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GETTING IT TOGETHER: FINDING OUT STUDENTS' REACTIONS TO LEARNING VIA INTERACTIVE COMMUNICATIONS TECHNOLOGY

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INTRODUCTION: AIMS OF THE STUDY

This study documents the ways in which flexible modes of delivery were adopted using information and communication technology (ICT) in two internal subjects in the third year Bachelor of Education (Early Childhood) program at Charles Sturt University, Bathurst NSW. It is based on the assertion by Taylor, Lopez & Quadrelli (1996) that 'flexibility must be developed and evaluated in specific local contexts'. The study examines the rationale for moving towards a more flexible mode of delivery for on-campus students in order to service the needs of their profession and the institutional demands both on students to become lifelong, autonomous learners, and on staff to develop skills and competencies in the use of ICT. The latter is defined in this study as 'the range of tools and techniques relating to computer-based hardware and software; to communications including directed and broadcast; to information sources such as CD-ROM and the Internet, and to associated technologies such as robots, video conferencing and digital TV' (Hardy 2000, p. 3).

SETTING THE SCENE: PLACE, TIME AND CONTEXT

Charles Sturt University (CSU) is a regional university in New South Wales, classified as a dual mode institution with over 21,000 students studying by distance education and another 10,000 students on campus in 2001. Since 1997 CSU has been providing support to these students by offering what is called 'online-support', initially in the form of a range of services to students provided by the Library, Student Services and the Help Desk. All distance education subjects are 'online supported', allowing email contact, an electronic discussion forum, an online subject outline that permits access to the discussion forum. Other facilities such as chat or quizzes, electronic submission of assignments links to web-based resources and library resources to support subjects are available. Online subject outlines are being extended to include subjects offered by internal or face-to-face mode.

The students in this study were young women from rural and urban areas in the third year of their four-year program studying two subjects 'Children, Families and Society', a basic sociology subject (Semester 1) and 'Early Childhood Research' (Semester 2). The context of the study is the Bathurst campus of Charles Sturt University, a regional town in the central west of NSW. Students were presented with two internal subjects across one year of study that used two hours per week of face-to-face interaction and two hours per week of structured tasks using ICTs. The structured tasks involving ICTs included use of the discussion forums, email, library database searches and use and critical examination of the Internet. Face to face work included lectures, workshops, group work, discussion, debate, research, role-play and oral presentations. Tasks required individual work and group collaboration. Aspects of the study are being utilised as a pilot study for further research. Table 1 below shows details of both subjects:

Table 1: Subjects Organisation

Subject	Organisation	Assessment	Weekly Learning Schedule
Children, Families & Society	Workshops/Tutorials - 2 hours per week	Learning journal and demonstrated use of technology	Each week involves students completing specific tasks in four different areas of work: in-class work; computer work (forum, email, internet searching), learning journal, set reading work
	Computer time - 2 hours per week	Written essay including library tutorial Prepared examination	
Early Childhood Research	Workshops/Tutorials - 2 hours per week	Learning journal and associated computer work	Each week involves students completing specific tasks in four different areas of work: in-class work; computer work (forum, email, internet searching), learning journal, set reading work
	Computer time: 2 hours per week	Research Exercise Examination	

LITERATURE REVIEW

In this study flexibility emphasises student responsibility for learning, increased student control of the learning situation, and the role of the lecturer as facilitator rather than imparter of knowledge (Green and Lamb 1999).

Flexible learning has been defined in terms of a range of components. These include flexibility of choice (Drinan, Little & O'Brien 1998; Collis & Moonan 2000); flexibility in terms of meeting individual students needs (Wade et al., 1994); flexibility in terms of understanding learners' needs, interests and contexts (Evans, 2000); flexibility in terms of more learner control of the teaching and learning environment (Kirkpatrick & Jacupec, 1999); flexibility in terms of time and place to study (Nunan, 1996); and flexibility in terms of interactivity (Freeman, 1997).

