Keynote 1:

Developing Networked Learning Professionals : A Critical Perspective

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Abstract

- A major factor in the up-take and use of Information and Communication Technology in Higher Education is the development of academic staff. This is particularly so in helping staff make the paradigm shift from "conventional" teaching and learning to teaching and learning in "virtual" or networked environments. With the advent of the Internet and Intranets, the distinction between on-campus and off-campus (distance) learning is becoming blurred. Networking learning resources and learners themselves now makes it possible for us to provide seamless, online learning environments which can be used to support learning anywhere in the world.

However, these new opportunties pose significant issues about the design of networked or virtual learning, and about the development of academic staff's understanding and skills in offering their courses in this way. A new paradigm is emerging for thinking about these issues, which is based on our understanding of the nature of knowledge and knowledge construction and which actively employs the unique characteristics of networked learning environments.

This is not a simple shift, but a complex cultural change.

The paper will provide a critical analysis of the paradigm shift. This will be done by way of presenting a Case Study of an innovative new Master's Course in Networked Collaborative Learning, which is one model for developing staff which is used at the University of Sheffield. The paper will consider the design of the Masters course, the need for training and development in Networked Collaborative Learning, the action research learning philosophy that we encourage as the basis of personal and professional development, the need for the development of a community of learners online rather than a collection of individuals studying in isolation, and the results of our extensive evaluation of the course to date.

Introduction

- The Internet and all its associated information and communication technologies present a variety of challenges to us: how do we learn about the technology, and how do we learn how to carry out our professional practice via the technology ? How do we avoid the technology determining and shaping our practice, rather than using the technology in the pursuit of our educational values and beliefs ?

At the moment, it would seem that the emphasis is often on the technology rather than on how the technology can facilitate learning. The education and training sectors are having to make decisions about implementation while our knowledge and understanding of the learning potential of the Internet is still only emerging.

This paper is about the ways in which we can work with professional educators and trainers in helping them understand the nature of the Internet and at the same time understand how they can develop their professional practice in the use of the Internet in ways that sustain and develop their educational values.

What is Networked Collaborative Learning ?

- Many terms are emerging to describe the use of electronic communications and the Internet in education and training. My preference is for "networked collaborative learning" since it places the emphasis on networking people and resources together; and on collaboration as the major form of social relationship within a learning context. The emphasis is emphatically on 'learning', and not on the technology.

Networked collaborative learning (NCL) is therefore the bringing together of learners via personal computers linked to the Internet, with a focus on them working as a "learning community", sharing resources, knowledge, experience and responsibility through reciprocal collaborative learning.

Why do we Need Professional Development?

- We are experiencing a paradigm shift in our thinking about learning. This is occurring at various levels. For example, there is a shift from conventional, second generation distance learning towards virtual distance learning. Face to face teaching and learning on campus is now also incorporating some forms of networked learning, freeing staff and learners to work at times which suit them and to use resources, and methods of working together, that were not possible a few years ago. "Distance" in learning is no longer the issue that it once was: the paradigm of NCL shifts the emphasis from geographical separation of learners, to the ways in which we can 'network' learners together, whether they happen to be on campus or off-campus; in the same country or situated anywhere in the world.

Learning how to work with the technology and take advantage of networking in learning are the key issues.

In the UK, the Dearing Report of July '97 (the most important policy document on Higher Education in the UK since 1963) emphasised that

communications and information technology (C&IT) should be seen to be very important in the future of HE. A National Institute for Learning and Teaching in Higher Education is to be set up which will be concerned with professional development, especially in the delivery of online learning:

> "for a full and successful integration into learning to take place, staff need to be effective practitioners and skilled in the management of students' learning through C&IT"

> "for the majority of students, over the next ten years the delivery of some course materials and much of the organisation and communication of course arrangements will be conducted by computer"

> *(Dearing Report, 1997)*

All of this suggests that we are going through a fundamental shift in our thinking about teaching and learning; a paradigm shift from "conventional" distance learning to networked collaborative learning. The basic changes are indicated in Figure 1.

