
AN EVALUATION OF AN ONLINE ICT COURSE: STUDENT PERCEPTION, SUPPORT ISSUES AND LECTURER INVOLVEMENT

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Introduction

The acquisition of basic Information Technology and Communication (ITC) skills is considered a vital starting point for students in the first year of any University course. At the Economics Faculty, Bergamo University, Italy, a level one Informatics course is offered to all students newly enrolled on a degree course within the faculty, in order to achieve a uniform standard in first year students. Many of the students who enrol in the Economics Faculty have studied at Technical and Professional High Schools and come equipped with a sound background in computer training, whilst others who come from more traditional high schools have few skills in this area or the ITC knowledge they possess is less well consolidated. The module offered also sets the standard for the minimum ITC skill set required by a student embarking on an undergraduate course.

With the advent of new technologies in the field of e-learning, it was also decided that the ability to work within a Virtual Learning Environment (VLE) should become a core skill for any student beginning a degree course within the Faculty, thus serving as the basis for further development within subsequent modules of a degree course. It seemed opportune, therefore, to introduce an e-learning activity within the Informatics module.

One difficulty facing all modern Universities is large cohort numbers. By allowing students to participate in courses through VLEs, many of the problems associated with large classes are resolved. Student support becomes more immediate within an online environment, where students have greater access to interaction with lecturers, which in traditional classroom based courses is either infrequent or lacking completely. As noted by Cavalli and Lorenzi “distance learning becomes active learning...the lecturer is the instructor who moderates activities, whose principle objective is to facilitate learning...” (Cavalli and Lorenzi 2000). On-line teaching can reduce the gap between lecturer and student and between the students themselves; a smaller classroom group is created virtually, which in the large cohorts of traditional undergraduate courses is lost. Virtual Learning Environments also allow for the introduction of key elements in student centred on-line learning, such as:

- ? the ability to structure the course into distinctive modules or learning units
- ? the facility to undertake tests and assignments on-line
- ? the possibility to interact with lecturers and students via the web
- ? the ability for students to participate actively in the course by posting questions and replying to discussion threads, as well as reading or downloading files

Thus it is hoped that students will undergo a change in their learning culture, achieving a different approach to study compared to their classroom peers as:

- students develop a more collaborative mindset, they receive positive feedback from lecturers and from other students and in turn contribute more actively to the course
- the virtual classroom allows for peer learning amongst students, where they ask and reply to each others' questions independent of any lecturer input

- teaching methods and learning processes change within a virtual environment: active participation from the students directs the lecturers' teaching and the students receive a more personalised form of study
- as students become more accustomed to the virtual environment, they begin to see the internet as a conduit to other material and information which will develop their studies
- students learn to evaluate for themselves the wealth of material offered on the internet and become adept at discerning which information is best suited to their needs.

Evaluating the module

Evaluating and monitoring of courses or modes of study is vital within any learning organisation in order to ascertain effectiveness. The Economics Faculty decided to undertake both a quantitative and qualitative evaluation of the distance mode, in order to judge whether students had performed as well as their classroom peers and to find out from the students themselves, whether this different mode of delivery had indeed provided them with the ICT skills they sought to acquire. As well as supplying demographic data about themselves on enrolment, students completed an initial questionnaire on expectations of the course where they were also asked to judge their own ICT skills. At the end of the course, students completed questionnaires on the course itself and their performance after it.

The themes dealt with in the questionnaires were:

- ? ICT skills – students own evaluation of their skills before and after the module
- ? Support – from materials, tutors and interim tests

It was also important to ascertain whether the students had received the support they needed through the VLE and to try and judge whether they were developing a collaborative mentality and more mature learning style that is fundamental to effective distance learning.

The module is run in at the beginning of the academic year and the September 2002 course is evaluated in this paper. The exam marks of the two cohorts were compared and questionnaires completed by distance students were analysed. Forums and online discussions were also analysed from the point of view of how many students participated, how often and with what type of question was posted. Lecturers' use of discussions was also analysed.

Organisation of the distance module

127 students actively enrolled on the classroom course and 123 enrolled on the distance course, although as the course was open to all students within the faculty, more students actually took part.

Distance students underwent six teaching hours in the lab with a lecturer and 19 teaching hours online. The six classroom based hours were divided into three lectures each two hours long, the first at the beginning of the module, the second in the middle and the third at the end. Lotus Learning Space was used as the Virtual Learning Environment for distance students and each person was given a specific log-in name allowing them to participate in discussion boards (asynchronous forums), send assignments electronically and undertake tests on-line. Distance students were subsequently divided into six subgroups, each with its own lecturer. Each lecturer (or 'tutor') managed their group independently and would participate in discussions as and when they chose.

At the end of the module, a final exam was taken online by all the students in person at the University, using the University's PC labs. Distance students also took four interim online tests during the course (called assessments), which were marked by the programme Learning Space and they also undertook other interim exercises (assignments), marked by the group tutor.

Students from both groups had access to the University's PC labs reserved for e-learning purposes.

