Virtual Campuses: A New Paradigm in E-Learning Widening Access to Higher Education

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ABSTRACT

This paper considers the increasing impact of Information and Communications Technologies (ICT) and eLearning practices and the associated rise in Virtual Campuses (VC) as a recognized and respected research area in the EU and around the world. The paper provides an outline of the key issues characterizing the VC paradigm. The paper will also report on the work of a European Commission DG Culture and Education and Culture co-financed project PBP-VC (Promoting Best Practice in Virtual Campuses) which is aimed at providing a deeper understanding of the key issues and critical success factors underlying the implementation of VCs. In addition, the project is working towards developing a practical framework to help guide the process of creating best practice in VCs, as well as raising awareness of issues and approaches to creating sustainable VCs.

KEYWORDS: *eLearning, Virtual campuses, Higher education, Best practices*

INTRODUCTION

Technology plays an important and pervasive role in our modern age and increasingly influences many social aspects such as administration, economy, industry, research, education, culture etc. The tremendous growth of new technologies, such as multimedia, Internet, broadband and mobile networks etc. has been considered as comparable to the expansion of printing, changing further our world to a global universal society. ICT nowadays is a driving force for much development and innovation and provides governance and administration with efficient tools and infrastructure.

At the same time, ICT adds value not only to the organization and management of educational systems and institutions but to the learning processes as well. Educational systems around the world are under increasing pressure to use the ICT in order to teach students the knowledge and skills needed for their future choices and directions. The dynamic nature of the ICT as an evolving technology intertwined with financial imperatives has made a profound difference to the way teaching and learning are conducted. Not only has it improved knowledge storage and sharing, but it has also broken down the barriers of rigid organisational structures

into looser and more adaptable ones. The rapid expansion of the Web as a potential course delivery platform, combined with the increasing interest in lifelong learning and budget constraints, has created a significant incentive for universities to develop eLearning programs (Harasim, 2000). Over the past decade, eLearning has evolved and developed at a rapid pace so much so that it is a commonly accepted and increasingly popular alternative to traditional face-to-face education (Gunawardena and McIsaac, 2004; Connolly *et al.,* 2007). The demand for higher education is expanding exponentially throughout the world, a situation widely attributed to the changing nature of employment, where a job for life is no longer the norm, and to the arrival of the *knowledge-driven society*. eLearning provides a valuable means for learners to participate in learning regardless of geographic location (place-independent) theoretically 24 hours a day (time-independent), thus providing access to lifelong learning which may not otherwise be possible.

It was these benefits that led to the development of many *virtual universities* across the world, particularly during the 1990s. However, eLearning developments and virtual university/campus initiatives were hindered by much of the hype and unrealistic expectations that plagued them in the mid-late 1990s. This contributed to the failure of a number of high profile eLearning and virtual campus initiatives across the world (e.g. California Virtual University, Danish Virtual University). On the other hand, despite the significant growth of VCs across the EU in recent years, it seems that many VCs suffered from a low profile resulting in little support at senior levels while they have very little contact and interoperability with each other (EACEA, 2005). If eLearning and VC initiatives are to be sustainable then it is vital that stakeholders understand how VC models of teaching and learning transform HE institutions and how those models can be used to enhance the flexibility and inclusiveness of the European education system.

This paper considers the increasing impact of eLearning and the associated rise in VCs as a recognized and respected research area in the EU and around the world. It provides an outline of the key issues characterizing the VC paradigm while it reports on the work of the EACEA co-financed project *Promoting Best Practice in Virtual Campuses (PBP-VC)*, which is aimed at providing a deeper understanding of the key issues and critical success factors underlying the implementation of VCs. The paper will outline a tentative model of issues underpinning best practice in VCs derived from an initial literature based investigation of existing VC initiatives within Europe.

