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IDENTIFYING INNOVATION IN HIGHER EDUCATION ELEARNING STRATEGIES

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Introduction

There are many case studies of individual Higher Education Institutions (HEIs) devising distinctive eLearning strategies, reported by the HEI itself, journalists, or research observatories. An extraordinarily wide range of university-level eLearning programmes are rapidly becoming available from large numbers of HEIs across Europe, and there are strong attempts being made to identify and disseminate case studies of innovative eLearning practices (e.g. MENON, 2006). However, the vital research goal of obtaining more systematic evidence across countries in relation to HEIs' innovations in eLearning strategies represents a particular challenge for collectors of case studies, especially given the diverse processes in different countries for measuring pedagogical value and cost-effectiveness.

By contrast, there are typically several reports a year of large-scale attempts to survey HEIs in relation to eLearning, sponsored, for example, by EU programmes or industry groups. Yet the factors that determine educational effectiveness are not, so far, well understood; and consequently it can be difficult to develop reliable quantitative survey items that simultaneously enable valid and insightful comparisons between essentially qualitative eLearning strategies. Moreover, such quantitative evidence is not collected systematically by the typical HEI; when collected, such evidence is commercially sensitive; and it is not easy for researchers to obtain independently of the HEI.

So, claims are made, for example, that European universities plan to "expand their use of eLearning" (BBC News, 2005), but it is not at all clear what measures of expansion are appropriate, and what kinds of strategies are associated with such expansion.

The two-year research study described here attempted a mixed-method approach to the problem of identifying examples of innovation in relation to the eLearning strategies developed by HEIs. Where possible the study estimated the impact of the implemented eLearning programmes, but the emphasis was on illuminating a range of innovative eLearning strategy cases, rather than necessarily determining best practice.

Two key research questions asked by the study are:

1. How can innovation in Higher Education eLearning strategies be identified?
2. What factors are critical to the success of these strategies?

This research did not set out to obtain, directly, insight into why eLearning has not been more widely adopted by HEIs, why various eLearning projects have failed, why some eLearning projects have achieved less success than anticipated, or why some eLearning projects have achieved success more slowly than anticipated. However, by researching innovation, the challenges faced by the innovators, and how strategies needed to change over time, it is anticipated that the findings from this study might indirectly illuminate these crucial questions.

It is not possible within the space available here to do more than outline the methodology and highlight a few key findings: fuller reports are available on the project website www.spi.pt/innounilearning/

Methodology

The study was divided into a number of phases. In Phase 1, a survey instrument was used in combination with a range of mostly quantitative data sources to develop a list of 64 HEIs with potentially noteworthy eLearning programmes. In Phase 2, fuller data was collected on 25 of these HEIs, using, where possible, multiple interviews supplemented by evidence from documentary sources. In Phase 3, intensive data collection visits were made to eight of the HEIs.

Phase 1(a): Identification of population

The first step aimed to compile a comprehensive list, in each of the research partners' countries (France, UK, Hungary, Austria and Portugal), of HEIs with potentially noteworthy eLearning programmes. The European Commission's definition of eLearning was adopted: "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration" (EC, 2001).

The original plan was simply to identify HEIs that had programmes satisfying this definition. However, this proved to be not as straightforward as might be expected. For example, while some 95% of the UK's 200 (or so) HEIs are using Virtual Learning Environments (VLEs) (Jenkins, Browne & Walker, 2005), the number of potential HEI candidates in Hungary was very much smaller. Furthermore, while it was clear that some HEIs had implemented institution-wide VLEs, with extensive use of online resources, services and discussion environments, in other HEIs just a few departments or courses were engaged in eLearning innovation. For many HEIs, it was not always possible to tell from websites and prospectuses whether "remote exchanges and collaboration" in fact took place at all.

So a range of sources were used to compile these initial population lists, sources which inevitably varied from country to country. These sources identified HEIs which...

- have featured strongly in previous surveys or case study collections (e.g. the "Forum neue Medien in der Lehre" in Austria);
- have a high media profile as long-standing eLearning players;
- offer eLearning courses through well-known international consortia (e.g. the World Universities Network);
- have been referenced in academic literature;
- have featured in leading conferences in relation to eLearning (e.g. ELearnExpo in France; eLes04 in Portugal; Online Educa and EDEN);
- have won awards, accreditation, or government funding for major eLearning-related initiatives (e.g. JISC projects in the UK or the Portuguese e-U initiative);
- were nominated by eLearning practitioners in HEIs already identified.

Basic data was then collected on each HEI from public websites, including (where available) names of central units involved in eLearning, technological tools and teaching methods used, particular curriculum strengths, and specific eLearning initiatives.