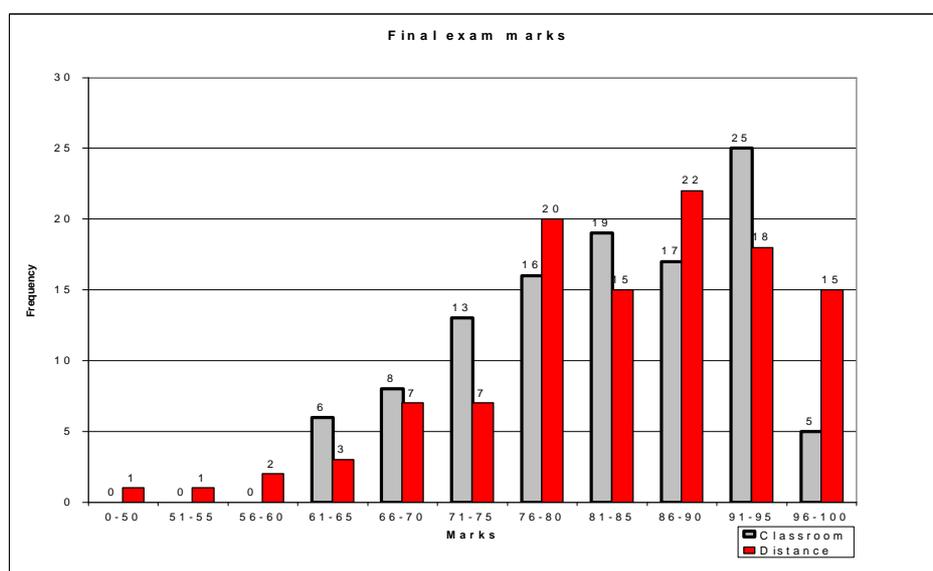
Student profile

At the start of the module 183 classroom students and 189 distance students completed questionnaires and supplied demographic data about themselves. Almost 20% of the distance group were not enrolled in the first year at university but were in other years, whereas in the classroom group, only 3% were not first year students. At the beginning of the course, 24 distance students claimed not to be full-time students, as opposed to only three classroom students. As has been shown in other studies (Gilroy et al, 2001) the distance learning environment tends to be favoured by non traditional students, that is students who may be older, who work or who have other obligations, such as family, that do not allow easy access to traditional classroom courses.

Exam marks

109 classroom students and 111 distance students took the exam at the end of the course. Both groups scored highly in the final exam with 92.5% as the mode for the classroom students and 87.5% as the mode for distance students. Only four people in the distance cohort who took the exam did not pass. When considering that the distance students also had to change their learning habits to include a new form of interaction with peers and lecturers, as well as mastering new technology, the results of their exams shows a notable success for the online course.

Undergoing interim online tests almost certainly contributed to the success obtained by the distance students in their final exam. Most of the students who achieved over 70% in their final exam took all four interim tests offered online. The online environment allows students to continually verify the level of the new skills they are learning, thus providing a more stimulating environment for the learner.



Student perceptions

The aim of the initial and final questionnaires was to establish the efficiency of the course based on subjective perceptions of the student participants. Evaluations were made based on the categories 'not at all', 'little', 'average', 'a great deal' and 'insufficient information to reply', with students evaluating sentences such as:

- 'I am familiar with general IT concepts and know how to use a PC on a basic level' (at the start of the module)
- 'After the course, I feel I am familiar with general IT concepts and know how to use a PC on a basic level' (at the end of the module)

The table below shows the differences in the categories “little” and “a great deal” for the distance students at the start and the end of the course. Although any changes in skills and knowledge were self assessed, the distance group felt they had progressed considerably after the course. This is especially true as regards the Internet and its uses. As distance students could immediately practice new internet skills acquired through the medium they were being taught in, they may have felt a more marked increase in their abilities and confidence. Students enrolled on the distance mode had to overcome the newness of the very environment they were being taught in, with the need to familiarise themselves with the PC and the change in their mentality to one of a more collaborative student. Nevertheless they demonstrated a stronger sense of achievement than the classroom students once they overcame the initial difficulties. In recent research undertaken by the Open University in Britain, one reads “many students go through a very steep learning curve at the beginning of the course....most of those who stuck with it till the end reported a tremendous sense of achievement.” (Weller and Mason, 2000). As mentioned in the introduction, one objective of the course was to accustom students to using the Internet as a source of information and thus create a more mature and autonomous attitude towards their own learning.

Units in the module	Category	Before course	After course
UNIT 1: General computer use and IT concepts	A great deal	1%	20%
	Little	38%	1%
UNIT 2: Windows Operating System	A great deal	11%	36%
	Little	15%	2%
UNIT 3: Word	A great deal	13%	35%
	Little	19%	2%
UNIT 4: The Internet and its uses	A great deal	5%	29%
	Little	19%	2%

Support

Traditional types of support, such as those offered by a lecturer to students or that gained by undergoing assignments were seen by the distance cohort in a very different way to the classroom based students. When asked to express opinions on how much they would use online materials or handouts, just over 40% of distance students expected to use them a great deal. This figure rose to almost 70% after the course, when the students had had the opportunity to consult the materials online. On the other hand, at the start of the course 47% of distance students expected to make use of tutor support ‘a great deal’, with just under 5% only expecting to need tutor support ‘little’. At the end of the course the changes were dramatic. Over 40% of distance students claimed to have needed tutor support ‘little’ at the end of the course and only just under 4% claimed to have used tutor support ‘a great deal’.

