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Cross cultural analysis of the use and perceptions of web Based learning systems

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ABSTRACT

The main objective of this paper is to examine cultural differences and technology acceptances from students of two universities, one is from a European country: Spain, and the other is in Latin America: Chile. Both of them provide their students with e-learning platforms. The technology acceptance model (TAM) and Hofstede's cultural dimensions are the tools used to measure the acceptance and use of web-based learning platforms and cultural diversity of respondents, respectively. In summary, we can affirm that the sample of tertiary Spanish and Chilean students are culturally different with regard to some of Hofstede's dimensions, but their behavior of acceptance of e-learning technology globally matches according to the TAM model. This study provides relevant implications for on-line courses managers' who have tertiary students from different nationalities.

1. Introduction

Rather than replacing traditional classroom teaching, e-learning complements it and thousands of on-line courses are being offered by universities and colleges world-wide in this way. E-Learning, also known as Web-based learning is defined as an Internet-enabled learning process (Gunasekaran, Mcneil, & Shaul, 2002).It has been crucial to make learning methods become more portable and flexible (Zhang & Nunamaker, 2003). And these characteristics are even more important in modern higher education. E-learning adoption by university students' is growing at a world-wide level. However, courses completely on-line (without traditional classroom teaching) are less than 5%, and the number of students enrolled in at least a course with relevant on-line contents is ranged between 30 and 50% (OECD, 2005).

However, the diverse cultural origins of tertiary students may derive from different perceptions and evaluations of similar e-learning systems. But, given a common purpose and using technology that may minimize cultural differences, is it possible for universities to overcome some of the cultural barriers to tertiary e-learning? What is the influence of culture on how university students learn and on the technology used to deliver learning solutions in an efficient and effective manner?

Designing and implementing e-learning systems in a multi-culture environment is a challenge for tertiary learning institutions. In an increasingly globalized world the presence of students from different nationalities enrolled in the same courses is actually a fact. Furthermore, the growing competence of colleges and universities trying to attract new students will negatively affect the reputation of those educational institutions do not address these multi-cultural issues properly. Another important matter is related to the impact to the learning effectiveness of multi-cultural students of the design and implementation of e-learning systems. The implications of this study point out all these ideas and will help tertiary educational institutions managers' to face theses challenges in a more efficient way.

As Nathan (2008) points out technical and hard scientific information such as engineering, anatomy, physiology, mathematics, etc., travel well for the simple reason that location and cultural context do not change the basic content of the information and knowledge being presented. But in social sciences the standardization of e-learning could be more difficult because of cultural aspects. Some authors (Raza & Murad, 2008) think that e-learning sets up a new global social opportunity to transcend regional, racial and national prejudices. According to these ideas, a strong controversy about the influence of cultural differences in e-learning exists. The importance of considering cultural differences of students that use Web-based learning platforms is an incipient research stream. The significance of this topic deals with the

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necessity of knowing if e-learning platforms should be accepted, used and perceived in the same manner by all students or national differences should have to be taken into account.

This work derives from the confluence of three current research lines. The first, as we argued above, raise with the use of e-learning platforms in higher education from universities around the world. Some recent studies above this topic are Ngai, Poon, and Chan (2007); Blazic, Law, and Arh (2007); Raza, Kausar, and Paul (2007); and Raza and Murad (2008); Ebner, Lienhardt, Rohs, and Meyer (2010); Law, Lee, and Yu (2010); Hourigan and Murray (2010), Paechter, Maier, and Macher (2010). In the second research stream, the theoretical framework that provides technology acceptance model is used as a tool to study adoption and use of e-learning platforms by university students. There is an important number of studies about this subject, such as Saadé, Nebebe, and Tan (2007), Van Raaij and Schepers (2008), Zhang, Zhao, and Tan (2008), Chang and Tung (2008), Halawi and McCarthy (2008), Liaw (2008), Liu, Liao, and Pratt (2009) and Park (2009). In the third line of research, the key element that differentiates our work is to add to the two previous views the adoption of a cross-cultural approach. This approach examines similarities and differences caused by national cultures in the adoption of e-learning technology by college students. Although there are studies that have addressed e-learning from a cross cultural approach (Phuong-Mai, Terlouw, and Pilot (2005), Teng (2007), Hannon and D'Netto (2007), and Elenurm (2008), there is clearly a lack of jobs that combine the three proposed lines (Grandon, Alshare, & Kwun, 2005).

