

Becoming “Librarian 2.0”: The Skills, Knowledge, and Attributes Required by Library and Information Science Professionals in a Web 2.0 World (and Beyond)

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Abstract

In 2005, Stephen Abram, vice president of Innovation at SirsiDynix, challenged library and information science (LIS) professionals to start becoming “librarian 2.0.” In the last few years, discussion and debate about the “core competencies” needed by librarian 2.0 have appeared in the “biblioblogosphere” (blogs written by LIS professionals). However, beyond these informal blog discussions few systematic and empirically based studies have taken place. This article will discuss a research project that fills this gap. Funded by the Australian Learning and Teaching Council, the project identifies the key skills, knowledge, and attributes required by “librarian 2.0.” Eighty-one members of the Australian LIS profession participated in a series of focus groups. Eight themes emerged as being critical to “librarian 2.0”: technology, communication, teamwork, user focus, business savvy, evidence based practice, learning and education, and personal traits. This article will provide a detailed discussion on each of these themes. The study’s findings also suggest that “librarian 2.0” is a state of mind, and that the Australian LIS profession is undergoing a significant shift in “attitude.”

Introduction

Gutsche (2010) observed that an increasing number of positions in libraries are moving closer to the technical end of the scale and that consequently technology competencies are starting to comprise an “ever growing piece of the performance pie, impacting every job in the library” (p. 30). She contends that new competencies must be defined and that “everyone who works in a library must stay nimble and ready to receive new knowledge and skills” (Gutsche, 2010, p. 31). According to Salter (2003) “the librarian of the 21st century will be the product of what we *observe* [italics added] about ourselves and the *critical self analysis* [italics added] that follows” (p. 53). This article will outline a study that has provided the opportunity for the Australian library and information science (LIS) profession to *observe* and *critically analyze* the changing skills and knowledge needed by the successful librarian in the Web 2.0 world (and beyond).

The Emergence of Librarian 2.0: A Brief Review of the Literature

Library 2.0 is a change in the “interaction between users and libraries in a new culture of participation catalysed by social web technologies” (Holmberg, Huvila, Kronqvist-Berg, & Widen-Wulff, 2009, p. 677). Library 2.0 is revolutionizing libraries and the LIS profession (Casey, 2005). Christine Mackenzie (2007), manager of the Yarra Plenty Public Library Service in Australia, suggested that Library 2.0 has forever changed the “library brand.” Libraries are no longer about books or even information. Instead, libraries are about “facilitating people to participate, interact and create, to provide the means for that to happen” (p. 120). Similarly, U.S. LIS educator, Michael Stephens, noted that Library 2.0 is breaking down the barriers “librarians have placed on service, barriers of place and time, and barriers inherent in what we do” (Stephens & Collins, 2007, p. 254).

In the last few years there has been extensive discussion and heated debate exploring Library 2.0 in journals, conferences, and most notably the “biblioblogosphere.” Much of this discussion has focused on developing a clearer understanding of what Library 2.0 actually is. However, the discussion has also included an acknowledgment that regardless of how Library 2.0 is ultimately understood, it will require a new type of LIS profession. Library 2.0 requires an LIS professional “that is better equipped and broadly educated than one just ten years ago” (Feng, n.d., p. 1). Enter *Librarian 2.0* (Abram, 2005).

In the last five years, blogging LIS professionals have begun to compile their vision for librarian 2.0. In 2005, Stephen Abram, vice president of Innovation for SirsiDynix, declared that “librarian 2.0 is the guru of the information age” (p. 46). Abram observed that the Web 2.0 movement was laying the

groundwork for exponential growth and was having a dramatic impact on the way people live, work, and play. He noted that librarian 2.0 has the “ability, insight and knowledge to influence the creation of this new dynamic—and guarantee the future of our profession” (p. 46).

Not long after this, Michael Stephens published in the OCLC online newsletter a list of the six key traits that he believed were necessary for a successful librarian in the Web 2.0 age. This was the first of several attempts to catalog the core competencies of a 2.0 librarian. According to Stephens (2006), librarian 2.0: plans for users; embraces Web 2.0 tools; controls technology; makes good, yet fast decisions; is a trendspotter; and gets content. He concluded by noting that librarian 2.0 “never stops dreaming about the best library service” (Stephens, 2006, para. 9).

By the close of 2006, Laura Cohen published her much cited work *The Librarian's 2.0 Manifesto* in which she provides seventeen statements that should guide the professional practice of librarian 2.0. Like Stephens, Cohen's *Manifesto* (2006) focuses not on the specific IT skills and knowledge of librarian 2.0, but on the attitude or ethos that a successful librarian in the 2.0 world must possess. For example, Cohen's Manifesto states, “I will be willing to go where users are” or “I will take an experimental approach to change and be willing to make mistakes.”