Given the very high numbers of HEIs identified, particularly in France and the UK, it was decided that an element of selection was needed, in order to ensure a manageable workload. So judgements were made on the basis of the evidence collected above about which HEIs seemed the most "noteworthy". These judgements were validated by an Advisory Panel, resulting in a final sample size of 87 HEIs, as shown in Table 1.

Country	n
Austria	13
France	25
Hungary	7
Portugal	11
UK	31
<i>Total</i>	87

Table 1: Numbers of HEIs selected for the survey

Although this latter selection process was done on a principled basis, it would have been preferable to have surveyed all the HEIs identified. Sampling would have been a possible alternative approach, but the aim was to maximise the chances of identifying innovation rather than to obtain representativeness.

Phase 1(b): Development of survey instrument

Criteria were developed to help identify particular strengths. Paulsen (2003) observes that recurring themes in recommendations from European projects about success factors in large-scale online education are related to institutional processes, cost-effectiveness and sustainability, efficient and well-integrated ICT systems, and a focus on pedagogy and online teaching. To elaborate these criteria, a range of academic literature was used, including the review of eLearning by Wentling et al (2000), which emphasised a multi-level approach to evaluation, including organisational aspects and student satisfaction; WCET (2001), which looked at best practices in institutional activity relating to eLearning; Massey (2002), which surveyed 450 eLearning adopters across the EU; Franklin et al (2004), which aimed to identify critical points for evaluating eLearning; Huang et al (2004), which examined what factors an accreditation system for online teaching should take into account; Hodgson (2002), which considered pedagogical practices in EU-funded programmes; and JISC (2005) which summarised a range of projects looking at pedagogy in higher education.

In order to gather data relating to these criteria, a questionnaire was constructed, drawing on this literature and more. It asked detailed questions about eLearning at the HEI using four sections: *Teachers, Learners, Teaching Methodology* and *Institution*. The questions sought quantitative or categorical responses where possible, in order to facilitate comparisons across HEIs, with opportunities to highlight innovations. The questionnaire was validated by the Advisory Panel, and is available at the project's website as part of the eLearning Programme Review Process Document.

Phase 1(c): Survey and additional evidence

The questionnaire was translated into the languages of the countries involved, and the selected HEIs were contacted to request their participation. An overall response rate of 74% was achieved; and the responses were subjected to detailed quantitative and qualitative analysis.

Portugal came out particularly strongly overall. Hungary showed strength in the section on teachers, while the UK was strong on institutional aspects. However, one should be cautious in making country comparisons, not least because of the linguistic differences. It was also clear that the rankings within countries provided some surprises in comparison with the data on noteworthiness gathered in Phase 1(a). Much of this could be attributed to differences between respondents rather than between HEIs. A particular problem of this kind of survey is that for large HEIs in which responsibility for eLearning is decentralised to faculties or departments, there is not always a single individual who can simultaneously represent the HEI in terms of both innovation in particular curriculum areas and in the institution-level infrastructure and processes that support innovative eLearning. Sometimes it proved difficult for HEIs to identify which individuals collectively would be best-placed to complete the questionnaire. So it is possible that the results over-represent HEIs in which eLearning is predominantly centralised (33%), or part of an institution-wide initiative (32%).

Some respondents were also clearly more enthusiastic than others in highlighting their institution's eLearning successes. Moreover, it is likely that respondents were eLearning advocates. For example, email (71%) was cited more often than face-to-face interaction (59%) as a mechanism for "learner to

learner” and “learner to teacher” interactions. Paper-based assignments and online assignments are almost equally used, although paper-based exams (56%) are still used more often than online exams (25%).

How well the perceptions of eLearning advocates match reality is difficult to tell. In selecting HEIs for more detailed examination, it was therefore decided that in addition to ten HEIs selected purely on the basis of the questionnaire data, a further three institutions per country would be selected (making a total of 25), by supplementing the data with additional qualitative evidence available in the public domain and building on the data on noteworthiness gathered in Phase 1(a). This process also enabled the study to represent a diversity of strategies across the countries involved, rather than simply selecting those HEIs that scored highest in total. As earlier, an Advisory Panel conducted a review of the selection process prior to the start of the next phase.

Phase 2: Data collection for the 25 highlighted HEIs

In Phase 2, fuller data was collected on the 25 selected HEIs. Where possible, multiple telephone interviews were supplemented by evidence from documentary sources.

The schedule for the telephone interviews was based on a benchmarking methodology developed by the United States’ Institute for Higher Education Policy (2000), which intended to provide a measure of eLearning quality. The interviews supplemented the data already obtained on aspects such as course development processes; the pedagogical guidance and support available to staff; the range of student activities, the resources available to them, their interactions with tutors and other students, and their assessment; and the use made of data on educational effectiveness, enrolment and costs.

Some 43 interviews were conducted, and subjected to a range of analysis techniques. Findings from these 25 highlighted HEIs are summarised in the “Noteworthy eLearning Programmes Report” on the project website. Some key findings are given in the discussion below.

