WCES-2011

Understanding and Intervening in E-learning in Higher Education Institution

Ana Luísa Mateus Oliveira Chança Torres [a]

[a]Polytechnic Institute of Santarém, Complexo Andaluz, 2000 Santarém, Portugal

Abstract

In higher education the situation is marked by an increasing availability and quality of virtual learning environments and social pressure towards integration. Technological developments are not accompanied by the use of appropriate teaching models and contexts, making it necessary to develop research on the structures of support and professional development more suited to the integration of technology in teaching practices. The aim is to highlight the conceptual and methodological journey in developing a training model in the implementation of Learning Manager System (LMS) as a tool in the teaching practices of instructors in higher education, creating for this purpose, a training device.
© 2011 Published by Elsevier Ltd.

Keywords: Constructivist Learning Environment; Higer Education, LMS (Learning Manager System), Mentoring, Instructor Training; Pedagogical Model.

1. Introduction

In the appropriateness of the degrees to the Bologna Process the Higher Education Institutions (HEIs) have been forced to face new challenges such as compliance to a paradigm of student-centered learning, updating the instructor's role as facilitator of learning. The LMS assume, in this context, a relevant function because it provide students a greater freedom space and time in managing their learning and facilitate communication with the instructor.

The context is marked by an increasing availability and quality of virtual learning environments and social pressure towards the integration of new technologies, but the introduction of e-learning platforms in the world of higher education has implications that go beyond the technological aspects and that modify the teaching and learning process. It is for higher education instructors not only prepare students for this new reality as well as adjust to new demands. The road to a teaching quality cannot be guided by innate gifts or learning made by the method of testing error (Eisenhart, Behm and Romagnano, 1991). A teaching quality is to learn in the workplace (Mettetal, 2001), developing ideas based on:

1. The processes by which adults learn;
2. The relevant aspects in the preparation of a course;
3. The management of classroom experiences with students to create learning environments rich and stimulating;
4. What constitutes a good evaluation and how to do it;
5. The aspects that meets during and at the end of the academic year in order to maximize students' later learning (Bain, 2004).

The relevance of this study is that technological developments were not accompanied by the use of appropriate teaching models and contexts, making it necessary to develop research on the potential and impact of using virtual learning environments in higher education, as well as the structures support and professional development best suited to promote their integration in pedagogical practices of higher education.

The intent is to bring to light the conceptual and methodological journey in developing an operating model, training and research in the implementation and effective use of LMS , creating for this purpose, a training device that was based on the following models: a) to design the content model was selected CLE - Constructivist Learning Environments to be indicated by Jonassen for situations in which you want to develop critical thinking and presentation of multiple perspectives in solving real problems; b) for the development the selected model was the R2D2 (R2 - Recursive and Reflective, D2 - Design and Development) Willis and Wright, given the strong emphasis on reflective and collaborative model, c) the relationship between students and trainer has taken a mentoring model called peer coaching set by Showers and Joyce as a method of professional development through which instructors share their knowledge and provide feedback, support and assistance to improve existing skills, learning new skills and resolve problems related to teaching.

The training device must include: a) a process of personal and professional development, promoting technical knowledge and didactic skills for the integration of the tools of LMS in teaching practices, b) a process that promotes reflection and allows instructors to assume their role as researchers in practice and engage in ongoing self-education.

2. Context

2.1. The role of the instructor

The use of LMS in higher education involves developing skills to create networks of interaction distance, especially as regards the management and maintenance of a pedagogical relationship supported by synchronous and asynchronous communication in a digital format. The instructor, in person beyond establishing a relationship with the student, should extend this relationship through a learning platform that allows the additional sessions, which means that the skills required for performing the job of instructor in classroom training, plus if the necessary training in the network which means that its role becomes more complex. Instead of a direct supplier of knowledge, instructors are encouraged to position itself as a facilitator of the collective intelligence of their group of students (Levy, 1999). They cannot be only an expert in content, they should also be expert in the learning process, research strategy for information and to generate and maintain a teaching relationship supported by a form of asynchronous communication.

2.2. The use of Moodle

At the end of the academic year 2008/2009 an analysis was performed on the *Moodle* platform of the School of Education of Santarém (ESES) which had 2126 users of who 312 had the role of teachers, 7 degree courses and 2 master's degrees with a total of 466 curricular units created, 152 with resources and activities and 314 empty. The use of disciplines in *Moodle* platform is related to the instructors and not with the courses, although the degree and Master of Multimedia Education and Communication, by its high number of curricular units related to computers, are the exception.

