Support Structures to the Teaching Mediated by Technologies

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Abstract

The definition of the name and role of support structures to the teaching mediated by technologies gives identity to the project that we want to implement. However, adoption of the venture is verified only through the involvement of those who will use the resources effectively, which includes participation, conviction and commitment. There are no magic formulas or turnkey solutions that can be replicated, adapted or customized successfully. Thus, the best way ahead seems to be to do a rereading of the best practices, adapting them to needs and local realities.

Keywords: e-learning lab; employee involvement; e-resources; infrastructure; institutional visibility.

Introduction

The definitions and assignments of the structures that are aimed to support and encourage the use of various technologies that can be used as an educational medium are found under a variety of names, forms and actions that may vary depending on the role and importance that these resources have in a given institution.

In this article, the author focus on analyzing how the characteristics and institutional position directly influence the space that these resources eventually will occupy in the several strategies. This involves elements such as its nature (public or private), size, need, motivation of professors, resistance to acceptance and use of technology, proper training, effective use, feasibility and sustainability of the implemented actions.

This is not unanimity, as almost everything in education.

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The main objective of this research was to observe the recent events related to the likely paradigm shift in the educational field and propose to the UAC the adoption of solutions that can, correct implementations already made, and at the same time meet their internal demands and respond to these new challenges.

Not only in Portugal are found some institutions that opted for institutionalizing the use of resources and others that have chosen not to do so, leaving the initiatives in charge of departments and/or colleges. The first option has failed when not properly managed by the parties involved, because projects are receiving a “red light” by lack of adherence of professors who feel excluded from participating even in initial settings. The second option may incur in duplication of structures and efforts, but when it gets results becomes a demonstration effect that can and should be used in the institutional process to be applied to all sectors.

With few exceptions, the vast majority of these structures is subjected to the educational area, because is a support activity where the problem has never been technological, but of effective use of these resources as a didactic option. And this can only be achieved through the involvement of all parties, which includes the participation, conviction and commitment of those who will use the resources effectively.

The focus is not wanting to invent or develop something necessarily new or original, but eventually use everything that already exists, often free of charge and developed by others.

Of course there are many variables to be worked that prevent or hinder the development of these initiatives.

The arguments most often cited are lack of time and skills of professors; along with the absence of a system of recognition or curricular reward. In addition, the lack of interest in pedagogical innovation is also a significant barrier.

Innovation in the use of these resources can happen anywhere, in any country, especially those not attached to old paradigms.

Europe is the cradle of the universities. But tradition is not everything. American universities dominate all rankings. And they do it because they do not replicate old practices; but they innovate in their methods.

A similar approach begins to rise in Latin America universities. It is no longer possible to replicate old concepts and formulas. Developing countries must choose new paths and never try to follow the same path of developed countries. According Lima (1998), “Underdeveloped countries, more than developed countries, can adopt extremely bold solutions. In education, the whole classical situation is a threat to block development. The role of education in the underdeveloped world is to exercise the imagination looking for entirely new solutions and never repeat the historical solutions of the developed world”.

The dominant view of the traditional European universities that have lessons to give (something to teach) to the institutions of developing countries is at least archaic. They should follow the best practices and experiences observed worldwide.

We note in Europe a very great resistance and few accessions in the face of the MOOCs (Massive Free Online Courses).

Guerreiro (2009), on behalf of the GUE/NGL Group (PT) and referring to the various demands says: “stop pretending that you can give lessons to the world”.

In principle and in practice, we are evolving rapidly to broader knowledge ecologies (Peters, 2009) that connect to many sites and learning networks that include both prescriptive and emerging elements.

Some institutions create centres, departments, offices, clusters, laboratories and specific spaces with many different nomenclatures. The independence of these structures in relation to existing departments can collaborate in the process by not encouraging more the existing competition observed internally in all institutions.

This can be considered as the natural evolutionary path, when the training resources will no longer be on the management of informatics services and are replaced by its own facilities. And this refers notably to learning management system, content production and video conferencing systems, among other emerging technologies.

