

James Fegan · Malcolm H. Field
Editors

Education Across Borders

Politics, Policy and Legislative Action



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James Fegan
Professor Emeritus
School of International Liberal Studies (SILS)
Waseda University
1-104 Totsukamachi
Shinjuku-ku
Tokyo, 169-8050
Japan

Malcolm H. Field
Professor
Future University-Hakodate
116-2 Kamedanakano
Hakodate, Hokkaido
041-8655
Japan

ISBN: 978-1-4020-9410-1

e-ISBN: 978-1-4020-9411-8

DOI 10.1007/978-1-4020-9411-8

Library of Congress Control Number: 2008938162

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Printed on acid-free paper

9 8 7 6 5 4 3 2 1

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Contents

Introduction: Crossing Borders Is Inevitable in Higher Education	1
Malcolm H. Field	
From Innocence to Experience: The Politics and Projects of Cross-Border Higher Education	19
John Daniel, Asha Kanwar and Stamenka Uvalić-Trumbić	
Cross-Border Higher Education and National Systems of Education	33
N.V. Varghese	
The Interconnection Between Australia’s International Education Industry and Its Skilled Migration Programs	49
Kumiko Tsukamoto	
Scientific Capacity Building Across Borders in Latin America: A Case Study on Inclusion	61
Luis Miguel Romero	
Reflections on the Cross-Cultural Delivery of an Information Systems Degree in China	77
Chris Keen and Dean Steer	
Elearning in European Higher Education: An Analysis of Present Practice in Ireland, Portugal, and the UK, with Lessons for the Bologna Process	93
Bryn Holmes, Isabel Huet, Denise Leahy, John Gardner, Dudley Dolan and José Tavares	
Borrowing Ideas Across Borders: Lessons from the Academic Advocacy of “Chinese-English Bilingual Education” in China	115
Guangwei Hu	

**A Support Network for Primary School Teachers in the Punjab:
Challenges of Policy and Practice** 137
R. Zia and R. McBride

**Perspectives and Perplexities Regarding Transnational Teacher
Migration Between South Africa and the United Kingdom** 149
Sadhana Manik

**Developing a Collaborative Community: Guidelines for Establishing a
Computer-Mediated Language Learning Project Between a Developed
and a Developing Country** 163
Debra Hoven and Jane Crawford

**Pathways in International Education: An Analysis of Global Pathways
Enabling Students to Articulate from Secondary School to Higher
Education in a Transnational Context** 179
Tony Adams, Peter Burgess and Robyn Phillips

Regional Universities in the Global Market: The Case of HUE 199
Michael Crawford and Malcolm H. Field

Postscript: Passion and Professionalism 215
Paul Snowden

Author Index 223

Subject Index 229

Elearning in European Higher Education: An Analysis of Present Practice in Ireland, Portugal, and the UK, with Lessons for the Bologna Process

**Bryn Holmes, Isabel Huet, Denise Leahy, John Gardner,
Dudley Dolan and José Tavares**

Introduction and Background

The Lisbon partnership requires a long-term communication strategy that not only keeps our citizens informed, but engages them in the process. The main thrust of our communication efforts must be at national, regional, and local levels. This is why there must be close and continual coordination with national governments, parliaments, regions, cities, and civil society. This will provide the democratic legitimization of the strategy itself and the basis for it to succeed.

(European Commission, 2005a)

The Bologna declaration was signed in 1999 by Ministers of Education from 29 European countries in the Italian city of Bologna. The Bologna process (also called the Bologna Accord) was begun in order to bring about a *European higher education area* where university degrees would be more comparable and compatible throughout Europe. The University of Bologna had recently celebrated its 900th birthday, in 1988, marking it as the oldest continually operating degree-granting university in the world. The declaration was open to other countries of the European Cultural Convention and further meetings have been held in: Prague, 2001; Berlin, 2003; Bergen, 2005; and London, 2007. The Council of Europe and UNESCO have jointly issued the Lisbon Recognition Convention on cross-border recognition of academic qualifications.

It seems natural to believe that any large-scale pan-European project must be based on a European Union initiative, so it is all the more interesting that the Bologna process was not. It actually constitutes a series of intergovernmental agreements, between both EU and non-EU countries. It does not have the status of EU legislation nor, as the Bologna Declaration is not a treaty or convention, are there legal obligations for the signatories.

B. Holmes (✉)

Concordia University, 1455, de Maisonneuve Blvd. W., Montreal, Quebec, Canada
e-mail: bholmes@education.concordia.ca, drbrynholmes@gmail.com

Although the Bologna Declaration was created outside its jurisdiction, the European Commission has played an increasingly important role in the implementation of the process. Previous to the Bologna Accord, the European Commission had supported a number of initiatives that promoted pan-European accord and, specifically, a wide range of projects in the areas of open and distance education across Europe, through Socrates and Minerva. Encouragement of student mobility between European institutes of higher education is supported by grants through European programs such as Erasmus, Tempus, and Erasmus Mundus. Erasmus Mundus has focused both on promoting European institutions on a global level and encouraging joint Master's courses in the European Higher Education Area. The Socrates-Grundtvig initiatives enabled adult learners to access higher education through a variety of pathways. The new EU Action Programme in the Field of Lifelong Learning (2007–2013) continues the Erasmus Action and other such programs. The Commission now participates as a full member in the Bologna Follow-up Group and the Bologna Board.

There are three general areas of concern to the EU:

- Curricular reform: The three-cycle system of the bachelor's, master's, and doctorate degrees, as well as competence-based learning, flexible learning paths, recognition of degrees and qualifications, and mobility of students
- Governance reform: Examining university autonomy, undertaking strategic partnerships with universities and business, and quality assurance
- Funding reform: aiding universities to perform when income is aimed at being linked to performance and efficiency, including the possible role of tuition fees, grants and loans (European Commission, 2007a).

