Toward a Pedagogical Framework for Integrating Experiential Learning Into Preparation for Data Librarianship Roles

Yunfei Du[a] and Brady Lund[a]

[a]University of North Texas, USA

Yunfei.du@unt.edu, brady.lund@unt.edu

ABSTRACT

This paper proposes a pedagogical framework for integrating experiential learning into the preparation for data librarianship. The framework is centered around practicum experiences and utilizes principles of the learner-centered paradigm in educational practice. Experience learning theory serves as a cornerstone of the framework, with students contextualizing their experiences within a broader understanding of trends in the librarianship profession. The proposed framework emphasizes the importance of practicums as a deep and critical learning experience for developing competent and compassionate information professionals. It addresses the need for a data-savvy workforce in libraries, including the adoption of emerging technologies such as artificial intelligence and augmented, virtual, and mixed reality experiences. Through this approach, students can develop the practical skills and critical thinking abilities required for success in the modern, rapidly evolving library environment, promoting principles of diversity, equity, and inclusion.

ALISE RESEARCH TAXONOMY TOPICS

pedagogy; big data; curriculum; students; education programs/schools

AUTHOR KEYWORDS

data librarianship; experiential learning; pedagogical framework; practicum; scaffolding

INTRODUCTION

The profession of data librarianship is rapidly evolving, especially in libraries where data-related roles are becoming increasingly important (IFLA, 2019). Libraries have long been hubs for collecting and sharing service and operating data (Molyneux & Abram, 2022), but they have recently experienced a growth in big data (Garoufallou & Gaitanou, 2021) which brings with it many challenges. Libraries need a data-savvy library workforce (Discover Data Science, 2022) and transparent data visualization and analytics tools to better compete for resources and reach out to communities (Bertot et al., 2014). Furthermore, community data literacy programs are needed so everyone in the community can understand and utilize data about their communities (American Library Association, 2021).

The need for a pedagogical framework for integrating experiential learning into education for data librarianship has become increasingly apparent as the field continues to evolve. While many educational programs prepare individuals for work in data librarianship, there is a growing recognition that hands-on experience is essential to developing the skills and knowledge necessary for success in this field (Bresnahan & Brown, 2022). Experiential learning is an effective approach to developing the practical skills and critical thinking abilities required for the modern librarian (Anderson et al., 2022; Bird et al., 2015). This paper aims to propose a pedagogical framework for integrating experiential learning into education for data librarianship, focusing on the value of well-designed practicums and curriculum redesign for library and information science programs.

A PROPOSED PEDAGOGICAL FRAMEWORK

The proposed pedagogical framework for integrating experiential learning into preparation for data librarianship roles is centered around practicums (also called "internships," "field experiences," or "field work"), a common component of library and information science education programs today. These practicums should utilize principles of the learner-centered paradigm in educational practice (Reigeluth et al., 2016). This framework values practicums as an instructional process that develops motivation, self-regulation skills, transferable knowledge, collaboration, and emotional, social, and character development through tasks, coaching, and personalized scaffolding. This contrasts from a perspective of practicums as an experience primarily focused on growing one's expertise in one very narrow domain, which lacks collaboration, self-motivation, and transferable skill development.

Experiential learning theory (ELT) is a cornerstone of a learner-centered paradigm. This theory views learning as "the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 41). In ELT models learning on a two-dimensional scale is based on how a person perceives and internalizes information, with concrete experience and abstract conceptualization on one axis and active experimentation and reflective observation on the other. Students are encouraged to contextualize their experiences within a broader understanding of trends in the librarianship profession.

Students with training in data management principles may experience difficulty understanding the context in which emerging technologies, such as large language models, impact the general public, including library patrons (Mittelstadt & Floridi, 2016). In an experiential learning practicum, these students should not only be working with large language models for projects like library chatbots or assistive cataloging systems but also must reflect on how these developments impact the library and the public. This forces the student to develop a human-centered focus and work ethically with data technologies, whether they ultimately end up working as a data librarian or in some other areas altogether. Libraries are a critical site for developing these skills because librarianship is a profession known for its high level of service orientation and ethical standards.

