Chapter 72
Theoretical Foundations of a CSCL Script in Persistent Virtual Worlds According to the Contemporary Learning Theories and Models

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ABSTRACT

Computer-Supported Collaborative Learning (CSCL) has proved to be one of the reliable contemporary approaches to education that is based on the fundamental principles of collaborative learning procedures between users (instructor and students) in electronic learning environments or Virtual Worlds (VWs). This approach to education has resulted in many considerable changes in the traditional "status quo" of e-Education. This chapter presents a literature review of major revamped principles of Learning Theories and Models that occurred in the early 21st century and reinforced the vast majority of CSCL pursuits and capabilities. It adopts Stahl's (2000) theoretical model to articulate a novel framework for e-Education in VWs. The meaning and contribution of this approach to education will be more understandable through the analysis of collaborative learning climate conditions in the 3D technologically advanced environments based on the interests, demands, and needs of trained users.

INTRODUCTION

The fact is well known that e-learning is one alternative and innovative way for teachers and students to use information technology. Many ways to facilitate such an adoption of information technology have resulted in a wave of supporting educational applications. The new knowledge gained from this approach to education mainly for distance learning (computer, internet, e-learning platforms) can create different theoretical structure, in which students are asked to co-exist and co-construct their own concepts of new knowledge. Thus, this approach prompts researchers to generally resolve and determine collaborative practices that are generally facilitating a more sustainable

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future of e-Education. Through these procedures a system of education can be estabiliahed for formal or informal learning within a shared action reasoning and thinking framework. The intergration of e-education tools in education reduces of the distance and the spatio-temporal constraints that may hinder education and result in the formation of a solid structure for the institutionalization of various types of education like adult education, and provide additional material in universities (Trentin, 2004).

Previous experiences of researchers on the issue of e-learnign and adults education revealed some interesting principles (Trushell, Byrne & Simpson, 2012; Tsai, 2007; Tsai & Chuang, 2005; Wang Reeves, 2005; Wang, H, Wang, H., Wang, L., & Huang, 2006), such as:

- The conformation of a common ground in which members use multimedia sources in online learning environments.
- The principle of active learning process through an educational context, in which users convoke the planned teaching practice through the active construction of knowledge for each group and expended energy of each student through students' needs and formulate their own experiences to achieve a common goal.
- The principle of cooperativeness, which will foster the interaction between students and with the instructor, in order to provide the necessary feedback on their actions.
- The management of team's flexibility in interactive learning environments in conjunction with models derived from the field of the contemporary education and theories advocated as models of Constructionism (Papert, 1980b) that brought to the fore new learning models that involve the "trinity" Personal Computer-Internet-Collaborative knowledge field.
- The principles of "internal" (user-based) and "external" (team-based) evaluation involving new packages for innovative educational programs for all levels of education, aimed at satisfying the principle of all-round development of students' personality.
- The gradual dissociation (fading scaffolding) through active processes and active supply construction of an innovative "knowledge field" with its own forces.
- The distribution of projects and constructive standards of learning through the collaborative exchange of knowledge and experience of users necessary for successful program implementation.

The diversity of this educational area has already provided various systems for e-learning since the early formative stages. On the other hand, the diversity should be treated with great skepticism, because various CSCL trends have emerged. Indicative of the growing concern that one of the main dilemmas for the future is whether we will accept the theoretical variety, diversity and the need for the integration and synthesis of these theories in order to create a common theoretical framework. Notwithstanding that computer-assisted activities supports collaborative learning and it was one of the most promising and widespread examples of learning in the history of ICT, there is still a lacking of a general theoretical framework in the field of CSCL with 3D technologically-advanced environments.

The purpose of this chapter is twofold: (a) to present the review of the literature for the most reliable contemporary learning theories and models that can be endorsed in a CSCL enviroment, and (b) to articulate a novel methodological framework according to the Stahl's (2002) model for CSCL procedures in virtual worlds.