The emphasis in this study lies in the ways in which ICTs are used as tools to realign the 'pedagogical profile' or instructional components of subjects (Collis 1996, 1998), and to encourage collaborative learning processes among students. The study draws on assumptions about teaching and learning in adult and higher education contexts (Brookfield, 1986; Knowles, 1975; Laurillard, 1993; Oliver, 1998; Pratt, 1998; Ramsden, 1992) and previous mainly case study research into academics' views about teaching and learning, technology and teaching and curriculum planning (Arnold, 1997; Ballantyne, Bain & Packer, 1997; Bain et al., 1998; Fox & Hermann, 2000; Taylor, Lopez & Quadrelli, 1996; Thompson & Holt 1996; Wolcott, 1993; Willmot & McLean, 1994).

RESEARCH DESIGN AND PROCEDURES

The research design adopted for this study was that of a case study. Case studies involve research into a closely defined area (Burns 1998). This project fits Burns' contention in that it is an investigation of learning through technology in a specific cohort of students at a limited time. – a defined or bounded phenomenon. The study also fits Burns' (1998) 'observational case study' category that is characterised by the use of a range of data collection techniques such as those discussed below. In addition, the group of people

studied 'identify with each other, share expectations, and interact in a close way' (Burns 1995, p. 315).

Data were collected in a variety of ways:

- Focus group interviews were conducted with students, asking them to reflect in a critical way on changes in (a) their roles as students; (b) relationships between themselves and the lecturer; (c) their experience of the learning process; and (d) their interactions with the University.
- Evaluative comments were gathered from the learning journals which were assessable components of both subjects, mandatory University subject evaluations, and small group evaluations by students on their subject forums.
- Students were requested to write a short, evaluative paragraph about their experience of online learning in the two subjects.
- A semi-structured interview was conducted with the subject coordinator of both subjects by one of the authors, focusing on the use of information and communication technologies with on-campus students. The subject coordinator speaks in this article through the 'researcher's voice'.

Data analysis

The data has been organised into categories that originate from the information provided by students and the subject coordinator and from the ways in which students were required to make evaluative comment on the subjects. These categories provide the narrative framework for the presentation of the data analysis. A narrative approach is used to portray student responses to the learning processes they experienced. Thus, context and setting are provided in the introductory sections and the subject organisation narrative; the plot is featured in the technology, pedagogy and assessment narratives; and characterisation is provided in the narratives about student and lecturer roles. Resolution occurs in the summary and conclusions section. Thus the true nature of narrative as the 'embodiment of experience' (Goodfellow 2001) is addressed through the use of narrative inquiry techniques (Clandinin & Connolly 2000).

The Process of Confirming the Findings

It should be noted here that, as part of the research design students were invited to read the narratives which comprised the data analysis and endorse the results or adjust the narratives to reflect their perceptions of the results. Students read these narratives a year after they evaluated the two subjects and reported their reactions to the findings at a group session on the last day of their last (fourth year) of study. The opportunity to object to the results obtained both in public with the whole group and individually in private with one or both of the researchers was provided. Neither researcher was in a position of power over any of the students at that stage in the course.

Without exception the student body endorsed the findings of the study unaltered. In addition they added that on reflection, with the benefit of distance in time, whilst they found the subjects to be very hard work, they thought they had gained enormously in terms of their own professional maturity from doing the two subjects which are the particular focus of this study.

Telling the story

The researchers have portrayed students' perceptions of their learning by giving the students a group voice so that the complex relationships involved in understanding key concepts in the learning process are clearly illustrated (Goodfellow 2001). The stories told show how students in a particular time frame and sequence have interpreted and understood their learning experiences developmentally, emotionally, intellectually and professionally. In addition, as Connolly and Clandinin (1990) suggest, three dimensions of meaning -significance, value and intention - are addressed via simulated student narration and the lecturer's voice. The latter responds to the student voices and places them in context, drawing upon data about the ways in which the subjects were structured, the pedagogy employed and how the use of information and communication technologies have shifted the traditional roles of the teacher and student.

FINDINGS: CONTEXT & SETTING

Preparing for online learning - student reactions

Our first reaction was basically shock. Reading the subject outline was daunting. Many of us felt scared, apprehensive and intimidated initially, probably because we didn't know what online learning was all about. It was fear of the unknown really because quite a lot of us had not had much experience with computers. We also felt that those people who were computer literate had an advantage.

There were people who did not feel daunted at all of course. Quite a number of us were already experienced with computers and considered to be computer literate. Despite feeling apprehensive, we also saw that online learning could be a very positive thing that would challenge and interest us. We could also look at it as a new way of learning and interacting together that would contribute to our professional development for the future.

