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TABLE

CONTENTS

OF

OPENING UP INFORMATION LITERACY: EMPOWERING STUDENTS THROUGH OPEN PEDAGOGY Erin Fields & Adair Harper	4
ACCIDENTAL INFORMATION LITERACY INSTRUCTION: THE WORK A LINK LANDING PAGE CAN DO Elizabeth Pickard & Michelle R. Desilets	16
ONE STEP AT A TIME: A CASE STUDY OF INCORPORATING UNIVERSAL DESIGN FOR LEARNING IN LIBRARY INSTRUCTION Samantha Huntington Peter & Kristina Clement	28
ADVANCING COLLEGE STUDENTS' THESIS WRITING ABILITY: A CASE STUDY OF AN ONLINE LIBRARY INSTRUCTION COURSE Derek Stadler & Dianne Gordon Conyers	39
MAKING METHODS RELEVANT: UNDERGRADUATE RESEARCH METHODS AND THE CONTENT ANALYSIS PROJECT Kevin E. Courtright & David A. Mackey	54
USING UNDERSTANDING BY DESIGN TO CREATE A UNIVERSITY ORIENTATION CLASS GROUNDED IN INFORMATION LITERACY Jennifer Joe & Wade Lee-Smith	81



OPENING UP INFORMATION LITERACY: EMPOWERING STUDENTS THROUGH OPEN PEDAGOGY

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ABSTRACT

Open pedagogy and critical information literacy are influenced by critical pedagogy, which advocates for a disruption of information authority and privilege in the classroom and the creation of an environment that empowers students to be equal participants in their own learning. With the open education movement and the affordances of networked technologies, open pedagogy has the potential to enable students to be active co-creators of knowledge, engaging in information literacy practices of finding, analyzing, and sharing knowledge. Moving beyond an individualistic skills-based approach to information literacy, open pedagogy provides students with opportunities to not only reflect on their understanding of the political, social, and cultural dimensions of information but also to authentically engage in enacting change in the information landscape. In this article, we provide an overview of open pedagogy and information literacy theory, outlining how they intersect and the ways in which open pedagogy might facilitate critical aspects of information literacy instruction in librarianship. To demonstrate this pedagogical theory in practice, we provide an example of open pedagogy enabled information literacy instruction through a Wikipedia-based classroom assignment.

Keywords: Open Pedagogy, Critical Information Literacy, Information Literacy, Critical Pedagogy, Open Education, Wikipedia

INTRODUCTION

Open pedagogy (OP), and its alignment to the open education movement, has created an

opportunity for instructors to empower students to be full participants in the creation and sharing of knowledge through networked technologies. This provides students the opportunity to

actively participate in improving the information landscape by focusing on students as informed creators of openly accessible knowledge. For academic librarianship, the goals of supporting information literacy (IL) development in students—including finding, evaluating, using, and creating new knowledge—are core to teaching and learning programs. While more recent approaches to IL promote a critique of systems for information creation and dissemination, they do not address “... possible solidarities for the student to help change the information system itself, nor the hierarchies of knowledge and status within academia” (Beilin, 2015, para 25). OP provides an opportunity for librarians to engage students in authentically creating and sharing new knowledge while critically evaluating information systems in the process. This supports students in learning about how information works, the structures of power that impact information systems, and ways to take action for positive change (Fister, 2014b) (Fister, 2013). In this paper, we investigate how OP and IL intersect by first providing definitions of OP and IL, addressing overlaps, and identifying how OP might support information literacies identified in librarianship. We also provide a practical example of OP informed IL instruction through a Wikipedia-based course assignment.

OPEN PEDAGOGY - DEFINED

OP is heavily influenced by social constructivist theory and critical pedagogy. Social constructivist theory emphasizes the “...importance of sociocultural context and the role of social interaction in the construction of knowledge” (Couros

& Hildebrandt, 2016, p146). In this theoretical frame knowledge is created, negotiated and renegotiated through social interactions, critique and analysis (Cormier, 2008) (Couros & Hildebrandt, 2016) (Gergen and Wortham, 2001). In social constructivism, “... humans learn by building knowledge cooperatively through social interaction and the application of prior knowledge (as tools) in a continual interpretation of ongoing experiences” (Bentley, Fleury, & Garrison, 2007, p11). As knowledge is socially constructed through this process, it is also then fluid and is reflective of the social, cultural, and political systems, values and practices of the time in which it was validated. Knowledge then is flexible and is open for interpretation through social communal dialogue.

Critical pedagogy critiques information privilege and authority and rejects the transactional models of education where the authority (i.e. teacher) feeds knowledge to the novice (i.e. student). Instead, the teacher works to break down hierarchies and empower learners to not only interpret, reject, or grant meaning to knowledge, but also to think critically about their own position within the institutions that maintain information authority (Gergen and Wortham, 2001). The teacher in this approach seeks to participate alongside students in problem solving through critical reflection, dialogue and action. This approach disrupts classroom hierarchies as students engage in critical reflection and empowers students to be full participants with an equal voice in identifying and questioning power imbalances and oppressive practices. (Bentley, Fleury, & Garrison, 2007) (Riasati & Mollaei, 2012). The purpose of education, in this context

then, is aimed at developing ways of thinking that address how information is shaped by the context in which it was created and to “...act upon decreasing social discrimination” (Riasati & Mol-laei, 2012, p. 225).

