Research in Action: Taking Classroom Learning to the Field

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Over the past two decades, preparation of LIS professionals to conduct credible research has been both scrutinized and encouraged by a variety of scholars. The conclusion of these researchers has been that there is a paucity of courses and that opportunities for students to participate in authentic field research are few. There is a resulting need for improvements to the research methods education of LIS graduate students in general.

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Literature Review

O'Connor and Park (2001), echoed by Hernon and Schwartz (2003), have argued that the LIS field needs professionals who can be both producers and critical consumers of research if it is to continue to evolve. Stephenson (1990) stated that library practitioners need to take a more active role in research and participate at a level that more accurately represents their numbers in the field. In 1990, at the time of Stephenson's writing, a disproportionately small number of practitioners produced research while library educators and doctoral students were greatly over-represented. Research, Stephenson argued, "needs to be recognized as an integral part of a continuing process of exploration, analysis, planning, and growth that extends to all aspects and participants in the field." (1990, p. 15). In the face of looming budget cuts, this is especially important because collecting empirical data is one way that practitioners can demonstrate the efficacy of their programs and help protect them against cuts (Feldman, 2010, 2011).

In her survey of ALA-accredited MLIS programs across the US and Canada (1990), Stephenson found that only 14 of the 51 responding programs offered advanced courses in research methods, despite recognition in the field that advanced courses are necessary if MLIS students are to become competent researchers. Twenty-four of the responding programs also did not require students in their basic research methods course to carry out any research. Of those that did include a research project, the survey was the most common method of data collection. Stephenson concluded that MLIS graduates were not consistently prepared with the skills or the inclination to make research a part of their professional lives.

Park (2003) showed that many of Stephenson's concerns were still valid over a decade later, and she recommended that ALA make research methods training necessary for program accreditation if MLIS programs continued to leave research methods out of the core curriculum. Park compared research methods courses across ALA-accredited MLIS programs and also across other professional disciplines at the same institutions (2003). In Stephenson's

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study, 35 (69%) of the responding programs required research methods (1990); this number had decreased by the time of Park's (2003) review, in which she found that 32 (59%) of the 54 programs examined required research methods. The accreditation standards for business and social work programs, on the other hand, required research methods in all programs. Where there was a core research methods class in MLIS programs, Park found the content to be inconsistent and that qualitative methods were often given short shrift in favor of more traditional quantitative methods. Even though Powell (1999) noted the growing popularity of qualitative methods and multi-disciplinary research efforts in LIS research, Park's (2003) research showed that these changes in the field did not appear to be reflected in the training of future LIS professionals.

In 2010, the status of research methods in MLIS curricula remained relatively unchanged: 61% of ALA-accredited MLIS programs required research methods (Luo, 2011). As part of the same study, Luo surveyed librarians about their involvement in research. The majority (84.3%) of Luo's respondents were involved in or made use of research at work, although more were consumers than producers. Of the respondents, 51.4% of 554 had taken research methods in their MLIS program. In the opinion of 72.5% who answered, research methods should be a required MLIS course.

The LIS literature provides insight into the content of two research methods courses. Liebscher (1998) described a course that included both quantitative and qualitative methodologies and gave students the opportunity to experience as well as to consume research. Liebscher's students furthered their understanding of research methodologies gained through classroom learning by using both quantitative and qualitative data collection and analysis methods in an authentic research project. Liebscher particularly emphasized the need for authentic experience when learning qualitative methods, as it is impossible to learn the practical skills of observation and interviewing from dummy data.

In contrast, Dilevko (2000) described a course and teaching strategy designed to prepare graduate students to be competent researchers while reducing "statistics anxiety," a common phenomenon among graduate students encountering statistics for the first time. Through analyzing and critiquing the use and analysis of statistics in newspaper and Library Quarterly articles, Dilevko's students gained confidence and understanding of statistics and associated research methods. However, Dilevko's course did not include practical experience of conducting field research or exposure to qualitative methods.