Initially, in the first face-to-face session, our lecturer gave us an overview of the structure of the subject and the way the subject was to be conducted. We were then briefed on how the technology was to be used (in forums, chat rooms and email) and had the nature of the library support explained to us (using the databases, searching the web, using CD ROM materials). Further assistance in using the technology was provided in a follow-up session by the School's educational designer, plus a library workshop on finding relevant material for designated tasks using databases and other electronic resources was conducted by the library liaison officer. This included providing us with pathways to some of the critical skills we needed to learn if we were going to use the Internet extensively. Those of us who lacked experience with computers found these sessions particularly valuable. We also had to do an electronic library tutorial in our own time, which helped us to practice using the technology to find resources. Both the library staff and the lecturer provided us with continuing support throughout the semester.

We practiced more database searching through the library in Semester 1. By Semester 2 we were pretty competent in using the forum and the chat room. The help we were given in determining the quality of resources on the web helped us to realise how necessary it was to develop critical skills in order to be able to use web resources effectively. As Semester 2 proceeded, less guidance was given about the technology, the electronic facilities provided and the use of the Internet, forcing us to find our own solutions to technology problems and rely on searching out the variety of resources available both online and elsewhere for completing required tasks.

Lecturer's Voice: By the end of the first semester of study, students had become very accustomed to using discussion forums and the chat room. While some of the students still experienced trouble organising search parameters to find specific information for their

assigned tasks and assignments, this was more related to the development of effective search skills than lack of familiarisation with the technology used in the subjects.

The students' learning journals in Semester 2 recorded more extensive use of the library databases and evidence of increased competence in searching out resources on the web. Student evaluations revealed that the use of email, forums and the chat room provided a wider range of options for communicating between each other and with the lecturing staff. They had acquired many computer skills they didn't have before, and the range of learning opportunities provided to them increased academic and conceptual knowledge at the same time. Some students were prompted to use Powerpoint in their oral presentations, a skill that many recognised as being useful, practical knowledge. The majority of students praised the approach to online learning adopted by both subjects. Two of the students' comments included: 'online learning is relative to the world in which we live!' and 'learning online is a life skill to keep. It keeps you motivated and feeling worthwhile as part of a group'.

Subject organisation

We all liked the flexibility of the subjects' organisation, which allowed us choices about when we could do work. Because of the list of objectives and related content that was provided each week we understood what was being required of us and also why it was required. The weekly schedule could be used as a checklist to see whether we had completed all necessary work for that week. When changes occurred or some organisational aspect of the subjects needed to be discussed we were notified quickly and efficiently by email. Lectures and tutorials were very well organised and no time was wasted in class doing organisational trivia. Group work, presentations, guest speakers, and whole class discussions gave us a great variety of learning experiences.

Lecturer's Voice: A lot of preparation has gone into each of these subjects. I look at the outcomes that I need for each weekly session and I have devised activities and workshops around those outcomes that I need each week. In their weekly schedule for each subject a theme is nominated, a list of content for that week is listed, and a heading entitled 'in class work' is provided, in which I described the activities scheduled for the face to face two hours that we have. There is also a heading entitled 'computer work' which can be a range of electronic activities. I schedule the University's three computer rooms for students, so that there is enough space booked so that the whole class can use the computer room for its scheduled activities all at the one time. This structure replaces the academic lecture, which I am philosophically opposed to, because I think people ought to know how to find their own information, how to study independently for themselves, and how to develop themselves.

THE PLOT

Difficulties with the Technology

In Semester 1 we often had trouble getting online. The system did not support the heavy use of the technology. We also needed individual help with computer problems and getting online. Lots of us needed help using email, and with the chat room and the subject forums.. The lecturer was easy to communicate with by email and extended considerable individual help. Many of us found searching the databases to be problematic and we needed lots of help from the library and the lecturer. Most of these problems disappeared later in the semester and we had no trouble in Semester 2 except perhaps for the database searches. Here we needed lots more practice than we actually got.