Designing Networked Collaborative Learning

- In the Centre for the Study of Networked Learning at the University of Sheffield we have been running a Masters in Education programme in Networked Collaborative Learning for the past two years. We have given considerable thought to the design of the programme and have been concerned to provide an experience which allows participants to learn about the technology by using it in practical, purposeful contexts, and to provide a course structure which emphasises active, collaborative learning in groups where participants carry out small scale action research projects into their professional practice.

The design of the programme is influenced by our understanding of adult learning theory. In developing the programme we have also drawn on research into online learning, especially in relation to the development of profesional people online.

1. Different views of virtual learning:

In imagining the design of a course for the development of teachers and lecturers interesetd in the use of the Internet, it is useful to ask what kind of learning context might suit such an audience. Bonamy and Hauglusliane-Charlier (1995) suggest three views of virtual learning which may be used for professional development purposes:

The Virtual Classroom as the Focus: Here, the control of learning is placed firmly with the teacher or expert. The emphasis is on knowledge acquisition with little concern for participant interaction or for social negotiation of meaning. There is a "body" of knowledge to be transmitted, and students are expected to study it, learn it and mirror it back the the tutor in some way, usualy by formal exmination.

The Communication Process as the Focus: The control and responsibility for learning resides with each learner, who is percieved as an "expert" in their own way. Knowledge is constructed via social interaction in the online learning environment. The tutor acts as moderator or animator.

Knowledge Building as the Focus: The focus here is on individual and collective knowledge building. There is reification of professional knowledge from the collective expertise of the participants. The tutor acts as cognitive expert, and helps in the development of an "evolving knowledge base."

The main application of the Knowledge Building focus is professional learning and development.

2.Viewing the design as a whole:

Some guiding principles are needed when thinking of the overall design of any professional development programme based on participants working in cooperative ways. McConnell (1994, 87) emphasises:

- openness in the educational process - the learning community

- self-determined learning

- a real purpose to the co-operative process

- a supportive learning environment

- collaborative assessment of learning

- assessment and evaluation of the ongoing learning process

These are parts of a whole which, taken together, suggest a philosophy of, and a set of procedures for the design of online learning environments.

In our programme, we emphasise the following in the design:

action research: the most important factor in helping professional people develop their practice is the need for them to be able to examine their existing practice in relation to what it might look like when carried out on the Internet. They need a model which will help them shift towards a critical perspective on teaching and learning. We chose the action research model as a way of organising the programme and as a method for participants to think about and analyse their practice. At the beginning of the programme we introduce participants to the action research model and help them understand the potential of action research as a form of learning. Throughout the programme they are involved in small scale, action research projects which focus on them developing their practice by introducing into it aspects of NCL and examining this through an action research perspective (see Figure 2).

group work: we wanted to emphasise the role of working in groups as a social form of learning, but also as a way of showing some of the benefits of the new C&IT which are available to support group work online. Group work helps participants "make public" their professional practice, and gives them a legitimate forum for examining and talking about it. It is also a social place where participants can feel free to raise issues of personal and general concern to themselves and to others in the group.

cooperative learning: at the core of a learning community is the willingness of participants to cooperate with others in their learning, to share resources and to reciprocate cooperation.

| "Conventional", 2nd Generation Distance Learning	Networked Collaborative Learning : A New Distance Learning Paradigm
- the content of learning material is largely unilaterally decided upon by academic staff	- New Information and Communication Technologies (I&CT) offer new opportunities for :
- knowledge, in this 'packaged' form, is slow to be changed and up-dated	- networking learners and tutors
- the form of learning encouraged is inherently individualistic	- emphasising social, dialogical learning
- learners are isolated - little communication	- building and developing learning communities
- assessment is unilateral, by the tutor	- developing cooperative learning/assessment strategies
- the educational technology of distance learning largely supports a form of positivism in relation to knowledge	- emphasising level two learning ie learning to learn through reflective, group processes
- difficult for us to be "true" to adult learning principles	- relating theory to practice through action research
	- accessing diverse resources via the Internet/Web

