Chapter 25

Design-Based Approach for the Implementation of an International Cyberlearning Community of Inquiry for Medical Education

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ABSTRACT

This chapter describes the conceptualization and implementation of a cyberlearning environment as a community of inquiry (CoI). This environment includes 13 medical schools from Sub-Saharan Africa and their 50-plus partners from around the world. The theoretical foundations of Communities of Inquiry provided the framework that drove the design of the web-based platform used in this project. Through an emphasis on learning from conversations, the resulting cyberlearning environment was designed to foster engagement among faculty, staff, and students of the 13 medical schools and their partners. Recognizing that generating a virtual community of inquiry framed around the cognitive, social, and teaching presence is no easy task, the approach taken for the design was based on conceptualizing the development of such a community along a continuum that addressed the depth of interaction for each presence. This type of design assumes a phased-in implementation. The chapter describes this conceptualization by addressing the core communication strategy used, which underlies the interactions to support learning from conversations. In addition, the chapter addresses key environmental constraints and how these constraints guided operational decisions during implementation. In addition, the chapter discusses challenges and solutions, as well as lessons learned.

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INTRODUCTION

This chapter describes the conceptualization and implementation of a cyberlearning environment as a community of inquiry (CoI) that includes 13 medical schools from Sub-Saharan Africa and their 50-plus partners from around the world. Cyberlearning is defined as the use of “networked computing and communications technologies to support learning” (NSF Report, 2008, p. 5). The theoretical foundations of Communities of Inquiry (Garrison, Anderson, & Archer, 2000) provided the framework that drove the design of the web-based platform used in this project. Through an emphasis on learning from conversations, this cyberlearning environment was designed to foster engagement among faculty, staff, and students of the 13 medical schools and their partners. Formal, non-formal, and informal learning opportunities are merged in the design of this environment. Definitions of formal, non-formal, and informal learning have been adopted from Colardyn and Bjornavold (2004, p. 71). Formal learning is intentional—recognized through earning a diploma, certificate, etc.—and occurs within an organized and structured context (formal education, formal training certification). Non-formal learning is also intentional but tends to be embedded in planned or structured activities that in and of themselves are not designated as learning activities. For example, in the design of the environment live webinars were aligned with key content themes (e-learning in medical education, medical education research methods, research support, and community-based education). These live webinars were archived and made available as resources. Learners could explore the archived webinars on their own and still move through a series of webinars following the structure provided based on the key content themes. In other words, a learner could explore webinars categorized as e-learning on topics such as digital libraries, open educational resources, etc. Finally, informal learning or experiential learning is learning that results from daily experiences and tends to be incidental instead of intentional. A “who’s online” extension was enabled as part of the cyberlearning environment to allow for opportunities among learners of impromptu conversations.

The merging of formal, non-formal, and informal learning within the design of the cyberlearning environment extends the utilization of the CoI framework as a process model beyond its traditional focus for use within formal educational environments. It is within this context that the chapter examines how the CoI framework could be used to serve as the process model for the design of a fused formal to informal cyberlearning environment. A design-based research approach is used as the lens of the exploration into whether the initial design of the cyberlearning environment would generate and support the cognitive, social, and teaching presence core to the CoI theoretical framework. In addition, to further identify participant needs, given the initial design, system data is collected and interviews are conducted with participants. Results inform re-design and expanded opportunities for learning.

BACKGROUND

The core team responsible for the design and development of the cyberlearning environment consisted of medical educators, senior programmer analysts, and instructional designers. This core team was based at a private university in the United States that coordinated efforts among the 13 schools in Sub-Saharan Africa.

It became apparent early on, due to the multi-dimensional elements that underscored this project (listed below), that the design of this cyberlearning environment needed to have flexibility to allow for both formal and informal opportunities for engagement among the 13 primary institutions and their partners. The elements that had to be accommodated were considered integral to the design of the cyberlearning environment and included:
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