

## **Facilitating the learning of wildlife management ethics through online forum debate**

Cilla Kinross  
Charles Sturt University  
[cilla.kinross@gmail.com](mailto:cilla.kinross@gmail.com) (5 May-31 July 2008)  
[ckinross@csu.edu.au](mailto:ckinross@csu.edu.au) (after August 1 2008)

### **INTRODUCTION**

This paper contains preliminary observations in respect of using online learning tools, in particular a World Wide Web forum debate, for distance education (DE) students enrolled in Wildlife Management, an optional third-year subject in the Bachelor of Land Management, Charles Sturt University (CSU), Orange, New South Wales, Australia. The objectives for the online forum program were to achieve a specific capability – an understanding of animal ethics in wildlife management – and to raise the level of student learning outcomes.

In this paper, therefore, I review briefly the literature on online interactivity focusing on the benefits and applications of these to distance education; describe the capability program in the rural management courses at CSU; outline the process for achieving the improved learning and capability outcomes through the use of an online forum debate in the subject Wildlife Management; and outline strategies for improving and evaluating online teaching.

### **Online interactivity**

Interactivity can be defined as 'the manner in which the learner dialogues with him/herself, with materials, or people during learning's mental activity' (Baker-Albaugh 1993, 36). Much of the literature focuses on online interactivity between student and materials (generally computers) and there is also a large literature on self-assessment. The focus here is on student-student (and to a lesser extent teacher-learner) interactivity at a distance, using computer-mediated communication.

It has always been difficult for distance education students to interact with each other (Davie 1988) and the social side of DE is still being neglected, putting those students at a disadvantage (Muirhead 2000). Milheim (1996) has reviewed the literature on interactivity within a computer-based education strategy and concludes that it is the most important element in instructional design. It increases the students' interest; it improves cognitive processes; and it develops group learning skills (Baker-Albaugh 1993). More precisely, the benefits include a better understanding of different perspectives; an ability to compare progress (and mistakes) with others and with set standards; opportunities for reflection; and a deeper engagement with the topic through interaction with other learners and teachers (Petre et al. 1998). One of the key advantages is that the student no longer feels alone, but is part of a community of students that also has problems and fears (Bates 1986). Audio-conferences and residential schools also do this, but are not always options, particularly for those students based interstate or overseas.

One of the ways that interactivity can be improved for DE students is through online learning, particularly via Web conferencing. The benefits are claimed for many disciplines, including science (see Gilmer [1999] for an example of teaching biochemistry via the Web). The educational advantages and costs through online learning have been reviewed by Laurillard (1993); McArthur and Lewis (McArthur and Lewis 1997); Harlamert (1998); Hughes and Hewson (1998); Petre et al. (1998); Stratfold (1998); Muirhead (2000); Sims (2003) and, in respect of professionals, Maor and Volet (2007). Benefits include the promotion of autonomous learning and life-long learning skills; encouragement of active, constructivist learning; improvement in communication and information technology skills; a reduction in feelings of isolation; and an improvement in motivation and academic performance.

Many of these are similar to the benefits of interactivity itself and it is important to understand that it is the educational processes (e.g. the type of interactivity) that provide the benefit, not the

tools themselves (Baker-Albaugh 1993); (McArthur and Lewis 1997). Successful online strategies require students to be comfortable with technology (Bates 1986); be prepared to take more responsibility for discovery; and be highly motivated (Harlamert 1998).

The arguments about improved learning outcomes using online teaching strategies have not always been validated. Many of the trials using the new technologies have not used appropriate evaluation tools and there has been some confusion between student reactions and student learning (Alexander 1999). Furthermore, many of the studies have contrasted face-to-face with online learning (Hewson and Hughes 1999; Petre et al. 1998) and these are unfair comparisons as DE students receive little or no face-to-face teaching. Actual results from research into the learning benefits of online interactivity are somewhat scarce (Sims 2003). Distance educators want to provide a stimulating, dynamic, interactive learning experience, but are not certain whether the online experience can provide that, although early results are generally positive both in respect of the quantity and quality of responses in interactive fora (Muirhead 2000).

