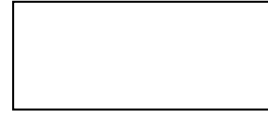


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E-LEARNING AT UNIVERSIDADE ABERTA: AN EMPIRICAL STUDY APPLIED TO MANAGEMENT COURSES

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INTRODUCTION

Over the last decades, we assisted to unprecedented changes in economic and social environment. People and organizations needed to learn in order to deal with changes, innovations and uncertainty, and almost of all them needed to adopt new ways to cope with unknown situations. Therefore, organizations need people with strong and up-to-date knowledge in strategic areas. This led to changes in the demand for higher education courses, in students' characteristics and needs and in the nature of instruction provided to them.

Traditionally, distance education in higher education offered solutions to students who could not be in a traditional classroom. However, the growing need for continuous learning and the unprecedented technological innovation in communications led to methodological changes in the traditional distance education. The change is deep. With the exception of a few studies [1], most of what have been written about distance education in the middle of the 1990s is out of date.

The objective of this paper is to define and share the conception of a research about the population of Portuguese Open University students enrolled in curricular units of the Bachelor in Management. We focus on the transformation process centred on the students environment and their study behaviour and highlight the basic methodological issues with the coming new waves of students that will interact on a much more different context compared with that of the 1990s.

Our intent is therefore to get a better understanding of the transformations of the online higher education in management studies and make progressive contribution to the comprehension of how learning and teaching have changed. There is already a vast literature on online management teaching experience [2, 3] but there is a need for empirical studies. Consequently, we are trying to see how theories and principles are describing correctly the practices of the teachers and students and how

expectations and other variables can contribute to that better understanding of management studies as they were and as they are practiced.

We are still far from a large-scale computer-mediated training for management teachers [4], but our teaching staff is undergoing a process of change and upgrading its online teaching skills [5].

UNIVERSIDADE ABERTA AND E-LEARNING

Universidade Aberta was, until 2006, a traditional Open University with still similar learning methodologies that emerged decades ago. The student, alone with the materials proposed by the teacher, should read the books or didactic texts, interpret them and try to understand the contents. In other words, it was a learner-content interaction [6]. The student could interact with the teacher to get some study orientation or some answers to specific questions. This learner-instructor interaction [6] was possible through correspondence or telephone calls. More recently, e-mail communication has begun to be used. But only a small group of students was receptive to this new way of communication and still most of the students preferred to speak with the teacher, because they did not have access to Internet or they did not feel comfortable to use a computer. The learner-learner interaction didn't exist.

Within the last decade, traditional distance education has turned obsolete. Technological advances and development of new tools to communicate and interact in environments like internet, changed the reality of distance education. The student population has become more knowledgeable with using computers and internet. Students feel the need to interact with peers. And Universidade Aberta needed to adapt its landmarks. A new Pedagogical Model was developed, based on didactic and pedagogical frameworks and models.

Holmberg [7] proposed didactic elements –like reflection questions, self-evaluation activities– in order to promote dialog between teacher and

students. Moore [8, 9] developed the transactional distance theory so that the real «distance» between teacher and student is essentially «pedagogic» and not time-space based.

Garrison, Anderson and Archer build up a theoretical model which constitutes a hallmark in distance learning development [10]. These authors stated three critical components of an on-line educational community: cognitive presence, social presence and teaching presence.

Cognitive presence means that development and growth of critical thinking skills are supported by 'serious' learning environment [11]. Social presence states that the expression of ideas in a collaborative context should imply students' feeling of comfort and safety. Teaching presence has three critical roles:

- first, the learning experience design and organization;
- second, the encouragement of discourse between and among students through devising and implementing activities;
- and third, the role that "...goes beyond that of moderating the learning experiences when the teacher adds subject matter expertise through a variety of forms of direct instructions. [...] In many contexts [...] teaching presence is delegated to or assumed by students as they contribute their own skills and knowledge to the developing learning community" [11].

Garrison, Anderson and Archer's approach is mirrored in the four major building blocks of the Portuguese Open University Pedagogic Model:

1. Learning focused on student;
2. Flexibility principle;
3. Interaction principle;
4. Digital inclusion principle.

This Pedagogic Model focus on student as a learning community member. The student, an active individual, builds his own knowledge and learning process based upon rigorous planning provided by the teacher. Student's active role implies sharing and exchange information, goals definition, and learning self-monitoring [12]. Teaching presence is essential to develop cognitive and social presence.

