



**Professional development 2.0 for librarians:  
Developing an online personal learning network (PLN)**

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**Abstract:**

*The field of librarianship is ever expanding and changing, from exploding Internet and media technologies, to ever diverse patron groups with increasingly complex information needs. Library professionals need to be as savvy as the clients they serve, and the most productive and effective way for librarians to keep up with these changes is to seek out professional development opportunities. Librarians owe it to their clients and to themselves as competent professionals, to remain abreast of trends and developments in the field.*

*This paper seeks to address the changing landscape of the library profession, including the changing nature of library and information science education, and to exemplify the importance and necessity of continuing professional development for librarians, the newest manifestation of which is online professional development through Web 2.0 tools and social media technologies.*

*Specifically, using such technologies enables library professionals to develop an online personal learning network (PLN); PLNs are beneficial because they are so customizable to an individual's work and research interests and time constraints, and they facilitate global learning and collaboration opportunities that may not otherwise be feasible. In times of financial difficulty, more traditional professional development opportunities requiring travel and funding are often prohibitive; PLNs enable continuous and affordable professional development opportunities that will benefit librarians and their institutions.*

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Those entering the work force should possess a "capacity to learn constantly and quickly. I cannot make this point strongly enough. It does not matter what they know now. Can they assess a new technology and what it may do (or not do) for your library? Can they stay up-to-date? Can they learn a new technology without formal training? If they can't, they will find it difficult to do the job. (Roy Tennant, as quoted in Miller, 2007, p. 206)

By not proactively seeking continuing education, librarians are “not actively pursuing obsolescence, but there are indications that some are passively permitting it to overtake them”. (Stone, 1971, p. 436)

### **Why Professional Development?**

As exemplified by the above quotes, the field of librarianship is ever expanding and changing, from exploding Internet and media technologies, to ever diverse patron groups with increasingly complex information needs. Library professionals need to be as savvy as the clients they serve, and the most productive and effective way for librarians to keep up with these changes is to seek out professional development opportunities. Librarians owe it to their clients and to themselves as competent professionals, to remain abreast of trends and developments in the field. Hurych (2002) proffers professional development as an essential obligation when he states

Education for the contemporary professional no longer ends with diploma, if it ever did. It has been recognized that continuing education strengthens not only knowledge and skills necessary for competent performance but also values and attitudes necessary for the service orientation of a profession. (p. 257)

This paper seeks to address the changing landscape of the library profession, including the changing nature of library and information science education, and to exemplify the importance and necessity of continuing professional development for librarians, the newest manifestation of which is online professional development through Web 2.0 tools and technologies.

### **The Changing LIS Landscape**

Technology and media have ushered in a new era of library and information science (LIS) education, allowing the field to reach and educate individuals who previously did not have access. And with these new technologies and opportunities come new considerations and concerns about the best ways in which to deliver content and instruct future library professionals. Shera (1970) speaks of the changes brought about by technology when stating

So, as our physical equipment changes, the roles related to it change. As the body of belief changes – there are shifts in that part of the culture, too – the roles associated with it change. The whole system is a constantly shifting sea of human movement, behavior and conduct. (p. 62)

Shera may not have explicitly been referring to LIS distance education, but certainly as library users change and expect new technologies and information, the roles of the library will consequently grow and change. Therefore, it becomes imperative that LIS education change as well, in order to reflect, respond to and anticipate these changes. There is ample room for technology enhanced and user centered instruction in traditional face-to-face LIS education, but it is especially needed in online education.

### **The Changing Roles of Libraries and their Users**

Dervin (1977) provides insight into the changing nature of library users, and what is fascinating about her assertions, which were made in the late 1970s, is that they are just as apt and thought provoking in 2011. Dervin’s work challenges libraries to rethink and restructure their services based on need of their users, and not rest on the laurels of prior successes, or overestimate the inherent value of libraries because they possess desired information. Libraries tend to assume

their services are adequate and do not ask their patrons' opinions, the patrons being the "raison d'être for the institution" (Dervin, 1977, p. 17).