## **DESCRIPTION OF PROGRAM**

### **Capability Program**

This program was initiated a decade ago with the aim of producing graduates that were capable in three main areas: scholarship, global citizenship and lifelong learning. This required students to extend themselves considerably beyond their formal studies, and even beyond the widely applied 'graduate attributes'. However the program also required teachers to facilitate student achievement of some of its requirements through the subjects taught. One of the capabilities was in the area of 'ethical, social and professional understandings' and asked the students to 'understand ethical principles and propositions'; I considered that a useful learning strategy for this could be through an interactive debate, using animal ethics in wildlife management as a debate topic.

In addition to facilitating the students achieving one of their capability goals, there was a desire to improve their mode of engagement from one of 'situated learning' (where the learning takes place in the context of a known situation) to that of 'mediated learning' (where students go one step further than this and use academic learning to enable them to reflect on an idea in order for them to 'change the way they experience the world' [Laurillard 1993]). In fact, the ideal is for students to use both these strategies (Figure 1), so that they can apply knowledge in context, but also see the wider picture ie to move from the particular to the general (Laurillard 1993). Concomitantly this could equate to the 'extended abstract', the highest step in the Structure of the Observed Learning Outcomes (SOLO) learning taxonomy (Biggs 1999), which was seen as going hand in hand with the capability program objectives.

### **The subject: Wildlife Management**

The subject is a third-year, senior subject with considerable flexibility built-in as it requires students to complete a learning contract. There are usually 10-20 mature-aged students enrolled, all by DE. Most of these are already in the workforce in an area related to land management or farming, which often includes some aspect of wildlife management. Furthermore, the Bachelor of Land Management assessment approach is through individual projects set in the context of the students' work or home, so most students are already familiar with the concept of 'situated learning'.