Lecturer's Voice: There were initial problems experienced by students and staff when this approach was first introduced in these two subjects. These problems were progressively addressed by the University's IT area, although it has still been difficult to gain the use of listservs for these subjects. When the latter were finally operating it was already 8 weeks

into semester. I am still not confident that all the messages posted to the listserv reach all the students, but these are the kinds of little frustrations that happen all the way along when you conduct subjects in this way. Support from within the University for me as the lecturer has come from a variety of sources, including a technology adviser based in the School of Teacher Education, the School's educational designer and the IT staff. There have been vast improvements in the services provided to staff in the two years I have been using ICTs in these subjects.

Pedagogy

We learned in a large variety of ways involving oral, written and online tasks. The variety of learning experiences opened up many new ways of doing things that will be useful later in our professional careers. The extended use of the web supported all the different learning experiences.

The weekly summaries that went into our learning journals were a good way of getting us into the routine of completing tasks each week rather than leaving them until the last minute. Other subjects have less reading and a lot more face-to-face lecturing. They also have very little peer tutoring and few requirements in the way of developing group skills. We do individual tasks as well as working in teams. We can see the value of the teamwork because as professionals, we will have to work with other people most of the time. It's good to get lots of experience doing collaborative work - finding out how to function on a team, work with strangers, produce a joint piece of work, and be responsible for something the whole team relies upon. We also had to find out how to make the lazy ones contribute and how to let someone know when their work is not acceptable to the group.

We found we could really look forward to the face-to-face sessions. The group work was fun. There was a sense of working together in a relaxed way. We learned through talking with one another and exploring individual opinion. We also really liked the organisational flexibility of being able to do the computer work when it suited us as individuals.

Working online provides you with the opportunity to think about and understand the content that's being learned by using it in many different ways. While we didn't especially like the discussion forum work, we could see its value in setting up peer interaction and helping us learn from our colleagues. You might discuss content, make decisions about it, refine it, post discussion on the forum, respond to forum discussion of others, research it, write an essay about it, teach it to your peers and communicate with people who are not students about it - all using the same body of material. You really know the material when you've finished with it! It's made us explore the issues in more depth and made us think carefully about the answers we might give to questions and tasks. That's important for students' learning.

The chat room was fun but not really valuable to us as internal students since we could talk to one another anytime without needing electronic help. We can, however, see how it might be valuable for distance education students.

We have a much better understanding of why research is important in our field now. Before, because we did not really know what research was, we had difficulty seeing its relevance in our course. Using the library databases online helped us to this better understanding of the research subject in particular. It gave us skills in other ways of finding resources and learning to evaluate them critically.

It's harder for us as learners, doing online subjects, because no one gives you the material, you have to get it yourself. So we have been forced to become more autonomous and independent learners. Other subjects 'spoon feed' you a lot compared to the two online subjects we did this year. Even if it is harder, in the end it's better for us as learners.

Lecturer's Voice: In the first two weeks of Semester1, students were familiarised with the technology. They did a session on using the forum and the chat room, using email and conducted web-based searches. I get them to send a friend a message, I get them to react to the morning's work in the face to face class, and I get them to send a message to everyone in class and finally, to send the lecturer a personal message, to demonstrate that email is a one to one thing, a private thing, whereas everybody can read what is posted on the forum.

While we don't actually use the chat room in either of these two subjects, and I have found chat very inefficient for an internal program, I still want students to have the experience of it. By contrast, with forum postings students have the time to reflect before they respond. A second session introduces them to the library and the use of electronic databases. This is supported by a task set by the Librarian responsible for my School in which students do a database search related to the essay topic they have chosen.

Over the course of the semester's work in both subjects there is a lot of learning exchange between students. On the very first day in class students are divided into small groups and they work in those small groups on their computer tasks. They can also collaborate with each other in preparing their essay assignments, but they must submit an individual assignment for marking. Students will regularly post resources they have found on the internet to the subject forums for sharing with other students. Generally there is a spirit of collaboration and sharing of information that I try and engender from the first week of the Semester and encourage this to continue throughout the year.

THE CHARACTERS

Role changes: the lecturer

The role of the lecturer was really very different from our previous experience. The subjects were clearly planned in great detail before classes started. Despite this, the lecturer exercised much less control. Because of the detailed schedule we knew what we had to do well in advance and could also make our own decisions about time. Because of this we felt more in control of our own learning. We had specific pre-arranged tasks to do each week. The tasks gave us plenty of opportunity to make choices about what we wanted to study. For example, one task involved individual students coming to a workshop with their own discussion questions based on the reading for the week. Other tasks involved creating situations for other groups to role-play. The lecturer therefore had most work to do *before* we completed the tasks. The nature of this preparation was obvious to us as each task in the different sections was related to other tasks. For example, readings, notes, assignments, research tasks, Internet tasks and communication tasks (discussion forum, email, chat room) were constructed to help us realise the objectives for each week and to help us complete assessable work.