Students as Researchers

The research experiment reported in this article strove to remedy in one MLIS program the following deficits documented by the investigations of research courses in LIS schools over the past two decades: (a) an inadequate number of research courses, particularly advanced research courses; (b) a focus on one particular methodology, the survey; and (c) few reports of courses in which the students actually participated in authentic research projects. The intent in reporting this is to encourage other LIS schools to make known such opportunities if they exist in their MLIS programs, and if they do not, to consider incorporating them.

The focus of this article is one offering of the University of Washington Information School's (iSchool) recently developed advanced research seminar generically titled *Research in Action*. The seminar followed Liebscher's (1998) model in that it aimed to expose students to quantitative and qualitative methodologies through a mix of classroom learning and authentic practice. This course extended Liebscher's model by including online students in the experiential learning. *Research in Action* also included a program evaluation component and contributed to students' pro-

fessional development by exposing them to models of working partnerships and interdisciplinary collaboration that they will carry with them into their professional lives.

This new course offering was timely in light of a survey of students, the community, and employers conducted by the iSchool during Spring 2011 ahead of a curriculum revision. The survey indicated that the most desired but at the time unavailable course offering was evaluation of programs. The research project with which *Research in Action* is affiliated includes an element of library program evaluation, so this iteration of the new course also answered the need raised by graduates of the program.

Research in Action had two goals. The first goal, described above, related to students' research-relevant learning opportunities and outcomes. The second goal related to the outcomes of the large-scale research project in which the students participated: we needed to train a team of researchers to carry out data collection and coding for the project. We approached the seminar with the following questions in mind: *How can the advanced research seminar be an appropriate way to meet both the needs of the students and the needs of the research project?* And, *what evaluation methods can be used for determining whether this is a successful experiment in learning?*

Lave and Wenger's (1991) theory of situated learning through legitimate peripheral participation in a community of practice provides an appropriate framework with which to describe our pedagogical approach. Drawing on the apprenticeship model of learning, Lave and Wenger see learning as a social practice; the social and environmental contexts in which the learning takes place influence the outcome. Novices begin on the periphery of a community of practice and, through interactions with more experienced members of the community and engaging in *legitimate* participation in the practice of the community, they transition from peripheral to full participation as their skills and knowledge grow. This conceptualization of learning is directly relevant to the goals and implementation of *Research in Action*, where we anticipated that our students would grow from novices to full-fledged researchers through authentic practice as a community in a faculty research project.

The Research Seminar: Design

Research in Action is worth 4 quarter credit hours, split evenly over two quarters. The first quarter (2 credits) focuses on reviewing research methods to place this project in context and showing students how to use the specific tools for data collection. During the second quarter the students collect, code, and in some cases analyze, data. They use a class discussion board and group meetings every two or three weeks to share experiences. Residential students and instructors meet in a classroom equipped with video cameras and microphones. The online students join the residential students via Adobe Connect, a videoconferencing platform that enables online students to see, hear, and participate in the classroom activities in synchronous sessions. The focus is on highly interactive learning in a small-group setting to ensure students gain sufficiently deep understanding of the course content.

The Research Project

In this iteration of *Research in Action*, the community of practice was made up of researchers and partners involved in Project VIEWS 2: Valuable Initiatives in Early Learning that Work Successfully, an Institute for Museum and Library Services (IMLS) National Leadership Research Grant initiative that began in October 2011 and continues through September 2014. VIEWS 2 followed and is based on Project VIEWS, an in-depth needs assessment of the early literacy landscape in

Washington's public libraries funded by an IMLS National Leadership Planning Grant. In Project VIEWS, representatives from Washington's public libraries, the Department of Public Instruction, the Department of Early Literacy, and numerous community partnerships focused on early literacy, participated in a 2-day planning meeting to conduct the needs assessment. The purpose of the VIEWS 2 research is to find valid, reliable, developmentally appropriate means for public libraries to measure the early literacy skills outcomes for children attending programs from birth to Kindergarten (K) and to strengthen and leverage public library and school partnerships to improve early literacy practices.

