6 DEVELOPING PERSONAL LEARNING NETWORKS FOR OPEN AND SOCIAL LEARNING

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Abstract

In 2008, an open access, graduate level, educational technology course was offered at the Faculty of Education, University of Regina. The development and facilitation of this course was inspired by philosophies of the open source movement, recent trends in social media, and pedagogies designed to inspire the open, transparent, and networked learning of its participants. The outcome of this course could hardly have been anticipated. By the end of the semester, non-registered participants outnumbered registered students 10 to 1 as a larger educational community formed around the course. The resulting experience has provided insight into the potential for leveraging personal learning networks in open access and distance education.

Introduction

In January 2008, I led an open access, graduate level, educational technology course at the University of Regina titled "Education, Curriculum, and Instruction (EC&I) 831: Open, Connected, Social." This fully online course was developed and facilitated using primarily free and open source software (FOSS) or freely available services. Additionally, the course demonstrated open teaching methodologies: educational practice inspired by the open source movement, complementary learning theory, and emerging theories of knowledge. The course challenged typical boundaries common to more traditional distance education courses as students built personal learning networks

(PLNs) to collaboratively explore, negotiate, and develop authentic and sustainable knowledge networks. This latter focus became a catalyst that, as one student described emphatically, "blew the doors of this course right off their hinges." As a result, the context for learning shifted from the potentially mundane to an engaging series of events where the twenty registered students freely interacted with at least two hundred other educators, theorists, and students from around the world.

EC&I 831 has received considerable attention by academic researchers and educational bloggers. Dave Cormier (2008) wrote that the course provides "an ideal example of the role social learning and negotiation can play in learning." Jeffrey Young (2008) listed the course as one of three examples of a "growing movement" towards experimenting with open teaching in higher education. George Siemens (2008) described the design of the course as "an important source of insight" that served to inspire the development of the "Connectivism and Connective Knowledge" (CCK08) course, the inaugural Massive Open Online Course (MOOC) facilitated by Siemens and Downes. Personally, my experiences in developing and facilitating this course have been the most exciting teaching and learning experiences of my academic career. It is my hope in writing this chapter that I capture and document relevant reflections and activities to provide starting points for those considering open teaching as educational innovation.

This chapter is broken into three sections. In the first, I briefly outline key theoretical foundations that influenced the design and development of the course. This section combines philosophical, pedagogical, and practical considerations to inform a model for open teaching. In the second section, I describe the course experience in detail. This discussion includes an overview of emerging technologies used in the course and an outline of the various course activities and assessments. The third section provides discoveries related to the role of personal learning networks, outlines techniques for developing and leveraging PLNs in distance education courses, and describes the role of emerging technologies in building and facilitating networked interactions.

Theoretical Foundations

Several overlapping bodies of theory and practice informed the development and facilitation of EC&I 831. This section briefly identifies relevant points from the following areas: the open movement, complementary learning theories, and connectivism. The section ends with a description of how these areas informed a model of open teaching for the course.

The open movement

In 2003, I initiated a two-year-long study that examined the perceptions, beliefs, and practices of educators who participated in free and open source software (FOSS) communities (Couros, 2006). Through data collection and analysis, it was revealed that the majority of participants were strongly influenced by the dominant philosophical views inherent within these FOSS communities. Participants identified strong tendencies towards collaboration, sharing, and openness in their classroom activities and through professional collaborations. Generally, these individuals identified themselves as part of a larger phenomenon, later defined as the "the open movement."

> The open movement is an informal, worldwide phenomenon characterized by the tendency of individuals and groups to work, collaborate and publish in ways that favour accessibility, sharing, transparency and interoperability. Advocates of openness value the democratization of knowledge construction and dissemination, and are critical of knowledge controlling structures. (Couros, 2006)

In the early stages of this study, participants expressed frustration with perceived barriers that limited the adoption of openness in their practice. Several technical barriers were identified (e.g., software not available, suitable, or mature; sparsely available content), but soon, many of these issues improved or were resolved. One of the most advantageous developments was perceived to be the sudden popularization and availability of Web 2.0 tools. Study participants and their students alike had now gained the ability to *easily* create, share, and collaborate

through emerging technologies such as blogs, wikis, podcasts, and social networks. Coinciding with this greater access to publishing came the greater availability of educationally relevant content. Participants gained access to information resources such as Wikipedia, course content through initiatives such as MIT OpenCourseWare and the OER Commons, and multimedia and video content through services such as YouTube. The dilemma of the educator shifted quickly from a perceived lack of choice and accessibility to having to acquire the skills necessary to choose wisely from increased options.