We were probably a little ambivalent about the amount of face-to-face time because we were quite unused to having to work so independently and were bound to feel a little insecure. The lecturer asked us twice during both semesters if we wanted to cut down computer time and increase face-to-face tutorial time. Each time we indicated as a group that we did not wish to do that. Despite this, four of us wrote in our final evaluation of the subjects that there were really not enough face-to-face tutorials and that the amount of time in tutorials should be increased.

We made a lot of decisions about our opinions, set priorities and decided on courses of action in relation to the professional dilemmas and case studies we were asked to work on in Semester 1. In Semester 2 we had to make group decisions about our research projects such as deciding what topic we wanted to research, what procedures we were going to use to find out the information we needed and how we were going to analyse the data and

present our findings. We were prepared to make those decisions as our structured reading program gave us the necessary background to enable us to decide on actions we might take in particular situations. Generally, we enjoyed being able to make choices about the work we had to do and to organise our time in our own way.

The computer time was so arranged that we could often work at home if we were connected to the Internet. This was particularly valuable to those of us with commitments at home. Although having two lecturers in the research subject was valuable in that it gave us the points of view of two experienced researchers, they were there to answer questions on the spot for a limited time only. However, they did respond by email whenever help was requested and we could always see them during consultation times. Thus the lecturer became more of a facilitator than a teacher. We were the ones in control.

Some of us however, resented the deliberate lack of direction, decreased guidance and lower availability face-to-face of lecturers. A few of us thought that, rather than having 2 hours computer work, one hour on the forum and one hour face-to-face would probably address these concerns in addition to the 2 hours face-to-face work already conducted.

Lecturer's Voice: I see it as my job to make it possible for students to find the information and through reading, their research and contact during the workshops, I am there to guide the students. After the initial computer sessions in the first two weeks of Semester, I don't attend their scheduled computer sessions. However, I am there physically online during the time that they are doing their computer work, looking at their forum postings and responding to some of them. I sometimes have to step in and help steer the discussions they are having, guiding them to draw upon what has been done in recent workshops, or to take a different angle to the discussion, to move from a more surface to a deep learning approach.

Initially I taught both these subjects myself, but then for various reasons other lecturers became involved, although I remained the subject coordinator. Structuring the subjects in this way using ICTs was a way for me of increasing the teaching practices that I use. This also fits comfortably with a philosophy of independent learning that I think increasingly teachers in the future are going to have to have. These students are going to be teachers who must be able to teach young children how to find information, and be self-motivated to find the information that they need.

Role Changes: The student

In this subject our opinions really counted. The subject coordinator knew we were capable of learning independently and she helped us to do that in a very efficient and organised way. It was sometimes, however, not what we expected, in that we were expected to take the lead in our learning.

As students our role involved being responsible for our own learning, managing our study and class time in the most efficient way possible and organising our own group learning activities. We took part in our own learning in a much more active way than is usual. For example, peer tutoring was a major feature of our learning in the online subjects. It was empowering and enlightening to be able to gain first hand experience of conducting research no matter how minor. Whilst we took more responsibility for our own learning we sometimes felt insecure and uncertain about its quality and felt the need for more feedback from lecturers in tutorials and Forum discussions.

We had to do a lot of collaborative work with our peers both in the face-to-face sessions and online. Because of this there was an emphasis on communication and teamwork. We relied on our peers to post messages at the right times, we relied on them for responses and to complete individual research work which had to be used by the whole group. There were

many problems associated with working together (see later discussion for more detail) which we had to work through. The interaction necessary to do the required collaborative tasks was facilitated through the online communication techniques we learned. *"It's... given me the chance to send messages to people/peers I don't normally speak to."*

Doing the cooperative group work tasks also meant we had to refine and improve our ability to make ourselves clear both verbally and in a written sense, to our peers. Sometimes, in Semester 1, because we didn't really use the subject headings for forum postings very well, others had to wade through too many irrelevant messages. We soon learned to ensure that a pertinent subject heading was included in our postings. We also used the forum to express our opinions getting better at this with experience. Thus the peer teaching role was a demanding one in which we had to help others adults learn. It taught us a lot about the teaching process itself and we found out how valuable our colleagues could be in the learning process.