Several community partners are closely involved in VIEWS 2. Official partners are the Early Learning Public Library Partnership (ELPLP), consisting of 26 urban, suburban, and rural Washington public library systems; the Washington State Library; and the Washington Foundation for Early Learning, a non-profit organization. Other national and local partners are represented on a Strategic Advisory Board (SAB). While all partners share the role of providing insight and feedback on grant matters, each partner has also taken on additional roles in the management of the grant. The University of Washington Information School, as the lead partner, oversees the overall and day-to-day management and implementation of the grant and provides the course described to train student researchers. The ELPLP is providing the library sites and, along with the Washington Foundation for Early Learning, assists by communicating with and updating these sites. The Washington State Library, due to the program officers' experience with training public librarians around the state, is assisting with the implementation of the intervention in the grant. Finally the SAB, which includes individuals from these partners as well as many others, serves as the formal organization for providing formative advice and insight on any grant matters.

The first offering of the advanced research seminar took place in 2012 for pre-intervention data collection for VIEWS 2. An intervention, based on the results of the first data collection, will follow this first offering and the course will be offered again in 2013 for post-intervention data collection. Some of the same students will participate in data collection while others will join the project in progress.

The Research Seminar: Implementation

In this version of the advanced research seminar, students learned about pre- and post- experimental design and sampling in the context of the VIEWS 2 project. This type of research design is rare in MLIS programs and in published LIS research. The VIEWS 2 project uses both qualitative and quantitative methods, giving students a taste of mixed methods research.

The first quarter began with a discussion of the distinction between academic research and evaluation. This is important to students who, as professionals, will likely need to become proficient in understanding and conducting both types of investigations (Luo, 2011). Project VIEWS 2 is particularly well suited for this discussion as it features program evaluation embedded in academic research.

One course assignment included completing the university's online human subjects training, required of all researchers. Understanding the ethical implications of research is particularly important in the context of VIEWS 2, where the research is conducted with young children, a vulnerable population, and the graduate students collect data with no on-site supervision. Human subjects training also made students more sensitive to, and better able to handle, questions and concerns raised by librarians or parents at the story times they observed, and it increased awareness of ethical issues students might encounter in the future when conducting or reading research as practitioners.

In line with the focus on formative assessment and feedback, students' exposure to the instruments in the first quarter that they used in the second quarter, and the development of their observational skills, was iterative. One of the instruments, the Benchmarks Curricular Planning and Assessment Framework (BCPAF), was developed and implemented prior to the start of VIEWS 2 (Feldman, 2010; 2011) and is based on the Washington Department of Early Learning guidelines for early learning. It is used to record observations of child behavior, aggregated at the group level. A second instrument, the Program Evaluation Tool (PET), was developed by the VIEWS 2 research team and was developed as a complementary instrument to BCPAF with a similar structure and parallel, as far as possible, content; it is used to record observations of program delivery and content.

Early in the first quarter students observed a library storytime of their choice to give them experience of some of the practical issues of observation, such as where to situate themselves and how to take field notes. Later in the quarter, once they were familiar with the specific instruments, they participated in several cycles of practicing using the instruments with videos of library storytimes followed by feedback on how to improve their skills. This ensured that the students were well-practiced, competent observers before going out into the field to collect data for the project.

The first quarter of the seminar covered a great deal of content in a fairly short time. To deal with this challenge, the structure of the class placed the responsibility for acquiring "the facts," or the content knowledge, on work by the students outside of class. Class meetings were supplemented by carefully selected readings, brief, pre-recorded lectures, and coding videos of storytimes, for which students filled out reflection sheets regarding any questions they had about where their codes differed from those on the answer keys they were given. This left class meeting times entirely free for discussion and collaborative learning. Students were encouraged to share their questions and confusions about the content knowledge during class times so that they could all learn from each other's experiences. In addition, each student was assigned a mentor from the instruction team who was on hand to provide individual help and support as needed. Mentors were tasked with collating commonly occurring issues or concerns among their mentees, which were then used to structure class discussion.

This process of coding, reflecting, and discussing led to a number of changes to the VIEWS 2 coding manual ahead of data collection in the spring. Lave and Wenger (1991) caution that existing power structures within communities of practice, such as the traditional relationship between instructor and student, can inhibit learning-through-doing if not properly managed. Encouraging students to question the coding manual and offer improvements to it increased their confidence as members of an authentic research team. The questions and issues that students raised showed a deep understanding of what the VIEWS 2 project seeks to measure and also ultimately improved the research tools.

