No Lectures On-Campus: Can eLearning Provide a Better Learning Experience?

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Abstract

This paper presents an alternative use of eLearning to support on-campus post-graduate teaching and learning. The case-study presented and described, is based on a Information Systems Project Management module taught using a flexible learning mode. This approach was adopted from lessons learned in eLearning-based distance education and adapted to the specific needs and advantages of on-campus learning. The paper establishes a pedagogical rationale and describes the use of eLearning to implement and support it. Preliminary evaluation results are then presented and discussed.

Introduction

No concept, approach, technology or innovation without a small "e" in front of it, is considered to be viable these days. New eConcepts emerge daily and fall by the wayside equally quickly. Some these are imposed on us by political needs, some by marketing needs and some just because of our inability to cope with the every increasing rate of change that characterises the Information Society we live in.

In fact, Higher Education (HE) has been particularly vulnerable to these new approaches, demands and insecurities. eLearning, online environments and virtual learning environments (VLE) have been seen as the most recent educational panacea [1] [2] to try and empower teachers and lectures as well as students. eLearning is thought to provide students with appropriate environments capable supporting not only the acquisition of subject matter specific knowledge but also transferable skills such as online communication, online discussion and negotiation of meaning [3]. The resulting emergence of new educational approaches and epistemologies, such as constructivism and problem based learning, have also been identified as possible ways of fostering and promoting the aforementioned skills.

The difficulties facing the educational practitioner are twofold: on one hand, becoming familiar with the complexities of the new pedagogical approaches allied to a new and very fast moving technological environment; on the other hand, to be able to identify the relevance of these new approaches in his/her own daily practice.

Difficulties start with the very terminology and jargon used in the emerging field of Educational Informatics. Terms are used interchangeably such as: *Open Learning, Networked Learning, Virtual Learning,* and the very recent *e-Learning* and *Blended Learning*. These terms are frequently used to describe learning associated to a particular delivery environment for courses that are not wholly delivered using traditional face-to-face, on-campus lectures within HE. The main characteristic linking all these terms is the use of new Information and Communication Technologies (ICT) as a delivery vehicle. These new Educational Technologies (EdT) are the result of the convergence of computing and telecommunications, and the resulting development of ICTs such as e-mail, video conferencing, bulletin board systems and the WWW.

Nevertheless, HE is slowly incorporating these emerging new modes of delivery. This paper presents and discusses an attempt to use eLearning on campus, including a proposal for a pedagogical approach and the corresponding educational design. Finally, some early evaluation results are presented.

eLearning

eLearning refers to the effective integration of a range of EdT to support teaching and learning. These technologies encompass a range of resources, media, tools, and environments that enable rich, interactive, and active online learning. Normally, this term is used in relation to WWW based environments, course and modules. However, and in truth, it does not necessarily

have to be associated with this specific technology.

eLearning has provided new opportunities for sharing information and interaction between individuals and groups. Benefits of eLearning course delivery for learners, tutors and institutions, have been discussed by a number of authors [4] [5] [6] and could be summarised as follows:

- electronic distribution of course material;
- flexibility for students (i.e. when to study, at what pace);
- supporting different learning styles; accommodation of different ability levels;
- establishment of communication between students and tutors, and between students;
- greater access to information; greater flexibility in maintaining and up-dating course documentation.

For the remainder of this paper the term *e-Learning* will be used to summarise the characteristics of these overlapping delivery methods and will be used as an umbrella term for all EdT and Internet based learning.

eLearning in HE

Experience suggests that the development of eLearning requires significant modifications to the traditional paradigm of the supply of higher education [7]. This implies not only changes in course models, but also changes in attitudes, in order to accommodate the new challenges posed by e-learning in general and HE in particular.

In fact, embedding eLearning in course development must not only meet the objectives of how students learn, but also take into account the students' motivations, priorities and preferences. Some authors go even further by stating that the inclusion of online teaching represents a shift from a model of efficiency to a model of quality [8].

