The BA in the Internet, Learning and Organizations: a peer to peer approach to distance learning

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ABSTRACT

This paper provides an account of the use of Colloquia, a peer-to-peer learning environment, to deliver a new distance learning, part-time degree at Bangor, the BA Internet, Learning and Organizations. Colloquia is a personal application, running on each student's or teacher's machine, it is not a server-based environment. The paper describes the educational and organizational theories and rationale behind the development of both the environment and the degree itself, the way it is taught, and progress over the first semester. Participation levels have been high along with the formation of a very positive group identity and reasons for this are explored.

Keywords

Peer-to-peer, Virtual Learning Environment, distance learning, .Internet

INTRODUCTION

This paper discusses the practical and theoretical background to the development of a new part-time distance learning degree. It is our observation that much of the current focus in elearning seems to be on the production of high quality materials, and we felt that it was more important to focus on the relationship between the student and teacher.

The course team have extensive experience of face-to-face teaching using a combination of conversational and resource based approaches, and the system used for this course was designed to support this style of teaching and learning. We are also concerned to encourage autonomy in students' learning, and were interested to see whether the students would exploit the opportunities provided for this in the system.

We hoped the degree would enable us to implement these approaches in an online situation, and this paper describes how we have attempted to do this and reflects on the progress we have made so far.

Background

The Centre for Learning Technology (CeLT), which developed and is responsible for teaching the degree, has extensive experience in developing tools and implementing e-learning in Higher Education, with particular expertise in the area of Virtual Learning Environments (VLEs). CeLT includes experienced teachers and learning technologists, and has developed and published a pedagogical framework for the design and evaluation of VLEs (Britain and Liber 2000).

The team has been responsible for promoting and supporting eLearning at Bangor for many years, and has supported the HE sector more widely through hosting a Teaching and Learning Technology Support (TLTSN) Centre. It is our view that many of the problems institutions have experienced in implementing eLearning have resulted from the fact that whilst they may have concerned

themselves with both the technologies themselves and the teaching and learning processes, they have not looked at the implications of doing this for the organization itself.

According to Enid Mumford, pioneer in socio-technical approaches to technology adoption, there are three essential and interrelated aspects which must be addressed in any implementation of technology – the technology to be used, the area of work (in this case education), and the organizational context in which these take place, including human factors (Mumford 1995). This three dimensional approach can be generalized to other implementations, and the failure to address all three areas may provide an explanation for many of the public and private sector implementations that have failed to meet their objectives. A new occupational area is emerging described as 'bridging' by the British Computer Society.

CeLT's approach is founded on systems theory and cybernetics, informed by Stafford Beer's Viable System Model (VSM) (see e.g. Beer 1981) and a conversational approach to learning (Laurillard 1993). It has developed its own Virtual Learning Environment, *Colloquia*, which is informed by these theories (Liber 2000).

The software

Colloquia is an online tutoring and group learning system developed in CeLT. The system is designed to support group and individual learning, and enables access and management of learning resources, group and individual discussions, the setting and assessment of assignments, and the development of student learning profiles. Students can also use the system to set up their own study groups, thus ensuring that despite the problem of physical separation, learning can still take place collaboratively.

Colloquia differs from other VLEs in that it embraces a peer to peer model, i.e. it is not based around a web server. Many VLEs, perhaps most, have sought to replicate the classroom online, but fail to provide students with facilities for extra-classroom interactions. Colloquia tries not to fall into this trap, by (a) providing students with the same software capabilities as teachers – they can initiate activities and discussions, and (b) providing the possibility for more a private and intimate experience than server based systems.

The course

Content

The course is concerned with the impact and implications of the Internet for Organizations and Learning, and how these are inter-connected, as discussed above. There is an enormous level of interest and investment in the areas of e-learning and e-commerce, and these developments take place against a background of post-modernist thought about the nature of organizations, which is has strong connections to constructivist learning theory. In turn, these have been influenced by insights from cybernetics, which amongst other things, influenced the learning and development theories of major figures like Piaget (see for example Piaget 1972), and organizational thinking through the work of management scientists like Stafford Beer (e,g, Beer 1981).

