Supporting the Implementation of Online Learning

Daniel W. Surry
University of South Alabama, USA

David C. Ensminger
Loyola University Chicago, USA

INTRODUCTION

Technology plays an important role in modern society. It is hard to imagine living in a world without such essential technologies as wireless communication, the Internet, laser surgery, polymers, and jet aircrafts, among countless other examples. Technology has had a profound effect on almost all aspects of our lives including banking, communications, medicine, transportation, energy, and the military.

As in these other areas, technology is now playing an increasingly important role in education. A variety of technologies have been introduced into the schools over the last few decades. Among the most common of these are computer assisted instruction, multimedia presentations, classroom management software, and various assistive and adaptive technologies. In more recent years, distance and online learning technologies have advanced to the point where online learning is now a viable option for the delivery of high quality educational and training programs. The potential for technology, especially distance and online learning, to revolutionize education and training is beyond question.

Despite technology's obvious impact on modern society and its potential to fundamentally alter our lives, fostering the effective use of any new technology within an organization is often a difficult process. Trying to foster the innovative use of technology in educational and training settings can be especially frustrating. In this chapter we will describe a framework that administrators can put in place to facilitate the adoption and effective utilization of new technologies in their organizations. Specific emphasis will be placed on how the framework relates to distance and online learning technologies.

BACKGROUND

There is a tremendous volume of literature on the topic of educational change. Much of the educational change literature is based on the theories of seminal change research conducted in fields such as rural sociology, business, and psychology. Ellsworth (2000) writes that educational change research can trace its ancestry to two broad traditions. The first is diffusion of innovations research, most notably the work of E. M. Rogers (2003). The second is general systems theory, most notably the work of Bela Banathy (1973). Diffusion of innovations research studies the factors that affect the speed by which an innovation is spread throughout a social system. The goal of such research is to develop strategies for increasing the use of innovations. Among the earliest studies in this field, for example, was a study into the diffusion of hybrid seed corn by Iowa farmers (Ryan & Gross, 1943). General systems theory is the study of how a complex set of factors interact to produce a given result. The holistic, systemic perspective provided by general systems theory is an essential tool for change researchers given the extremely complex set of interactions which influence the diffusion process.

In spite of the large and diverse volume of literature related to fostering educational change, many innovative technologies have failed to be fully utilized in educational settings (Burkman, 1987; Surry & Ely, 2007). The reasons for this are not fully understood, but are probably based in a fundamental misunderstanding of the diffusion process on the part of administrators and technology promoters. This misunderstanding is that newer, better, more powerful, and more efficient tools will be readily adopted and effectively used by end users. However, research tells us that, in reality,

the adoption and effective use of an innovation are the result of a complicated and highly contextualized mix of technological, social, personal, and organizational factors. In order to foster the adoption and use of an innovation, administrators must develop a coherent and logical strategy.

MAIN FOCUS: SUPPORTING IMPLEMENTATION

The RIPPLES Model (Surry, 2002; Surry, Ensminger, & Haab, 2005) describes a framework for supporting the implementation of innovations. The framework draws from prior theories of diffusion and implementation including Rogers (2003), Ely (1999), and Stockdill and Morehouse (1992). There are seven components of the model: Resources, Infrastructure, People, Policies, Learning, Evaluation, and Support. Each of the seven components is discussed briefly in this section.

Components of the Model

Resources refers to the financial resources needed to adopt, implement, utilize, and maintain an innovation. Distance and online learning programs generally require a significant commitment of "up front" resources. Most administrators are aware of the start up costs of online learning, but often fail to account for the large continuing costs. Continuing costs can include the ongoing modification and updating needed to keep courses current with both content and technology, instructor salaries and benefits, administrative and clerical costs, costs associated with support for both faculty and learners, advertising and recruiting costs, and money for hardware and software upgrades. Resource allocation is a key consideration given the competing costs associated with maintaining an online learning program and the often limited and sporadic funding for educational and training organizations.

Infrastructure refers to the hardware and software required to effectively utilize an innovation. The success of any distance and online learning program depends in large part on its infrastructure. Much of the literature related to educational change (e.g., Stockdill & Morehouse, 1992; Farquhar & Surry, 1994; Ensminger, 2005) focuses on the critical role of hardware, software, and supporting technologies to the innovation process. In addition to the delivery infrastructure, it is necessary to have a development infrastructure that can be used to create high quality audio, video, and graphic elements for the online courses.

People refers to the impact an innovation has on the personal, social, and cultural aspects of an organization. The importance of a variety of personal factors is a common theme in implementation models (Robertson, 2007). Change, even highly technical change, is not a technological process but an inherently human process. Even a relatively minor change can be extremely stressful to the members of an organization (Surry, 2005). Large scale changes, such as moving from traditional forms of instruction to online learning, often have a profound impact on people's productivity, motivation, career plans, and even such personal things as one's physical health or sense of self worth. The leaders of an organization should try to identify and account for the impact online learning will have on their faculty, staff, learners, and other stakeholders. Shared decision making, communication, feedback, and other forms of participation (Ely, 1999) are critical to understanding the human impact of online learning not only at the initial stage but throughout the process.

Policies refers to the impact an innovation has on the rules, regulations, traditions, and practices of an organization. Any innovation requires at least some accompanying changes to policies and practice to be successfully implemented. The effective implementation of a large, complex innovation such as distance and online learning usually requires organizational policies to be substantially updated, revised, or even totally rewritten. For example, in higher education settings, faculty may be reluctant to devote the time needed to develop online instruction unless policies related to tenure and promotion are modified (Surry & Land, 2000). In business settings, workers who have been given paid work time to attend traditional training sessions should not be expected to participate in online training on their own time. An organization experiencing problems with the implementation of online learning should closely examine its policies to determine if old, out of date, or inflexible practices are serving as a barrier to effective utilization.

Learning refers to the need to maintain a focus on instructional and pedagogical considerations during the innovation process. Most educational innovations begin as a sincere attempt to improve student learning. It is common, however, for issues related to technological, organizational, and administrative problems to result in