In May 2006, the Commission published a Communiqué outlining an agenda for modernization in education, research, and innovation as part of the Community Lisbon Programme. The first measure listed calls for a breaking down of the barriers around the universities of Europe. A major effort is being made to achieve the core Bologna reforms by 2010: comparable qualifications (short cycle, bachelor's, master's, doctorate); flexible, modernized curricula at all levels corresponding to the needs of the labor market; and a reliable quality assurance system (European Commission, 2007a).

When trying to agree on aspects of education, entrenched values and practices have been problematic. Of the three areas of concern listed above the change in the timing and titles of the degrees has been difficult to garner support for, as has the call for students to pay tuition fees. In Greece, for example, reforms have been met with resistance on the part of students, who rioted. On the one hand, having the same timeframes across borders promotes student mobility and is an admirable goal but, on the other hand, these are in many ways surface changes and become flashpoints for ill-feeling. The process of converting all systems 'to the short cycle, bachelor, master's, doctor' is now moving towards a competency-based system and away from a focus on the strict convergence in terms of time spent on qualifications. So, for example, the new pan-European system will have an undergraduate

and postgraduate division, with the Bachelor's degree in the former and the Master and Doctoral degrees in the latter. This is more of a compromise between the common UK, Irish, and North American models and the Central European model. Such changes miss a chance of making real reform happen and building a model where European education can perform at its highest potential. There is a process, however, that may suit.

The Commission works with member states and the higher education sector through what is called the Open Method of Coordination (OMC). OMC is promoted as a technique involving dialogue with key policy makers and experts, as well as peer-learning activities. It also involves promoting indicators, benchmarks, publishing reports, and undertaking analyses. The EU has undertaken initiatives that support its key goals, such as quality assurance, through the European Credit Transfer System (ECTS), etc. A final pillar of the OMC is to aid the initiatives of member states and institutions through pilot projects, associations, networks, etc. It is hoped that such reforms will enable universities to play their role in the Europe of Knowledge.

Cammack (2006) states that the Lisbon process was not the first to propose the use of the Open Method of Co-ordination. He argues, instead, that the OMC adopted at the Lisbon Summit of March 2000 constitutes the most *formal and comprehensive* promotion of such an initiative. Cammack, an economist, links the OMC methods and global competitiveness, which he believes is the underlying reason for the adoption of the method in the EU. This chapter will explore its alternative potential for underpinning change within a communally constructed environment.

We present here the voices of educators who e-teach or have taken part in projects promoting online education, so as to reflect on our experiences in promoting new ways of teaching and learning. We have selected the information as examples of international good practice and innovation in elearning in Europe. We seek to use benchmarking tools to identify a number of models where successful and innovative learning has taken place. Based on these examples, we put forward recommendations regarding the Bologna process.

We would argue that though it may seem obvious that countries across Europe should have similar educational systems in the way they have similar calendars, being too prescriptive may lead to a loss of an excellent opportunity to create an environment for real progress. Consider the example of the Japanese monks who traveled to China in the 6th and 7th centuries. They brought back many cultural artifacts without always understanding the full significance of their origin. The Chinese calendar is a case in point; it was based on the mathematical calculation of *Pi*, which the Japanese rounded to 3.14. Within several generations, the calendar was seriously out of tune with the seasons – proposing good days for planting, for example, in the first days of winter. The imposition of common structures for the sake of “modernization” has similar potential problematic implications. The structures, in many cases, are simply old shells that originally evolved from real needs but no longer need apply – or are just not applicable. Consider for a moment that fellows at the University of Cambridge in the UK must sign a document testifying that they live within 10 miles of Great St. Mary's Church (located at one corner of the market square of the town, now city). The distance is not an arbitrary one.

Instead it is carefully chosen as it was considered the distance one can travel in 1 hour on horseback. Although it may be easy to dismiss this as an example of eccentric behavior associated with the Oxbridge tradition – where students can, for example, also wear swords to their exams and call for ale during the trial, should they be thirsty – there is no aspect of the present education system that is not in some way akin to this example in being unnecessarily restrictive. Reflect on the archaic example of schools meeting each day at the same time, of educating together students who simply share a birthday that falls within arbitrary dates of a calendar year, of moving students through materials at the same pace – materials that some find much too easy and others much too hard. Indeed, we could argue that almost any aspect of present-day schooling is built on traditions that not only no longer need to apply, but are often implemented with an eye to ease of administration rather than on any basis for high-quality education.

If the real goals of the Open Method of Coordination are communication and building of knowledge, then the method should not simply be used as a carrot for the EU's persuasive financial incentives for member states to coordinate and deliver their Master's degrees in 2-year periods. Instead, the OMC might be the key to a future where education evolves, and the joint process of evolution that is as important as the products of individual systems. Now is not the time to create a Europe that essentially follows the American system; instead, a pivotal moment exists to seek a truly innovative (and perhaps truly European) model.

For almost a decade or more, elearning has been credited with the potential to transform education. For the most part, this potential is still considered untapped. Yet, the Bologna process could be the driving force that creates the right synergy for change. Elearning should have an important role in supporting many of the key goals of the EU at this time. Elearning can and should allow for alternatives to what we currently experience in higher education (HE), for the gradual erosion of the institution-based system of mass education (that the Bologna process is solidifying) to one of a more individualized, student-centered, and community-oriented experience. Changes in pedagogy are key to changing the role of instructors so that they act as guides on the side, aiding students to discover solutions. Luarillard (2002) in her book *Rethinking University Teaching* supports mediating learning, not only de-contextualized knowledge, but also situated knowledge in real-world activity. Her work builds on that of Collins, Brown, and Newman (1989) and others who proposed that learning takes place best in an environment that 'situates cognition'; or provides cognitive apprenticeships. Put simply, new roles in the teaching-learning relationship are one aspect of the impact of information communication technology in higher education (Frederickson, Reed, and Clifford, 2005; Luarillard 2002) and these are developing across borders in alternative environments. Two of the authors of this paper, Holmes and Gardner (2005), state that elearning can also promote a type of constructivism, called communal constructivism, where students learn not only *with* each other but also *for* each other, leaving behind something of their learning experience for others who follow [see also the work of Holmes, FitzGibbon, Savage, Mehan, and Tangney (2001), Leask and Younie (2001), as well as the work of Preston on Braided Learning (2007)]. The modern education process may be seen

as a sanitized pipe system through which students are poured to emerge “educated”, but without leaving anything behind in the system they have passed through. In contrast, the “communal constructivist” philosophy is like a river that changes its environment as it flows.