Flexibility places Discussion Forums has a crucial pedagogic element. Asynchronous communication allows time-space flexibility for students to read, process information, reflect and interact. Asynchronous instruments provide a more democratic access to knowledge and learning, and increases student's participation in the education community. Consequently, the

interaction principle implies the development of student-student collaboration and the growth of teacher's visibility in terms of curricular unit plan, messages and moments of previously planned contacts.

The digital inclusion principle implies educational promotion strategies towards acquisition and development of digital literacy.

CONCEPTUAL AND EMPIRICAL FRAMEWORK

We intend to define and share the conception of a research about the population of Portuguese Open University students who are enrolled in curricular units of the Bachelor in Management. The study will be based upon five dimensions:

- Dimension 1 – Study and work practices of students in current traditional distance learning;
- Dimension 2 – Student interactions with administrative services;
- Dimension 3 – Student interactions with new technologies;
- Dimension 4 – Student electronic interactions with Portuguese Open University;
- Dimension 5 – Student's expectations towards on-line learning.

These five dimensions focus on essential elements constituting two of the building blocks of Portuguese Open University actual transition:

- The transition from traditional distance learning to on-line learning;
- The adoption and acceptance of ICT.

Dimension 1 – Study and work practices of students in current traditional distance learning

Dimension 1 allows us to characterize traditional distance learning. Respective didactic-pedagogical frameworks and models were proposed by Wedmeyer [13] and Peters [14, 15].

Wedmeyer – who was fundamental in Open University creation - argued that education should promote autonomous and independent individuals who are free to make their choices. However, this author also sustained that teachers have to support and guide student. This model implies the separation between the teaching process and the learning process.

Peters' model allowed growth and dissemination of distance learning. This organisational model sustained that «package-

learning» should be efficiently distributed to motivate students interactions with programs and content. Accordingly, industrial production systems were applied to distance learning and this point could be developed in further study.

Dimension 2 – Student interactions with administrative services

The second dimension deals with the characteristics of the interaction of the students with the administrative staff and services of the university. The objective here is to define the types of interactions, whether on campus, by fax, email, web agents and software, by post or by phone and to find out about the motives or reasons of the communication between students and administrative staff. In other words, this dimension is trying to get information on how and why students communicate with the administrative services of the University. This is a very important issue to deal with in the transition from traditional distance education to online education and e-learning methodologies [16].

This aspect of the communication of the students with the administrative staff has been neglected in the literature but some of the information that we can get here can help interpret better the data of the other dimensions. Moreover, these services to the student incur costs both to the university and the student and it is important to know if those services correspond to the expectations students have. This point could be extended in further studies but now we will limit to the how and why questions of the interaction.

Dimension 3 – Student interaction with new technologies

The new Pedagogic Model implemented in Portuguese Open University is based in an online learning context within which students work with software applications and internet tools [12, 17]. Some examples are: word processor, e-mail, information research in Internet, Internet forums and chats.

We want to evaluate students' degree of interaction with technology to conclude about their technical ability to be engaged in on-line courses. Interaction with technology is defined as the students' experience and skills in working with tools and applications that are needed in an on-line course [17, 18]. We identified the variables listed in Table 1.

Variable	Examples of subscales
Knowledge about basic software applications [19-21]	experience in using basic software applications like word processor and spreadsheets
Frequency of basic software applications use [21]	time spent in using basic software applications
Knowledge about Internet and Internet tools [19, 21, 22]	years of Internet experience; experience in using e-mail, forums and chats
Frequency of Internet use [19, 21, 22]	time spent on Internet
Motive to use Internet [19]	e-mail; shopping; information search

Table 1. Variables to “student interaction with new technologies”

Dimension 4 - Student electronic interaction with Portuguese Open University

Portuguese Open University has two systems of electronic communication: a web site, with a wide set of information in subjects like: university's history; list and characterization of courses offered in university; exam's dates; professors' contacts; list of publications and links to courses web pages, for example; and a portal, where students could communicate with administrative services of the university, to have information about their classifications and to make matriculation in courses and exams.

We pretended to evaluate the degree of actual interaction of students with these two systems and their experience of operating with them. Students' perceptions about these systems could explain their expectations, and future success of e-learning in Portuguese Open University. We will adopt a model widely used in information systems field named Technology Acceptance Model [23, 24] recently extended to e-learning field [21, 25].