Inspired by Cohen's work, a number of LIS professionals have begun to develop lists of core competencies for librarian 2.0 that are tailored to their unique contexts. Like Cohen's original work these lists have tended to focus more on interpersonal skills and less on technological competencies. Peltier-Davis (2009), a cataloging librarian at Alvin Sherman Library at the Nova Southeastern University in Florida, identified a fourteen point checklist for librarian 2.0 that included things such as “have the capacity to learn constantly and quickly,” “have the propensity to take risks and work under pressure,” “be skillful at enabling and fostering change,” “have a sense of humor,” and “become an advocate for the profession” (p. 20). In the same year, Michael Saint-Onge (2009) compiled his list of the “must-have” features for law librarian 2.0, which included librarians needing to: possess big picture skills; establish a closer connection to information and not the library per se; embracing the role of teacher; adopting a marketing approach to service design and delivery; and having the confidence to take up the challenge and embrace the future.

King (2007) moved the focus from attitudinal qualities to IT skills and knowledge. He identified a list of over a dozen basic IT competencies of a 2.0 librarian. This list included: write and post to a blog; create, upload, and edit photos, short videos, podcasts and screen casts; edit an avatar's appearance; and, know how to pick up a new device and figure out how to use it. He also identified “big picture” 2.0 skills that included understanding how the basic IT competencies work within a library setting, and how they complement a physical, traditional library. But most importantly, King noted that librarian 2.0 must be able to tell the library's story, through various media—writing, photography, audio, and video. Interestingly, when asked by a reader of his blog to include understanding of Creative Commons to his list of basic competencies, King noted, “I'm not adding it to my 2.0 Librarian list. Instead, I think EVERY librarian, 2.0 or not, should understand Creative Commons, just like every librarian should understand the basics of copyright” (para. 4). This raises the question: should every librarian be a 2.0 librarian?

More recently, Cullen (2008) moved the focus of the conversation from skills, knowledge, and attitude of the LIS professional to that of the role and influence the professional can and should have within their organization. Cullen argued that librarian 2.0 does not work or think of his or her role at the level of the library or information service; instead he argued “they work at the organizational level and challenge assumptions about what the business thinks it knows” (p. 256). Librarian 2.0 creates value for every individual in the organization, they have become “a critical organizational resource whose influence transcends departmental silos and professional boundaries, and can catalyze management innovation throughout the business” (p. 257).

Discussion and debate aimed at identifying and exploring the key competencies of LIS professionals is not new. In fact, Wagner (2000) argued that the future of the LIS profession can only be determined by examining “what skills will be required by library information professional to enable them to adapt to new and changing demands in society” (p. 128). While this may seem a relatively straightforward challenge, Harvey and Higgins (2003) point out that as the profession is complex and ever changing generally, it does “not speak with one voice about the attributes and skills it expects” (p. 154). In the last decade speculations and suggestions about the skills and knowledge required by the

contemporary LIS professionals have emerged (Fisher, 2002; Keenan, Willard, & Wilson, 2006; Knight, 2009; Middleton, 2003; Myburgh, 2003; Partridge & Hallam, 2004; Thompson, 2008). Not surprisingly technology or the ability to engage with and use technology to meet client and community needs is frequently included within the various lists of competencies or abilities. Other traits frequently mentioned include teamwork, project management, research, information access, and information management. This study will build upon this existing body of knowledge by providing the first empirically derived analyses of the key skills, knowledge and attitudes of "librarian 2.0."

Before discussing the research project the issue of language must be addressed. This study adopted a Popperian¹ position of explaining rather than defining terms. That is, the study adopted the perspective that the labels attached to concepts do not matter; the concepts themselves and their significance for practice do. In short, semantics, and especially disagreement over terms, should not be a restriction to understanding. Thus, for ease of communication, the current research used the term *librarian 2.0* in referring to the concept being explored. The author acknowledges that librarian 2.0 is not an ideal label, and that it will (and should) fade away into non-use, but for the context of the current study it provided a convenient vehicle for communicating and exploring a specific concept (i.e., the library and information professional in a world of ever changing emerging technology).

The Research Project

The Research Aim

The aim of the project was to identify the current and anticipated skills and knowledge required by successful library and information science (LIS) professionals in the age of Web 2.0 (and beyond).

Research Approach: Focus Groups

Focus groups were used for data collection as they allow for the gathering of qualitative data through "carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment" (Krueger, 1994, p. 6). Krueger (1994) noted that focus groups are effective because they tap into the human tendency to develop attitudes and perceptions by interaction with people and that "people may need to listen to opinions of others before they form their own personal viewpoints" (p. 11). This view is also shared by Stewart and Shamdasani (1990) who observed that focus groups allow individuals to react to, and build upon, the comments of other participants in the session. They observed that the "synergistic effort of the group setting may result in the production of data or ideas that might not have been uncovered in individual interviews" (Stewart & Shamdasani, 1990, p. 16). Focus groups are an appropriate choice for the current study because of their ability to produce concentrated amounts of data on a specific topic and because there is the opportunity for the clarification of responses and for follow-up questions (Morgan, 1997). In addition, focus groups allow the researcher to "obtain deeper levels of meaning, make important connections, and identify subtle nuances in expression and meaning" (Stewart & Shamdasani, 1990, p. 16). All of the above, however, must be viewed in light of the inherent limitations associated with the focus group technique, including the small number of respondents that participate, the limitations on generalizability to a larger population, and the bias of the researchers' influence and interests. Every effort was made in the current study to strengthen the advantages and to limit the disadvantages of the focus group method.