We look to the Open Method of Coordination as a potential vehicle for a communally constructed Europe of Knowledge.

Case Studies of Elearning in a European Context

We have entered a crucial stage, both in a political and in an economic sense. We expect Member States to come up with credible and ambitious action plans to make Lisbon work. Europe has to show the way. Europe has to show that it can choose. It has to substantiate its choices. The choices need to be ambitious but realistic. By showing leadership the Commission can stimulate and encourage Member States to do the same. It is only by the combined forces of the Commission, the European Parliament and the Member States that Europe can reach the ambitious goals set in the renewed Lisbon agenda. Now is the time to deliver.

European Commission, 2005a

Education is in a period of transition across Europe; at the same time that the Bologna process is bringing together Ministries of Education across Europe, new directions are being spurred by the eEurope 2005 Action plan (which was built on the work of the Lisbon European Council of 2000). The European Commission has been concerned with issues of social inclusion, re-skilling for the knowledge society, bringing public administration online, providing interactive public services, online health services, development of broadband networks, and legislation for e-business (European Commission, 2005b). Europe’s i2010 initiative – *A European Information Society for growth and employment* (European Commission, 2007b, p. 9) – builds on previous work by seeking to extend the benefits to all EU citizens and also improving their potential to make the most of their lives:

As the use of ICT grows, so does its impact on society. i2010 recognizes this in three ways: making sure that ICT benefit all citizens; making public services better, more cost effective and more accessible; and improving quality of life.

Elearning has the power to provide more flexible learning and the university, with its more flexible mandate than primary and secondary education, may be the best place for instigating changes that make a difference. We would argue that elearning can and should allow for a student-centered and community-oriented experience. In an online learning environment not only can teachers and learners connect across space and time, they can also access information from still further afield. Experts from across the globe take part in courses and, as in the case of medical students studying laparoscopic surgery, who watch from their classrooms operations which are being carried out by remote surgeons in a hospital on a patient in a third location. There is an opportunity now to put forth a new paradigm for cross-border education in a European context. There is much excellent work being carried out in Europe and funded by the European Union that could form the basis of a knowledge-rich Europe and provide a communally constructed knowledge space that would serve to underpin the Open Method of Coordination.

Ireland

Former Irish Taoiseach (Prime Minister) Bertie Ahern (Irish Government, 2002, p. i), in outlining: “A Strategy to realise the potential of the Information Society” stated:

We must also ensure that our approach is responsive to the influence of rapidly evolving technologies. The key to competitive advantage will be to retain the capacity to respond quickly to new developments in an environment of ongoing change. A supportive public policy environment is clearly critical to shaping our development as an Information Society. . . . I am confident that it gives a solid basis to underpin future economic and social prosperity.

Ireland, perhaps more than any other country in Europe, owes its recent prosperity to transformations in business brought about by the increased use of information and communication technology. Ireland is seen as one of the emerging key software producers, one of the “3 Is”, together with India, and Israel (Arora, 2005). With a population of approximately 4 million people, Ireland is, for example, the second-largest software producer in the world. All the big names in software, such as Microsoft, Sun, IBM, and many in hardware, such as Intel, have headquarters in Dublin. Ireland, too, has developed local computer-area industries, such as Iona Technologies, an early successful initiative out of Trinity College’s Computer Science Department. When people in the Republic of Ireland are asked to predict the further integration of technology into their lives, the highest scores are for the use of computers in education. In a recent survey, 93% of respondents agreed that: ‘All school children will be using computers at school on a daily basis as part of their education’ and 87% of the people polled believed this to be a good thing (Williams, Blackwell, & Whelan, 2004).

The Republic of Ireland’s education system is quite similar to that of most European countries. In Ireland most Honors Bachelor’s degrees are 3 to 4 years, with Master’s and Doctorates being broadly similar to the UK. Ordinary bachelor’s degrees are also first-cycle qualifications. The Master’s degree is always a post-graduate degree, either for coursework or earned through research. The generic outcomes for Irish degrees are spelled out in the National Framework of Qualifications published in 2003 (National Qualification Authority of Ireland, 2003). Students attend primary and secondary school and can choose to go on to higher (or *third-level*) education or further education if they have sufficient “points”. Entry into the top universities is highly competitive. The pattern of Bachelor’s degree followed by Master’s degree and Doctorate is similar to most of Europe. The Minister of Education controls the direction of education in Ireland through the *Department of Education and Science*, which has jurisdiction over policy and funding. There are other Irish actors at the governmental level, including the National Qualifications Authority of Ireland and the Higher Education Authority, as well as local Vocational Education Committees. There are many other statutory and non-statutory bodies which have a function in the education system.

There has been a move in Ireland to standardize the offerings of the various colleges and universities. Consolidation of Irish college and university awards is being driven in part by the Bologna process. Some institutions have completed a

process of modularizing their courses (others are still in a transition phase), mostly using the European Credit Transfer System (ECTS) (European Commission, 2008). The National Certificate (NCert) and National Diploma (NDip), which had been the most common awards at the 1-year diploma level, were replaced by the Higher Certificate and Ordinary Bachelor's Degree, respectively, in 2005. Further education has seen real growth in recent years, reflecting the booming economy in Ireland.

