

Chapter 8

Towards a Theoretical “Cybernetic” Framework: Discovering the Pedagogical Value of the Virtual World “Second Life”

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ABSTRACT

In the last decade, there is a common conviction and connectedness for modern e-learning practices to use online virtual environments (or worlds) for arousing students' interesting in various experiential activities. In this perspective, this chapter creates and proposes a “Cybernetic Planning Framework” (CPF), which combines the diversity of educational theories and practices, yielding in a common basis for their inclusion. The present chapter focuses on Second Life's qualitative characteristics that can be utilized to construct a “teaching-organizational” framework, which is essential for planning effective and meaningful distance learning courses. This gain averred a “cybernetic model,” in which users enhanced pedagogical authorities and principles of Contemporary Learning Theories that previous studies carried out in Second Life. This premise recapitulates the value-added of this chapter, which can successfully be adapted to any 3D “open” and “sustainable” education system, emphasizing on integration and innovation of teaching methods.

INTRODUCTION

The exponential growth and diffusion of new Information and Communication Technologies (ICT) in Higher Education have significantly changed over the form and manner of operation. With the adoption of new Web-based technologies

are rapidly being developed and still developing, distance [electronic] learning (or otherwise named as “e-learning”) acquired as a new dimension and its features that allows students searching and re-positioning the system's changes, particularly with the regard of web-learning environments. Beneath this light, the guiding axis integration in distance

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education is to offer assistance as educational institutions and collaborative implementation of dynamic change of ideas, taking more account of adult users’ needs and interests, thus helping them to form new relationships with knowledge.

Distance learning through the utilization of ICT can provide the educational research an important “context,” in which students will work and discover knowledge. The components of the “frame-action,” includes the possible correlations between knowledge, values and management practices that leads to social, cognitive and emotional development of the knowledge, which is widely emphasized by the theorists of Cognitive Psychology. The “framework” that we described earlier, requires the construction of new tools for analysis and modeling of interactions and includes four pillars:

1. The criteria that determine the status of an individual or collaborative activity (individual or corporate division of labor, etc.).
2. The interactions that occur between users (type, negotiation of cognitive resources, etc.).
3. Operations that are being performed, such as the constructing model of learning, the foundation of concepts etc.
4. The effect of the activity in the learning process-the cognitive outcome. The most important thing is to understand that the relationship between these axes, whereas a state that determines causes different patterns of individualism and cooperation, can trigger cognitive mechanisms and produce cognitive effects.

From the aforementioned reasons, it is crucial to identify these additional parameters (at least to be associated with past or current theories and principles formalities related to the cognitive process under certain conditions), which either have been ignored or not adequately been examined

so far and to see if they could and they have the potential to lead to positive learning outcomes. The effectiveness of the action-methods will become apparent when it becomes a “good guide” for the navigation of learning activities by encouraging the adult-learner and the other correspondents to interact with the environment. Therefore, it does not give weight in the instrument, but the design models and simulators of the “real” world in order to “build” itself, the student’s knowledge, fulfilling the goal of learning more directly.

This “frame” (or “context-action”) application of psychological, cognitive and social processes, in which they actively adapted, should be considered in advance. During the distance learning process, we must choose the means and methods that best suit to the context. A medium that is used to support a learning activity, which follows the theory of constructive learning approach to teaching, should be anyway as the primary purpose of encouraging students both to co-construction of knowledge, but also for effective collaborative action with the others, so that they persuade: (a) alone to assess the knowledge gained, and then (b) collectively understand the degree of realization of the goals set. But, in order for e-learning to be effective, it should thoroughly be studied in three dimensions that govern it (Strijbos et al., 2004): *pedagogical*, *technological* and *organizational*. The most important of the three considered dimensions is the *pedagogical*, which focuses on teaching and learning process, and how it can be used to enhance this process and the expected results. The *technological* dimension is providing the appropriate infrastructure to enable the implementation of e-learning. Last but not least the *organizational* dimension must be taken seriously in terms of roles and interactions between students, teachers and cognitive resources (see Figure 1).

As Dillenbourg (2008) mentioned, collaborative learning cannot any longer be limited, but it may include individual learning activities (work or pilot studies, etc.) and activities for the whole

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