Chapter 15
U–Learning Pedagogical Management:
Cognitive Processes and Hypermediatic Resources Involved in Web–Based Collaborative Workspace

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ABSTRACT

The Internet has permitted some changes that may not have been foreseen on its initial design. We started to constitute friendly or professional interactions, and it eventually enabled the emergence of collaborative actions that resulted in cognitive processes in unusual ways, that is, that take place without the physical presence of those involved but with the effective participation of everyone involved in a broad and democratic approach, constituting a collective intelligence. In the professional world, these interactions can turn into significant gains to developed activities. This chapter reviews relevant findings concerning the cognitive aspects related to the knowledge construction developed under the collaborative work approach in Learning Management Systems (LMS). When working collaboratively in a LMS, the subjects engage in cognitive processes mediated by hypermedia resources that potentially have positive impact on their ability to construct, sense, and/or produce knowledge, to the extent that these resources dynamically dialogue with the already markedly multimodal human cognitive ability. In order to support the analysis, the authors present the relationship between cognitive processes and hypermedia and their influence on knowledge production in an LMS. They also present two experiences developed in Moodle, which showed the possibility of using such resources for people prone to collaboration, resulting in a continuous design optimization of the mentioned course.

INTRODUCTION

The changes which ark the beginning of the 21st century have deep impact on organization and people's way of living, i.e., the way they deal with each other. The appearance of the computer networks at the late 1970s indicated the potentiality of digital communication hegemony in area of social communication and interaction.

As a result, the new dynamics of the economy grants great importance to information delivered through a variety of media and the construction and diffusion of knowledge which interferes in all aspects of the social life, far beyond the ancient border of the labor world. Such movement promotes changes on the preexisting cultural structures under the influence of new interfaces and digital hypermedia. Certainly, this is a broad and complex phenomenon not entirely understood which lead with computer mediated communication, but not only.

In the context of such transformation, an important aspect is the increase of distance education course proposals in all the educational levels in the last ten years due to the emergence of the so called web 2.0, the improvement of internet connection quality and computer processing capability to home users.

In Brazil, this phenomenon can be testified by the widespread interest of public universities on offering distance education undergraduate courses according to the Brazil's Open University System (UAB – in Portuguese)[1], as such institutions are the most qualified universities in the country. As a centralized federal program, it fails to promote collective and collaborative pedagogical knowledge construction within the institutions, stimulating repetition rather than innovation. Besides the political and bureaucratic issues, there are still technical and cognitive problems. Too often teachers present difficulties in the use of computer systems that support u-learning as well as for those who can't adapt to the use of teaching methodologies appropriate to this type of education. This context favors the frequent absence of collective involvement and collaborative teaching teams focused on knowledge construction to planning, management and development of these courses, even though with the facilities provided by the support of computers. The non-involvement of the collective management proposal contradicts the collegiate, democratic and participative perspective, important guideline for management education.

In order to fully understand the impacts of such changes and its influence on management and on teaching-learning process in u-learning, this chapter addresses the cognitive aspects related to the Human-Computer-Human Interaction (HCHI) in the knowledge construction process through collaborative work on u-learning pedagogical management, i.e., addressing the relation among cognitive processes, cyberculture and hypermedia and their influence on web-based knowledge production.

This theoretical discussion is addressed in the analysis of the experience of the Post graduation Course on School Management and the Course of Formation for City Educational Department Managers, two u-learning courses on which the theories presented here could be implemented and verified. These empirical experiences permitted the verification of web based professional interaction spaces can provide a opportunity of collaborative intercourse in educational enterprises, allowing teachers and coordinators to easily interact and build a community of practice.

INTERCONNECTIONS IN COLLABORATIVE WORK

In the first half of the twentieth century, the management model used by organizations was inspired by the experiences and ideas of Henry Ford, with production at assembly lines of large scale and the theory of scientific management; Max Weber, with studies on bureaucracy that

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