

Social Networking in Web-Enhanced Courses

Karen S. Nantz, Eastern Illinois University, USA; E-mail: ksnantz@eiu.edu

Norman A. Garrett, Eastern Illinois University, USA; E-mail: nagarrett@eiu.edu

INTRODUCTION

The use of the Internet for delivering courses has become a pervasive influence on undergraduate and graduate curricula. Current figures indicate that fully 12% of Internet users in the United States use the Internet to take an online course for credit toward a degree of some kind (Pew/Internet, 2006). That number is indicative of the rapid proliferation of online courses over the past several years.

Classifying web courses becomes problematic because the web-enhanced course is a blend with the components of the traditional class and course management software, a course listserver, instructor-student e-mail, collaborative activities using RSS feeds and related technologies.

Navarro (2000) suggests that faculty are far more likely to start by incorporating Internet components into a traditional course rather than directly offering web-based courses. These web-enhanced courses might be considered the transition phase to the new paradigm of Internet-based courses. Rich learning environments are being created, with a shift from single tools to the use of multiple online tools, both to enhance traditional courses and to better facilitate online courses (Teles, 2002).

Lee Rainie, Director of the Pew Internet and American Life Project notes that the role of experts, such as teachers, has changed. The Internet has empowered amateurs. New teaching models and methods have developed as educators try to adjust to changing student attitudes (Rainie, 2006). The new educational model becomes "the net-savvy, well-connected, teacher-independent end-user" (Castells, 2000).

Approximately 96% of undergraduate students at a midwestern, public university come to school equipped with at least one computer with university-supplied high speed Internet access. (Nantz, unpublished research, 2006). Researchers at Ball State University found that 30% of a waking day is spent with media as the sole activity with an additional 39% spent with media combined with some other activity. Part of the expectation of the current college population is that two-way technologies are the norm (instant messaging, weblogs, and online journaling, for example) and that online communities provide a rich environment for information sharing ("Average Person", 2006). According to Pew data, almost half of Internet users access list servs, RSS feeds and bulletin boards to stay engaged.

Clearly, there are many compelling reasons to use web-based resources in a course, including greater efficiency in the delivery of materials, providing up-to-the-minute

content, enhanced status for the course and faculty, fostering student-to-student collaboration, and the use of technologies with which the students are increasingly familiar and comfortable.

RESEARCH VALIDATION

We have implemented the learning community paradigm in a variety of classes using several RSS technologies (RSS feeds, blogs, and wikis). Anecdotal evidence suggests that this approach enhances the instructional experience for students and exposes them to a wider variety of ideas than is possible with only the instructor as a source.

The learning community is, essentially, a social network. Social networks are based upon network theory, which focuses on the connections in the network. Any given social network has $n(n-1)$ connections possible, where n is the number of nodes in the network. In a classroom, that includes all students plus the instructor and any other relevant individuals (graduate assistants, etc.). That is not to say that all connections will be used in any network. This is just the number of possible connections. In reality, each potential connection may be used in one of four ways:

- No connection exists
- Unidirectional connection, with interaction flowing primarily from node A to node B
- Unidirectional connection, with interaction flowing primarily from node B to node A
- Bidirectional connection, with interaction flowing in both directions

For example, the relationship between a teacher node, X, and a student node, Y, might be primarily unidirectional, from X to Y. A relationship between a student Y, and another student, Z, might be bidirectional.

Further, there is the strength of the connection to consider. It is likely that the strength of the connection between an instructor and a student will be high. The strength of a connection between students will likely vary greatly.

To analyze the efficacy of peer-driven learning communities in the classroom, it is necessary to examine the social networks that result from such communities and to compare them with the social networks that exist in classes wherein the learning

Figure 1. Instructional communication matrix

	Non-interactive	Interactive
Synchronous	Lecture Webcasts Videos	Discussion Managed Meetings IRC Chat Internet Messaging (IM) Webinars
Asynchronous	Podcasts / Vodcasts Webcasts Wikis	Discussion Boards Weblogs RSS Feeds / Syndication Cellular Text Messaging (SMS)

community has not been formally established, or is operating on an ad-hoc basis. To do this, a network diagram must be established for both the control and the experimental groups. In order to do this, we intend to establish network maps for each class, both for those participating as experimental groups and for those not participating (controls) by asking students about their learning relationships with other students and instructors in the class. In so doing we will establish:

1. The number of potential connections actually in use in the network
2. The nature of those connections
3. The strength of the connections that are in use

We will undertake a statistical analysis of the differences between the control and experimental networks to see if the difference is significant and if the resulting experimental network can, indeed, be enhanced by stronger and more plentiful peer-to-peer interaction.

Finally, the authors will discuss using synchronous and asynchronous communication with both non-interactive and interactive components as indicated in Figure 1 (Garrett, 2006). This model can enhance web-delivered instruction and meet student expectations for two-way communication and online communities.

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