Interdisciplinarity in Students' Research Papers: The Impact of Assignment Requirements on Students' Use of Interdisciplinary Sources in an LIS Research Methods Course

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ABSTRACT

Library and information science (LIS) is an interdisciplinary field; however, historical studies of the use of sources and literature outside of library science indicate a lack of use of interdisciplinary sources. Research also shows reliance on a handful of sources. This study will explore the influence of strategic assignment requirements for a final paper on students' use of interdisciplinary sources in their work.

ALISE RESEARCH TAXONOMY TOPICS

research methods; education; scholarly communications; curriculum

AUTHOR KEYWORDS

LIS education; interdisciplinary research; student research

Literature Review

Interdisciplinary scholarship has been recognized as that which "…draws upon the theories, methods and paradigms of more than one discipline to solve a particular problem that is too large or complex to be addressed by a single discipline…" (Meyer, 2014, p. 323). When the topic of interdisciplinary research in library and information science (LIS) arises, it is usually accompanied by the suggestion that LIS should engage in more interdisciplinary research, especially as a way to prepare to tackle the problems the LIS community faces, which cannot be solved with the knowledge produced by a single discipline (McNicol, 2003).

It can be argued that LIS has become more interdisciplinary in its research over the last twenty years. Historical studies of the use of sources and literature outside of library science indicated a lack of use of interdisciplinary sources (Gatten, 1991). But subsequent research and reviews of LIS research have indicated a change, with reviews of citations showing an uptick in the use of sources outside of the LIS literature (Dali & McNiff, 2019).

Beyond interdisciplinary research itself, the question of reliance on interdisciplinary sources of information to support LIS research has also arisen. In a recent article, Dali and

McNiff (2019) suggested that librarians are reluctant "to build interdisciplinary knowledge into professional practices…" (p. 574). And despite research that indicates librarians do source and cite outside of the LIS literature (Dali & McNiff, 2019; Herring, 1999), research also shows repeated reliance on the same sources, especially sources within LIS (Dali & McNiff, 2019; Gatten, 1991). Chang and Huang (2012) report that when reviewing the literature over a period of 30 years, there was a definite increase in interdiciplinarity, which they define not only as citing more sources outside of LIS, but also of authors forming collaborations with authors from other disciplines. In their study the fields of education, business/management and sociology where the non-LIS fields more commonly cited in the LIS literature (Chang and Huang, 2012).

Another aspect of studying interdisciplinarity in LIS is that of LIS authors publishing in non-LIS journals. Chang (2018) found that these authors published in fields such as biology, medicine and computer science. In addition, most of these authors published by themselves and the cases when they published with others, it was mostly with other LIS authors not with authors in the differing discipline. Those LIS authors who published in fields other than LIS were also found to be mostly librarians (Chang, 2018). This intimate connection between librarians and research, makes an exploration of the topic of interdisciplinarity and how it is approached in the LIS curriculum a valuable endeavor in LIS education.

When considering the way in which research methods has been taught in LIS, the issues are many. Research on the topic has identified some of these as research method courses not matching the students' interests (Luo, 2017), not being fully connected to real-life-work experiences (Evans et al., 2013), students' anxiety about learning research methods (Dilevko, 2000; Matusiak & Bright, in press), and students' discomfort with certain research skills such as data collection, data analysis and writing research results (Alemanne and Mandel, 2018). Research has also shown that librarians who conduct research have expressed that their programs did not prepare them well for this task, with as few as 17% of participants indicating that their program did prepare them to conduct original research (Kennedy and Brancolini, 2018).

Problem

These issues inform the main questions driving this research: Is the reliance on majority LIS sources pointed out by some authors, related to how librarians are taught to conduct research in their LIS program? Are students who complete research proposals showing the same tendency to rely primarily on the same LIS resources within their work? And what impact would the introduction of required use of interdisciplinary sources have on students' choice of sources overall?

This study explores these questions in an effort to define the main issues related to interdisciplinarity in its relationship to LIS research and practice. This will allow LIS educators to appraise the exposure of LIS students to a broad body of research beyond that of the field. This study seeks to illustrate the need for soon to be LIS professionals to engage with scholarly literature/materials beyond those published in the field in order to enrich research and practice in LIS.