In the first quarter, emphasis was placed on becoming reliable using the research instruments. Inter-coder reliability is an issue of great importance in real-world research such as VIEWS 2 but is difficult to achieve using dummy data or isolated individual research projects where reliability is less of an issue. Experiencing the process of becoming reliable on qualitative (i.e., taking field notes and preparing interpretative descriptions from them) and quantitative (i.e., coding observed behaviors against established indicators) tools that they subsequently used prepared students to conduct qualitative and quantitative research in future professional or academic capacities.

In the second quarter, students applied what they learned in the first quarter as

they collected and coded data in the field. Liebscher (1998) defines the essentials of education in qualitative methods as "[1] defining (and justifying) purposive samples, [2] data collection through interviews and observation, [3] data analysis simultaneous with data collections, and [4] data analysis through reduction and interpretation." The first essential, sampling, is covered in the first quarter as part of the background of VIEWS 2. The remaining essentials, data collection, simultaneous analysis, and interpretation, were the emphases of the second quarter.

The students independently collected and coded data in the field. Focusing on a stratified random selection of 40 public libraries throughout the state of Washington, the students carried out field observations of three storytimes per library, taking field notes and interpreting their data. They coded their data using the BCPAF and PET instruments developed and validated by the research team. Online students received exactly the same training in research methods as the residential students. Equipment was sent to them via UPS. The randomly-chosen libraries are scattered throughout Washington, so online students were particularly useful to collect data in places many miles from the university.

Each observed storytime during the second quarter was videotaped with two cameras, one focused on the children and one on the delivery of the storytime. The coding took place both directly after the storytime for BCPAF and from the videos for both BCPAF and PET. This also enabled online students outside the state to participate in the research experience. Although some of the most remote students were unable to visit storytimes themselves, for example, a student in Alaska and one in Washington, D.C., they were still able to code videos taken by other students.

Partnership and inter-organization collaboration make VIEWS 2 possible and these themes ran through both quarters of *Research in Action*. In the first quarter, students learned that partnership with the ELPLP and the Foundation for Early Learning contributed to the development of the grant by acting as a liaison with their member libraries and providing resources as well as valuable insight and ideas during the planning of the grant. The students saw that the partnership is ongoing throughout the grant, as the ELPLP and the Foundation for Early Learning have committed themselves to the success of the grant, encouraging and achieving full participation from all member libraries. In the second quarter, students saw some aspects of these partnerships in action as they visited libraries across Washington State and interacted directly with librarians.

The course instructors came from a range of backgrounds and included a faculty member and doctoral students from the iSchool and a postdoctoral researcher from the College of Education. The course utilized the interdisciplinary strengths of the different instructors. For example, to be successful as observational researchers in the context of early literacy programs in public libraries, the seminar students not only needed to know how to apply observation as a research method, they also needed an understanding of informal learning in public libraries, child development, and early literacy more broadly. They needed to be able to recognize developmental and literacy milestones when observing the diverse children spanning a range of ages that attend library story times. The postdoctoral researcher who participated in all class sessions has a master's degree in developmental psychology. As a specialist in early learning, she was well placed to help the seminar students gain the background knowledge in child development and early learning that made them better observational researchers in the context of VIEWS 2. As the developer of the Benchmarks Curriculum Planning and Assessment Framework (Feldman, 2010; 2011), she was deeply involved with their reliability training.

The course is offered as credit/fail. As

the emphasis is on authentic research experience, or legitimate participation to use Lave and Wenger's terminology, students were assessed in the same way that non-student researchers working on the project would be; each achieved reliability through a valid testing procedure. Grading the course credit/fail also allowed students to concentrate on becoming skilled researchers rather than maintaining their grade point average. The close coupling of students' learning goals and the progress of the VIEWS 2 research project was a primary motivation for restricting the course to a small, interactive seminar rather than a lecture as it is vital that the instructors had the time and resources to be attentive to the learning needs of each individual student.