Dervin continues by stating that there is an "increasing demand by users of systems that they be treated as individuals" (Dervin, 1977, p. 19). One size no longer fits all, and as user populations continue to diversify, so should the library and its services. Information consumers are presented with new facts and information, which, in combination with their prior knowledge and experiences, shape and influence their current state of knowledge; each consumer will accept, process, and make sense of the same information in different ways. This process is affected by how consumers learn and how they are instructed (in this case by the library). "These 'how' questions focus our attention on the behaviors or procedures by which people get what they do not know, 'how' they get informed, 'how' they get instructed" (Dervin, 1977, p. 23).

Belkin (1978) concurs with Dervin in his statements that "different users respond to (learn from) the same set of data differentially," "the same user will respond to the same set of data differentially at different times", and "the nature of a user's response depends to some extent on the presentation of the data" (p. 60).

Dervin's and Belkin's discussions point out that the model of communication between the library and its consumers must be more comprehensive and robust than the basic model of communication presented by Shannon and Weaver (1949), which is concerned primarily with the transmission of symbols (information), the meaning of that information, and, if the transmitted information produces the desired results (p. 2). In his critique of this model, Belkin (1978) feels the Shannon and Weaver model is valuable because it provides basic understanding of the communication process and makes it applicable to other fields of study, however he states that the model "explicitly aims not to consider meaningful, social communication, or the problems raised by the requirements which refer to the effect of information and the relationship between information and state of knowledge" (p. 66).

Dervin concludes by stating that "the user is in control of his own sense-making processes and will attend to messages that might help him in these processes. He will find libraries useful to the extent that they are helpful to him in this regard" (Dervin, 1977, p. 28). To this end, libraries must strive to create "activities that are communication-based rather than simply information-based" (p. 24), and librarians must "make the communication process as useful as possible and employ all techniques that seem to have any promise at all to the achievement of that end" (Shera, 1970, p. 77).

### **The Changing Roles of Library Education**

All of Ranganathan's (1957) Five Laws of Library Science are applicable to the education of librarians, but specifically, it is the Fifth Law that perhaps speaks most directly to the changing role of LIS education. The Fifth law states that a library is a growing organism. "The fifth law tells us about the vital and lasting characteristics of the library as an institution and enjoins the need for a constant adjustment of our outlook in dealing with it" (p. 326). LIS education is also a growing organism, and when Ranganathan suggests that our outlooks on dealing with the library should be constantly adjusted, I believe he is referring to LIS education. LIS programs have certainly shifted, adjusted and changed over the years to accommodate new outlooks and technologies, the latest incarnation of which is online, or distance, or computer-mediated LIS education.

Meyrowitz (1997) discusses the ways in which electronic media have broken barriers between time and place, essentially allowing 24/7 access to information. Individuals no longer need

to travel and “be” in a physical location to receive information and participate in conversations or events, nor do they have to be excluded from events they cannot physically attend (p. 44).

Communication through electronic media is certainly not equivalent to traveling from place to place and interacting with others in live encounters, but the information transmitted by electronic media is much more similar to face-to-face interaction than is the information conveyed by books or letters. And ‘relationships’ with others through electronic media are accessible to virtually everyone without regard to physical location and social ‘position’. (Meyrowitz, 1997, p. 45)

Meyrowitz refers to this phenomenon as “para-social interaction,” which allows participants to engage in mediated relationships that “psychologically resembles face-to-face interaction” (Horton & Wohl, as cited in Meyrowitz, 1997, p. 46).

### *Expert Knowledge*

Another change in the LIS education landscape is the role of expert knowledge. Horkheimer & Adorno (1993) make an interesting assertion that is applicable to the traditional mode of LIS education, traditional meaning face-to-face, teacher centered education: “In every career, and especially in the liberal professions, expert knowledge is linked with prescribed standards of conduct; this can easily lead to the illusion that expert knowledge is the only thing that counts” (p. 16). This is not to say that the traditional model is faulty or undesirable, just that this model represents the status quo, or the cultural common sense<sup>1</sup> notion of what LIS education is and has always been. This status quo of LIS education was challenged with the advent of online education for librarians. Online education allows students to pursue library degrees that would otherwise be unattainable, enables students to participate in new and different ways, enables students to construct their learning processes and paths, and allows for some genuine individuation in the educational process (p. 18).

