

# **Integrating the Internet Tools in an Introductory IS&T Course: New Zealand Distance Education Case Study**

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## **Abstract**

*This paper describes and analyses an experience of using collaborative teaching and learning tools in an Introduction to Information Systems and Technology course. The key factor for success of a distance education course is student support (lecturer-to-student and peer-to-peer). Therefore I put special emphasis in this paper on how to initiate and encourage students involvement in the discussion forum and chat room.*

*The Open Polytechnic of New Zealand is one of the largest distance education institution in this part of the world. Having a long tradition in the market of educational services the Open Polytechnic recently developed a complete educational platform for enrolling, teaching, learning and management of online courses. However, on the Introduction to Information Systems and Technology course we are deliberately using a mixture of in-house built tools and external resources available on the Internet. The main reason for combining tools from different sources was purely pedagogical, as I have described in this paper. Finally, the pros and cons of using each particular tool (course web site, student discussion forum, chat room, mailing list, regional mailing list and e-mail) in student support have been given.*

## **1. Introduction**

With over 50 years of history, The Open Polytechnic is New Zealand's leading and largest provider of open and distance education at tertiary level. We currently enrol more than 36,000 students from all parts of New Zealand, nearly 75% of these are in employment and studying part-time. Information Systems and Technology is one of the discipline areas within the Applied Science and Business programmes. Introduction to Information Systems and Technology course is a core course for the major in IS&T area as well as an elective for most of the other majors. The average number of enrolled students on this course varies between 150 and 200 per semester. Most students are over 30. For most of them studying this

course is the first study commitment after a long period being in work force. Some of them, when they start with the course, have quite limited knowledge in this area.

If I have to pick up a single word which would best describe students feeling at the beginning of this course I would pick up a word 'fear' (fear of technology, fear of a learning process, fear of failure, etc.) Therefore my role at the beginning of this course is to relax them, to introduce them to the communication technology which they going to use on the course and to stimulate them to start and cope with study commitments.

Collaborative learning can be applied successfully to computer-mediated communication environments, especially in distance education where students lack the interaction between tutors and students and among students. Collaborative learning groups can be a valuable teaching tool through which participants share ideas, resources and elaborate on new material. The outcomes of such collaboration in terms of their approach to learning will be dependent on their willingness to be involved, to share ideas with other students, and to take responsibility for their own learning. Through group work and communication students are motivated and encouraged to remain focused on the task. Student interaction has helped students to learn and develop some subject knowledge by planning, sharing, comparing and contributing information resources. Johnson and Johnson [1] identified various 'interaction patterns' when a student interaction at the group level is concern. They categorised these patterns as follows: 1) giving and receiving help and assistance; 2) exchanging resources and information; 3) giving and receiving feedback; 4) challenging each other's reasoning; 5) advocating increased efforts to achieve; 6) mutually influencing each other's reasoning and behavior; 7) engaging in the interpersonal and small skills; 8) processing group members effectiveness. Our experience shows the same 'interaction patterns' among collaborative study groups formed on this course.

Students on this course are provided with a wide range of communication or collaborative tools by which they can communicate and collaborate with academic staff and other students. Some of these tools are created in-house

(the online campus environment, course web site and student discussion forum) and others are externally hosted and managed (chat room, general and regional mailing list). We are fully aware that new communication technologies introduce new skills and knowledge. We now require students to develop new levels of computer and information literacy and communication skills arising out the use of computer-facilitated communication. Hopefully some of these technologies has been included in the course prescription, i.e., they are already part of the course.

Tutor-to-student and particularly student-to-student communication through asynchronous and synchronous computer conferencing and electronic mail will be the major focus of this study. The first section gives a brief description of student support on this course, describing the practice we used to encourage students' involvement in collaboration and communication. In the second section I summarise and critically reflect on our experience with computer-mediated communication on this course in the last three years. Finally some recommendations concerning effective use of computer-mediated communication tools have been given.

## **2. Student support on the course**

The Open Polytechnic of New Zealand introduced an online environment called Online Campus to deliver and support some of its courses (mostly degree courses). The main features of the online campus are:

- course web site (online course material & support pages)
- student discussion forum
- send assessments

However, we are still send out printed course material on these courses which means that the new system is complementing the old traditional methods of teaching.

On the other hand although the classic majordomo list server was available we started to use externally hosted and moderated list server known as ListBot ([www.listbot.com](http://www.listbot.com)) for general mailing list (or announcement list) and regional mailing list for peer-to-peer collaboration. Also, Delphi chat server ([www.delphi.com](http://www.delphi.com)) was used for regular weekly chat session and to archive chat logs.

The main reason for using collaborative tools from different sources was based on purely pedagogical ground. We thought that exposing students to different collaborative environments could be beneficial for them. It gives them a feeling of the real world and possible problems in it. Also, from moderator's point of view external mailing list was much more easier to manage than the classic majordomo list.

The disadvantage of using tools within different environments (for example: discussion forum in the

online campus and the chat room on Delphi server) is that the students have to visit two separate web sites with their own set of rules of how to subscribe and login and the most important how to use it. It was the challenge for most of them to go through registration process and to become familiar with the environment. However, at the end of the first week during which tutors' help and encouragement is crucial, students started to communicate with each other, providing support and encouragement for their peers.