A structure for this purpose conducts studies, trials and investigations related to the development of technology-mediated education through creative and innovative approaches to teaching and learning. Provides training sessions and support directed to the departments, covering a diverse set of topics on the various existing solutions didactically usable. Seeks a professional and organizational development to obtain a more effective education, through the creation of a dynamic research; development and resource centre that performs the prospection, testing, disclosure, dissemination, socialization and contribution to the development of this area of knowledge through active participation in actions and collaborations at local, regional, national and international.

To define the main objectives and features of something to be proposed, developed, deployed and used effectively by an institution it is necessary to consider individual opinions, even when related to a research that aims to be applied and achieve real benefits. Necessarily the process goes through consultation, discussion and criticism of the parties involved, with an emphasis on professors.

Facilitate the exploration of various technologies as didactic and pedagogical tools, stimulate production and socialization of content as well as to propose solutions and new teaching and learning methodologies that are appropriate to the programs and objectives of the institution may be among the options. One interesting practice is to observe how similar institutions are dealing with the matter, but never replicate the solutions found. Rather, it is necessary to give identity to the project, which starts in the very name of the structure to be eventually created.

C. Gomes (personal communication, May 1, 2012) suggests the use of the expressions: virtual education office, virtual studies office, e-learning office, e-learning lab...

Names can be explicit and be related or have no obvious relationship.

The Portuguese pointers server, SAPO (Servidor de Apontadores Portugueses Online), for example, was created in 1995 at the University of Aveiro only as a search engine (мета). To become the property of PT Multimedia passed by the management of other companies (Navegante, Saber & Lazer and Telepac). Along this path added services providing free email, virtual shopping, news portal and internet access; and were created versions for Angola, Cape Verde, Mozambique and East Timor. (http://en.wikipedia.org/wiki/SAPO_(company))

Nowadays ZON Multimedia are exploring more and more the company as a supplier of access and services in broadband and the image is related to the figure of amphibian. (http://www.zon.pt/)

Sapo is the Portuguese word for toad. (http://pt.wikipedia.org/wiki/ZON_Multim%C3%A9dia)

Probably a large portion of Portugueses, Angolans, Cape Verdean, Mozambicans and East Timorese have no idea what the acronym SAPO originally meant.

The word has lost its original meaning.

Google was created two years later (1997), and have in common the fact that they have originated also with a university (Stanford University, with the domain google.stanford.edu) and have also just started their activities as a search engine. Its first name was “BackRub” later changed to “Google”, due to a misspelling of the word “googol”, a term coined by Dr. Edward Kasner of Columbia University, who wanted to baptize a very large number (one followed by a hundred zeros), with a sonorous name and easy to remember. (http://www.google.com/)

(http://en.wikipedia.org/wiki/Google)

The rest is history…

But analysis of Roth (2013) points out some lessons:

Names are important as they provide a brand and give identity to a particular initiative. The original meaning of a name will not necessarily be maintained over time. Changes of names may seem unproductive and incur additional effort of marketing, but often prove to be advantageous. Being the first in a particular initiative does not mean being the best or the most successful. And lastly, certain universities have not administered very well the copyright question, that is, the products and services that are developed in their labs and then become private ventures.

In academia various expressions are used to refer to the structures to support technology-mediated teaching. In particular the names “distance education”, “distance learning”, “online learning”, “distance study”, “study away”, “e-resources”, “teleducation”, “tele-education”, “tele-learning”, “remote learning”, “e-learning” and derivations “blended learning”, “b-learning”, “m-learning” and “x-learning”, among others. In business environment the term “distance training” is commonly used. In a way, there is no distinction between education, learning and training, because it is a constant learning and search for knowledge.

The first two expressions (“distance education” and “distance learning”) are inadequate. Education and learning are processes that happen inside the person, that is, there is no way to perform them at a distance. Both education and learning (which is conceptually linked to education) happen wherever the individual who is being educated or learning is. There is no way to do, not even understand, “teleducation”, “tele-education” and “tele-learning”. Teaching at a distance, however, is entirely possible and, nowadays, it happens all the time.

In Brazil, “distance education” was the expression that overlapped the other, being the most used in books and articles as well as used by professors and researchers in the area. In Portugal, “distance learning” is the term more often applied, probably because educating is much broader than teaching. Brings with it the idea of socialization in all its forms, including teaching. When the one who is teaching is distant with respect to time and/or space, the expression “distance learning” makes perfect sense.