Figure 1 : The Paradigm Shift
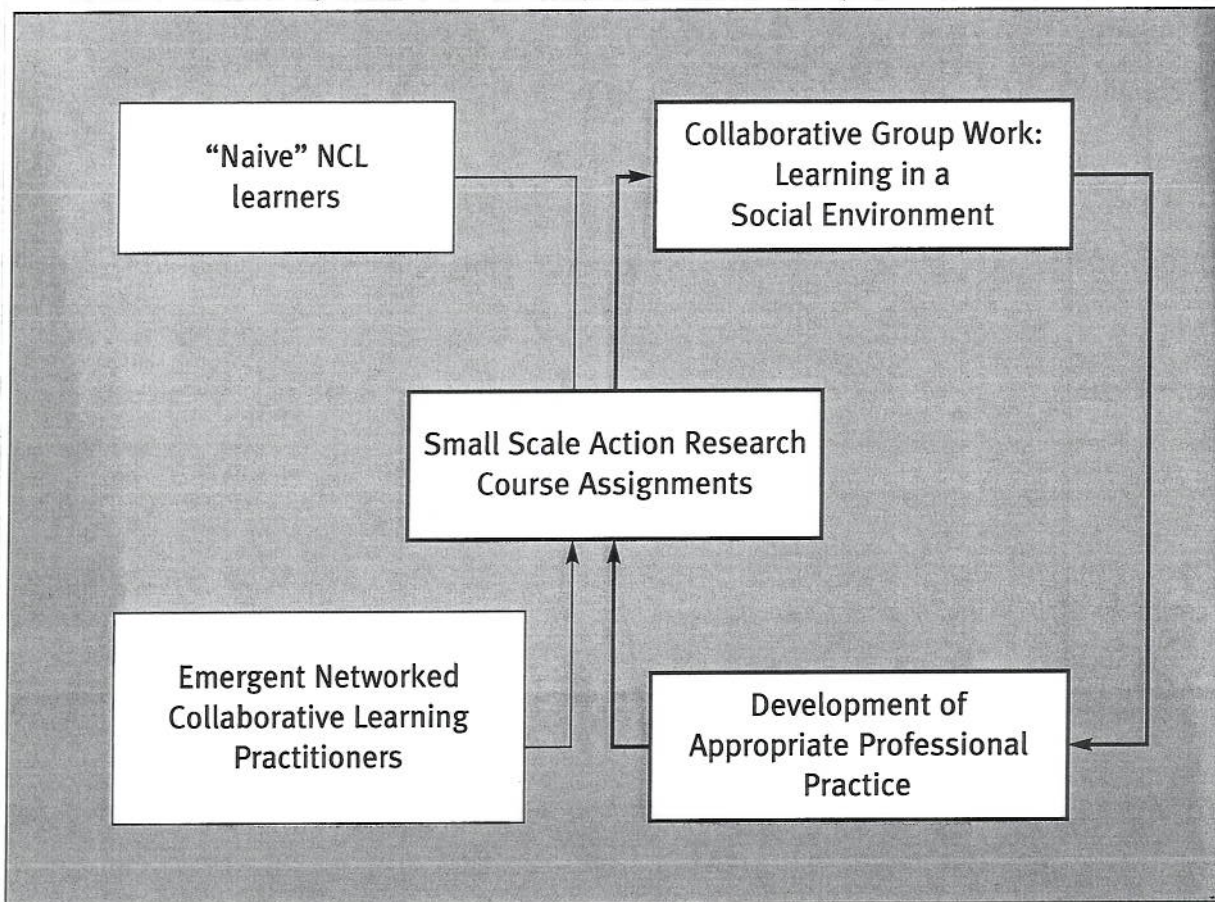
Figure 2 : The Course Action Research Model

Cooperation theory (Axelrod1990; Argyle 1991) and cooperative learning theory (Johnson and Johnson 1990; Slavin 1990; Sharan 1990) have influenced the emergent field of computer supported cooperative learning. Research into computer supported cooperative learning (McConnell, 1994; McConnell, Hardy and Hodgson, 1996) indicates that there are several factors which influence cooperation in learning:

- a willingness by learners to participate cooperatively

- an understanding by learners and tutors of the benefits of this form of learning

- assessment systems that support and reward cooperation & active involvement of learners in their own formal assessment

- the distribution of power between tutor/learner: the learner has to see in practice that they have power to control their learning

We have been careful to ensure that these factors have been 'designed-into' the programme.

