



Universities Ireland

A Symposium

eLearning as a Strategic Imperative

FOR UNIVERSITIES IN IRELAND

Programme and Briefing Paper

Keynote speakers:

Dr Andy DiPaolo, Stanford University, USA Prof. Diana Laurillard, Dept. for Education and Skills, UK

Dublin City University

4 November 2004



PROGRAMME

10.00	Registration	1.15	Lunch
10.20	Official opening by Professor Ferdinand von Prondzynski , President, Dublin City University	2.15	Two workshops repeated (so that participants can go to both workshops)
10.30	Choices and Challenges: Lessons Learned in the Evolution of Online Education Dr Andy DiPaolo , Executive Director, Stanford Centre for Professional Development, Stanford University, USA Chair: Professor von Prondzynski	3.15	Panel discussion with the keynote speakers and eLearning specialists from four Irish universities: Professor Clive Mulholland , University of Ulster Ms Maria Lee , Queen's University Belfast Dr Vincent Wade , Trinity College Dublin Dr Barry McMullin , Dublin City University Chair: Professor John Hegarty , Provost, University of Dublin, Trinity College
11.10	Refreshments		
11.35	A Higher Education Framework for a Unified eLearning Strategy Professor Diana Laurillard , Head of the eLearning Strategy Unit, Department for Employment and Skills, UK Chair: Professor Peter Gregson , Vice-Chancellor, Queen's University, Belfast	4.15	Closing remarks by Professor Gerry McKenna , Chairman, Universities Ireland, and Vice-Chancellor, University of Ulster
12.15	Two workshops: a. The strategic management of eLearning by universities in Ireland b. The strategic use of eLearning in learning and teaching by universities in Ireland		

KEYNOTE SPEAKERS

Dr. Andy DiPaolo is Executive Director of the Stanford Center for Professional Development (SCPD) and Senior Associate Dean in the School of Engineering at Stanford University. Under Dr. DiPaolo's leadership the SCPD was created in 1994 to support the career-long education needs of industry professionals in the areas of engineering, computer science, information technology, management and the sciences. In 1995 he established Stanford Online, the first university programme to deliver video-based engineering and science courses on the internet and in 1998 led Stanford's efforts to develop the world's first graduate engineering degree available online. DiPaolo is currently responsible for the distance delivery of Stanford's graduate degree programmes, credit courses, certificate programmes, professional education courses, and contract training to thousands of students at nearly 500 corporations, government organisations and universities worldwide. Using a variety of delivery strategies, including award-winning Stanford Online and the Stanford Instructional Television Network, the SCPD will produce in 2004 over 12,000 hours of new academic and professional education programmes in digital form for online delivery to industry professionals, managers and executives and for use by students on the Stanford campus.

Prior to his Stanford University appointment, DiPaolo was the Director of Media Services and Consulting Associate Professor of Educational Media at Boston University. He was also an Associate Professor at the University of Toledo and Media Programme Training Manager at Indiana University where he received his doctoral degree in instructional systems technology.

Recognised for his research, writing, and presentations in the area of eLearning for graduate and professional education, DiPaolo has served as a consultant to numerous higher education, industry and government groups in North America, Europe and the Pacific Rim in the creation of successful strategies for the design and implementation of new models for distributed learning. A complete biography for Dr DiPaolo can be found at:
<http://scpd.stanford.edu/scpd/about/bio/aDiPaoloExt.htm>
Information on the SCPD can be found at:
<http://scpd.stanford.edu>

Professor Diana Laurillard is Head of the eLearning Strategy Unit at the UK Government's Department for Education and Skills, and is Visiting Professor at The Open University. She is responsible for developing a coherent eLearning strategy for the Department across all the education sectors, including training, home-based learning, workplace learning, and partnerships with private suppliers. Professor Laurillard previously held two terms of office as Pro-Vice-Chancellor at the Open University. During that period she was responsible for developing the appropriate use of learning technologies within the full range of learning and teaching methods in the Open University's courses, and for the structural reform at the heart of its course production operations. By the end of her second term, over 160,000 students were connecting online to the OU for aspects of their study, and over half the courses had integrated eLearning with more traditional methods. Her academic work spans more than twenty-five years of research, development and evaluation of interactive multimedia materials and internet services in education and training, covering a wide range of discipline areas. Her book *Rethinking University Teaching* (Routledge Falmer, 2nd edition 2002), has been widely acclaimed, and is still used as a set book in courses on learning technology all over the world. This work has been recognized through her honorary degrees from the University of Abertay, and the Open University of the Netherlands. She is a Fellow of the Royal Society of Arts and an Honorary Fellow of University College London.



Dr Andy DiPaolo



Professor Diana Laurillard

SYMPOSIUM BRIEFING PAPER

eLearning in the Higher Education Sector: Context, Benefits and Challenges for the Universities in Ireland

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Foreword

The aim of this paper is to provide a basis for discussion as to how the universities in Northern Ireland and the Republic of Ireland - from here on referred to as the universities in Ireland - may use eLearning, both in supporting the strategic direction of the institutions and in improving the learning and teaching experience offered by the institutions. The paper draws heavily on several Irish national reports, including the New Forms of Learning Report compiled by the Conference of Heads of Irish Universities (2004) and the HECTIC report (2003), and several UK and European studies for the higher education sector.

Executive Summary and Workshop Questions

There is growing recognition of the pedagogic benefits of eLearning in the tertiary education sector internationally. In the UK the Government's recent consultation document, *Towards a Unified eLearning Strategy*, recognises that "eLearning has the potential to revolutionise the way we teach ... and bring high quality, accessible learning to everyone - so that every learner can achieve his or her full potential". However realising such potential is a significant challenge.