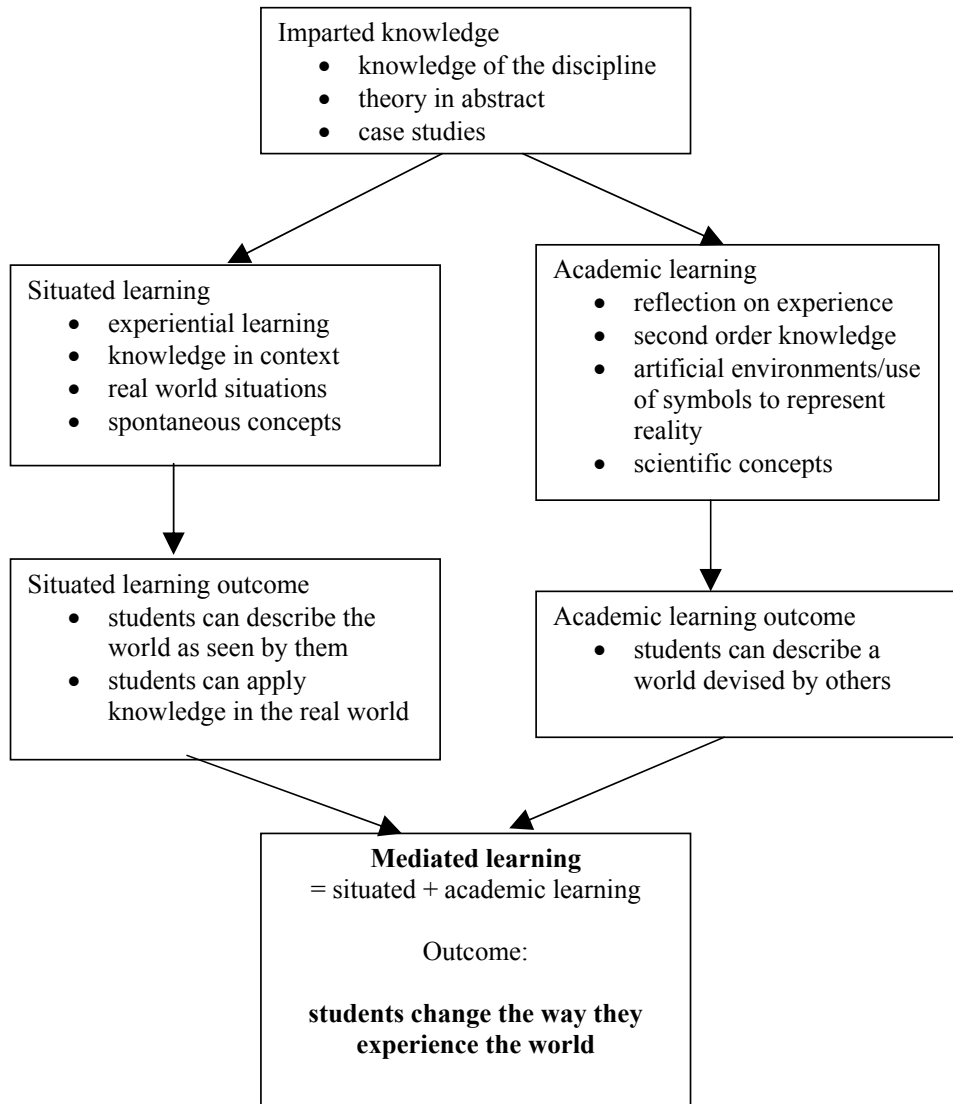


Figure 1 Learning strategies and pathways: previous and current

Sources: Adapted from Laurillard (1993); Morgan & Kinross (2002)

The subject is broken into three modules: the ecology of species, populations and communities; an introduction to wildlife research techniques; and wildlife management approaches and planning (Figure 2). There is a prerequisite subject relating primarily to ecological theory and application. There is usually an optional one-day school that covers the statistics component of the research model, although this was not held in 2007. Students are required to achieve learning outcomes from each module, but can, within limits, provide their own assessment weightings for each. They also need to provide evidence they can meet the overall subject's capabilities, one of which is an understanding of the ethics involved with wildlife management and research, as described above.

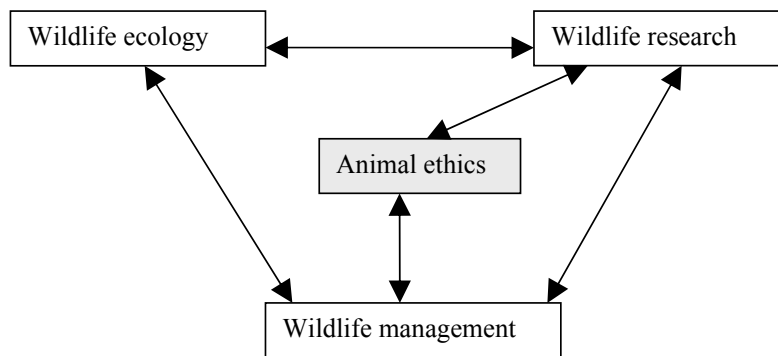


Figure 2 The links between wildlife ecology, research, management and animal ethics

### The process

At the beginning of semester, the students receive a package of material, which provides all their course materials as well as information in respect of the online forums in which they may choose to participate. Participation is voluntary, but almost all students elect this option unless they have problems with Internet access due to their location in remote areas or similar. The actual process of running the debate is provided in Table 1.

The topics selected by students have to be relevant to the proposition, which is changed each time the subject is offered, and approved by the moderator to ensure no overlap. Propositions

Table 1 Steps involved in holding an online forum debate

Step	Action	Responsibility	Comments
1	Selection of debate proposition	Moderator	Provided in DE course materials
2	Choosing of sides: positive or negative	Students	First come, first served (moderator sorts problems)
3	Selection of relevant research topic	Individual students	Approval by moderator needed
4	Research of topic	Individual students	Two-three weeks allowed
5	Posting of results of research	Individual students	References need to be provided
6	Feedback to students	Moderator	May be assessable (students elect weighting 0-25%)
7	Election of team leader	Students or moderator	Can be done earlier; team leaders earn extra points
7	Creation of private forums for each team	Moderator	Can be 'closed' to all eyes apart from moderator
8	Preparation of debate positions	Student teams	Two-three weeks allowed
9	Posting of position statement	Team leaders	Must be on time!
10	Preparation of response statements	Student teams	One-two weeks usually enough
11	Posting of response statements	Team leaders	Must be on time!
12	Feedback to teams	Moderator	Can be done throughout debate; students also contribute
13	Assessment	Moderator	Peer review has not been very successful
14	Posting of opinions and feedback	Individual students	Students air their own opinions and evaluate the debate process

were deliberately controversial and generally related to the exploitation of wildlife such as duck-hunting, kangaroo harvesting etc. The proposition in 2007 was: 'Allowing licensed and trained hunters to shoot introduced animals on public lands is a wildlife management strategy to be encouraged'. This was a highly contentious topic as all recreational hunting prior to 2007 in New South Wales had been on private lands only.