We are trying to create a stimulating environment so that the students become actively involved on the course, to actively search for resources from different sources, to communicate with other students and to form study groups. The role of the lecturer is mostly to facilitate discussion. At the beginning of the course the lecturer initiates and provokes discussion, establishing a connection between students (through the chat room, regional mailing lists and student discussion forum) until they form virtual or face-to-face study groups. For example, at the beginning of each chat session lecturer is there to welcome students, to ask questions and initiate conversation on a particular topic. However, during the session the role of the lecturer changes. Tutor mostly monitor conversation and actively participate in discussion only to encourage passive students and initiate a new discussion on a particular topic. In the chat room and student discussion forum the lecturer usually leaves questions unanswered for a certain period of time, just to allow to the most competent students to answer the questions. Only if the question is of a difficult type and students are not able to answer it adequately, will the lecturer provide a full and detailed answer.

One way to encourage students to communicate with other students or to remove their fear of the new communication technology is to ask them to post a few words about themselves (for that purpose we have created a thread: Introduce Yourself!). We find these postings very useful. Some of them wrote about their fears of new technology or feeling anxious about studying again after a couple of years after they left school. Their comments put the other student at ease, because now they know that they are not alone feeling stressed at the beginning of the course.

## **3. Pros and cons of using specific Internet tools**

In this section I provide additional comments regarding a particular Internet tool used on this course for student learning support. Table 1 gives a brief overview of the positive and negative aspects of each Internet tool with some useful tips on how to use a particular tool to get most from it.

### **3.1. Course web site**

The main idea behind web design for the course web site was to effectively use web technology, allowing students flexibility and freedom of choice. For example, the navigation system was built with several optional navigation sub-systems included (they may choose between web site with or without frames, web site with or without using floating menu, to have a site map integrated in the navigation system, etc.)

Although we have integrated course material with learning guide in the course web site I think that having a complete online course material is not a good option for most of online courses. To read more than 3-4 pages of text on the screen is quite difficult. The only reason of having the learning guide in online format was the search facility not available in a printed version. However, we have structured and stored the online course material away from the rest of the student support pages.

### **3.2. Student discussion forum**

Some students asked for old discussions to be removed from the threads while others wanted us to keep them. We found that the old discussions, if related to the assignments, are still relevant and therefore we kept them, by treating them as semi-structured FAQ pages.

### **3.3. Chat room**

On the Delphi Chat server we used for our chat session there was an option of saving chat logs. We found this option quite useful for those students not able to attend the live chat session on Monday evening. They were able to browse the chat log and look for a relevant comments posted by lecturers or other students.

We had a discussion what to do with the original chat log, to edit them or to keep them in a raw format. We decided to keep them in a raw format, thus giving a chance for other students to see and learn about the interaction, dynamics and netiquettes in the chat room while they are still a novice. Using the search facility on the past chat logs they can always find a particular piece of information.

### **3.4. Mailing list**

Mailing list was used mainly as one-way communication tool from tutors to students for sending out announcements and course newsletters. We used this tool as an alternative way to inform students about the new stuff on the course. Sometimes we have posted the same information on "What's New?" course web page,

"What's New?" thread in student discussion forum and on this announcement list. This was done simply because some students did not visited course web site regularly and this was a good way to push the information into their mailbox rather than to wait until they visit the web site.

### **3.5. Regional mailing list**

We formed about 15 different regional mailing lists with idea of making them a starting point toward forming virtual or face-to-face regional study group. Traffic on these lists was very heavy, particularly at the beginning. Then, when they setup a study group (usually at the end of the second week in semester), traffic slow down a bit. This tool was used mainly for peer-to-peer collaboration and we found it very effective from social and pedagogical point of view.

### **3.6. E-mail**

E-mail from and to a particular student could be treated as a one-to-one student learning support. For lecturer answering them was a time consuming process. If the question asked in the email was of general interest we advised sender to post the same question in student discussion forum hoping that other students will provide answer or that our comment, if we had to answer it, would reach much wider audience.

## **4. Concluding remarks**

Our practice highlight the pedagogical advantages of being flexible in terms of the communication methods students can use. The majority of active students although not formally introduced into the degree embraced some of the devices, such as discussion forum, regional mailing lists and chat room. Our experience with this course support results presented by Ruberg et al. [1] that computer-mediated communications strongly encourage sharing of resources and early ideas.

Although some authors challenge the dominant trend of automation of higher education (Noble [3] described the automation of higher education as the distribution of digitized course material online, without the participation of professors who develop such material. He sees the recent trend towards automation of higher education as implemented in North American universities today not as a progressive trend towards a new era, but rather a regressive trend, towards old era of mass-production, standardisation and purely commercial interests.) my opinion is that proper usage of computer assisted learning devices could help the people involved in educational process (students, academic and administrative staff) to improve learning, teaching, and management efficiency.

Table 1. An Overview of the Pros and Cons of Using Specific Internet Tools

Internet tool	Pros	Cons	Comments / Tips
Course Web Site	FAQ and Hint/Tips pages answers most of students questions,  fast way to inform students by posting news, files and other supporting material	beside feedback page there is no two-way communication	regular update of the course information is a must
Student Discussion Forum	excellent way for sharing resources,  effective way to manage focused discussion on a particular topic	-	setup initially a small number of threads,  ask them to introduce themselves
Chat Room	quick exchange ideas at early stage,  good way for sharing resources (URLs),  fast and brief response in real time	too fast media for slow typist,  discussion on several topics at the same time,  fast and too brief response	develop a FAQ response file before session starts,  keep past chat logs on the server
Mailing List (for announcements only)	fast and efficient way to deliver course information to student	there is no two-way communication	use this tool 3-4 times in semester (otherwise students will experience information overload)
Regional Mailing List	good way to form a virtual or face-to-face study group in a particular region,  good way to discuss some ideas within groups	discussion is not structured and not saved	initially post a welcome message to start discussion  encourage them to post general questions to student forum rather than to mailing list

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