These ideas connect the various aspects of the course explicitly through the content of the modules, and implicitly in the way the whole course is presented, participated in and assessed.

How it is delivered

The course is offered as a part-time, distance learning undergraduate degree through the Department of Lifelong Learning (DoLL). It is supported administratively, along with study skills support and personal tutoring through DoLL, and is taught by staff in the Centre for Learning Technology (CeLT).

It was agreed that the first year of the course should be treated as a pilot to enable us to explore all the implications of a wider use of distance learning at the university, and that the student cohort should be relatively small and locally based in case of a catastrophic break down in systems! A further decision was that students should be responsible for providing and maintaining their own computers, and should be sufficiently skilled in using them, although methods of supporting students who cannot afford to do this will need to explored in the future. The questions of technical support arising from this would be studied.

Getting started

The student cohort

There was a great deal of interest in the course, and a group of 19 students was recruited. All the applicants were interviewed to make sure they understood what the course was offering, and what their responsibilities were in terms of time commitment, providing and supporting their own computer, and further to this, what the implications of studying part-time would be. At this stage

it was made clear that the course was neither a computer science course, an education degree, nor a business studies degree – but was about a new inter-disciplinary area of study as described above.

The students range widely in age, back ground and levels of educational experience, some having already gained degrees in other subjects. Some have professional roles in this area and others are hoping for a change in career, or are taking the course for personal interest. All were willing to take on the challenge of being part of this pilot, and they were assured that there would be some interesting moments in the first year!

We met at an induction weekend at the beginning of Semester One, where registration took place, along with an introduction to the student services available to them, the library and other entitlements. The content of the course was introduced and a short training session using *Colloquia*. Most importantly, the students met each other and the tutors. Students were asked to complete a form indicating what they hoped to gain ideally from the course, what they expected, and what they did not expect to happen. The comments were almost without exception idealistic in their aspirations, but realistic about what they thought the course would and would not offer them.

Ideally, I hope the course will offer me a chance to prove to myself that I am capable of studying at degree level. As well as this, a chance to be right up to date with learning requirements in today's ever changing world.

I don't expect the course to be easy. I don't expect to be on my own.

That at the end of the course I'll have enough academic and practical skills, which would give me enough ground for a change in career

Introduce ideas, information and concepts that I will be inspired to explore

Issues in installation

We provided intensive technical support for the first fortnight by phone, email, Colloquia, and we visited students' homes where necessary. By the end of this period, all students bar a few further problems, were using Colloquia successfully from home or work. What was a pleasant surprise was that all the problems related to the computers and the way they were set up, (and how other family members used them!), rather than Colloquia. This then raised the more general question of where responsibility lay for providing support which will be a major issue for universities as remote learning becomes more prevalent.

The course process

Structuring the course within colloquia

It is possible within Colloquia to structure a course into 'activities'. In the case of this course, several 'activities' were created –

> a general area for issues that were not specific to modules including general housekeeping issues.
> Study Skills support and administrative functions take place here.

> a Technical Support area for matters to do with Colloquia installation and support in particular, but
> this has also developed into a more general mutual support area for technical issues.

> a Staff area for the teaching team to discuss things

> an activity for each module which was structured in ways appropriate for the module.

> students have also begun to set up study group activities themselves, they are free to do this without
> including us, and even without our knowledge (as they would if they met in the pub!).

The teaching process

Teaching the course has followed a very similar model to the conversational and resource-based approach taken by the lecturers in their previous face-to-face teaching. Whilst the framework of the module has been planned, and many of the resources identified, the teaching itself has been based on an essentially discursive model which has been responsive to students' work and the discussion that has taken place.