The effects of extensive use in Brazil of the expression “distance education” (or its acronym EAD in Portuguese) are reflected in acronyms and structures related that were created. The TelEduc, for example, is a development environment at the Nucleus of Informatics Applied to Education (NIED), State University of Campinas. (http://www.teleduc.org.br/)

During the year 2005 we had the opportunity to work (as a professor, producer of materials and coordination of distance education) in two Brazilian institutions of nature, characteristics and size totally different.

• Pontifical University of Rio Grande do Sul (PUCRS). (http://www.ead.pucrs.br/)

The PUCRS VIRTUAL is a service unit whose role is to support and manage the actions and policies of PUCRS regarding the distance education mode. The PUCRS VIRTUAL is a service unit whose role is to support and manage the actions and policies of PUCRS regarding the distance education mode. As such, it has training courses for professors, technicians in distance education (ATEDs) and managers of virtual courses, supported by ICT.

• State University of Rio Grande do Sul (UERGS). (http://www.uergs.edu.br/)

Education, through the processes of learning and teaching, involves the constant construction of information and knowledge. In distance education, this interaction occurs between people separated geographically and they need, therefore, technological resources to support communication. In the case of UERGS, this separation is a consequence of the very structure of the University, distributed throughout the state. To overcome the distances and provide integration, the University predicted the networking of all units with the rectory and support of various software applications.

The Nucleus of Distance Education (NEAD) team coordinates the training activities of students, professors and staff, as well as advising on the use of these resources to educational and administrative activities. UERGS is also part of the Gaucha Network of Superior Education at Distance (REGESD), composed of eight public universities of the south of Brazil, under the Pro-Licenciatura program, which offers degree courses free of charge and at a distance. Through this experience, the institution has reinforced its vocation to the distance education. (http://www.regesd.tche.br/)

Some Portuguese initiatives:

• Santarém Polytechnic Institute (IPS). Santarém Higher School of Education (ESES)

Office Open Space to support e-learning. (http://eraizes.ipsantarem.pt/)

It is an office, open to make way for an innovative space, with a hybrid group (e-content, e-platform, e-communication, e-mentoring) permanently to give technical and scientific support. The main objective is to work as a team that will solve any questions arising in the context of changing the content of the curriculum units for e-learning format. In addition to the platform e-Raízes.Redes (eRR), was developed in parallel another complementary platform designated Digi_ZIP_ZAP. (http://www.eraizes.com/digizipzap/)

As a source of enrichment of knowledge, this platform provides a set of basic digital formations with the main objective to support the students. Created within the course Technological Project Methodologies of Masters in Education and Communication of ESES, its content goes through present training units in life histories, LinkedIn, Wordpress, Second Life, Entrepreneurship and Facebook. A great asset is that all these features are presented to the virtual student in e-learning format, thus facilitating lifelong learning.

• Institute of Information Sciences and Administration (ISCIA)

Multimedia Technology Centre (http://www.iscia.edu.pt/servicos.php)

The Multimedia Technology Centre of ISCIA has as main function the technological support of all the teaching and administrative activities that require the use of new technologies to support their activities. With video equipment, sound and digital image already installed and available it is possible to establish a multimedia platform of support for all stakeholders in the educational process of the Institute. With regard to professors, enables and facilitates the creation, editing and publication of didactic material in digital format for subsequent placement on the Internet and, to students, serves as the basis for the development of work for their curricular units. This is a recent lab in constant adaptation to better respond to the constant and growing need for the use of multimedia material as support for educational activities taking place at the Institute. Associated with the implementation of a Multimedia Laboratory is the access to the e-learning platform (FORMARE) installed since 2003 and fully functioning at the Institute. This application of PT Innovation allowed the adaptation of the tool to the reality of ISCIA and purposes that guided its installation to support classes. (http://www.formare.pt/)

In this application each curricular unit has its availability of content space in various formats as well as professors and students have a set of synchronous and asynchronous communication tools. In addition to the content produced by each professor there is another area of vital importance: the library. This feature of the platform seeks to bring together a set of digital resources open to current communities and constantly updated. On the other hand, the same application serves as an area that allows the clustering of interests and cultures where students, professors and administrative staff communicate, share and learn in a collective and dynamic way. Add to that the possibilities for managing applications and personal data, by secretariat, that the tool provides. Within the e-learning activity of ISCIA this lab is also responsible for developing content in SCORM standard to be made available to the academic community.

