

# Chapter XII

## Culture's Impact on Technology Mediated Learning:

### The Role of Horizontal and Vertical Individualism and Collectivism

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#### ABSTRACT

*The horizontal and vertical dimensions of individualism and collectivism are an important characteristic of cultures. These dimensions have many implications for the ways in which individual learners use and respond to interactive technologies. This article reports on a study that investigated the impact of culture, specifically horizontal individualism (HI), vertical individualism (VI), horizontal collectivism (HC), and vertical collectivism (VC) on the effectiveness of technology mediated learning. Results indicate that the four dimensional patterns have differing effects on the use of TML communication capabilities, feelings of sense of community, satisfaction with the TML experience, perceived learning, and declarative knowledge acquisition.*

#### INTRODUCTION

Culture is emerging as an important variable in the investigation of Technology Mediated Learning (TML) (Anakwe, Kessler, & Christensen, 1999;

Collis, 1999; Gunawardena, Nolla, Wilson, Lopez-Islas, Ramirez-Angel, & Megchun-Alpizar, 2001; Salvatore, 2002). TML has been defined as “an environment in which the learner’s interactions with learning materials (e.g., readings,

assignments, exercises), peers, and/or instructors are mediated through advanced information technologies” (Alavi & Leidner, 2001, p. 2). This article extends the current examination of cultural influences on the effectiveness of TML by investigating the impact of one cultural dimension: individualism-collectivism at the individual level of analysis. This level of analysis is best conceptualized as “fluctuating pressures or tendencies” (Singelis, Triandis, Bhawuk, & Gelfand, 1995, p. 243), rather than as a distinguishing attribute (used in categorizing nations (Hofstede, 1980).

This research emphasizes the analysis of culture in a single learning setting, as opposed to cross-cultural studies that focus on the impact of culture across different settings (usually multiple geographic locations). One of the major differences in using a single learning setting and examining culture from an individual level of analysis is that the cultural dimensions being studied are not necessarily viewed as bipolar opposites (Triandis, 2004b). Rather, individuals can attribute characteristics of each dimension to themselves. That is, they can be bicultural, having both individualistic and collectivistic traits (Yamada & Singelis, 1995).

Calling for more holistic investigations of how TML can be used to improve the efficiency of delivery and effectiveness of learning outcomes, Alavi and Leidner (2001) stressed the importance of considering underlying psychological processes that are affected by TML. In their suggested framework, however, individual characteristics known to influence these learning processes were conspicuously absent. As Triandis (2004a) states, “cultural psychologists think of culture ‘in’ the person ... there is no psychological process that is not shaped, to some extent, by culture” (p. 30). Therefore, from the perspective of individuals, learning in a TML environment should be influenced by their cultural inclination. Of the myriad cultural dimensions that have been identified (see, for example, Myers & Tan, 2002; Straub, Loch, Evaristo, Karahanna, & Srite, 2002), Individualism–collectivism has re-

ceived the most attention (Triandis, 2004b), at both national (i.e., cross-cultural) and individual levels. We believe this dimension of culture is a critical factor in determining the perceived importance of various TML characteristics (asynchronous vs. synchronous communication tools), the perception of the TML environment itself (i.e., its social context), and as a predictor of learning outcomes. The following sections will expand upon the TML model developed by Alavi and Leidner (2001), and discuss the implications of the individualism/collectivism dimension in order to build support for this study’s hypotheses. This will be followed by a presentation of the study setting, methodology, results and discussion.

## RESEARCH MODEL

Alavi and Leidner (2001) contend that to best examine the effectiveness of TML, the “mutual influence” of a constellation of variables need examination. They propose that instructional technique, coupled with the learning environment will impact underlying psychological learning processes of individual learners, which in turn will impact learning outcomes (satisfaction, perceived learning, and actual learning).

It is our belief that, beyond the characteristics described by Alavi and Leidner (2001), the TML ecosystem consists of idiosyncratic predilections of individuals participating in the learning context (e.g., individualistic and collectivistic traits), and use of the training technology (e.g., asynchronous and synchronous) communication capabilities. In addition, it is our contention that while TML may occur in isolation (e.g., computer-based training), learning outcomes improve from exposure to a social learning context in which learners interact with each other (Richardson & Swan, 2003), the instructor (Arbaugh, 2001; Picciano, 2002), and course content (Swan, Shea, Fredericksen, Pickett, Pelz, & Maher, 2000). Thus, our research model (see Figure 1) indicates that the individualistic-

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