Adult & Feminist Learning Theory and practice:

We were guided by current understanding and practice of adult learning theory (eg see Knowles 1984; Boud 1988) and of the enormous impact of feminist theory on educational practice (eg see Kramarae and Spender 1993). From this several guiding principles have emerged which we incorporate into the programme:

- **new thinking about knowledge creation:** we are all creators of knowledge and we can construct knowledge in social learning settings; one of our

concerns on the programme is to provide a space and context for participants to reflect on their "implicit" professional knowledge and bring that to the fore-front of the online groups in order to make it explicit and available for discussion.

- **knowledge is not value neutral:** it is "socially justified belief"; different communities have different "truths". We wanted this to be an underlying concept on the programme, especially in relation to the construction of participants' and tutors' knowledge about how to teach and learn on the Internet.

- **our relationships with learners:** tutors on the programme do have a special role to play as "guardians" of the University; but we see ourselves as learners too, and as tutor-participants in the learning groups. We work hard at developing good learning relationships with course participants.

-**using learners' experiences as a form of learning:** most participants are new to teaching and learning via the Internet; we think that there is great scope for them to spend time reflecting on their experiences as learners on the programme, and to use this knowledge to guide them in their own practice.

We have also been guided by the theory and practice of open learning (eg see Hodgson, Mann and Snell 1987; Harris 1987) and reviews of the various groupware available (McConnell 1994, Chapter 2) and our past practice in using these systems. We decided to use Lotus Notes as the main groupware because it offers:

- threaded discussions

- off-line work: saves telephone costs; allows reflective participation; acts as an evolving knowledge data base which can be interrogated

- affords easy replication over the Internet

- provides a quality experience in a rich, text-based environment.

The Design of the MEd in Networked Collaborative Learning

- The MEd is an advanced, part-time Masters Course lasting 2 years which provides a comprehensive grounding in NCL. There are two learning environments: face to face and virtual.

The focus is on learning about NCL, and on using networking technologies as a learning environment

The course emphasises a wide choice over content and direction of learning; the management of one's own learning, and that of others; a critical perspective on learning; a focus on participants' own learning and development; and a learning community perspective: tutors and participants modify the design Our audience is teachers/lecturers in all sectors of education; professional trainers and developers; adult educators; open and distance learning personnel; librarians and resource people

The course design and content is shown in Figure 3

The Two Learning Environments

Face to face

We have found it beneficial at this stage to meet face to face prior to each Workshop period. This helps us establish a sense of community; learn about the technology; form the online learning sets; review the online periods; consider MEd design issues, and plan for the next online period

Virtual Learning Environment

Most of the course is run electronically, via the Internet. We use the groupware Lotus Notes for group collaborative work and have a Web site for the exploration of the Web and its potential in supporting learning. On the Web site we have course readings / bibliographies; Web resources associated with each Workshop; links to other Web sites; a link to Sheffield University Library resources / catalogues (and beyond).

MEd - Structure of the Programme

Year 1

Workshop One

-setting purposes and developing the learning community - from staff and participants' perspectives

-the role of action research and experiential learning

-an introduction to Lotus Notes and the Web

-participants choose a course assignment related to their professional practice

Workshop Two

-networked learning and computer supported cooperative learning

-computer mediated communications generally

-open and distance learning : theory and practice, and the new paradigm of networked
collaborative learning

-self-chosen assignment

Workshop Three

-the Internet as a learning environment

-learning potential, benefits and drawbacks of online tools and technologies

-networked learner support

-generic/subject specific information skills resources

-Web page design

-design of networked learning course in own subject area as course assignment

Year 2

Designing for Research and Evaluation - participants plan and design an action research project which addresses a real issue in their own professional practice

Research Dissertation - Action research project carried out and dissertation written.

Assessment - Self chosen course assignments. Topics negotiated with staff - but must relate to participants' professional work. One Research Dissertation
Assessment is part of the learning process and is carried out by triangulated processes ie self/peer/tutor collaborative assessment process

Figure 3: The Structure and Content of the MEd

Experience and Outcomes

- We have carried out extensive research and evaluation into the MEd, both by ourselves as part of our concern to be action research practitioners, and by external bodies commissioned to evaluate the programme. I will draw extensively on the findings of the external evaluation (Machell, J. and G McHugh,1997) to indicate some of the experiences and outcomes of the programme.