In the ESES platform the most used resources were pointers to files or pages (3422 records) and the activities were forums (404) and sending a single file (358), values that reflect the use of the platform as a repository of Word, PowerPoint and PDF files, the interaction with students sums up to the delivery of works or the use of forums such as the indication of the working groups or themes chosen.

2.3. Instructor training

The training is an undeniable need for instructors in higher education can respond to their new role and like intended for their practices, should play a constructive model (personalize, investigative, contractual, interactive, reflective), leaving a contextualized reflection for mounting devices training as part of a permanent regulation of the practices and work processes, as reported by Nóvoa (1991a: 21), under b-learning because it is the reality with which confront instructors in this level of education.

3. The base model of the proposed training course

3.1. Design of the contents of the training device

From the context described above has been created a course to an initial group of 20 teachers, called "construction of units under b-learning". The structuring of the course is based on the CLE (Constructivist Learning Environments) proposed by Jonassen (1997). The problem or project context, as verified by analysis of the use of the platform on the ESES lies in the development of curricular units within the platform by teachers. As regards the representation / Simulation Problem / Project, the course structure is designed so that teachers assume the role of students in order to simulate the context, reproducing the same kind of activities that teachers will propose. As space manipulation of the Problem / Project, initially of course the teachers assume the role of students where they will need to undertake the proposed activities and the second stage where the role of teachers will have to create activities to offer its students. The course structure has been designed to allow teachers to experience a course in the two perspectives, developing critical thinking and presentation of multiple perspectives in solving real problems.

3.2. Development of training

For the development of the training was selected R2D2 model (R2 - Recursive and Reflective, D2 - Design and Development) of Willis Wright (2000). This model give the strong emphasis on reflective and collaborative work and is characterized by: recursion ; reflection and participation. Principles that occur during three phases key:
1. Definition - Basic analysis needs and potential use. The aim is to define the general idea of the project. The training course began with a session in person to analysis needs and evaluation of the prerequisites, recording the expectations of each participant and negotiation of the proposed program. Based on the results agreed adjustments were made in the contents, activities and calendar.
2. Design and Development - involves the entire project team, details of the plan shall be established gradually. Design and development are not linear phases separated; the process is flexible and allows you to implement improvements resulting from feedback. Assessment is formative and recursive. The structure and planning of the course presented is open to any change, whether of time or activities. Was carried out a weekly balance of the activities performance so that students could express their difficulties and facilities.
3. Dissemination - Implementation and creation of documentation of a learning environment for dissemination to other disciplines and other schools. The main objective in conducting this course is the effective use of the potential of the platform in the curricular units in the first instance of those involved in this process, seeking input from its fine-tune the structure so that it can be replicated by other teachers and others schools.

3.3. Mentoring

The relationship between trainer and trainees will assume a mentoring model called peer coaching set by Showers and Joyce (1996) as a method of professional development through which instructors share their

knowledge and provide feedback, support and assistance to improve skills current make learning new skills and / or resolve problems related to teaching.

Peer coaching is concerned with both the training room, as with the tutor support that helps the instructor to apply the skills learned, is an ongoing process that involves a training course followed by several extensions of that training, a mentoring process monitoring or individual applications in the content.

3.4. E-moderator

In learning environments, the instructor assumes the role of e-moderator who follows the model proposed by Gilly Salmon, there are five levels or stages guiding the instructor's activity in order to promote the building of virtual learning communities and aiming at the independence of student, working with the other group - the success of online learning depends on the support of participants organized through a structured process of development that is based on five steps leading progressively participants, greater autonomy in learning through a gradual modification of the experiences of online learning with each step.
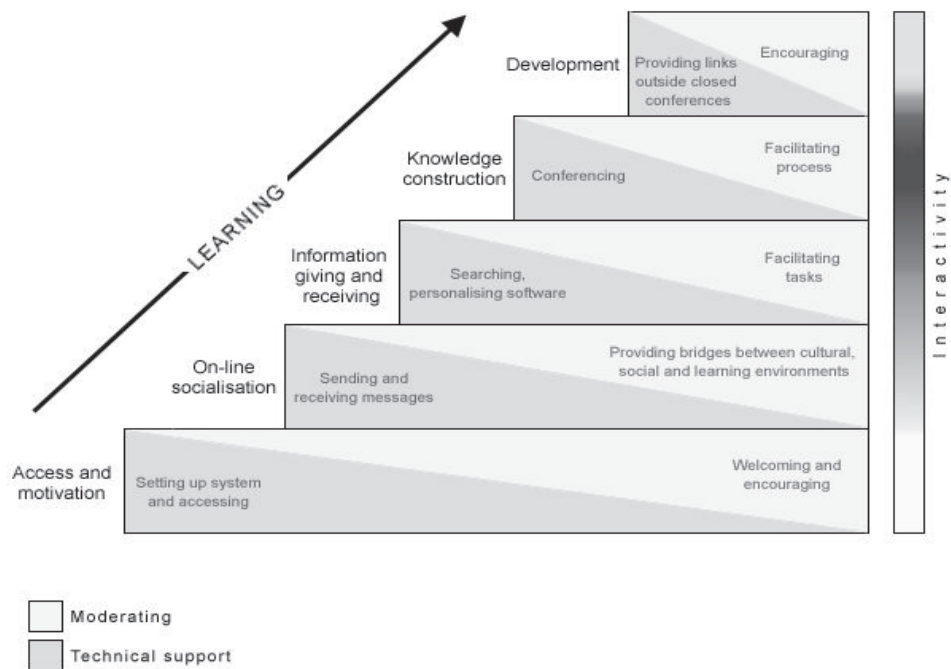
Figure 1 - Model of teaching and learning online through e-learning. Source: Gilly Salmon (2000)

