An Examination of Instructional Intervention on Doctoral Student Perceptions of Scholarly Communication

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Abstract

Doctoral students need a solid understanding of the scholarly communication process in order to publish their research. Despite this need, many universities lack a formal means of instructing their graduate students on these topics, opting instead for informal discussions between students and faculty. This pilot study describes one academic library's attempt to understand doctoral student perceptions of scholarly communication topics by way of collaboration, both within and outside of the library. A one-time instructional intervention was conducted with a selected group of doctoral students within a College of Education program. Students were assessed pre- and post-instruction to ascertain any change in student knowledge and perceptions as a result of the instruction. Results indicate that the instructional intervention produced positive gains in student knowledge as well as solidified student understanding of the imperative need to publish prior to graduation. Results also demonstrated the need to educate faculty on these topics as students indicated a strong preference for their professor's guidance on selecting a journal for publication. These findings highlight the need for greater levels of instruction on scholarly communication topics as well as the need for increased channels of instruction.

Keywords: scholarly communication, open access, institutional repository, doctoral students, scholarly publication, student perceptions, collaboration

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Introduction

As graduate students progress through a doctoral program, they transition from being information consumers to information producers. In order to complete this transformation successfully, doctoral students must possess a strong knowledge of their subject matter as well as a command of the scholarly communication process. Although doctoral programs put great emphasis on developing student expertise in a particular subject area, little explicit instruction may occur regarding practical applications of scholarly publishing and open access scholarly work such as utilizing these resources for publication or research (Dulle, 2011; Stanton & Liew, 2011). The authors contend that such knowledge is critical to success, both as a doctoral student as well as a professional.

Having identified this instructional need at their university, two academic librarians at Middle Tennessee State University (MTSU), a Carnegie Doctoral Research Intensive University, created a one-shot instructional intervention on scholarly communication topics. The instruction was designed to be delivered through in-person lecture and covered a range of topics such as open access, institutional repositories, and scholarly publishing. The last encompasses a number of items including but not limited to copyright, intellectual property, author rights, editorial practices, and scholarly communication resources on campus.

Instruction was given to one section of a Research Methods class within the Ph.D. in Literacy Studies program at MTSU. This course was selected after consultation with the professor, who felt the scholarly communication topics would complement the content of her class. The class came to the library during one regularly scheduled three-hour class session, and the librarians led the instruction and assessment that took the entire class period. In addition to being instructed on the scholarly communication topics, students completed a pre- and post-assessment.

This instruction intervention was intended by the researchers to be a pilot study, and the instruction and accompanying assessment were designed such that the results would inform their future collaborative work. The researchers intended to produce an instructional session that would be helpful to students, resulting in their increased knowledge about open access scholarly publishing. The researchers also hoped that the instruction would enhance student perceptions so that they would become more receptive to using a variety of sources for future publishing opportunities. These two areas of inquiry were assessed through the pre- and post- instruction assessment instruments.

In desiging this project, the authors also sought an opportunity for collaboration.

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As their library's Digital Scholarship Librarian and Education Librarian, the authors were subject specialists who typically did not work directly together in support of an initiative. The Education Librarian is the academic liaison to the College of Education and therefore has a deep understanding of the different degree programs; she was able to recommend and contact individual professors in the college who were most likely to be interested in the instructional intervention. The Digital Scholarship Librarian has an in-depth knowledge of the subject matter but lacked the professional ties to any one academic college on campus to initiate such a targeted instructional session. Both librarians worked together to design a course of instruction as well as an assessment tool. The Education Librarian was able to make suggestions regarding topics that the College of Education students would find the most relevant and engaging. The Digital Scholarship Librarian designed the specific curriculum and instructional delivery. Together, these individuals were able to collaborate on a project that held the promise of increased instruction to a variety of academic colleges on campus.

Background

Before discussing the study specifically, it would be helpful to explain some of the terms and concepts that were part of the instruction session. The evolution of the digital era has produced a significant amount of literature on open access (OA), but what does this term mean? Peter Suber is the Director of the Harvard Office for Scholarly Communication and the de facto leader of the open access movement. Suber (2004) defines OA publication as "digital, online, free of charge, and free of most copyright licensing restrictions" (para. 1). Further, open access is a movement led by libraries, university presses, authors, faculty, and organizations who strive to remove access barriers to information. OA is also considered a movement that has recently come to the foreground of scholarly publishing as compared to the much longer history of manuscript publishing that occurred as early as the fifteenth century (Tonkery, 1998).

Two of the most prominent organizations in the open access movement are the Public Library of Science (PLOS), and the Scholarly Publishing and Academic Resources Coalition (SPARC). According to SPARC (2013), cost barriers and use restrictions placed by traditional print publishers hinder access to research that can stimulate the economy, enrich education, and encourage innovation. Both PLOS and SPARC cite the far lower production costs associated with online publishing as opposed to traditional print publishing as a major factor enabling the global distribution and access of scientific information. Increasing access to

innovation through OA distribution could potentially increase the pace of scientific discovery, thereby contributing to the advancement of society.

