TEACHING AN INTERDISCIPLINARY GRADUATE-LEVEL METHODS COURSE IN AN OPENLY-NETWORKED CONNECTED LEARNING ENVIRONMENT: A GLASS HALF-FULL

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ABSTRACT

Our paper describes the design and delivery of an online interdisciplinary social science research methods course (ISRM) for graduate students in sociology, education, social work, and public administration. Collaborative activities and learning took place in two types of computer-mediated learning environments: a closed Blackboard course management system and a public facing "openly-networked connected learning" environment designed to facilitate cross-discipline connections, student engagement, and digital fluency. A course formative assessment based on student feedback and instructors' reflections informed the lessons learned about the design and delivery of the course. Our assessment suggests that many of the connected learning goals can be met through the closed course management system rather than through the open platform.

Keywords: computer-mediated learning, interdisciplinary education, connected learning environment, online education, research methods, information competencies

Several challenges confront the 21st century social science university professor, not the least of which are (a) equipping graduate students with sufficient research capacity to understand, generate, and use scientific knowledge in a world driven by multiparadigmatic perspectives, and (b) assessing a plethora of technological advancements for use in varied learning environments. To address these challenges, four social science research methods instructors, an instructional designer, and a research librarian formed a faculty learning community (FLC) to collaborate on the design and delivery of an online interdisciplinary social science research methods course (ISRM) for graduate students in sociology, education, social work, and public administration. The ISRM course, characterized as an openly-networked connected learning approach, leveraged digital tools and technologies to connect student learning environments across disciplines, home, and community settings (Connected Learning Alliance, nd). The course web site was built on a public-facing open web site platform designed to facilitate student blogging and peer learning across disciplines, seamless integration of abundant multimedia content (podcasts, videos, text, data), and sharing course content with

interested university and community members (Croteau, 2015). An openly-networked connected learning approach supports active collaborative learning through student interest-driven projects, opportunities for student reflection, and frequent feedback from peers and instructors—themes identified by Nind, Kilburn, & Luff (2015) in a recent analysis of articles about teaching research methods. Connected learning is also expected to facilitate greater student autonomy in a self-guided learning environment (Dron, 2007; McLoughlin & Lee, 2010). For instance, a social bookmarking tool like Diigo enables students to curate, share, and integrate their own learning content into the course (Stoeckel & Sinkinson, (2013). Four components characterized the new ISRM course and distinguished it from the discipline specific research methods courses taught previously:

1) a public-facing course site based on connected learning principles;

2) a structured blogging component;

3) an interdisciplinary approach; and

4) an information literacy component anchored in library science.

The purpose of this article is to share the lessons learned from a course assessment of this learning initiative to contribute to the emerging pedagogical knowledge base for teaching graduate research methods course content in computer-mediated learning environments. First, we identify and contextualize some of the critical issues around teaching research methods and note how our openly-networked connected learning environment was informed by and could address these issues: the need for increased research capacity in graduate students, trends in the technology and pedagogy of teaching and learning research methods, the benefits of interdisciplinary course delivery, and the changing information landscape. Second, we describe the design and delivery of the ISRM course, highlighting the four new components that were incorporated into the course. Next, we present the course assessment, including student feedback and instructor reflections, that was undertaken to better understand the student response to and the learning associated with the new course components. This assessment informed our lessons learned which we organize and present within the framework of the new course design components offered in the ISRM course. We conclude that the glass is half full in that the benefits of two of the new components, the interdisciplinary approach and the information literacy component, were clearly apparent while the two other components, openly-networked technology and the associated blogging activities, contributed less than we expected.

THE CHANGING CONTEXT OF TEACHING SOCIAL RESEARCH METHODS

Although the creation and dissemination of new knowledge has been the hallmark of graduate education for several decades, increasing demands for evidence-based practice and research-informed policy has generated a new urgency for research capacity—defined as the understanding and use of science to confront complex social problems in today's rapidly changing world (Nind, Kilburn, & Luff, 2015). Research capacity requires that students not only master a range of research methodologies but also develop insights and proficiencies to apply research knowledge in real world settings. This is no small task given what we know about the apprehension of social science students entering their introductory research methods courses (Earley, 2013; Zerden, Powers, & Wretman, 2014). Unfortunately, little pedagogical guidance or empirical evidence is available to help build student research capacity (Kilburn, Nind, & Wiles, 2014). The recognized need for a pedagogical culture for teaching social science research methods in our institution prompted the formation of our FLC.

The impact of technology on the lives of educators, students, and academic support personnel on university campuses has been prominent and pervasive. Of particular importance is the rise, reach, and variability of the virtual classroom that ranges from hybrid arrangements, blending in-person and online learning environments, to fully online courses with synchronous or asynchronous participation (Allen & Seaman, 2013; McNeal, 2015). Commercial learning management systems like Blackboard, freely-available open source platforms like Moodle and Wordpress, and Web 2.0 technologies like Twitter, blogs, and wikis, contribute to this rapidly changing learning environment (Cornelius, 2014; Palmer & Schueths, 2013; Toven-Lindsey, Rhoads, & Lozano, 2015).