As the subject coordinator and sole teacher, I was also the moderator of the forum. As students now have considerable exposure to online fora prior to undertaking this subject, they do not usually require a lengthy introduction to the computer medium (such as the five stages of competence described by Salmon [2000a]), although when the debate was initiated, some 'ice-breaking' activities were included and students are always encouraged to introduce themselves online as students often move through the course at different speeds (or come from different courses) so may never have 'met' before, online or otherwise. The debate has been held four times: three times (2001, 2002, 2003) in conjunction with another subject Applied Ecology as a peer mentoring scheme, and once on its own (2007) in Wildlife Management after subject coordination of Applied Ecology was changed and the debate dropped in that subject. The process in Table 1 shows the 2007 process without the peer mentoring approach, which was considered beyond the scope of this paper.

### **Assessment of forum participation**

The main justification for assessing participation given by Boud et al. (1999) is that academic effort should be recognised and rewarded. This is particularly important for busy DE students who need to be given a very good reason to participate (Salmon 2000b). Based on feedback from a different subject's Web forum evaluated in 2001, it was clear that higher participation in the forum would have eventuated if at least some credit (15%) had been provided (Kinross and Morgan 2001). Boud et al. (1999) suggest that a credit of <20% may not be taken seriously, but state, on the other hand, that assessment should not be used as a compliance device. As this appears to be something of a contradiction, it seemed a sensible compromise to allow students to elect whether their participation in the online activities was graded or not, but to insist that all forum inputs needed to be at a satisfactory level.

The assessment was based on participation: quality and quantity. It was anticipated that criteria loosely based on SOLO principles would assist the move from situated to mediated learning. It included the professionalism of their approach (timeliness, attitude, participation level); depth of research into selected topic; ability to analyse wildlife management options; and evidence of understanding of the issues, particularly animal ethics. The team leader was eligible for an additional 10 points. The actual weighting was selected by the student in their learning contract (up to 25% for each student; up to 35% for each team leader).

### **Student evaluation**

The numbers of formal student evaluation respondents in each year's cohort have been too small to warrant quantitative evaluation. However, the feedback at the end of each debate has been generally positive and provided input into the process of improving the subject course materials each year. In 2007 students were asked to provide qualitative feedback on the debate process, and from these comments some themes have emerged.

1. The most important aspect was the 'eye-opening' effect, ie seeing the other team's point of view; and appreciating other people's values. One example of this was: 'My opinions on this are still not any clearer on this topic than I was before, if anything even more undecided, but at least my knowledge of the arguments for and against is more informed than before'. Another example was a comment from a student who researched hunters' views on a different website and said 'I was impressed by how many of these guys are really genuinely concerned about native wildlife and very keen to have their side of the story heard by a 'greenie' as they quickly assumed me to be!'
2. A second theme was the 'intellectual exercise', eg being forced to defend one's team's position even when disagreeing with it. An example cited in this case was: 'I found it a useful format for exploring different views and a useful intellectual exercise to defend these'.
3. The third theme was that of the actual learning process through the stimulation of the research and the debate itself. Feedback included: 'The opportunity to participate in this debate provided a new learning (and debating) experience'..... 'Big thanks to all who contributed to this process of knowledge enhancement'.
4. And what did they actually learn? Learning themes included a new awareness of the difference between technical and value judgements in wildlife management; a better appreciation of animal ethics through the use of humane feral animal control techniques for example; the benefits of a multiple-strand approach to controlling pest animals; and the need to assess each situation, as well as the consequences of different options, before making a wildlife management decision. An example of the latter was: 'The debate has enabled me to recognise that all management strategies carry something of a 'footprint' and that there are both costs and benefits, some of which may not be fully recognised for years or decades'.

