Virtual Communities of Inquiry

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INTRODUCTION

Nowadays, there is a widespread conviction that the evolution of computer hardware and Web ("blogosphere") sources can assist instructors and scholars to enrich learning processes with innovative technologically advanced environments. Social interactions and managerial responsibilities are also formed through humans' relationships that defined as frameworks of a community leading to a novel knowledge field with the basic principles of the contemporary pedagogy, such as cooperativeness, cohesion, trust, and mutual support among members (Pellas, Peroutseas, & Kazanidis, 2013).

A careful planning of developing learning communities must be associated with users' (instructors and students) demands in order to be achieved common goals in a persistent workflow. According to Conrad (2002) the duration of the community's Lifecycle has been widely accepted as a component of a network learning environment. The user's presence in the community established as an alternative constructive approach in order to be achieved a high-order relationship of interaction that promoted from the students' capacities to construct and support positive learning consequences (Garrison & Archer, 2000).

The latest technological functions of Information, Communications Technologies and Media Resources (ICT & MR) with the rapid growth of broadband networks like Web 2.0 applications and interactive distributed three-dimensional (3D) virtual environments (3DVEs) have considerably changed contemporary instructional formats (blended and online) of the e-Education. Moreover, social networking systems have changed the Web 2.0 cyberspace in a rapidly growing communication system bringing to the front several facets of a "*networked collectivity.*" Virtual environments (or virtual worlds) in this vein can convert the existing distributed networks into habitable and navigable three-dimensional (3D) locations that can be separated into virtual "places" or "spaces." From this perspective students learn in collaborative workshops and share their experiences synchronously (VoIP or brainstorming) or asynchronously (important messages or gestures). These premises have frequently recapitulated in the last decade through advanced learning practices with the support of virtual worlds (VWs) by enhancing the technological literacy of users (students and instructors). Likewise, the corollary of interactivity and social formalization of modeling allows users to design learning activities, in conjunction with contemporary pedagogical approaches. The emergence of innovative learning technologies has caused profound changes in the current educational system.

The technological infrastructure that was supported from two-dimensional (2D) Learning Management Environments (LMS) and the development of their descendants, i.e. the 3D systems included also virtual communities in turn offered more advantages as a learning process always regards. The typical users' appearances (instructors and students), as cyber entities (avatars) in a common virtual place where they interact simultaneously even from a distance (or not) have significantly influenced the nature of teaching and learning practices. A popular support on this issue is the extension of the computer system that follows a collaborative pedagogical approach that can be utilized from students' social interactions with ICT&MR, called as *Computer-supported collaborative learning* (CSCL).

Although recent studies (Delfino & Manca, 2007; Dunlap & Lowenthal, 2009) have revealed that should be clearly defined a framework for understanding both students engagement and analysis of a constructing knowledge field that is created from their participation in collaborative activities through the Web 2.0 sources. Until now teaching and researching fields determinate the entire "status quo" for the acquisition of knowledge through online environments based on the analysis of:

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1. The interaction of discussion groups, the sense of social presence or cooperation among participants in (asynchronous) learning environments (Rourke & Anderson, 2002).
2. The interaction and knowledge's structure in communities (Swan & Shih, 2005).
3. The construction of an environment can promote students' critical thinking (Garrison, Anderson, & Archer, 2001).

Literally to these provisions, it was found an urgent need for scholars and researchers to explore and configure factors influencing and formulating the interaction between students and instructor, in an online learning community with the implementation of a community of inquiry (CoI) framework (Garrison et al., 2007). The widespread utilization of the CoI framework in 2D LMS was already accepted from a growing academic literature body (Akyol, Vaughan, & Garrison, 2011; Joo, Lim, & Kim, 2011). However, both the life cycle and the beneficial formalization of this model in 3D technologically-advanced environments are still infrequent.

The main purpose of this study is:

1. To give adequately an explanation for the new term of "Virtual Community of Inquiry" (VCoI).
2. To delineate the contexts in which a VCoI can be defined.
3. To emerge the beneficial formalization of the organizational structure of a VCoI with the 3D technological infrastructure that VWs can provide (roots and core).
4. To present the "life cycle" of a VCoI in order to become valuable the transfer of the knowledge field in VWs; and finally
5. To decipher the background for understanding the insightful practical-teaching constructs of a VCoI.

BACKGROUND

Higher education scholars and researchers try to use effective teaching strategies and tools in order to affect students' engagement. In these circumstances, they have exponentially disclosed plans or curricula for new educational perspectives that emerged in various issues of organizing and disseminating the learning information. Through this investigation, a more effective learning of the scholars' attention can be focused on two elements: (a) the students' satisfaction in (formal or informal) courses according to their needs and demands and (b) the added value of the community members' participation, in which they belong, as they are in post-adolescent adulthood and the university is the first pre-preparatory point before their final entry to the society.

These distinctions explicitly indicate an imperative need to examine, organize and create instructors a teaching progress in learning environments that must endorse a strong sense of community, in order to share or compare students' ideas, problems and solutions in collaborative processes (Kamradt & Kamradt, 1999). However, it must first of all be taken seriously into account before getting involved in an e-learning environment the development and management of a community that requires considerable time and effort. A teaching procedure should not have a faceless character, but should be designed with the community through contemporary learning strategies that can be implemented. The computer-mediated communication (CMC) is being used in recent years for various training programs, towards rethinking users' awareness in a community (Kanuka, 2011; Ke, 2010). Regarding the use of CMC in supporting the learning experience, Garrison, Anderson, and Archer (2001) has developed a model (or framework) for researchers to analyze the educational use of CMC and users' presence in communities. The current model can be identified by three key elements: i) the cognitive presence (CP), ii) the social presence (SP), and iii) the teaching presence (TP).

The present model was being on the research area of Garrison, Anderson and Archer (2000), and discussed within the research rounds for more than fourteen years. The analysis of users' presences in learning environments was based on a model of critical thinking and empirical research. Learning, thereof is enhanced with communicative and interactive methods that averred the strong relations between students-instructor and the premier division of this framework that is described through the above three key elements. The existing framework endorses the construction of knowledge as a result of a teamwork between active participants in learning communities in which they interact with other peers (cognitive presence), reflecting an educa-