Participants

Stewart and Shamdasani (1990) observed that the selection and recruitment of participants is a critical task when using the focus group technique. They noted that the "individuals who are invited to participate in a focus group must be able and willing to provide the desired information and must be representative of the population of interest" (p. 51). Interaction between participants is a crucial aspect of focus groups (Kitzinger, 1994). Consequently the composition of the group must be given careful attention (Bloor, Frankland, Thomas, & Robson, 2001). As this is a study exploring the understandings and perceptions of LIS practitioners in regard to the skill and knowledge of librarian 2.0, it was important that the participants had diverse and rich experiences within the broad LIS field. This would help to reveal the range of views and experiences that exist about librarian 2.0. Participants for the current research project were drawn from public (including state and national), academic, school, government, and special libraries, LIS education and LIS employment services. They were drawn from different areas of Australia and were employed in a variety of roles, from library assistant through to senior managers.

Focus groups of between six to ten participants are usually recommended (Morgan, 1988). Small groups allow a greater contribution from each participant but if they are too small they can either be dominated by one or two participants or leave participants feeling compelled to speak. Larger focus groups can foster richer discussions but if they are too large participants can feel excluded or unable to fully contribute. Following the advice of Krueger and Casey (2000), the current study aimed to have six to eight participants in each focus group. This would help the facilitator to have control over the discussion but at the same time allow participants to share their views and make their observations. Thirty possible focus group session times were identified and interested LIS professionals were asked to indicate their availability via an online scheduling tool (<http://www.doodle.com>). This resulted in fourteen focus group times being established. Assuming a 20 percent “no show rate” up to ten people were allocated to each focus group session. This resulted in the study having between three and nine participants in each focus group. It is interesting to note that data analysis revealed that a “saturation point” (i.e., no new themes were arising) was reached after approximately six focus group sessions. This supports Nasser (1988) who recommends four to six focus group sessions as being sufficient for “self-contained” focus groups; that is, when the focus group is the primary data collection approach in the study.

Eighty-one subjects participated in the study. A breakdown of the participant profile can be found in table 1. All participants were LIS professionals with industry experience ranging from four months to sixty years, and an average of 17.09 years spent within the industry. Participants’ ages ranged from twenty-four to sixty-six years with an average age of 44.8. Reflecting the current female domination of the LIS profession the gender balance of participants was skewed with only nine males participating in the focus groups. All library sectors (academic, public, school, and special libraries) were represented in the sample; however, the public and academic library contexts dominated. Although teleconferences were used to encourage regional involvement in the study only 28.4 percent (or twenty-three of the eighty-one) of the participants identified themselves as being located in a regional area. A combined convenience and purposive sampling approach was selected as the most effective option for recruiting study participants. Personalized mails were sent to the managers of large libraries (i.e., academic, public, state, and national) inviting involvement in the study by their staff. E-mails were sent to the LIS professions e-lists.

Total	81			
Gender	Female:	72	Male:	9
Age	Range:	24-66 years	Average:	44.8 years
Time in industry:	Range:	4 months–40 years	Average:	17.09 years
Employment status:	Full time:	70	Part time:	8
	Contract:	2	Casual:	1
Location:	Regional:	23	Metropolitan:	58
Sector:	Public/state/national	24	LIS education:	5
	School:	6	LIS supplier:	1
	Academic:	33	LIS employment:	1
	TAFE:	3	Special:	8

Table 1. Table 1 Participant Profile

Data Collection

The focus groups were conducted in February and March 2009. Fourteen one-hour sessions were held. Eight sessions were face-to-face and six sessions were conducted via teleconference. Traditional focus groups involve a semi-structured group discussion, involving face-to-face interaction among multiple participants guided by a facilitator. In the teleconference focus group a moderated group discussion similar to a conference call is conducted, allowing the participants and the facilitator to be situated in various physical locations (Cooper, Jorgensen, & Merrit, 2003). While using telephone for conducting focus groups is a relatively new approach in research (Hurworth, 2004) it has been noted that teleconference and the face-to-face focus group approaches are very similar and that the primary difference between the two is the lack of nonverbal cues in the teleconference format (Tolhurst & Dean, 2004). The teleconference approach was included in the current study as it allowed participants to be included from geographically remote locations. Given the focus of the study this was an important dimension to include within the research design.