Other relevant discoveries from this study included differences in the practical and philosophical beliefs of participants. The positioning of each individual ranged from open source zealot to hobbyist; from those who refused to use *any* proprietary software, to others who voiced more practical beliefs regarding the adoption of tools. To a FOSS purist, the perceptions of the latter group would likely be considered unacceptable. For the professional educator, these more practical beliefs supported greater options for the adoption of emerging technologies. It is this latter, more general, view of openness that informs my emerging framework for open teaching.

Complementary learning theories

Several learning theories have influenced my approach to distance education and online learning. These include social cognitive theory, social constructivism, and adult learning theory (andragogy). As much has been written regarding each of these theories, this section serves only to highlight key points of each theory as it relates to the emerging concept of open teaching.

Social cognitive theory (SCT), also known as social learning theory, suggests that a combination of behavioural, cognitive, and environmental factors influences human behaviour. SCT posits that humans learn through their observations of other individuals. If one observes particular behaviours that become associated with favourable outcomes, such behaviours are more likely to be adopted by the observer (Albert & Bandura, 1963). Another relevant feature of SCT is Bandura's (1997) concept of self-efficacy that he defines as "people's judgment of

their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Bandura considered self-efficacy beliefs to be the most influential arbiter of human activity and an important element in conceptualizing student-centred learning environments (Lorsbach, 1999).

The theory of social constructivism, attributed to Vygotsky, is related to social cognitive theory in that both theories emphasize the importance of the sociocultural context and the role of social interaction in the construction of knowledge (Woolfolk & Hoy, 2002; Derry, 1999). Instructional models influenced by social constructivist perspectives highlight the importance of collaboration among learners and practitioners in educational environments (Lave & Wenger, 1991). Another important feature of social constructivism is the concept of the zone of proximal development (ZPD). The ZPD is commonly expressed as the difference between what a learner can do independently and what the same learner can do when tutored (Vygotsky, 1978). Moving beyond tutoring, Tabak (2004) introduced the concept of distributed scaffolding, an emerging approach of learning design that incorporates multiple forms of support that respond to the diversity of learner needs and to the complexity of given learning environments. Through a greater understanding of how individuals construct knowledge and skills, the role of the social environment, and the design of flexible learner support, educators can increase student performance in both face-to-face and distance learning environments.

Adult learning theory, also known as andragogy, is based on the perception that adults learn differently than children, and that these differences should be acknowledged and accommodated. Knowles, primary developer of this theory, argued that adults generally possess different motivations for learning and have acquired significant life experiences; both of these factors greatly influence the learning process (1970). Due to these key differences, Knowles proposed the following principles for adult learning:

(1) Adults need to be involved in the planning and evaluation of their instruction.

(2) Experience (including mistakes) provides the basis for learning activities.
(3) Adults are most interested in learning subjects that have immediate relevance to their job or personal life.
(4) Adult learning is problem-centred rather than content-oriented. (p. 43)

These general principles proved to be beneficial in supporting the learning of the participants of EC&I 831.

Connectivism

Connectivism, originally developed by George Siemens (2004), is a "Net aware" theory of learning and knowledge (see chapter 2, this volume) that is heavily influenced by theories of social constructivism (Vygotsky, 1978), network theory (Barabási, 2002; Watts, 2004), and chaos theory (Gleick, 1987). Connectivism emphasizes the importance of digital appliances, hardware, software, and network connections in human learning. The theory stresses the development of "metaskills" for evaluating and managing information and network connections, and notes the importance of pattern recognition as a learning strategy. Connectivists recognize the influences that emerging technologies have on human cognition, and theorize that technology is reshaping the ways that humans create, store, and distribute knowledge.