Methodology

Through analysis of the references cited by students in a required LIS research methods course, this study attempts to examine the impact of assignment requirements on graduate students' use of interdisciplinary resources. The main documents analyzed were the bibliographies of submitted research proposals, the final assignment for a required LIS research methods course. This is a convenience sample, as one of the researchers is the instructor of record for the course. The research was approved as exempt by the institution's IRB.

This study took place in two phases. Phase I focused on the initial analysis of 48 research proposals submitted in three iterations of the research methods course. These proposals were completed during the fall 2017, spring 2018 and summer 2018 semesters. In these iterations of the course, there was no requirement to include sources outside of the LIS literature in the final research proposal, nor a requirement for the dates of publication of the works cited in the research proposal.

Phase II analyzes the 35 bibliographies submitted for the spring 2020 course. These works capture the references cited after the assignment requirements were modified to require at least two sources from outside of the LIS literature, and materials no older than 5 years for journal articles and 10 years for monographs. This comparison will make it possible to explore whether a requirement for students to include a minimum of two sources from outside of LIS for the final research proposal, will encourage students to include additional interdisciplinary sources in their work. The issue of the age of the works cited was also explored.

Coding

To create the dataset for analysis, information about the sources found in each bibliography was entered into an Excel sheet. Each bibliography was assigned a participant ID and a group number that aligned with the semester of submission. For each bibliography, individual entries were coded based on whether they were LIS or non-LIS. The Subject entry from Ulrichsweb was used to determine the subject area of periodicals, while WorldCat's "Subjects" was used to determine the subject area of books. Webpage subject areas were assigned by the researchers based on content and author information.

All LIS sources were coded as "1" and non-LIS sources as "2." A "0" was assigned to any general definition and these sources were not counted. As some sources were used multiple times in a bibliography, the dataset also noted the number of "unique" sources found in each bibliography. Additional data pulled from each bibliography included the titles of each source and publication dates.

Data Analysis

The data was analyzed using SPSS 26. The three groups of bibliographies that were collected prior to the assignment changes were combined to create a "Before" group. An independent sample t-test was utilized to determine if there was a difference between four aspects of the sources utilized by students before and after the assignment requirements were

changed: The mean number of non-LIS sources used by students, the mean number of LIS sources used, the mean percentage of non-LIS sources used, and mean age of publication for sources used.

Results

Results for Phase I of the study showed that students relied mostly on LIS sources, with student bibliographies averaging 71.76% LIS-centered sources. Looking at the sources themselves, 45% were LIS centered, while 26% were classified as education, and only 24% covered all other fields. Even more, while only one bibliography utilized only non-LIS sources, 17 (35.42%) did not use any non-LIS sources. Another interesting finding from this data relates to the dates of publication and age of the sources used by students in their final research proposals. In this aspect, 58.6% of the sources had publication dates from 2014 and older. Sources averaged an age of 6.63 years old, with a range of 19.4 years (min = 0.9, max = 20.3).

Results for Phase II of the study showed less reliance on LIS sources, with student bibliographies averaging 55.75% LIS-centered sources. Looking at the sources themselves, 37.8% were LIS-centered, while 34.0% were classified as education, and the remaining 28.2% covering all other fields. Similar to the Phase I, only one bibliography utilized only non-LIS sources, but only two (5.71%) did not use any non-LIS sources at all. In terms of dates of publication and age of sources, only 7.26% of the sources had publications dates from 2014 and older. Sources averaged an age of 3.32 years old, with a range of 6.3 years (min = 1.5, max = 7.8).

Independent-samples t-tests were conducted to compare the number of non-LIS sources found in student bibliographies before and after assignment requirements were changed, the percentage of non-LIS sources found in student bibliographies before and after assignment requirements were changed, the number of LIS sources found in student bibliographies before and after assignment requirements were changed, and the average age of sources found in student bibliographies before and after assignment requirements were changed.