All sessions were audio recorded. Full ethics clearance was obtained from the Queensland University of Technology Ethics Committee and all participants were informed about the recording procedure when initially invited to participate in the sessions and again at the commencement of the focus group. Participants were provided the opportunity to ask for clarification about the project at any time and encouraged to make honest responses. The general aim of the focus group session was to develop a greater understanding of the current and anticipated skills and knowledge of librarian 2.0. The focus group sessions were conducted by two members of the research team. Researcher one was the facilitator for six of the face-to-face sessions and researcher two was the facilitator for two face-to-face sessions and all of the teleconferences sessions. To control for the variation of having two researchers administering the sessions, the research team established a shared philosophy and approach to the running of the sessions; this included the creation of a discussion guide to structure content and flow. The focus group facilitator was responsible for ensuring the sessions ran smoothly and that all key points were covered. They were also responsible for ensuring that a permissive, nonthreatening environment was created “by not making judgments about responses or communicating approval or disapproval through body language, and through encouraging alternative explanations” (Williamson, 2002, p. 256). The emphasis in the focus group is on the interaction among the group members with the facilitator blending quietly into the background. Except for posing questions and occasionally making necessary comments to ensure the group’s engagement, the focus group facilitator should be a listener and a learner (Morgan, 1993). The following open-ended questions were used to stimulate discussion:

- What is Library 2.0?
- What are the skills and knowledge required by librarian 2.0 in Library 2.0 (and beyond)?
- You are about to appoint a new librarian to lead the charge in making your library into Library 2.0—what are the essential and desirable traits, skills, and knowledge you would include in the position description?
- Is it a fad? (i.e., Library 2.0, librarian 2.0)
- To what extent are the skills and knowledge of librarian 2.0 representing a new and different type of skill and knowledge set? Haven’t we always had these?

Unstructured follow-up probes were used to further explore points as they arose during the session. In addition, to stimulate the discussion, a handout was provided that outlined the key findings and reflections about librarian 2.0 from the current literature. The handout was developed by examining the current published scholarly writings within the LIS field as well as the more informal discourse found via blogs, wikis, and the like. The handout was provided at the start of the face-to-face focus group sessions and was e-mailed to the participants of the teleconference focus groups in advance of the session. The sessions ended with the participants being invited to provide any comments that they would like to raise about librarian 2.0 but have not had the opportunity to do so during the session.

Analysis

The most challenging part of any research study is the analysis of the data obtained (Morgan, 1993). Given the qualitative nature of the data gathered by focus groups, Morgan noted that a “considerable amount of subjective judgment is necessarily involved in their interpretation and analysis” (p. 43). But he also acknowledged that with “proper scrutiny and interpretation, the information, perceptions, opinions and attitudes expressed by focus group participants can yield valuable insights not available

from other sources” (pp. 43–44). The main purpose of the focus groups conducted in the current study was to provide an in-depth exploration of a topic about which little is known. Analysis therefore concentrated on exploring the content of the sessions by identifying the key points and themes of discussion. Lisosseliti (2003) recommends that the focus group analysis should consider issues, ideas, and themes in the participant’s comments, inconsistent contradictory comments and shifts in opinion, vague comments versus specific responses, tone and intensity of comments, frequency and intensity of an idea, and the balance of positive and negative comments about an issue or idea. Because the identification and exploration of ideas and themes depends on the researcher’s classification of the data a manual data analysis approach was used (i.e., software such as Nvivo cannot do this form of analysis appropriately).

The data analysis process undertaken in the current study was an iterative one, constantly grounded in the focus group data. The researcher spent time listening to the audio recordings and reviewing the transcripts. The researcher was seeking to identify the emerging themes and to determine the similarities, differences, and potential connections among keywords, phrases, and concepts within and among each focus group. It should be noted that because of personal reasons (i.e., maternity leave) only one member of the research team was available to undertake the analysis.

In recent years a number of researchers have begun to acknowledge that focus group analysis must also take into consideration the group context. Visek (2010) suggests that if we leave the contextual information out of the analysis process the researcher will arrive at “distorted conclusions” but that factoring in the context can only lead to “richer and more illuminating” findings (p. 123). Similarly, Carey (1995) recommended “an appropriate description of the nature of the group dynamics is necessary to incorporate in analysis” (p. 488). Thus the current study included both contextual and thematic analysis of the data.

Maintaining Quality

When undertaking a study using focus groups the researcher must acknowledge, explicitly deal with, and understand, his or her subjectivity and bias and how this may impact upon the administration of the sessions and the analysis of the data. It is important that the researcher treat all experiences and comments of the participants as equally important and that they remain open to alternative interpretations of the data. In the current study this was achieved by establishing a discussion guide and overall philosophy and approach to administering the sessions and analyzing the data. The facilitators listened carefully to participants, observed how they answered and sought clarification on areas of ambiguity. The focus group was designed to be an open and nonthreatening environment that would allow each individual adequate opportunity to share his or her views.