In common with the way that a face-to-face course is taught over a period of time with lectures and practicals, online material is sent in small chunks over time with discussion. The materials are produced using a 'low-tech' approach in that the teachers produce

Powerpoint presentations with 'voice-overs', images and diagrams, and post these out regularly as short lectures, along with a variety of readings and online web-based resources. We had some concerns about the production quality of these presentations, mainly around the informality of our commentaries which were made as if we were talking to the group. Because they were made during the semester, we were able to refer to things students may have said and elaborate points raised previously. When we later discussed this in a face-to-face meeting about 10 weeks into the course, students were overwhelmingly positive and felt they were personal, and easy to relate to and understand, and urged us to continue!

The other essential part of the process is the ensuing conversation and debate that takes place. This is often managed by setting tasks and raising questions for discussion as happens in face-to-face courses, and responding to these with feedback and guidance. This has led to an extremely high level of participation, although confidence can be an issue for some students –

I seem to understand most of it, but I don't feel confident enough to enter into discussions at this point. I feel as if I am just repeating someone else's viewpoint. I hope you don't mind too much at this stage

A further dimension is that Colloquia is available in the Welsh language, and students can, and do, work through the medium of Welsh when they wish.

In a short space of time a high level of group identity has developed, with a great deal of mutual support, and at times moral support for tutors!

I just wanted to let you know, that I am really enjoying studying this way, having spent the last few years in a more formal study situation, I really appreciate the flexibility being able to send my work whenever I want 24/7 at the click of a button. Being able to attend lectures, so to speak whenever I want to seems to make me more receptive to the learning, I thought it might be a little isolating but now it's all up and running there's quite a nice community feel about it too which is great.

Assessment

Colloquia provides for student assignments in the form of documents (essays reports etc) which are placed in a location designed for this purpose within each activity in Colloquia. This means that within this space students can engage in one-to-one discussions with their tutors about the assignment, send in drafts for comment that the tutor can then return in annotated form or with comments, and submit the final version. Once marking has taken place, the mark is inserted in a field within this space and can be automatically submitted to the Student Record System. Some students have taken advantage of this opportunity to gain feedback and guidance in the early stages of preparing essays and reports and this has been a very constructive process, especially for those who have not been in formal education for a considerable time. To our amazement, the first assessed pieces of work were all submitted within the deadline – it remains to be seen if this pattern will continue!

Multiple choice testing systems are purposively not supported directly in Colloquia; but an optional MCQ plug-in component is being explored for a later version of Colloquia.

Reflections

The extent to which it has been possible to replicate those aspects of face-to-face teaching which we value has been a revelation. What has also been striking is how much the students seem to feel part of a group and supported, despite their physical remoteness from each other and from us.

The level of participation in group discussions has been extremely high, every student has contributed, though some more confidently than others. There are a number of possible explanations for this which we will be testing in the coming months. Meeting at the beginning of each semester has been very important and has helped students and staff to get to know each other. Time was spent at the weekends developing an ethos of mutual support and tolerance, and a sense of trust so that students could explore their ideas in a relatively safe way. Given the very wide range of experience and confidence in the group, it has been very striking that there has been much mutual encouragement, and there have been no examples of the more aggressive and intimidating behaviour that can sometimes occur in online discussions. Another explanation may be that as a peer-to-peer system, Colloquia creates an impression of privacy. Messages are copied only to participants, and do not sit on a server where there can be more exposed feeling. Also the group is relatively small, so that having met and established trust, they have felt a degree of security. The moderating role played by the tutors in prompting and steering discussion has also been important because conversations and tasks have been seen as a central part of the learning process. The points made above about the more personal nature of the presentations we regularly send to them may also have helped.

Students have been engaged in the very activities they have been learning about and there has been a high level of sophistication in their reflections considering it is a first year undergraduate course. The following is a comment from a student's essay about the

impact of learning technology on educational institutions -

To some extent the current BAILO course is, at this moment in time, a good way forward for educational establishments as it fairly closely follows the constructivist approach to learning, where the process of interaction is through Colloquia – albeit asynchronously. Another benefit of this method of learning is that the lectures can be viewed as many times as is required to understand the subject. And all this in the (now) comfort of your own home, with a coffee and cigarette, as opposed to a more formal lecture theater.

