Investigating a Peer-to-Peer Community Service Learning Model for LIS Education

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This research explores the professionalization of Library and Information Science (LIS) students who participated in a peer-tutoring service, "Research Rescue." Research Rescue was a collaboration of the Chapman Learning Commons and the School of Library, Archival and Information Studies (SLAIS) at the University of British Columbia. The purpose of the service was to provide an experiential learning opportunity for LIS students, benefit undergraduate students in need of assistance with term papers, and increase undergraduates' awareness and use of the campus libraries through targeted referrals. Research Rescue interactions were documented as "shift notes" in a wiki, which was moderated by a learning services librarian and SLAIS faculty. The wiki acted as a shared learning resource and a means of observing and exploring LIS students' learning and professional development as an outcome of participating in the service. In this paper, we report on our qualitative analysis of the shift notes, which provide evidence that peer tutors took steps towards the formation of their professional identities. We explore the learning and socialization that occurred as part of tutors' involvement in Research Rescue, while also advocating that peer tutoring is a viable model for LIS education.

Keywords: professionalization; experiential learning; peer tutoring

Introduction

Library and Information Science (LIS) faculty attempt to impart a balance of theoretical and practical knowledge and skills to prepare graduates as professionals in diverse settings. However, the transition from student to professional is more than an epistemic shift; it is a "transformation of the self," whereby learners come to exemplify the values, behaviors, and thinking of the professional community (Dall'Alba, 2009; Weidman, Twail, & Stein, 2001). This occurs when learners have opportunities to interact with established professionals (Mehra & Robison, 2009) as well as those whom the profession serves. LIS programs facilitate this by engaging established professionals to teach, inform curricula, and supervise experiential learning opportunities. However, as Dall'Alba (2009) notes, "the most challenging task of learning professional ways of being . . . is left to the students themselves" (p. 43). This is problematic given that "a clearly defined professional identity . . . [determines] . . . work-readiness, recruitment, retention, job satisfaction and work-related motivation" (Tsang, 2010 p. 1). As LIS educators, how do we support students' journeys into the profession?

There are a number of educational para-

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digms from which to draw answers to this question. LIS programs in North America have typically included a practicum component as a graduation requirement, and additional opportunities, such as part-time work placements and longer co-operative work terms exist to give students professional experience. Experiential learning, which emphasizes in situ problem solving and rests upon intrinsically motivated self-directed learners (Knud, 2007), is an important element of LIS education and is enthusiastically embraced by students. Another model, community service learning (CSL), is receiving increasing attention. CSL encourages students to "contextualize course work" and to acknowledge patrons as equals and experts, with the goal of benefitting the learner and the community where the learning occurs (Mehra & Robinson, 2009, p. 30). In addition, peer tutoring has been explored for its benefits for both tutees and tutors. This has received little recognition in LIS, despite the intellectual, emotional and social gains that have been documented (Badura, Millard, Johnson, Stewart & Bartolomei, 2003; Elmendorf, 2006; Fantuzzo, Riggio, Connelly & Dimeff, 1989). Thus we sought to formally explore the application of these experiential learning models in LIS education.

From 2008 to 2010 we developed "Research Rescue," an experiential learning opportunity for LIS students at the University of British Columbia, which draws upon CSL and peer tutoring models. We hypothesized that by participating in the program, emerging librarians would come to understand their position in the learning process, act as role models, and enhance their knowledge and professional identity through reflection and interaction (Badura *et al.*, 2003). In this paper, we describe Research Rescue and report on the learning outcomes for LIS student participants. We begin the paper by examining what it means to become an information professional. We then introduce peer tutoring as a way of facilitating professional "becoming," rooting it in experiential and community service learning. Next, we describe the Research Rescue program and report on students' experiences as peer tutors. Lastly, we analyze and interpret these experiences qualitatively, and discuss our findings. We provide evidence that students took steps towards the formation of their professional identities through their participation in Research Rescue.

Literature Review

Discussions concerning professional identity are abundant in LIS, yet tend to focus on stereotypes (e.g., Seal, 2008) or on the changing identities of established professionals. Julien and Genuis (2011), for example, surveyed more than 700 Canadian information professionals to explore the relationship between library instruction duties and self-identification as a teacher. Studies of emerging information professionals tend to concentrate less on professional identity and more on the acquisition of knowledge and skills (e.g., Partridge, Menzies, Lee & Munro, 2010), a focus shared by LIS programs and professional bodies. The existence of required courses in LIS programs suggests there is a core body of knowledge that every student must have before graduating, and that professional pathways rest upon this foundation. Further, competencies set out by professional associations (e.g., Reference and User Services Association) provide benchmarks of professional knowledge and behaviour. However, it has been argued that knowledge and skills are too heavily weighted at the "expense of ontological considerations relating to who students are becoming" (Dall'Alba, 2009, p. 35) and that students need to be socialized into the profession early in their programs (Tsang, 2009).