In a traditional classroom, curriculum is presented part to whole, with emphasis on basic skills and explicit knowledge. Students are viewed as empty vessels into which knowledge is poured [2]. Teachers behave in a didactic manner, disseminating facts and correcting answers. Strict adherence to fixed curriculum is highly valued and activities rely heavily on textbooks and workbooks. In this traditional classroom, assessment of student learning is viewed as separate from teaching and occurs almost entirely through examination at the end of the course. Students work individually and in competition.

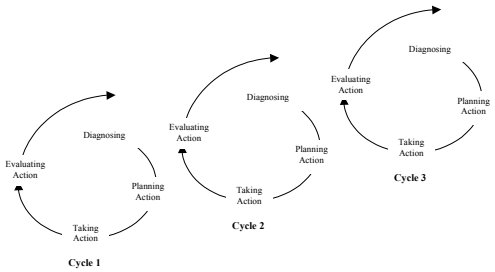

Figure. 1 - Spiral of Action Research Cycles [12].

eLearning has the potential to change this scenario, by providing facilities for peer interaction, collaboration and formative assessment.

Furthermore, research and practice in HE indicate that successful eLearning use in course delivery not only needs to be well designed, to adopt appropriate pedagogical approaches and have knowledgeable tutor/facilitators, but also needs to pay attention to surrounding issues such as programme structure, institutional and organisational strategy and management processes [9].

Thus, for the educational practitioner (lecturers, teachers and tutors) the task of embedding eLearning in their practice should not be seen as a trivial matter. The use of eLearning needs to be based on evidence-based practice and sound educational informatics research.

Action Research into eLearning

The eLearning application presented in this paper is grounded on a practitioner action research approach as the guide for everyday work and professional life [10].

Action research is highly appropriate to the development of e-Learning where changes in delivery mode imply not only alterations in course models, but also development of new attitudes, in order to accommodate the new challenges posed. Educational researchers [11] proposed that the most suitable approach for educational research in general, and educational informatics in particular, is to use a 'methodological pluralism'. Given that the emphasis of this particular research is to concentrate on educational models and e-learning issues, it was felt that a positivist approach would have been inappropriate. Action research is a pluralist research approach that is based on the assumption that the mere recording of events and formulation of explanations by an uninvolved researcher is inadequate in and of itself.

Furthermore, action researchers [10] propose that those who have previously been designated as "*subjects*" should actually participate directly in research processes and that those processes should be applied in ways that benefit all participants directly. Therefore action research is more than the traditional interpretative research in the sense that the researcher is directly involved in the research setting and in the experience itself. More specifically, the research presented in this paper draws on the framework suggested by [12].

Action research results from spiral research cycles, starting with a process of identifying a problem area – a

pre-step often based on the previous experience in the field of the researcher. The actual cycle comprises *Diagnosis* (data gathering, analysis and representation), *Action Planning*, *Action Taking*, and *Action Evaluation* as shown in Fig. 1.

Designing a Flexible On-Campus Module Using eLearning

As academic members of staff involved in both on-campus and distance education courses within the Department of Information Studies at the University of Sheffield, this research team is often involved in course review exercises. During one of these reviews it was noted that one of the modules being offered within the distance education programme was notably missing from a similar on-campus programme. The module in question, Information Systems Project Management (ISPM), had an already well- established curriculum and delivery mode based on an eLearning paradigm.

Nevertheless, although the curriculum could be adopted almost intact, the delivery mode had to be adapted to an on-campus environment. Curiously, this evolutionary process is contrary to the current trend of replicating on-campus courses, human interaction modes and consultation processes into distance education [13].

Since the team decided to use an action research approach, the first step in implementing the new ISPM module was to prepare the action plan. In order to do so, a pedagogical model for delivery had to be defined, an appropriate delivery strategy established and finally a suitable eLearning environment chosen.