This paper outlines the key motivators for strategic and tactical use of eLearning within the context of the HE sector in both the Republic of Ireland and Northern Ireland. The paper then highlights the broad range of eLearning practice within the nine universities which form Universities Ireland and explores the key benefits derived from the successful integration of eLearning with the wider learning practices of

a university. The paper concludes by outlining the challenges and opportunities for eLearning, and raises the issue of how collaborative action could benefit the universities in Ireland.

Two sets of questions should be considered when reading this paper and thinking about the workshop sessions at the 4 November symposium, namely questions concerning the strategic management of eLearning and its use in Learning and Teaching.

Strategic Management of University eLearning

1. What strategies are best pursued to achieve the benefits of eLearning in relation to the goals and mission of universities in Ireland?
2. What are the resource and cost implications in promoting the use of eLearning in on-campus and distance learning?
3. Which models of eLearning support and exploitation have been successful in higher education and which have failed?
4. What are the key opportunities for collaboration among universities which could alleviate the significant challenges of eLearning?
5. What are the key obstacles to successful collaboration between universities in eLearning e.g. copyright?

Strategic use of eLearning in Learning and Teaching

1. What are the most successful models for integrating eLearning into existing (predominantly traditional) teaching practices?
2. What are the key considerations in achieving a balance between distance and blended eLearning?
3. How can eLearning assist universities in dealing with an increasingly diverse student population? Can eLearning assist with student retention, and what are students' expectations regarding learning using various forms of Information and Communication Technologies?
4. How can universities assess and assure the quality of their eLearning (i.e. delivery, effectiveness, student/academic satisfaction, efficiency)? How can universities use eLearning to improve the overall quality of students' learning experience?
5. How can universities best provide academic staff and student development for eLearning?

1. eLearning for Higher Education

The aim of this paper is to provide a basis for discussion as to how the universities in Ireland, North and South, may use eLearning, both in supporting the strategic direction of the

institutions and in improving the teaching and learning experience offered by the institutions. The paper begins by outlining the key motivators for the strategic use of eLearning within the context of the HE sector in both the Republic of Ireland and Northern Ireland. The paper identifies key drivers at international, national and institutional levels which have significant influence on the objectives of eLearning within the Irish universities.

In order to gain an understanding of the current situation in Irish universities, the paper then highlights the broad spectrum of eLearning practice and activity occurring today within the nine universities which form Universities Ireland. The key benefits, derived from the successful integration of eLearning within the wider learning practices of a university, are then explored. The paper concludes by outlining the challenges and opportunities for eLearning, and raises the issue of how collaborative action could benefit the universities in Ireland.

Context

The last decade has seen the growing importance of enhancing educational programmes using Information and Communication Technologies¹ (ICT). Governments around the world are strengthening their commitment to the use of these technologies, especially multimedia (Davis 1998), and are recognising the pedagogic benefits of eLearning in the tertiary education sector internationally. In the UK the Government's 2003 consultation document, *Towards a Unified eLearning Strategy*, recognises that "eLearning has the potential to revolutionise the way we teach ... and bring high quality, accessible learning to everyone - so that every learner can achieve his or her full potential". The three main reasons underpinning the adoption of such technologies in education are the potential to provide improvement in:

- the quality of the learning experience;
- access to education and educational resources;
- the cost-effectiveness of the educational experience.

In the past the adoption of ICT within mainstream higher education programmes has been sporadic, rather than having been implemented as part of a planned, orchestrated support infrastructure. The employment of such technologies has tended to consist of 'once off' projects, which were initiated and driven by individual academics or departments.

The consensus in the USA, the UK and other European countries is now that a more structured and strategic

approach is needed to the use of these technologies. For example, experience of the Teaching and Learning Technology Programme (TLTP), a major UK initiative in the 1990s, led the programme's evaluator to conclude:

"Existing products need to be embedded into teaching and learning structures for students. This requires the addressing of issues such as cultural change within departments, time for academics to work ICT based learning into their teaching curricula, staff development and training and even a fundamental change in the role of teachers in some higher education institutions." (Somekh 1998)

More recently, the Department for Education and Skills (DfES) in the UK has launched an eLearning strategy which aims to embed eLearning across the education and skills sector. It provides the framework within which the DfES and its partners will work to integrate effective use of eLearning to improve the experience of learning and support the reforms set out in *Department for Education & Skills: Five Year Strategy for Children and Learners*.

Drivers for eLearning in Higher Education in Ireland

Malcolm Skilbeck notes in *The University Challenged* that in the past three or four decades universities have expanded and diversified. He remarks that at the turn of the millennium universities are faced with a continuing demand to change and adapt:

"Individuals are seeking advancement while whole societies are looking to higher education and research to underpin economic growth, improve the quality of life and strengthen the social fabric. Universities have a vital role in helping to set new goals and directions for human development while maintaining a rich and ancient cultural heritage." (Skilbeck, 2001)

The demand for change is fuelled by many components and championed by a range of stakeholders. Change is particularly prompted by advances in technology, which impact hugely and are to a great extent responsible for the fact that the university now finds itself at the centre of "a vast network of intellectual, social, economic, cultural relationships, increasingly global in their reach." (Skilbeck, 2001)

The motivators for action regarding the initiation or extension of the use of ICT in Higher Education stem particularly from

¹ Information and Communication Technology (ICT) has become the commonly used general term which includes such technologies as multimedia materials and delivery, computer software and hardware, databases, telecommunications, internet technologies and the World Wide Web.



legislative expectations, policies, and socio-economic expectations.

Key Drivers for eLearning have been identified as:

- Enhanced Quality
- Increased Access
- Legislative Expectation
- Equality of Opportunity
- Promotion of Lifelong Learning

A discussion of these drivers in the context of the universities in the Republic of Ireland is presented in Appendix 1 of this report. The context influencing eLearning establishment in higher education in Northern Ireland is outlined in Appendix 2.

2. eLearning Practice

Each of the nine universities in Ireland has addressed the application of ICT to teaching and learning in an individual way, which reflects the unique culture of each institution. However the universities have much in common and there is considerable scope for shared practice and collaboration.