Becoming a professional is an evolving process that is influenced by a range of educational and social experiences (Dall'Alba, 2009; Melrose, Miller, Gordon & Janzen, 2012; Tsang, 2009). The

process begins before students enter professional programs as they entertain ideas about what it means to be a professional in a specific field. However, as Dall'Alba (2009) points out, this is not simply an assimilation of the individual into the professional body:

> In learning to think and act as 'they' [established professionals] do, we also take a stand on those thoughts and actions, as well as on who we are becoming, even if this means we simply fall into line with how 'one' should think, act and be. (p. 42).

Professionalization is not only important for the success and work readiness of graduating students, but for continued professional development (Tsang, 2010).

Key to the process of becoming a professional is socialization. Socialization in graduate programs involves gaining the "knowledge, skills and values necessary for successful entry into a professional career" (Weidman, Twale & Stein, 2001). It comprises role acquisition and professional development: committing to the profession, developing a professional identity and recognizing the responsibilities one has as a member of a profession (Melrose, Miller, Gordon & Janzen, 2012). Students' socialization occurs through interactions with established professionals, but also through encounters with clients, peers, and faculty members (Dall'Alba, 2009; Melrose *et al.*, 2012).

Melrose *et al.* (2012) equate socialization with legitimization, where interacting with others provides students with confidence that they are acquiring the necessary knowledge, skills, and experiences to be professionals, and they begin to be valued as evolving professionals. While socialization is a positive and necessary component of becoming a professional, it may contribute to student dissatisfaction with normative modes of education. Cherry, Duff, Singh and Freund (2011) found that, as students advanced in their LIS programs, their level of satisfaction with the program fell. They speculated that as students progress through their studies, "they are able to see more clearly the gaps between what they are learning in the classroom, and what they will be expected to do in the workplace" (p. 130). There is no doubt that a majority of LIS students are strong supporters of programs that provide support for professional socialization. A survey of students from six Canadian information schools concluded that over 90% of respondents sought a "practically and professionally oriented program that will prepare them to work in the field" (2011, p. 129).

The majority of LIS programs offer experiential learning opportunities, such as internships, practica, or co-operative work experiences. These placements enable students to practice their knowledge in the "real environment" of the workplace and to assume some control over their learning (Knud, 2007, p. 86). One issue with experiential learning is that it is focused on the benefits of the student learner and the workplace, but not necessarily of the greater community. Community service learning (CSL) extends the experiential learning model to include community engagement (Mehra & Robinson, 2009). Like experiential learning, CSL allows students to apply what they have learned in the classroom to the field and facilitates professional socialization. Yet, there is the added recognition that the user and community are equals and experts (Mehra & Robinson, 2009, p. 31). CSL should not be thought of an alternative to academic experiences, but should focus on how the classroom and community environments inform each other and the students' learning (Riddle, 2003). However, one challenge with both experiential learning and CSL is in its assessment and how this relates back to professional education. Employers may provide useful feedback to the student and the program as a whole. Yet, faculty members seldom have the opportunity to be directly involved with and to observe and monitor the learning process *in-situ*. We sought to combine the ad-

vantages of experiential learning and CSL through direct collaboration between LIS faculty, librarians, LIS students, and the university community. Central to our initiatives was the peer tutoring model.

Peer Tutoring

Peer tutoring is not yet an established practice, thus resulting in differing conceptions of the role and purpose of tutors (Colvin, 2007). It rests upon the idea that students can learn from other students, and peer tutors who are similar to their target audience will increase the chance of delivering instruction successfully (Badura *et al.*, 2003). Peer tutors are bridges between students and instructors, displaying attributes of both. However, tutors do more than provide instruction and guidance on coursework. They are part of the fabric of the post-secondary community and act as role models to their peers, imparting both hard and soft skills (Badura *et al.*, 2003; Colvin, 2007).

Researchers have examined what makes peer-tutoring interactions and programs successful. Roscoe and Chi (2007) evaluated the techniques of knowledge-building, i.e., "monitoring of comprehension and knowledge," and knowledge-telling, i.e., "summarization with little monitoring or elaboration" (p.535), with the former being the ideal strategy. They note that a tutor must be willing to reflect upon and evaluate their explanations in order to deliver instruction in a knowledge-building manner. Cleveland (2008) advocates for a dynamic peer-tutoring model aimed at engaging and empowering students, whereby tutors aim to unlock knowledge that already exists within the tutee.