The following principles of connectivism were most relevant to the development and facilitation of EC&I 831:

- Learning and knowledge rests in diversity.
- Dynamic learning is a process of connecting "specialized nodes" (people or groups), ideas, information, and digital interfaces.
- "Capacity to know more is more critical than what is currently known."
- Fostering and maintaining connections is critical to knowledge generation.
- A multidisciplinary, multi-literacy approach to knowledge generation is a core to human learning.

> Decision-making is both action and learning: "Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality." (Adapted from Siemens, 2005)

A connectivist approach to course design acknowledges the complexities of learning in the digital age. The theory offers insight into how learning can be managed through the better understanding of emerging technologies and their relationship to knowledge networks.

Open teaching

Through an exploration of the above influences, I developed the following definition for the concept of open teaching. This definition helped to inform the epistemological, philosophical, and pedagogical considerations for EC&I 831.

Open teaching is described as the facilitation of learning experiences that are open, transparent, collaborative, and social. Open teachers are advocates of a free and open knowledge society, and support their students in the critical consumption, production, connection, and synthesis of knowledge through the shared development of learning networks. Typical activities of open teachers may include some or all of the following:

> advocacy and use of free and/or open source tools and software wherever possible and beneficial to student learning;
> integration of free and open content and media in teaching and learning;
> promotion of copyleft content licenses for student content production and publication;
> facilitation of student understanding regarding copyright law (e.g., fair use/fair dealing, copyleft/copyright);
> facilitation and scaffolding of student personal learning networks for collaborative and sustained learning;
> development of learning environments that are reflective, responsive, student-centred, and that incorporate a diverse array of instructional and learning strategies;

- modelling of openness, transparency, connectedness, and responsible copyright/copyleft use and licensing; and,
- advocacy for the participation and development of collaborative gift cultures in education and society.

Open teaching is an emerging concept, and this most current framework is one that guided the design of EC&I 831.

EC&I 831 in detail

This section will provide thorough detail of the development and facilitation of EC&I 831. Covered areas include a general overview of the course, details of the project's initiation, arguments for the primary learning environment, and a description of the course facilitation model.

Overview of the Course

EC&I 831 is a graduate studies in education course that focuses on the appropriate and critical integration of technology and media in K–12 classrooms. The course is not new — it has been around since 2001 — but when originally submitted to the university calendar, it was written broadly enough to provide sufficient flexibility for future course development. This feature has allowed for its extensive tailorability and responsiveness to changes in the field of educational technology, from the shifting focus (e.g., recently from eLearning to social learning) to the types of emerging technologies available to universities and colleges.

The section of the course discussed in this chapter ran from January to April 2008. There were twenty registered students, most of whom were practicing teachers (K–12) or educational administrators. The graduate courses in our faculty have a typical maximum of sixteen students, but I requested an overload due to student interest in the course and because of the peer-supported pedagogical approach proposed.

Project initiation

The Government of Saskatchewan offers Technology Enhanced Learning grants for the development of online courses, and $30,000 was awarded

for EC&I 831. Typically, when granted an award, the "content expert" (myself in this case) is assigned instructional design and multimedia support personnel. For EC&I 831, I opted out of this support for three main reasons. First, I possess a strong background in instructional design and multimedia. While the university support for these areas is excellent, in envisioning the design of *this* course, I did not feel these were the areas on which I wanted to spend the bulk of the grant money. Second, considering the type of course I was teaching, I felt that there was no better way to research the area of emerging technologies than to immerse myself in the design, development, and testing of the various tools and strategies. These activities were powerful in ascertaining the various advantages, disadvantages, and social affordances inherent within the various tools implemented. This flexibility also avoided being locked into a tool that did not pedagogically or practically suit the emerging needs of learners. Finally, I identified that the area of support most needed for this course was in the development and support of the participants' personal learning networks. Thus, two learning assistants were hired as social connectors, and their primary responsibilities were to support students in the development of PLNs. These connectors were not tied to a tool or to a learning environment, but directly to the participants — their technical experience, their unique needs for support, and their learning goals.

Primary learning environment

In the weeks preceding the course, there was much research and discussion regarding the choice of a primary learning environment. Several were tested, and the following gives a brief overview of our conclusions.

