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Learning the role of information architect: Reshaping professional identity as a librarian

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Introduction

This paper reports on the development of a course on information architecture (IA), offered online, both to MLIS students and to practicing information professionals returning for continuing education in a post-Master's certificate programme in web design. The research behind the course's development used the theoretical framework of threshold concepts (Meyer and Land 2003), which has as its primary practical objective to guide curriculum design so that students are able to approach, recognise, and internalise essential knowledge of a domain (Land et al. 2006). The study's purpose was to integrate core principles of IA design (Rosenfeld, Morville, and Arango 2015) with the application of threshold concepts theory, creating a course that extended the abilities of practicing library and information science (LIS) professionals. The outcome was that, in learning information architecture concepts and acquiring the skills to do information architecture work, the students did more than acquire new professional skills. They also evolved in their professional identities.

Many librarians, particularly in public library and school library environments, are called upon to develop and maintain the websites of their organisations, regardless the extent of their pre-existing knowledge. Their organisations' websites are an essential way to connect people to authoritative, accessible, and up-to-date resources on topics ranging from health and the law, to employment benefits. To support their continuing learning, MLIS programmes have been adding coursework in web design and IA (ALIA 2015, ALISE 2018). Through designing websites—or re-designing sites needing improvement—librarians learning IA are enhancing access to vital resources for their communities. Deepening their knowledge in IA also opens up career paths and niches within librarianship not previously envisioned.

Research Questions

In order to frame the research objectives, setting forth a trajectory toward the intended outcome of course design, the study focused on two core research questions. They were intentionally open-ended so that nuanced answers were fostered; they also reflected the balance between critical

concepts to be learnt and the hands-on activities that would enable students to experience discovery of new knowledge, and to apply the concepts in their work environments. We asked:

- What fundamental concepts must be learned to develop IA abilities in LIS professionals?
- What learning activities are effective for integrating these IA concepts with necessary technical tool proficiencies and enabling ('soft') skills?

Theoretical Framework: Threshold Concepts

The research questions in place, the next step was determining appropriate theoretical framework(s) for the ideas embedded in the questions, specifically: "fundamental concepts," "develop abilities," and effective "learning activities." Threshold concept theory (Meyer and Land 2003) supports researching core concepts and the design of curriculum for learning those concepts (Cousin 2006).

A threshold concept is a core concept that, once understood, transforms perception of a given subject (Meyer and Land 2003). Several characteristics are necessary for an important concept to be considered threshold knowledge. Briefly, the concept must be transformative, irreversible, integrative, and troublesome—meaning that a learner will likely need to wrestle with the concept to fully grasp it. In addition, a threshold concept, once grasped, will reshape the learner's identity. This is evidenced in changes in the learner's discourse about the new knowledge, and it may also show up in how he/she is able to reconstitute the knowledge. Understanding a threshold concept involves "a reconfiguring of the learner's prior conceptual schema and a letting-go or discarding of any earlier conceptual stance. This reconfiguration occasions an ontological and an epistemic shift" (Land, Meyer, and Baillie 2010, xi). Timmermans and Meyer (2017) described the stage as "epistemic and ontological unmooring" (3) that is an opportunity for learners "to shift their identities and understandings of the world" (3).

Within the LIS discipline, perspectives about the transformative experience of fully understanding information structures extend far back in the LIS research literature. Bates stated, "People who come into this field…go through a transformation; they shift their primary focus of attention from the information content to the information form, organization, and structure" (1999, 1045). This still holds true for LIS professionals today, and information structures was one of the early LIS subjects to be established as threshold knowledge (Tucker et al. 2014). For deepening understanding of ways for librarians to learn about information structures, and about IA specifically, threshold concepts theory provides a robust framework.

Methodology: Case Study

The study's methodological approach was case study, with the objective to explore and illuminate a contemporary phenomenon (Gray 2013, Yin 2017). The course activities were designed around

the threshold concepts curriculum considerations of Land, Cousin, Meyer, and Davies (2006), with particular attention to:

- Engagement with concepts: students need "engagement with the conceptual material … [instructors should] ask students to explain it, to represent it in new ways, to apply it in new situations, and to connect it to their lives" (199).
- Recursiveness: students need "a recursive approach to what has to be learned, attempting different 'takes' on the conceptual material until the necessary integration and connection…begin to take place" (202).
- Learning as excursion: students need to experience learning "as a journey or excursion … [with] deviation and unexpected outcome within the excursion" (202).

These considerations support the "transition to new knowledge that becomes integral to one's identity and praxes" (Tucker 2019, 60).

Research Results

A pilot of the course was conducted, followed by student and peer evaluations; revisions led to the course proper. With the underpinning of the two research questions, the first result was four course learning objectives:

- Apply best practices for website content inventorying, structuring, labelling, and navigation;
- Learn about and apply methods for eliciting user requirements and information needs;
- Evaluate websites according to principles of effective IA, usability heuristics for content-rich sites, and concepts of information-seeking behaviours;
- Evaluate and use appropriate tools for conducting user research and creating IA design documents and prototypes.

In support of the threshold concepts curriculum considerations, described above, several types of learning activities were found to be effective. For example: exercises conducted in small-group discussions, supporting extensive peer engagement; practice in evaluating website architectures, engaging with industry heuristics and practices; and tiered development of a major IA project. The project's tiers included: writing a client-centred proposal, drafting sections of the final deliverable, and presenting parts of the user research results and designs to peers for feedback. We built a collaborative learning environment through these activities. The peer review at formative junctures while developing their projects was highly effective.

The research questions helped guided the study toward outcomes that could contribute to knowledge about IA concepts and to curriculum design for learning threshold knowledge. For the first question, the findings were made more meaningful by examining the 'fundamentals concepts' for threshold knowledge characteristics. Industry heuristics for IA design abound and yet these are generally not threshold knowledge.

For the second question, the primary results were the peer engagement activities and the recursive learning that was intentionally built into the course to support varied ways of reconstituting new knowledge. In addition to conceptual knowledge, the course covered technical tools for implementing the student's IA designs, such as content inventories, user scenarios, and prototypes/wireframes, as well as tools for conducting user research (e.g., card sorts). For both questions, further study is planned to assess the learning experiences of students in the course.

Discussion

The research began by exploring threshold knowledge about information structures, and it aimed to bridge the challenges of integrating coursework learning into real-world IA settings. In studying threshold concepts in entrepreneurship, Hatt (2018) faced similar challenges in exploring ways that learners connect critical knowledge, typically taught in a graduate business degree programme, to practical application in varied work environments of entrepreneurs. She argued for an understanding of entrepreneurial learning that is both practice-based and holistic.

In studying the learning of graduate students looking to acquire the essential knowledge and practical skills of IA, a similar finding was the outcome: that further study is needed for a holistic understanding and to evaluate the learner's experience more completely. This may extend to retention of the new knowledge as well. Yet another dimension is that the context of learning about IA sets the stage for experiences in which the information experience (Bruce et al. 2014) is driving the IA project's design, and also being experienced by the learner, creating a meta-learning environment. This suggests another area for further study.

Conclusion

The completed course projects demonstrated a wide range of ways that students were able to contribute to their communities by re-designing existing sites or by transitioning non-web content onto the Web. Projects ranged from resources for released convicts, for First Nation educators, and an overhaul of a music streaming service. The primary finding was that students reported a shift in their thinking about their professional roles, in their identities relative to both the LIS and IA domains, and in what they anticipate for their future career options. Students experienced a shift in identity as they integrated the learning of IA concepts with new skills, taking on new roles in their workplaces.

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