While the benefits to tutees may be readily apparent, e.g., assistance with coursework from a more knowledgeable and approachable peer, there are a number of benefits to the tutor. Badura *et al.* (2003) collected narratives from 21 graduating health education tutors. They found that acting as peer educators allowed tutors to develop and model desirable attributes and behaviours, i.e., positive role modeling and community participation (Badura *et al.*, 2003). Elmendorf (2006) suggested that, in teaching others, tutors gain insights into their own learning process, specifically the difference between learning facts versus attaining understanding, organizing ideas, and making connections between their field and other disciplines. Gafney and Varma-Nelson (2007) saw the benefits or peer tutoring as going beyond the tutoring interaction and contributing to life-long skills (e.g., presentation skills) and qualities (e.g., confidence, perseverance) that would serve tutors in post-graduation professional settings.

However, peer tutoring programs are not without challenges; chief among these is the gap between student tutees' perceptions of the purpose of peer tutoring and the delivery of the service itself (Cleveland, 2008; Colvin, 2007). Cleveland (2008) observed that many students seek peer assistance in the form of quick fixes and easy answers. Tutors must cope with these pressures and try to turn each interaction into a teachable moment. In other words, there is a tension between what tutors are trained to do and what students want.

In summary, researchers agree that peer tutoring brings benefits to all participants. Although tutoring comes with many challenges, including defining one's role and purpose and acting as a leader by displaying desirable attributes, it aids in personal growth and development, the acquisition of knowledge and skills, and is part of professional socialization (Badura *et al.*, 2003). With peer tutoring services and other experiential learning models on the rise, it is worthwhile to examine whether these models are successful in allowing tutors to develop competencies that will serve them in a professional capacity.

Research Rescue

Research Rescue a peer tutoring pro-

gram that was offered by the iSchool and the Chapman Learning Commons at the University of British Columbia (UBC). The program brought LIS student volunteers together with students from other programs within the Learning Commons to provide support for research activities and term papers. Research Rescue was designed to supplement the classroom experiences of LIS students with relevant and meaningful community-based practice and provide a framework for students to learn from their experiences. The program was based on the idea that LIS graduate students could act as a bridge between other students and librarians.

During the 2008–2009 academic year, a group of LIS students and faculty and UBC librarians established basic policies and procedures for Research Rescue, including volunteer requirements, training sessions, protocols for behavior during interactions with students, and a self-reflection component in the form of "shift notes." Peer tutors were required to have completed the core MLIS courses, including a foundations course in information sources and services, attend two training sessions, and participate in at least one Research Rescue shift per week. A wiki was set up to facilitate coordination, communication and sharing of resources among peer tutors. The goals of the service are provided in Appendix A.

Approximately thirty SLAIS students volunteered to participate in Research Rescue the first year and forty-six in the second year. Some of the students participated both years, while new or graduating students served more limited terms. The service provided assistance to more than one hundred students across various UBC academic programs in year one and ninety-five in year two. Student volunteers were mentored over the course of the program by SLAIS faculty and the Learning Services Librarian. These individuals reviewed and provided feedback on the Wiki shift notes, organized and taught instructional sessions, acted as the liaison between LIS students and the UBC Library, and provided advice and assistance as needed; they worked in close concert with the Research Rescue LIS student coordinators.

Shifts were two hours in length and scheduled during times when the Learning Commons was busiest. During most shifts, peer tutors worked in pairs, and efforts were made to match novice peer tutors with more experienced colleagues. In addition to sessions provided at the Learning Commons, some shifts were scheduled in campus residences to promote the service.

Following the first year, a collaborative assessment of the service was conducted, which resulted in the implementation of more structure in the shift notes and closer oversight of activities on the part of a Learning Services Librarian via the wiki. This was based on the desire to collect information in a consistent manner, to guide tutors in their interactions with tutees, and to provide a forum for the collective sharing of experiences and provision of feedback. Also, the mandate of the service was delineated more clearly, such that providing instruction on specialized databases was removed from the scope and peer tutors were instructed to provide a referral slip to an appropriate UBC Library as part of each interaction. This was intended to reinforce the integration of Research Rescue into the broader library system and ensure that student volunteers were providing a high quality service within the scope of their own expertise.

In the current paper we explore Research Rescue as a program that blends the CSL and peer tutoring models. Based on previous research, we focused on what benefits LIS students gained from being part of this project in terms of their interactions with the community, and the development of their own knowledge and skills. Specifically, we asked: What are the learning effects on peer tutors of participating in a community service learning project? Additional questions arise from this query, included:

- What was the nature and content of their interactions with students?
- What challenges did they face?
- How and to what extent professional socialization occur?

