

Strand 3: Networked Learning For Professional Development

Paper 2:

Networked learning for professional development: Design and evaluation of technologies to meet learning outcomes

Rhona Sharpe and Paul Bailey

Rhona Sharpe and Paul Bailey
University of Plymouth

e-mail: r.sharpe@plymouth.ac.uk

Summary

- Professional development for staff in higher education is developing rapidly in response to current national developments. As staff seek support and development to cope with the changes in their students, appropriate teaching, learning and assessment methods and rising use of learning technologies, institutions must be in a position to provide relevant programmes of development. Increasingly staff will be required to evidence their own development and institutions should be able to offer suitable and accessible systems which allow them to easily document their progress and gain accreditation. As new programmes are being created and existing programmes are evolving quickly in response to these national demands, this paper reminds us of the importance of learning outcomes in design and evaluation. Two case studies which have used learning technologies on professional development programmes are presented. The first case study uses outcomes to redesign the teaching

Strand 3: Networked Learning For Professional Development

and learning in higher education course for teaching staff to a web based open learning system. The second case study uses the outcomes of a graduate teaching assistants course to evaluate the effectiveness of using a computer conferencing system. The paper intends to give a clear rationale for using learning technologies in professional development programmes and strategies for their design and evaluation. It is hoped that using learning technologies in this way, with the emphasis on outcomes will lead to more appropriate and successful use of technologies for networked professional development.

General introduction

- Continuing professional development (CPD) for staff in higher education is currently undergoing something of a quiet revolution. In response to internal and external demands new and innovative ways of developing and supporting staff are being sought. The Dearing report (Dearing, 1997) placed considerable emphasis on CPD, recommending that "... all new full time academic staff with teaching responsibilities are required to achieve at least associate membership of the Institute." (recommendation 48), and that "... it should become the norm for all permanent staff with teaching responsibilities to be trained on accredited programmes." (summary point 70). The emphasis on CPD is not just for academic staff. Many departments have encouraged their postgraduate students to become involved in teaching and the Dearing Report notes that this is of benefit to postgraduates who appreciate the experience (Chapter 14).

It is proposed that networked professional development programmes can be viable options for the development and support of staff in higher education. The use of networked CPD enables the development of programmes for new and experienced staff which can account for the variety in their previous skills and experience and include different pathways which lead to recognised qualifications. Networked CPD also offers a flexible form of learning and course participation, particularly important as staff have increasingly heavy demands on their time. As participants on networked CPD programmes, staff find themselves involved in student centred, independent study courses of the

type which they are starting to use with their students. The networked CPD courses for staff should provide them with models of good practice and a greater empathy with their students. The two case studies presented here are drawn from the networked CPD provision at the University of Plymouth. The first case study examines how learning outcomes influence particular design issues and the second how learning outcomes are used in an evaluation methodology.

Case Study 1: Design of a web-based open learning system

The learning outcomes

- This first example discusses the evolution of the Teaching and Learning in Higher Education (TLHE) programme accredited by the Staff and Educational Development Association (SEDA). This programme is aimed at new teaching staff and in light of the changes in CPD described above is undergoing expansion to include experienced staff. The programme aims to enable staff to become coping, confident, innovative facilitators of learning. The outcomes of the course are obviously concerned with preparation for teaching, for example, "design a teaching programme from a course outline, document or syllabus". Therefore, for each module, participants are expected to have actually implemented some strategies into their teaching and/or assessment aimed at helping students become good, independent learners. These outcomes are assessed by a Portfolio of evidence.