Fiske (1987) discusses semiotic power and diversity and difference, and these concepts could also be applied to the significance of online learning and technology on LIS education. If students employ semiotic power (p. 511), the power to construct meaning, to their educational process, it could be viewed as diverging from the homogeneity and status quo of LIS education – not resisting it, but approaching the process from another stance and turning the educational experience into a student-centered process. Students enrolled in online LIS education programs produce their own learning culture (p. 517) where they can indulge their own specific learning styles and preferences. As a result, not only is the learning process different, the teaching process is also significantly altered, with instructors giving new consideration to their students learning requirements and how best to deliver the necessary information (p. 518). Media and technology have made the LIS education process public (Habermas, 1974, p. 49) in new and important ways as it becomes more of a collaboration and negotiation between students and their institutions.

### **Design Considerations for Online LIS Education**

Advances in technology and media have undoubtedly benefited LIS education; however, Shera (1970) offers a caution by stating “the medium, very definitely, is the message. If it is not the message, it certainly shapes the message and influences it” (p. 79). To this end, Aakhus and Jackson (2004) assert,

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<sup>1</sup> As explained by Dr. Deepa Kumar, cultural common sense is a set of dominant ideas which have become naturalized and are not questioned (personal communication, October 15, 2008).

New devices and services appear, new practices develop around them, and new real-world problems arise. In the general literature of information and communication technology, it is common to speak of technology as presenting affordances and constraints. *Affordances* are possibilities and preferences for action that are either created or amplified by the new technology. *Constraints* are, of course, possibilities cut off by the technology, sometimes unintendedly and sometimes quite purposefully. (Aakhus & Jackson, 2004, p. 412)

Despite any constraints or downfalls, online LIS education remains a powerful and useful entity, one which involves more than just uploading content to a course management system or Web site; there are numerous design issues to consider, including customized instruction, considering librarians as adult learners, the motivations and learning styles of librarians, pedagogical strategies for this demographic of learners, the length and style of courses, and the ways in which to create and maintain learning communities among students (Lopatin, 1999, pp. 36-50).

Among the most important considerations when teaching and learning in an online LIS environment are those regarding communication and interaction. Various types of communication, including interpersonal, organizational, and intercultural, play an important role in online LIS education.

### *Mediated Social Interaction*

The facilitation of quality social interaction among participants should be of paramount concern for instructors and developers of online LIS education. For example, Shera (1970) discusses some of the differences between face-to-face and online interactions, stating that online interactions can lack

Moments of relaxation, of interruption, this pacing back and forth, or drawing designs on the blackboard. All of these behavior patterns not only relax me, but when they relax me they relax you, because the audience is bound to be the reflection of the speaker (p. 79).

Shera's aforementioned quote about the nature of instructor / student interaction exemplifies the important interpersonal dynamics that can be lost in online education and learning. Indeed, online instruction is a ripe opportunity for "social isolation and loneliness," especially with asynchronous computer mediated communication (Berger, 2005, p. 429). Learning is about more than just content; learning is fostered by the building of community that is established between instructors and students.

Fostering quality mediated social interactions in an online setting is certainly a challenge. Aakhus and Jackson (2004) point out that in a technologically-mediated setting, communication is very different from face-to-face communication, and usually ordinary communication tasks such as "the way people take turns, the identities people are willing to display, the commitments to be invoked, the direction in which speech act sequences are expanded, the means to repair coherence and coordination, and the beliefs about appropriate communication held by a speech community," become extraordinary and require new understanding and negotiation (p. 414).

The authors continue by advocating that a computer-mediated system should be dynamic, and be viewed as contingent, malleable, and redesignable (Aakhus and Jackson, 2004, p. 415), and not as a "freestanding construction," devoid of theory, sound design, or "a hypothesis about how communication works" (p. 423). In this way, computer mediated communication systems used for education and instruction can be customized by their designers, who take into account the specific learning and communicative needs of their audience (in this case, librarians), and "shape the object" (p. 420) and learning environment. As online LIS education continues to burgeon, the creation and maintenance of supportive learning environments and communities will underscore the effectiveness of LIS programs and produce better library professionals.

