Back to the Future: The Power of Traditional Teaching with Modern Communication

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The use of information and communication technologies in the delivery of higher education is heavily influenced by academic researchers in the fields of e-learning and education. The primary interest of such academics is naturally more focused on research and practice in the use of more advanced and emerging tools and techniques, rather than in the growth of their own institutions. Could such a preference be an inhibiting factor in the development of online courses in higher educational institutions? In moving their teaching online, academics are often faced with the dual challenge of changing the medium of teaching as well as adopting more sophisticated technologies and pedagogical practices than those they have previously used. In addition to this, institutions are challenged by development and quality assurance procedures for online delivery that are often more stringent than those in use with campus based delivery. Could it be that the combination of these challenges is resulting in many departments being slow to develop online courses or in not considering online delivery as an option at all? Might this be different if institutions were to replicate online, the methods used for teaching campus-based courses?

This paper presents a case study on the success of a department in Institute of Technology Sligo in rapidly developing a suite of online distance learning programmes (www.itsligo.ie/online), with a very low level of investment. Using synchronous and asynchronous communications technologies to enable mainly traditional teaching methods over the Internet, this small department, with no previous experience of distance learning, between 2002 and 2008, grew the number of online distance learners to 400, greater than the number of full-time campus based students, and income from fees to over €1.5m

The paper also puts forward the hypothesis that adopting a strategy of transferring traditional teaching practices online, may be more effective in scaling up the availability of online learning programmes than other strategies that require the use of more sophisticated pedagogical or technological approaches. It also suggests that the interests and preferences of e-learning and educational researchers may actually work against the simpler business objective of increasing capacity in online delivery.

Keywords synchronous teaching, on-line learning, development costs, pedagogy

1. The origin of online-distance learning in the Institute of Technology Sligo

In 2002, the Department of Mechanical and Electronic Engineering, in the Institute of Technology Sligo launched a web-supported distance learning programme in Quality Management using the wrap-around model described by Mason [1]. This course was essentially a self-study course, using existing materials such as books, lecturer handouts and third-party web resources, and added learning activities that could be carried out by the distance learners with both peer and lecturer support being provided by asynchronous online discussion forums. The motivation for using this approach was purely pragmatic as no funding was available for development and it was felt that that, although less than perfect, the approach would enable effective learning.

This proved not to be quite so. The programme comprised of three different types of modules which could be classified as management, technological and mathematical. At that point in time, asynchronous discussion-based learning had already been proven to be quite effective in the teaching of humanities. [2] In this case, it did prove to be effective in the teaching of the management topics, possibly helped by the fact that the learners were in workplaces where they came across these issues on a regular basis, but primarily due to the fact that the topics were suitable for text based discussion. The technological topics were a little more challenging. Learners were required to attend the Institute about once or twice per semester, and the practical work carried out during these visits seemed to enable them to effectively do further study on these topics on their own. The mathematical topics proved to be much more of a challenge. The learners found it extremely difficult to progress in these topics on their own through reading texts provided. Providing tutorials or classes at extended intervals helped a little but the situation was still not satisfactory, as learners found it difficult to take in a large number of new mathematical techniques during a single extended face-to-face session.

Fortunately, at this point in time, PC based video-conferencing was reaching a level of robustness where it could be reliably used for web-casting classes, and a price level that was affordable. This was introduced in the second year of the programme and all modules added a weekly one-hour class or tutorial to their activities. The

high levels of satisfaction reported by learners indicated that this had effectively solved the problem we had been having with the mathematical modules. It also appeared to have improved learning in technological and management topics also, with students expressing a much reduced desire to travel to the Institute for tutorials.

In the development of this course, lecturers were given minimal training in the tools available and, as is mostly the case in campus based higher education in Ireland, they were given the freedom to devise their own teaching strategies. In the beginning, when the synchronous conferencing system was not available to them, they had to use strategies that were quite different to those that they normally used with their full-time students. However, once the live teaching methods became available to them, they tended to revert to methods that were much more like those they already used on campus. Although it could be remarked that this might be a backward step, it has to be said that the satisfaction levels among learners were generally very high.