The many forms of participation afforded by these technologies fuel the appeal of constructivism and connectivism as the pedagogical grounding

for online learning approaches (Educational Broadcasting Corporation, 2004; Schulze, 2009; Stillar, 2012). Courses are designed to be student-centric, active, and collaborative, bringing peers together to solve problems and process new knowledge (Bryant & Bates, 2015; Revere & Kovach, 2011). Means, Toyama, Murphy, Bakia, & Jones (2010) conducted an extensive analysis of online learning using a quantitative meta-analysis of 99 empirical studies and a narrative synthesis of an additional 77 empirical studies and concluded that "students in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction" (p. xiv). Similarly, a majority of academic leaders have reported that they considered online education "as good as or better" than that in face-to-face classes (Allen & Seaman, 2013).

These technological advancements and pedagogical approaches bring new opportunities to teaching research methods, one of the most challenging, yet understudied, subjects across the social and behavioral science curriculum. Investigations about teaching research methods in online formats are just beginning to surface in the literature and focus on a wide range of topics including:

- the exploration of constructivist learning approaches to teaching research methods courses in a masters of education course (Schulze, 2009);
- the application of Chickering & Ehrmann's principles of quality education to an online undergraduate research methods course in healthcare management (Johnson, 2014);
- the assessment of a hybrid graduate research methods course in criminal justice and criminology program (Pelfrey & Bubolz, 2014);
- the adaptation of a traditional doctoral-level research methods course in education to a completely online Blackboard based course format (Lim, Dannels, & Watkins, 2008); and
- the insertion of online or electronic components into face-to-face research courses in undergraduate psychology courses (Bates, Rodriguez & Drysdale, 2007) and nursing curriculums (Sabey & Horrocks, 2011).

The few studies that compared online to face-to-face formats in research methods courses reported that there is little difference in learning outcomes between face-to-face and online formats (Girod & Wojcikiewicz, 2009; Ya Ni, 2013). We envisioned our FLC as an ideal forum to expand the discussion related to the technology and pedagogy of computer-mediated environments by exploring innovative strategies in delivering fully online research methods courses.

Interdisciplinary competencies are increasingly expected as today's faculty and graduate students navigate a world where disciplinary boundaries are blurring and interprofessional collaboration is valued (Kemp & Nurius, 2015). In interdisciplinary courses, students become familiar with other professions' knowledge and scope of practice, develop a respect for others' contributions (Supiono & Berry, 2013), recognize the strengths and limitations of discipline-based research, and integrate interdisciplinary thinking into their research repertoires (Gill et al., 2015; Kecskemethy, 2008; Mabry, Olster, Morgan, & Abrams, 2008). Because interdisciplinary research is often driven by an orientation toward applied research activity (Wolley, Sánchez-Barrioluengo, Turpin, & Marceau, 2015), it is particularly relevant to graduate students in social work, sociology, education, and public administration—the core group of students targeted in our FLC.

Although notably absent in the literature on teaching social science research methods, information competencies are integral to the development of students' research capacity. In 2000, in response to an increasingly complex information landscape marked by an explosion of scientific journals and unvetted publications (Head, Van Hoeck, Eschler, & Fullerton, 2013), the Association of College and Research Libraries (ACRL) developed Information Literacy Competency Standards for Higher Education to help ensure that students understand how knowledge is organized and know how to search for, critically evaluate, synthesize, and use reliable information ethically and in such a way that others can learn from this knowledge.

Regardless of discipline, information literacy provides a foundation for independent research, evidence-based practice, and lifelong learning (Andretta, 2005). Unfortunately, graduate students are often left to their own devices for library research (Rempel & Davidson, 2008). In addition to time constraints, faculty often lack the knowledge and expertise required to address this

research component adequately. Because students need guidance that goes far beyond the few pages typically offered in introductory methods texts (Boote and Beile, 2005; Granello, 2001), collaboration between research methods faculty and librarians is a logical solution and one eagerly embraced by our faculty learning community.

DESIGN AND DELIVERY OF THE ISRM COURSE

This FLC was situated in one U.S. southeastern urban public research university where connected learning was being actively promoted and supported by the faculty development center at the time. The number, nature, and complexity of resources required to initiate the ISRM required a systems approach that could be delivered only at the university level. The center's instructional designer brought together educators from education, public administration, social work, and sociology programs who were experienced in teaching online graduate research methods courses to create an openly-networked ISRM course. A research librarian was invited to join the FLC to incorporate an information literacy component.