TOWARDS A DEFINITION OF VIRTUAL CAMPUS

Nowadays, the term *virtual campus* is widely used around the world. But, in most cases, it is confused and/or used interchangeably with other concepts such as open and distance learning, distributed learning, networked learning, web-based learning, and eLearning. According to Farrel (1999) a *virtual education institution* may be defined as:

(a) An institution which is involved as a direct provider of learning opportunities to students and is using ICT to deliver its programmes and courses and provide

tuition support. Such institutions are also likely to be using ICT for such other core activities as:

- administration (e.g. marketing, registration, student records, fee payments etc.);
- materials development, production and distribution;
- delivery and tuition;
- career counselling/advising, prior learning assessment and examinations.

(b) An organization that has been created through alliances/partnerships to facilitate teaching and learning to occur without itself being involved as a direct provider of instruction.

Within the context of the eLearning programme, the EACEA (2004) stated that European *virtual campuses* refers to: *"cooperation between HEI in the field of eLearning regarding: design of joint curricula development by several universities, including agreements for the evaluation, validation and recognition of acquired competences subject to national procedures, large-scale experiments of* ***virtual mobility*** *in addition to physical mobility and development of innovative dual mode curricula, based on both traditional and on-line learning methods".*

The broad definition put forward by the EACEA involved many issues from partnerships between traditional and/or distance universities and HEI in view of offering joint certificates for undergraduate and/or postgraduate levels to cooperation with learning support services. Also included in the definition are collaborative activities in strategic education or research areas through cooperation involving a wide range of different stakeholders such as researchers, academics, students, management, administrative and technical personnel. The EACEA clearly states that *virtual campuses should in no way be confused with eLearning platforms.*

At the European Commission consultation workshop about VCs, held in Brussels on 23rd November 2004, three definitions emphasising different aspects of a virtual campus were proposed (EACEA, 2004):

- *collaborative* perspective, denoting ICT-based collaboration of different partners supporting both learning and research in a distributed setting;
- *enterprise* (economic) perspective, denoting an ICT-based distributed learning and research enterprise;
- *networked organisation* perspective, denoting an environment which augments and/or integrates learning and research services offered by different partners.

The workshop also highlighted the point that VCs and ICT-based learning organisations are not limited to Europe and that benefits such as time differences, cross-cultural exposure and increased market share provide institutionalised transcontinental learning communities in which a scooping or shared practice project should be addressed.

VIRTUAL CAMPUSES WITHIN THE EUROPEAN UNION

Since 2004 there have been some twenty EACEA eLearning co-financed Virtual Campus projects that cover a wide range of areas such as teacher training, architecture, European languages, advice and support services, virtual mobility,

reuse of digital teaching materials, economics of eLearning, comparative urban studies and biomedical engineering. At a European Commission workshop held in Brussels on 11th October 2005 to explore the issues associated with virtual campuses, the need for a critical review of existing projects in this area was identified (EACEA, 2005). The workshop identified a range of issues that affected the successful implementation and deployment of VCs and their long term sustainability. It was felt that VCs generally have very little contact and interoperability with each other due to a

- general lack of awareness about other VCs;
- lack of self-promotion/dissemination by VCs;
- cross-cultural and linguistic barriers to communication.

The two main recommendations were that:

(i) There should be support for the undertaking of a systematic critical review of existing VC Projects. Within this recommendation it was stated that the theme of the review should be the valorisation of projects and sharing of know-how, the creation of a firm basis and positive environment for the development of VC projects, practical issues as well as obstacles and enabling factors should also be studied as well as the involvement of new players in mixed consortia with more experienced partners. Also highlighted within this recommendation was the provision of assistance for VC projects in the area of self-evaluation.

(ii) There should be the support for project proposals which demonstrate the successful expansion of virtual campuses, supporting the dissemination of replicable solutions for establishing VCs and establishing a community of decision makers involved in setting up VCs. Within this recommendation, it was considered that successful applicants should be able to demonstrate some experience of running a successful VC within a consortium.