This paper is structured in the following way. Firstly, the research objectives and literature review are presented. Secondly, a model is proposed. Thirdly, analysis and results of the study are exposed. Finally, the discussion and conclusions are explained.

2. Research objective

The main objective of this paper is to examine cultural differences and technology acceptances from students of two universities, one from Spain and the other from Chile. Both of them provide their students e-learning platforms. The TAM model (extended with some TAM2 and TAM3 constructs') and Hofstede's cultural dimensions (including the new ones published in 2008) are the tools used to measure the acceptance and use of web-based learning platforms and cultural diversity of respondents, respectively. In order to achieve this main objective two research questions have to be answered. The first is to contrast if cultural differences between the Spanish and Chilean samples exist. Spain is a European country member of the European Union and Chile is a Latin-American country associated to Mercosur. To do this, the sample was divided into two groups: Spaniards and Chileans. First of all, Hofstede's dimensions were calculated for each sub-sample. Then an Independent-Samples T Test procedure was applied. The second secondary aim is to compare the same TAM model in both samples trying to study the acceptation of e-learning platforms in both universities. The Partial Least Squares (PLS) path model approach to Structural Equation Modeling (SEM) has been applied to test this second objective.

3. Literature Review

In this section three parts are developed. Firstly, a brief literature review about e-learning in higher education is provided. Secondly, Hofstede's cultural dimensions are explained and analyzed. And finally, TAM models and their applications to e-learning are exposed briefly.

3.1. E-Learning in higher education

E-learning is becoming an increasingly important part of higher education in many different areas of knowledge. According to Tavangarian, Leypold, Nölting, and Röser (2004) E-learning comprises all forms of electronically supported learning and teaching, which are procedural in character and aim to effect the construction of knowledge with reference to individual experience, practice and knowledge of the learner. Information and communication systems, whether networked or not, serve as specific media to implement the learning process. The first courses over the Web started to emerge in 1995 and there has been a rapid expansion of on-line learning since then. One of the main reasons for the widespread use of on-line learning in many institutions is that most students now have access to the Internet. The University of British Columbia, in Vancouver, Canada, offered its first credit courses delivered entirely over the Internet to distance education students in 1996. The same year Murray Goldberg developed a software package called WebCT designed to enable Web-based courses to be offered over the Internet (Bates, 2005).

In order to support e-learning, various Web-based learning systems have been developed for colleges and universities. Such as the Web Course Homepage System (WebCH), Blackboard Learning System, the System for Multimedia Integrated Learning (Smile) and Web Course Tools (WebCT), are some of the latest waves of technology-based pedagogical tools (Ngai et al., 2007). However, Web-based learning must take into consideration that education has activated a shift from the teaching paradigm to the learning paradigm. As a result, students are becoming more independent from the teacher. Unfortunately, much of the development of Web-based learning is carried out without a true understanding of issues that are proper to Web-based learning (Hadjerrouit, 2006). In general, Internet-based activities have been incorporated into regular face-to-face classes as an added resource, without reducing classroom time, but in many cases teachers have reduced the number of face-to-face classes (Bates, 2005).

For lecturers and students, the implications of e-learning are extensive. Increasingly universities must provide quality and flexibility to meet the diverse needs of students – this will inevitably involve tailoring courses to suit differing educational needs and aspirations. Another implication of virtual learning is the increase of international competition for students by many universities, of distance methods of delivery and of new communication tools. These are very useful mechanisms that facilitate the internationalization of higher education (O'Neill, Singh, & O'Donoghue, 2004). For this reason there are an increasing number of students of different countries and cultures enrolled in the same courses. This fact brings into consideration the issue of cultural differences in accepting and reacting to new teaching technologies. Major cultural differences have been found in students with regard to traditions of learning and teaching. In many countries, there is a strong tradition of the authoritarian role of teachers and the transmission of information from teachers to students. Thus, teachers need to be aware of language, cultural or epistemological differences of their students, especially in distance classes (Bates, 2005). However, no differences between students from culturally and nearby countries from Central Europe have been found by Blazic et al. (2007) with regard to the assessment of an e-learning portal. Furthermore, e-learning reflects the new dynamic response to the needs of a knowledge society