Although the evidence for a common pedagogical approach to teaching research methods is limited in the literature (Wagner, Garner, & Kawulich, 2011), a review of the syllabi used by the FLC faculty members in their discipline-specific research courses revealed similarity among the courses in terms of course objectives, course content, assignments and quizzes, small group work, and a basic adherence to the cognitive dimension of Bloom's Taxonomy of Learning (Betts, 2008). Each of the instructors addressed qualitative, quantitative, and mixed methods research designs, but all placed emphasis on quantitative methods, primarily because of the continued dominance of quantitative methods in each of the instructors' disciplines and because of the focus on quantitative methods in the research methods texts used by the instructors. Basically, the instructors had shared experiences in teaching research methods in the long-standing tradition of the positivist paradigm (Wagner & Okeke, 2009) with respectful (and increasing) attention to the interpretivist and mixed methods approaches. In addition to these overlapping course design elements, which were incorporated into the new interdisciplinary course, the FLC group recognized the value of two strategies developed independently by two of the faculty members and incorporated these strategies into the course as well: 1) a food for thought question series to encourage higher order thinking about the material; and, 2) the use of proposal development worksheets to guide students through each step of the research process.

All instructors had experience using Blackboard, including features such as discussion boards, journaling, and wiki pages; all were familiar with Babbie's research methods text The Practice of Social Research (Babbie, 2015), which has been widely used in the social sciences. The course similarities reinforced the expectation that these faculty members could work toward a common syllabus and course design that would extend their current discipline-specific online research methods courses into one course open to students enrolled in any of the four academic units.

Informed by the Digital Media and Learning Research Hub and the Connected Learning Alliance, the new ISRM course was anchored by the following principles: interest-powered (content and assignments related to student goals), peer-supported (student participation in collective learning experiences), shared-purpose (working together to achieve a common goal), academically-oriented (driven by academic success, civic engagement, or professional development), production-centered (taking advantage of digital media for experiential or hands-on learning), and openly-networked (a public facing web site that connects classroom learning with real world settings across space, time, and multiple spheres). The first five principles—interest-powered, peer-supported, shared-purpose, academically-oriented, and production-centered—were familiar to the members of the FLC, who easily found these principles embedded in their existing discipline-specific online courses by requiring students to work together on specific assignments or develop a group research project based on a combined area of interest. In their previous courses, instruction and content on developing the research proposal was delivered through the Blackboard Management System with students interacting primarily through Blackboard discussion forums, Collaborate, or wiki tools.

The sixth principle, openly-networked, which inspired the term used to describe the

interdisciplinary course, was new to the instructors and became an integrating component of the course through the use of a customized WordPress platform, a widely adopted open source publishing and content management platform (Jones & Alida-Farrington, 2011). Blogging, another feature associated with openly-networked environments, was added and located in the WordPress site for students to exchange ideas with one another. Blogging promotes universal access to activities, thoughts, and beliefs almost as they are being created (Bouwma-Gearhart & Bess, 2012). Shulman's observation on the nature of learning is highly relevant to an openly-networked context: "learning flourishes when we take what we think we know and offer it as community property among fellow learners so that it can be tested, examined, challenged, and improved before we internalize it" (p.12).

The course moved from a restricted Blackboard site available only to students in a particular discipline to an open web site that was available to students enrolled in programs from several disciplines. In addition, most, but not all, course interactions and sources of information were open to the public through the WordPress site. To protect the privacy that students and faculty expect in a graded for-credit course (Mentor, 2007), student assessments and grading were available on a Blackboard site accessible only to students who were registered for credit. This also helped faculty focus their time on registered students whose mastery of this material would be critical to their success in subsequent required research courses. In summary, the ISRM course was a blend of open and closed platforms. The more generic components of the course, such as the syllabus, podcasts, and blogging activities, were publicly available through the WordPress web site. The components related to student monitoring, assessment, and grading were confined to the Blackboard site. The primary course portal was through the public web site that was then linked to Blackboard with the technological support of the university; students taking the course for credit were registered in the Blackboard system.

Fifty-two students registered for the course and 49 completed it, a 94% retention rate that is considered excellent for online courses (Bawa, 2016). Because cross-disciplinary interaction among small groups is critical to interdisciplinary course design (Kemp & Nurius, 2015), students and the instructors were distributed among four cross-disciplinary groups (average of 12 students per group) to complete group assignments. Each of the instructors maintained primary responsibility for grading and providing feedback to students in their group, but they met frequently throughout the semester to ensure consistency for cross-disciplinary group grading.

As one of the goals of the FLC was to help faculty and students gain expertise with digital tools and openly-networked resources, each instructor created his/her own WordPress web site that was then linked to the course's "mother" web site. Students published their blogs to the account of the instructor responsible for their cross-disciplinary group, which was then linked to the "mother" web site; all members of the class could access each other's group sites. The instructional design member of the FLC served as the administrator/owner of the course web site; the instructors were granted editing capability and the students were granted author status to facilitate creating personal blogs.