The Pedagogical Model and Delivery Strategy

The pedagogical model proposed is based on the assumption that eLearning allows an improvement on the traditional classroom paradigm, as discussed above. Therefore, the research team decided to adopt a moderate constructivist and experiential learning approach, which implies the following assumptions:

- learning involves an active process of construction by the learners at both individual and social levels, rather than the passive reception of knowledge;
- the role of the tutor is that of a facilitator that supports independent engagement in the process of construction through scaffolding and the provision of advanced organisers into the learning environment;
- collaboration and peer support relationships are essential features in order to enable engagement in dialogue, exploration of multiple perspectives, exchange of experience, ideas and feedback, and overcome isolation;
- learning activities must be authentic and situated within a real context if learning and skills are to be transferred easily into other contexts;
- programme and module design should engage with learners' individual experiences and encourage ownership of and motivation to learning.

Therefore, the team decided to drop a lecture-based approach in favour of a flexible approach composed of groupwork (case-study analysis and problem solving), small-group seminars and practical sessions. Explicit knowledge would also be provided in the form of module notes and all aspects deemed relevant for the course. These materials, together with traditional reading lists, web links, individual activities and administrative information are now available in the eLearning environment.

The **student** is suppose to engage with module notes and materials on an individual basis and apply and negotiate the meaning of the theoretical concepts with his peers though situated activities such as case-studies, simulations or role-plays. The **facilitator** provides scaffolding for both individual and group learning.

Importantly, because it remains an on-campus module, face to face (f2f) support, discussion and guidance must still be provided. This f2f interaction is imparted through the seminars and practical sessions.

The eLearning Environment

Having established the pedagogical model and delivery strategy, the team first had to decide on an appropriate VLE and then design and develop the module environment.

The choice of VLE is often made at an institutional level and is then imposed on departments and academic staff. As the University of Sheffield elected WebCT as its VLE, this was consequently used.

WebCT is a web-based platform for the delivery of networked learning courses, composed by a number of ICT tools that allows educators to build collaborative learning environments. These include asynchronous and synchronous computer mediated communications (CMC) facilities, student group areas, student presentation and submission facilities as well as full content development tools. This enables both peer-peer and tutor-peer interaction as well as individual study of module materials.

The module area itself was developed using a prototyping approach and resulted in a safe, robust and intuitive site, as illustrated in Fig 2.

Evaluation

The fundamental contention of the action researcher is

that complex social processes can be best studied by introducing changes into practice and observing the effects of these changes [14]. Therefore, the most important part of any educational action research model is evaluation.

Evaluation is the collection, analysis and interpretation of information about any aspect of a programme of education and training, as part of a recognised process of judging its effectiveness, its efficiency and any other outcomes it may have [15]. Evaluation should not be

Figure 2. The ISPM Environment.

confused with assessment. Assessment is an integral part of the programme and although part of evaluation, should not be considered as evaluation *per se* [16]

There are several different recognised methods for evaluation [15]: Formative, Summative and Situated/Participative Evaluation:

- Summative evaluation - is primarily concerned with the quality and effectiveness of a completed educational programme, tested against its aims and objectives;
- Formative evaluation - focuses on evaluation of educational programmes during the development and delivery phases of the programme lifecycle. In formative evaluation;
- Situated evaluation - analyses the learning process within its context.

All the above methods have been successfully used to evaluate traditional f2f courses. However, while online education processes share a number of common characteristics with face-to-face courses, the very fact that they are delivered through ICT means that there are a number of new variables to assess and evaluate [17]. eLearning is not based on one physical location where participants gather periodically, but rather is composed of a host of different learning settings, each built around a central online environment. A number of other issues such as social aspects of online interaction, networked learning processes, online learning resources and online learning environments must also be taken into consideration when evaluating eLearning [16].

The ISPM module was evaluated using a combination of methods aiming at being able to assess these different aspects of eLearning. The evaluation strategy consisted of using situated evaluation during the module delivery, mid-term formative evaluation and summative evaluation on completion of the module.