THE PBP-VC PROJECT

The Promoting Best Practice in Virtual Campuses (PBP-VC) project is a two year EACEA co-financed project aimed at providing (Cartelli et al., 20008):

- A deeper understanding of the key issues and critical success factors underlying the implementation and best practice of virtual campuses;
- A published practical framework to help guide the process of creating best practice in virtual campuses;
- Raised awareness of the issues and approaches to creating successful and sustainable virtual campuses;
- Raised awareness of how institutional transformation can be brought about by the development and application of new models of VC teaching and learning;
- Raised awareness of how the successful implementation of VCs contributes to the Bologna process and enhances the curricula and the quality of courses.

The PBP-VC project involves working with key stakeholders throughout the European Union in order to investigate best practice in virtual campuses. The findings are aimed at helping institutions and other key stakeholders understand the issues surrounding virtual campus projects and the conditions necessary to help

them progress to a strategic level and thereby achieve institutional transformation.

VC classification criteria

As part of the initial work carried out by the PBP-VC project, a detailed literature-based investigation was conducted into twenty EACEA co-financed VC projects announced on 2004, 2005 and 2006. In addition, a wider investigation was conducted into fourteen virtual campus initiatives that were located outside the European Union. The investigation involved searching for papers, reports and web-based content relating to the projects and highlighting specific instances of good practice that were identified by the stakeholders involved in the projects, as well as looking for specific problems or limitations that might have been identified.

Based on the literature review, we have identified three main models of virtual campuses:

University provision: Institutions established on this model aim at providing university studies to the national or/and international higher education area. Such institutions tend, in most cases, to combine online learning with procedures of face-to-face support provided through partnerships with national and international education institutions. The African Virtual University (a consortium of African Universities coming from 18 countries) and the MIL (Master Program in ICT and Learning offered since 2000 by five Danish Universities) are representative examples of VCs of this type.

Widening access: VCs of this model aim at widening access to higher education, in particular for people with work/family commitments or who live in remote areas. This model furthermore provides students already enrolled in the higher education system with a wider choice of courses through e-learning environments. The Swedish Net University (SNU) and the Canadian Virtual University (CVU), consortia of Swedish and Canadian Universities and Colleges, are representative examples of VCs of this type.

Research and development: VCs of this type act as research institutes to develop digital content, e-learning environments and management systems for their members. The Finnish Virtual University (FVU) and about twenty EACEA funded VC projects (for example eLene, eTTCampus, etc.) constitute representative initiatives aiming at developing sound and sustainable VC in the European area.

Generally, the taxonomy of the models above is formal while many VCs encompass more than one model. Moreover there are four categories of VC according to their format, namely their educational targets and organizational characteristics:

- *Consortium* e.g. collaboration between independent conventional universities and/or dual mode institutions
- *Dual mode institution* e.g. part of an existing conventional university
- *Independent institution* e.g. institution offering studies only through VCs processes
- *Research and development project.*

There are also organizational issues related to the studies offered, e.g. univer-

sity degree, master degree, diploma or certificate. Further organizational themes concern factors such as course modules, ECTS points, duration, the organization which grants the degree, quality factors etc.

Research themes and questions on VCs

There are various reasons justifying why research on VCs is important:

(i) Much of the relevant data, results, conclusions and recommendations in relation to best practice gathered from numerous eLearning and VCs projects are scattered across numerous publications and are not easily accessible to the wider community. The impact of important lessons gained from these projects and initiatives is seriously diminished due to a lack of valorisation of previous results and the sharing or transfer of knowledge in order to create a firm basis and positive environment for the development of future eLearning and VCs initiatives.

(ii) Very little attention is being paid to exploring the new forms of pedagogy made possible by eLearning and VCs. It is vital that effective staff development is provided within educational institutions so that online tutors and developers change the way they think about teaching and learning and how to employ emerging technologies to enhance learning.

(iii) If eLearning and VCs are to be sustainable, this presents a number of key economic, social, pedagogic and technological challenges that learning providers must address. Specific issues such as ensuring that eLearning provides for cost effective and sustainable learning are vital to ensuring long term success.