IMPLEMENTATION OF THE FRAMEWORK

In this proposed experiential learning framework, student interns will be assigned two coordinating professionals: a faculty practicum supervisor and a library practicum supervisor (coach). The faculty supervisor and library supervisor build consensus on what tasks the practicum student can perform to support the library and what support the library can provide to the student. Library practicum supervisors act as coaches and provide mentoring. The faculty supervisors may host educational webinars or similar meetings with practicum students to reflect upon and contextualize their experiences within the broader mechanization of librarianship and data science practice (explicit explanations of learned concepts). The internship activities may follow the coaching principle of Knight et al. (2016):

Activity 1: Observation and Goal-Setting. In this stage, the interns can be introduced to coaches (library practicum supervisors) and understand what is currently happening in library environments, and they will share the data gathered with the coaches and their reviews from observations. Interns and instructors (PIs) then communicate through the Canvas online learning management system to identify performance goals from the internship experience.

Activity 2: High-Leverage Practices. During this stage, coaches help interns plan effective activities, training, and practice to address real-life problems in libraries. Instructors may use formative assessments to identify what interns are to learn, how to assess interns' understanding and monitor how interns are progressing. The interns may start to perform data-related assignments from libraries and start team-building and community-building efforts with coaches and library colleagues.

Activity 3: Explicit Explanations/Discourse. Instructors may conduct site visits and ensure that interns implement the data science and data visualization (VR/AR/MR) skills they learned from the classroom in real-life settings and assist the adaption of such skills to be best suited to the needs of individual students, libraries, and library coaches. This individualized learning experience fits the learner-centered paradigm.

Activity 4: Modeling. Coaches and instructors might need to demonstrate how data services and data management plans can be implemented. Interns internalize the learning process from concrete experiences to abstract conceptualization.

Activity 5: Deliberate Practice and Progress Toward Goals. During this active experimentation stage, interns gain hands-on experience by practicing the new skills on projects, and coaches gather and share data on the impact of the practice. Data might be gathered from formative assessments, such as observation checklists and interviews, to summative assessments, such as surveys and exams.

Activity 6: Reflections and Summaries. Interns may learn new skills and insights related to the internship projects. At the same time, instructors and coaches also gain from the instructional process, building relationships with each other and with a diverse future workforce. All parties will benefit from the exchange of ideas on serving diverse library users in their communities. Reflections and summaries through the coaching process are important steps in identifying new goals.

Another component of this experiential learning framework for data librarianship should be a focus on the sustainability and maintenance of connections established during the practicum experiences throughout the professionals' careers (Goodsett & Koziura, 2016). These connections may be maintained in a variety of ways, including the creation of alumni networks of past students who have completed the practicum experience (including social media groups and regular meet-ups as professional development events/conferences), building continued partnerships with libraries that will allow students to transition from an internship into a full-time, professional position, and continued university and departmental commitment to the practicum program and student support.

DISCUSSION AND CONCLUSION

The proposed pedagogical framework for integrating experiential learning into education for data librarianship has the potential to offer many benefits for both students and libraries. The framework emphasizes the importance of practicums as a deep and critical learning experience for developing competent and compassionate information professionals. By engaging in concrete experiences and reflecting on them, students can develop a deeper understanding of the complexities of data librarianship and the impact of emerging technologies on the profession and the public.

By adapting the practicum experience to the individual student's needs and learning style, the framework aims to promote motivation, self-regulation skills, transferable knowledge, collaboration, and emotional, social, and character development. Through this approach, students can develop the practical skills and critical thinking abilities required for success in the modern, rapidly evolving library environment. In addressing the need for the development of a data-savvy workforce, this model directly addresses one of the most pressing challenges of the time: the adaption of libraries and information centers to the emerging fourth industrial revolution, including the adoption of artificial intelligence technologies and augmented, virtual, and mixed reality experiences. In so doing, it also promotes principles of diversity, equity, and inclusion by making careers in data librarianship more accessible to a broader swath of library and information science students, through guided learning experiences (Hurtado, 2007).

This proposed framework offers a unique opportunity for students to gain hands-on experience and develop skills and knowledge that are in high demand within the modern library environment. Through the learner-centered approach, students may develop a deeper understanding of the complexities of data librarianship and the impact of information professionals on the library experiences of the public. By establishing sustainable connections between students and libraries, this framework has the potential to benefit the profession for years to come.

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