Pursuing Research, Education and Library Outreach Goals: A Case Study of Visual Literacy Project

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Abstract: The benefits of experiential learning in higher education have long been recognized in multiple academic disciplines, including library and information science (LIS). This paper describes a case of a graduate course project that focused on developing visual literacy in young children and provided experiential collaborative learning opportunities to multidisciplinary students. The paper provides recommendations for incorporating similar projects into LIS curriculum and argues that the integration of experiential learning into formal instruction not only benefits students, but also helps to promote faculty research and benefits user communities.

Keywords: library and information science education, experiential learning, service learning, project based learning, visual literacy, public libraries, outreach programs.

1. Introduction

The idea of incorporating experiential learning into formal education are often attributed to the work of John Dewey who emphasized the importance of high-quality experiences in shaping students' knowledge and opinions (Dewey, 1938/2000; Kolb, 2014). Experiential learning can broadly be defined as any learning that creates opportunities for students to apply their knowledge to real-world problems through case and problem-based studies, guided inquiry, simulations, experiments, art and other types of projects (Wurdinger & Carlson, 2010). Experiential learning usually implies that a learner goes through the stages of having concrete experiences, reflecting on these experiences, forming new concepts/ideas based on reflections, and testing the new concepts (Kolb, 2014). The benefits of experiential learning as an educational technique have been recognized in higher education as academic programs ranging from art and medicine to engineering and management bring practical experiences and field projects into their classrooms (Kolb, 2014; De Graaff & Kolmos, 2007).

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Information schools (i-schools) and library and information science (LIS) programs are no exceptions: emphasis on "learning-by-doing" is evident from a review of i-school and LIS programs' missions and goals, faculty and student publications as well as the emphasis on experiential learning in the American Library Association program accreditation requirements (ALA, 2015).

In addition to benefitting students, experiential learning provides opportunities to advance faculty's research and service agendas and benefit broader user communities. This paper illustrates the benefits of an experiential learning by describing the project that examined visual literacy development in young children.

2. Literature Review

Experiential learning comes in many forms. Following is a review of several methods used to support experiential learning in LIS education.

Yontz and McCook (2003) discuss service learning, a subcategory of experiential learning, in the context of LIS education. Service learning aims to promote student learning and development while also addressing the needs of patrons and communities. The authors suggest that service learning promotes "learning by doing" and creates a lasting impact on students. This is especially applicable for older students as service learning supports a link between theory and real life application (Yontz & McCook, 2003). The authors' note that service-learning ideas emerged in 1862 and by 1990th had been integrated in academic curricula. Early 2000's saw a rise of literature on service learning, including recommendations for integrating service learning into the LIS curriculum. Service learning is comprised of two elements: reciprocity and reflection. Reciprocity requires all involved participants (student, faculty and community members) to show mutual respect and engagement in discussions about the best ways to create community-relevant projects and learning opportunities. Reflection is required in order to reinforce the lessons that students learn through collaboration. Reflection involves asking students to look back on the experiences and comment, criticize, and discuss their learning experiences with others. Reflection can be supported through class discussion, written reflections, one-on-one conversations with the faculty, or a journal kept during the collaborative experience (Yontz & McCook, 2003). Due to the nature of service learning, this method can be applicable to selected courses within LIS programs, as well as internships and fieldwork opportunities.

In an attempt to examine internship experiences as service learning opportunities, Cooper (2013) analyzed short narratives collected from 14 LIS students enrolled in a service learning internship course at Queens College, New York. Students' reflections about the course indicated that the classroom learning and discussions were instrumental in preparing them for their internships, while on-site experiences allowed them to practice professional skills and problem solving, observe personal growth, and gain new perspectives

from interactions with a broad network of professionals. Some students mentioned that one-to-one mentor/student relationships were important to their learning experiences. Cooper's (2013) findings emphasize the need for internships as service learning opportunities that are positive and meaningful to participants, promote cooperation, team building skills and community involvement, present complex problems in complex settings, advance problem solving, critical thinking skills and deeper learning, and support emotional, social and cognitive learning and development. Cooper (2013) concludes that service learning is a transformative experience for students, and that internships can be used as a form of service learning and the student-community collaboration. The author believes that educators have a responsibility to support the learning needs of a diverse student population, and that providing opportunities for service learning (internships/practicum) allows students to learn on multiple levels while also helping the community and the profession.

