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**Preparing Librarians to Support Student Access to New and Emerging Technologies: Selected Online Programs in School Library Education from Three Countries**

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**Abstract:**

*Supporting student access to new and emerging technologies is a key role of 21<sup>st</sup> century school librarians. Online school library education offers a variety of ways through which school librarians can build their knowledge and skills related to learning about new and emerging technologies and about how to help students and others use those technologies. Programs in school library education increasingly are looking to online delivery models in order to: (a) increase access for students not easily served by on-campus programs; (b) provide more choice for on-campus students; and (c) integrate technology education through both content and pedagogy. Three examples, selected from programs in Canada, Australia, and the United States, are described to illustrate the ways in which online programs have developed, including challenges and successes. The future of online school library education is discussed from the perspectives of educators currently working in online programs. Finally, findings are presented in the form of themes found across the three programs and themes emerging from interviews with educators.*

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**Introduction**

Although the education of teacher-librarians has always included learning about the newest media formats and instructional technologies, there are increasing demands for school librarians to take a leadership role in relation to new and emerging technologies, especially social media. Despite years of pressure to integrate technology into teaching and learning, some schools and some teachers still struggle with this work—they are constrained by lack of time and support for professional learning, by the multiple and often conflicting demands of their work, and by the rapid pace of technological change. In order for school librarians to be able to support teachers' learning and to provide leadership in the school related to students' learning about new and emerging technologies, school librarians themselves need to be confident users of new and emerging technologies.

Online school library education, by its very nature, offers rich opportunities to integrate learning about technology through online pedagogies as well as through course work specially focused on these technologies. That is, following the basic tenets of 20<sup>th</sup> century media education (“Media Education 1.0”), learners achieve a more profound and critical understanding of a new technology, and of technology in general, through learning with technology (experiencing media), through learning about technology (interpreting media), and through learning through technology (making media).

In the 21<sup>st</sup> century, digital media extend these three ways of knowing technology and enable a more participatory culture (“Media Education 2.0”): digital media hold the promise of a shift from a ‘sit down and be told’ culture to a more creative ‘making and doing’ culture (Gauntlett, 2011). Meikle (2007), in writing about participatory culture and the use of the Internet in the last American election, pointed out that 11% of Americans “used the net not just to get news and information about the campaigns, but also to write, to blog, to comment, to forward, and to distribute their own audio and video material. That's a lot of people who see politics as something they're part of; *a lot of people who see media as something they do, rather than just watch, listen to or read* [emphasis added].”

According to the September 2009 report from the Pew Research Center, 93% of teenagers (12-17 years old) in the USA are using the Internet; 73% of teens are using social networking sites; a smaller but still significant group of teens are using social media for content creation: 38% for sharing content online, 21% for remixing content online, and 14% for blogging and commenting online. Children and youth in our schools are using the Internet and using Web 2.0 tools in out-of-school contexts. School librarians can and should take a leadership role in introducing and integrating new and emerging technologies into teaching and learning in the schools.

Branch and de Groot (2009) found that school librarians wanted and expected their library education to help them to know more about technology, specifically about Web 2.0, and about issues related to technology use such as digital citizenship, copyright, privacy, intellectual property and electronic publishing. The school librarians surveyed by Branch and de Groot saw the importance of this knowledge in terms of what their students would need, e.g., “Students will need to know how to access, manage and evaluate information from a multitude of sources” (p. 6). The challenge for school library educators is to meet their graduate students’ learning needs in ways that allow them to continue their learning long after their degrees are finished.

## Literature Review

Much of the research in the 1990s related to distance education for library education in examined the questions of equivalencies between face-to-face and distance education. Overall, this research showed positive results for distance education in terms of student learning outcomes and of satisfaction with the learning experience (Oberg, 1996). These findings were consistent with my field research into distance education programs in Australia (Oberg, 1994) and with the “high structure-high dialogue” model described by distance education theorists (see, for example, Keegan, 1996). Student success and student satisfaction were linked to carefully designed content and to high levels of contact between and among instructors and students, rather than by particular delivery technologies.

The first decade of the 21<sup>st</sup> century was a time of great change in distance education, when the available technologies finally had the power to meet the challenges of rapidly changing content and of expectations for high levels of communication and interaction. Distance education was moving from independent to interdependent learning (Garrison &

Anderson, 2003) and from behaviorist/cognitivist/constructivist pedagogies to more connectivist pedagogies (Siemens, 2004, 2005).