4. Methodology

This research uses an interpretative approach, a qualitative one, to be held in two complementary stages. The first phase will take the form of a case study through which to look for: a) describe the use that instructors at the School of Education of Santarém make the virtual learning environment (platform "Moodle") provided by this institution, and b) diagnose difficulties and problems that these instructors feel the integration of technological tools of the

platform in their teaching. As instruments of data collection for this phase will analyze the existing 466 curricular units in the ESES platform and conducted depth interviews with some instructors.

The second phase of research, largely based on the results of the first phase, will take a format of action research, pursuing, simultaneously, as is inherent to this methodology, purposes of understanding and intervention in the reality studied. So, will involve the design, implementation and evaluation of a training device for a specific group of instructors to facilitate the overcoming of difficulties and problems encountered. After the needs assessment carried out by analysis of the platform and interviews with a group of teachers was conducted a training course under b-learning, as the modality to promote the modules and allow more time flexibility And there is no set schedule but deadlines. The course takes place on the platform Moodle and lasts for 70 hours of which 56 are online and 12 classroom hours. The students begin their use in immersive environment, carrying out learning activities that allow them to apply their acquired knowledge and develop their own content.

The learning methodologies to be adopted in the context of this course are methods associated with constructivism, active teaching techniques being used. In particular we highlight the use of the methodology of project-based learning that will enable students from the beginning, develop their own project and their course of learning content, so the results can be immediately transferable to work settings.

5. Conclusion

The successful use of the LMS through the development of quality content properly applying the pedagogical recommendations for structuring and design of its interface, and respecting the requirements of each of the phases involved in the planning and development of an information unit such as a Moodle course. The major objective of this work is a study whose result is a training device, on a b-learning, using ICT, and to assist the integration of LMS efective teaching practices in higher education and, above all, promote reflection, as reflection in action is elemental to overcome complex situations, allowing the instructor to criticize his initial understanding of the phenomenon and construct a new theory based on practice. Reflection allows instructors to assume their role as researchers in practice (and on the practice) and engage in ongoing self-training.

References

Bain, K. (2004). What the best College teachers do. Cambridge, Massachusetts: Harvard University Press.
Eisenhart, M., Behm, L. & Romagnano, L. (1991). Learning to teach: Developing expertise or rite of passage? Journal of Education for Teaching, 17, 51–71.
Garcia, C. M. (1999). Formação de professores. Para uma mudança educativa. Porto: Porto Editora.
Gomes, M. J. d. S. F. (2004). Educação a distância. Um estudo de caso sobre a formação contínua de professores via Internet. Braga: Universidade do Minho.
Jonassen, D. (1997). Designing constructivist learning environments. , INSYS, 527.
Lévy, P., (1999). Cibercultura. São Paulo: Editora 34
Mettetal, G. (2001). The what, why and how of classroom action research. The journal of scholarship of teaching and learning, 2 (1), 6-13.
Salmon, G. (2000). E-Moderating. The Key to Teaching and Learning Online. London: Kogan Page.
Salmon, G. (2002). E-tivities. The key to active online learning. London: Kogan Page.
Showers, B. & Joyce, B. (1996). The evolution of peer coaching. Educational Leadership, 53(6), 12-16.
Veiga Simão, A. M. & Flores, M. A. (2006) O aluno universitário: aprender a auto-regular a aprendizagem sustentada por dispositivos participativos. Ciências & Letras, Revista da Faculdade Porto-Alegrense de Educação, nº 40, p. 229-251.
Willis J. & Wright K. (2000) A general set of procedures for constructivist instructional design: the new R2D2 model. Educational Technology, 40, p.5-20.