The issue of generalizability is frequently raised when considering the quality or credibility of findings within focus group research. Focus group research is conducted to gain a more complete understanding of a particular topic. Krueger (1994) observed that “the intent of focus groups is not to infer but to understand, not to generalize but to determine the range, not to make statement about the population but to provide insights about how people perceive a situation” (p. 87). Visek (2010) also notes that focus group results represent only one possible scenario and the focus group approach does not suggest other scenarios are possible. The issue of transferability is more applicable when considering focus group research. That is, an individual wishing to use the results of a focus group study must first consider whether or not the results transfer into the environment they want to explore (Krueger, 1994).

Finally, the problems of conformity, group think, and social desirability are frequently raised as issues within focus groups. The current study followed the advice offered by Morgan and Krueger (1993) in regards to dealing with potential participant conformity: establish an open and permissive atmosphere in which each participant feels free to share his or her point of view; provide opening instructions which emphasize that a wide range of different experiences and feelings are wanted and encouraged; and the researcher should show that they are genuinely interested in learning as much as possible about the participants’ experiences.

Results

The focus group data was analyzed from two perspectives: contextual and thematic.

Contextual Analysis. Hollander (2004) identified four aspects that should be considered when describing the context of focus groups. These included, the *association context* or the common characteristics that bring the participants together; the *status context* or the relative positions of the participants in local or social status hierarchies; the *conversational context* or the scope and nature and manner in which the topic is approached and discussed; and the *relational context* or the extent to which participants have a prior or existing relationship with each other. All fourteen focus groups were analyzed in light of these different contexts. It is beyond the scope of the current paper to provide a detailed analysis of the context for all fourteen focus group sessions. Instead a summary of the collective context will be provided.

Fourteen focus groups were held. Focus groups ranged from three to nine participants. The composition of the groups was relatively similar. Given that the LIS profession is female dominated; it was not unexpected that few men participated in the sessions. Focus groups included very few participants from the special or school library context. This is perhaps not surprising given that many individuals in these contexts are working in one person libraries with little opportunity to be involved in a one hour non-work related activity. In most of the focus groups the participants did not know each other. This appeared to have a positive impact on the group discussion with participants appearing to speak comfortably and freely during the sessions.

The teleconference sessions were very effective in encouraging equal contribution by all individuals in the focus group sessions. This may be because of the approach taken by the facilitator who would call on each individual participating in the session and ask if they had any comments to be made. This approach was undertaken to help overcome some of the issues associated with the lack of nonverbal cues inherent in the telephone approach. While the first teleconference session had minor technical problems all other subsequent sessions were conducted without incident. In two of the focus group sessions (both face-to-face) opinion leaders (Visek, 2010) were clearly identifiable. Only in one group did this appear to have a slightly negative impact on discussions with the identified opinion leader also being the only individual in the group holding a senior level management role. It appeared that this individual may have stopped others from freely expressing alternative opinions. Overall, while there were one or two important points to note about the focus group contexts, the study's thematic analysis can proceed based on the premise that the context was having little negative impact on the nature of the group's discussions.

Thematic Analysis.

While each focus group tended to draw on specific themes of interest to that particular group of people, there was also a great deal of common ground. The eight key issues in the discussions are briefly outlined below.

They are not listed in any particular order of importance. Quotes from participants have been included to elaborate on the points being made.

- **Technology**
Not surprisingly, the role of IT or technology in the context of librarian 2.0 was discussed. Interestingly, there was a general consensus across all focus groups that while IT is important within the context of Library 2.0 and librarian 2.0, it is not the dominant or main aspect. It was generally acknowledged that technology was a means to an end and not the end in itself. Successful librarians in the Web 2.0 world (and beyond) need to be aware of, and have some fundamental understanding of, the emerging technology—what is available and what it can do and how to make it do what is needed—but they do not need to be IT professionals per se. As one participant noted, “I get concerned when I just hear about the IT sides of things, and I think that is just one part of librarian 2.0.” The difference between “IT skills” and “IT appreciation skills” was highlighted. As one participant observed, librarian 2.0 “makes technology their own.” Librarian 2.0 should not be “tied to technology because by the time we’ve convinced the powers that be . . . to buy it, a new ‘you-beaut’² thing has been developed.” The need for librarian 2.0 to “talk the talk” with the IT professionals and managers was identified. One participant observed that “I see myself and what I can do as a bridge—translating techno geek.” Many of the focus group participants acknowledged that librarian 2.0 needed to have a Web presence, should “be out there” and have “visibility on the web.” Librarian 2.0 should be a role model; he or she should possess “knowledgeable credibility.” Interestingly one focus group noted the “elitism” that was emerging within the profession. One participant commented on the fact that we do not insist that all librarians like to read, so why

than should we insist that all librarians have a Web 2.0 presence? One participant noted that "I am plugged in and connected but I can also walk away from it."