The course was divided into 12 weekly units corresponding to the chapters in the course text (Babbie, 2015). Course activities and assignments consisted of: weekly text readings, podcasts, and other material and online educational resources accessed via the course web site and the internet; one ungraded library assignment at the beginning of the course; completing weekly textbook-generated quizzes; participating in weekly blogging discussions to answer food for thought questions; completing five group proposal development worksheets (i.e., developing research question, sampling, design, etc.); the final group research proposal; self-assessment of the group proposal process; a multiple-choice midterm; and an article critique as the final exam. A semester calendar outlining course requirements and due dates was posted on the course web site. Students earned one point for every quiz completed with 80% correct answers, 0–2 points for blog entries (0 for no or a minimal post, 1 for satisfactory postings comparable to B-level work, 2 for outstanding postings comparable to A-level work). The worksheets were not graded; it was assumed that diligence in completing the worksheets and using the instructor feedback would be reflected in the proposal grade.

The final proposal and the exams were graded on traditional 100% scales. All students earned a passing grade in the course.

A library guide facilitated access to social science databases and to videos, web content, and tutorials focused on building specific information competencies. Each student completed a nongraded search exercise that helped them prepare for the research proposal by: extracting preliminary search concepts from a well-stated research question, organizing search concepts using a logic grid, identifying databases relevant to the research question, choosing appropriate search parameters, analyzing the results, and revising strategies based on the initial search results. The exercise also functioned as a needs assessment tool that facilitated individual and group feedback provided by the librarian.

The food for thought questions deserve special mention because these questions: anchored the blogging experience, which distinguished the ISRM as a connected learning course; provided an interpretivist-qualitative aspect that was important to balance out the quantitative component of the course; and contributed to the course assessment as discussed in the section below. The questions were designed to stimulate conversation, connect to real-world settings through electronic resources, and foster reflections about different aspects of the research process. Examples of food for thought questions were:

- What are common errors of human inquiry? Find a magazine, newspaper article, editorial, or blog that illustrates one or more of these errors. Explain. Be sure to include a quote and/or a link to the source.
- What does trust mean to you? Explain your concept of trust and then try to operationalize it in some way that would allow it to be measured. What types of questions might you ask?
- Review all the blogs to date posted on the class course site. What might you do to analyze these blogs? What types of things might you want to research and draw conclusions about regarding the types of posts, the students who post, etc.?

Instructors commented on the blogs within the cross-disciplinary groups but posted the blog grade in Blackboard grade center.

COURSE ASSESSMENT: FEEDBACK FROM STUDENTS AND INSTRUCTORS

As with any educational initiative, gathering feedback and reflecting on both the experience and the outcomes of the course not only inspires continual course improvement but, in this case, also formed the basis for a series of lessons learned to be shared with other online educators to help develop the most effective computer-mediated course delivery environments. The process of gathering information to improve student learning is known as formative course assessment and is distinguished from summative course assessment, which is aimed at evaluating student performance and learning outcomes (Angelo & Cross, 1993; Frey & Schmitt, 2007; Taras, 2008). Student feedback and instructor reflections formed the basis of the formative assessment for the ISRM course, which was then used to create the subsequent "lessons learned."

Student Feedback

Student feedback comprises an essential aspect of any formative course assessment and can be gathered in a variety of ways. In this ISRM course, we used a midsemester check-in and feedback solicited directly by the librarian to answer the underlying questions of any formative assessment, such as "What is working, what needs to be improved, how can it be improved?" (Dixson & Worrel, 2016, p. 155). We used responses to one of the food for thought blogging questions as a formative assessment tool embedded within the course learning activity and linked directly to the unit of instruction (Perie, Marion, & Gong, 2009). A fourth source of student feedback was provided by student responses on the end-of-semester student course evaluations that were generated by the university for the ISRM course. Although the relationship between student course evaluations and student learning outcomes is debatable, student course evaluations are recognized as a viable and acceptable tool to assess student learning experiences, provided they are not used as a sole indicator (Carbone, Ross, Phelan, Lindsay, Drew, Stoney, & Cottman, 2015; Vasey & Carroll, 2016).

Midsemester check-in

The midsemester check-in occurred six weeks into the semester. Students were asked via e-mail for feedback on course structure, content, and group

processes. Students expressed concerns about the format of the self-assessment quizzes as they did not allow viewing of the correct answers; the blogs, which seemed disconnected from the rest of the course; and too much course information being scattered over too many locations. Subsequently, we (a) corrected the quiz format to allow students to view correct answers immediately upon completion of the quiz; (b) instituted weekly instructor blogs to synthesize and guide student learning and to correct inaccurate information posted by some students on the blog site; and (c) created new customized screencasts or podcasts for each of the weekly topics to better aid students in navigating content.