Various hypothesis present themselves as to understanding these figures. Before commencing the module and while still within the mentality of a classroom student, distance students may have expected to use traditional forms of support (such as asking the tutor for help) in the usual way. Once on the course, they develop into more autonomous learners, able to access online materials at will, with less need to ‘ask the teacher’. As Dr S. Quinsee of City University London notes “distance students appreciate the fact that they access materials and respond to them as they feel appropriate. When students are pushed for time the ability to engage in this form of learning is beneficial” (Quinsee 2000). Time management skills and the ability to login whenever and wherever may mean that students are looking for support at times when it is physically impossible for tutors to be available, late at night for example. Thus they turn to other means and become more mature about taking control of their own learning. In this way the online environment leads directly to student centred learning. The online environment also radically changes the interaction between student and teacher and between the students themselves. Peer learning becomes a much more integral part of the

learning experience. As we shall see in the analysis of the discussion boards below, students created a collaborative web amongst themselves, where knowledge transfer was not solely dependant on the lecturer as is more usually the case in the classroom. Interestingly, lecturers also participated actively within the discussions posted. It may be that it is precisely the fact that student had access to information that was not directly meant for them, that may have given them the impression that they were not benefiting from tutor support, when in fact the opposite is true.

Discussion rooms

About half of the distance cohort participated actively within the discussion rooms for the module. By far the most popular topics to be posted by students to their peers were questions on either the organisation of the module itself (deadlines for tests etc.) or technical questions, such as how to attach files to documents within Learning Space. The ability to post questions to a significant number of peers, as opposed to turning directly to a lecturer, is vital for the online community. A collaborative network is established between online students, independent of the lecturer, who (the students fear) may judge the student too harshly or doubt their technical ability. The student becomes more empowered through the forum environment. By answering questions submitted by peers, they begin to feel that their input is valid. As Dr WG Lockitt says of his research into individual learning styles and e-learning “all learners identified ‘hands-on’ as the preferred method of learning...the overriding feature of the term hands-on given by respondents focused on the involvement of the learner in the learning process and the perception that their input was being integrated into the learning process itself.” (Lockitt 2002).

Replies to discussion threads were posted up fairly rapidly, by both students and teachers, with intervals of usually a few hours and rarely more than a day, demonstrating that discussion boards were checked fairly regularly by both staff and students. However, in many instances when questions by students were directed to the whole group, lecturers would reply rapidly, without leaving enough time for other students to reply. This may be a reason why students, having started to use discussion cards as a way of interacting with each other soon gave up this practice and reverted to the traditional student/ teacher role, where they waited (not for long) for the lecturer to supply the correct answer. Even in instances where a student replied to questions posted by a peer, a lecturer would also supply the ‘correct’ answer, thus removing the possibility for students to work out a solution together. Quinsee noted that “it is tempting for lecturers to contribute too quickly to discussion board postings. This can lead to a build up of expectations the students and in fact impede communications...if this is not addressed resentment may build.” (Quinsee 2000). She suggests ‘lecturer hold back’, with tutors deciding together at the start of the module how and when to reply to discussion postings. This allows students enough space to interact with each other, thus establishing for themselves the parameters of their virtual environment and therefore taking ownership of it. Lecturers should participate in online discussions, but it is important that they too, do not transpose the traditional classroom roles onto the elearning environment. The distance students here were beginning to create a virtual community that would have given them a different type of support than the ones they were traditionally used to, however this seems to have been truncated fairly early on. If lecturers want students to look on VLEs as new and effective ways of learning, they must allow students space to manage the online environment as they desire.

Conclusion

When evaluating the IT skills module run for distance students, one can say that it was a success from various points of view:

- all the students who took the exam, apart from one person, passed.
- the majority of students felt that their IT skills pertinent to each single component of the course had increased.
- half of the distance students actively participated in asynchronous discussions, thus establishing a collaborative community with other students and with lecturers.
- students used the new technology to take on-line tests to their advantage; those who took a greater number of tests gained a better mark in the final exam
- most made use of the online materials available as demonstrated in the questionnaires they compiled
- the students now have valuable experience in using Learning Space

One was able to see changes in the distances students approach to learning as the module progressed, with the increase of autonomous learning and a move towards a collaborative community where the lecturer is no longer at the centre but rather the students feel that their input is worth something to the cohort as a whole. New support issues have been raised, especially as regards lecturer participation. Students certainly gained from the course and will continue to take advantage of these gains in the future, both when using their ITC skills and through their learning patterns. It is worth noting that a distance environment necessitates a different learning mentality both on the part of students and lecturers if it is to be used to its full potential. It is vital to allow a certain organic growth within the VLE during the course of the module.

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