The learning experience: for all the participants, studying on the MEd is a new kind of learning experience - in terms of becoming acquainted with the Internet and associated technologies, and in terms of participating in an online learning community where cooperative learning is the main focus. Participants have, on the whole, responded to this form of learning very favourably. The content of the course is felt to be interesting and relevant to them, and there is a very clear message that they feel they are acquiring new skills and knowledge:

> "It has been intellectually, philosophically and professionally refreshing and imagination expanding."

> "It is opening up new areas of study."

Views on the efficacy of the collaborative learning and teaching methods suggest participants are having different experiences of these: the majority say that they are effective, but a sizable minority are "not sure" of their effectiveness, while a few feel that they are not effective. Our discussions with participants tell us that the change from knowing how to work as a predominantly autonomous learner (which most of them have been accustomed to), to working in collaborative groups where learning is "shared" in some form and where they each have a large role to play in ensuring that the work of the learning set is carried out effectively, is not always an easy one. Most participants appear to understand the educational benefits of working in this way and articulate a willingness to do so. But for some the shift in expectations about themselves as collaborative learners takes some time, and when it becomes difficult they are sometimes inclined to fall back on their traditional approach and work autonomously. This is, of course, an issue for discussion in each learning set - there is much to be learned by participants examining how the groups work.

Some participants also felt a little disappointed that that some of the anticipated collaborative aspects of learning did not always work smoothly. Several reasons were given for this: personal and work related issues sometimes prevented full participation in the collaborative work (problems faced by mature learners on all courses); some participants felt that the tutors did not regularly prompt them to engage in the collaborative work of the learning sets:

> "The course work load is acceptable, my job workload is not ! This has a knock on effect on collaboration and because of little regular prompting from tutors allows us to have lapses in contact"

Having the freedom to choose what to work on during the course provides certain benefits to participants, but may also, in their eyes, make it difficult to collaborate with others on their work:

> "Collaboration only works well when a high percentage are participating and working in similar areas. When you choose topics relevant to work this may not be what others are working on, may not be relevant to them."

But for other participants, the variety of assignment topics and backgrounds of participants presents a rich environment for learning:

> "I have learnt a lot from other people's projects on the course which has been professionally useful."

These differences in experience should not necessarily be judged in negative or positive terms: they are equivalent and worthwhile experiences which indicate the need to be inclusive of alternative ways of working in these online environments. Our job

as online tutors is to help participants make sense of them, and help them understand the potential learning implicit in them.

For some, attitudes to this form of learning may also be related to their confidence in working with the technology. Attitudes tended to become more positive once the technical confidence of individual users improved:

> "After initial technical problems, having got used to this medium of learning I would now not wish to study through any other method."

Nearly all participants felt that the course was exploiting the full potential of the medium as a mode of learning. Interestingly, when asked which were the most useful aspects of the course overall, some commented that it was the development of technical skills which they welcomed, while others indicated that the opportunity to reflect on their professional practice was the important outcome for them. For many, however, both the technical and pedagogical aspects were equally important:

> "email as a tool.....But for me the whole philosophical/pedagogical debate around 'learning communities' and collaborative learning because it coincides with so may fundamental values traditionally espoused within radical adult and community education."

> "First exploring the idea of collaborative learning online has enabled me to see the potential for geographically dispersed students. This is useful for a subject in which class contact and sharing experiences is normally highly valued. Second, it's stimulated me to find resources on the Net and these are growing a pace."

Staff work on the programme as a team. We try to design and run each workshop collaboratively. On the whole, this has worked very well. We make every effort to examine our own practice on the programme by sharing experiences of facilitating

the learning sets, organising the group work, participating in the triangulated assessments and running the "general" community conferences.

The impact on individuals: an important aspect of the course is the way in which participants can use the experience to develop themselves as professionals and perhaps find a new career path. Comments suggest that for a number of them, participation in the MEd has had a considerable impact on their professional practice:

> "the skills I have acquired in using the technology and the knowledge about educational practice.....have been absorbed into my own training sessions."

> "I can see ways of supporting learners that I would not have considered, would not have considered possible, before taking the course."

> "it has improved my teaching potential and allowed my programme to expand and reach out to others."