This section of this paper provides an overview of current practice in the area of ICT in universities in Ireland. Prior to examining current practice, a brief introduction to the concept of eLearning/ICT is provided.

Introduction

eLearning may be defined as “learning facilitated and supported through the use of information and communications technologies” (LTSN Generic Centre, 2002). It is important to note that eLearning is not a single methodology, technology or technique, but rather can take a variety of forms depending on the context of the learning. At a basic level this could involve the use of MS PowerPoint as a presentation tool in a lecture; at the opposite end of the spectrum one might have a virtual campus providing 100% online courses with sophisticated immersive technologies and rich interactivity.

Some of the more traditional eLearning manifestations involve the use of basic hardware and software at a local level within teaching and learning. This might incorporate:

- Using MS PowerPoint as a presentation tool
- Having a number of PCs in a lab networking and using particular software where the tutor can show her screen to everyone, show one student’s work to the class etc.

- Use of interactive white boards
- Use of audience response technology (ART)
- Use of brainstorming software
- Use of CD ROMs e.g. tutorials on CD

However eLearning is increasingly internet based and is often accessed through Virtual Learning Environments (VLEs). VLEs have the capacity to host, manage, track and deploy a learning experience. Most VLEs provide basic “templates” within which content is arranged, without the requirement of high levels of technical skills or programming ability. Examples of VLEs include WebCT (www.webct.com), BlackBoard (www.blackboard.com) and TopClass (www.wbt.com). There is also increasing interest in Open Source VLEs, which, although they do not provide the sophistication and support of the commercial products, do provide low cost potential for improvements e.g. www.moodle.org

VLE or other internet based on-line learning often involve the following elements:

- **Online resources.** These can include digital copies of PowerPoint lecture notes, online articles from journals, databases, information on learning events and conferences, noticeboards, FAQs, past exam papers, prerequisite materials, links to other web-sites.
- **Interactive online resources** provide richer interactivity and engagement of the learner with the learning experience e.g. simulations, online experiments. These resources typically provide much greater ‘activity’ by the learners.
- **Electronic Learning Objects.** These typically embody the ‘richer online resources’ mentioned above e.g. interactive tutorials, quizzes, multiple choice tests, video materials, animations, sound clips, simulations, games etc. However Learning Objects also provide metadata descriptions of the resources to allow ease of searching, discovery and integration with other courses. Learning Objects are typically developed with re-use envisaged, either within or across courses, and hence have ‘granularity’ at a concept level or some time epoch.
- **Asynchronous Communication** supports user interaction and collaboration online but at different times (non-real time interaction), e.g. collaboration and communication tools would include discussions, presentations, debates, buzz groups etc.
- **Synchronous Communication** supports user interaction and collaboration online for real time collaboration and interaction, e.g. online lectures, virtual presence, internet

relay chat, real-time audio, video conferencing (streaming), voice conferencing, shared white board etc.

Co-ordination of eLearning in Irish Universities

Though there is some variation in terms of the structures which support ICT in teaching and learning in Irish universities, there are common features which may be identified. One of these features is the establishment in each Irish university of a centre/hub, which addresses the area of ICT in the institution. These ‘learning centres’, ‘centres of teaching excellence’, or ‘learning technology units’ are concerned with assisting and supporting staff in the initiation and development of information technology and digital media innovations in learning and teaching.

A key feature of these successful ‘learning centre’ initiatives is that in order to achieve the desired outcomes in this area, a holistic, educationally led approach to ICT enhanced learning is required: ICT-enhanced learning needs to be well integrated both within the university’s academic community and within the organisational infrastructure. Many of the centres may be seen as a ‘one-stop-shops’ for university staff who are planning, developing, implementing and evaluating eLearning on campus. They are typically integrated with the academic practice/learning development support infrastructure of the universities. In addition, such centres are part of a larger network of both service and academic departments within the university: these departments might include Computing Services, Teaching Development Units, AV Centres, Education Departments, Quality Promotion Departments, Libraries, Language Labs and individual academic departments, faculties and schools.

Within the HE sector in Ireland, North and South, several of the universities have established such centres over the last five years and integrated them within the overall teaching and learning strategy and support infrastructure of their universities, e.g. Trinity College Dublin’s Centre for Learning Technology (CLT), NUI Galway’s Centre for Excellence in Teaching and Learning (CELT), University of Ulster’s Campus One and Queens University Belfast’s Educational Technology Unit. Other universities in the Republic have recently set up such centres or are integrating eLearning support into their existing university structures. In terms of personnel many if not all of the universities have identified a Dean, a Director, a support officer, a teaching/learning technologist, or some other designated members of staff to oversee, co-ordinate and support these activities.

The provision of these centres and the improved access to ICT resources goes some way to addressing the adoption of ICT in higher education. However the long term success and impact of such centres is dependent upon establishing a critical mass with the ability to collaborate and create a greater awareness and skills pool across the university sector. Structures and initiatives which encourage and support collaboration across HE institutions are vital. Similarly it is essential to address the cultural, organisational and user-community issues within each institution without which effective innovation will be impossible, e.g. academic time and reward, and cultural change at the departmental level (Somekh, 1998). These challenges and opportunities are discussed in greater detail in section 4.

Ethos and underpinning values

What is typical of all centres is a commitment to quality and excellence. Coupled with this commitment is a student-centred, pedagogically focused, innovative approach to learning.

In addition, many of the centres have long-term educational goals. These may include:

- encouraging and supporting students to take greater responsibility for their learning.
- supporting and encouraging greater student ‘activity’ and ‘interactivity’ in the learning experience
- providing increased flexibility for students participating in the learning process.
- promoting ICT to facilitate increased emphasis on interactive teaching across a broad range of courses.
- acknowledging and accommodating a diverse range of learning styles.