In the current paper, we explore these questions through the analysis of shift notes created during the second year of the program, and consider the ways in which LIS students' experiences as peer tutors may facilitate professional becoming and inform LIS education.

Methods

Study Design and Participants

Both quantitative and qualitative data were collected directly from student peer tutors through structured shift notes. Data was collected throughout the second year that Research Rescue operated, 2009–2010.

Study Instruments and Data Collection

Research Rescue peer tutors used a wiki to coordinate service activities. Over the first year of operations, peer tutors summarized each shift in a diary-style entry on the wiki. In the second year, we created a more structured template for shift notes (see Figure 1). Shift notes were completed by peer tutors following each shift and were available via the wiki to other peer tutors and the Learning Services Librarian, who provided feedback. Tutors briefly summarized each interaction that occurred during the shift and described it in terms of subject area, stage of research, resources used, approximate duration of the interaction, challenges faced, and what they felt they learned. The shift notes were regularly reviewed by all tutors, faculty members involved in the project, and the Learning Services Librarian. Thus, the shift notes functioned as a tool for reflection, collaborative learning, information sharing, and assessment, as well as for purpose of data collection. Shift notes completed by peer tutors who did not give their consent to participate in the study were excluded from the data analysis. Over the two terms of activity, we collected a total of 90 usable shift note entries.

Data Analysis

Shift note entries were transferred to a spreadsheet and responses from sections

1. Interaction #	**2. Research Rescue Volunteer names**:
3. Subject Area or Topic:	**4. Stage in Research (highlight one or more):** Defining Topic, Exploring Topic, Searching for Information, Working with Information, Other.
5. Summarize the interaction:	**6. List Resources used (if applicable)** Subject Guide/s: Database/s: Referral/s:
7. Where/ how students found us:	**8. Length of interaction (in minutes):**
9. Challenges:	**10. Things I learned:**

Figure 1. Blank shift note template.

Table 1. Five Components of Information Literacy.

Literacy Type	Definition	Example from Shift Notes
Tool literacy	The ability to use print and electronic resources including software and online resources.	*She had a sense of what to look for in relation to her topic but needed some help understanding how to access databases and books using the library website. (36)*
Resource literacy	The ability to understand the form, format, location and methods for accessing information resources.	*We went over the subject guide and talked in general about the differences between book research and the catalogue, and online articles and databases (18).*
Social structural literacy	Knowledge of how information is socially situated and produced. It includes understanding the scholarly publishing process.	*We talked about citations, what they were and what information was needed (16).*
Research literacy	The ability to understand and use information technology tools to carry out research, including the use of discipline related software and online resources.	*It . . . became clear that they needed to spend some time defining their topic before these [subject] guides would be helpful. At this point, we referred to the Research Rescue wiki . . . for some ideas on how to do this. We worked on developing a solid topic and sub-topic until the end of the session (5).*
Publishing literacy	The ability to produce a text or multimedia report of research results.	*A student dropped by wanting some advice on citing sources. She was concerned that her paper was too "citation heavy" and that her writing style was suffering. We looked at the Princeton website on academic integrity to show her where and how it is appropriate to cite sources . . . (7).*

3, 4, 6, 7 and 8 (see Figure 1.) were summarized quantitatively. The qualitative responses from sections 5, 9 and 10 (see Figure 1) were analyzed separately by researchers to identify themes and categories. Potential themes were discussed as a group and further refined. Themes were defined and documented in a codebook that guided the final coding of the shift notes. For example, the theme of *social collaboration* was defined as "evidence and examples of student(s) and volunteer(s) working through problems together in an informal/casual manner." Each qualitative response in the shift notes was assigned a unique identification number, which is used to reference the data reported in the results section.

Results

The Nature and Content of Interactions

Research Rescue sessions were, on average, five to twenty minutes in length, though some interactions lasted more than one hour. The majority of sessions (65%) were humanities and social sciences based; the remainder related to applied and life sciences (17%) or other (18%) subject areas.

A small number of interactions consisted of referring students to the campus Writing Centre or explaining and promoting Research Rescue services, but the majority included some instructional activities. Students were most often seek-

ing assistance in searching for information (41%), defining or exploring topics (27%), or working with information (16%). However, based on the shift notes, we also noted evidence of tool, resource, socio-structural, research and publishing literacy, as defined by Shapiro and Hughes (1996). In Table 1 we include the definitions of each of the five types of literacies and an illustrative example from our data.

Resource and research literacy were most frequently observed, while publishing literacy was relatively uncommon because peer tutors were instructed to refer students with writing questions to the Writing Centre. The higher incidence of research literacy may be due to the fact that peer tutors recorded student's research stage in the shift notes and were trained to tailor the interaction to this stage. Socio-structural literacy arose in discussions of different types of sources, e.g., primary and secondary (44) or the purpose of citations (16).

