Chapter II

A Comprehensive Web-Based Learning Framework: Toward Theoretical Diversity

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ABSTRACT

This chapter presents a theoretical framework for understanding the Web-based learning (WBL) phenomenon based on disciplines other than education. First, from the organizational communication field, it proposes media richness and social influence models to understand factors affecting media communication choice in WBL. Second, from the managerial field, it proposes the theory of knowledge reuse to understand the managerial challenges that instructors face when creating knowledge repositories for WBL. Finally, from the information literature perspective, it proposes the information structure framework to assess the adequacy of the information for a particular situation. In reviewing these theoretical perspectives, implications of the proposed framework for research and practice are highlighted.

INTRODUCTION

Web-based learning (WBL) refers to the use of Internet technologies for delivering instruction. To some extent, WBL constitutes a new field, because it brings together a number of previously separate domains that underlie practice in education and technology. While the Internet provides the functionality of previous technologies, including audio, video, and videoconferencing, it also affords new technological possibilities that are likely to transform many aspects of education. Among the facets of education likely to change are the forms of content delivery, the level of interaction between students and instructors, and the roles played by students and instructors. To be able to study WBL effectively, researchers will need to be able to apply the theories and findings of diverse disciplines that have been only poorly related until now. With this requirement in mind, the intent in this chapter is to present a framework that supports WBL researchers by connecting the theoretical foundations provided by the reference disciplines of WBL.

Because WBL is a multifaceted phenomenon, different points of view lead to different impressions of it. As an example, from one perspective, the implementation of WBL is its most important aspect. Given this viewpoint, any instance of WBL implementation is a project. Researchers adopting this perspective need to understand the WBL project's resources, its critical success factors, and other issues associated with project management. From another perspective, the learning that students can achieve through WBL, rather than implementation of WBL, is the most important aspect. From this viewpoint, researchers need to understand the determinants of motivation, as well as the influences of students' cognitive characteristics. Still another perspective on WBL focuses on matters of technology acceptance and human–computer interaction, because WBL requires students to use computers.

Recognizing that theory is needed to understand WBL is not new. There have been a number of efforts to create theoretical frameworks for studying WBL. Miller and Miller (2000) discussed theoretical foundations in the design of WBL. Leflore (2000) presented different theories supporting WBL design. Piccoli, Ahmad, and Ives (2001) developed a comprehensive framework to analyze factors affecting WBL effectiveness. In these works, the theoretical foundations have come, largely, from the education field. In this chapter, a framework for the study of WBL is also developed, but it approaches the task of framework development from a different vantage point.

The perspective assumed in this chapter considers that there are disciplines, not specifically focused on educational settings, that can be useful in understanding the WBL phenomenon. For instance, WBL requires that people communicate with each other through the computer. The field of computer-mediated communication has studied, among other things, factors influencing media use, and has developed theoretical frameworks such as media richness theory (Daft & Lengel, 1986) and the social influence model (Fulk, Schmitz, & Steinfield, 1990). These theories, although not originally developed with WBL in mind, provide insights into media capabilities for it.

To summarize, this chapter proposes a framework for the study of WBL based on theoretical foundations from disciplines other than the education field. To accomplish this objective, first, *learning* theories are reviewed, as previous works on WBL do. Then we move on to theoretical foundations from other disciplines. Drawing on the organizational communication field, in the chapter, the literature on media capacity is reviewed. More specifically, the *media richness* model and the *social influence* model are reviewed. Then, drawing on the management field, particularly the knowledge management area, the theory of *knowledge*

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