Strand 3: Networked Learning For Professional Development

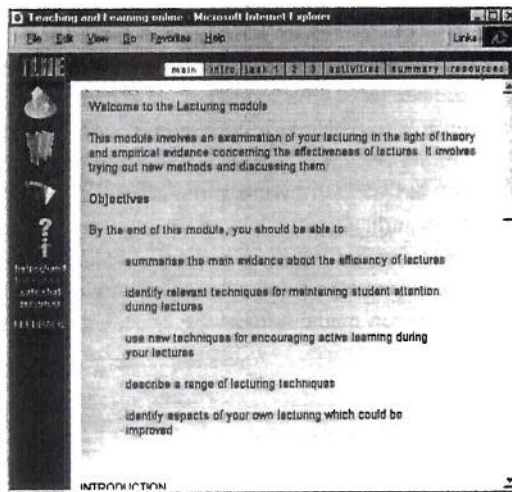


Figure 1. Example of an open learning module from the TLHE programme

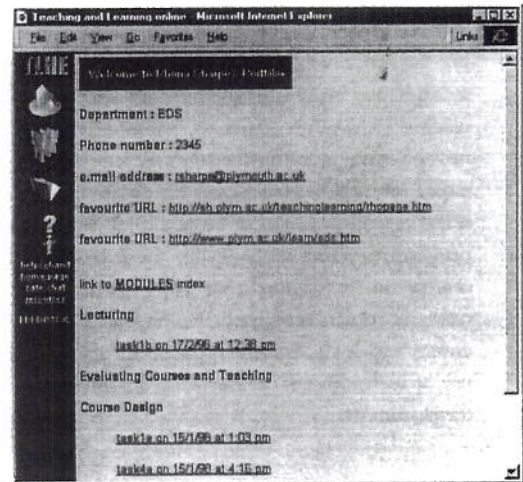


Figure 2. Example of a portfolio of evidence

Design methodology

To meet these outcomes and individualised needs, an open learning system has been developed for the Web. This allows staff more choice and flexibility over what and how they study and accounts for variations in previous experience. To enable participants to meet their outcomes of implementing teaching, learning and assessment strategies, the system was developed to take participants through a learning cycle based on Kolb (1984). This requires a project based, well structured system which guides staff through the process. As the open learning materials themselves are a core part of the system, it was decided to use tried and tested guided open learning materials rather than designing materials from scratch. An example from one of the modules based on materials from the Oxford Centre for Staff and Learning Development is shown in Figure 1.

An advantage of the networked system is that participants' progress and documentation can be constantly evaluated and they can receive regular feedback to help them evidence their achievement of the module outcomes. This type of feedback and monitoring is incorporated by building electronic portfolios which are available to the tutors and other participants. This system allows ideas and progress to be shared among the other course participants and it is hoped that this will build cohort cohesiveness and reduce the high drop out rates

commonly associated with open learning programmes. In previous years, participants have reported that they find the creation of a portfolio of evidence an additional burden on their already limited time. In this electronic system, tasks completed whilst working through the open learning materials are automatically added to an individual's portfolio and so the main body of the final assessment is created as the participant progresses through the course. The final portfolio will be a useful record of an individual's CPD for appraisal and promotion as shown in Figure 2. The first cohort are presently using the system with six core modules and evaluations are being collected from paper based and online feedback forms.

Conclusions

- The use of learning outcomes in this case study has led to the development of a set of guided open learning materials which give the participants a structured approach to the design and implementation of new teaching, learning and assessment strategies. The dilemma with traditional open learning courses has been that to achieve flexibility in learning participants have studied independently and in isolation. The networked system developed here allows the needs of the participants to be met

Strand 3: Networked Learning For Professional Development

by sharing and documenting their progress in their electronic portfolios whilst still achieving the learning outcomes.

Case Study 2: Evaluation of computer conferencing with graduate teaching assistants

The learning outcomes

- The programme for graduate teaching assistants (GTAs) has recently received recognition from SEDA under their Associate Teacher Scheme. As in the TLHE programme, the major outcomes are concerned with improving teaching and learning practice, although this group of participants has quite specific needs, particularly improving confidence and reducing isolation. In addition, at this early stage of their career, GTAs are encouraged to develop the skills of reflective practice through a learning log.

Design methodology

Focus group evaluations of previous courses have shown that participants rate as most positive the aspects of the course which allow for the sharing of common concerns and opportunities for group discussions. This has been achieved by bringing together GTAs from around the institution for weekly workshops which provide opportunities for the sharing of experiences, group discussion and collaborative learning. It is proposed that these outcomes can be met and further extended to include reflective writing through the use of computer conferencing.

Computer mediated communication (CMC), particularly computer conferencing, has primarily been used for distance education (see Magee & Wheeler, 1997 for review) where its asynchronous nature is used to overcome time and space constraints. The UK Open University has made full use of conferencing claiming that this electronic networking gives its courses an "intellectual vitality" not always

apparent in other distance learning courses (Daniel, 1996, p. 195). In relation to the specified outcomes of the GTAs course, CMC is reported to be a powerful tool for group communication and co-operative learning (e.g. Kaye, 1989; McConnell, 1994) and as such should promote the collaborative learning aspect of the course including sharing of experiences and group discussions. Similarly, Mason (1991) suggests that CMC reduces social isolation and this is also an explicit aim of the GTAs course.