### Continuing Education / Professional Development

Learning and education do not cease with the attainment of a Masters Degree in Library Science; quite the opposite, the degree is only the beginning of a librarian's education. Weingand (1999) states

The shelf life of a degree is approximately three years and declining. Maintaining competence and learning new skills must be at the top of every professional's "To Do" list. It is an ethical responsibility, to be sure, but also one that is pragmatic and critical for career success. ... Continuing professional education is no longer an option, it is a requirement of professional practice. (p. 201)

Weingand goes on to define continuing professional education (CPE) as "Education that takes place once professional qualification is achieved, with the intent of maintaining competence and/or learning new skills" (p. 201).

As essential as CPE is, there are several fundamental dilemmas that will keep it from uniformly benefitting the field of librarianship. As a point of entry, the field of librarianship requires a Masters degree, and with rare exception (some public librarians and school librarians) librarians do not need any form of licensure, certification or credentials to assume professional positions. Therefore, with no requirements to uphold and maintain, CPE for librarians is voluntary. Certain specialties of librarianship and their associated professional organizations (for example medical librarians and special librarians) offer regimented CPE and credentialing programs for their members; however, while such credentials may be desirable to certain employers, they are still optional endeavors and are not necessary for employment.

Two other significant dilemmas facing LIS CPE are the absence of a central repository or clearinghouse for educational offerings, and the lack of quality control mechanisms to govern said offerings. Because CPE is not a professional requirement, there are no regulations in place regarding the development and offering of CPE programs; any school or agency can offer CPE programs for librarians. As a consequence of not having a central agency regulating LIS CPE, there are no standards or quality control measures in place. Varlejs (2002) states that "Quality control in the LIS CPE field is very rare, if it exists at all" (p. 235). Issues of quality control and a central repository for CPE offerings are a frequent topic of discussion at library conferences, most notably the American Library Association's (ALA) Congress on Professional Education (COPE) summits, held in 2000 and 2001.

COPE garnered participation from all major professional library organizations, and the meeting's recommendations included establishing an independent and comprehensive clearinghouse for CPE offerings, establishing congruence between CPE and library conference offerings, taking direction from other professions who mandate CPE from their practitioners (Varlejs, 2001), and encouraging LIS educators to infuse more of their research into professional practice, and to:

Inculcate the lifelong learning ethos, together with the skills to become an effective independent, self-directed learner. ... It is crucial, however, to make students recognize that they are only at the beginning of their learning, and that they must accept responsibility personally for continuing their own professional development. (Varlejs, 2003, p. 371)

The ALA's Continuing Library Education Network and Exchange (CLENE), and the International Federation of Library Associations and Institutions' (IFLA) Continuing Professional Development and Workplace Learning Section are active organizations that have continued to discuss the issues and recommendations brought forth by COPE, but it appears that no substantial and lasting progress has been made as of 2008, most likely due to the huge financial and

stakeholders coordination such an endeavor requires. Mayfield (1993) summarizes the current state of affairs by stating,

No single organization, institution, or agency could marshal the resources needed to address the agenda. A collaborate effort is required, an effort that itself may contain the seeds of the development of an integrated, holistic framework for education and training beyond the classroom. (p. 430)

With the aforementioned issues surrounding formal CPE, there have been new developments on the LIS CPE landscape, notably online professional development. With the rapid development of Web 2.0 / social software tools, many librarians are supplementing, and even substituting, formal CPE for online tools such as blogs, wikis and social networking communities. These online tools are especially attractive because they are free, do not require dedicated blocks of time or travel, and they offer the potential to create lasting learning communities that foster ongoing professional development. Certainly, the same quality control issues that plague formal / in person CPE apply to online CPE, and the same considerations employed with online LIS education are applicable to online CPE development.