Traditional publishing, including electronic/digital publishing, has been around a lot longer that OA publishing. Collectively, these different types of publishing are all subfields of the much larger ecosystem of scholarly communication (see Figure 1). The Association of
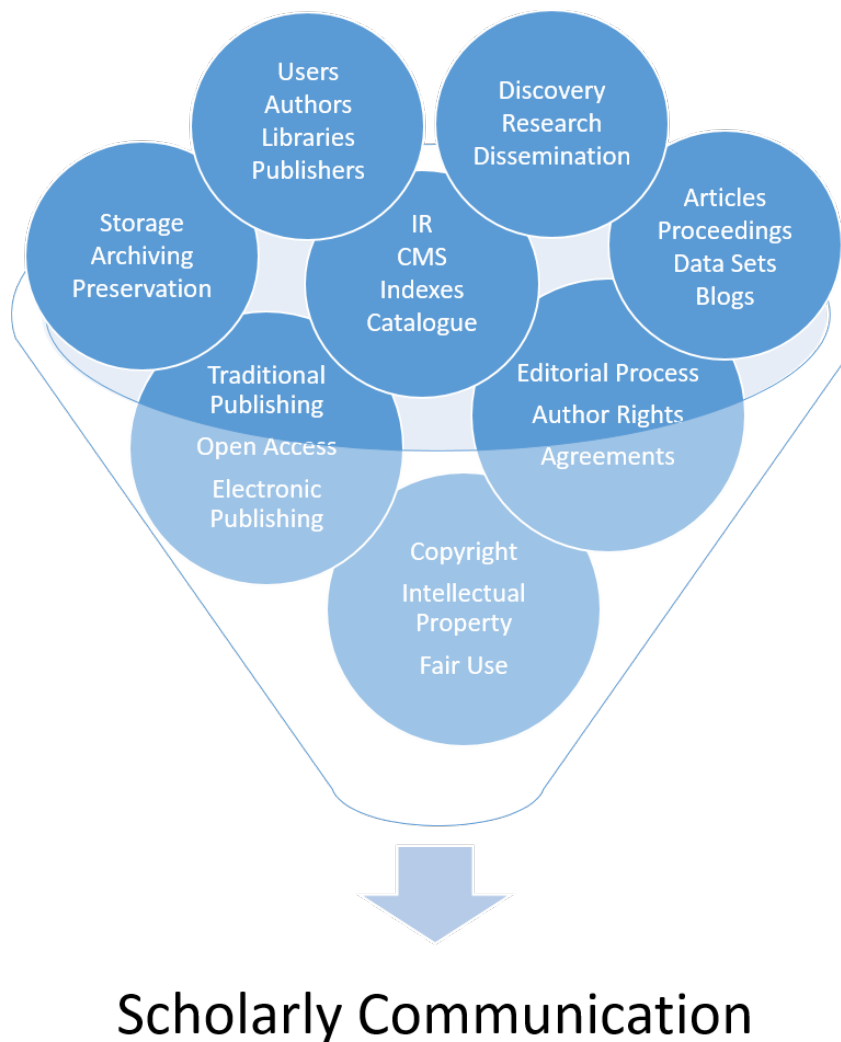

Scholarly Communication

Figure 1: The scholarly communication ecosystem encompasses a variety of subfields

Research Libraries (ARL) website defines scholarly communication as "the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use" (ARL, n.d., para. 1).

The authors contend that universities are a perfect setting not only for the discussion of open access and publishing but also for instituting open access options. After all, a large percentage of journal article authors are faculty or students of higher education. Over the last twenty years, there has been a profound transition in scholarly communication whereby the emergence of open access journals has been viewed as a boon to academia (Park & Qin, 2007). The institutional repository (IR) has been one such blessing, providing a vital function as the university platform to showcase the scholarly output of its faculty, staff, and students. The authors of these documents retain the copyright; the IR is only granted the right to redistribute the content. If an author has previously published the document and no longer retains the copyright, they may still place a copy of the content in an IR if the author's publisher agrees to OA policies or gives special permission. As the OA movement has gained prominence, more and more journals are allowing this type of "self-archiving" of scholarly publications in an IR (Stanton & Liew, 2011). The OA movement has affected the way some traditional publishers operate today. For example, prominent publishers including Wiley, Elsevier, and Taylor & Francis have changed their publishing options to include OA possibilities as well as permission to post a specific version of an article in an IR. IR software options also provide valuable statistical analysis and indexing features that help track the impact factor of research and enable accessibility of the research through the automatic indexing in scholarly and popular search engines such as Google Scholar and other open source databases. In preserving the scholarly output of the university as well as contributing to its discovery online, the IR is an important piece in the OA movement.

To say that open access has revolutionized scholarly publishing and research is an understatement. Although most universities today understand the importance of the open access movement as a way to improve scholarly communication, their ability to communicate its significance to their students is in question. Graduate students in particular need to be informed about this development in scholarly communication, not only for their educational achievement but also for their possible careers in academia upon graduation. This literature review will examine prior research that has surveyed graduate student knowledge of the scholarly publishing process; it will also look at what libraries have done to educate graduate students on the open access movement as well as other topics within the field of scholarly communication.