- Learning and Education

The need for librarian 2.0 to be interested in, and willing to engage in, lifelong learning was highlighted by all focus groups. It was acknowledged that the boundaries between IT professional and LIS professional were rapidly narrowing and that the skills and knowledge required by successful LIS professionals were becoming more complex and plentiful. Consequently, librarian 2.0 must "know how to maintain their own [ongoing professional] education." Librarian 2.0 has an inquiring mind, enjoys playing and experimenting and loves learning. He or she is also willing to share knowledge with colleagues and to mentor and coach others. As one participant observed, "Openness and willing to learn are the heart of web 2.0." Librarians in a 2.0 world engage in reflective practice, they "have a knowledge of oneself . . . they know their own strengths." They are willing to grow with the job. These librarians are not only willing to be outside of their comfort zone but actually learned how to be "comfortable within being out of their comfort zone." The successful librarian in the Web 2.0 world is interested in what is happening around them, they scan the horizon and are aware of the outside world. As one participant noted, "Current awareness is not just a catch cry it is part of everyday work." Another participant went even further, "If they're not interested in learning new things . . .if they are not engaged in the world around them there is no point really even having a conversation with them." The need for the LIS profession to have a compulsory professional development program was raised in one focus group. Librarian 2.0 is "not a clock watcher." He or she has the latest applications on a home PC and is willing to explore and practice after the workday has finished. A 2.0 librarian is comfortable with different ways of working. Librarian 2.0 is a professional not a worker. The more formal educative role of LIS professionals in regards to serving the needs of clients was also acknowledged. Web 2.0 requires librarians to take on the role of educator, trainer, or guide. They must be able to explain complex things and help individual users and communities to make the best use of the available technology within their workplace or everyday life. Librarian 2.0 understands how people learn.

- Research or Evidence Based Practice

Research skills were seen by participants as being essential for the 2.0 librarian. Research is a way for librarian 2.0 to be making the best decisions, developing best practice and establishing benchmarking. Gathering evidence to demonstrate feasibility, and undertaking continual evaluation and assessment of resources and services being introduced in the ever-changing and frequently untested Web 2.0 world was seen as vital. One participant noted that "evaluation is one of the most important things we need to cover as far as web 2.0 is concerned." And more dramatically, "professional malpractice is not using evidence based research" in your professional practice.

- Communication

All focus groups identified communication as being a core requirement for the 2.0 librarian. While communication skills include the ability to engage in written and oral communication in diverse formats and media, it also includes an array of more complex dimensions and aspects. Librarian 2.0 must know how to be an advocate and lobbyist for the resources and programs he or she wants to introduce, especially when faced with IT departments or senior management who have competing agendas or policies. These librarians need to be able to be good at negotiation and diplomacy and should be able to use whatever "language" is needed to persuade or influence the target audience to their point of view; "a good librarian is a chameleon." Librarian 2.0 should be good at marketing and promotion. He or she must be able to sell their skills and knowledge. Excellent presentation skills are essential.

- Collaboration and team work

Almost all of the focus groups acknowledged that need for librarian 2.0 to work successfully as part of a team: "so much of what we are doing is done in multi-disciplinary teams." This point was raised because it was acknowledged that "you can't do everything; you can't go into all these technology." Collaboration is no longer just an optional extra: "we're not talking about an individual being a repository for all this information, we are talking about within a group there are the skills." Librarian 2.0 is also willing to build new relationships outside the library

context. He or she works intimately with IT and other disciplines. Librarian 2.0 must be able to build relationships and partnerships and establish networks with individuals and groups wherever it is needed. He or she needs to be a team player and be able to work collaboratively across disciplines.

- User Focus

Many of the focus group participants noted that Librarian 2.0 was requiring librarians to develop a new relationship with their users or clients. They had to evolve into a more synergistic and equal partnership that involved both the 2.0 librarian and the user working together more as equals. Librarian 2.0 loves working with people, values the diverse experiences of users, looks at things from the user's perspective and seeks to actively use the emerging technologies to provide their users a voice. In the Web 2.0 world LIS professionals are driven by a focus on people, not resources. They help to create communities. As one participant noted, "What you don't want is some techie that wants to sit at their computer and doesn't want to get involved in the whole community thing." The 2.0 librarian has learned how to let go of a need to control. His or her role is to "encourage people instead of protecting" them. As one participant noted, "Web 2.0 enables us to interact with our users in a completely different way so that we are no longer the authoritative figure putting information out there."

Interestingly, Librarian 2.0 is also developing different expectations on the user's role: "They now have the ability to and the responsibility to contribute content." Librarian 2.0 is no longer the gatekeeper: "The gate now opens both ways." Although it appears that old habits die hard. When discussing the emergence of library catalogs that allowed client tagging, some participants were still not convinced, stating, "But you could have a real mess!"

