Chapter IV

Team Effectiveness in Virtual Environments: An Ecological Approach

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Abstract

This chapter attempts to address the need for more research on virtual team effectiveness and outlines an ecological theoretical framework that is applicable to virtual learning environments (VLE). Prior empirical studies on virtual team effectiveness used frameworks of traditional team effectiveness and mainly followed Hackman’s normative model (input-process-output). We propose an ecological approach for virtual team effectiveness that accounts for team boundaries management, technology...
use, and external environment in VLE, properties which were previously either nonexistent or contextual. The ecological framework suggests that three components — external environment, internal environment, and boundary management — reciprocally interact with effectiveness. The significance of the proposed framework is a holistic perspective that takes into account the complexity of the external and internal environment of the team. Furthermore, we address the needs for new pedagogical approaches in VLE.

Introduction

As a result of globalization and advances in information and communication technologies, the increased use of virtual teams (VT) in both education and business has become prominent (Weiss, Nolan, & Trifonas, in press). VTs are “group[s] of people who work interdependently with a shared purpose across space, time, and organization boundaries using technology” (Lipnack & Stamps, 2000, p. 18). The need for more theoretical and empirical research on virtual team effectiveness (VTE) (e.g., DeSanctis & Poole, 1997; Furst, Blackburn, & Rosen, 1999) attracted several empirical studies (e.g., Vickery, Clark, & Carlson, 1999; Anderson, 2000; Lurey & Raisinghani, 2001). Most of these studies on VTE were conducted under the systems approach using Hackman’s normative model (input-process-output) for traditional team effectiveness (Hackman & Oldham, 1980).

Previous studies of VTE emerged from the body of knowledge on traditional (face-to-face) teams (Hackman & Oldaham, 1980; Shea & Guzzo, 1987; Pearce & Ravlin, 1987; Sundstrom, DeMuese, & Futrell, 1990; Cohen & Bailey, 1997) and from theoretical perspectives on the interplay between information technology (IT) and organizations (Orlikowski, 1992; DeSanctis & Poole, 1994; Kling, McKim, & King, 2003). In this chapter we will capture the complexity of work groups and IT under a framework that manifests environmental aspects (social, cultural, organizational, and technological) and propose an ecological approach that would be relevant to teaching and learning with virtual teams. This theoretical framework is delineated from synthesizing, adopting, and modifying theories from other fields and levels of analysis. Specifically, we are influenced by several ecological theories, such as ecological psychology at the individual level (Barker, 1968; Bronfenbrenner, 1979;