Evaluation methodology

The GTAs course consisted of four workshops held over one semester. Between workshops participants were required to work on the FirstClass™ conferencing system to submit and discuss weekly reflective logs, comment on teaching observations, generate questions and discuss case studies. Several different areas were provided for these tasks as shown in Figure 3. The 11 course participants were joined by a principal tutor and three associate tutors. All course messages were recorded for analysis and participants also completed a course evaluation questionnaire.

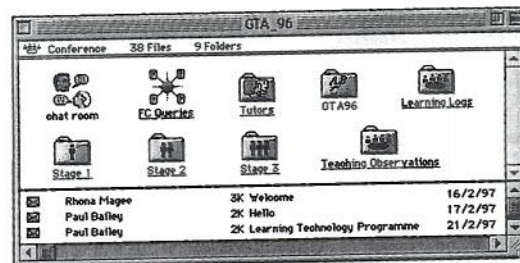


Figure 3. The conferences provided for the graduate teaching assistants course

Evaluation, Results and Discussion

Analysis of message content

During the course there were a total of 370 messages posted into the conferencing system. Table 1 shows the number of messages in each of the conference areas and shows that participants posted more than the tutors during the course. The primary tutor posted the most messages (92 messages) with the other three associate tutors making only minimal contributions (6, 2 and 3 messages respectively). Some users were more willing to post

Strand 3: Networked Learning For Professional Development

messages than others. The number of messages from an individual participant ranged from 10 to 47 with a median of 23. The Stage 2 and Learning Logs conferences were the most well used with 119 and 91 messages respectively. The participant chat area was not used and the tutors were also reluctant to use their private area.

A message classification system, shown in Table 2, was devised from the literature of the educational value of CMC (Mason, 1991; Henri, 1991) and the learning outcomes of the course. The messages were coded independently by the primary author and another colleague. Rather than classify every statement in a message, the obvious examples were marked and counted and sections of the transcripts which did not fall neatly into one of the above categories were ignored. The most popular message content was sharing of experiences with 75 occurrences. Generating ideas, reflecting and building on other messages were all close with 58, 57 and 55 occurrences respectively. There were 45 references to the course and 36 giving or requesting feedback.

Conference	Tutors	Participants	Total
GTAs	23	14	37
FC Queries	6	2	8
Chat	n/a	0	0
Tutors	12	n/a	12
Teaching observations	4	16	20
Learning Logs	17	74	91
Stage 1	12	38	50
Stage 2	21	98	119
Stage 3	8	27	35
Total	103	269	372

Table 1. Number of messages in each of the conference areas.

Sharing of personal experiences. 47 of the 75 sharing occurrences were found in the learning logs conference. Participants were willing to share their, often difficult, experiences of particular situations with 49 of the occurrences being concerned with specific incidents. The remaining messages in this category concerned participants' general experiences of the job and their students. Individuals were honest in their experiences of teaching with references to workload, conflicting demands of teaching and research and the lack of contact with other GTAs.

"I began the lecture—it seemed to be going OK. I had prepared some cardboard tubing, elastic bands, and sticky tape to demonstrate what a sound wave does—this went down very well with some spontaneous applause. (That felt really good.) However, it wasn't long before I felt I was losing them and in fact I did lose a couple who walked out.."

(participant 1, learning logs)

Drawing on the course. This category is concerned with how the course promoted understanding and whether the GTAs were able to incorporate what they had learnt on the course into their own teaching practice. This consisted of messages related specifically to how or where the course workshops, discussions or activities had influenced their understanding or skills or how participants had used techniques from the course in their teaching practice. There were 45 occurrences in this category.

"It's easy to think that students take everything in, but it was clear from the session last week that attention spans are less than I thought."

