Chapter 7
Enhancing Virtual Learning Team Performance
A Leadership Perspective

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ABSTRACT
Debate abounds over whether a virtual team is an effective substitute for traditional face-to-face team and can sustain itself. Drawing upon literature on leadership, trust, computer-mediated communication, and teams, the authors propose a theoretical model of online learning team effectiveness. A quasi-experiment was conducted to empirically test the impact of team trust, propensity to trust, leadership effectiveness, and communication frequency on the effectiveness of virtual learning teams and team satisfaction and performance. The results support the majority of the authors’ hypotheses. Trust serves as a mediating role in the relationship between leadership effectiveness and team satisfaction and team performance. Practical implications and future trends are discussed at the end of the chapter.

INTRODUCTION
Virtual teams operate across spatial and time difference via electronic means (McShane & Von Glinow, 2000). They are formed according to tasks, membership and roles (Duarte & Snyder, 1999). Virtual teams exist in many forms to achieve ad hoc and operational purposes. For instance, virtual teams are formed to help an organization recover from disasters. Cisco utilizes virtual teams to facilitate the coordination and communication process within the company and with business partners. Some companies form virtual teams to increase productivity and creativity. Open source software development heavily relies on virtual teams to advance. Call centers are another form of a virtual team to provide customer and technical support services. Virtual teams are prevalent within and outside many
organizations, and in the open source community. The virtual form has many advantages over collocated teams (where team members are physically located together). These include; the flexibility of team coordination and reorganization, reduction of travel budget, frequency of communication, and fast responses to customers’ needs (Suchan & Hayzak, 2001).

Virtual teams formed to perform e-learning activities have a definite set of tasks, such as discussing a business case or completing a case report, to complete within a predetermined length of time. An instructor plans, designs, executes and completes a course. The instructor is responsible for the learning effectiveness of students throughout the course. The instructor performs these responsibilities as a typical project manager; the instructor can approve or disapprove the project outcomes delivered by the virtual learning team. Team members can alternate roles as either a project manager or a team member. Despite the difficulty of establishing social goals (e.g. trust) and aggregating the disparate interest of virtual team members, virtual teams designed for a learning purpose often have clearly stated educational goals, such as a deadline for assignments, course materials to study, and exams to take. The clarity of purpose and the participatory processes are two of the best predictors of a virtual team’s success (Lipnack and Stamps, 1997). As such, it is plausible that it is easier to establish a virtual community in the higher education environment than in the business context.

In this chapter, we will present an initial investigation into how a leader’s effectiveness can influence the effectiveness of a virtual learning team. In addition, the relationships between trust, trust propensity, and communication frequency are examined and their impacts on virtual learning team effectiveness are assessed.

**BACKGROUND**

A virtual team is made of a group of people working independently and interdependently to achieve a common goal (Jarvenpaa and Leidner, 1999; Lipnack & Stamps, 2000). A virtual learning team could be composed of instructor, students, guest speakers, and assistants, all working together to improve the learning effectiveness for students, and teaching effectiveness for instructors.

**Learning Effectiveness of Virtual Teams**

Virtual learning teams need to address the desired pedagogical goals (Leidner & Jarvenpaa, 1995). Effective learning models include the traditional classroom, constructivism, and collaborationism (Leidner & Fuller, 1997). The focus of traditional classroom learning is the dispersion of information, rather than information processing. Its primary weakness is the lack of an active learning process (Kolb, Rubin, & McIntyre, 1984). Experiential exercises are effective approaches in improving communication skills, building self-confidence and motivating knowledge-sharing among team members in the traditional classroom (Gove, Clark, & Boyd, 1999). Constructivism focuses on the knowledge construction process and is an inductive approach to improve the knowledge transfer effectiveness of a learner. Collaborationism differs from the other two learning models in that it exposes students to diversified ideas and provides a more realistic learning context (Leidner & Fuller, 1997; Leidner & Jarvenpaa, 1995). Potential benefits are the improvement of shared understanding, communication and listening skills, and participation.

Collaborative knowledge creation and sharing activities have been evident in a wide range of forms, such as the vertical organizational integration in a supply chain to reduce uncertainty and