### **Web 2.0**

Web 2.0 / social networking software applications (Abram, 2008; Technorati, 2008; Anderson, 2007; Vickery & Wunsch-Vincent, 2007; Boulos & Wheelert 2007; Laning, Lavalley-Welch & Smith, 2005; Bar-Ilan, 2004) continue to grow in popularity and are proving themselves to be worthwhile for more than just purely social uses. These tools, which are billed to be huge proponents of interactivity and community building, seem a natural extension for LIS CPE. Abram (2008) asserts

Web 2.0 is ultimately about a social phenomenon- not just about networked social experiences, but about the distribution and creation of Web content itself, “characterized by open communication, decentralization of authority, freedom to share and reuse, and the market as a conversation.” It moves the Web experience into a place that more closely resembles an academic learning collaboration environment than and information delivery and e-commerce vehicle. (p. 20)

The emphasis on interactivity and community building are the qualities that make Web 2.0 tools especially applicable to LIS CPE and will make this method of learning successful. In particular, three concepts, self-directed learning, electronic culture, and communities of practice, contribute to our understanding of how online CPE with social software tools is a viable and beneficial alternative for librarians.

### **Building Online Learning Communities**

#### *Self-Directed Learning*

Self-directed learning is a concept borrowed from the field of adult education, and really speaks to the motivation of librarians seeking CPE, particularly in the unregulated and time unconscious environment of the Internet. Self-directed learning is simply defined as learning that is “informal, self-initiated, independently conducted, and integrated into individuals’ daily work” (Varlejs, 1996, p. 2). This is a most appropriate description of how library professionals might incorporate blog and wiki reading, and participation in online communities into their daily practice.

Formal CPE is not to be negated or disparaged in any way, but is not always appropriate or available, because of various time and financial constraints.

It appears that their professional development activities are not influenced by the amount of release time, financial assistance, or other support provided in their work setting. Rather, they may be motivated by factors inherent in the nature of their work and by expectations of performance imposed by employers and clients. Or, perhaps, an ingrained affinity for learning may be the best explanation. (Varlejs, 1999, pp. 63-64)

Varlejs (1996), a library scholar whose body of work has contributed greatly to the field's knowledge of self-directed learning and CPE endeavors, reported that a significant number of library professionals belonging to the American Library Association engage in self-directed learning.<sup>2</sup> Varlejs also points out that self-directed learning is not to be conflated with formal CPE, formal learning associated with the pursuit of an academic degree, or current awareness activities (i.e., reading a professional article to acquire information about a specific event, trend, or tool).

### *Electronic Culture: Collective Intelligence and Knowledge Communities*

Mass media scholars Jenkins (2006), and Kahn & Kellner (2005) contribute to our understanding of how technology and media can foster and facilitate online culture and knowledge communities, which are especially pertinent when teaching and learning online. Jenkins (2006) mentions two interesting concepts, collective intelligence and knowledge communities. Collective intelligence is described by stating, "None of us can know everything; each of us knows something; and we can put the pieces together if we pool our resources and combine our skills. Collective intelligence can be seen as an alternative source of media power" (p. 4). I would argue that collective intelligence can also be seen as an alternative source of *educational* power. For example, in online LIS education, bulletin boards are often used to supplement and / or replace traditional face-to-face conversations. In this way, each learner has the opportunity to contribute their opinions, experiences, and interpretations to a common area, thereby shaping the learning experience and overall understanding. In effect, collective intelligence contributes to the formation of knowledge communities.

Referring more specifically to social software applications, Boulos and Wheelert (2007) feel these technologies foster collective intelligence and decrease isolation, and have the "potential to promote active and engaged learning, where participants themselves construct their own knowledge through social interaction and exploration. Learning becomes an active process in which peers collaborate equally so none might dominate the interaction" (p. 18).

About knowledge communities Jenkins (2006) says "Knowledge communities form around mutual intellectual interests; their members work together to forge new knowledge often in realms where no traditional expertise exists; the pursuit of and assessment of knowledge is at once communal and adversarial" (p. 20). Kahn and Kellner (2005) discuss blogs and wikis, which are enormously popular, powerful and excellent examples of social networking and knowledge communities.