2. The model of online learning that has emerged

In general, the online courses from this department revolve around a weekly online class. This class is quite similar to the face-to-face classes for full-time or evening classes that currently take place in the Institute. Distance learning classes are normally web-cast from a classroom in the Institute, although a few lecturers give their classes from home. Lecturers normally use and headset microphone for best quality audio. In general they do not use a camera as this increases the set up time and requires more bandwidth. As the process is relatively simple, no technical support is required in the room, but they do have access to information technology support in the building. PowerPoint is the main tool used for presentations. Al electronic whiteboard is supplied in the classroom, and lecturers can use the electronic pen to write on top of their slides as they give their presentation, or use a blank screen like a normal whiteboard. Learners can ask questions using a chat window, or indicate to the lecturer that they wish to verbally ask a question. Lecturers encourage interaction in the session by asking the students questions that they can answer using the chat area or by the use of instantaneous polls. The classes are recorded for those who cannot attend live. In addition to attending these classes, learners are given activities to carry out on their own. While carrying out these they have access to a Virtual Learning Environment area for the module where they can access relevant resources and an asynchronous forum where they can ask questions of their peers and their lecturer. Continuous assessment marks are generally awarded for these activities. There is a final examination at the end of each module.

3. Comparisons with other modes of learning

Examining the approach to teaching described above, it is apparent that it is very close to traditional teaching methods, even to the point of having a lecturer writing on a board in the traditional manner [3]. This can be contrasted with the sophisticated planning and instructional design normally required in the development of materials and activities in traditional distance learning. It can also be contrasted to the large effort required to design and build interactive multi-media based learning materials. It might be considered ironic to observe that the use of these more sophisticated approaches may have been driven by the limitations of the technologies available at the time. Although it can be argued that the development of independent learning materials may be justified by the economies of scale that can emerge from their use, there is no doubt that lack of convenient local access to suitable courses was a major driver in the traditional distance learning and interactive multi-media techniques. Recent years have witnessed a steady growth in broadband penetration and the development of many competing PC based video-conferencing systems that are reliable, fully functional and available at a reasonable cost level. This has, to a very large extent, solved the problem of local access to suitable courses. Linked to these technology developments, has been the growth of the above described synchronous training techniques for rapid, low-cost, widespread deployment of training in private companies as well as the development of screen and lecture capture systems which enable simple recording and publishing of lecture style presentations. Both of these approached are strongly linked to traditional lecture delivery as used on campus-based courses.

Indeed the parallels with campus based courses are more than pedagogical. As with campus-based courses in higher education in Ireland, lecturers were not paid for preparation of materials. Thus, the resulting financial model for these online-distance learning courses is more similar to campus-based courses than traditional distance learning or e-learning courses, where significant up-front investment is required, and whose reduced running costs can lead to significant economies of scale. While the lack of economies of scale, at first, appears to be a disadvantage it should be noted that distance and e-learning courses normally require significant projected enrolment levels before a decision can be made to proceed with the development of a new programme. In contrast to this, both campus-based courses and the model of online distance learning developed in this department, require much lower projected enrolment levels in order to be justified.

3. The success of the communications based approach.

Because of the limited amount of new technical and pedagogical skills that need to be acquired by lecturers, the amount of time and effort required to make a course available online is much less than an equivalent e-learning or traditional distance learning course. Indeed, this observation, along with the level of satisfaction being reported by existing online students, formed the basis for a decision to increase the number of courses available online from this department. Between 2004 and 2008 the number of 60-credit programmes available online increased from 1 to 9, the number of students from 5 to 400, and the fee income in the 2008/2009 academic year reached a level of over €1.5m.

This seems to be quite a remarkable achievement. This development mostly took place in one small department. This department now has more distance learners than full-time students. This was achieved with minimal investment and the income generated covered all teaching and estimated overhead costs. In addition student surveys indicated that the distance learners were generally very satisfied with their experiences, and examination results, which were often identical for full-time and online courses, showed that the distance learners performed as well if not better than the campus-based students.