There was a significant difference in the average number of non-LIS sources found in bibliographies “Before” assignment changes were made ($M = 2.96$, $SD = 4.37$) and “After” assignment changes were made ($M = 5.40$, $SD = 4.25$); $t(81) = -2.54$, $p = 0.01$, $g = 0.57$. There was also a significant difference in the average percentage of non-LIS sources found in bibliographies “Before” assignment changes were made ($M = 28.24\%$, $SD = 30.89\%$) and “After” assignment changes were made ($M = 44.25\%$, $SD = 26.76\%$); $t(81) = -2.46$, $p = 0.02$, $g = 0.55$. However, there was no significant difference in the average number of LIS sources found in bibliographies “Before” assignment changes were made ($M = 5.90$, $SD = 2.55$) and “After” assignment changes were made ($M = 6.06$, $SD = 3.27$); $t(81) = -0.25$, $p = 0.80$. These results suggest that including a requirement for non-LIS source use increases students use of non-LIS sources without impacting their use of LIS sources.

In terms of the age of the sources used, there was a significant difference in the average age of the sources found in bibliographies “Before” assignment changes were made ($M = 6.63$, $SD = 4.18$) and “After” assignment changes were made ($M = 3.32$, $SD = 1.32$); $t(59) = 5.14$, $p < 0.001$, $g = 1.00$. Levene’s test indicated unequal variances ($F = 18.84$, $p < 0.001$), so degrees of

freedom were adjusted from 81 to 59. These results suggest that including a requirement to utilize "current" sources reduces students' use of older and potentially outdated sources.

Discussion

Assignment instructions are essential to the type of work that is expected of students. This study introduced two caveats to the instructions provided to students regarding the expectations for the sources they were to use in their final research proposal between the sections in Phase I and the sections in Phase II of this study. Students in Phase II were instructed to include at least two sources outside of the LIS literature for their final proposal. They were also instructed to include material that was no older than 5 years for periodicals and 10 years for monographs. These instructions were intended to add clarity regarding the expectations around use of information sources for their final work. According to Walvoord and Anderson (1998), students complete assignments as they interpret their instructors' words and not necessarily what is intended for them to complete. It is because of this that complete and clear instructions are necessary in order to avoid students drawing from previous learning that might be marginally relevant to the current situation. By adding these requirements, any ambiguity regarding the expectations for the sources cited is eliminated.

Findings for Phase I resonate with those of Dali and McNiff (2019), in that students still tend to rely heavily on the LIS literature. Moreover, these findings present a picture in which interdisciplinarity is not represented in LIS students' work through their chosen sources for citations. The tendency for the age of the cited sources is to be older than 2014 is an important consideration, especially due to the use of social science focused literature, which favors journal publications and where publication cycles move at a faster pace than other fields of study (Bowers, 2014).

Phase II of the research demonstrates an overall reduction in the inclusion of materials which are exclusively from the LIS literature as well as the overall reduction of the age of the materials cited. These changes were also accomplished without a significant negative impact in their use of materials in the LIS literature. These changes demonstrate a positive impact of the change in assignment instructions in guiding students towards a more interdisciplinary approach to their final research projects.

Overall, the results of this study suggest that students do show a reliance on LIS sources, which is likely related to how students are taught, especially in terms of assignment requirements. Students did show a tendency to rely primarily on LIS literature, despite the changes. This is not totally surprising, after all, students are instructed to choose an LIS topic for their final paper and are enrolled in a program which focuses on preparing students to work in libraries. Therefore, it is not out of the realm of the possibility to consider that the choice of topic is a strong driver into the choice of information sources included.

It is important to point out here that, according to the data presented, the students' choice of sources was impacted by the new assignment requirements introduced between Phases I and II of the study. This points at the importance of faculty introducing students to the possibility of finding information relevant to LIS in the literature of other fields. It can be argued that this approach helped expose students to a more varied body of work relevant to their topic of choice,

which helped them produce more interdisciplinary work. This is an experience which can positively influence their future professional practice, as the field of library science is one that has been increasingly becoming more and more interdisciplinary throughout its history (Larivière et al., 2012), and one which prepares students to work in a variety of fields and environments (Luo, 2017).

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