Some of us thought that the online aspects of the subjects could be taken much further with online lessons and more exercises to work through. We had some doubts about whether we were learning the "correct" content (because we made so many study decisions ourselves) and some of us thought that we needed more professional guidance and support from the lecturers to ensure we were on the right track. But perhaps those are the insecurities of learning how to be autonomous and independent students.

The research subject had a lot of new content that contained concepts we were not familiar with. Some of us thought that, rather than asking us to find out what the concepts meant, we need to be taught the basics and then left to work more independently.

The textbook was an important part of the independent learning in the research subject. At first the language and concepts went straight over our heads. Terminology in particular was great barrier to learning and understanding. Gradually, however, with research and discussion, the language became more transparent and we were able to apply the concepts enunciated in the reading to our own research projects. The text was a big factor (along with analysing the research articles) in developing our critical analysis skills.

We began to feel as if we were self-taught autonomous learners - we could figure out what we had to do ourselves just as real professionals do. In many ways it was good preparation for becoming an independent teaching professional.

Lecturer's Voice: Student feedback was solicited constantly throughout both subjects. I have used the University's subject and lecturer evaluations and had some questions tailored to examine the use of the forum by the students. In classes I prefer to ask them 'what is your reaction to this?' Do you want this or not? Do you like this or don't you like this? I do that a number of times, every couple of weeks in fact, throughout the semester. When there is trouble with the technology there is always a reaction. I ask them about the whole program, not just the technology side of it, but no one has ever said they don't want to do it this way. Most of them see the value of learning in this way, and they see it as a very necessary thing for the future. I think that is quite important. In Week 6 of the semester I ask them to elaborate on the differences between themselves as learners in Week 1 and themselves as learners in Week 6 and to a person they are no longer afraid of the technology. They enjoy having control of their own learning.

THE DENOUEMENT

Assessment

We all thought there was plenty of time to complete assignments and help was always available by a number of different means. We also thought that the assessment reflected well on the stated outcomes of the programs.

Each week the learning schedule defined exactly what needed to be done in the learning journal. This was explained at the beginning of semester and reiterated in the middle of semester. Despite this a few of us thought that lecturers should have enunciated the requirements more clearly. Some of us thought that, although the learning journal was a lot of work for its 20 % weighting, in the end it was very rewarding work in terms of achievement. The journal helped us to keep up to date, organise our thoughts and reflect on each week's work. It was, however, easy to get behind if you were not accustomed to working steadily throughout the semester. The results/assessment sheet for the Learning Journal was well set out and easy to follow. It was easy to see where we did not complete requirements or where we had gone particularly well. The sheet provided a lot of good quality feedback.

A few of us thought the exam wasn't a really efficient way of examining what we had learned because we felt that we were just required to regurgitate our summaries. Most of us, however, were pleased that we were able to take our summaries into the exam because it went a long way towards relieving the stress of doing an examination. We also thought the summaries gave us good scaffolding for answering the fairly general questions designed to give us the opportunity to reflect on what we learned.

Most of the marks for assignments are given at the end of the semester so we really didn't have much of an idea of how we were going until it was too late. In Week 4 of Semester 1 we were asked if we were unhappy with the assessment process but we voted to leave it the way it was. We were asked if we wanted tests or exam questions every week but we voted against that unanimously.

The research project (an assessment task in Semester 2 for the subject Early Childhood Research) was completed by us in groups. The report itself was written up individually and five of us wanted more guidance in the research report. We were given a basic structure to use but thought we needed much more guidance than we got.

Some of us were concerned that a few people did not pull their weight in the teamwork. The subject coordinator talked to us about this at the beginning of semester and gave us a number of options for dealing with colleagues who were not doing the required work. Most of us really enjoyed doing the research report because we could choose to research areas in which we were vitally interested. Three of us thought that we should not have been required to do any research and that such exercises should belong to the honours program. The restrictions on the word limit of the research report caused some of us some problems but we had to learn the skill of producing the report in a concise way. We also think the research report could have a higher assessment weighting as it took so much of our time and effort.