Aspects of current practice

Current practice in the implementation of ICT across the Irish HE sector involves a variety of combinations of some/all of the following activities:

- use of VLEs within undergraduate and postgraduate courses
- delivery of entirely online courses
- provision of online resource material e.g. online journals, online databases etc
- use of AV technologies and simulations
- web conferencing
- online tutorials and chat
- video-conferencing
- audience response technologies



The range of online courses offered across the universities is also significant. These courses and eLearning resources support both entirely online delivered eLearning courses as well as blended learning involving campus-based courses. In fact, it is the blended approach to eLearning that is most common in the university sector in Ireland, North and South.

In addition to established eLearning programmes within individual universities, there are also a number of examples of inter-university, national and international initiatives in this area.

3. Benefits of eLearning

This section identifies and briefly discusses the possible benefits that eLearning could deliver for universities in Ireland. In particular it examines the potential benefits with regard to the quality of learning delivered by universities, and the flexibility and access which eLearning can provide.

Quality

eLearning can greatly enhance the quality of the programmes offered by universities in Ireland by:

- Providing **opportunities for enhancing the student learning experience** through programmes which can be adapted to a greater extent to the particular needs of the learner and which can, in many cases, provide greater stimulus and incentives.
- Providing **easy access** to large volumes of scholarly and research literature - ICT database and multimedia technology can provide access to extremely large collections of up-to-the-minute resources, from case studies to raw data in a variety of media formats, from research reports to collections of literary and historical texts. Information in electronic format also benefits from being more easily manipulated, analysed and synthesised than corresponding information in conventional analogue formats.
- **Greatly facilitating** the use of a wider range of **pedagogical approaches** that encourage greater learner participation or “interactive engagement” in the learning process. Approaches such as collaborative learning, problem-based learning and project work, while not necessarily requiring eLearning technologies, are much easier to implement with an effective ICT infrastructure.
- Facilitating **increased communication between students, between teachers, and between students and teachers**. Teachers can quickly become aware of emerging issues within their courses and respond flexibly.

The communications technologies can also be used to support collaborative work amongst students and “team teaching.”

- Facilitating the **integration** of courseware, learning objects and other forms of computer-based teaching and learning materials within a syllabus.
- Enabling students to adopt a more **active, responsible role in the learning process**, thus encouraging them to become autonomous lifelong learners.
- Providing tools for testing and activity tracking, which can be used for formative evaluation as well as **assessment** purposes.

Flexibility and Access

Changing lifestyles and demographics will require a more flexible approach to the delivery of education. The flexibility and ease of access which is enabled through the new technologies will allow those constrained by social conditions, family commitments, working hours or location to avail of higher education.

Due to the flexibility it offers, eLearning can:

- **Reach out to large numbers of students** who cannot access existing programmes, including students resident outside Ireland;
- **Deliver programmes in highly flexible and convenient formats** which enhances their attractiveness to significant student groups, and
- **Make viable the development of new programmes** that currently would not attract sufficient students in the catchment areas of each university.

The flexibility offered by eLearning is one of its most obvious advantages. While most interest tends to focus on the flexibility that eLearning provides to make programmes available to off-campus students, it should be noted that eLearning’s flexibility could also be harnessed to make on-campus programmes more attractive to students. Possibilities include ‘blended’ programmes with elements of both ‘traditional’ and eLearning; the ‘extended’ classroom, and integrating work-based and experiential learning.

However it is in the provision of off-campus courses that eLearning offers possibly the greatest opportunity for Irish universities to access international student markets. This is particularly the case for postgraduate programmes, which could be offered internationally. Such programmes, for example, could focus on uniquely Irish subject areas, e.g.

Celtic Studies, Anglo Irish literature, Irish history, folk music, culture and ethnography, which could find a ready audience among the Irish Diaspora and which universities in Ireland are uniquely positioned to deliver via eLearning. However other subject areas in which Ireland possesses uniqueness or in which the Irish universities believe a strong opportunity exists may also be appropriate.

4. Challenges and Opportunities

Moving from the current situation to one of world-class standing in eLearning presents significant challenges and opportunities for the Irish HE sector. There is a significant disparity across nations as to their investment in eLearning developments over the past several years in terms of institutional and national infrastructure, staffing and expertise, software development, evaluation studies and policy decisions. For example, it is only over the last four years that universities in the Republic of Ireland have gained modest levels of funding for eLearning infrastructure via the Higher Education Authority’s strategic initiatives programme. This section highlights some of the challenges and opportunities regarding the strategic organisational issues in adopting eLearning (the change management which is necessary for successful eLearning); the leadership and co-ordination issues both within the institution as well as at a sectoral level; quality issues; student and staff development issues; standards and costs associated with eLearning.

Embedding technologies

The positioning of eLearning initiatives within the universities, and the change management associated with its successful integration within the universities’ practices, is crucial in facilitating development. If, as has to some extent been the case, eLearning is regarded as an ‘add on’ component, removed from the core activities of institutions, it is likely to make little headway. In order to exploit the full potential of ICT, eLearning must become embedded as a key part of the standard repertoire of teaching tools and methods at the disposal of academic staff. Equally eLearning must be perceived by students as a valid means of facilitating effective learning.

Embedding such new technologies into the culture of an organisation is a challenge for the universities of today. However eLearning is a ‘transformative’ technology, meaning that its successful introduction can and frequently does require a re-appraisal of the existing teaching approach of the course or module, and a change or modification of this

pedagogic approach which genuinely improves the student learning within the course and benefits that course.

With institutions opting for Virtual Learning Environments for both distance and, more recently, on-campus courses, staff and students need to prepare for and adapt to the change in modes of learning. Implicit in change of this nature is the need for training, support for students and teachers (both pedagogical and technical), and the integration/adaptation of existing structures and systems. In addition, another potential stumbling block for institutions is the natural instinct of both staff and students to resist change. However if both groups can tolerate the initial challenging phase of coming to grips with new technologies and new systems, the benefits for all, in terms of quality and flexibility, will in time outweigh the effort.

