them broad respect and appreciation from their colleagues. As a result they are able to achieve higher levels of engagement with the corporate mission of their institution.

Adult learning theory underpins the learning paradigm upon which our instructional model is based. (See Hager, 2000). Therefore collaborative learning is a key feature of our on-line

learning. It is fostered by online discussions and interaction while engaging in workplace problem-based projects.

On-line discussions are a significant element of this environment. They represent the key feature of participant sharing and provide an effective metaphor for engaging participants in a virtual learning space. Clarkson (1998) reports that adults' learning is more effective when they learn and unlearn in relationship, not independently as isolated individuals. The challenge for the on-line environment is to simulate this process by harnessing the power of asynchronous communication. Participants show high levels of engagement with on-line discussions and report satisfaction with the learning outcome. They also report feeling 'part of a learning community' and adding to the 'shared knowledge' that is constructed over the duration of the learning period.

We find that our participants have a greater understanding of the nature of learning as a result of undertaking these authentic e-learning tasks. Mayer (1999) reports that constructivist learning occurs when learners actively create their own knowledge by trying to make sense out of material presented to them. The role of the learner in relation to ICT may be as a user of the technology or as a producer of technology or media for other end-users. Our participants report that in using technology for their own learning, they gain a further appreciation of constructivism as an approach to their students' learning.

ICT Factors affecting learning

A number of factors consistently affect the way in which participants use ICT to access our e-learning site and how they interact with the learning material and activities once they do. These ICT factors are both inhibitors and promoters of learning.

Maguire and Matejka (2000) report on the range of such inhibitors that include: problems with reliable connection to the Internet, the suitability of the location of the computer used to access the learning sites, lack of ICT e-learning competencies, poor or negative participant attitudes to technology and that those who are slow to acquire the necessary ICT competencies to access the web sites often fall behind or fail in their learning.

One of the most complex issues reported is from those participants who have difficulty understanding how the instructional system is represented in an e-learning environment. It is evident that these participants have weak schemas of the information system and their engagement within the learning environment.

We have identified ICT factors that promote learning. These include the use of a supported learning model, the use of low-threshold applications (LTA) and the setting of realistic expectations for participant involvement. We have found that on-line learning is most effective where participants feel supported. Specific aspects of supported learning are the need for participants to communicate regularly with group presenters, a sound understanding of the paradigm for communication, the need for quality and speedy feedback on formative and summative assessment tasks, an appropriate group size and good accessibility to the presenters.

Our e-learning model uses LTAs extensively. These are ICTs that are reliable, accessible, easy to learn, non-intimidating and inexpensive. Examples include e-mail, on-line discussion, teleconferences and web sites. Participants report that each LTA has observable positive consequences that promote learning.

The expectations of the participants are set to an achievable level to help them successfully complete the learning programs. For example, prototypes are developed rather that fully functional solutions, design specifications are presented in graphical rather that in a fully annotated form, simple software applications are always used rather than complex and more expensive packages.

ICT competencies of the learner

Participants exit the course with two sets of ICT competencies: those acquired to achieve the course outcomes and those necessary to engage in on-line study. Both sets are important determinants of success in the e-learning environment.

Participants have to develop ICT competencies to satisfy the course outcomes. These include web authoring, database development, on-line communication tools, graphics and design, FTP and file management. Participants report satisfaction with the way in which their own ICT software competencies increase in diversity and complexity during the course of study.

We assume that participants have a minimum level of ICT e-learning competencies to undertake the course. Some participants enter the course with limited sets of these. For this minority, sending e-mail, attachments, file management and web site access prove difficult. Participants report greatest success in their learning where these competencies are clearly specified and support is provided for their development. They have access to an all-hour access help desk with telephone and e-mail support and conclude that this is the minimum support requirement if their set of ICT competencies is to be enhanced.

Participants also report that where their ICT e-learning competencies are increased, not only is there a corresponding enhancement in their learning, but there is positive and clear transference of competencies to their workplace and professional roles.

Conclusion

Our experience and feedback from participants demonstrate that e-learning sites must have the promotion of learning as their focus. They must incorporate effective supported learning structures and promote the development of ICT competencies to meet course outcomes and to engage in effective on-line learning. The latter competencies provide the opportunity for participants to engage in further life long learning. We also conclude that successful e-learning provides new perspectives on learning which inform the participants' decisions about teaching and leadership roles in the workplace. We believe that the successful incorporation of theses features is a key indicator of success in an on-line environment.

References

Clarkson P (1998), Learning to Unlearn: Insights from a Qualitative Study of Successful Business Managers. *Paper presented at THE LSE STRATEGY & COMPLEXITY SEMINAR* 1998, University of Warwick, Coventry.

Hager P (2000), Conceptions of Learning. *Paper presented at Working Knowledge: Productive learning at work* on 10-13 December, 2000, [http://www.rcvet.uts.edu.au/wkconference.htm] University of Technology, Sydney.

Maguire M and Matejka D (2000), On-Line Delivery: Making the Rough Road Smooth. *Paper presented at Flexible Learning for a Flexible Society. Proceedings of the ASET/HERDSA 2000 Joint International Conference* 2000, [http://cleo.murdoch.edu.au/gen/aset/confs/aset-herdsa2000/procs/contents.html] Toowoomba, Qld.

Mayer R E (1999), In *Instructional-design theories and models*, Vol. II (Ed, Reigeluth C M) Lawrence Erlbaum Associates, Mahwah, NJ, pp. 141-159.