If the WWW was about forming a global network of interlocking, informative websites, blogs make the idea of a dynamic network of ongoing debate, dialogue and commentary come alive and so emphasize the interpretation and dissemination of alternative information to a heightened degree. (p. 88)

While specifically discussing blogs and wikis in a political environment, there are many examples of blogs and wikis being used to facilitate communities in all types of specialized communities (Kahn & Kellner, 2005, p. 91). These tools can be extended to include online LIS CPE

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<sup>2</sup> Varlejs' dissertation study drew from a random sample of 39,900 ALA members, resulting in 849 survey recipients. Of those recipients, 521, or 58%, participated in self-directed learning.

communities, several examples of which are briefly presented below. While beneficial, care must be taken to not allow online knowledge communities to completely substitute for, or supersede other methods of communication and interaction.

### *Communities of Practice*

Another related concept, this time from the management literature, is communities of practice. The concept, developed by Wenger (2001, 1998), is not dissimilar from the concepts of collective intelligence and knowledge communities. Wenger defines a community of practice by stating

Members of a community are informally bound by what they do together – from engaging in lunchtime discussions to solving difficult problems – and by what they have learned through their mutual engagement in these activities. A community of practice is thus different from a community of interest of a geographical community, neither of which implies a shared practice. (Wenger, 1998, p. 2)

Wenger (1998) continues by specifying three distinct dimensions of a community of practice: they are joint enterprises, meaning they are created and maintained by their members, they feature mutual engagement, meaning all members come together to form a social entity, and the members have a shared repertoire of resources and sensibilities that have been communally developed over time (p. 2). Wenger does caution that communities of practice should take care not to become insular, rather they should remain dynamic and fluid entities which constantly renew their learning, “for while the core is the center of expertise, radically new insights often arise at the boundary between communities” (p. 6).

### *Personal Learning Networks (PLNs)*

Personal learning networks build upon the notions of collective knowledge, communities of practice and follows up on how to actually form such learning communities. Built upon the theories of social learning and connectivism<sup>3</sup>, PLNs consist of a learner and the contacts and colleagues with whom they surround themselves. These networks need not occur fact-to-face or in real time, nor does the learner have to personally know their knowledge collaborators. PLNs are often specifically devoted to professional learning and development, and are keenly applicable to the use technology, which makes them as local or global in reach as the learner desires. “Including technology and connection making as learning activities begins to move learning theories into a digital age. We can no longer personally experience and acquire learning that we need to act. We derive our competence from forming connections” (Siemens, 2005).

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<sup>3</sup> Siemens (2005) defines connectivism as “the integration of principles explored by chaos, network, and complexity and self-organization theories. Learning is a process that occurs within nebulous environments of shifting core elements – not entirely under the control of the individual. Learning (defined as actionable knowledge) can reside outside of ourselves (within an organization or a database), is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing.

### Professional Development 2.0: Examples

The concepts of self-directed learning, electronic culture and communities of practice frame and extend our understanding of how Web 2.0 tools can be successful vehicles for LIS CPE. The consistent and interactive nature of these tools allows learning to be more robust and enduring than a singular meeting of class session.

Examples of social software applications being used for LIS CPE are blogs, wikis and social networking communities. Blogs are perhaps the most prolific and well know applications being used for CPE (Technorati, 2008; Laning, Lavalley-Welch & Smith, 2005; Bar-Ilan, 2004), because they are frequently free of charge, and potential authors do not need to know programming languages or HTML to update and maintain their pages, and it is easy to keep blogs up to date.

Blogs, which began appearing in 1997, “can alleviate information overload by helping the reader filter the important news in any domain.” And “the reader can use blogs as a professional development tool to stay abreast in the LIS field, and follow new resources, technological advances, research, vendor activity, new materials, conferences, and job postings” (Laning, Lavalley-Welch & Smith, 2005, p. 165). At the time of the Laning, Lavalley-Welch, and Smith article, there were over 400 blogs related to LIS issues and services; that number has surely increased since 2005. To further elucidate the proliferation of blogs, it has been written that blogs have exploded in the last 10 years, from 23 blogs in 1999, to 10 million 2004 (Bar-Ilan, 2004, p. 119), to well over 78 million in 2008 (Technorati, 2008), to well over 200 million by the start of 2009 (Technorati, 2009). With the current exponential rate of growth, it is conceivable that the number of blogs could approach the 1 billion mark by 2011.