Literature Review

The following review was conducted to examine contemporary thought regarding the perceptions of university students toward scholarly communication, with particular emphasis on open access resources. The most significant questions asked in this study are "How much do doctoral students know about open access scholarly communication?" and "Will an instructional intervention change their knowledge and understanding of the topic?" The literature review examines the work of other researchers who have sought to examine different parts of these questions. The studies examined for this literature review rely heavily on quantitative data to report their findings.

The perceptions of graduate anthropology students regarding scholarly publishing were examined in a 2014 study by Cooper and Mierxiati. Although the authors surveyed 150 students from both master's and doctoral programs in anthropology, the vast majority of respondents (96.7%) were doctoral students. These respondents understood the importance of scholarly publishing, with 62% having submitted work for publication that was subsequently accepted. One-third of the respondents indicated a strong pressure to publish as a qualification for future employment: "33.1% of the participants believed that more than 3 published works by the time of graduation would make them an attractive candidate on the job market" (Cooper & Mierxiati, 2014, para. 4). While this study indicates that scholarly publishing is taken very seriously by Ph.D. candidates, it does not indicate the students' attitudes nor their depth of knowledge regarding open access issues; for that perspective, the authors have examined other studies.

Dulle (2011) surveyed 128 graduate students in master's and doctoral programs specifically for their attitudes toward open access scholarly communication. He found that while a majority (60.9%) of respondents had used OA content, only 10.9% of them had published research through an OA journal or resource. Dulle's research targeting student perceptions examined three areas: "perceptions of the (a) quality of open access publications, (b) perceived usefulness of open access, and (c) value of institutional repositories at their respective institutions" (Dulle, 2011, p. 21). The majority of respondents had very positive views regarding open access: they felt such publications were of high quality and understood the peer-review process, they saw its benefits in distributing scholarly research, and they also understood the role of the institutional repository in increasing visibility and access of scholarly work. At the same time, there was a clearly identified problem in that only 29% of the students knew the pragmatic skills of how to publish through an open access journal. The author concluded that

although students supported OA, their lack of knowledge regarding OA publishing was a key constraint for graduate student publication through open access resources.

Stanton and Liew (2011) performed a mixed methods study in which doctoral student perceptions of open access were examined. These authors surveyed 251 students and performed interviews with eight students. The authors made an important distinction between "awareness" and "understanding" of open access concepts. They found that the majority (62%) of survey respondents were aware of the concept of open access, but they felt that very few actually had an understanding of what this term encompasses. Although the majority of all respondents held very positive opinions regarding the value of open access to disseminating scholarly work, less than half of the survey respondents (48%) were familiar with the concept of an institutional repository and only 17% had submitted their research to their university's IR. The respondents also indicated that they perceived potential risks in publishing in open access journals; these risks included "the potential conflict of interest with journal publishers, concerns around plagiarism (particularly in relation to theses) and a perception that open access was less prestigious than traditional forms of publication" (Stanton & Liew, 2011, para. 3). These findings suggest many opportunities for instructional intervention to better inform graduate students.

Similarly, there is a concern about predatory publishing practices. As stated by Beall (2015), who developed a set of criteria to determine predatory publishers, this is true for both open access publishers and for traditional publishers. Predatory journals do exist in which published papers have little or no peer review, information regarding the location or editorial board expertise of the journal is misleading, and unrealistic expectations are promised (Ward, 2016). It is therefore important that students be able to differentiate between predatory and non-predatory publishers when selecting a publishing venue. In order to reduce the chances of a student succumbing to such predatory practices of a potential publishing venue, students need publishing education. The question remains regarding from where this education should come. Rotfeld (2010) discusses the need for quality graduate student mentoring that goes beyond the basic fundamental issues, data collection, and analysis. This work leads up to a publication, "yet, at the point of preparing work for publication, the mentoring seems to end" (p. 267). He adds that classroom reports and dissertations are far different from journal articles and it is the doctoral teachers who have misplaced this critical guidance and mentorship of publishing as a part of their job.

One study that has examined the role of academic libraries in meeting this instructional need was a 2011 work by Del Toro, Mandernack, and Zanoni. These authors surveyed 304

library deans and directors regarding their scholarly communication engagement. Most of the respondents came from medium to large institutions, and the majority of these academic libraries indicated that they had instruction in place to address such topics as open access journals, institutional repositories, and author's rights. This study was helpful for identifying the most effective formats for teaching graduate students about scholarly communication; the authors cite "formal group presentations, followed by workshops/seminars/symposia and discussions associated with social events such as lunches or teas" as the most successful formats for instruction (Del Toro, Mandernack, & Zanoni, 2011, p. 158).

The research examined for this literature review indicates that graduate student perceptions of scholarly communication topics vary considerably. While the Ph.D. students in the Cooper and Mierxiati (2011) study had a strong appreciation for the need to publish, it is unknown if those students understood that open access resources can be a valuable tool for research and publication. The graduate students of the Dulle (2011) study had positive views of open access resources but lacked practical knowledge of how to utilize open access resources for publication of their work. Similarly, the graduate students studied by Stanton and Liew (2011) exhibited a lack of understanding regarding open access resources as well as institutional repositories. This is compounded by the predatory practices of some publishers (Beall, 2015; Ward, 2016) and the lack of this publishing education in the doctoral curriculum (Rotfeld, 2010). The majority of library deans and directors surveyed by Del Toro, Mandermack, and Zanoni (2011) felt their libraries were largely effective at educating graduate students on scholarly communication and had valuable feedback regarding the instruction that works best.