Another subcategory of experiential learning is project-based learning (PBL), broadly defined as student-driven, teacher-facilitated inquiry that involves solving real-world problems as a way to acquire deeper knowledge (Bell, 2010; Blumenfeld et al., 1991). The PBL framework usually includes an inquiry question, supporting research, a display method/sample, and a target audience (Bell, 2010). PBL can allow for collaboration or individual work and is most successful when driven by the interest of the student. Bell (2010) reviews a number of studies that employed PBL in elementary schools and notes that students who were taught using a PBL method were more successful than those who were taught using traditional methods. She further notes that PBL allows students to develop communication skills, team work, and social learning. Like service learning, there is a reflective component to PBL known as self-evaluation where the student comments on his/her work throughout the project. Allowing students to select their own topic and perform their own research promotes creativity, problem solvers, critical thinking, and motivation (Bell, 2010). While I did not find any published reports of PBL cases in LIS education, anecdotal evidence suggests that many LIS faculties are applying this technique to complement more traditional instructional methods.

3. Project Review

The following is a report on a visual literacy project that illustrates multiple benefits of incorporating experiential learning into the LIS curriculum and also highlights some areas of concern. The project was conducted as part of a research methods course in an information school. The course introduced master-level students to basic research design concepts, including a research question, causal inference, sampling, validity, and reliability, as well as several research methods such as surveys and ethnographies. The course aimed "to allow the student to begin developing skills in planning and implementing research […] beyond a theoretical or evaluative approach" (Stephenson, 1990, p. 58). Therefore, class time was split between lectures, discussions, and work

on a field research project. The field research project was designed with the three main goals: 1) research; 2) education; and 3) outreach.

The research goal was to investigate the effects of visual literacy instruction on young children. Visual literacy (VL) is usually defined as an ability to interpret and create visual messages and is considered an integral part of the overall literacy (Eckhoff, 2010; Edwards & Willis, 2000). Despite multiple benefits of introducing VL early in life, the evidence for VL programs for children in schools, libraries and museums is scarce (Lopatovska et al., 2016). The reported study expanded on earlier VL work with children by measuring the effects and exploring the feasibility of VL instruction for very young children. The study was conducted by eight graduate students in collaboration with the Brooklyn Public Library, New York. The library staff assisted with recruiting children participants and their parents and facilitating instructional workshops.The LIS students developed and administered the workshops on the VL elements of color, shape, lines and texture, measured children's knowledge of these VL elements before and after the instruction, and observed children's engagement with VL instruction. Selection of the research focus for the project was guided by the following considerations:

- The research project had to closely simulate the type of practice-driven research that the program graduates will be engaged in in their professional careers. Examining effects of instruction in a natural setting allowed students to work closely with the user communities and examine the immediate impact of their work.
- The research topic had to be of interest to students who pursue LIS, museum, and user experience degrees. The project focused on developing a user-centered instruction and measuring its effects enabled students to develop some of the core skills for all information professionals (Abels et al., 2016; Getto, Gossett, Potts, & Salvo, 2013; Seadle & Greifeneder, 2007).
- Since the instructor's role was to guide students' thinking and activities and coordinate the project, the research topic had to align with instructor's expertise and research interests.

The educational goal was to provide experiential learning opportunities for students. This was accomplished by involving students in all stages of the research project and allowing them to practice newly introduced theoretical concepts. The students conducted a literature review to survey prior work and identify relevant methods for addressing the research questions. They designed pre- and post-instruction questionnaires that measured participants' knowledge of VL elements, and analyzed the data using descriptive statistics. The students designed and conducted four workshops which honed their abilities to develop data collection instruments, engage participants and lead group conversation, skills relevant for conducting research interviews and focus groups. In order to identify children's engagement with instruction, the students conducted

observations and took notes during the workshops. The notes were analyzed using content analysis techniques to identify the main causes and manifestations of child (dis)engagement with instruction. Involvement in a semester-long field project exposed students to teamwork and provided leadership opportunities on tasks that capitalized on students' individual strengths.

The outreach goal involved promoting VL awareness among children, caregivers and educators while developing and testing VL instruction method. Collaborative relationships with the public library not only provided experiential learning opportunities to students, but also aided library staff in developing new programs and strengthening relationships with the local community. During and after the workshops, children's caregivers and teachers showed increased awareness of VL education opportunities and shared plans for continuing developing VL skills in their children, including additional collaborative programs with the library.