Not only is change management required for learning practices - there is also a need for transformation of the management and administrative processes which support the learning. Typically this involves the usage of Managed Learning Environments (MLEs) and the integration of such systems with student record systems, administration systems, registration systems etc. Such change management is required to leverage the technology investment of eLearning and improve administration performance and economies.

Collaboration and leadership

A challenge to Irish universities regarding ICT is the fact that work to date in the HE sector has lacked co-ordination. The nine Irish universities are at different levels both in the maturity of their policies and strategy for eLearning, as well as in their eLearning delivery processes and infrastructure. Also the universities differ in the strategic goals for which they are prioritising eLearning deployment. It is important that universities in Ireland increase their participation in the major international organisations, projects and discussion fora that are shaping the future direction of eLearning. Irish universities would be best served if their efforts to participate on a global scale were collaborative in nature. eLearning offers these universities the opportunity to define themselves as a collective community and to reap the associated benefits.

Working collaboratively could aid the widespread adoption of ‘best practice’ approaches to teaching and learning. Even working within traditional subject disciplines there is great scope for sharing practice, resources and ideas (as is the case in the UK LTSN subject centres, for example). Generic issues



can also be highlighted by multi-disciplinary linkages and the availability of a 'community of practice' of teaching staff. A repository of ideas, case studies and development materials would provide an excellent catalyst for this type of development.

Collaborative approaches to purchasing are already in place in a number of examples (e.g. CHEST Ireland, purchase of academic access to international journals), and these could be extended to other areas of ICT resources to allow the nine universities on the island of Ireland to negotiate favourable sector-wide deals with suppliers.

Collaborative working would also allow for:

- The sharing of course development costs, with the possibility of individual universities taking responsibility for elements of programmes within their areas of greatest expertise;
- Co-operation in the provision of student support;
- Common marketing including the 'branding' of Irish universities as a marque of excellence.

A greater level of cooperation and collaboration between universities in Ireland could also give rise to a greater number of collaborative courses. For example, new courses which may be either considered too high risk for a single university, or which require diverse academic and support skill sets, could be more effectively and efficiently offered as a collaborative course from multiple universities in Ireland.

Alternatively, to help protect the Irish HE market share in the international arena and defend itself against external competitors operating within Ireland, the universities in Ireland could seek to jointly market and/or develop eLearning-supported courses. While many of the original developments of 'virtual universities' failed in practice to present a credible 'threat' to higher education institutions in Ireland, a number of such organisations are becoming increasingly important and are having marked success in particular countries and particular sectors of the potential student population.

Regulations regarding degree-awarding powers are also subject to change with international trade negotiations, and this does present an issue for Irish universities, particularly given the need to seek a more diverse student body to address both issues of widening participation and demographic changes. It is important that the Irish

universities collaborate to establish a strong eLearning presence both at home and abroad, as without such a presence foreign universities (particularly European and US based institutions), which are now entitled to offer their programmes in Ireland, will pose a long term threat.

Educational quality before technological capability

Universities are not merely about the transmission of knowledge; rather they are concerned with the provision of high quality learning that fosters individual growth, personal and professional development. eLearning, however, runs the risk of focussing attention on the information content instead of the educational process. This crucial issue can be neglected in the initial wave of enthusiasm with which organisations embrace new technologies. Thankfully, we in Ireland are in the happy position of being able to learn from the weaknesses and failures of eLearning projects elsewhere, and to glean from these early experiments a wealth of practical experience. Thus it is vital that as a sector the universities in Ireland, North and South, build on best practice codes and standards which are educationally driven and support educational quality improvement.

Student retention

Many initial forays into eLearning have yielded high dropout rates. Student retention is one of the key issues currently receiving much attention in both the Republic of Ireland and Northern Ireland, and it would be ironic if a new development were to lead to a worsening situation, rather than to the improvement that is currently sought by university management and government. How eLearning is used, the levels of support available and the quality of the materials will be decisive in this regard.

Standards for interoperability

Over the last several years there have been significant changes in the eLearning industry with growth and consolidation of key players, buy-outs and collapse of others. This has inevitably led to the situation where some of the early adopters of the new technologies suffered from developing materials and courses that were tied into proprietary formats which have subsequently either disappeared or been superseded. Though this is unavoidable in such an early developmental environment, it should be seen as an opportunity to insist that content developers and course providers adhere to the emerging standards for file formats, metadata (content description) and software interoperability. Such standards are now beginning to be

adopted by the key players in industry and the education sector. Over the next few years we should see these standards becoming more refined and beginning to have a real impact.

Staff development

As discussed earlier, eLearning will only have an impact in higher education if there is sufficient 'buy in' from existing academic staff. Staff development is a vital component of any such culture change, and of course the wider issue of professional development of teaching staff at third level is the subject of much current discussion. eLearning should be discussed within this context, rather than treated as a separate, stand-alone issue. The suggestion of a collaborative, multi-institutional staff development programme, to complement existing programmes in the UK and the Republic of Ireland, and possibly even supported through eLearning technologies, has been mooted.

5. eLearning and cost

A number of prominent commentators have in the past made very optimistic predictions about the cost-saving potential of new teaching and learning technologies. In addition, various international agencies, including UNESCO, the World Bank and the European Union, have played a key role in promoting the use and enhancing the profile of the new learning and teaching technologies. The impression is often given that such technologies will ipso facto lead to improved quality in learning and teaching at reduced cost. As MacKeogh has noted, "in recent years, a largely uncritical consensus appears to have developed among policy makers about the benefits of technology in education" (MacKeogh, 2001).