These comments indicate that the debate has had the following outcomes: it has not only enhanced students' learning of the topic of wildlife management, but, at least in some cases, improved their understanding of animal ethics; in addition, their ability to see the wider picture has probably aided a small shift towards mediated learning and independent thinking by getting

them to apply knowledge to an unfamiliar situation (Ramsden 1992). The feedback related mainly to the debate process as this was what was requested; it did not specify that students provide their views on ethical attitudes before and after the debate, nor did it ask to comment on the learning process. But at the very least it has caused these students to stop and question the validity of a proposed wildlife management strategy, which should make them become better land managers.

#### **Evaluation of current online teaching strategies**

The online program in Wildlife Management meets all the criteria of typical Web discussion systems as listed by Stratfold (1998), although some are met better than others ie:

- they are of interest to a specific group of learners (yes)
- they permit frequent visits (yes)
- access is restricted to students and tutor/moderator (yes, plus the online technical assistant)
- discussions are focussed on a particular topic (yes)
- tutors are used for more formal participation (yes)
- there is reference to other material (yes, although students are expected to be reasonably self-directed in this respect)
- there is a mechanism for guiding students through a unit e.g. discussions are closed and new ones activated (yes, although getting students through on time can be tricky)
- messages can be reviewed (yes)
- there is extended interaction and collaboration with other people (yes).

### **DISCUSSION AND RECOMMENDATIONS FOR IMPROVEMENT**

#### **Subject design and learning tools**

More diverse activities could be planned; however, most students have said that researching the wildlife topic and conducting the debate already provided a diversity of activities and required considerable time and effort. A focus on more of a problem-solving case-study could be attempted as an alternative activity, especially if using real life simulations (Oliver, Omari, and Stoney 1999) and could further help students move from situated to mediated learning. This activity should be considered now that the culture of online learning is more widespread.

Other ways of extending the value of the debate as a learning activity could also be considered: we could encourage students to express a viewpoint about the issues explored in the public media; and we could include a portfolio of student achievement as part of overall student engagement in the subject or course; and encourage students to demonstrate how their participation in the debate supported their global capability development.

In terms of further improving the use of the online technologies within the subject, students could have more input into the design, making the fora more student-centred (Boorsook and Higginbotham-Wheat 1991). They could set some of the marking criteria, although some would have to be non-negotiable to ensure they are congruent with the essential learning outcomes (Morgan and Kinross 2002). Past attempts at asking students to contribute to the setting of marking criteria have met with some resistance and are very time-consuming, but are still worth consideration if students were given more guidance and support.

It has been suggested that the use of threaded comments increases the cognitive load and therefore reduces learning and that one tool that could be employed to overcome this is that of a 'shoutboard' (Albon et al.). This feature has scrolling columns with headings, making it much easier to post comments. I can see that this feature could be very useful to the debate process, in particular at the time when the teams are providing input into the team's position statements and responses.

An additional tool is that of chat rooms. In fact this has already been tried, but it was not very successful as it proved too difficult to have all students online at the same time, a problem also

observed by others (Zariski and Styles 2000). It would appear, therefore, that the asynchronous forum still appears to be the most suitable tool for class interaction.

### Assessment strategies

At the beginning of this online forum debate program it was very difficult to be objective in the assessment process, as it seemed so important to reward effort in tackling a new learning tool. However, as students became more familiar with the technology and as Web conference inputs are there for all to see, it became easier to evaluate the effort made, level of understanding attained and improvement achieved by each participant.

One way in which assessment could be more in line with constructivism and capability-building is to use self and peer assessment. Self assessment, with 'informed opinion from peers' is recommended by Boud et al. (1999) to develop autonomous learning skills. Summative peer and self assessment have been tried in this and other subjects, but were not entirely satisfactory as the most conscientious students under-rated themselves and over-rated their peers, so there was an equity issue. However, formative self assessment has been used by the author in a different subject as a means of reflective thinking and, whilst not wholeheartedly supported by students, appeared to be a useful learning tool as it forced students to reflect on how their work could be improved prior to submission, and could be considered for this subject.