A total of thirty (N=30) 2-4 yr. old children participated in a study. The pre-workshop questionnaire indicated children's familiarity with basic VL concepts of colours, shapes, lines and texture. However, their description of an image primarily focused on its subject matter, a known tendency for this age (Yenawine, 2003). After instruction, children's vocabulary for describing an image was expanded; without assistance from adults, they noted and were able to describe more VL elements that comprised an image. The analysis of children's behaviour during the instruction indicated general interest in workshops' discussions and hands-on activities related to VL concepts. Participants had relatively advanced knowledge of colour and shape basics so the instructors had to introduce more advanced concepts to maintain children's interest. During the workshops, most of the children showed abilities to comprehend, retain and apply new VL concepts. Some of the advanced VL concepts, such as perspective and focal point, proved to be too challenging for most of the participants, and might be more appropriate for older children.

From the research perspective, the project succeeded in illustrating young children's abilities to successfully engage in VL instruction, learn new VL concepts, and improve their understanding of visual messages. Some of the research challenges included occasional conflicts between research and educational goals. For example, for research purposes it would have been beneficial to maximize the uniformity of instruction and note-taking during observation. However, for education purposes it was important to give all students a chance to practice data collection skills. Analysis of the project challenges suggests that the course instructor was probably too ambitions in trying to involve students in instrument development, administration, data collection and analysis over the course of one semester. It might have been better to limit the scope of instruction to fever VL elements/workshops, delegate instruction to the library staff who have experience with children, and focus students' work primarily on assessment and data analysis components.

Educational goals were achieved by providing students with first-hand collaborative research experiences. In addition to learning research principles and basic concepts in lectures and in-class discussions, students had a chance to apply theoretical knowledge by designing data collection instruments and protocols, analyzing data, reporting findings, and reflecting on their accomplishments and mistakes during the project. The class size, use of project deliverables as course assignments, regard for students' individual strengths, encouragement of initiative and originality and tolerance for mistakes were conducive to collaborative learning. However, managing collaborations between multiple student researchers was at times difficult. For example, I attempted to coordinate writing of a single report (hosted on Google Docs) where each student would share her/his contributions and findings throughout the semester. The joint narrative resulted in confusion about individual writing responsibilities and lack of a unified writing style. The challenges I uncovered could be mitigated by requiring individual student submissions and delegating a single editor who would weave individual narratives into a common report.

Some of the project tasks, including preliminary literature review, logistical planning, and development of external partnerships, were conducted by the instructor before the beginning of the course and the semester. However, despite the advanced planning, the project work load was intense and time-consuming. Students who were interested in developing their project report into a publication were required to continue their work after the course was over. While the students' anonymous course evaluations suggest that they appreciate the intense learning experiences, I would recommend that similar course projects focus on the narrower set of research questions and methods to avoid scope creep.

In achieving the outreach goal, the project inspired interest in VL programs from participating librarians, educators and parents, and produced re-usable instruction and assessment methods (Lopatovska & Volpe, 2017). In addition, the project opened up possibilities for future collaborations that can benefit students, faculty, practitioners and users.

4. Conclusions

Course projects in which students investigate research questions and "produce artifacts that represent answers to those questions "…have the potential to motivate students and help them better understand subject matter content" (Blumenfeld et al., 1991, p. 392-393). The course project presented here illustrates multiple benefits of experiential learning and its subcategories, service and project based learning, including:

- Providing experiential learning opportunities for students and addressing their degree requirements (ALA, 2015)

- Advancing faculty research agenda by integrating research and teaching
- Assisting external partners in offering innovative programs and instruction methodologies. In the described example, the project promoted VL to a broader community of children, caregivers and educators.

Over the course of seven years of integrating research projects into formal classroom teaching, I observed additional benefits of experiential learning, including high students' and alumni course and instructor evaluations, student publications, and collaborations between academic and professional communities (Lopatovska et al., 2016; Lopatovska et al., 2014; McDonald et al., 2015). Scope creep and other issues might hinder the project success and should be addressed by advanced planning and careful project management.

In discussing my educational approach and lessons learned from a particular project, I hope to advance the practice of integrating immersive experiential learning into i-school and LIS program curricula.

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