Results

The outcomes brought a positive response to both of the research questions: *How can the advanced research seminar be an appropriate way to meet both the needs of the students and the needs of the research project?* And, *what evaluation methods can be used for determining whether this is a successful experiment in learning?* The seminar was successful in meeting both the needs of the students as apprentice researchers and the needs of VIEWS2. The description of the design and implementation of the course answers the first question. The success for the research project was demonstrated by the outcome that the second quarter data collection and coding proceeded smoothly and in accordance with the requirements of the grant. The success for students was measured by the inter-coder reliability established with Pearson R, % agreement, and Kappa applied to their codings of 3 videos. The other means of assessing outcomes was through their evaluations of the course. The numerical evaluation was solidly in the 'very good' category. The enthusiasm of students for this type of authentic research experience is found in the following comments drawn from the students' anonymous responses on the open-ended portion of the course evaluations:

- "I am so excited about this course, it is a great realistic learning opportunity."
- "I love this chance to interact with kids and observe the impact of early literacy programming in public library settings."
- "I am very interested in this opportunity to assist with your research. It is extremely helpful for me to be involved in a project outside the College of Ed."
- "This class has been wonderful, I am thrilled I can take it!"
- "I took the basic research methods class, but this opportunity makes research so much more realistic and easy to understand."
- "This class taught me a lot about what goes into research and all the different things to take into account when doing it. I also learned about the variety of storytimes present and the different early literacy skills that children have."

Discussion

Some of the details of the research seminar are, of course, specific to the VIEWS 2 context. However, other LIS schools seeking to offer a similar course can draw on several aspects of this offering, confident that it can be a successful experience and that it is theoretically sound pedagogy. The following recommendations may be helpful in planning such a research methods course:

- Coupling classroom-based learning with the opportunity to work on authentic faculty research projects provides valuable experiential learning that cannot be gained using dummy data or learning entirely confined to the classroom or desk. This pedagogical model is supported by Lave and Wenger's (1991) theory of learning through legitimate peripheral participation.
- Research projects that utilize mixed methods are particularly well suited

to learning experiences as students get to know how various methods work together in context.

- The addition of a number of students to the research team helps further the research effort. For VIEWS 2, online students in remote parts of the state and across state lines were invaluable in reaching study sites far from a university's campus. Input from the students also improved the project's research tools.
- Including researchers from relevant outside disciplines in the instruction team supports broadening students' learning experience. Exposing students to interdisciplinary and/or collaborative research provides them with a model that will continue to be relevant as they become professionals in a field that is essentially interdisciplinary.
- For online or distance programs, remote students can gain access to opportunities to work on authentic research with support from faculty. Online students are at risk of being left out of experiential learning due to logistical challenges. Current technology, however, affords many ways to include geographically distributed students as full members of a research and learning community. Our experience using videoconferencing software showed us that it is important to allow time for all participants to become familiar with it and to establish a protocol for smooth communication in a mixed online and offline environment.

Conclusion

Research in Action, the advanced research seminar described in this article, is an experience that provides students with both theory and genuine practice in research methods. It is a practice that can be modified and implemented in any LIS curriculum in which a faculty member is involved in data collection. The students enrolled in the course had differing academic and professional goals but all students were able to benefit from the experiential learning offered by this seminar. For the students intending to become librarians, the training they received in program evaluation for early literacy activities in public libraries will enable them to better serve their libraries' youngest users. The exposure to different evaluative tools for use in informal learning environments increased their awareness and use of such tools. For the students intending to continue their academic studies, the hands-on research experience will help to make them more competitive applicants to doctoral programs. The seminar also stands to benefit project partners, as their organizations will gain from the research and evaluation outcomes.

Training in research methods is an important part of LIS graduate education. Prior work by Stephenson (1990), Park (2003), and Luo (2011) has shown that research methods in LIS programs is often missing or, when present, fails to represent the range of methods employed in library and information research today. A combination of classroom learning and authentic participatory experience with a collaborative research project prepares students to be both consumers and producers of research, familiar with multiple methodologies.

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