- Business savvy

Many of the participants discussed the need for librarians in a 2.0 world to be business savvy. They need to have good project management skills. They should be outcome focused and able to multitask and manage their time well. Librarian 2.0 "knows how to get things done." These librarians are lateral thinkers who can prioritize and problem solve. They understand how organizations function and know how to influence, inform, and enable strategic decision making. They "understand the value propositions" inherent in their organization and their profession. They are not only open to and able to manage change but are the drivers of change within their library service, their governing organization and profession. They understand that the "ability to change is a vital thing" and are willing to "let go of the status quo." They are innovators who understand how to be entrepreneurial: "they go out and seek business," Librarian 2.0 is a leader.

- Personal Traits

Participants unanimously agreed that the 2.0 librarian should possess a complex array of personality traits. One participant even declared that personality traits were more important than skills. Librarian 2.0 should be enthusiastic and inspirational. Librarian 2.0 should be able to clearly communicate an idea and through his or her passion, as one participant noted, "You should be able to take a room full of people with you." These librarians have vision, spark, and creativity. They know how to lead and motivate. Librarian 2.0 is adaptable, flexible, persistent, and resilient. In short, nothing fazes them. Librarian 2.0 is a self-starter who has no fear and is willing to move outside of their comfort zone. He or she is proactive and willing to take calculated risks. The 2.0 librarian aims for excellence not perfection. It was noted that LIS professionals need to "get over ourselves." We need to realize that there is "no patient on the table" and be prepared to "release in beta mode." Librarians in a 2.0 world have an open mind and are willing to try new things and learn from their failures—their mantra is "just do it." They know that it is okay to feel like a novice. They are willing to let go of the rules and to deal with ambiguity.

Discussion

But haven't LIS professionals always been required to have these skills, knowledge, and attributes? Interestingly almost all focus groups responded to this question with, "yes, but . . ." The acknowledgment that successful LIS professionals need to possess transferable skills and interpersonal attributes is not new. In 1936, Harriet Howe noted that the "traits of the ideal librarian" included attention to detail, initiative, productivity in work, and effective relations with people. In more recent years, numerous studies have been undertaken around the world noting the need for, or the role of transferable skills within the LIS profession (Mascevicute, 2002; Partridge & Hallam, 2004;

Raju, 2003; Tedd, 2003). The results of the current study support this previous body of work. Overwhelmingly participants argued that the LIS industry needs, and has in fact always needed, its practitioners to possess a mix of generic capabilities and interpersonal skills. But participants in this study also commented that the speed with which things are changing in the Web 2.0 world was having a significant impact:

It's a faster pace. I think people have to get use to dealing with a world that moves a much, much faster pace than what we are used to.

The speed has changed. Once upon a time the change was slow enough so that you could cope with it as just a part of normal life.

How do you free people up to have the time and the necessary support to actually be able to stay current with everything that's going on and the ability to get out of the day to day detail?

This faster pace is placing a new and unexpected emphasis on these "timeless" (Gutsche, 2010) skills and knowledge. As one participant noted:

Even if you were flexible you have to be even more so, you have to be even more inquisitive, you have to be even more multi-tasked, more multi-skilled.

It was also acknowledged that *all* librarians need to possess these skills, knowledge, and attributes and not just the one or two role models who lead the way.

People who have these skills are 1 in 100, [the] challenge is to make it the norm.

Not just one person, everyone has to be there, we all have to be competent at a level.

The idea of "survival of the fittest" was mentioned in a number of the focus group sessions. There was debate as to whether librarian 2.0 needed to possess *all* the skills, knowledge, and attributes or just some of them. While no clear consensus was reached in regards to this point it was acknowledged that the level of competence for each skill, knowledge, and attribute had become higher. Participants noted that "ours is an organic profession" and several participants talked about the "raising of the bar for the profession" and that there is no room for "average, mediocre librarians anymore."

But perhaps the most interesting finding from the study is the idea that Web 2.0, Library 2.0, and librarian 2.0 are "a watershed" for our profession. Almost all of the focus groups spoke about how they are seeing and experiencing a cultural change in the profession. Librarian 2.0 requires a "different mindset or attitude." It is "challenging our mental models" and forcing us to think about and perceive our profession differently. Librarian 2.0 is an attitudinal shift for the Australian LIS profession. Interestingly, it was noted that because of this shift not everyone in the profession is ready to be, or even wants to be, involved:

In the education sector, we very much have an aging workforce. Now the aging part doesn't worry me, it's the minds that worry me.

If you want to do a job you have to change your mind set. Otherwise in five years time you won't have a job.

There's a massive cultural change in the library.

