

Chapter 15

Managing the Ecology and Sustainability of Online Learning Environments

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ABSTRACT

The future of online learning may be more than technology integration or increasing demands; it has to be humane and sustainable. Project management aiming to provide better online learning environments has to integrate sustainability into its vision and action in order not to burden future generations with careless creations of products or processes. This integration can be achieved by treating nature as a model and mentor and ecology provides the framework for this treatment. The first step towards realizing humane and sustainable online learning environments is to define the online learning ecosystem based on the characteristics of natural ecosystems; the external inputs, producers, consumers, decomposers, organic, and inorganic compounds. Once this ecosystem is defined, the managerial vision and strategies based on ecosystem management principles can be formed. Sustainability studies provide the necessary roadmap for these principles. The objective of sustainability is to be considerate in the usage of resources, not to deplete them and damage the environment with the products and production processes. Management attitudes incorporating these principles would facilitate the growth of humane and sustainable online learning ecosystems which would cultivate efficient learning experiences and their renewal within local, regional, and global resources.

INTRODUCTION

This chapter aims to highlight the need of an ecological approach in online learning project management. Management is the key to success in any project, including online learning. Partici-

pants with diverse backgrounds, various expectations and different teaching/learning styles either individually or within communities interact in an online learning environment. This interaction takes place in ‘any time and any place’ and in terms of management, planning, organizing, securing, and handling resources to ensure effective learning

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necessitates analysis ranging from educational theories to technology integration.

The term ‘online’ places technology and its products at the core and learning theories are not less important. There is no doubt that ‘one size fits all’ is no longer valid for online learning. Studies present various findings and discussions for best practice, theories provide guidelines and explanations but each online learning project remains unique regarding its content, participants and objectives. As Anderson (2008) states, “online learning will be increasingly diverse in response to different learning cultures, styles, and motivations”. It is possible to state that the future of online learning may be more than technology integration, demand increase or theory application. To respond demands from different learning cultures, styles, and motivations, it has to be humane and sustainable; humane in the sense that the expectations of the participants would be fulfilled and sustainable so that resources will not be depleted and continue to serve. Moreover, the online learning process must keep up with up-to-date information and technology, thus has to be renewable. Designing sustainable online learning environments requires an ecological standpoint in terms of project management.

In this chapter, managing the ecology and sustainability of online learning environments are covered under the following arguments: (1) Online learning environments can be defined as ecosystems in which many components (learners, instructors, developers, technology, tools and suppliers) interact and while each preserving its own identity, depend on each other, (2) Project management goals and strategies of online learning ecosystems necessitate an ecological perspective in order to achieve effective learning outcomes and (3) Project management perspective associated with ecosystem management and sustainability principles would promise humane and sustainable online learning environments.

THE ONLINE LEARNING ECOSYSTEM

The term “ecosystem” was introduced by Arthur Tansley in 1935, describing it as “the whole system ... including not only the organism-complex, but also the whole complex of physical factors forming what we call the environment”. Encyclopedia Britannica (retrieved from <http://www.britannica.com/>) defines ecosystem as “the complex of living organisms, their physical environment, and all their interrelationships in a particular unit of space”. Business dictionary definition, (retrieved from <http://www.businessdictionary.com>) explains the ecosystem as: “A self-sustaining community comprised of interdependent organisms (plants, insects, animals) and their natural environment. It provides the food chain through which energy flows, and the biological cycles that recycle essential nutrients and wastes”. An ecosystem defines a unique whole in which all living and non-living elements, the environment, inputs, outputs, nutrients and wastes continuously interact and live by means of energy flows.

Odum and Barret (2005) describe natural ecosystems as open systems where matter or energy can flow into and/or out of the system and the living organisms continuously need external inputs in order to continue functioning. The most important external input needed is the solar energy. Without the continued input of solar energy, biological systems would quickly shut down. For any ecosystem to function sustainably over time, the consumption of resources must produce outputs that are useful for other purposes or for other species without generating waste (Kışlalıoğlu and Berkes, 2010). In natural ecosystems, primary producers are the major functional aspect. All photosynthetic plants are primary producers. Energy from the sun is captured by the process of photosynthesis and this is the first step in the production of energy for living things. Living organisms consume the energy produced by the

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