(iv) There is a need for an in-depth, systematic critical review of previous and existing best practice in relation to how VCs models of teaching and learning contribute to institutional transformation from the perspective of the different stakeholders in order to provide a consolidated information resource that can help decision-makers.

(v) The variety and complexity of ICTs and the potential ways in which they can be used have a significant impact on institutions, impinging on both organisational structures and individual functions (administration, teaching and learning, and research). However in the HEI area little is understood about the affordances of different learning technologies and how institutions are being transformed.

During the last years there is an expansion of research exploring the ways in which technologies can be used to support eLearning, coupled with an increased focus on the associated technological, pedagogical and organisational issues (O'Neill *et al.,* 2004). The PBP-VC project research agenda is defined within a wider pedagogical and socio-cultural context of factors grouped around five main dimensions determining academic quality of VCs and driving our current research interests (Figure 1):

Organisational issues: They generally relate to the running of the virtual campus project and dealing with bureaucracy and problems relating to language and culture.

Technological issues: These issues focus on the setting up of appropriate ICT platforms and tools which form the basis of the virtual campus.

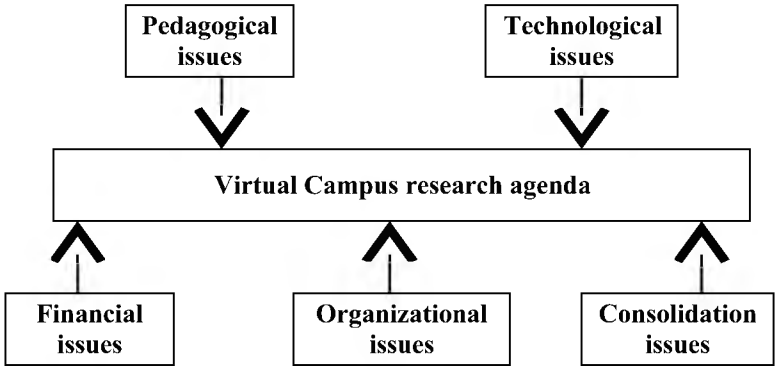

Figure 1: *The PBP-VC framework of research issues on VCs*

Pedagogical issues: They relate to developing appropriate and stimulating educational experiences that are linked to the effective use of ICT.
Financial issues: These issues are often overlooked by many virtual campus projects and relate to using appropriate financial tools and methods in providing effective and realistic cost/benefit analysis.
Consolidation issues: They focus on providing adequate planning and provision to enable VCs to be self sustaining once the initial period of external funding has elapsed.

The five dimensions above were represented in the research instruments developed to explore issues relating to best practice in VCs and to include a greater degree of participation among VCs stakeholders throughout the European Union. The initial literature-based investigation into best practice and success factors underpinning VCs has been further developed in more detail through both qualitative and quantitative instruments:

- **Face-to-face knowledge elicitation sessions** which have been conducted to investigate the more qualitative and interpretive aspects of best practice within the context of VCs by exploring the viewpoints of different stakeholders (namely project coordinators, external evaluators, and learning technologies experts) associated with EACEA virtual campus projects.
- **Online questionnaires** which have been developed aiming at three main groups of stakeholders, namely researchers/developers, students, and management or decision-makers. They provide a means of engaging a great number of VCs stakeholders and projects not covered by the face-to-face knowledge elicitation sessions.

CONCLUSIONS AND FUTURE WORK

This paper has outlined the virtual campus concept and the related research framework proposed by the PBP-VC project. It has presented some of the prelim-

inary results of work aimed at exploring key issues underpinning best practice in virtual campuses. There are clearly a number of important interrelated elements relating to technological, pedagogical, organisational and financial issues that need to be explored and understood if replicable approaches for establishing and sustaining virtual campuses in European Union are to be developed and disseminated.

The PBP-VC project provides a forum through which key issues relating to the development of virtual campuses can be explored and discussed contributing thus to a better understanding of best practice. The results of the project are currently disseminated both within the European Union as well as globally through various ways. Over the next months a detailed framework for best practice will be finalized based on case studies and case scenarios research data.

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