Food for Thought Question

All 49 students responded to a multiple-faceted food for thought question posted toward the end of the semester: "What did you learn by being active in this course? Did working with an interdisciplinary group interested in all forms of social research enhance your learning? Did you do your work the way other people did theirs? Did conversation during collaboration strengthen your learning? What changed your mind about research? What do you still need to learn to do quality research?" Guided by the assumption about good classroom assessment that "the type of assessment most likely to improve teaching and learning is that conducted by faculty to answer questions they themselves have formulated in response to issues or problems in their own teaching" (Angelo & Cross, 1993, p. 9), this food for thought question sought feedback on issues related to the goals of our FLC initiative. We categorized the student responses similarly: three categories captured information about the important aspects of three of the four new components introduced into this course by the FLC (interdisciplinary nature, blogging, and structure and format); a fourth category captured student feedback on the collaborative nature of the course because of the social constructivist approach that was foundational to the course; and a fifth category, the extent of learning, was a direct assessment of student' perception of their own learning. To avoid instructor bias, a Graduate Research Assistant, unfamiliar with the course, coded the blog discussions of each student into the five categories noted above. Specifically, the GRA created a matrix to organize all comments, words, or phrases from each student's blog associated with any of the five categories identified by the instructors. Once the student names were removed, one of the authors of this paper (who was also one of the FLC instructors) reviewed the matrix and summarized the findings as described below.

Regarding the interdisciplinary nature of the course, although a quarter of the students thought that their learning was not enhanced by having students from other disciplines in the course, 75% of the students thought that their learning was enhanced by the interdisciplinary aspect, noting is was "interesting," "stimulating," and "refreshing." Students respected others' ideas, learned with and from one another, acknowledged the value of different perspectives, and felt they gained a broader view of research process. For some, this meant selecting a research problem they would not otherwise consider; for others, it provided exposure to new concepts and/or an understanding of how the same concepts may be applied in different contexts. In addition, students learned about other programs in the university.

In regard to the collaborative nature of the course, students reported that: interacting and conversing with the members of their group "strengthened" or "enhanced" learning, provided a strong sense of "emotional support" from other students, encouraged conversations with peers that were "helpful" and facilitated "understanding of the material" and "clarified concepts and methods," and created a collegial atmosphere with "regular communication" with group members who were considered "teammates." In sum, working in a team to create the research proposal and conversing with team members for support and guidance was a vital component of the learning process.

Regarding the blogging component, which was implemented to better align the course with a connected learning approach, some students noted that blogging was "valuable" and provided some insights into how other students understood and applied the material to their disciplines. However, a majority of students commented that the blogging seemed to be an unnecessary burden and most agreed that the technology was not user friendly. Overall, students indicated a preference for the more familiar Blackboard discussion forum as a venue for interaction and exchange of ideas over the public WordPress blog.

The structure and format of the course was the fourth category from the blogging assessment. Many students found the course to be "fast paced" and more "challenging" and "intense," with more detail and emphasis on theory in research methods than previous research courses they had completed during their undergraduate program. Students reported that the workload felt "overwhelming," the use of the various technology formats was confusing, and the organization of the course was difficult to follow.

In regard to the fifth category, the extent of learning, students shared their perceptions of how much they learned in the course. Many students reported a stronger appreciation for research methodology and the research process, a better understanding of the relevance of research, and increased confidence in their own research abilities. Some noted that they learned "more than expected." Several students noted an enhanced ability to read journal articles, develop a research question, and critically think about research. Learning the differences between quantitative and qualitative methods, research ethics and terminology, and how to write research proposals, were additional strengths. Students recognized that their comprehension of research methods was increased through completing various assignments, "deliverables," and worksheets and that the proposal assignment was especially helpful to understanding research methods. Interestingly, students also described a process of "self-discovery" whereby they recognized greater insight into themselves as learners and their own personal learning style as a result of the ISRM course.

Course Evaluations

Course evaluations in this university were electronic and anonymous; they included both quantitative and qualitative questions, allowing for the calculation of percentages for the fixed response questions as well as gathering comments about the strengths and weaknesses of the course from open-ended questions. Eighty-two percent (82%) of the 49 students who completed the course also completed the course evaluations. Much of the anonymous course evaluation information was consistent with the midsemester check-in and the blog responses where the students were self-identified. However, the criticism of the course structure was more pronounced in the course evaluations, where over 60% of students disagreed or strongly disagreed with the statement that the "course material was presented in an organized and informative manner." Comments supported this rating:

- "too many blogs that distracted from the other work,"
- "we should get rid of the blog and just use Blackboard,"
- "too many overlapping assignments,"
- "the course material is too confusing to follow multiple instructors,"
- "so many requirements per week that I became lost in what was expected of me instead of trying to understand the material," and
- "the format of the online material was located in WAY too many places."

In the anonymous evaluation, students were less favorable about the interdisciplinary nature of the course than they had been in the public blog about this issue. As one student noted, "the interdisciplinary approach didn't seem to have a huge impact for me in this class."

On the other hand, most of students felt positive about the instructors and their learning. Ninety-one percent (91%) "agreed" or "strongly agreed" that instructors created an environment of trust and fairness and that students were treated with courtesy and respect.