4. Observations and hypotheses

So, on the face of it, it seems that some of the latest developments in technologies are now enabling an online move back towards more traditional teaching techniques. However, although private companies are rapidly adopting this approach, the uptake of this approach in higher education seems to be quite slow, and where it is being used, it is often as an addition to an existing heavily designed and expensive approach to distance learning.

So why is this approach not more widely used in higher education? This paper does not claim to have definite answers but does suggest some possible reasons based on the authors contact with people involved in educational development, distance learning and e-learning over a number of years. It proposes that there may be two main reasons why this is so:
1. The background of the people within higher education responsible for the development of online learning.
2. The strong links between educational research and educational development within higher education institutions.

Online learning in higher education seems to be influenced by three main groups of people: Those who have a background in traditional distance learning, those who have a background in technology and multi-media (or what used to be referred to as Computer Based Training - CBT), and those involved in educational research. Each of these three groups will have a natural tendency to place a high importance on their existing skill set when working on the development of online learning, although each in a slightly different way.

Traditional distance learning has been with us for quite some time, and even with the advent of the Internet, its investment in materials, instructional design and standardised methods of operation has resulted in significant efficiencies which seem to have ensured its survival. Although those involved admit to the importance of information and communications technologies (ICT) in improving their courses, their use seems to be in the form of cost-saving measures (e.g. move from printed to electronic distribution) or quality enhancement (e.g. online tutorials and asynchronous forums) as opposed to being in the form any major changes in the approach to how courses are developed and delivered. The author would like to suggest that this reluctance to make major changes to the approach is due primarily to a natural attachment to the techniques they have used successfully in the past. Pre-internet approaches were also heavily based on the concept of the course content being a core asset of the course and although this is now in serious doubt, because of the easy availability of free content on the Internet, the idea may still sub-consciously influence approaches to the development of online and distance learning. In addition, when making decisions on adding technological enhancements to courses, there may be a tendency to rely on multi-media professionals who have their own ideas how online learning should be enabled.

Indeed the problem may somewhat similar with multi-media developers. Many of the experienced developers may have developed their skills in CBT and the younger ones would also have invested heavily in the development of strong skills in design and development of sophisticated interactive materials. Synchronous teaching requires a relatively low technology skill level and other than some initial set-up of infrastructure and training for teaching staff, requires very little of the more sophisticated skill-set of e-learning professionals. The author would argue that this would make them quite reluctant to recommend such a simple approach to the delivery of online learning. Whereas, it might be too critical to say that traditional distance learning providers and multi-media professionals see learning as about content, rather than as a communication process, it might be fair to say that they see content as a key core element, and the development of such content as a necessary part of the development process.

The influence of educational researchers may be quite different. Within higher education, learning development units are often staffed by people who are heavily involved in research into teaching and learning. This naturally gives them an interest in more advanced and experimental teaching techniques. It is the author's observation that very little research is carried out into the effectiveness of traditional teaching techniques and, perhaps more importantly, even less into its cost effectiveness. Again the author would argue that there may be a natural reluctance on the part of educational researchers to encourage the use of simple teaching techniques.

The combination of the above could be taken to suggest that most institutions, because they rely heavily on the opinions of traditional distance learning developers, e-learning professionals and educational researchers, would believe that putting programmes online requires significantly more development effort than the development of a new equivalent campus-based course. In addition to the need for specialist instructional designers and technologists, the institutions may believe that the teachers would also be required to increase their skill levels significantly. This approach requires a higher level of investment but also generates a natural reluctance in academic staff to become involved. The author would like to suggest that these perceptions are creating a barrier to development and that his experience in rapidly creating online courses using an online communication approach as opposed to a content based approach, and the levels of satisfaction reported from students on these courses, indicate that replicating traditional teaching techniques in an online environment may prove to be a more promising strategy.

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