(participant 4, learning logs)

Requesting or giving feedback. CMC allows participants to give much more feedback on each other's work than face-to-face sessions however only 36 occurrences were noted. Of these, 22 were

Strand 3: Networked Learning For Professional Development

Category	Description	Examples
Sharing of personal experiences	Drawing on own experiences about particular situations which have occurred or are about to occur. Sharing more general experiences.	<p>"This afternoon I have to give a twenty minute lecture . . ."</p> <p>"The main thing is lack of contact with other people. You work on your own, you teach on your own. You never really get positive feedback about what you do. You feel isolated."</p>
Drawing on the course	Referring to course materials, workshops or readings in order to promote understanding or improve practice.	"So this week's exercise puts teaching into another dimension, treating students as individuals with different needs... Teaching now becomes an activity with many more facets than I thought: attention curves, methods of teaching, interaction, relationship to the group, moving furniture, ways to ask questions . . ."
Requesting and giving feedback	Asking for comments on own work or posing a specific problem. Giving feedback or responding to messages requesting help.	<p>"Anyone else got any suggestions/comments/tips?"</p> <p>"As far as I can see, your session was well planned . . ."</p>
Generating ideas	Initiating a new topic for discussion or a novel solution to a problem.	"... a difficult concept needs time to sink in - and discourse theory is certainly easier for the 'theorist' than the 'activist' or 'pragmatist' learner. Could there be a role-play created where students apply this theory?"
Building on previous messages	Referring back to the written course record. Responding or referring to another message or drawing together threads of several messages	<p>"As [participant name] pointed out with her comments . . ."</p> <p>"From the messages I've read, there seems to be a consensus emerging."</p>
Reflection	Questioning own beliefs or actions. Trying to find reasons for what one sees or demonstrating awareness of own ideas, strengths or weaknesses.	"I recognised a number of things about how I approach things generally. I certainly am not a very active learner it would seem . . ."

Table 2: Message classification system

Strand 3: Networked Learning For Professional Development

requests for feedback and 14 giving feedback. Requests were made for help in specific teaching situations and feedback was also requested on teaching observations. Participants were happy to offer feedback on each other's teaching practice, but more reluctant to give feedback on written work. Of the 14 giving feedback occurrences, 11 were related to teaching observations.

"I did give a research seminar this week and would kindly ask for any constructive criticism 'GTA-style' on that one from people who sat in and listened."

(participant 11, Stage 2)

Generating ideas. There were 58 occurrences of new ideas. Most of these (n=51) were in response to a specific activity in Stage 2 where participants were asked to generate ideas on how to deal with difficult situations. The remaining 8 occurrences appeared to generate spontaneously, usually in the learning logs area (n=4). They were either an individual's own thoughts or ideas generated in response to a request for help.

"I think that when marking, maybe it is a good idea to go away after initially skim reading scripts and have a break to let the subconscious tick over what's been written."

(participant 7, Stage 3)

Building on previous messages. It is well documented in the literature that the number of teacher-student contacts increases markedly in CMC environments (Berge & Collins, 1995) and indeed the conference generated over 300 messages. However, the focus here is on discussion rather than interaction. As Mason (1991) and later Webb et al (1994) note "a natural tendency to measure that which is most easily measurable has mistaken activity for learning, interaction for collaboration." (Webb et al, 1994; p. 329). Here, analysis of content shows that of the 55 occurrences in this category, 27 were simple conversations such as arranging times to meet or agreeing with previous

messages. The remaining messages commented on and extended a previous message or drew together the threads of a conversation.

"One of the common themes to come out of some of the learning logs for example is the setting aside of some time before the start of the session to have a brief chat with some of the students individually, enquire about their histories and aspirations for what they are doing, have a laugh, crack a joke."

(participant 8, Stage 2)

Reflection. One of the key objectives of the course is the development of reflective practice and in this CMC environment, of reflective writing.

Participants are constantly encouraged to review what they do, why they do it and how they can improve. Of the 57 occurrences, the majority were found in the learning logs conference (n=27). The remainder were fairly equally distributed around the other conferences showing that participants appear to have integrated this way of working into all aspects of the course, and hopefully, their practice.

"Students learn in different ways, you need to address the needs of all the members of the group, people who are naturally vocal and those that are shy. The main reason for this problem is this has not been taken into account in the process of planning the tutorial programme."

(participant 4, Stage 2)

Reflective comments primarily concerned an individual's own learning, particular teaching situations, or individual strengths and weaknesses.

"I also learned that I should think less in terms of my teaching and more in terms of the students' learning . . . I realised that the idea was not to try to become

Strand 3: Networked Learning For Professional Development

'the great provider of knowledge' but more the provider of encouragement and guidance of student learning."