Students noted that the instructors were knowledgeable, responsive, provided good feedback, and produced good videos and podcasts. A few mentioned that they thought one or two in-person classes would help convey the material. Ninety-two percent (92%) reported that they "engaged in critical thinking," "increased knowledge of the subject matter," and "developed greater self-awareness" while 69% reported that they "developed significant skills." Some of the positive comments repeated what was noted in the blog responses:

- "I learned a lot about research design and the components of a research proposal,"
- "I feel like I have gained a foundation in research and actually have a desire to learn more," and
- "I can be more critical when reading research and 'evidence based' programs."

Feedback to Librarian

The librarian gathered student feedback through e-mail and research consultations throughout the duration of the course. Students noted concerns about their lack of library research knowledge and were very appreciative of the help navigating the course web site, posting blogs, locating research based on a specific methodology, gathering background information for the proposal, finding the most recent prevalence and incidence statistics to justify their research question, and choosing topic-specific databases. Groups were especially grateful for the proposal development support; faculty also acknowledged the librarian's contribution.

INSTRUCTORS' REFLECTIONS ON THE ISRM COURSE

Finally, we acknowledge that "college faculty assume a great deal about their students' learning, but rarely make these assumptions explicit or check them against the students' impressions" (Angelo & Cross, 1993, p. 7). To offset this deficiency and provide a fuller complement for our formative assessment, faculty members involved in this project participated in an end-of-semester informal evaluation session to reflect on their experiences with the course. Two major themes emerged.

Benefit of a Shared Experience: We're in This Together

The instructors were encouraged by the collaboration with their interdisciplinary colleagues. They could reciprocally learn from the challenges and share strategies for delivering this content. This exchange included insights from their own personal experiences as educators and from their own disciplinary perspective. The milieu reflected a sense of respect for participants' contributions, skills, and knowledge across disciplines and a sense of camaraderie and enjoyment, which was a welcome relief from the isolation often experienced by instructors focused solely on their own courses. In addition, the guidance offered by the librarian provided valuable troubleshooting, support, and technical expertise as questions arose during the semester. Library resources and tools were recognized as aids to student learning as well as additional tools for the instructors' teaching that supported the course learning objectives.

Problems with Platform: Public in Nature and Personally Challenging

The instructors saw the WordPress terminology as obscure and the navigation tools were difficult to manage, particularly in comparison to the more familiar Blackboard. The multiple linked web sites, created by the instructional design member to increase digital literacy, were especially burdensome as the instructors spent too much time and effort learning the various WordPress features and guiding their students in a similar learning process. The consensus among the FLC was that the major learning objectives for the course, including some of the connected learning goals, could be accomplished as easily through Blackboard.

Related to pedagogy, the public nature of blogging presented challenges to faculty. They worried that the frustrations and anxieties many students experience as they work to master research content (Early, 2013) may be particularly exposed in this public forum. Faculty members were especially sensitive to correcting students for effective learning without being overly critical in such a public context. In addition, while this course was open to public viewing, very few visitors actively engaged with the course, making the benefit of having a public face in the learning environment nearly inconsequential.

LESSONS LEARNED

The lessons learned from the student feedback and instructor reflection are organized around the four components added to the discipline-based graduate research methods courses previously taught by the instructors: an interdisciplinary approach, an openly-networked web site format, a blogging component, and an information literacy component. Although none of these course design components had undergone prior extensive evaluation, each had merited attention in the literature as viable and valued considerations for online or connected learning courses.

Interdisciplinary Nature of the Course

Members of the FLC agreed that the collaboration provided a rich source of information, support, and, most importantly, affirmation about teaching research methods across social science disciplines. The similarities among the existing research methods courses promoted ready adoption of most of the prior activities or assignments for

the new course design. To this array of assignments (quizzes, readings and screencasts, accessing OERs, proposal development, and exams) we added the blogging component without due regard for the cumulative effect that so many different types of learning strategies might have on the overall student and faculty experience in the course.

A more in-depth assessment of how the activities triangulated with or reinforced each other might have minimized the confusion and frustration that students expressed about the overlapping assignments and excess of requirements. For example, either the blogging activity or the proposal worksheets might have been adequate to develop research capacity. Similarly, perhaps the self-assessment quizzes or one exam rather than both a midterm and a final might provide ample evidence of students' mastery of course content.

Although students were clearly dissatisfied with the number, type, and organizational layout of the course activities produced by our interdisciplinary efforts, they overwhelmingly reported that they did learn research, some more than they had ever expected. Would this perceived level of learning have occurred with fewer activities? Were all activities necessary to achieve the learning goals? In the online environment, there is a real need to critically assess each teaching activity within the context of the other activities. This is an important lesson to learn, especially in online education where the proliferation of technological tools coupled with the growing popularity of interdisciplinary course development, can create temptations to add indiscriminately both the tried and true as well as the latest bells and whistles. We know of no examinations of the impact of the "constellation" of teaching activities for online student learning, and we believe that this would be a fruitful area of exploration in the developing pedagogical culture, not only for teaching research methods specifically but also for any computer-mediated course.