The demand for online programs has led to a proliferation of programs, in some cases, developed by units with little special expertise in distance education. The distance education research of the 21<sup>st</sup> century has turned to issues related to the planning and development of quality programs (see, for example, Huffman, Albritton, Rickman & Wilmes, 2011; Pribesh, Dickinson, & Bucher, 2006). In 2003, Howell, Williams & Lindsay identified, from an analysis of the general distance education literature, 32 trends affecting distance education today. They grouped the 32 trends into six categories—student/enrollment trends, faculty trends, academic trends, technology trends, economic trends, and distance learning trends—the most germane to the topic of this paper are academic trends, technology trends, and distance learning trends, e.g.:

13. Knowledge and information are growing exponentially.
16. Instruction is becoming more learner-centered, non-linear, and self-directed.
18. Academic emphasis is shifting from course-completion to competency.
19. Education is becoming more seamless between high school, college, and further studies.
22. Technological devices are becoming more versatile and ubiquitous.
23. There is a huge growth in Internet usage.
24. Technological fluency is becoming a graduation requirement.
28. More courses, degrees and universities are becoming available through distance education programs.
29. The Internet is becoming dominant among other distance–education media.
30. The distinction between distance and local education is disappearing.
32. There is an increasing need for learning and teaching strategies that exploit the capabilities of technology. (pp. 6-12)

Online school library education can and should address the need for teacher-librarians to have the confidence and competence to use new and emerging technologies and to support teachers and students in their use of new and emerging technologies. The question that drives the research reported in this paper relates to how current online programs meet those expectations now and how might they do so in the future.

### **Research Methodology**

The research reported in this paper, conducted in 2010-2011, examined six graduate-level programs in three countries through the perspectives of educators engaged in online and distance school library education. Interviews were conducted using a semi-structured approach; field notes were taken during visits to each program; and online sources, primarily the websites of the universities where the programs were located, were examined as well.

Findings were drawn from the data using content analysis. Preliminary findings address: (a) history and development of online school library education; (b) ongoing successes and challenges of preparing students to become leaders in new and emerging technologies; and (c) perspectives on future developments. These findings are presented in this paper the form of “cases” or examples of online programs, selected to represent three of the common ways in which online programs have developed in the past 15 years.

## **Limitations and Delimitations**

The research project addressed only English-language programs at the master's degree level. The research is ongoing, and the findings are preliminary: more programs will be examined in the coming months.

I come to this research with my own biases, borne out of both research and practice: I have been involved with school library education in Canada since the 1980s, and in the 1990s I examined the research on distance education in library and information studies (Oberg, 1993), prior to initiating the development of an online school library education program at the University of Alberta. The development of that program has been documented on an ongoing basis by myself and by the current coordinator of the program, Dr. Jennifer Branch (see, for example, Branch & de Groot, 2009; Branch, deGroot, Mardis, Barronoik, & Galloway Solowan, 2009; de Groot & Branch, 2009). It also has been the focus of a doctoral dissertation (Saumure, 2010).

## **Three Cases of Online School Library Education: Commonalities and Differences**

The three cases presented here were selected to illustrate the different routes that have been taken to develop online programs in school library education. The cases are based on actual programs which lead to master's degrees with a specialization in school libraries. All are located in research-intensive universities which offer mostly face-to-face programs and which mandate that faculty be involved in research as well as teaching, but each has developed its online program in quite unique ways. The three programs vary somewhat in length (from 27-36 credit hours, or 9-12 semester-long courses). For each of these programs, student demand is high, and admission is competitive. All expect that candidates seeking admission are experienced teachers. None of the three programs, at this time, charge additional tuition or special fees for online students, thus facilitating equity of access. The nature of the administrative homes of these programs differs, as do the types of other programs offered in conjunction with the master's programs (e.g., certificate programs; alternate routes to teacher certification).

### **Program 1: Replacing a face-to-face program with an online program**

Program 1 was online by 1998. The online program replaced a small face-to-face program, serving about 15 students a year, mostly part time students from the local community. Two to five students graduated from the program each year. One full time tenured faculty member and several non-tenured master's level adjunct instructors taught the courses in the program. Today Program 1 serves about 80 students a year; the students continue to be mostly part time, but they come from across the country and around the world. About 15 students graduate from the program with their master's degrees each year. The instructional team has grown slightly, to 1.5 tenured faculty and two non-tenured part time adjunct instructors (both with doctoral degrees). The challenges of the current program are: program growth has brought high student-advising loads (although class sizes have remained small because of institutional policies); maintaining program flexibility while ensuring that students attain the necessary competencies; and responding to the issues of new and emerging technologies.