In many cases resource literacy and tool literacy co-occurred. Peer tutors introduced available resources, often referencing library subject guides, and showed students specific databases or other tools. In the following excerpt, we can follow the trajectory of the session as the student and tutor explore a range of resources (e.g., books, e-books) and specific tools to locate and use these resources:

> We showed her how to use subject headings to find books on her topic. We then showed her how to find the location of the book (which library it's in) and mentioned browsing. She also wanted to know about e-books, so we showed her how to access Books 24/7. Finally, we talked about Academic Search Complete, to which someone had already pointed her and explained the difference between a database and the library catalogue." (29)

Although the interactions were instructional in nature, they were also social and collaborative. In at least one case, this presented a challenge, as one tutor recounted: "The student was playful throughout the interaction and it was tough to balance between keeping a similar tone and giving him information" (230). However, for the most part, the social nature of the interactions, which included wide-ranging discussions and group problem solving facilitated by the two peer tutors, contributed positively to their success. (In fact, tutors noted the advantages of working with another tutor in a collegial manner [154].) The following excerpt from the shift notes documents a collaborative encounter:

> We attempted to find a relevant subject guide, but I found that it was too confusing to us both, since there was no specific option for "applied science". We began looking at the UBC databases, particularly Web of Science and Academic Search Complete. I tried to explain how using the same search terms [in] both databases gets different results . . . By the end of 40 minutes, he seemed to have a much clearer understanding of what his research options are. (40)

In this particular interaction, the tutor uses inclusive language (e.g., "we") to indicate that the student and tutors were working in tandem to identify where to begin the search and how to increase their understanding of the problem area. During the analysis, we were struck by the frequency in which students used "we" in their descriptions of the session (e.g., "We brainstormed keywords and synonyms and conducted a few searches" [10]). In other cases, the peer tutors served as sounding boards for students seeking validation or a confidence boost. One tutor described explaining the uses of databases and journals but felt the student "seemed to already have this knowledge and was looking to confirm [it]" (2).

Peer-Tutor Learning Outcomes

Based on peer tutors' expressions of the challenges they faced in offering the Research Rescue service and explicit statements of personal learning, we identified

three distinct learning themes: learning about the self (i.e., self-efficacy, self-evaluation), learning to be a professional (i.e., ethical and behavioral issues, professional standards, service mandate), and developing interpersonal and communication skills.

Learning about the Self

Peer tutors grappled with the limitations of their abilities and knowledge. One tutor admitted "[I] know absolutely nothing about what [the student] actually wanted" (138), while another felt "'out of my depth' with scientific databases"(185). Some tutors accepted that each interaction may not have a successful outcome (i.e., "you just can't answer them all" [173]) and that they would not always execute the situation perfectly (e.g., "I forgot to show her an appropriate subject guide, likely because I'm a little rusty this term" [234]). However, others did navigate difficult interactions successfully. One peer tutor explained, "It's a little intimidating to search for something if you don't know if it exists or not, we could have easily ran into a dead end. Thankfully we didn't!" (256).

Peer tutors also learned not to make assumptions about tutees' previous knowledge and abilities/inabilities because "a person's knowledge of one research tool, even an 'advanced' one, isn't a reliable indicator of knowledge of other tools" (155). This lesson in making assumptions fostered greater awareness amongst the tutors that they needed to ask more questions: "It's easy to make assumptions about what students might know but this was a good lesson in asking questions" (144). In some cases, this was apparent after the interaction. Said one tutor, "[I] was a bit too focused on finding materials at first, which was not what the student wanted - an extra question or two from me at the beginning might have clarified this" (126). However, other tutors recognized that "figuring out what she already knew and what she was still looking for was crucial to determining which resources might actually be useful to her" (157).

The need to ask questions was tempered with the knowledge that some students were operating within time constraints and with limited skills and knowledge. Tutors described the challenges of "quickly understand[ing] what the student already knows how to do and when to stop giving information" (232) and to balance providing information without "overwhelming" students (188).

Learning to be a Professional

Within this theme, we saw evidence of peer tutors negotiating their roles with students and within the broader university system. With respect to students, peer tutors recognized that their role was to provide guidance, not answers. "It can be tempting to tell students the 'right way' to cite something," wrote one tutor, "[but] it's important to point them to sources that will help them with this process, but they must ultimately write the citation themselves" (148). Another tutor acknowledged that "students come looking for advice and answers, but it's not our place to give them answers on right or wrong things to do with their assignments" (108).