Although Ireland's economic growth is considered a boon, there is a well-founded concern that it has created a digital divide and, thus, resulted in inequalities in Ireland's society. Perhaps because of Ireland's history of foreign rule, there is a strong movement in Ireland to combat the emergence of entrenched divisions in society. The Irish Government established a task force on Lifelong Learning under the Programme for Prosperity and Fairness to explore issues of increasing adult access to basic ICT-skills training, using technology and flexible learning options to enhance the skills of those in the workplace, with specific efforts to target the over 55s.

Ireland's Information Society Commission (ISC) has an ongoing role in creating a public policy framework by monitoring progress and highlighting key issues. Its members are drawn from the business community, the 'social partners', and government, and they act as an independent advisory body reporting directly to the Taoiseach. There are six working groups of the ISC: Values and Ethics, Workplace of the Future, e-Health, Privacy and Cyber Security, and School of the Future. By being an independent body, with members drawn from a variety of backgrounds, the ISC can quickly respond to and, indeed, lead in new trends. The high levels of growth are a welcome trend in Ireland but as Dr. Daniel O'Hare, Chairman of the ISC, states: 'Change and learning can be seen as two sides of the same coin, and a faster pace of change requires us to learn more quickly' (Information Society Commission, 2005). And a key challenge for Ireland is that there is a growing diversity of learners, including an increase in students of different ages, races, and cultural backgrounds, and of those with disabilities. In a 2008 strategy statement, the Department of the Taoiseach (2008) stated that:

We will work to build on our achievements under previous action plans. Our strategies will focus on promoting effective and innovative deployment of technology in the public and private sectors, and in society generally, in line with agreed wider European objectives. The aim is to promote inclusivity of access to, and use of, digital media technologies with consequent benefits for all.

Irish ACE and SAVI Projects

The key significance of the Information Society is that it makes possible new connections – connections that challenge traditional assumptions about what is possible, and when it is possible.

(Irish Government, 2002)

New technology offers increased opportunities for employment for people with impaired vision and can considerably open up opportunities for learning. The

Internet is a powerful tool enabling users to link with others and to engage in advocacy. In spite of the positive breakthroughs in the development of screen-reader software over the past years, little progress has been made in providing training with fully accessible e-content material. Poor web design (Imrie, 2004) can also reduce the overall effectiveness of access to course content and, as a result, can hamper the success of the learning experience for the individual (Tahkokallio, 2004).

Two projects in Ireland, the Accessible Community for E-Business (ACE) Project and The Social Assistance for and with People with Vision Impairment (SAVI), were designed to make an impact by investigating how online learning environments could aid those with vision impairments and reduce the digital divide.

ACE was designed to be a multi-stage study so that the design, development, and testing of a new electronic online community were conducted with learners with vision impairment. The ACE team then built an e-community to serve those identified with learning needs. The ACE project focused on supporting the participation of people with Impaired Vision in the workforce, both as employers and employees. Part of the project investigated whether the virtual community embodied the changing needs and aspirations of the physical community. Participants learned both *with* and *for* each other, the concept that we call 'communal constructivism' (Holmes et al., 2001).

From the beginning of the research, vision-impaired participants were invited to take part in a dialogue at each phase of the project, especially with regard to researching and recording their experiences whilst testing the ECDL courses. One of the outcomes from this research process was to agree on a 'research coalition' (Baker, Lynch, Cantillon, & Walsh, 2004) that would monitor how representative the vision-impaired community was in the design and delivery of a virtual learning environment (VLE). In many ways, this process echoes the Open Method of Coordination (OMC). The bringing to the front of those who are marginalized is part of a movement within qualitative research (Pugach, 2001) that we believe should be reflected in the OMC and an underlying part of the key goals of the Bologna process. We wished to capture the experiences of the participants. We were interested in both the formal and non-formal modes of learning knowledge and skills development and how much of the strength of a visually impaired community could be replicated electronically (Lave & Wegner, 1991).

One of the main areas of ACE focused on how a group of adult vision-impaired participants use, share, and reconstruct knowledge-based learning materials based on the European Computer Driving License (ECDL) program. The research team explored how the resulting e-community promoted new learning activities by its participants in order to help continue building and to sustain the life of both the e- and visually impaired community. We also investigated how the newly created virtual community supports itself by modifying, extending, and perpetuating new knowledge based on that community's needs. To us, these were important goals both for ACE and for the Bologna process as a whole.

We expanded the goals of ACE when designing the SAVI project. We sought to involve more people in the process, specifically targeting teachers. Educators who have had little training or experience in working with visually impaired students

were, we believed, looking for specific courses that can help them deliver a more accessible national curriculum and meet these students' needs more effectively. As EU countries look into the greater integration and inclusion of students with visual impairments into mainstream schools, pressure is placed on mainstream teachers to meet the individual needs of the visually impaired and modify their teaching practices and break down the barriers so commonly experienced by poor training and awareness programs.

The greater need for improved training for those wishing to work with students with visual impairments could be met by designing specifically related courses that can teach educators how to work with students with visual impairments. This creation of an EU partnership is to develop a series of activities based on building and sharing networked knowledge, rehabilitation, and creating employment within the educational and industrial sectors. Visually impaired learners can also increase their technology skills and avail themselves of the support of their peers, which will make an immense difference to their success in the future. We strongly believe that any elearning tool designed by the partners should be "user-led", thus ensuring that all who will be using the tool will influence its construction and delivery. It is also intended that participants with visual impairments will provide important input affecting how elearning tools will be more accessible.

As outlined in the revised Irish National Anti-Poverty Strategy, building an inclusive society is the key priority of the government of the Republic of Ireland. It is clear that the technologies of the Information Society present new opportunities to address traditional problems of disadvantage and exclusion in society. ICTs deliver new channels of access and participation, and have the potential to offset the disadvantages associated with remoteness and restricted mobility. However, it is also clear that public policy interventions are needed to avoid the danger of exacerbating existing inequalities, and to prevent the emergence of a digital divide (Irish Government, 2002).