For Program 1, the motivation for beginning the online program was the reduction in student enrolment, mainly due to an economic downturn in the mid 1990s that reduced the number of positions for teacher-librarians in the local K-12 school system. Reaching out to students "at a distance" was seen both as a way to increase student numbers and also to protect the program from the vagaries of local school funding. The obstacles that hindered the

development of the program included: cutbacks to the post-secondary system; scarcity and inexperience of personnel for online course and program development; priorities within the university focussed on research instead of teaching; and lack of infrastructure and lack of interest in distance education within the institution. The forces that supported the development of the online program included: instructors who were willing re-invent themselves as online educators; access to theory and research related to distance education; one-time government incentive funding; and on-going program evaluation.

Program 1's approach to preparing future school librarians to support student access to new and emerging technologies involves two required courses, one in new and emerging technologies and one in the implementation of technologies, as well as a program-level commitment to integrating new technologies into all courses. The program has used a variety of learning management systems (LMSs) and is now being migrated onto *Moodle*. The technologies utilized at the course and program level include: photo sharing sites such as *Flickr* or *Picasa*; video-sharing sites such as *YouTube* and *Teacher Tube*, social bookmarking sites such as *diigo*; podcasting; wikis; multimedia sharing and mashup sites; social networking sites; *Twitter*; and blogs and blog aggregators.

## **Program 2: Replacing a technology-enhanced distance education program with an online program**

Program 2 has had a very long history of serving students from across the country through distance education; it has grown from about 200 students in the 1990s to over 400 enrolled in the master's degree program today. About 70 students graduate from the program with their master's degrees in teacher-librarianship each year. Four tenured faculty and one non-tenured adjunct instructor teach in the program, assisted by an annual rota of about five markers/teaching assistants. The challenges of the current program are: large class sizes and high advising loads due to meeting increasing student demand without increasing faculty resources; and the need to re-examine the overall vision for the program in relation to the 21st century vision of what a teacher librarian is and should be.

For Program 2, there was no particular impetus to move to online delivery, but the move to online was deliberate and gradual. The move to online delivery was a long term goal of the unit, with one faculty member being a pioneer in the area and the others adopting structures and opportunities as the University made them available. The program had begun in the 1980s with distance education print materials; these were augmented with computer tracking for assignments and grading and for student queries. Through a systematic process of course-by-course revision and development, the program was transformed from a blended print-online approach in the 1990s and to an online approach in the early 2000s. The process was supported by a well-established infrastructure for distance education and by university-wide initiatives such as the provision of a web forum for all distance education courses in 1998.

The obstacles that seem to have slowed the move to online included: varied levels of interest and commitment to online technologies among the faculty; a highly structured system of course revision that lacked flexibility and restricted faculty autonomy to innovate; and the need to rationalize three streams of school library education into one master's degree program. The forces that supported the development of the program included: a core of faculty with high expertise and commitment to online delivery; access to theory and research related to distance education; and experience with several different distance education delivery models.

Program 2's approach to preparing future school libraries to support student access to new and emerging technologies involves both courses focusing on digital citizenship and

social networking as well as the integration of new technologies as part of the pedagogy of the program. An electronic professional portfolio is introduced in the first core course of the program and completed throughout the program as an integrative and cumulative professional learning activity. Most of the courses are taught on a learning management system, but the two courses emphasizing technology integration and use, social networking, and virtual learning and mobile learning have used *FaceBook* as the central platform for online learning for the past three years. The technologies utilized at the course and program level include: blogs, wikis, social bookmarking, *Facebook*, *IM*, *VoIP* and web conferencing, *Flickr*, *Twitter*, and *Second Life*.

### **Program 3: Adding an online program option to a face-to-face program**

Program 3 was online by 2007. It provides an alternative for about half of the 180 students in school library education; the university retains its commitment to a large face-to-face school library education program. About 20 new students are admitted to the online program every year, mostly part time students living in the local area but outside commuting distance, and about 20 students graduate from the online program with their master's degrees each year. Four full time tenured faculty members and a number of part time adjunct instructors teach the courses in the program. The challenges of the current program are those of school library education generally: ensuring that both the face-to-face and online programs meet the government's changing certification requirements and responding to the vagaries of educational funding in the local school districts (which has an impact on student applications for advanced study in school librarianship).