Within the broader university community, tutors viewed themselves as "emissaries to the community" (146) and discussed ways in which to advertise and promote the service. For example, in addition to operating within the Learning Commons, they suggested offering services at student dormitories. However, they also faced challenges operating within the boundaries of the Research Rescue service mandate. As one tutor noted, "Some requests don't fall strictly within our purview but the student is most comfortable talking to us" (149). The tutors observed that some students seemed unable or reluctant to speak to their instructors or visit the Writing Centre, coming to the peer-tutors instead. Tutors practiced boundary setting, "talking through an assignment with a

student while being clear that she should clarify that assignment with her professor or a subject librarian." (239). They also became aware that some students were in need of counseling to cope with academic life: "She was down and upset about the work involved with being a first year university student" (264).

Learning Interpersonal Skills

Tutors' reflections of their interactions with students underscored the need for friendliness, patience, and effective verbal and non-verbal communication skills. They described identifying whether students were "reluctant to admit they need[ed] help, and [required] a little gentle coaxing" (112) in the form of "a friendly 'hello' (and candy)" (137) to use the service, or whether they "just need[ed] to talk to someone that understands what they are going through" (174). Regardless, tutors recognized that "it's important to reach out to the students and make them feel welcome and comfortable" (122).

For many peer-tutors, Research Rescue was their first opportunity to interact directly with people information service. We observed both negative and positive affective responses in the shift notes. Peer tutors expressed frustration when they were unable to help due to students' time restrictions (198) or feeling "like you didn't help as much as you could have" (150). As one tutor stated, "Not being able to give the patron something that will satisfy their information need can be disheartening!" (260). On the other hand, peer-tutors articulated fondness for the tutees (e.g., "Oh, and I love undergraduates" [99]) and personal satisfaction at being able to satisfy students' information needs (103) or help them cope with an assignment. In recounting an interaction, one tutor related that "by the time [the tutee] left, she said she could finally 'breathe again' while thinking about the assignment. Which was nice for us to hear" [144]).

Furthermore, we noted inter-relationships between the sub-themes related to learning. Tutors who encountered and navigated service and personal boundaries learned about themselves, their colleagues, and their profession, and executed interpersonal skills to deal with the situation at hand. Peer-tutors who learned the value of asking questions not only learned about themselves, but they learned and expanded upon valuable professional and interpersonal skills. Arguably, such complex and comprehensive learning cannot occur in the artificial setting of a classroom. Tutors' learning was enriched because they were able to engage with information seekers in real and uncontrived situations.

Discussion

The content and nature of the interactions showed tutors and tutees working as a team to broaden students' literacy skills in the areas of research, information tools and resources, the socio-structural organization of knowledge, and the dissemination of academic work. The social nature of these interactions exemplifies the mandate of community service learning where the user community is recognized as equals. Based on tutors' depictions of the activities that occurred during their interactions with students, we documented students playing the role of a more knowledgeable peer, introducing various literacy skills, and gaining experience in the reference interaction.

In addition to what took place during the sessions, we also had a window into tutors' personal reflections of their own learning. Here they noted the gaps in their knowledge, which were exposed through the unpredictable nature of students' inquiries, and confronted their assumptions about tutees' knowledge and skills. In both instances, they highlighted the need to ask questions and increase their understanding of students' needs, abilities and perspectives, and sought to balance the volume of information they were providing. This kind of hands on learning can neither be

found in a classroom nor a simulated role-play scenario. The element of surprise and the tutor's ability to think on his/her feet is a necessary component of learning how to interact with the community. We also observed the tutors negotiating their roles within the university in relation to their service mandate. This involved recognizing the limits to how much help they should provide, and when to refer students to other services. Lastly, volunteers learned the importance of being approachable to students, while grappling with a range of emotional reactions to being tutors.

Similar to other researchers, we observed the benefits and challenges of operating a peer tutoring service. For example, we saw students articulating the difference between knowledge building and knowledge telling (Roscoe & Chi, 2007), making a concerted effort to guide students without doing their work for them. In addition, we observed that tutors learned valuable skills and lessons (Elmendorf, 2006). We also noted that peer tutors confronted many barriers (e.g., in their own knowledge) and negotiated boundaries (e.g., tutor as expert vs. tutor as social peer), sometimes successfully and sometimes not so successfully (Cleveland, 2008; Colvin, 2007). Tutors were not there to act as professional librarians, but were largely there to provide a comfortable and safe environment for students and to know when and where to refer students for more in-depth research help.