WebCT (now BlackBoard) At the time of the course, WebCT was the officially supported Course Management System (CMS) at the University of Regina. WebCT was appealing for two reasons: the university had a strong infrastructure of support for WebCT, and the enrolled students had prior experience with the environment. WebCT was rejected, however, for the following reasons: it was a proprietary system that could not be modified without vendor support, the learning environment

favours directed learning rather than constructivist approaches, and licensing fees were expensive and increasing in cost. Additionally, a goal of EC&I 831 was that students would be able to explore tools in the course and then apply them to their own professional work. WebCT was not freely available, free, or low-cost, and participants would not likely have much access to this tool in their school divisions.

Moodle Most readers will know that Moodle is a free and open source Course Management System that has been adopted with success in a number of educational institutions. Moodle was seen to be more favourable than WebCT in that Moodle is FOSS, modifiable, and has strong community support. Moodle also touts a "constructivist and social constructionist" approach to learning through its full range of tools and modularity. Moodle is also more available to course participants, although the software requires particular server infrastructure (e.g., PHP) and technical expertise, leading to hidden costs such as hiring a developer to setup the platform (chapter 10). The reasons we did not choose to adopt Moodle include: the software was not as easily available to participants as we hoped, the concept of the CMS is heavily course-centric rather than student-centric, and the majority of Moodle content modules represent a top-down instructivist approach to learning.

Ning Ning is an online platform that allows users to create their own social networks. Ning is not considered a CMS tool, but because social networking was to be an important activity in EC&I 831, Ning was a strong candidate for a primary learning environment. Ning's favourable characteristics include: ease of use, freely available, familiar functionality for Facebook users, community- and individual-level privacy options, user-centric spaces, content aggregation, and the inclusion of basic communication tools. The reasons we did not choose to adopt Ning include the lack of a wiki feature and the awkwardness in including core content material (e.g., syllabus, scope-and-sequence, assessments).

Wiki A Wikispaces.com hosted wiki was the primary environment chosen for EC&I 831. We reviewed several FOSS wiki software engines (MediaWiki, MindTouch Deki, TikiWiki, PhPWiki), as well as three hosted wiki services (Wikispaces, PBWiki, WetPaint). While we desired the level of administrative and data control a self-hosted option would give us, we were hesitant due to the time cost identified for patches, updates, and spamming issues. A hosted service provided us with strong technical support, and we could avoid advertising for a small monthly fee. We chose Wikispaces.com as it was the senior, best-known, and most stable of the three major providers, offered solid technical support, allowed options for CSS/theme modification, and had a simple user interface that supported many third-party services. The resulting wiki can be found at http://eci831.wikispaces.com.

Course facilitation model

The following section will outline and describe the course facilitation model through a description of the major assessments and related activities performed by course participants.

Major assessments Three major student assessments guided the activities of participants for EC&I 831: the development of a personal blog/digital portfolio, the collaborative development of an educational technology wiki resource, and the completion of a student-chosen, major digital project. Activities related to each of these assessments were designed to require and/or result in the development of a personal learning network. Thus, PLNs were both the prerequisite to and the outcome of successful completion.

(a) ***Personal Blog/Digital Portfolio:*** Each participant was responsible for developing a digital space to document his or her learning through readings and activities, to provide a space for personal reflection, and to create a personal hub for networked connections. In most cases, these spaces quickly became showcases of student professional activity, and acted as distributed communication portals — alternatives to centralized, managed discussion forums. Students chose

from a number of free services to host their spaces (e.g., Wordpress.com, Edublogs.org) and each blog was customized by the user, both functionally and aesthetically. In most cases, these blogs continue to be maintained and have remained active well beyond the official end date of the course.

(b) ***Collaborative Wiki Resource:*** Students worked collaboratively to develop the content of a wiki focused on the use of technology in education. The resource, found at http://t4tl.wikispaces.com, is the result of hundreds of student edits, and covers topics such as tools and techniques, digital pedagogies, virtual worlds, mobile learning, course management software, digital storytelling, podcasting, and screencasting. The site also provides case studies of technology use in the classroom that are supported by rich, multimedia examples.

(c) ***Major Digital Project:*** The major digital project was designed so that students could develop a relevant resource for their specific professional context. Some students produced videos, instructional resources, or other multimedia. Others engaged in social networking activities: participation in global collaborative projects, development of private social networks, and development of localized professional development workshops. The completed activities represented a vast range of student technological competencies as well as professional and personal interests.