Phase 3: A detailed study of eLearning strategies – case study visits

In Phase 3, eight HEIs were selected for detailed eLearning strategy case studies. Campus visits and interviews were arranged with senior management, with those staff involved in originally creating the programmes, with the teachers currently involved in the programmes, and with existing or former students. Each case study provides an overview of the institution, its educational structure, curriculum needs, and eLearning strategies.

The inclusion of the student perspective and of all available evidence of educational impact was seen as particularly important. Clegg et al (2003) argue that uncritical acceptance of pressures to adopt new ICT for education, under the rhetoric of “student-centred learning”, can turn out to have negative consequences for students.

The format of the case study visits was based on the template developed for JISC in the UK, and the interview schedules attempted to establish stakeholders’ perceptions of quality and factors of success, in relation to aspects such as the environments for learning, pedagogic approaches, course development processes, and quality improvement processes. The interviews also attempted to identify how the HEI’s eLearning strategies have developed over time.

Findings

The study found firstly that blended learning is overwhelmingly the preferred teaching mode: in only two of the 25 HEIs were purely online programmes featured as cases of innovation.

Secondly, while a minority of the HEIs have formal eLearning strategy policy documents, two distinct types of strategies were observed: some HEIs have chosen to target niche markets, such as international postgraduate professional programmes in particular departments; other HEIs are aiming for whole-institution strategies from the start. Wirtschaftsuniversität Wien provides an example of a

niche strategy, beginning Learn@WU in a small way with the faculty of Business Computer Science, and seeing wider acceptance develop. Dennis Gabor College, Budapest, and IAE, Caen have similarly used niche strategies to build up eLearning gradually. The UK Open University, in contrast, emphasises large-scale systems in its whole-institution strategy. ENIC, Lille is similar in that eLearning is a required component of all programmes.

Thirdly, while there are differences between these types of strategy (see below) in terms of the factors that respondents noted are critical for success, there are also some commonalities. In particular, the study provides some evidence supporting the hypotheses of Bates (2005) that these critical factors included:

- sustainable business plans, including an accurate assessments of the student market and control of costs;
- an ambition for quality assurance processes and student support services to be at least as strong as those in established programmes (whether these established programmes are face-to-face or traditional distance education), with an emphasis on “customer-focused” objectives such as providing timely and constructive feedback on assignments and queries, and on facilitating student interaction with tutors and peers; and
- technology that is robust, scaleable, affordable, productive, and widely accessible, with good quality technical support.

Somewhat surprisingly, there seemed to be little use made of data on enrolments, costs, and successful or unsuccessful applications of technology to evaluate programmes’ effectiveness.

Differences between HEIs adopting the niche strategy and those adopting the whole-institution strategy can be illustrated by comparing Universidade do Porto and the University of Ulster. Both HEIs have multiple campuses, faculties with a high degree of autonomy, and a history of eLearning innovation that had led to a proliferation of systems of varying robustness. But while Porto established institution-wide technological and student support frameworks to advance eLearning, Ulster decided to create international online courses in niche areas incrementally. For Ulster, critical success factors included ensuring early triumphs, designing the initial technical and student support systems in such a way as to allow generalisability, and targeting staff development at those creating new courses. For Porto, critical success factors included motivating staff through an Excellence Award rather than pressuring them, and promoting best practice cases. Both HEIs established effective central teams to help staff build eLearning courses and to provide student technical support.

Finally, nearly all the respondents noted that the shift towards eLearning has been accompanied by a shift in pedagogical approach, towards more collaborative, problem-based and project-based learning. Several respondents noted students becoming more independent in their learning: more willing to ask questions, to seek alternative resources and to discuss with their peers. Educators, too, seemed to be aware of changes in their role as students exploit the flexibility of eLearning to become more autonomous and less constrained by place and time.

In relation to the question of how innovation in Higher Education eLearning strategies can be identified, no easy answers were found. A range of sources were found to be needed in each country to identify an initial population, while the effectiveness of the survey was hugely influenced by the quality of responses. Very different HEI lists were generated by these two different data collection approaches. The schedule of questions used for the telephone interviews of Phase 2 and the campus visits of Phase 3 produced rich accounts of innovation; but if there is to be viable identification of innovative strategies across countries, then further work is needed to refine the survey instrument to take account of these schedules.

This study has not attempted to compare HEIs that have been successful in eLearning with those that have been unsuccessful, so one has to be careful about interpreting these results. Moreover, the methodology suffers from dependence on self-reporting, common to case study and survey research in this field. However the research does at least provide some evidence of the factors that those who have

implemented successful eLearning strategies consider to be critical, drawing on the innovators' diverse experiences of having to refine their strategies over time.

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