Wikis are also being increasingly used for collaborative work, and are sometimes preferred because they allow the creation of more traditional, or linear, pages and documents.

Unlike blogs, wikis generally have a *history* function, which allows previous versions to be examined, and a *rollback* function, which restores previous versions. Proponents of the power of wikis cite the ease of use (even playfulness) of the tools, their extreme flexibility and open access as some of the many reasons why they are useful for group working. (Anderson, 2007, p. 8)

Social networking sites are also growing in popularity, as they incorporate many social software tools into one platform. Social networking sites “enable users to connect to friends and colleagues, to send e-mails and instant messages, to blog, to meet new people and to post personal information profiles. Profiles include photos, video, images, audio, and blogs” (Vickery & Wunsch-Vincent, 2007, p. 38).

Perhaps among the most popular social media tools for developing and maintain PLNs is Twitter. Twitter, the popular micro blogging service that requires posters to convey messages in 140 characters or less, allows access to a wide variety of educational and professorial colleagues and resources. Posts often contain links and citations, and there are many chats and discussions that are linked together by designated hash tags. The result is a 24/7, and in many instances instantaneous, network of likeminded people with similar academic interests. These short bursts of information are convenient. A learner could post a question about training and presenting to their Twitter PLN and within hours be provided with a wealth of tips, tricks and further readings and information.

Another example of social networking sites are Ning networks, which allow anyone to create a social network, based on any interest, similar to the ease with which people create blogs. Ning networks have an increased air of individuality and customization possibilities.

Social networking sites have quickly become a ubiquitous part of our culture. These sites provide ways for users to interact in online communities using blogs, discussion groups, e-mail, video and audio, and file sharing. Ning is one example of a growing number of sites that allow you to create a

social network for a specific audience around practically any interest, group, or activity. Ning has great potential as an education tool, especially for professional development and building profession connections. (Rosenfeld, 2008, p. 60)

### **Disadvantages and Areas for Future Research**

As wonderful as online learning and online CPE are, they are not a panacea for the library profession; learning online is not possible for everyone, nor is it an appropriate venue for all types of learners. Online CPE demands a commitment of time to participate in the truest sense of the word, the type of participation necessary to truly create knowledge communities and communities of practice; not all library professionals, particularly those who are not truly self-directed learners, have the time, patience or technological skills to keep up with and fully engage in online CPE.

Another disadvantage is the sheer amount of information and number of blogs, wikis, communities, etc., available. When blogs and other forums were fewer in number there was a sense that the information being provided had been vetted and was especially worthy of attention. However, with so many information venues from which to choose, it takes decidedly more time and energy to vet and trust potential online sources of information and CPE. Finally, the discussion has revolved around Web 2.0 tools and software; what happens when Web 3.0, 4.0, etc., arrive? Will that negate the existing 2.0 communities and CPE sources? Will library professionals have to constantly upgrade and begin new communities of practice, or will it just be a matter of upgrading technology platforms?

Fortunately, it appears that the area of online LIS CPE is ripe with possibilities of future research, particularly in the area of assessing the motivations and nuances of self-directed learning for librarians, and the further investigation of how interdisciplinary concepts inform and impact library education and professional development. Other areas of future research include pedagogical issues for teaching librarians online, system design and interactivity issues, and CPE as a management tool and a builder of organizational culture.

Technology and media changed the face of LIS education and extended its reach worldwide, and with these new technologies and opportunities come new considerations about communication and interaction. From a personal perspective, the most effective learning situations, face-to-face and online, are those that have included significant interaction and discussion with colleagues, in an environment where students are co-creators of knowledge with their peers and the instructor. Although this type of learning environment takes significant planning and effort to create and maintain in an online environment, it is certainly worthwhile and will further benefit online LIS education and continuing professional education.

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