Tools and Interaction There were a number of synchronous and asynchronous interactions designed throughout the course. This section outlines these interactions and describes the tools used.

(a) ***Synchronous Activities:*** Two synchronous events were planned weekly, and these averaged in length from 1.5 to 2 hours. The first session of the week was focused on content knowledge and in connecting students to leaders in the educational technology community. Ten presenters in all were invited, and these included Canadian educational leaders such as Dr. Richard Schwier, George Siemens,

and Stephen Downes. All sessions were interactive and recorded in various formats, including an audio-only podcast version. The second session of each week was a "hands-on" session where participants would learn both technical skills related to the dozens of tools used in the course, as well as the tools' pedagogical possibilities.

Several tools were used to facilitate the synchronous sessions. Adobe Connect, a proprietary web-conferencing tool, was first chosen as a relatively inexpensive solution. Unfortunately, Connect was dropped after only two sessions as we experienced poor audio, system crashes, and negative user feedback. Elluminate, a more expensive alternative, was used next. This tool was found to be more stable, but students and presenters complained about the "primitive" user interface and system crashes. The larger identified issue was that the tool was expensive, proprietary, and not available to most of the participants for their own use. Finally, we began to experiment with ustream.tv (a free video-streaming service) in combination with Skype audio-conferencing. The combination of these two free services created a stable video-conferencing tool that became the preferred choice for course participants and presenters. More importantly, unlike both Connect and Elluminate, this configuration was not bound by a licensed seat limit. This allowed us to invite other "informal" participants from outside the official course. A precise description of how ustream.tv and Skype were used can be found at http://educationaltechnology.ca/couros/765.

(b) ***Asynchronous Activities:*** Participants also engaged in a number of asynchronous activities between our weekly sessions. Some of the most common activities of participants included:

- reading, reviewing, and critiquing course readings through participant blogs;
- sharing and reviewing articles, tools, and readings through participant blogs or through posting to Delicious (social bookmarking service) with the common course tag (i.e., eci831readings);
- creation of screencasts, tutorials, or other resources for self-referencing or to assist other participants' understanding;

- reading, reviewing, commenting, and subscribing to blogs from outside of the course community;
- participation in open, viral professional development opportunities (e.g., Edtech Talk, OpenPD);
- posting created content to Youtube, Blip.tv, ustream.tv, Diigo, Voicethread, Mind42, Google Docs, or other collaborative, social media services;
- microblogging through Twitter or Plurk;
- collaborative design and development of lesson plans or instructional sets; and,
- continued development of the collaborative course wiki.

Many of the asynchronous activities were completely unplanned. Participants worked with individuals in the course community, but often, strong bonds formed with individuals outside of the course due to common interests. Through both the synchronous and asynchronous activities, personal learning networks grew as individuals freely connected with those interested in the content and collaboration, and not solely because of the identification with a specific course. Social interactions became authentic, dynamic, and fluid.

Personal Learning Networks in Distance Education

The first synchronous session of EC&I 831 was a private session with only the registered course participants in attendance. In this session, I briefed students about the potentially open nature of this course and that non-registered participants would be brought in to give formal presentations, to comment on student blogs, and to interact in other ways not yet known. Although optimistic, I was not yet sure at the time how I would solicit interaction from "outsiders" with these students. Yet, only two to three weeks into the course, it became evident how important the development and utilization of my PLN would be in supporting the pedagogical model of the course. To share these understandings, this section will provide a brief definition of personal learning networks and provide strategies for leveraging PLNs in distance education courses.

Conceptualizing the PLN

When I began conceptualizing this chapter, I envisioned a literature review focused on the differences between personal learning environments (PLEs) and personal learning networks. While there is a growing field of research and thinking behind the concept of the PLE (chapter 9), the academic research on PLNs is much more anecdotal. A quick Google search will deliver hundreds of blog entries highlighting the importance of the PLN, dozens of strategies focused on how to build a PLN, and many K–12 conference presentations focused on the PLN as professional development. Yet, a definition of the PLN — one that differentiates itself from the PLE — does not readily exist.