I feel my practice has been completely turned inside out, I've found it very refreshing to try new approaches (community learning/triangulated assessment etc). Its not to say my old approach was wrong, but I feel now I have more strategies/approaches I can adopt ie I can deploy an 'appropriate' learning model."

Some participants also indicated that the course could have an impact on their future working life. Whilst few of them thought that completing the course would lead to them gaining promotion, there were a wide range of very positive responses, some of which were related to increases in job opportunities outside their current organisations:

> "opportunities to apply for other jobs outside the organisation."

Several mentioned increased job satisfaction:

> "better job opportunities, more job satisfaction."

"more job satisfaction and opportunities for consultancy."

"more job satisfaction due to increased awareness of opportunities for different delivery methods."

The impact on participants' organisations: another major aim of the programme is to help participants make an impact on their organisation, for them to help their organisation develop its Internet capabilities and potential. This could of course occur in a variety of ways, but one very immediate and easy way is for participants to talk with colleagues about the content of the course and about networked learning generally. Nearly all participants reported having done this, both informally and formally. A number also indicated that they were adopting a staff development role in relation to networked learning within their organisation.

Participants commented on the benefits to their organisation through their involvement in the course:

"(my sector) will be in a better position to know how to support students participating in online courses."

"we are going to provide email and world wide web access to pupils and staff at no extra cost to the school."

Participation in the course was also leading to some organisations developing their own Internet courses, and to the adaptation of existing courses for Internet delivery:

"I am able to identify developments within the telematics framework and I will soon be tutoring an online course for which the college will attract funding."

"my organisation is now delivering online courses."

"I have a management/policy role within my department and I have used this to discuss departmental strategy and policy on new ways of learning/using IT."

The knowledge gained in the field of networked learning has also been of strategic importance to some organisations in other ways. Some are now able to participate in debates about networked learning in informed ways. This was cited by one participant as being of great value to their organisation:

"we have been able to hold our own within local discussion/debates about IT strategies. We have been at the forefront of advocating 'lifelong learning' with telematics as an integral part within its practical development. We have been able to devise our own systems and get local voluntary and community groups involved."

Other organisations have been adept at using their newly developed expertise in networked learning in putting in proposals for external funding for further developments:

"my organisation is currently delivering a communication skills course which has been funded by the local TEC."

"funding for the section....a further way of attracting new business particularly SME's."

However, changing the culture of any organsation takes time, and dissemination within ones own organisation is sometimes fraught with potential problems and barriers. Internal structures do not always support discussion between academics and technical personnel, and curriculum development is sometimes seen as the domain of certain members of staff and not others. Breaking down these barriers, or influencing policy, can sometimes be beyond the scope of any one individual:

"development work per se in the organisation is going on around me. I don't seem to be part of that process."

"(in my organisation) technology occupies a different 'space' from (curriculum development)."

"I have not been asked to cascade my experience and knowledge to the rest of the body of staff or been invited to give opinions when decision making re 'telematics' has been on the agenda. I would not expect to be included in decisions about technology but curricular areas should involve (me)."

Lotus Notes, where we can work reflectively off-line, suggests this movement may not be completely educationally valuable. We are about to carry out comparative analyses of group work in both environments with a hope of illuminating the strengths and weaknesses of them.

Conclusion

- It is beyond the scope of this short paper to present a more in-depth analysis of the impact of this course. Our experience to date suggests that there is a real need for a course of this kind which is aimed at developing professional practice in the use of electronic communications and the Internet. Our evaluations of the course have helped us understand the experience of those taking the course and to use that knowledge in re-designing it.

Several issues are emerging from our research into networked collaborative learning which we will now be addressing in more detail:

- should we continue with both face to face & virtual learning environments OR can we run the programme completely virtually ?

- what is the role of the tutor in networked collaborative learning ?

- is collaborative learning a paradigm shift for participants, and if so how can we facilitate better their experience of this ?

- collaborative assessment has been one of the most important learning events on the programme; we need to carry out more research into the processes and experiences of this in order to more fully understand it.

- maintaining online presence is difficult at times: we need to examine what's involved in helping participants and tutors cope with working and communicating online.

- Lotus Notes and/or Web-based systems: most virtual learning is moving towards a completely Web-based environment, yet our experience of

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