In designing and delivering to teachers an online course that is both informative and accessible, the SAVI project model offers a way forward for those educators who find they are teaching students who can learn effectively but differently. Here, again, we believe is a lesson for the Bologna process. The process itself can, like the SAVI project, model effective behavior in its method of communication and information delivery. The Open Model of Coordination can be designed to be held up as an excellent example of inclusiveness within European society.

Portugal

Portugal has yet to specifically address the national development of elearning within the nation. In the area of training and education, governmental efforts related to the development of the Information Society are mostly focused on the aspects of providing access and on basic qualifications, such as the uptake of the International Computer Driving Licence (ICDL). We examine here the first experiences of a university in using online learning environments across its campus.

The European Union, through the *elearningeuropa* program has been promoting Information and Communication Technology (ICT) literacy and the creation of a virtual campus inside higher education (HE) institutions. As usual in innovation processes, the curiosity of some faculty members and a few institutional leaders paved the way for the earliest experiments, mainly focused on the discovery of the power of some new technologies, such as virtual learning environments (VLEs). Initially, the use of technology mediation in higher education was seen as a feature limited to distance education reserved for the Universidade Aberta, the Portuguese public Open University. Since then, however, the exponential dissemination of the Internet, web-based technologies, and, more recently, the advent of Web 2.0 social tools, has contributed dramatically to the adoption of new work strategies in HE. This flow of new web-based didactic approaches, introduced new learning and teaching paradigms into HE and the resulting re-examination of learning that such an experience affords we believe to be useful for the Bologna process.

The IMS-Learning Design (IMS-LD) is a framework for the design of activity-oriented learning experiences, that includes a set of concepts and features conceived to provide flexible support to any didactic and any technology environment. Many institutions are adopting open-source solutions, such as the VLE MOODLE, and a special task force of the Portuguese Ministry of Education, responsible for the non-HE education sector, is promoting its use in primary and secondary schools. This means that the use of technology mediation is becoming more common among the secondary students who are the HE students of the future, thus paving the way for future generations of technology-educated students in HE institutions.

Currently, in Portugal, therefore, most HE public and private institutions have adopted a VLE platform and have undertaken e-dissemination. However, adopting elearning is often understood as merely just installing a VLE, and very little attention is given to the critical factors of elearning, such as: (i) What is the added value of elearning for the institution? (ii) What are the strategic targets to be achieved? (iii) What are the desired changes to be pursued? (iv) What faculty and technical staff training is required? (v) What is the expected impact on students? (vi) How are results going to be evaluated (vii) What performance indicators are going to be adopted in order to enable future reasoning concerning the results achieved?

Much of the hype surrounding virtual learning environments was embedded in the idea that learning could be effectively broken into small units that could then be shared. The units of learning are called learning objects (LOs) and it was believed that teachers could easily produce and share such resources. Much work has been done on making sure that such contributions can be standardized and so more easily accessible in a wide variety of elearning environments. The “brave new world of learning”, resulting from the generalized adoption of learning object (LO) technologies seems to be very far away in the Portuguese context. The idea that educators around the world could and would voluntarily organize information in small chunks, each one an autonomous LO, that would be shared and re-used, decisively contributing to an ever-expanding knowledge society, seems to have stalled. However, the fact is that the process is just slower than originally envisioned, and that some technologies, such as ADL’s SCORM and IEEE’s LOM, are currently contributing

to facilitating content migration among VLE platforms, providing users with a relevant degree of freedom as far as platform choice is concerned. Some other important contributions have, meanwhile, been made to technology-supported learning.

HE institutions generally, however, remain very reluctant to adopt such new work paradigms, although they may provide new levels of flexibility for faculty and students, and new business opportunities. This is due to the lack of a strong strategic management in most of the institutions, and to the traditional conservatism of faculty and staff, who are not encouraged to take risks and exploit new opportunities to improve the work conditions offered to their students. One way forward is that several Portuguese HE institutions look to web-based learning as an interesting way to reach new students, including the provision of life-long learning programs. Also, some institutions, such as the University of Aveiro, are using technology mediation to reach some new international markets, such as the African Portuguese-speaking countries.

Case-Study 1: Faculty-Training Program at the University of Aveiro

The University of Aveiro, founded in 1973, is one of Portugal's newest Universities, with a faculty, in 2006, of more than 900 academics. The traditional model of teaching is centered on the teacher delivering information through lectures. However, new technological innovations, the globalization of our society and culture, and new lifestyles are bringing a demand for a different type of education. The university is engaged in exploring the advantages of all the opportunities to improve the quality of more than 40 undergraduate and 130 postgraduate programs currently being offered and to broaden the catalogue of student choices through the promotion of ICT/Internet-based programs.

Since 2002, the University of Aveiro has offered post-graduate courses at a distance, based on a blended-learning model that mixes face-to-face with technology-mediated distributed-learning activities. Currently, this program comprises courses covering a wide variety of topics, such as multimedia in education, language-teaching pedagogy, electronics and telecommunications, and mathematics for engineers. A long-term program is now being developed in collaboration with HE institutions in Cape Verde, and other programs are under development with the Angola and Mozambique educational authorities.

At the University of Aveiro almost all faculty members and their students use the VLE platform on a daily basis. Very different pedagogical and didactic approaches can be identified, however, ranging from using the platform just for delivery of content to the exploitation of the power of dynamic learning communities. This open range of approaches is encouraged and welcomed, because it provides a rich environment for the discussion of the effectiveness of different methodologies and technologies in different topics and learning styles. The roles of both the teacher and the student have been changing in the past years owing to the new demands of the information society. Faculty can focus not only on the delivery of knowledge but also understand how that knowledge is acquired by students, and, thus, adapt the resources they use to make the information more accessible. Burge argues that to

'teach constructively is to provide opportunities for complex information processing related to a learner's needs and knowledge of the world, relevant design and real world (authentic) tasks. . .' (Burge, 1995) and it is this process that we believe online learning environments can support. Here again the Bologna process could benefit from a flexible system of identifying and meeting the needs of the variety of actors, which may be easier said than done, of course. The focus on knowledge acquisition, as well as delivery, is part of the EU's current processes, in that feedback is collected from those who take part in EU funding exercises. However, feedback could be more formally built into the EU system and into the Bologna process, as well. Education Ministers would benefit from learning from others who are involved in the process in ways where feedback is entrenched in the Open Management Coordination process.