Among the benefits cited for eLearning is that of increased productivity and improved cost effectiveness. However the potential for increased productivity will only be realised through extensive integration of the technologies into all aspects of the learning and teaching situation. The use of specific online courseware, for example, is only merited where there is genuine educational added value or where the scale of deployment justifies the substantial investment required for its production. Whether the use of new technology for learning and teaching will lead to substantial cost reductions is a matter of some debate, and in recent times the discussion has subtly shifted focus from 'cost reduction' to 'increased efficiency'.

Resources

Some years ago, after reviewing a number of technology-based educational systems, Green and Gilbert wrote:

"We have yet to hear of an instance where the total costs (including all realistically amortized capital investments and development expenses, plus reasonable estimates for faculty and support staff time) associated with teaching some unit to some group of students actually decline while maintaining the quality of learning" (Green and Gilbert, 1995).

More recently, Bates has noted that:

"To assume that investment in technology will lead to reduced cost in higher education is to misunderstand the nature of the educational process in higher education and the relationship of technology to that process. Indeed, the introduction of new technology is more likely to lead to increased rather than reduced costs" (Bates, 2000).

At the core of any major development, of course, is the need for adequate levels of resourcing. eLearning is an expensive endeavour, at least in the short term, and this must be acknowledged by institutional management and funding bodies. The requirements involve hardware, software and staff, and they are not simply resolved by purchasing a licence for a particular package. Implementing an eLearning strategy on the scale of a university with several thousand students requires recognition that this is a "mission-critical" activity that cannot evolve in an ad hoc mode. Funding must be in the form of recurrent, core support with appropriate build-in for equipment replacement, software renewal and support staff.

Apart from ensuring a high quality of service in terms of software, hardware and access, there is also the issue of supporting the development of new multimedia materials. In many cases these will require specific skills such as programming or graphical design, as well as hardware and multimedia production facilities. Currently few universities in Ireland are sufficiently well provided for in any of these areas. Failure to address this issue may well be the limiting factor in the growth of eLearning.

Staff time

The cost of supporting online learners is one area that has received particular attention. Rumble suggests that "the biggest and, I suggest, least costed ingredient in the costs of online learning is the cost of supporting learners online" (Rumble, 1999). Effective eLearning requires adequate

academic staff development so that the processes of learning in this mode and in a 'blended' hybrid of eLearning and 'traditional' classroom methods are fully understood. There is a need for understanding from management that eLearning can place a significantly increased burden on teaching staff in terms of time commitment to develop materials and to deal with increased volume of communication and higher demands for learner support. Course management and design procedures and protocols need to be developed with a view to shifting the emphasis in teaching towards greater student engagement and peer support. In addition, effective time management protocols may facilitate more effective use of class contact time.

Conclusion

Previously enthusiastic supporters of eLearning, while maintaining hope, have become more sober in their prognostications. To quote John Daniel² in the preface to a recent UNESCO publication on educational technologies: "Impressive advances in technology over the past few years provide new hope that technological solutions, intelligently applied, can allow greater access, higher quality and lower cost per learner. To achieve massive improvements through technologies will require learning from past mistakes and careful analysis of how to innovate broadly and durably" (Haddad and Draxler, 2002).

APPENDIX 1

Drivers for eLearning in Higher Education in Republic of Ireland

Legislative Expectations

The wider uptake of ICT in university teaching should reflect the 'Objects' of a university as cited in the Universities Act, 1997 (Department of Education and Science, 1997). The Objects, which are reflected in other legislative documents, such as the Education Act, 1998 and Qualifications (Education and Training) Act, 1999, outline the need for universities to advance knowledge and promote learning, promote quality, facilitate lifelong learning, contribute to the realisation of national economic and social development, and promote equality of opportunity.

Quality, Access, Equality of Opportunity and Lifelong Learning

Quality is a consistent concern within Higher Education. The recently published Confederation of Heads of Irish Universities (CHIU) document - *A Framework for Quality in Irish Universities: Meeting the Challenge of Change* - outlines the quality assurance and quality improvement process in universities in the Republic of Ireland in terms of its context, goals, broad principles and procedures (CHIU, 2003). A discussion on how ICT can improve the 'quality' of learning and teaching within a university is explored in Section 3 of this report.

Closely related to quality as a goal for universities are the concepts of access, equality of opportunity and lifelong learning. Patrick Clancy in his report - *College Entry in Focus, A Fourth National Survey of Access to Higher Education* - recognises that though the "higher education system has offered a diverse range of opportunities to an increasingly large percentage of the young population, the distribution of these opportunities has, like the distribution of wealth, been extremely uneven" (Clancy, 2001). He goes on to highlight that "as more and more people participate in higher education the implications of non-participation are becoming more acute."

Access to HE in the Republic of Ireland is primarily through the second level 'points' route. As *Learning for Life: the White Paper on Adult Education* suggests: "There are limited opportunities for alternative entry points for adults generally in the system. This is one of the reasons why Ireland has amongst the lowest mature student participation in higher education in the industrialized world" (Department of

Education and Science, 2000). *Learning for Life* highlights that according to the OECD (*Education Policy Analysis*, 1997) only 2% of new entrants to degree level programmes in the Republic of Ireland in 1995 were aged 26 or over.

One strategy towards the tackling of the access issue is to encourage the provision of more flexible approaches to higher education. This flexibility, which is vital to lifelong learning, access and equality of opportunity, may partly be facilitated by the use of ICT. As noted in the National Development Plan:

"Training activities to support lifelong learning will involve the provision of more open, flexible opportunities for acquiring skills. These will build on the following components, which are already underway:

- Multimedia Learning Centres in Training Centres;
 - Training delivered through the internet".
- (National Development Plan, 2000-2006)

Because of this flexibility "the National Adult Learning Council and the Higher Education Authority will be asked to explore mechanisms to provide financial support for initial course development work targeted at strategic areas, maximising the use of ICT and broadcasting in delivery" as a particular priority (Department of Education and Science, 2000).