The oral presentations were related to the essays in Semester 1 and the research reports in Semester 2. We thought they were especially valuable. In Semester 1 we gave oral presentations on our essay topics and opened our work up for discussion in class. It was really interesting to discover what other people were doing and how they had developed their research questions in Semester 2. It was also very motivating to be able to present what we had achieved by doing our research study. We were very proud of what we had

done. The feedback we got from the subject coordinator on the email about our oral presentation was terrific! It is somehow a more personal way of giving out assessment information and feedback. Most of us were delighted with the way it worked.

A couple of us thought that the learning journal was too much work for the assessment weighting it carried (25%). Because the examination is an open book exam it does not rely on memory alone but taps into our conceptual understanding of the subject so we can demonstrate how well we can think. There are some of us who do not like the exam much. However, most of the assessment is on the basis of the weekly tasks for the learning journal and for our essays and so it does not become a huge load at the end of the semester.

Lecturer's Voice: The learning journal has been the most exacting of the assessment tasks both from the perspective of the student and of the lecturer. When you don't lecture to students, when you only do face- to- face workshops, the students must have a basis upon which to develop intellectually and to learn. The way I have tackled this issue is to get students to read and examine them on their reading. So, they have to summarise certain text chapters, and other articles not covered in their text, but which are pertinent to the content and their essay topics. They also find their own material on the web and disseminate this material to the rest of the group. At the first meeting with them in Semester 1, I gave the students some criteria for evaluating resources on the web. Most ignored these criteria and limited their evaluation to a description of the websites. This is an area that we need to work further on with the students. I have also had some students in the Research subject who have created websites on their research projects. If they want to do that, they can. Students are also asked to make linkages between these two subjects and others they have studied within the course. It comes as a surprise to the students that these linkages do exist. Whether or not the technology usage in these subjects is the sole determiner of this or not, I don't know.

SUMMARY AND CONCLUSIONS

The use of ICTs with face to face students in this study have previously been documented in the literature (Arnold 1997). Changes made by the lecturer to the pedagogical profile of the two subjects of this study are consistent with the approaches described by Collis (1996) to enrich face-to-face teaching and extend the current subject 'didactics' (Collis 1998). The teacher's motivation to adopt the use of information and communication technologies stemmed from the concern that students met the requirements of their future profession and achieved competency in the use of the technology. The shift in the role of the lecturer highlights the new skills demanded of teaching staff using ICTs: becoming a master of sources of information, engagement in synchronous and asynchronous communication with students, and providing navigational guidance to access a variety of online information sources (Tinkler, Lepani and Mitchell 1996; Cravener & Michael 1998).

In examining student reactions to the way ICTs were used by the lecturer in both subjects, the following conclusions can be drawn:

- Initial uneasiness amongst students about using ICT gave way by the end of the second semester to a feeling of being comfortable about using the available technology.
- Students rated highly the preparatory work done at the beginning of their first semester of study using ICTs to achieving a positive outcome for students. Such work included introductory computer skill sessions with library staff and the lecturer, a tutorial on the use of forums, chat room and email, supplemented by electronic library tutorials that students could undertake at their own pace.

- There was some resentment among students about the decreased amount of guidance by the lecturer and the lower face-to-face availability of lecturing staff. Students valued the face to face teaching component in both subjects. This is consistent with findings in a study by Chin (1999).
- Peer tutoring was named as a major feature of students' learning, underpinned by a strong emphasis on communication and teamwork.
- There was constant dialogue between the lecturer and the students as the teacher solicited feedback on an ongoing basis about the way students were engaging with the technology and were reacting to it. There was a high degree of structure to the tasks set by the teacher. This dialogue with students is consistent with the findings of Oliver (1998).

FUTURE RESEARCH

The current approach to teaching the two subjects that were part of this study will continue, with a re-examination of the structured formative and summative assessment tasks. Consideration is being given to expanding the use of peer-evaluation and feedback in assessment tasks using discussion forums. This study has revealed the requirement for tailored approaches to evaluation of innovative learning and teaching situations beyond the mandated subject or course experience questionnaire. Further examination of the use of ICT with on-campus students continues, helping to define what constitutes 'flexible delivery' and convergence of distance and on campus mode of delivery within a dual-mode institution.

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