### Moderation and feedback

Students clearly appreciated feedback throughout the research and debate process. Learners need structure and support and it is the moderator's role to provide these in order for students to engage satisfactorily in this type of activity (Maor and Volet 2007). More feedback could also provide students with a better idea of their progress through each milestone (Farrell 2001). In fact the more feedback the learner receives – both synchronously from interactive self-test mechanisms and chat sessions and asynchronously from teacher email, forums, and from other students in group work – the more comfortable and confident the participant is to move forward with their learning program (Poynter 2004). This needs to be balanced by the needs of the teacher, however, who does not have unlimited time at his or her disposal.

### Evaluation

In order to evaluate the effectiveness of online interactivity, more theoretically based research is needed, and more specifically, studies that examine the educational value of computer mediated interactivity and other forms of social learning activities (Maor and Volet 2007). Certainly, in this case, to evaluate whether the students have really moved from situated to mediated learning, formal evaluation would be required. If the teaching strategy is to change to facilitate this and to improve quality of teaching and learning in other ways, then incorporation of evaluation of these changes to teaching strategy is critical (Milheim 1996). Some ways in which this could be implemented include:

- Investigation of the correlation between the overall results in the subject and the level of participation in the debate (but this does not allow for those students who are high achievers notwithstanding teaching strategies)
- Implementation of before-and-after questionnaires to gauge whether the level of learning has been enhanced or altered
- Monitoring of the level of participation (including those who 'lurk' without posting) using tracking tools (these are currently under development with CSU's new *Interact* (Sakai) online learning environment). Other analytical tools as described by Davie (1988); Muirhead (2000) and (Salmon 2000b) should also be investigated
- Submitting the program to peer review by colleagues
- Allowing sufficient time at the end of the debate to provide a forum whereby the process itself can be critically reviewed by the students.

**Comment [TMck1]:** Alternative form: < 'before' and 'after' questionnaires >

## CONCLUSION

One of my teaching objectives in this subject was to encourage students to move to mediated learning, without losing their ability to achieve situated learning. In this respect, student participation in an online forum has proved to be a useful tool. In addition, the debate has aided most students to progress in their achievement of at least one of the capabilities that are seen as desirable outcomes of their undergraduate degree.

When this program was started, not all students had Internet access. Over the years, it has become more and more the 'norm' and now at Charles Sturt University, it is a requirement. For this reason, I remain optimistic and anticipate that, as Stratfold (1998) suggests, students will use this technology when they perceive the benefits: improved learning, flexibility, contact with peers and tutors, and access to the Web resources. Now there is institution-wide acceptance, there is also a stronger likelihood of stimulating dialogue taking place and this may lead to an increase in student numbers, which will further enhance interactivity (Daniel 1997). If adequate planning is undertaken at the design stage and sufficient attention given to improving student learning and interaction, I am confident that use of the Internet forum to present research findings and conduct debates can bring benefits to both the institution and to its teachers and students.

## ACKNOWLEDGMENTS

I would like to thank Tony McKenzie, Educational Designer, Centre for Learning and Teaching, Charles Sturt University, Orange for his useful input into the draft manuscript.

## REFERENCES

- Albon, R., and L. Pelliccione. 2006. Whose technology enables learning through discussions? The 'shoutboard': a new design for asynchronous discussions. In *Who's learning? Whose technology? : proceedings [of] the 23rd annual conference of the Australasian Society for Computers in Learning in Tertiary Education*, ed. L Markauskaite, P Goodyear and P Reimann, 9-19. Sydney: Sydney University Press.
- Alexander, S. 1999. An evaluation of innovative projects involving communication and information technology in higher education. *Higher Education Research and Development* 18 (2):173-183.
- Baker-Albaugh, P. R. 1993. What we see is not what we get. *Journal of Instruction Delivery Systems* 7 (3):36-39.
- Bates, T. 1986. Computer Assisted Learning or Communications: Which Way for Information Technology in Distance Education? Open University, Walton, Bletchley, Bucks (England). Inst. of Educational Technology. [BBB10421].
- Boorsook, T. K., and N. Higginbotham-Wheat. 1991. Interactivity: what is it and what can it do for computer-based instruction? *Educational Technology* 31 (10):11-17.
- Boud, D., R. Cohen, and J. Sampson. 1999. Peer learning and assessment. *Assessment & Evaluation in Higher Education* 24 (4):413-426.
- Daniel, J. S. 1997. Why universities need technology strategies. *Change* 29 (4):1-7.
- Davie, L. E. 1988. Facilitating adult learning through computer-mediated distance education. *Journal of Distance Education* III (2):55-69.
- Farrell, P. 2001. Online interactivity - creating new ways to engage the learner. Paper read at An On-line Odyssey: Asia Pacific WebCT Conference, Adelaide, March 22-24, 2001.
- Gilmer, P. 1999. Developing a discourse community: teaching biochemistry using the World Wide Web. In *Selected Papers from the 10th International Conference on College Teaching and Learning*, ed. J. A. Chambers, Ed. Jacksonville, Florida: Florida Community College, Jacksonville. Center for the Advancement of Teaching and Learning.
- Harlamert, J. A. 1998. Effect of distance education on student learning methodologies. *Journal of Instruction Delivery Systems* 12 (4):6-8.
- Hewson, L., and C. Hughes. 1999. An online postgraduate subject in information technology for university teachers. *Innovations in Education and Training International* 36 (2):106-117.