Methods

Research Questions

This study sought to answer the following questions:

- Would participants experience a change in knowledge of open access scholarly publishing as a result of the instructional intervention?
- Would participants experience any change in their perceptions regarding the utility of open access scholarly publishing sources for their future publications?
- Would participants find the instructional intervention to be helpful, and, if so, how?
- Would participants experience a change in confidence regarding their future career prospects as a result of the instructional intervention?

Sample

A group of eleven students in the Ph.D. in Literacy Studies program at Middle Tennessee State University received a one-time instructional session on scholarly communication topics during the course of a required class in their program. All eleven students were in a pre-candidacy status whereby students needed to complete a minimum of 48 credit hours of coursework before being permitted to take their preliminary exam and advance to candidacy. The students were at varying pre-candidacy levels in their Ph.D. programs, and for some students this was their first semester in the program.

The authors first considered students from this program for the instruction session because they need a solid understanding of scholarly publishing due to a requirement of their Ph.D. program. Before advancing to candidacy, students in the Ph.D. in Literacy Studies program are required to complete a preliminary examination offered in two formats. While a traditional written exam is one option, many students opt for the research project format of the preliminary exam. The research project option requires students to take a sequence of two three-credit hour classes, the culmination of which is a research article on an area of inquiry. Upon successful submission of the research article to a peer-reviewed journal, students may be eligible to advance to candidacy. This can be an attractive option for some students, particularly those who hope to pursue a tenure-track position at a university upon graduation. One obstacle to choosing this option, however, is that students require some prior knowledge of the scholarly publication process. For example, they need to know where to find reputable journals for their article submission, and they need to understand their rights to their work as the author. The students selected for this study, therefore, already had a factor in place to motivate them to learn about scholarly communication topics.

Data Collection

At the commencement of the instruction session, the researchers informed students about the nature of the instruction and asked them to participate by signing a written IRB consent form. All but one student agreed to participate and were subsequently given a written pre-assessment questionnaire. The purpose of this questionnaire was to collect demographic information about the participants as well as measure initial student perceptions on a range of scholarly communication topics. The professor of this doctoral class was in attendance but was not involved in the selection of lecture content or administration of the assessments.

The instructional session began after completion of the pre-assessment survey and was a

one-shot session delivered over a three hour period. Instruction was delivered primarily through a traditional lecture format but also incorporated video clips, discussion, practical examples, in-class exercises, and Q&A (see Appendix A for the course agenda). Afterwards, students were administered a post-assessment survey to measure any change in student perception as well as understanding of the topics presented during instruction.

For both the pre- and post-assessment instruments (see Appendix B and C), most questions were asked using a five-point Likert scale to capture responses. Several open-ended questions were, however, also asked at the end of the post-assessment so that participants could record individual responses to these particular questions.

Data Analysis

The results of the pre-assessment and post-assessment instruments were compared to ascertain any changes in student perception, particularly in the three areas of open access, institutional repositories, and scholarly publishing. For questions using a five-point Likert scale response, descriptive statistics were conducted. For open-ended questions, a sample of the participant responses has been reported below.

Results

Demographics of Participants

The authors first wanted to ascertain the career goals of the participants. It was discovered that post-graduation, three of the eleven students wanted to secure a tenure-track position, and another two wanted to obtain another type of professional position. Nearly half of the respondents (N = 5) were interested in either scenario after graduation. This left just one participant who was undecided about his or her future career goals (see Table 1).

One of the pilot study's objectives was to determine if the instruction had made any difference in student confidence levels regarding career prospects. In both surveys, students were asked "How confident are you about your chances of successfully securing a tenure-track or other professional position after graduation?" Prior to instruction, student responses were rather mixed (see Table 2), and this trend remained largely unchanged after instruction. Therefore, one could conclude that learning more about the scholarly communication process did not have a significant effect on the student confidence level regarding securing a professional position after graduation. This was a disappointing result to the researchers who had intended

for the instructional intervention to be an empowering experience to these students. This result, however, could be impacted by external factors unrelated to the instructional intervention. It would be helpful to follow up with the "not very confident" students through individual interviews to learn what they perceive to be their individual deficiencies so as to determine what could be done at the library instructional level to remedy these perceived shortcomings. It could also be possible that student uncertainty regarding the job market has less to do with their academic preparation and more to do with external conditions such as economic or social factors.