Coupled with access is the requirement of universities "to facilitate lifelong learning through the provision of adult and continuing education" (Universities Act, 1997). The development in all institutions of what Skilbeck calls a 'lifelong learning mentality' is vital. The Department of Education and Science has identified as a high level goal within its *Strategy Statement 2001-2004* the promotion of lifelong learning. It suggests that it will endeavour to achieve this goal through a number of strategic actions, one of which is the provision of ICT in support of learning (Department of Education and Science, 2001).

Socio-Economic Expectations

As noted previously, the development and impact of ICT is one of the key forces driving economic change. The Higher Education Authority, in *Creating and Sustaining the Innovation Society (2002)*, notes that:

"As we move into a new millennium, we see the higher education sector playing a more prominent role in advanced national economies and societies, which strengthens the

² Previously Vice-Chancellor of the UK Open University and currently Assistant Director-General for Education, UNESCO.



APPENDIX 2

traditional role and contribution of the sector. Higher education is now a provider and facilitator of wealth creation through the endowment of human capital and the generation and exploitation of new knowledge.”

Universities are no longer seen, nor can they any longer afford to see themselves, as secluded from society. They are now expected to be partners in society’s development. This partnership is reinforced by the Universities Act, where every university is committed:

- to promote learning in its student body and in society generally,
- to support and contribute to the realisation of national economic and social development,
- to educate, train and retrain higher-level professional, technical and managerial personnel.

(Universities Act, 1997)

The financial investment which the Republic of Ireland has made in higher education has “fuelled the growth of the economy and yielded an impressive private dividend to the individuals who participated” (Clancy, 2001). As Clancy notes, “there has been a widespread recognition that education is a determinant of economic success for the individual as well as for society generally”. Ireland has enjoyed considerable, indeed unprecedented, economic growth in the 1990s with an almost doubling of its GDP and an increase by almost 50% in employment. The FÁS *Irish Markets Review*, 2002 notes that “the phenomenal rate of economic growth could not have been sustained without corresponding increases in both the quantity and quality of the workforce”.

Universities are obliged to support and contribute to the realisation of national economic and social development. Such development is prompted by strategies expressed in documents such as the *National Development Plan (2000 - 2006)*, *Implementing the Information Society in Ireland* (Department of the Taoiseach, 1999), and the proposal for *Creating and Sustaining the Innovation Society* (Higher Education Authority, 2002). The NDP recognises the significant role that education can play in the achievement of national goals. It states that:

“There is a clear consensus that investment in education and training has a very high rate of return and that it accounts for a significant proportion of the observed variation in economic growth rates around the world. Many studies have

demonstrated the contribution of the rising educational levels of the labour force to Ireland’s economic success.”

The HEA also recognizes that: “Education (particularly higher education), learning, research and technology will be at the centre of this transformation of Ireland from an Investment Driven economy to an Innovation Driven economy.” In addition, the Government Action Plan for *Implementing the Information Society in Ireland* noted that, in order to ensure that Ireland may maintain and build on its economic success of recent years, and ensure that all of society can participate in the Information Society, “it is vital that Ireland becomes both an early mover and a global player in the Information Society” (Department of the Taoiseach, 1999).

Because the universities now have a more direct role in the economy, they are also potentially more exposed to the opportunities and threats of the open market place. In the past they faced little or no competition from outside the sector. Today the universities are only one player - albeit a very significant one - in the knowledge economy. While the new technologies provide opportunities for the universities, they are seen by the corporate sector as removing the barriers to entry to the higher education marketplace.

Any economic and social development in Ireland in the future will have, to a greater or lesser extent, an ICT aspect to it. If Ireland is to continue to enjoy the economic growth to which it has become accustomed, steps must be taken to ensure that the “the education system is equipped to increase its use of information and communications technologies and to meet the rapidly changing information technology skills needs of the economy” (National Development Plan, 2000-2006). A timely and preferably collaborative response regarding ICT from HE providers, coupled with an effort to strengthen links with industry and community, should assist the Republic of Ireland in its ambition to build on its economic success to date.

In the context of the evolving peace process in Northern Ireland, both the Irish and British governments would be supportive of this collaborative response also coming from the nine universities on the island of Ireland as a whole, rather than from the universities separately in the Republic and the North.

eLearning in Higher Education in Northern Ireland

The UK context: social and economic drivers

In recent years many universities in the UK have introduced some form of eLearning. The reasons for this are varied and include the increase in student numbers, reduction in units of resource, pressures relating to quality assurance, the enhancement of learning and teaching, and student expectations. The use of ICT to enhance learning and teaching in higher education has been promoted and supported through government funding, initially with the aim of achieving efficiency gains, but more recently to enhance the flexibility of provision. Flexibility of provision is key to achieving a number of important government aims, namely:

- **Widening participation:** The UK Government’s White Paper, *The Future of Higher Education*, included a clear commitment to widen participation in higher education. eLearning is seen as one way of providing greater choice and flexibility, enabling a more diverse student body to learn through part-time and distance learning modes. There is also great potential for enabling those with disabilities and additional learning needs to access higher education through eLearning.
- **Supporting the growth of the economy:** The UK Government’s Green Paper, *The Learning Age*, presents a vision of Britain as a learning society, where learning is seen as the key to prosperity for both the individual and the nation. Universities have an important role to play in supporting the lifelong learning agenda. There is great demand to expand provision, strengthen links with business and meet employer needs through, for example, work-based learning and more flexible provision for continuing professional development (CPD). eLearning can play a role in higher education’s support for the growth of the economy, especially at the regional level.

eLearning is also seen by some as an opportunity to enhance a university’s potential to expand its market share and to respond to the new competition from overseas providers within the UK. Higher education is a global business and there is a growing trend towards ‘borderless’ education. In recognition of this, Universities UK (UUK) and the Association of Commonwealth Universities (ACU) established the Observatory on Borderless Higher Education in 2001 to scan and report on the latest developments in borderless higher

education worldwide. The most effective entry to the global eLearning market is generally seen to be through collaboration with other universities or educational organisations. Several collaborative partnerships have been established to increase market share, to market to a wider national and international market, and to share development costs and operational costs e.g. Global University Alliance.