Long before I read anything about the PLN, I discovered a variation of the concept as it emerged in the practice of the participants of my doctoral study. Through this research, I noted a significant increase in the social connectivity related to the practice of study participants. This phenomenon was a vast departure from what was understood as a "typical teacher network," one often bound by local curriculum, school district, and geography. I developed two diagrams (Figure 6.1 and Figure 6.2) informed by the aggregate data, which describe the differences in the two networks.

Figure 6.1 Typical teacher network (from Couros, 2006)

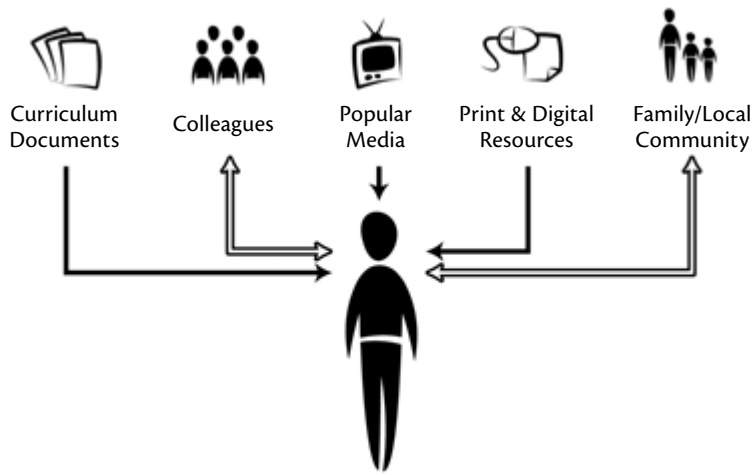
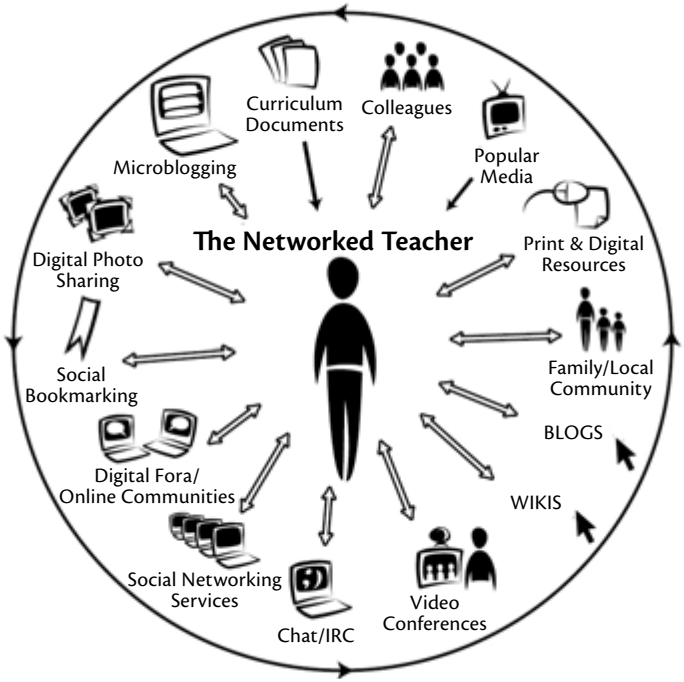


Figure 6.2 The networked teacher (from Couros, 2006)



I consider "the networked teacher" representation to be a PLE diagram. It describes an individual's connectivity through participation in social media activities (e.g., blogging, wikis, social networking), and the arrows represent both the consumption and production of content.

In seeking a distinction between the PLE and PLN, I performed a recursive exercise. I asked individuals within what I perceive to be my own PLN about their perceptions of the differences between the two terms. This interrogation was facilitated via Twitter, as this microblogging platform has proven for me to be the most responsive method for surveying the connective knowledge of those within my PLN. The result was a steady outpouring of educators who offered definitions, print and multimedia resources, and diagrams, many of these developed personally or by those to whom they were connected. I have attempted to capture this conversation in a blog post at: http://educationaltechnology.ca/couros/1156.

The general consensus of this conversation maintains that PLEs are the tools, artefacts, processes, and physical connections that allow learners to control and manage their learning. This definition supports Martindale's and Dowdy's observation that "A PLE can be seen as a manifestation of a learner's informal learning processes via the Web" (chapter 9). Definitions of PLNs, however, seem to extend this framework to more explicitly include the human connections that are mediated through the PLE. In this framework, PLEs become a subset of the substantially humanized PLN. For reference in the remainder of this section, my PLN definition is simple: personal learning networks are the sum of all social capital and connections that result in the development and facilitation of a personal learning environment.