• Portugal's Open University (UAb)

Laboratory of Distance Education and eLearning (LE@D). (http://lead.uab.pt/)

The Laboratory of Distance Education and eLearning (LE@D), is a research unit based at UAb, dedicated to research and development in distance education and e-learning. Seeks to promote and carry out research in the field of e-learning, distance education and on the impact of digital technologies in the knowledge society as well as promoting dissemination activities of research and advanced training. To achieve its goals, is structured in lines/research groups and, for the purposes of guidance and assessment, each line/research group organized by research projects, understood as scientific activities with specific objectives, duration limited and scheduled execution. The actions of advanced training of human resources, as a result of the research, as well as consulting activities are own projects. LE@D is formed by researchers, associates and collaborators who are organized into three groups: Distance education and network society, focusing on the new trends of distance education in the network, both in terms to innovative theoretical models, as to applied developments based on emerging technological devices; Systems and information and Communication Technologies in eLearning, this research group explores the technological aspect of distance education and networking, focusing in particular information and communication technologies that support and facilitate e-learning methodologies, b-learning (blended) and m-learning (mobile), as well as models and technological support infrastructure, covering topics such as data networks, distributed systems, information systems and security; Education, Cyberculture and Organizations in the Network Society that investigates, organizational models and institutional dynamics that promote innovation and new leaderships in networked communication contexts, particularly in formal educational environments and systems.

• University of Aveiro (UA)

Operational Unit for e-Learning (UOe-L). (http://cms.ua.pt/suporteuoel/)

The UOe-L is a multidisciplinary unit, dedicated to the support for all those involved in e-learning programs of the UA. Its main goals: to create scientific and technological skills that allow the university implement programs and projects supported education and training in information and communication technologies; become a resource centre in e-learning to support professors, researchers and students involved in the UA programs, by providing a set of features and services; lead the operational management of the UA e-learning environment (e-learning platform and work areas existing there, support sites, educational content and users). The UOe-L has its field of action: in the management of e-learning platform of the UA; in the management of working areas (websites), in content management; in supporting users involved; in the quality management of services it provides.

• University of Lisbon (UL). e-Learning Lab. (http://elearninglab.ul.pt)

The e-Learning Lab operates as a unit to support professors and researchers of the University of Lisbon in the integration of technology in teaching and research. Seeks to promote the use of Learning Management Systems and other online applications in support of a more current and innovative training, modernizing the classroom teaching and stimulating the development of b/e-learning practices.

• University of Porto (UP). Support Office for New Technologies in Education (GATIUP). (https://sigarra.up.pt/up/web_base.gera_pagina?p_pagina=18377)

GATIUP's mission is to offer to all professors of the University of Porto, pedagogical and technical support in order to encourage and facilitate initiatives of open and distance learning, taking advantage of Internet technologies, particularly the Web. This mission has as main beams both the presential and online component, that is the blended-learning. However, there are already some continuing education courses fully at a distance. Its objectives are to disseminate and promote the use of Information and Communication Technologies (ICT) in the teaching/learning processes through: dissemination and implementation of events; dissemination of good practices; disclosure of e-learning initiatives elapsed or ongoing in the

UP, notably by conducting biannual sessions for presentation and dissemination of internal projects completed; conducting training for professors interested in the design and management of online course units; support the academic community of UP in the design, production and delivery of e-learning courses, both in mixed regime, that is, presential and distance, as totally at distance; evaluate the effectiveness and efficiency of the introduction of ICT in courses at UP; support the creation of multimedia materials of interest to the teaching and training activities of UP; participate in carrying out works in collaboration with other organic units UP, related to their activities and recognized interest in pursuit of its purposes; maintain a constant updating of knowledge in ICT applied to education, in particular through monitoring and participation in national and international events/projects in this area.