Table 1: Participants' Career Goals Post-Graduation

Career Goal	Number	Percentage
Tenure-track	3	27.27%
Other professional	2	18.18%
Tenure-track or other professional	5	45.45%
Undecided	1	9.09%
Total	**11**	**100%**

Table 2: Participants' Confidence Regarding Post-Graduation Career Prospects

	Pre-Instruction		Post-Instruction	
	Number	Percentage	Number	Percentage
Very confident	3	27.3%	2	18.2%
Confident	2	18.2%	4	36.4%
Indifferent	3	27.3%	2	18.2%
Not very confident	3	27.3%	3	27.3%
Total	**11**	**100%**	**11**	**100%**

Participant Perception of Instruction's Value

In spite of not boosting student confidence, the instruction session itself demonstrated some benefit. When assessed post-instruction, the students strongly indicated that the seminar had been a good use of time. A majority said the session was either "very relevant" (N = 3) or "relevant" (N = 6) to both their current class in the Ph.D. program as well as to their degree program overall. A slightly more enthusiastic response said that the session was "very relevant" (N = 3) or "relevant" (N = 7) to their professional goals.
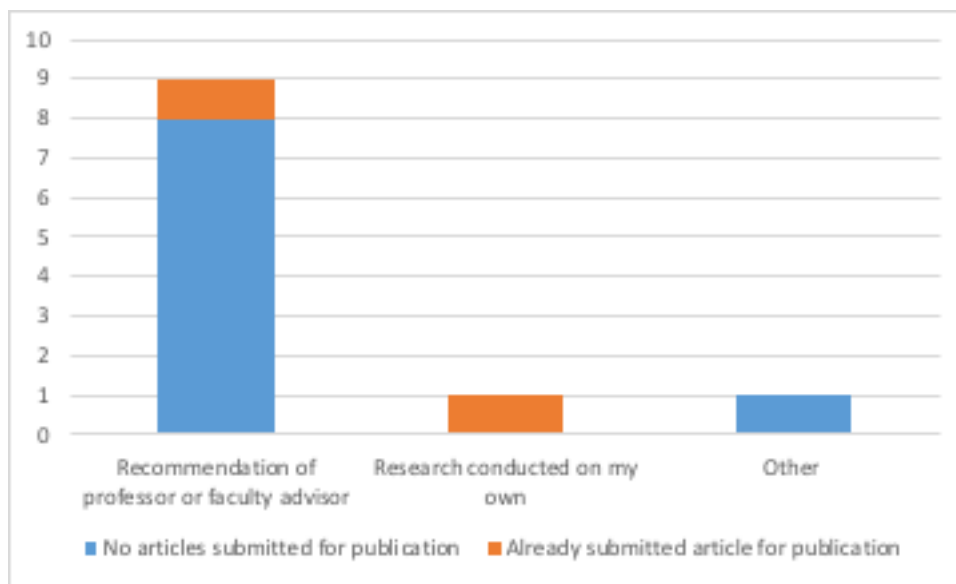
Scholarly Publishing Perceptions

The participants indicated several strong opinions regarding scholarly publishing. A majority of respondents (N = 8) agreed with the statement "I am concerned about the long-term preservation of my research." Students also had definite feelings regarding the number of desired published works prior to graduation. A majority of the students (N=7) believed they should have two published works by the time they finished their degrees. One noticeable change from pre- to post-instruction was related to a question that asked "How important is it to publish as a Ph.D. candidate?" Students gave a more decisive answer to this question post-instruction with 100% of participants answering "very important" or "important", whereas in the pre-assessment only eight of the participants answered "very important" or "important."

This importance of publishing, both to participants' current degree-seeking goals as well as for their future career aspirations, was widely acknowledged in the responses. All of the participants indicated that publishing was important in order to earn one's degree, with "very important" (N = 5), "important" (N = 3), and "somewhat important" (N = 3) being the most frequent responses. Similarly, a significant number of students found that publishing was "very important" (N = 7) or "important" (N = 3) in securing a professional or tenure-track position. As might be expected of students early in their Ph.D. programs, few of the students had actually produced a research publication themselves. Of the eleven participants in the study, only two had previously submitted articles. Many of the students have, however, participated in the sharing of research on a smaller scale. For example eight of the respondents have participated in Scholar's Week, an annual university-wide opportunity to present posters of student research projects. These results largely demonstrated that although students recognized the importance of publishing, at this point in their academic careers they are not yet fully engaged in the task.

Another significant finding was related to the decision regarding where to publish. A large majority of students (N=9) indicated that their decision of where to submit a manuscript was based primarily on the recommendation of a professor or faculty advisor. This result points to the importance of educating faculty regarding open access publishing options. If faculty are not informed, they will not discuss or promote these publishing venues to their students. Figure 2 demonstrates the manner by which the participants chose a publication venue.

In all, it appeared that these doctoral students take scholarly publishing seriously. They know it is important to their degree programs as well as future career goals. Despite this understanding, however, these students are getting off to a slow start regarding actual published research. The majority, at this point in their studies, have engaged in "safer" venues such as an on-campus poster presentation session.

Figure 2: How students choose where to submit a manuscript

Open Access Perceptions

In the pre-assessment survey, nearly all of the respondents (N = 10) said they had some level of familiarity with open access concepts. While only seven said they had used open access resources, a larger number (N = 9) answered that they used Google Scholar in their literature review or research process to find articles. Google Scholar incorporates open access sources, including items in institutional repositories and open access journals in its index. Students could, therefore, be using open access resources without their realization. Prior to instruction, less than half of the students knew if their university offered open access resources for research purposes and even fewer (N = 4) knew how to locate these resources.

Students appeared to have a stronger familiarity with open access concepts post-instruction. The subsequent survey showed that students unanimously agreed that "Open Access removes cost barriers to accessing research (allowing public access to research and information)." Most students (N = 9) also understood that allowing one's dissertation to be open access would not hinder their ability to publish later.