- Hughes, C., and L. Hewson. 1998. Online interactions: developing a neglected aspect of the virtual classroom. *Educational Technology* July-August: 48-55.
- Kinross, C., and C. Morgan. 2001. Improving interactivity online for land management distance education students. Paper read at The 9th Cambridge International Conference on Open and Distance Learning: Supporting the Student in Open and Distance Learning, at Cambridge, UK.
- Laurillard, D. 1993. *Rethinking University Teaching - A Framework for the Effective Use of Educational Technology*. London: Routledge.
- Maor, D., and S. Volet. 2007. Interactivity in professional online learning: a review of research based studies. *Australasian Journal of Educational Technology* 23 (3):269-290.
- McArthur, D., and M. Lewis. 1997. *Untangling the Web: Applications of the Internet and Other Information Technologies to Higher Education*. Santa Monica, CA: Rand Corp., Inst. on Education and Training.
- Milheim, W. D. 1996. Interactivity and computer-based instruction. *Journal of Educational Technology Systems* 24 (3):225-233.
- Morgan, C. K., and C. Kinross. 2002. Facilitating online interactivity among remotely located land management students. *e-Journal of Instructional Science and Technology* 5 (2):14.
- Muirhead, B. 2000. Enhancing social interaction in computer-mediated distance education. In *International Forum of Educational Technology and Society: Formal Discussion Initiation*.
- Oliver, R., A. Omari, and S. Stoney. 1999. Collaborative learning on the World Wide Web. In *Selected Papers from the 10th International Conference on College Teaching and Learning*, edited by J. A. Chambers, Ed. Jacksonville, Florida: Florida Community College, Jacksonville. Center for the Advancement of Teaching and Learning.
- Petre, M., L. Carswell, B. Price, and P. Thomas. 1998. Innovations in large-scale supported distance teaching: transformation for the Internet, not just translation. In *The Knowledge Web*, ed. M. Eisenstadt and T. Vincent. London: Kogan Page.
- Poynter, D. 2004. Educational technology: cutting to the chase. *Training and Development in Australia* 31 (5):10-14.
- Ramsden, P. 1992. *Learning to Teach in Higher Education*. London: Routledge.
- Salmon, G. K. 2000a. Driving across stepping stones. In *Networked Learning 2000. Innovative Approaches to Lifelong Learning and Higher Education through the Internet.*, edited by M. Asensio, J. Foster, V. Hodgson and D. & McConnell. Lancaster, UK: Lancaster University.
- Salmon, G. 2000b. *E-moderating: the Key to Teaching and Learning Online*. London: Kogan Page.
- Sims, R. 2003. Promises of interactivity: aligning learner perceptions and expectations with strategies for flexible and online learning. *Distance Education* 24 (1):87-103.
- Stratfold, M. 1998. Promoting learner dialogues on the Web. In *The Knowledge Web*, edited by M. Eisenstadt and T. Vincent. London: Kogan Page.
- Zariski, A., and I. Styles. 2000. Enhancing student strategies for online learning. Paper read at Flexible Futures in Tertiary Teaching: Proceedings of the 9th Annual Teaching Learning Forum, 2-4 February 2000, at Perth: Curtin University of Technology.