The results of this study suggest that what it means to *be* an LIS professional in Australian is changing. The *Levels of Perspective Model* by Daniel Kim (1996) offers one lens by which to consider this point. Kim (1996) articulated five levels or perspectives from which to study a system (see fig. 1). He points out that the further one moves from specific events toward mental models or vision the more leverage one has. According to Kim, "leverage" refers to small, well-focused actions that can produce significant lasting change. Leverage to alter a system can occur at any level but a key principal of systems thinking is that intervening at the higher levels (mental models or vision) is more likely to increase influence over future outcomes. A system is defined as "a perceived whole whose elements 'hang together' because they continually effect each other over time and operate toward a

common purpose” (Senge, Roberts, Ross, & Smith, 1994, p. 90). Assuming that the Australian LIS profession can, under Senge’s definition, be defined as a type of “system,” it could be argued that the Australian LIS profession has focused its time, energies, and attention on the lower levels of Kim’s model (i.e., events, behaviours, and systematic). Indeed one participant noted, “We are very good at creating systems and processes,” and that we “need to move away from this.” The findings of this study suggest that we are witnessing a re-awakening of the Australian LIS profession as it begins to move toward the higher levels of Kim’s model (i.e., mental models). The study suggests that the Australian LIS profession is re-conceptualizing who or what it is in light of the emerging Web 2.0 world (and beyond). New and different mental models of what it means to be an LIS profession in the twenty-first century are being identified and explored.

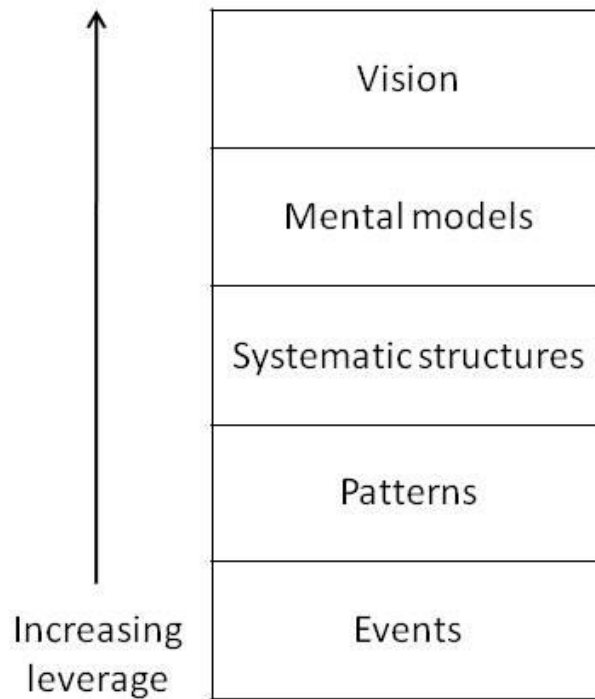


Figure 1. Levels of Perspective (adapted from Kim 1996)

Limitations of the Research

The research has several possible limitations that must be considered. First, while attempts were made to have representation from both metropolitan and regional areas, only 28 percent of the participants identified themselves as being from a regional location. Thus the study’s findings may not be transferable to all Australian contexts. A second potential weakness is that six of the fourteen focus groups were conducted by teleconference, which may bias results because it is a different data collection format. However, it was noted that the teleconference sessions did not provide markedly different data from those conducted in-person. Third, it is acknowledged that because of resourcing constraints two different moderators were used to conduct the fourteen sessions. Training was arranged to standardize focus group moderation across sites, however, it is difficult to estimate the potential bias, given that moderators have their own styles. Finally, there is the issue of a potentially biased sample. Involvement in the study was completely voluntary and it may be that those individuals who took part may have done so because they are more interested in the topic than other LIS professionals. Thus the views expressed in the focus group sessions may be skewed because of the self-selecting nature of the recruitment process.

Conclusion

The project outlined in the current article has provided some interesting insights into the skills, knowledge, and attributes needed by the Australian LIS professional in the Web 2.0 (and beyond)

world. Not surprisingly, the study highlighted that librarian 2.0 is less to do with technology and more about quality transferable skills and interpersonal abilities. Of greater note is the study's finding which suggests that librarian 2.0 is more about changing attitudes and ways of thinking than anything else. The real power of Web 2.0 is not how it is changing the way library and information professionals design and deliver services and resources to meet client needs but how it is changing the ways in which the Australian LIS profession conceives of itself. This study suggests Web 2.0 is the catalyst for a significant attitudinal shift in the Australian LIS profession. The challenge the profession now faces is trying to clearly articulate the nature and scope of this new professional attitude. The LIS profession in Australia must take stock not of "what we know and can do" but on "who we are becoming" (Dall'Alba, 2009, p. 34). While it is beyond the scope of the current article to explore these questions in any great depth an obvious first step forward would involve undertaking further research that explores the existing cultures and attitudes within the profession and what it means to "become an LIS professional" in the twenty-first century. We should also try to learn from other professions, such as teaching and nursing, who have already begun to ask these very same questions within their own professions (Dall'Alba, 2004; MacIntosh, 2003).

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Notes

1. Sir Karl Raimund Popper (1902–94) was an Austrian born, British philosopher and a professor at the London School of Economics. He is counted among the most influential philosophers of the twentieth century, and also wrote extensively on social and political philosophy.
2. Slang word for exceptional or outstanding.

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