Institutional Repository Perceptions

Prior to instruction, most of the respondents (N = 7) knew the university had an institutional repository, but fewer than half (N = 5) knew how to access it. A separate question

elsewhere in the pre-assessment asked respondents how often they used institutional repositories. Four responded "often" and an additional four answered "sometimes." Taken together, these responses point to some discrepancy in respondents' initial understanding of institutional repositories.

Upon receiving instruction, students indicated very positive opinions regarding the value of institutional repositories in aiding their research. All respondents answered affirmatively to the statement "Depositing my work in an institutional repository will assist other academics in finding my work" with seven strongly agreeing and the rest simply agreeing with the statement. A consensus of respondents similarly believed that an IR would enhance their professional research profile ("strongly agree" and "agree" each received five responses). A majority of students post-instruction (N = 8) appreciated the value of an IR in consolidating research, and a majority (N = 7) correctly discerned that depositing work in an IR does not hurt one's ability to publish elsewhere.

These survey results indicated that if students were uncertain as to the use of an institutional repository pre-instruction, they seemed to better appreciate its functionality and benefits after instruction.

Open Response Areas of Concern from Post-Assessment

The post-assessment survey gave students an opportunity to write in their thoughts on two areas of inquiry. The first question asked students to "identify one or more takeaways from the seminar that will be useful to you." Most of the responses said that the various topics of open access resources, institutional repositories, and author rights (including different examples of publishing addenda) were all very helpful. One response cited the instruction on "retaining copyright for derivative publications" as being useful information. Based on classroom discussion, this topic in particular struck a chord during the instruction session. The students were concerned because they often plan to take their preliminary exam journal publications and build upon this research in their dissertations. One student may have had this thought in mind when the student wrote "I have a better understanding of open access and will keep that in mind as I choose who [where] to submit." Another student brought up the classroom discussion of OA fees with "I was previously unaware of the issue of journal costs."

The second open response question asked if the students thought there were any topics or concepts that could have been explored in greater detail. Student responses dealt primarily with library instruction questions such as wanting to explore the differences between Scopus and Web of Science. One respondent wrote "I don't understand impact factors very well." Another

student wanted to know more about the effects on publishing rights after a work is deposited into an IR. Certainly these would be great topics for follow-up instruction.

Discussion

The results of this pilot study indicate that the instructional intervention was very helpful to the initial group of doctoral students and therefore holds great promise as an instructional session that could be offered to additional classes and academic programs on campus. Although the data indicates that the instruction did not make a positive change in student confidence levels regarding their post-degree career prospects, students strongly indicated that the instruction was important to their current coursework and degree program as well as to their professional goals.

The post-assessment results indicate that the instruction helped students better understand the importance of publishing for success in their current degree program. Although the surveys indicate that students understand the importance of publishing for their marketability in securing a tenure-track or other professional position after graduation, the instructional intervention may have been helpful in impressing upon students the urgency in beginning their academic writing and publishing prior to graduation. At the time of assessment, a majority of students had engaged primarily in a campus poster presentation rather than published research.

The post-assessment also demonstrated student gains in the areas of open access and institutional repository knowledge concepts. The open response comments showed a particular student interest in the area of copyright retention for derivative publications, a topic with special significance to this population.

One last but rather significant finding was that the vast majority of students surveyed based their decision about where to publish solely on the recommendation of their professor. This finding highlights the need for academic librarians to instruct not only students but faculty on the different scholarly communication concepts such as open access and institutional repositories. If librarians educate students only to have student perceptions altered to the biases of their professors, then librarian work on these topics will be for naught.

Limitations

The study sought to examine a possible change in student perceptions and knowledge base as a result of an instructional intervention. The authors recognize the limitations of a one-time seminar in imparting knowledge of scholarly communication to the participants: the instruction is far from comprehensive. Another limitation is that there is no control group by which to compare the results of the pre- and post-assessments. The instruments themselves, although assessed for validity prior to use, are not comprehensive, and future phases will include enhanced and tailored instruments based on the results of this study. The study sought only to produce results for a small, defined population that has an external motivation of wanting to learn about scholarly publishing and open access resources. As this study is based only on a selection of doctoral students in the College of Education, the results of the study would not be generalizable. For future phases, this limitation would be addressed by incorporating not only other doctoral disciplines but also master's degree students and tenure-track faculty.

Future Research

For future iterations of this instructional seminar it would be helpful to record the course instructors' self-assessments before and after instruction. Ideally, these would be compared with students' responses since this study has indicated that graduate students largely determine where to publish their work based solely on the recommendation of their professors. Additional criteria that would benefit future studies include a revised and more in-depth survey instrument as well as a larger pool of participants, including students from other academic colleges on campus. Such data would help determine whether scholarly communication perceptions differ between academic programs.

Utilizing the data in this study, the university could conduct further analysis and create opportunities to leverage the gap of information students have regarding the scholarly communication process. Instruction tailored to a specific discipline may be necessary, perhaps utilizing the library liaison program. Educating the faculty on these topics first or concurrently may also prove to reinforce and sustain the awareness and encouragement of open access resources and benefits, as well as the future of academic publishing. All of this would add to the goal of the library in guiding this scholarly communication discussion across campus in hopes of providing evidence for the need of an interdisciplinary and credit-bearing scholarly publishing course.