Technology Acceptance Model (TAM) posits that an individual's beliefs and perceptions of information technology have significant influence on its usage [23, 24]. This model posits that perceived usefulness and perceived ease of use, determine an individual's intention to use a system with intention to use serving as a mediator of actual system use [23, 24]. These are important concepts to our study because digital inclusion is one of the principles of the Pedagogical Model implemented in Portuguese Open University [12].

In our study, we will apply TAM to Portuguese Open University web site and to the portal. We identified the variables listed in Table 2.

Variable	Examples of subscales
Web site (or portal) use [12]	experience in use the system; frequency of use
Perceived usefulness [14, 15, 21, 23-25]	time reduction; information usefulness; impact in individual performance
Perceived ease of use [21, 23-25]	easy to understand; easy to navigate
Intention to use the web site (or portal) [21, 23-25]	future use; divulcation to other students

Table 2. Variables to “student electronic interaction with Portuguese Open University”

The model conceived by Davis [23] is frequently used in studies of Communication and Information Systems and their respective efficacy. ‘Perceived usefulness’ and ‘perceived ease of use’ have been developed and validated as specific variables and hypothesized as essential determinants of user acceptance (idem: 319). Perceived usefulness relates to situations when “... people tend to use or not use an application to the extent they believe it will help them perform their job better” (idem: 320). Perceived ease of use states that “...if potential users believe that a given application is useful, they may, at the same time, believe that the system is too hard to use and that the performance benefits of usage are outweighed by the effort of using the application.” (ibidem). The set of related theoretical frameworks (like self-efficacy or adoption of innovations) supports the assumption that these two variables have a central role in determining computer and new technology use.

Dimension 5 – Student’s expectations towards on-line learning

Recently, other models based on Davis (1989) seminal paper have been applied on on-line learning situations [21]. These authors consider that internet technology favours opportunities for learners in disadvantage and remote locations, and promote exchange of expertise and information [21]. The internet learning environment is enriched because teachers can provide tools to encourage initiative, creativity and learning development which favours the strength of an educational community. For Saadé and Bahli, the student perspective is essential for this kind of analysis: “the introduction of internet-based

learning environments may hinder the learning process if the technology is perceived as being complex and not useful to enhanced performance, and thus a distraction to learning.” [21] We pretend to identify students’ expectations related with on-line learning in Portuguese Open University. On-line learning is already a reality to some courses in Portuguese Open University, but not to Bachelor in Management. However, next year this course will be teach on-line, so students already read and eared about the new Pedagogic Model and have some expectations related with aspects like: assessment, methods of study, interaction with instructors and interaction with other students [8, 9, 12, 13, 17]. Student is assumed to be an active individual who builds his own knowledge and learning process [12]. Learning environment is ready to drastically change in aspects such: types of interaction; professor/instructor roles; students’ involvement in knowledge construction; and types of assessment [11, 18]. Consequently, it is important to evaluate what students really know about these issues and what are their expectations. The variables are listed in Table 3.

Variable	Examples of subscales
Knowledge of Pedagogic Model [12]	existence; assessment; possible interactions; type of tasks; student’s role; professor’s role
Moodle’s experience [10, 11, 14, 15]	experience in use; frequency of use; easy to understand; easy to use
Expectation about study process [6, 11]	comparison with traditional distance learning; type of learning materials; regularity of study; expected number of hours dedicate to study in a week
Expectation about interaction with instructs [6, 10, 11]	comparison with traditional distance learning; type of contacts; regularity in the contacts; motives to contact
Expectation about interaction with other students [6, 10, 11]	comparison with traditional distance learning; type of contacts; regularity in the contacts; motives to contact
Expectation about effort [11]	comparison with traditional distance learning
Expectation about success [11]	comparison with traditional distance learning

Table 3. Variables to “student’s expectations towards on-line learning”

CONCLUDING REMARKS AND FUTURE WORK

Traditional distance education changed and Universidade Aberta needed to implement a new Pedagogical Model. These transformation were motivated by the growing need for continuous learning and the unprecedented technological innovation in communications with still further economic and social consequences.

With our study we want to understand the changes in management education and their consequences on students' actions, perceptions and expectations.

The next step is to develop a questionnaire based in the conceptual and empirical framework presented paper. The questionnaire, after validation, will be responded by the population of Portuguese Open University students who are enrolled in curricular units of the Bachelor in Management.

This study could lead to a better strategy in the online education of management studies to make easier the planning of teaching and learning activities in this new configuration of teaching and learning.

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