Whereas some students devalued the interdisciplinary benefits of the course in the anonymous course evaluations, most were overwhelmingly positive on the public blog in response to the specific interdisciplinary learning question. We have two thoughts about this conflicting feedback: 1) Students may have been reluctant to report negative attitudes in a public blog due to the fear of damaging the strong supportive relationships that they had built, regardless of discipline, during the course; 2) With the exception of the one blogging question about interdisciplinary work late in the semester, nothing in any of the assignments asked students to consider an interdisciplinary perspective. We speculate that students identified less with their discipline affiliation and more with their graduate student status, unified by graduate school expectations and their current work-life demands as students, employees, and family members. Despite these commonalities, we suspect that the students nonetheless, and perhaps unconsciously, brought their different disciplinary perspectives and educational backgrounds into the course which subsequently increased the opportunity for diversity that they clearly recognized and applauded in much of their feedback. Unfortunately, by not explicitly addressing the interdisciplinary aspects throughout the course, we missed the opportunity to provide a richer level of reflective, and perhaps more diverse, learning experiences. Our lesson here is to take full advantage of the interdisciplinary nature of the course by asking students to compare and contrast disciplinary perspectives in some if not all of the assignments and activities. Finally, given their general compatibility, our experiences lead us to the additional lesson that differences among the disciplines in this FLC can be leveraged without provoking anxiety or confusion among either instructors or students.

Openly-Networked Structure and Platform

We have three observations about the openly-networked platform experience. First, both instructors and students found the WordPress learning curve steeper than anticipated, despite assistance from the instructional design member, the availability of a multitude of WordPress tutorials, and their own expertise in Blackboard. The multiple-linked web site structure, created for increased exposure to connected learning tools, may have been yet another complication. Feelings of being "lost in social space" are not unique to our experiences. Students attempting to navigate a similar open source social networking platform have complained about disorientation, confusion, the lack of structure, and difficulty finding things (Dron & Anderson, 2009). A simpler web site structure, with instructor and student users situated in just one course web site rather than multiple web

sites, might have been preferable.

Although it is difficult to know the extent to which the steepness of the learning curve was due to the instructors' limited exposure to web site design or to something inherent in this particular WordPress platform, one of the most important lessons here would be that instructors should gain at least minimal experience with web site design prior to, rather than concurrent with, experimenting with the delivery of an openly-networked course, especially in a content area as challenging as research methods.

Second, we were naive to think that we could blend our experiences and knowledge about teaching research methods, particularly the need for instructor-imposed structure and guidance, with the openly-networked premise that learners create and assess their own learning pathways using an ever-increasing amount of digital information (de Laat, Lally, Lipponen, & Simons, 2007; Goodyear, Jones, Asensio, Hodgson, & Steeples, 2005; McConnell, Lally, & Banks, 2004). Rather than embracing the array of learning opportunities afforded by a combination of an open web site and a closed learning management system, students were confused, frustrated, and overwhelmed by the various technological formats which, in turn, created more demand for instructor guidance—and reassurance—about meeting course expectations. For example, early in the semester, students had difficulty learning from the self-assessment quizzes; they preferred ready answers to questions rather than exploring the material on their own. The pattern of requests for the librarian's help suggests students continued to have apprehensions about searching the web, which abated only after we generated customized podcasts and summary blogs.

It could be argued that the number and type of required course assignments contradicted the self-learning premise of openly-networked learning experiences and probably increased the students' anxiety with the course structure. Furthermore, responding to many course assignments is time and labor intensive for students, leaving little opportunity for them to explore their own interests or specific learning needs. Nonetheless, it is a reality that research methods is a required course in several graduate professional education programs and that there is perhaps little negotiation about the basic research knowledge that is needed for success in subsequent research courses. Most importantly, the mandate for professional graduate students to build the critical research capacity needed for effective and responsible practice dictates that students demonstrate a certain level of foundational research knowledge, which, at this level of study, might be less subject to interpretation and differing perspectives than other topics. Ultimately, the instructors concluded that their responsibility to structure the learning process and assess learning outcomes, plus the student requests for increased instructor involvement, trumped the autonomous learner-discovery approach associated with openly-networked learning.