• New University of Lisbon (UNL). Faculty of Science and Technology (FCT)

e.Learning laboratory. (http://elearning.fct.unl.pt/)

The e.Learning lab has a support service to all professors, students, researchers and staff of the FCT in content development in different areas.

• University of the Minho (UM)

Office of Continuing Education (TecMinho). (http://www.tecminho.uminho.pt/)

The e-Learning Centre is a structure that provides specialized support to the development of distance learning process by e-learning, b-learning and m-learning. As an integral part of the Department of Continuing Education, it has created a culture of integration between classroom training and distance learning, especially among trainees, trainers, training bodies, students and professors of UM. The TecMinho is a training entity accredited by DGERT, with top quality profile, with specific accreditation for design, implementation and evaluation of distance learning. The e-learning centre organizes courses specialized in e-learning (90% online), develops e-learning projects tailored to the organizations (in partnership), as well as innovative technologies and pedagogies. Since 2007, all classroom training courses of TecMinho have an online extension in the e-learning platform, which implies the existence of an offer of courses in b-learning environment. Activities of Centre e-Learning: e-learning courses; support to companies/organizations in creating and implementing online training designed to each customer; R&D e-learning projects (national and international); development of e-learning pedagogies and technologies; studies and publications about e-learning; organization of conferences on e-learning. Over the last few years TecMinho has prepared middle and senior management of companies and organizations for the information society and knowledge through the organization and implementation of training courses, 90% e-learning.

The paper argues that in due time the University of the Azores (UAC) will set their own options necessary structures and systems involved, since such details go beyond the limits of a personal opinion from someone outside the institution. To work, this process requires the involvement, consultation, discussion and criticism of the parties involved, with an emphasis on professors. Some suggestions and recommendations:

Must be followed, while possible, the principle of simplicity also known as “Keep It Simple” (KISS, acronym in English of: “Keep It Simple, Stupid”). It is a general principle that values simplicity of design and argues that all unnecessary complexity is discarded. (http://skamv.wordpress.com/2010/11/02/kiss/)

Probably the inspiration of this principle is derived from quotes of Leonardo da Vinci “simplicity is the ultimate sophistication”, Ludwig Mies van der Rohe “less is more”, Albert Einstein “everything should be made as simple as possible, but not simpler” and Antoine de Saint-Exupéry “Perfection is achieved, not when there is nothing left to add, but when there is nothing left to take away”. (http://en.wikipedia.org/wiki/Keep_It_Simple)

This principle teaches that we must fetch the results avoiding any unnecessary complexity.

The KISS principle is directly related to Information technology (IT).

It is common to see many universities using resources that would never be necessary to solve a problem. R. Ribeiro (personal communication, September 10, 2012) recalls that in Portugal: “We have spent many years creating solutions to problems which did not exist with just a senseless waste of resources”.

I conclude by suggesting that the starting point must be the current situation. The UAC uses the Moodle LMS and has video conferencing systems. Provide training and support for these systems is the principle of everything.

The e-learning lab can then rely on passive and active installations of both technologies, and the passive can (should) be easily convertible into active if necessary.

Passive LMS can be understood as one (or more) offline facilities of Moodle, installed on a server under invalid IP or even desktop PCs or laptops. Thus it avoids cluttering the production plant with trials and training. However a video conferencing system "only" passive is inconceivable because of the associated costs. But nothing prevents two or more rooms (individual or small groups) be used by switching (internal or external network).

Personal video conferencing systems (present in all laptops, notebooks, tablets and mobile phones, among other devices available today) can and should be used for experimentation, but do not compare in terms of quality and productivity to systems developed specifically for this purpose.

The use of internal network saves bandwidth (internet) for capacity building, training, trials and testing.

More than equipment, an e-learning lab is, above all, formed by people who not only will provide training and support to others, but also take part in some type of development, testing and approval of new solutions for use by the university.

It is important that it is a multidisciplinary structure, represented by the various existing departments and which also serves as a space for research development, not only basic as advanced, enabling aggregation of solutions and positive differential to the needs of the university and the region.

There are no magic formulas or complete turnkey solutions, ready cake recipes (domestic or imported) that can be replicated, adapted or customized successfully to different social, cultural, economic and technological realities. The best way forward seems to be to do a rereading of the best practices, adapting them to needs and local realities.

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