Currently, special attention is being given, at the University of Aveiro and other Portuguese HE institutions, to researching the power of 3D virtual environments, such as Second Life, to improve formal and informal learning experience in HE. Preliminary results are encouraging, as far as the interaction and social networking issues are concerned, but further research is required to provide in-depth evidence.

Special attention has been given to the identification and dissemination of good (and not-so-good) practices, and a staff-training program has been organized and is run regularly. This training program, the first comprehensive training program for HE staff to be held at a Portuguese HE institution, is based on a blended-learning approach, thus providing trainees with direct experience of the use of technology mediation. It includes topics such as pedagogy, curriculum development, VLE and Web 2.0 technologies, and management of distributed-learning communities.

The staff development program offered at the University of Aveiro between 2005 and 2006 was composed of three modules. The first module covers the basic concepts and strategies relating to pedagogy and curriculum design in higher education. The second module provides an in-depth view of the power of online opportunities, and addresses the most relevant issues concerning the current status of standardization and products available for the creation and management of learning solutions using Internet-based ICT. Finally, the third module addresses the practical issues related to building and managing distributed learning communities.

Each module of the staff development program runs for 2 months, with a 50-hour workload, and is organized on a blended-learning approach, i.e., comprising face-to-face and Internet-supported distance activities. In each module, there are three 1-day face-to-face sessions. During the first such session (in the program's first week), some distance activities are proposed, namely, ice-breaking social activities and some initial readings. This first face-to-face activity is very important because it builds a common understanding of the learning outcomes to be achieved and of the work strategies to be used during the following weeks. It is also a chance for each person to get acquainted with the other participants and to understand the possible scientific, professional, and personal bridges that will aid participants in their experience of the module. The second face-to-face session is held at the end of the fourth week, and is used to share the work that each group has developed since the first face-to-face meeting and to (re)organize the work for the last part of the module. Each module ends with the third face-to-face session comprising final

presentations and discussions. The addition of an online portfolio of the participants' reports highlights the work carried out throughout the module. This final activity is strongly recommended, since it will stimulate the reuse and dissemination of the knowledge acquired by the participants.

The project's main aims targeted the development of specific intervention strategies for academics to improve their knowledge of topics such as curriculum design or collaborative learning by using an elearning tool (Blackboard). Faculty response to this staff development program has been very positive, with all the available places (more than 150 for the three modules) being filled. The courses are currently being run, and preliminary evaluation based on informal questionnaires and case studies developed by trainees show that the program helped academics develop their methodological and technological skills and, also, their perception of the adequate role of elearning as an enhancement factor to improve higher education teaching and learning practices.

The discussion forums were revealed to be a powerful instrument in the promotion of interaction among the academics. Topics were added weekly by the monitors. The digital portfolios were a challenge to most of the academics. In order to help them maximize the use of this tool, the trainers asked for technical support. A member of the CEMED (Multimedia and Distance Learning Centre) team also describes the digital portfolio functionalities of Blackboard.

One of the objectives of the three modules is to promote collaborative learning among the participants of the group, using the online platform "Blackboard". The collaborative work was not always easy to attain. There is still a strong traditional preference for face-to-face meetings. One of the main constraints to overcome is the mind-set change required of faculty staff, most of whom are not sufficiently familiar with the functionalities of ICT/Internet-based technologies in order to create – and use – flexible and student-centered learning settings.

The Portuguese experience is one that many universities across Europe are undergoing, a move to a fully integrated system of online course information and lecture delivery. The difficulties faced by involving all members of an institution are parallel to those facing all the signatory countries of the Bologna process. Originally, therefore, much of the activity will simply be a replication of the face-to-face teaching system to an online platform but, increasingly, real change is taking place. It is noteworthy that the University of Aveiro is aiming to attain yet higher-level change and we would recommend the same aim for those undertaking the Bologna Accord.

United Kingdom

In 1997, Lord Dearing set out a vision for higher education in the UK, a vision that saw students learning so as to contribute to a democratic, civilized, inclusive society, as well as acquiring knowledge for its own sake. Almost 10 years later, the Leitch Review of Skills published in 2006 was designed to address the fact that high-level skills and knowledge have become central to the UK's international competitiveness and domestic prosperity. The British were at the forefront of the

use of computers in schools. In 1963, for example, the British Computer Society established its Schools' Committee and in 1965, the first computer was installed in a UK school. The National Council for Educational Technology (NCET) was established in 1967. In 1976, in a speech that would become famous, the then UK Prime Minister, James Callaghan, told schools that they should do more to give young people the skills necessary for the workplace. The first microcomputers arrived the next year from Tandy, Commodore, and Apple. In 1978, the BBC Horizon television program, *Now the Chips Are Down*, questioned Britain's readiness to embrace the problems and opportunities of the microcomputer and in response the government initiated microelectronics awareness programs for industry, commerce, universities, and schools.

The UK has three devolved governments: Scotland, Wales, and Northern Ireland, though many of the initiatives are initiated by the Westminster Parliament for England only. In England, the Department for Children, Schools and Families (DCSF at www.dcsf.gov.uk) has responsibility for schools, while local authorities (LAs) ensure local educational provision. The Department for Innovation, Universities and Skills (DIUS at www.dius.gov.uk) is responsible for higher education. English universities offer a 3-year ordinary or Honors degree. Work placement also occurs in "sandwich courses", where students combine short periods of work throughout their courses. Students specialize from the beginning of their degree. Ordinary degrees are either awarded for vocational courses, which include medicine, or awarded when a student has not reached the standards or course requirements of the honors degree. Universities award bachelor's degrees to those who complete undergraduate courses. Academic degrees are usually split into classes: First Class (I), Upper Second Class (II:1), Lower Second Class (II:2) and Third Class (III), and Unclassified (below Third Class). A Master's degree generally takes a year to complete, which is unusual in the European context, as is the fact that students can enter Ph.D. studies directly from their undergraduate studies.