Conclusion

Working with doctoral students in the MTSU's College of Education was a great way to begin gauging campus understanding of scholarly communication issues. The authors based the one-time instructional intervention on different topics that are essential to an introduction on open access, institutional repositories, scholarly publishing, and other related concepts. The results of the pre- and post-assessments allowed the authors to make an initial determination about the effectiveness of the teaching presented; it also demonstrated student perceptions and knowledge regarding the modern scholarly communication process. This study and its findings would not have been possible without collaboration both within and outside the library. With open access and scholarly communication, collaboration is the key to unlocking the awareness and education of the graduate student population.

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Appendix A: Seminar on Scholarly Communication Agenda

Agenda/Topics

- Pre-assessment survey (voluntary)
- Overview of scholarly communication
  - Terms
  - Different publishing models (traditional, open, hybrid)
  - Levels of access via open methods (green-gold-modified gold)
- Brief history of the internet, electronic publishing, and open access
- Introduction to repositories, journals, and publishers
- Access to research (for different publishing models)
- Arguments for and against the publishing models (trade, commercial, academic including electronic theses and dissertations)
- Arguments for and against open access (including predatory publishing practices)
- Intellectual property (IP) concepts
- Copyright and IP differences, licensing
- Publishing terms, publisher agreements, how to find publishing terms
- Putting all of this into practice
  - Exercises on how to find OA journals for specific disciplines
  - Exercise on using tools to determine publishing terms for a journal
  - Exercise on comparing author rights for different publishing agreements
  - Exercise on how to negotiate authors' rights
- Use of databases for searching publications (Scopus) from various publishing models
- Discussion of impact factor, journal reputation, peer-review, editorial process
- Discussion of scholarly communication resources on campus and at-large
- Post-assessment survey (voluntary)

Appendix B: Pre-Assessment Instrument with IRB Consent

Pre-Seminar Assessment of Scholarly Communication
LITS 7140 : Research, Design, and Methodology in Literacy

Project Title: An Examination of Instructional Intervention on Doctoral Student Perceptions of Scholarly Communication

Purpose: The purpose of the survey is to explore and examine the perceptions of doctoral students at Middle Tennessee State University (MTSU) as they progress through their degree program. Students will be assessed pre- and post- instruction seminar in order to examine any differences in student perception regarding scholarly communication.

Procedures: The pre-seminar survey involves multiple choice and fill in the blank responses that are completed on a paper. It is estimated that the pre-seminar survey will take less than six minutes to complete and there is no discomfort in this process. The post-seminar survey involves multiple choice and fill in the blank responses that are completed online. It is estimated that the post-seminar survey will take 10-15 minutes to complete and there is no discomfort in this process. The responses to these surveys are not linked to identifiable information. The results of the surveys may later be generalized for publishing purposes.

PI Contact: digitalscholar@mtsu.edu

Consent for Paper Survey

(Check box to give consent) ☐   I have read the above information and my questions have been answered satisfactorily by project staff. I believe I understand the purpose, benefits, and risks of the study and give my informed and free consent to be a participant.

By taking the following survey, Pre-Seminar Assessment of Scholarly Communication, I acknowledge the following:

Participating in this project is voluntary, and refusal to participate or withdrawing from participation at any time during the project will involve no penalty or loss of benefits to which you might otherwise be entitled. All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised; for example, your information may be shared with the Middle Tennessee State University

Institutional Review Board. In the event of questions or difficulties of any kind during or following participation, you may contact the Principal Investigators as indicated above. For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

We thank you for your time and consideration. Your participation will help advance the graduate student resources available on campus.

Please turn the page over to begin the Pre-Seminar Assessment
Pre-Seminar Assessment of Scholarly Communication

Instructions: Please circle the answer that is closest to your opinion

Section 1

1. Please select your desired career goal by selecting one of the following:

        A.   Tenure-track academic
        B.   Other professional position
        C.   Both A and B
        D.   Undecided

2. Have you submitted article(s) for publication?
        Yes   No

3. How would you choose where to submit your manuscript? If no, how would you choose where to submit a manuscript?
        A.   Recommendation of professor or faculty advisor
        B.   Suggestion of department
        C.   Mandate of department
        D.   Research conducted on my own
        E.   Other (please specify here)_____

Section 2

4. How important is it to publish in order to earn your degree?

Very important   Important   Somewhat Important   Not so important   Not important at all

5. How important is it to publish in order to secure a professional or tenure-track position?

Very important   Important   Somewhat Important   Not so important   Not important at all

6. How confident are you about your chances of successfully securing a tenure-track or other professional position after graduation?

Very confident   Confident   Indifferent   Not very confident   Not confident at all

7. How familiar are you with the concepts of open access?

Very familiar   Familiar   Somewhat familiar   Not familiar at all   Not sure

8. How often do you use open access resources?

Often   Sometimes   Rarely   Never   Not sure

9. How often do you use institutional repositories?

Often   Sometimes   Rarely   Never   Not sure

10. For the research process, how useful is the information found in open access and institutional repository resources?

Very useful   Useful   Somewhat useful   Not so useful   Not useful at all

11. How often do you use Google Scholar in a literature review or research process?

Very often   Often   Sometimes   Rarely   Never

12. For publishing purposes, how effective (quality research and audience access) is it for an article to be published in an open access publication?