PLNs for teaching and learning

The following is a short list of strategies for developing a personal learning network and for leveraging the PLN in distance education courses. These points were effective in the facilitation of EC&I 831 as evidenced by personal reflection and student feedback.

Immerse Yourself. The entire PLN strategy depends on the use and understanding of social media in the formation of human networks. The essential tools in my own experience are blogging (self-hosted Wordpress), wikis (Wikispaces), social bookmarking (Delicious), photo sharing (Flickr), video sharing (Youtube, BlipTV), and microblogging (Twitter, Plurk). Understanding how these tools work, how they can be used together, and how your students can utilize them is essential.

Learn to Read Social Media. Although the situation is improving, traditional search engines are not currently ideal for reading social media. There are a number of social media search engines and tools available that are important to understand. Specialized search tools such as Technorati, Google Blog Search, or WhosTalkin allow for better search results. Social media browsers such as Flock and tools such as Feedly have been developed for those who primarily view, produce,

and interact with social media. Blog aggregators such as Google Reader or Bloglines are essential for tracking student work if blogging is assigned. Social media is read much differently than traditional media.

Strengthen Your PLN. Human connections in PLNs are strengthened through various degrees and forms of interaction. Producing content is an important activity that may include writing and sharing blog posts, media, content, and links to resources. Feedback on the contribution of others is also equally important for social bonding and bridging. Providing comments on media, participating in digital conferences, or contributing to community resources strengthens your PLN.

Know Your Connections. Through continuous interaction, I was able to form a strong comprehension of the backgrounds and skills of many of the individuals within my PLN. This was of great benefit for me as I was then able to refer my students to educators who I knew would be willing to assist and provide expertise in areas where I lacked knowledge or experience. These interactions would often benefit learners in the extension of their own PLN.

PLNs Central To Learning. The most transformative realization that occurred to me because of EC&I 831 is just how important PLNs are for sustained, long-term learning, for students and facilitators alike. Having taught dozens of courses through CMS tools, I think of the irony: the tremendous amount of time and effort put into the development of local, time-based, course-centric communities. The communities die, usually only days after the official end-of-course date. They die because they are communities based around courses, not communities based around communal learning. For students who developed PLNs in EC&I 831, their learning communities still exist. The individuals are active and interactive, and continue to form and negotiate the connections they need to sustain long-term learning for themselves and for their students. This will be further evidenced when the EC&I 831 Class of '08 visits the current student cohort this semester — an idea for collaboration initiated by these former students.

Final Thoughts

I have given several conference presentations based on my experiences with EC&I 831. The two most commonly asked questions from audience members are phrased similarly to "How did you get away with this?" and "Where do you find the time to teach this way?" In answer to the first question, I cannot overemphasize the importance of institutional support for open teaching. I consider myself lucky to work within a faculty of education whose members I would characterize as constructively critical of technology, but strongly supportive of innovation in teaching and learning. Additionally, social justice is an integral theme in our faculty programming, and open teaching supports similar philosophies and the need for more accessible learning in our communities and in our greater society. To the second question, my gut response is to note my personal belief that *good* teaching always requires more time. This response is often not well received, considering the "publish or perish" mantra evident in contemporary universities. I can only support this with my own experience, through the realization of how interlaced the activities of teaching, learning, and research have become through the development of my own personal learning network. When I contribute to the network, I am rewarded with potentially rich opportunities for student learning, connections to individual knowledge and expertise, and tremendous insight into emerging areas of research. While developing a PLN requires a significant time commitment initially, these losses can be regained quickly through networked efficiencies, enhanced learning experiences, and new opportunities.

In summary, this chapter highlighted some of the key processes involved in the development and facilitation of EC&I 831. Careful attention to the course's theoretical foundations, use of emerging technologies, and personal network building assured the success of this course for its students. Perhaps the most telling quote regarding the success of the course comes from Jennifer, who wrote, "The best part of this course is that it's not ending. With the connections we've built, it never has to end."

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