As with a number of countries, the UK has established specific umbrella organizations that provide strategic guidance, advice, and opportunities in the use of electronic technology to support teaching, learning, research, and administration. The British Educational Communications and Technology Agency (Becta), is the government agency responsible for leading the national drive to ensure the effective and innovative use of technology throughout learning (www.becta.org.uk). The Joint Information Systems Committee (JISC at www.jisc.ac.uk) is also a key organization. Its focus is on research and education policy and practice. It is jointly funded by the higher education funding councils of the four constituent national entities. JISC has commissioned research on the underlying design and resource needs in creating and managing digital repositories. Researchers, especially those working in developmental areas, have begun to explore strategies for building a global knowledge commons (Chan, 2005). These national and international trends signify the growing importance of building interconnected research repositories.

Malcolm Read (2005), the Executive Secretary for the JISC, argues that at present UK education and research has benefited enormously from its investment in ICT over many years and remains at the forefront of the innovative use of technology.

The Higher Educational Funding Council for England (HEFCE) outlined in its strategic plan for 2006–2011 a number of challenges and opportunities facing the UK over the next 5 years (HEFCE, 2007). Not only is the UK experiencing increasing numbers of students attending university at a national level but as provider of higher education for many international students, there is increased competition in the global market. HEFCE's chief executive Professor Eastwood argues that: 'At the same time the Internet and other new technologies, many arising out of HE, give us new opportunities to compete and connect across the world' (p. 3).

Digital Repository for Northern Ireland – A Case Study

Here we will report on an initiative design to test the potential of an electronic repository for education-related research. In a study carried out by the authors, key educationalists from central and local government departments and agencies, charities, and teacher organizations in Northern Ireland were asked to comment on the feasibility and desirability of an electronic repository for educational research. A secondary focus of this case study was a survey and analysis of the common features of existing repositories in the UK. In August 2004, we began the process of surveying key groups on the need for such an Internet-based research repository for use by education-related professionals in Northern Ireland. As part of the research, a postal questionnaire was sent to 45 organizations considered likely to have an interest in education-related research, either as users or as bodies that commission or undertake research. Thirty-six organizations completed the questionnaire, 27 of whom expressed a willingness to take part in follow-up interviews. During the study, 15 interviews were conducted from among this group.

1. The main findings from the questionnaire survey included:
 - i. Thirty of the organizations either commission or carry out research, while six are users of research.
 - ii. Reports are freely disseminated by 23 (of 25 cases) of the organizations through the organization's Web site or through libraries, while eight bodies also sell some or all of their reports
 - iii. The large majority of respondents consider it is a good thing to have a central online resource of research items for teachers and other education-related professionals (34 of the 35 valid responses); and that they would expect their organization to provide resources for uploading (28 of 35 valid responses, with six "don't knows").

Many of the interview responses also highlighted the changing role of those involved in the education system. One institutional representative described the research process and evolution of their sphere of activity in the following way:

For research really to make an impact it needs to be based on concrete evidence. Thus we need to take routes to the creation of knowledge. . . . We are changing our ways of working – we need to take time and effort in making recommendations and we are now more focused on outcomes. We generate strategies for action, based on the literature and (need to) be more

proactive and need to make sure that it is done ‘with’ us not just to us (a local education authority response).

The need of local organizations to produce directions for their own futures is key to the findings of the research on a repository for Northern Ireland. We would argue that this level of involvement is an important aim of any organization involved in education and is important for those who are teaching classes in European Universities as well as the Ministers of Education who signed on to the Bologna process. Although essentially the principle that underlies democracy and the addition of the voices of stakeholders to policy is unwieldy at the best of times, new tools for social networking may aid those wishing to have a say and allow for the Open Method of Coordination to collect and disseminate a variety of opinions.

Another interviewee echoed similar thoughts stating that: “. . . evidence should as far as possible inform policy and as far as is feasible should be practitioner-related. Our organization is attempting to pull together a database right now. We wish to explore issues, and to act as a catalyst”. Several bodies are creating new research officer or information officer posts as a result of calls from senior managers for new research and analysis, and an increased research role for institutions with regard to the views of the public and client uptake of resources. A more systematic approach to knowledge building is being sought.

Across Europe, therefore, systematic knowledge building is being explored at local, national, and pan-European levels. The database for research in education in Northern Ireland is a good example of an environment that would benefit from being communally constructed. It is this energy that the Open Method of Coordination could tap so as to succeed in creating new ways forward and allow for natural growth and progression. Linking the different perspectives will be a challenge but, as the case study above illustrates, a local perspective is very important. As much research in the UK is commissioned, carried out, and published in London, the Northern Irish repository allows local groups to access information that otherwise might be lost among so many other studies. Northern Ireland also has a range of local issues that may not be as relevant in other areas of the British Isles. Local educational research in one area may be of particular relevance (because of the context, amongst other local factors) to other local researchers, even if their area of research is somewhat different. A top-down approach would not have the same “buy-in” at the local level – and it is this local approach that we recommend to the signatories of the Bologna Accord.

Discussion and Conclusion

Much more stress must also be put on policies promoting knowledge, education and skills in order to strengthen EU competitiveness and sustainable growth while ensuring social and territorial cohesion.

European Commission, 2005c

The Bologna process seeks to bring European educational institutions in-line with one another. We argue that part of this process should be an advancement of

education rather than a 'lock down' of present practice. Excellence in education should be a moving target and supported by a process that allows for flexibility, movement, and progression. A variety of studies that have been undertaken in Europe (of which the above are just three) suggest possible successful models for advancements in education. The Open Method of Coordination may allow these two streams to better cross-pollinate each other.