Very effective   Effective   Indifferent   Not effective   Depends on journal

Section 3

13.   Does MTSU offer open access resources for research purposes?

Yes   No   Unknown

14.   Do you know how to locate open access resources at MTSU?

Yes   No   Unknown

15.   Does MTSU have an institutional repository?

Yes   No   Unknown

16.   Do you know how to access MTSU's institutional repository?

Yes   No   Unknown

17.   Have you participated in Scholars Week or Scholars Day at MTSU?

Yes   No   I planned on participating but my proposal was not accepted

Appendix C: Post-Assessment Instrument with IRB Consent

Post-Seminar Assessment of Scholarly Communication

LITS 7140 : Research, Design and Methodology in Literacy

Project Title: An Examination of Instructional Intervention on Doctoral Student Perceptions of Scholarly Communication

Purpose: The purpose of the survey is to explore and examine the perceptions of doctoral students at Middle Tennessee State University (MTSU) as they progress through their degree program. Students will be assessed pre- and post- instruction seminar in order to examine any differences in student perception regarding scholarly communication.

Procedures: The pre-seminar survey involves multiple choice and fill in the blank responses that are completed on a paper. It is estimated that the pre-seminar survey will take less than six minutes to complete and there is no discomfort in this process. The post-seminar survey involves multiple choice and fill in the blank responses that are completed online. It is estimated that the post-seminar survey will take 10-15 minutes to complete and there is no discomfort in this process. The responses to these surveys are not linked to identifiable information. The results of the surveys may later be generalized for publishing purposes.

PI Contact: digitalscholar@mtsu.edu

Consent for Online Survey

By taking the following survey, Pre-Seminar Assessment of Scholarly Communication, I acknowledge the following:

Participating in this project is voluntary, and refusal to participate or withdrawing from participation at any time during the project will involve no penalty or loss of benefits to which you might otherwise be entitled. All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised; for example, your information may be shared with the Middle Tennessee State University Institutional Review Board. In the event of questions or difficulties of any kind during or following participation, you may contact the Principal Investigators as indicated above. For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

Please check "Agree" if you would like to take the survey. Or check "Decline" if you choose not to participate in this study.

We thank you for your time and consideration. Your participation will help advance the graduate student resources available on campus.

After reading the description of the study above, please choose one of the following:

☐ Agree. I would like to take the survey

☐ Decline. I do not want to take the survey.

Post-Seminar Assessment of Scholarly Communication
Instructions: Please choose the answer that is closest to your opinion

Section 1

1. Depositing my work in an institutional repository will give my work exposure:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

2. Depositing my work in an institutional repository will increase the number of times my work is cited:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

3. Depositing my work in an institutional repository will make it available via Google Scholar:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

4. Depositing my work in an institutional repository will enable the preservation of my research for the long term:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

5. Open Access removes cost barriers to accessing research (allowing public access to research and information):

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

6. Depositing my work in an institutional repository will assist other academics in finding my work:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

7. Depositing my work in an institutional repository will enhance my professional research profile:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

8. Depositing my work in an institutional repository will help consolidate my research into one location and complement my CV:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

9. If I deposit my work in an institutional repository, I may not be able to publish elsewhere due to copyright restrictions:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

10. If I deposit my work in an institutional repository, others may copy or use my work without my permission:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

11. I am concerned that the research in an institutional repository may not be perceived as prestigious in comparison to other publishing venues:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

12. If I deposit my work in an institutional repository, I am concerned people will not be able to find it:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

13. I am concerned about the long-term preservation of my research:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

14. If I allow my dissertation to be open access, it will allow others to criticize my work:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

15. If I allow my dissertation to be open access, it will hinder my ability to publish later:

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree

Section 2

16. What is the ideal number of published works prior to graduation?

0   1   2   3   4+

17. How many works have you submitted thus far?

0   1   2   3   4+

18. How many of those were rejected by a publisher?

0   1   2   3   4+

19. How many of those submitted were open access publishers?

0   1   2   3   4+   Not sure

20. How many total works have you published thus far (does not include those under review)?

0   1   2   3   4+

Section 3

21. How important is it to publish as a PhD candidate?

Very Important   Important   Somewhat Important   Not Important

22. How confident are you about your chances of successfully securing a tenure-track or other professional position after graduation?

Very confident   Confident   Indifferent   Not very confident   No confidence at all

23. How relevant was the scholarly communication seminar to your course?

Very Relevant   Relevant   Somewhat Relevant   Slightly relevant   Not relevant at all

24. How relevant was the scholarly communication seminar to your degree program?

Very Relevant   Relevant   Somewhat Relevant   Slightly relevant   Not relevant at all

25. How relevant was the scholarly communication seminar to your professional goals?

Very Relevant   Relevant   Somewhat Relevant   Slightly relevant   Not relevant at all

26. Identify one or more takeaways from the seminar that will be useful to you. (Optional)

_____
_____
_____
_____

27. Could any of the topics or concepts have been explained more clearly or explored in greater detail? (Optional)

_____
_____
_____
_____