Ivory Server -- A Reimagining of Virtual Learning Environments

by Chingfu Lan, Faisal Anwar, Hui Soo Chae

Table of Contents

Ivory Server -- A Reimagining of Virtual Learning Environments ........ 1
Table of Contents ................................................................. 1
Introduction and Problem Statement ........................................ 1
Proposed Solution: A Teaching & Learning Environment for Teachers College ......................................................... 2
A Preliminary Review of Existing Tools and the Need for a New Approach .................................................................. 3

Introduction and Problem Statement

This project is intended to explore what an online learning environment should be. It is an attempt to re-imagine existing approaches to online education (such as LMS's, social networking sites for education, blogs, etc.). Rather than simply discarding or critiquing these existing tools, our intention is to synthesize the best of all these approaches while also presenting an approach that is consistent with current evidence and theory on effective learning and professional advancement in educational systems. To this end, our goal is then to answer the following questions:

- THEORY: What does a community-driven online environment look like (as opposed to solely faculty driven environments)?
  - What insights do existing online learning tools provide in this regard? What features are valuable and where do they fall short?
  - What insights are valuable to incorporate from the pedagogical literature on both online and physical learning environments?
  - What basic purposes should an online educational environment accomplish.

- IMPLEMENTATION: Can we build an example environment that begins to incorporate the theoretical ideal above.

Our focus is on the higher education sector for this particular iteration of the system. It is likely that K-12 systems would have significantly different aims and goals as compared to higher education, so targeting our audience in this way is necessary. For example, the role of career advancement and professional networking tools may need to be very different (both functionally, and from the perspective of safety and security of participants) for a K-12 cohort as compared to older students. Even within the higher education environment, our initial focus is on research or professional schools where the goal is to provide students...
with an education that ideally extends beyond knowledge transmission through courses.

**Proposed Solution: A Teaching & Learning Environment for Teachers College**

To address the theoretical questions laid out above, we intend to conduct thorough research on online learning environments: their purpose, past implementations, and the benefits and drawbacks gleaned from experience with such systems. The key artifacts we intend to produce for this phase include research publications and presentations that will document the current state of online education and our evaluation of the efficacy of existing tools.

Beyond just research, we believe it is important to take a first pass at trying to build an actual learning environment. Based on our initial review of literature (below), we envision an innovative design of a more sociable online learning environment that facilitates professional knowledge and skills building, contributes to informal learning among peers and professional networking among students, faculty and alumnus, and provides credentialing. In this new platform, current students in higher education institutions perform both formal learning of a variety of academic courses as well as informal learning such as professional culture immersion, and socialize with fellow students, faculty members, and alumnus. Faculty members instruct more efficiently, innovatively and creatively in this online learning environment and network with students inside and outside of their institutions. Alumnus can update their professional skills by taking online courses and contribute their expertise to their schools by instructing online courses or providing consulting services to other students. Students from across the globe who are interested in networking with members in this institution can register in online courses offered by institution members in this online learning environment.

For implementation, we intend to build a prototype system for the Teachers College Teaching & Learning network. This abstract network is intended to be initially a community of students at a research university (Teachers College) who would like to provide instructional services and academic support to one another. Such support can be in the form of teaching mini-courses on a wide variety of topics (basic statistics; TC's doctoral certification process; qualitative research overview; basic probability in a weekend, etc.) or through other channels like mentoring and document-sharing. Our objective for the fall semester is to build an online environment that facilitates the Teaching & Learning network, while exploring the theoretical and practical questions around online learning.

Part of the purpose of this initial prototype is purely exploratory: to build something basic, to learn what such an implementation involves in terms of resources; to identify challenges and additional issues during the implementation; and to provide an artifact that more closely aspires to the type of environment that our research suggests which we can then critique and improve in a concrete fashion. Despite the exploratory nature of this project, we have identified certain key elements of our prototype environment that will help make it functional and serve our analysis purposes in the future:

1. The initial implementation of Ivory Server should have a strong concept of user profiles and relationships that help to build community within an online environment.
2. While recognizing the value of informal learning, such an environment should also provide opportunities for formal or semi-formal learning paradigms. In particular, we would like to provide a re-imagined manifestation of the online course that is integrated with the
There should be an initial attempt to tailor the experience of users around their own personal preferences and behavior. Resources and activities in the environment should be presented in a way where they are easily directed to what is most useful to them without being overwhelmed with too much information or too limited in what they can access in the community.

At the initial stage, our Teaching & Learning network will target current TC graduate students who are interested in topics that are not offered by TC faculty members. In the near future, T&L Network will open to prospective students who seek to be familiar with TC academic environment and network with current TC members before applying to it. Currently, T&L Network has 7 mini courses, and expects to expand to 15 -20 courses at the end of fall 2009 semester.

Finally, our solution attempts to retain the notion of school boundaries, although the nature and reach of those boundaries may change. The goal is to create an environment for students that is tailored to a particular educational institution or community. This could be a university, a higher education cooperative, a professional program or organization (both virtual or physical), etc. Each institution brings with it its own set of faculty, students, alumni, and course content. Our solution will connect these elements together in a way to maximize the benefit of being part of a particular educational institution.

A Preliminary Review of Existing Tools and the Need for a New Approach

The innovation of technologies has enabled new learning experience possible in higher education. One such example is learning management system (LMS). LMS provide new platforms for educational instruction, interaction, and assessment and are used in more than 70% of the colleges (Bradford, Porciello, Balkon, & Backus, 2006, p. 301, in Grant, 2008). Although LMS are popular and provide convenient features such as file sharing and discussion forum for online learning, Craig (2006) contends that current design of learning content management system needs to be reevaluated since a new generation of users deeply influenced by web 2.0 culture might find it inflexible and traditional. Beldarrain (2006) points out that social software creates new dimensions to online distance learning and allows more interactions that are keys for online learning experience. In short, a variety of new technology features are available for LMS to enhance their “sociality”, the state of the community that influence online participants’ experience of social presence and social navigation in online community. Sociality of an online community is important because it highly correlates with participants’ learning satisfaction and behavior intensions to use technology (Laffey et al. 2006).

Since social network sites are one of the most popular social software among the youth, scholars increasingly interest in their educational effects. danah and Ellison (2007) define social network site as: “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.” While social network sites undoubtedly provide great sociality, less is known about how they serve educational purpose. In his study of 612
students’ usage of Facebook in a UK college for five months, Selwyn (2008) finds that students use SNS to reflect on their university experience, exchange academic information. Further, Selwyn (2008) points out students' postings are guided by “norms of disengagement, disorganisation and mild disgruntlement”, and in a sense Facebook as a backstage space helps participants to shape and negotiate their identities as college students.

While SNS provide informal learning space, it does not provide formal learning opportunities such as professional knowledge sharing. Furthermore, current SNS service might become a disadvantage for students’ professional development. In the field of education, for instance, prospective teachers are often required to shut down their social network account for professionalism, which is evident in a statement of a local association that “It is our advice that if teachers have Myspace or Facebook pages, they take it down immediately to protect themselves and their jobs (Columbus Education Association, p.2, cited in Saunders 2008).” Saunders’s (2008) qualitative research reveals that teachers negotiate with their personal and professional selves on these social network sites by using a variety of strategies such as tighten privacy settings, use a different name in a new social network for anonymity, or change content to fit professionalism.

In sum, technologies have offered new online learning possibilities in higher education. While LMS provide convenient features for online instruction such as file sharing, discussion forum and the like, they need advance their sociality. SNS have great sociality, but fail to meet the needs of professionalism. It is necessary to develop a new platform that accommodates both online educational activities and sociality that facilitates user online user interactions.