We have looked at examples from Ireland, Portugal, and the UK to see how an example of an initiative from each country might allow us to learn lessons that could be applied to the Bologna process. We specifically chose examples that complement each other and provide a variety of instances of the use of elearning in higher education, further education, and lifelong learning. We examined a number of different theories that might be used to compare and contrast the data we collected in our case studies. We set out two examples to illustrate the type of models we were finding and the type of selection processes we undertook.

We explored a number of models that might help to shed light on the case studies from Ireland, Portugal, and the UK, including the elearning Maturity Model (eMM), a methodology trialed in the Higher Education Academy Benchmarking Pilot by the University of Manchester (2008). eMM measures an organization's maturity levels in-line with the following 5-step model:

1. Learning – focus on pedagogy
2. Development – creation and maintenance of resources
3. Co-ordination – management
4. Evaluation – quality control
5. Organization – institutional planning.

While Open Management Coordination covers coordination, evaluation, and organization, the primary focus on learning is missing in its stated aims, and also the development of learning resources – though resources for evaluation and benchmarking are available. As the organizational aspects come after learning in the eMM measure above, we believe the model implies that once a good learning environment has been established, the institution should undertake to plan accordingly, but we would suggest that this be stated explicitly. Examine the list in relation to the 3 areas of concern of the EU. The ACE and SAVI projects of Ireland focused first on learning and next on the development, creation, and maintenance of learning resources. The projects were presented at conferences, to ministers and others in local and national government, in an effort to create an environment where the principles of developing online resources that capture and share learning experiences would go forward.

After examining a variety of models, we selected McDonnell and Elmore's (1987) four generic classes of policy instruments as we believe that the model provides ways to measure online activity, as well as at the macro-level, the design and creation of programs to promote elearning. McDonnell and Elmore argue that there are four generic classes of policy instruments.

1. Mandates, which are the rules that govern the actions of individuals and agencies, intended to produce compliance
2. Inducements, the transfer of funds to individuals or agencies in return for certain agreed-upon action
3. Capacity building, the transfer of funds for investment in material, intellectual, or human resources
4. System-changing, the transfer of official authority among individuals and agencies to change the system through which public goals and services are delivered.

In the case of Portugal, the University mandated the change. A decision to implement elearning was made at the highest levels, with the support of the University as a whole. Creating the conditions for system change was, without doubt, the ultimate aim of the University. Both faculty and students understand that the use of the new electronic learning tools should benefit them all but there are no short-term inducements, such as cash incentives for the faculty involved or actions taken to change the University system itself. Instead, elearning to date remains an adjunct to the present system. Change will take place but its pace will be slow, with perhaps both online and face-to-face courses running in parallel for many years. Present faculty members may never really change the way in which they teach, while new faculty members will lead the way over the next few decades. They will have experienced online and blended learning as part of their own education and understand its potential.

In Ireland the ACE and SAVI projects have been designed through a system of inducements. Here the European Commission and also Ireland's Southern and Eastern Regional Assembly offered innovative projects a chance to be funded and selected the ACE project partially owing to its focus on capacity building in the visually impaired community. The ACE project partnership comprised Trinity College Dublin, Inishnet Ltd., the National Council for the Blind of Ireland (NCBI), and the Visually Impaired Computer Society of Ireland (VICS). Thanks to the involvement of VICS, the partnership was able to offer more than an inducement to take part in the online learning environment. Instead, because of the buy-in of the visually impaired community, the ACE project's online site offered a chance for capacity building and aimed at system change. As over ten members of the visually impaired community participated in designing, testing, and delivering the courses, the ACE project met the capacity building objectives, but both projects stopped short of achieving a systems change in Ireland or across Europe at this time. Perhaps in the future the visually impaired community will take over the tools which were specifically developed to be accessible to them. In the UK case study, the design and development of a research repository, the aim of the project was to reflect users' needs, but the need for a system change as a key component emerged from the interview data. Those who took part in the questionnaire outlined their goals for moving their own organizations towards becoming "research institutions", however small, as part of a long-term dissemination plan for their organizations.

The involvement of those directly affected by change is a lesson we think that the Bologna process could benefit from and that should underpin Open Method Coordination. The ministers responsible for education across Europe initiated the Bologna

process but did not build in tools that would allow for those directly involved in the educational process to shape their future. The tools to support effective systems change need to be built into the Bologna process.

The present goals of the Bologna process are not as oriented towards learning as they could be. The European Commission is focusing its present efforts on modernizing higher education in Europe, specifically making it more responsive, flexible, and coherent in response to the challenges of globalization and the increasing need for innovation in the workforce. Mobility still remains a high priority. These are all admirable goals but not the only action needed to create a dynamic pan-European educational system.

Ministers recognised that mobility of students and staff among all participating countries remains one of the key objectives of the Bologna Process. Aware of the many remaining challenges to be overcome, they reconfirmed their commitment to facilitate the portability of grants and loans where appropriate through joint action, with a view to making mobility within the EHEA a reality.

(European Commission, 2007a)

Cammack (2006) argues that the Open Method of Coordination is a means to co-ordinate individual governments to put their policies in line with what Cammack calls the *hard core*, or inner workings, of the politics of global competitiveness. He calls the EU a meta-government seeking to re-orient individual states. Such an end stops short of the real goal of education, which should be promoting excellence in providing learning experiences that are second to none. This is what the EU should be aiming for and what must underlie making European education more compatible and comparable, more competitive and more attractive.

What is needed is mining the range and depth of the projects and initiatives currently taking place in the EU so as to build knowledge, not just with others but deliberately *for* others – the hallmark of communal constructivism. Designing online repositories of networked knowledge to support a communal constructivist approach will aid in addressing issues of European excellence in education and lay the foundations of a Europe of knowledge.

Acknowledgments The ACE project was funded by the Southern and Eastern Regional Assembly of Ireland from the European Commission Innovative Actions Fund; the SAVI project was funded by the European Commission Grundtvig Programme for Lifelong Learning.

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