

Forums and Wikis and Blogs, Oh My: Building a Foundation for Social Computing in Education

Timothy J. Ellis and Maxine S. Cohen
Nova Southeastern University, ellist@nova.edu, cohenm@nova.edu

Abstract - The goal of this study was to build a conceptual foundation for the educational use of Web 2.0 social computing technology by conducting an analysis of the studies reporting pedagogical uses of wikis, blogs, and threaded discussion forums. The analysis included an identification of the distinguishing and the shared characteristics of each of these asynchronous computer mediated communication tools, followed by an assessment of the implications of those characteristics.

Index Terms – Asynchronous learning networks, Blogs, discussion forums, social computing, Web 2.0, Wiki

INTRODUCTION

The importance of interaction within an online learning environment has been well established [3-5]. Web 2.0 advances offer new tools beyond the time-tested threaded discussion forum [3] to promote greater interaction in the online environment. Most specifically, the wiki [5] and the blog [2, 7] have been especially visible as promising innovations for use in an ALN. Unanswered, however, is the question of just what new features and functionalities each of the new technologies offer and how those features match types of educational goals and the associated learning activities [10]. The importance of fitting technology selection to the task is well established, both in general [12] and specific to the richness of interaction within asynchronous communication environments [14].

The goal of this research was to build a conceptual foundation for the educational use of Web 2.0 social computing technology by performing an historical study to identify the distinguishing and shared characteristics of wikis, blogs, and threaded discussion forums.

BACKGROUND

Social software, including email, threaded discussion forums, blogs, wikis, collaborative bookmaking, and text chat are common examples of social computing technologies that have been used to enhance learning in online environments. The promise of social computing as a boon to learning in an online environment is based upon its potential to promote greater interaction in an ALN. The importance of creating an engaging, highly interactive learning environment has been clearly established [3-5]. Although various descriptions of precisely what constitutes an “interactive learning environment” have been offered [4, 5,

17], four components are evident: interaction with instructors, interaction with classmates, interaction with course content, and interaction with the course interface. The potential of a social computing technology can best be considered in the context of these four elements of scholarly interaction.

Decisions about which technology option to implement are best made when based on the nature of the task to be performed. The fit of the technology with the task to be performed – the task-technology fit (TTF) – has been defined as “... the degree to which features of a technology match the requirements of the task and the abilities of the individuals involved with the task.” (p. 1) [12] Effective implementation of TTF entails attention to three aspects of “fit” [18]: task-related, or the “... appropriate combinations of specific task-characteristics and technology performance” (p. 130); use context-related, or the specific places and conditions in which the technology will be used and the associated aspect of technology performance; and user-perceived technology performance, or perception of the maturity, stability, and reliability of the technology.

The TTF model has been effectively employed to evaluate alternative technologies for group support systems (GSS) [10]. Although a GSS is certainly not identical to an ALN, the three dimensions identified for technology in support of a GSS do appear applicable to the ALN: communication support, process structuring, and information processing.

RESEARCH METHODS

The data coding scheme was developed by adapting one validated for assessing GSS technology [10] to the ALN [4]. In specific, the following categories were examined:

1. Communication support, including: a) Support for interaction; b) Types of media supported; c) “Openness” of the environment; and d) Delivery modality.
2. Process structure – interaction with the course interface in terms of: a) Locus of control; and b) Organizational paradigm.
3. Information process, including: a) Support for student-content interaction; b) Tools for artifact development; and c) Nature of the artifact developed.

Table I presents the data derived from this analysis.

TABLE I
Wikis, Forums, and Blogs Comparison

Category	Wiki	Blog	Forum
Communication Support			
Student-instructor and student-student interaction.	Since the paradigm upon which the wiki is based is one of modifying or expanding upon the work of others, it is essentially a peer-feedback system without formal distinction between instructor and student input [1].	Since the paradigm is based upon a personal journal model, there is no formal distinction within the system between communication made by the student to the teacher, the teacher to the student, or student to student.	Interaction is based upon a post and reply process.
Types of media supported	Being based upon open-source, web-based software, the artifacts developed in a wiki are web pages. Any media that can be displayed on the web can be included in the wiki [2].	Since the blog is based on open source, web-based software, the journal postings are web pages, any media type that can be displayed on the web can be included [6]	Type of media supported is largely limited to written text, although files containing video, audio, and graphic media can be attached to postings
“Openness” of the environment	Essentially an open environment available to all with web access [1].	Essentially open, available to all with web access [7].	Typically a closed system, available only to registered members.
Delivery modality	Essentially a “pull” system, requiring users to access regularly to determine if changes have been made.	“Push” through syndication.	Essentially “pull”; members must access the forum to determine if new postings have been entered.
Process Structure			
Locus of control	Essentially democratic; all users can freely edit the work of others [8].	Each blog is owned by the individual author [9].	Instructor.
Organizational paradigm	Prototyping; evolving web pages [11]	Electronic journal [13].	Reply structure [14]
Information Process			
Support for student-content interaction	Students become co-creators of content [15]	Individual student becomes the creator of content [7]	Although the discussion board offers unlimited potential for significant depth to postings, there is no specific structure provided to promote such activity, resulting in a great number of rather shallow, “social filler” postings [16]
Tools for artifact development	Generally a rather simple tool set for developing web pages.	Simple tool set for developing web pages.	None native, beyond basic html tags.
Nature of the artifact developed	Web site.	Electronic journal containing authors’ thoughts and comments from readers.	Textual, lacking system-provided structure

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