Similarly, our third observation relates to the assumed relationship between connectivist learning and openly-networked platforms. Although there are theoretical arguments, particularly within the realm of connectivism, that promote openly-networked platforms (Dabbagh, 2007; Kop, 2011; Mentor, 2007), our experiences suggest otherwise. There is no evidence that the majority of the learning that occurred in this course resulted from an openly-networked platform. Rather, students reported that the bulk of their learning, as well as emotional support, derived from their small group experiences as they worked together on their worksheets and research proposals within the closed learning environment in Blackboard. Furthermore, student explorations in web-based materials and resources and in digital technologies central to networked learning were minimal and limited to those required by course assignments. In this regard, our students' experiences were similar to others in openly-networked platforms in that most students did not work beyond course requirements (Saadatmand & Kumpulainen, 2014; Veletsianos & Navarrete, 2012) and became confused and overwhelmed by an abundance of learning activities (Kahnwald & Pscheida, 2015; Miller, 2014) and technology tools (Fini, 2009).

As to why this might be so, we tend to agree with Kop, Fournier, and Mak (2011) who question whether adult learners have the level of skill and investment to be effective network learners. They assert that students successful in networked learning need to be autonomous learners who have advanced analytic and synthesis skills to distill the abundance of network information and who

have a high level of competency and interest in using an array of digital tools (p. 74). Although it is tempting to recommend that graduate students in professional programs attain a greater level of digital proficiency and interest to meet these standards, such recommendations may not be feasible given what we know about online students:

> *Online students are older... and have several responsibilities in life; 68% are using online programs to balance work, family, and school responsibilities while 73% are employed full-time and 16% part-time, seeking convenience and flexibility when furthering their education for career advancement. (Aslanian & Clinefelter, 2012, p. 16).*

Miller (2014) refers to online courses as the "third shift" that students engage in after their paid work and their family work. There is little to suggest that such a group of students would have the time or the inclination to amass the skill necessary to succeed in a true openly-networked course.

The lesson here is that required research methods courses in professional education programs may not be the most suitable ones to express the full benefits of open and connected learning platforms. While we tried to attend to the "open, emergent, chaotic nature of online interaction" characteristic of many open-networked courses, we tend to agree with Kop, Fournier, and Mak (2011) that such an approach might conflict with the organized structure of formal education, which involves prescriptive learning and standardized goals and curricula. We suspect that the nature of teaching and learning research methods, as we know it now, may be less consistent with the student-centered constructivist model and more aligned with an instructivist approach (Dron & Anderson, 2009).

Blogging Component

Despite widespread support for blogging among proponents, Sim and Hew (2010) found that rigorous studies demonstrating the educational value of blogs are scarce. Based on their review of 24 empirically-based articles, they concluded that "the question on whether the use of blogs can improve performance outcome such as learning or thinking is still unresolved" (p 157). Similarly, we found that public blogging offered little in terms of learning in this ISRM course. To reiterate, students attributed their major learning to the small-group work encapsulated within Blackboard and seemed burdened by the blogging component. As instructors, we were especially concerned about the inaccurate or misinterpreted research content shared in the blogs and the inability of students to recognize and/or correct these content errors in a public space.

Furthermore, our students concurred with graduate students elsewhere who expressed concerns about the public nature of their blogs how others might perceive them online. They worried about the time they spent keeping up with other's blogs, making comments, and trying to find supplementary material for their own blog posts (Veletsianos & Navarrete, 2012). Although we are tempted to offer but one take-away lesson—not to utilize a public blogging component in graduate research methods courses—we believe that such a blanket statement might be short-sighted, especially given the speed of technological and pedagogical changes we are witnessing. Rather, we recommend careful consideration of the fit between subject content, pedagogy, and the technological assumptions that drive new learning models (Mishra & Koehler, 2006). Most importantly, we remain open to the possibility that research methods courses may need to be completely restructured to better fit self-guided learning environments unlike anything that we know today, where the public blogging component serves as the primary, and perhaps sole, teaching and learning strategy.

Information Competencies

The librarian's role grew more active and collaborative as her expertise in the literature review process and proposal development became increasingly apparent. The search exercise, videos, and handouts emphasized the systematic and iterative nature of the search process and demonstrated how research questions and hypotheses can change following a more extensive literature review. Most importantly, we suspect that the librarian's consultations reduced student anxiety around the completion of the proposal worksheets in particular and in the research process in general. Consistent with the library and information science literature (Mounce, 2010; Rempel & Davidson, 2008), the major lesson here is to better broadcast and take advantage of the effectiveness of faculty-librarian collaborations in helping students develop

research competencies.

CONCLUSION

Our exploration with an interdisciplinary openly-networked graduate level computer-mediated course provided mixed results for the educational experiences that we had hoped to achieve. In that sense, we suggest that the glass is half-full. We provide evidence to pursue interdisciplinary research methods courses, to examine the "constellation" of teaching activities during the collaborative planning process, and to showcase the interdisciplinary nature of the course. We illuminate the benefits of librarian-research faculty partnerships in building both information competencies and research capacity. The ability of the closed Blackboard system to provide sufficient connectivity for meaningful, interactive online learning is affirmed. On the other hand, we found the public blogging aspect and the openly-networked components, at least the way they were organized and presented within our course, to be problematic and not suitable for duplication in graduate research methods courses without more extensive examination.

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