Peer tutoring facilitated LIS students' experiential learning, but working with other UBC students allowed them to contribute to their community (Mehra & Robinson, 2009). By analyzing the peer tutoring experience, we extracted elements of professional becoming amongst the tutors. For example, the affective responses from tutors revealed important aspects of socialization. Positive encounters affirmed tutors confidence in their knowledge and training (Melrose *et al.*, 2012), and reinforced their desire to help others in a professional capacity. Such outcomes may contribute to tutors' commitment to the profession they are joining (Melrose *et al.*, 2012). However the negative experiences are also important. By showing tutors the personal and situational constraints they will encounter in real-world reference encounters (Dall'Alba, 2009), they may develop a more holistic and accurate view of the profession. The collaborative nature of tutors' interactions with students and other tutors, as well as their ongoing negotiation within the university, contributed to their understanding of the delineation of the work of librarians versus other professionals within higher education. It also revealed how different units must work together through service referrals to ensure students' success. The processes of collaboration and relationship building are all fundamental components of professionalism.

Implications

This research raises a number of issues related to professional education. Firstly, the use of shift notes and the sharing of these reflections through the wiki provided a way in which to collaborate and learn from each other, but also to shift the focus away from individual performance to collective learning. Adams, Daly, Mann and Dall'Alba, (2011) note that this may create an "embodied understanding…[that is] embedded and enacted within the dynamic, intersubjective flow of activity that is professional practice" (p. 590). Thus, educators might reflect upon the ways in which knowledge is conveyed and assessed within LIS programs (i.e., student and instructor vs. students instructors) in order to maximize learning but also professional socialization.

Secondly, we encountered the danger of "playing a role." Tutors were librarians-in-training and in the process of developing professional identities, yet not accredited professionals. This led to a built-in conservativeness as tutors attempted to stay within the confines of "LIS student"

versus "LIS professional." In some ways this limited the experiences they were able to participate in and made them focus on boundaries rather than opportunities. On the other hand, they naturally developed a strong collaborative spirit, willingness to share, and openness to asking questions and making mistakes in order to increase their learning, which was valuable. Thus, we suggest that confronting assumptions and making errors are important aspects of the learning process and we must give students the freedom to do so in guided environments mediated by faculty and established information professionals.

Limitations

Our research focused exclusively on the experiences of peer-tutors, and not on the educational outcomes of users of the Research Rescue service. We did not collect data from students using the service because this would have required informed consent and constituted a barrier to using the service. However, such information would be valuable for establishing what benefits students gain from learning from their peers and whether other universities should consider implementing similar LIS peer-tutoring programs. In addition, we did not have high levels of use by students and the reasons for this should be explored. For example, did students understand the purpose of the service, were our marketing and promotion efforts unsuccessful, or did students feel that they did not need or value help with research or from other students? Despite the positive outcomes noted in this paper, Research Rescue did not continue past the first two years, in part due to the low participation rates and in part due to the challenges of accommodating a volunteer service within a professional work setting that already employs students in very similar roles. The discontinuation of the service meant that we were not able to conduct a longitudinal study that might have provided additional insights.

Conclusion

CSL and peer tutoring models informed the development of "Research Rescue," an experiential learning opportunity for LIS students at the University of British Columbia. This study investigated the learning effects on the Research Rescue peer tutors, gathered through the analysis of structured shift note data. We found strong evidence that peer tutors took steps towards the formation of their professional identities through their participation in the service. Peer tutors were engaged in their role as the knowledgeable peer and expressed both positive and negative affective responses, demonstrating a development of a more enriched understanding of their profession. Tutors' reflections also revealed skill development in social collaboration and relationship building as they interacted with fellow tutors and tutees. Participation in the service afforded peer tutors the opportunity to identify and mediate challenges that can occur in a professional setting, including confronting professional boundaries and the limits of personal knowledge, and assessing whether situations require the use of soft, rather than hard, skills. Additionally, peer tutors built confidence in their skills, identified areas for improvement, and applied theory learned in the classroom in a 'live' setting. This *in-situ* learning allowed tutors to develop their professional identities in a way that cannot be replicated in a classroom or textbook.