For Program 3, the motivation for beginning the online school library education program was meeting some of the high demand for school library education, especially for students living in the local community but beyond commuting distance to the university. The major obstacle to the development of an online program was the lack of infrastructure and lack of interest in distance education within the institution: the prevailing view within the unit offering library education, as well, was that there was "no need" to develop an online program. The forces that supported that development of the online program included: access to a professional studies unit that had a history and commitment to innovation in continuing education and professional development; a unit director who saw the potential of online learning for an emerging specialization in digital libraries and for meeting an ongoing excess demand for school library education; availability of two-year grants from a foundation to support online library education; instructors who were willing re-invent themselves as online educators; and a university policy that provides additional funding to units who provide online courses. Obtaining a major external grant changed faculty perception of the need for online education and ensured that the supports would be there for developing a quality program. The online program was developed over a two year period, supported by course release for instructors and access to an instructional designer. The professional studies unit expanded its role to include managing online learning courses and orienting and advising online students.

Program 3's approach to preparing future school libraries to support student access to new and emerging technologies involves both providing courses focusing on new and emerging technologies and integrating technologies throughout the program. Recently, an e-portfolio requirement has been added which serves as an integrative and cumulative professional learning component of the program. The courses are taught using two different learning management systems, both with threaded discussions. Most faculty present content in the LMS by using PowerPoint slides with voice narration (using Audacity, for example). The technologies utilized at the course and program level include: *Facebook*, blogs, *Skype*, wikis, social bookmarking, audio and video production, and digital storytelling.

### **Findings: Themes across the Three Cases**

1. Online school library educators have taken advantage and will continue to take advantage of rapidly changing technologies in keeping programs current, through revision of the program vision, through revision and/or development of technology-related courses, and through infusion of new technologies into all courses.
2. The resources available within and beyond an institution offering school library education appear to determine, at present, whether or not multiple delivery modes can be supported. Maintaining both face-to-face and online programs requires abundant resources, a rare situation within post-secondary institutions in all three countries.
3. Rapid program growth presents challenges for faculty related to two critical aspects of graduate education: large class sizes and heavy advising loads.

### **Findings: Future Perspectives from Six School Library Education Programs**

The future of online school library education was explored in the interviews and follow-up discussions with educators involved in developing and teaching online programs in six different settings. The following themes emerged from those interviews and discussions:

1. Online school library programs are attractive to students, especially to those who are working full time, and online programs are experiencing higher student demand than are blended or dual mode programs.
2. The number of students applying for admission to online school library education programs is projected to continue to grow.
3. The number of online programs available is projected to continue to grow (see, for example, Bishop & Kroll, 2011).
4. The distinctions between students in face-to-face programs and online students will continue to decrease as students in face-to-face programs seek access to online courses to enrich their programs and to provide greater convenience of access to desirable content.

### **Discussion**

The current and future school librarians enrolled in face-to-face and online programs in school library education still vary widely in their expertise and confidence in using technologies including Web 2.0 tools (Kules & McDaniel, 2010). Some are using social networking tools and other software in ways that are pushing instructors forward; others are fearful of the new technologies and reluctant to use them for their own learning. Instructors are having to find ways to deal with wide variations in their students' technological competencies.

Increasingly, instructors are experimenting with online pedagogies in ways that show a shift in thinking about the learning theories that need to guide learning and teaching in a digital age—moving from behaviourism, cognitivism and constructivism to connectivism (Siemens, 2004, 2005). Connectivism challenges the foundational assumptions of constructivist pedagogies that underpinned early online programs in school library education.

The use of Web 2.0 supports students' creation of personal learning environments—environments where learning is about the creation of content and the interaction of students and teachers. Online programs in school library education are moving closer to the self-directed learning experience (“networked social learning”) that is becoming more the norm in students' lives outside of traditional face-to-face and distance education classes.

As school librarians and as school library educators, we need to keep in mind the saying attributed to Alexandre Ledru-Rollin, the 19<sup>th</sup> century French politician responsible for establishing the first working system of universal suffrage in his country, “There go the

people. I must follow them, for I am their leader.” There go our students into the digital world. We must follow them, for we are their teachers.

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### **About the Author**

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