(participant 5, learning logs)

Analysis of user perceptions

Evaluation questionnaires were circulated and returned by 10 of the 11 participants. The results of one section of the questionnaire is relevant here. This consisted of open questions asking participants to comment on what they considered to be the best and worst aspects of the course. The number of comments in each category are shown in brackets.

The most frequently mentioned 'best things' about the course were:

- practise at giving talks and teaching observations with feedback (6)
- meeting postgraduates from other departments and comparing experiences (4)
- groupwork and group discussions (3)
- particular skills learnt on course e.g. session planning (2), marking schemes (2)
- developed understanding of teaching and learning (2)

The most frequently mentioned 'worst things' about the course were:

- finding and/or managing time to participate in the conferences (4)
- the lack of contact with other participants (4)
- finding something to write in the learning logs (2)

Conclusions

- The use of CMC by the GTAs course is intended to provide a shared, supportive environment in which participants can work and learn collaboratively. Primarily, CMC should promote collaborative learning which may be characterised by the sharing and comparing of experiences, giving and requesting feedback and building on messages. There is strong evidence that participants were able to share, often personal experiences, and this aspect of the course was positively evaluated. Participants did give and request feedback from each other and engaged in group discussions which were also seen as a positive aspect of the course. Secondly, the conferencing aspect of the course was intended to reduce social isolation by providing a supportive place to work. There was evidence of socially supportive messages throughout the course with participants helping each other with teaching observations and technical queries. In contrast, in the user evaluations, participants reported feeling lonely and missing the face to face contact. Finally, the course aimed to develop reflective practice and there was strong evidence of reflective writing, not only in the learning logs, but throughout the conference. The course evaluation, through analysis of the message content, demonstrates that participants did achieve the learning outcomes and that CMC can be used to successfully support a course of this type. However, the user evaluation raised concerns about the specific needs of the participants such as finding time for conferencing and the lack of contact with the group.

General summary

- The paper has presented two examples of how professional development programmes have utilised learning technologies. The first study demonstrated a clear strategy of using the learning outcomes of the course to design an appropriate learning system. It also showed the importance of considering the needs of the individual learners, in this case flexibility in CPD. The second study used learning outcomes to evaluate the effectiveness of a conferencing system by an analysis of message content as well as user evaluations and highlighted discrepancies between the two. Each of these projects illus-

Strand 3: Networked Learning For Professional Development

trate the potential of using networked systems in CPD programmes where they have: provided flexible learning opportunities for more staff, shared records of progress and supportive and collaborative learning environments. It is clear that networked systems have the potential to provide the required professional development to carry staff in higher education forward into the Learning Age.

References

- Berge, Z. & Collins, M (Eds) (1995) *Computer-mediated communication and the online classroom: overview and perspectives*. Cresskill, NJ, Hampton Press.
- Daniel, J (1996) *Knowledge media and the information society*. London, Kogan Page.
- Dearing, R (1997) *Higher education in the learning society*. Report of the National Committee of Enquiry into Higher Education. HMSO.
- Henri, F (1991) *Computer conferencing and content analysis*. In Malley, C (Ed) *Computer supported collaborative learning*. Heidelberg, Springer-Verlag.
- Kaye, A R (1989) *Computer-mediated communication and distance education*: In R D Mason and A R Kaye (Eds.) *Mindweave: communication, computers and distance education*. Oxford, Pergamon Press.
- Kolb, D (1984) *Experiential learning*. Prentice-Hall.
- Magee, R & Wheeler, S (1997) *Distant education and new convergent technologies 2: computer-mediated communication*. *Information Technology in Nursing*, 9(2), pp 13-17
- Mason, R (1991) *The textuality of computer conferencing*. In A R Kaye (Ed) *Collaborative learning through computer conferencing: the najaden papers*. Berlin, Springer-Verlag.
- McConnell, D (1994) *Implementing computer supported cooperative learning*. London, Kogan Page.
- Webb, B Newman, D R & Cochrane C (1994) *The role of computers in improving student learning*. In Gibbs, G (Ed) *Improving student learning: theory and practice*. Oxford, The Oxford Centre for Staff Development.

Acknowledgements.

- Web site design by James Norwood and Alex Zenovic