The approach we have described has been very similar to the approach we take to face-to-face teaching with the focus on group discussion. This runs directly counter to the standard (perhaps exaggerated) view of distance learning as being primarily content-based, involving the receipt of a large pack of materials (paper, CD Rom or Internet based content) at the beginning of a course to be worked through individually at one's own pace, before perhaps being assessed through a multiple choice automated testing system. Common problems with this sort of approach are low participation in online discussion, student isolation and high drop out.

Running a course like this for the first time has inevitably raised all sorts of issues as were anticipated. Our associated work promoting and supporting eLearning in the university has provided us with an ideal opportunity to treat this as a pilot for distance learning across the university. Many areas are affected by distance learning, including students' access to entitlements including the library, other learning support facilities, student services, technical support and the many administrative processes involved.

Whilst recent models for online courses have predicted costs of around £20k per module, and over £1million for whole degree courses, (Middlehurst *et al* 2000) our modules have proved relatively cheap and flexible to prepare and deliver. However, the costs associated with a different way of teaching must also be taken into account (Bacsich *et al* 1999).

At this moment in time, there is enormous interest in and pressure to adopt Virtual Learning Environments in Further and Higher Education in the UK, and this work is also enabling us to inform the discussions that are taking place in Bangor on this theme. Discussions rage about the most appropriate system(s) for an institution to adopt, and the question of the pedagogical appropriateness of the model embedded in any system has to be weighed up against other issues such as interoperability, cost, commercial viability and other pragmatic and sometimes political questions. What is becoming apparent from the experience of teaching this degree is the importance of understanding what the pedagogical approach to any course is going to be, and ensuring that the platform selected will support it.

We expect the course to expand to at least two cohorts next year, and we have discussed with the students the possibility of their acting as peer guides which some of them are keen to do. We need to expand the staff involved in teaching and supporting the course. Colloquia will enable us to maintain cohorts of a reasonable size for a group to work well, we think at the moment that the ideal number is about 15. The teaching in terms of the materials such as presentations and any tasks and exercises will be sent to all students regardless of the numbers, and then tutors will support each cohort, thus enabling a significant scaling up to take place whilst maintaining the intimacy of being a member of a small group.

We also need to look at continuing to develop the positive group dynamics; we don't know how much these are due to the group feeling in some way special as they are the first cohort, and whilst they have had to bear the brunt of any teething problems, they have also had a higher degree of support than perhaps they might get once the course is in full flow. It is important that we develop a good understanding of this process in order to ensure the students following have the same experience.

In common with most developments of this kind, we have worked in a context of very limited funding and whilst we are proud of our achievements, particularly the dynamic and responsive mode of delivery, we feel it would be valuable to focus more attention on the range and variety of materials we can make available, and to have more time to evaluate the process.

Throughout the course, students have been encouraged to be critical of the software system, and to propose changes and extensions. Since the software was written by CeLT we are able to evaluate and respond to these suggestions quickly, and the version used in the second semester has already been significantly changed. This would have been impossible has we been using a commercial system.

Conclusions

A number of research questions arise from this experience. To what extent does a peer-to-peer environment make a higher degree of intimacy possible in online learning? How important is it to be able to adapt content throughout a course? How important is it for students to have control over their learning environment both in terms of their social interactions and in shaping the learning environment itself? We are beginning to study these questions and it will be interesting to see what effect a scaling up of numbers of students will have on the outcomes.

Sorry I am in a rush - 5 minutes to get to school and collect the children

Apart from all the settling down and time management etc, I'm really enjoying the learning experience, and have already been able to link what I've learnt into my work situation. I can see flaws in systems and find myself "pulling things to pieces" (in my own head). I now look at things with new eyes.

Here's to the next 4 yrs!!!

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