The evaluation process allowed the research team to identify a number of unexpected difficulties. Initially, the response from students to the ISPM module was quite enthusiastic. IPSM was offered as an elective in the second semester of the MSc in Information Systems. 31 out of 45 students registered on this module. This was partly due to the nature and relevance of the subject matter and partly due to the appeal of eLearning combined with a flexible approach. In fact, this was very much appreciated by students:

"Group-based learning gave us students a chance to exchange ideas and get to know one another better. One of the few modules that really taught us about real life experience." Q1.19

"It is an interesting course, offering a variety of skills that we are experiencing and will help in future jobs." Q1.11

However, when faced to the reality of not having any lectures, the need for self-disciplined and self-directed study together with the need to coordinate seminar preparation and presentation, some students' enthusiasm waned:

"No boring lectures, but much more work to do. More hours as we don't have lectures but still have to do reading." Q1.6

Nevertheless, the eLearning environment designed for the course was seen as appropriately supportive of the learning needs and challenges posed by the course.

"I like the flexibility of printing out detailed course notes and webct is a nice place. The posting of new discussion is nice too. The flexibility of adding more practical sessions is good. Giving us more time is ideal and I appreciate that." Q1.26

When asked about positive aspects of the ISPM course, students mentioned:

"Lots of online resources, readily available. Good to look at others' work they posted on the web to compare methodologies." Q2.11

"Good example of web-based learning environment. Demonstration of groupware capabilities, potential for distance working/learning." Q1.13

The use CMC was not as extensive as expected by the team. In reflection, and since this was an on-campus

setting, some students prefer to meet f2f rather then making use of synchronous CMC.

"Webct is very good, but could benefit from more overall participation." Q2.16

This less than expected participation by some students in online discussions could also have been due to a lack in experience in using CMC as a means of communication and learning.

"I was hesitant in posting comments on the whiteboard." Q2.11

"I don't really like webct as a teaching tool. Would prefer lectures as we don't really trust ourselves enough to confident with our chosen approach" Q1.20

Prior to delivery, the course team had not considered this would be a problem, as these were MSc in Information Systems students, supposed to be able to efficiently cope with ICT. Nevertheless, general technical proficiency is not synonymous with ability to learn online. In fact, only 16.7% had used WebCT or similar web-based learning environments before. The remaining 83.3% had no previous experience with eLearning. In the future, networked learning skills induction will have to be provided, as discussed by [18].

Surprisingly 76.7% of the students agreed that the eLearning environment was an effective learning resource and appropriately supportive of the needs of flexible learners. This was confirmed by 65.4% of the students that strongly agreed with the statement that this flexible approach supported by eLearning is appropriate for the teaching of ISPM. More emphatically, 70.1% agreed that this is a better approach than traditional lecture-based teaching.

To sum up, and despite some drawbacks, overall the IPSM course supported by eLearning was well received by students and a success. More importantly, the use of eLearning and the online environment was totally transparent to the students and seen as part of the delivery as whole - probably, the most significant reflection of successful use of eLearning.

"I think the way this course has been managed is quite good. IS project management needs to be practical and flexible. We need to put ourselves in real-life situations, this is what the course structure does. Very good." Q1.10

"I feel I've gained a good theoretical grounding in Project Management issues, and I've finally learnt how to use Gantt charts and CPA diagrams properly!! Also learnt about risk and quality issues – I'm keen to move in into Risk Mgmt now!! Hopefully this course is a good selling point for job applications." Q2.2

Conclusions

This paper proposes that eLearning can be successfully used in on-campus learning to complement f2f provision. Furthermore, it is proposed that eLearning will allow the design of more flexible and learner-centred courses.

Nevertheless, the introduction of eLearning is not a trivial matter and requires a practice and evidence-based approach. Action research was successfully used by this research team and is seen as the ideal methodology for the research and development in educational informatics.

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