However, such steps need to be considered carefully as not all major initiatives are successful. For example, the UK eUniversity (UkeU) was set up with great fanfare in 2000, but was discontinued in spring 2004 by the Higher Education Funding Council for England after spending large amounts of money but attracting few student users.

The UK context: support and development of eLearning

To facilitate eLearning in education, the government has encouraged significant investment in ICT. A range of initiatives has focussed on such activities as establishing a computer infrastructure for all sectors, production of learning content and the development of staff and student skills. One of the major influences on ICT in tertiary education has been the JISC (the Joint Information Systems Committee), funded by all the UK post-16 and higher education funding councils. The JISC supports further and higher education by providing strategic guidance, advice and opportunities to use ICT to support teaching, learning, research and administration.

Although many of the past initiatives may have appeared piecemeal, there is now an intention to promote the use of eLearning coherently through all sectors of education (DfES, 2003). The Department for Education and Skills (DfES) in England is working towards a **unified eLearning strategy** which will extend across the whole education spectrum. Similar visions have been adopted within Wales and Scotland, which have established eLearning strategies for their further education (FE) and higher education (HE) sectors.

The Northern Ireland context

Although there is no over-arching eLearning strategy for Northern Ireland as yet, focussed strategies are building common systems across colleges and institutions to provide integration and shared content. In the province eLearning is evident across all sectors of education as the various educational organisations and agencies are now turning to it to meet the demands and priorities of both educators and students.



The schools sector has seen the introduction of the C2k (Classroom 2000) ICT managed service, and the achievement of teacher education targets through the 'Connecting Teachers' programme and the New Opportunities Fund (NOF) Training in ICT, following the *Education Technology Strategy* (1997). These developments are transforming the technological landscape for learning and the capacity of teachers to begin to address the embedding of eLearning in their classroom practice. To support this, the Northern Ireland e-Learning (NIeL) Partnership, set up in 2002, will coordinate and advance developments in eLearning for the school service in Northern Ireland. The *emPowering Schools Strategy*, which will cover the period to 2008, will provide the framework for these developments.

A similar picture is evident within the further education (FE) sector following the three-year strategy, *Information and Communication Technology For All - The Way Forward in The Further Education Sector* (1999). The FE sector is now progressing to a new stage of development with a shift in priority from ICT to ILT (Information Learning Technologies), i.e. the application of ICT to support learning and teaching and the management of the colleges. An ILT strategy for the FE sector is expected in the near future.

Although no strategy exists that focuses specifically on higher education, all Higher Education Institutions in Northern Ireland offer some form of eLearning. This includes courses designed to supplement existing face-to-face delivery, as well as those which are wholly delivered online with a view to offering a comprehensive, coherent and institution-wide service to all students. The Open University uses a range of learning technologies and media to integrate eLearning into its courses. Currently most of the Open University's 375 courses offer online services or use multimedia products in some way.

The University of Ulster has, in recent years, given prominence to exploiting recent advances in ICT, and in particular the internet, to enhance student learning and provide greater access to its programmes and courses by providing more flexible learning opportunities. A strategically led institutional approach to exploiting ICT in learning and teaching has been adopted. The success of this approach was highlighted in a recent Eduventures report identifying the University as a "lighthouse" institution for eLearning. Currently over 16,000 students utilize the institutional VLE in support of their learning. In 2001 the University launched a

virtual campus - Campus One - as a vehicle to deliver full online innovative programmes to a global audience. In the current academic year approximately 4,000 online student modules will be delivered to students from 45 countries. In 2003 the University was awarded WebCT Institute status, one of only 24 in the world, one of only two in the UK and the first in Ireland, reflecting excellence in institution-wide adoption of eLearning.

Queen's University Belfast sees eLearning as largely occurring in the context of blended learning (i.e. the integration of eLearning with traditional media and methods according to course content, level and students). The university promotes the uptake of eLearning through its eLearning Strategy and supporting activities addressing infrastructure, staff and student support. In 2004 over 1,000 staff are registered with the University's Virtual Learning Environment, Queen's Online for Learning and Teaching. Over 9,000 students access the system on a daily basis. In addition, the University recognises that eLearning has a key role to play in widening access to higher education within Northern Ireland i.e. regional based eLearning. This will benefit those engaging in lifelong learning and continuing professional development, as well as those on study and work placements. It is also anticipated that a select number of programmes which are unique to Queen's will offer courses throughout the world i.e. distance learning.

Integration across the education sectors

An emerging theme of eLearning developments within Northern Ireland is the concept of integration across the sectors. This is illustrated by a number of developments including:

- the development of a **new Northern Ireland Regional Area Network (NIRAN)** that will link Northern Ireland's FE colleges and Higher Education Institutions. Note that NIRAN will also offer a high speed link to education providers in the Republic through HEAnet.
- the **Northern Ireland Integrated Managed Learning Environment (NIIMLE)** project, which aims to build a cross-institutional Managed Learning Environment (MLE) for the Northern Ireland region that facilitates the mobility of the lifelong learner and supports collaboration between FE and HE institutions.
- the establishment of the **Regional Support Centre (RSCni)**, one of 13 centres across the UK, which was set up in October 2000 to help ensure the FE sector in Northern Ireland was best able to make use of the networked

services available via their connection to the Joint Academic Network (JANET). The Centre provides network support, staff training and advice in the use of information and learning technology (ILT) in the curriculum. Since then the remit has developed and

expanded to support HE Institutions. The RSCni is a partnership between Queen's University Belfast (QUB) and the North West Institute of Further and Higher Education (NWIFHE). It is financed by the Joint Information Systems Committee (JISC).

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