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References

Adams, R.S., Daly, S.R., Mann, L.M., & Dall'Alba,

G. (2011). Being a professional: Three lenses into design thinking, acting, and being. *Design Studies, 32*, 588-607. doi: 10.1016/j.destud.2011.07.004

Badura, A., Millard, M., Johnson, C., Stewart, A., & Bartolomei, S. (2003). Positive outcomes of volunteering as a peer educator: A qualitative study. (ERIC Document Reproduction Service No. ED473426). Retrieved from http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED473426

Cleveland, J. (2008). What Socrates would say to undergraduate tutors. *Chronicle of Higher Education 55*(17), A26. Retrieved from http://chronicle.com

Colvin, J. (2007). Peer tutoring and social dynamics in higher education. M*entoring & Tutoring: Partnership in Learning, 15*(2), 165–181. doi: 10.1080/13611260601086345

Cherry, J. M., Duff, W.M., Singh, N. & Freund, L.(2011) Student perceptions of the information professions and their master's program in information studies *Library & Information Science Research, 33*(2), 120–131. doi: 10.1016/j.lisr.2010.09.004

Dall'Alba, G. (2009). Learning professional ways of being: Ambiguities of becoming. *Educational Philosophy and Theory, 41*(1), 34–45. doi: 0.1111/j.1469-5812.2008.00475.x

Elmendorf, H. G. (2006). Learning through teaching: A new perspective on entering a discipline. *Change: The Magazine Of Higher Learning, 38*(6), 36–41.

Fantuzzo, J. W., Riggio, R. E., Connelly, S., & Dimeff, L. A. (1989). Effects of reciprocal peer tutoring on academic achievement and psychological adjustment: A component analysis. *Journal of Educational Psychology, 81*, 173–177.

Gafney, L., & Varma-Nelson, P. (2007). Evaluating peer-led team learning: A study of long-term effects on former workshop peer leaders. *Journal of Chemical Education, 84*(3), 535–539. doi: 10.1021/ed084p535

Julien, H. & Genuis, S.K. (2011). Librarians' experiences of the teaching role: A national survey of librarians. *Library and Information Science Research, 33*, 103–111.

Knud, I. (2007). What do we actually mean by experiential learning? *Human Resource Development Review, 6*(1), 84–95. doi: 10.1177/1534484306296828

Mehra, B., & Robinson, W. (2009). The community engagement model in library and information science education: A case study of a collection development and management course. *Journal of Education for Library and Information Science, 50*(1), 15–38. Retrieved from http://jelis.org

Melrose, S., Miller, J., Gordon, K. & Janzen, K.J. (2012). Becoming socialized into a new professional role: LPN to BN student nurses' experience with legitimization. *Nursing Research and Practice* (Article ID 946063), 8 pgs. doi:10.1155/2012/946063

Partridge, H., Lee, J. & Munro, C. (2010) Becoming librarian 2.0: The skills and knowledge required by library and information science professionals in a web 2.0 (and beyond) world. *Library Trends, 59*(1/2), 315–335. Retrieved from http://www.press.jhu.edu/journals/library_trends

Roscoe, R., & Chi, M. (2007). Understanding tutor learning: Knowledge-building and knowledge-telling in peer tutors' explanations and questions. *Review of Educational Research, 77*(4), 534–574. doi: 10.3102/0034654307309920

Riddle, J.S. (2003). Where's the library in service learning? Models for engaged library instruction. *The Journal of Academic Librarianship, 29*(2), 71–81.

Seale, M. (2008). Old maids, policeman, and social rejects: Mass media representations and public perceptions of librarians. *Electronic Journal of Academic and Special Librarianship, 9*(1). Retrieved from: http://southernlibrarianship.icaap.org/content/v09n01/seale_m01.html.

Shapiro, J. and Hughes, S. (1996). Information literacy as a liberal art. *Educom Review, 31*(2). 31–36. Retrieved from http://www.educause.edu

Tsang, A.L. (2010). Students as evolving professional: Students' perceptions of the evolving professional (EP) concept as a professional socialization process. *International Journal for the Scholarship of Teaching and Learning, (4)*1, 1–10. Retrieved from http://academics.georgiasouthern.edu/ijsotl/v4n1/ essays_about_sotl/_Tsang/index.html

Weidman, J. C., Twale, D. J., & Stein, E. L. (2001). Socialization of graduate and professional students in higher education: A perilous passage? *ASHE–ERIC Higher Education Report 28*(3). Retrieved from http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED457710

Appendix A: Goals of Research Rescue

- To provide peer-to-peer (student to student) assistance in the research and planning phases of undergraduate academic course work (term papers);
- To provide an opportunity for SLAIS students to develop skills by providing information services and instruction in an academic setting;
- To extend the reach of the UBC library

by providing an easily accessible, informal and low stress introduction to conducting research using library facilities;
- To serve as a confidence-building encounter for both groups of students;
- To round out and complement existing student services offered through the Learning Commons;
- To serve as a test-bed for research on student literacies and library and information science education.

Throughout its operations, Research Rescue peer tutors and coordinators aimed to:

- Coordinate efforts with other groups active in the Learning Commons;
- Encourage all students to make use of UBC library resources and services;
- Refer all complex reference questions to the appropriate UBC library staff;
- Conform to the accepted ethical standards and practices of library professionals.