Within the context of OP, authors have identified the importance of social constructivism and critical pedagogy through the works of Paulo Freire, Henry Giroux, and bell hooks. Themes of information privilege and authority (Heidebrink-Bruno 2013a; Baili 2017; Derosa & Jhangiani 2017a; Stommel & Morris 2014 ; Shaffer 2013), breaking down hierarchies to engage in collaborative dialogue (Heidebrink-Bruno 2013a; Haggarty 2015; Derosa and Jhangiani 2017a,b; Stommel & Morris 2014; Shaffer 2013; Ehlers 2011; Rosen & Smale 2015), critical analysis of power imbalances in information and information institutions (Couros & Hildebrandt 2016; Conole 2013; Haggarty 2015; Derosa & Jhangiani 2017a; Stommel & Morris 2014; Rosen & Smale 2015), and the empowerment of students for the betterment of society (Cormier, 2008) have become the theoretical grounding for OP. The uniqueness then of OP as an approach to education is its focus on openness and its application in the open education movement through the use of technologies to break down barriers to access.

The open movement initially focused on access to research sources for the purpose of greater reach, the potential to increase innovation, and the reclaiming of intellectual property rights. With global networks and digital texts the potential for free openly accessible information was possible but the barriers of cost, social association, and ownership of information remained significant hurdles. The open access movement

addressed these issues by removing barriers to information access that privileged those with financial means or an association with institutions (e.g. academic libraries, etc.). Open access empowered scholars to claim their intellectual property rights and remove permissions barriers for the use and reuse of their work (Suber, 2012). With the growth of the open education movement, the principles of removing these barriers remain fundamental goals with the creation of open education resources (OER). The creation of OER was integral to the social justice commitment to breakdown access to education barriers through the delivery of no-cost education resources; however, they did not address innovation in teaching and learning practices within the classroom (Ehler, 2011). OP builds upon the social justice commitments of open access with the creation and use of OERs but also invites students to be active participants and collaborators in the creation process—aligning education practice to the foundations of critical pedagogy. The fundamental belief that knowledge does not belong to the experts, allows instructional practice to focus on empowering learners in an active form of resistance against the teacher-student hierarchy (Derosa & Jhangiani, 2017) (Stommel & Morris, 2014).

While open resource creation can occur without OP, the relationship between openly licensed content and the analysis and creation of new knowledge are intricately connected (Haggarty, 2015). In OP, where open access is a fundamental principle, networked technologies provide an opportunity for large scale participation regardless of credentials or association. This empowers voices that have been excluded from knowledge

creation and sharing (Cormier, 2008). As Howard Rheingold (2012) states, “In the world of digitally networked publics, online participation—if you know how to do it—can translate into real power. Participation, however, is a kind of power that only works if you share it with others.” (p. 112). While networked technologies provide the vehicle for participation and sharing, OP requires authentic, student-centred learning with these technologies and emphasizes the importance of peer-to-peer dynamics in networked spaces with more experienced contributors (e.g. instructors, knowledgeable peers, etc.)—as mentors to those with less experience (Hagarty, 2015). These participatory environments, as Jenkins et.al. (2006) states, “... [leads to] a changed attitude toward intellectual property, the diversification of cultural expression, the development of skills valued in modern workplace, and more empowered conception of citizenship” (p. 3).

INFORMATION LITERACY - DEFINED

As academic library positions shifted away from the provision of discrete reference services—towards an instructional model that is more deeply connected to the pedagogical goals of the university—there was an increased interest in teaching students a broad set of literacy skills that can improve students’ abilities to find and use information (Elmborg, 2006). Despite this increasing emphasis on literacy instruction, definitions of the concept vary widely and continue to evolve over time. For the purpose of this paper, we will explore how IL is defined within the governing documents of the library profession and how scholars have critically evaluated those definitions.

The term “information literacy” was first introduced in a report for the National Commission on Libraries and Information Science. Zurkowski (1974) wrote, “Information is not knowledge; it is concepts or ideas which enter a person’s field of perception, are evaluated and assimilated reinforcing or changing the individual’s concept of reality and/or ability to act” (p. 1). In a time of increasing access to information sources, Zurkowski argued that individuals needed to develop IL skills in order to find, access, and utilize information in order to accomplish a goal. With the American Library Associations (ALA) recognition of the need for people to independently “...locate, evaluate, and use effectively the needed information”(ALA, 1989, para 3), and the creation of the Association of College and Research Libraries Information Literacy and Competency Standards in Higher Education (ACRL Standards) in 2000, IL was formally introduced to librarianship and literacy instruction. IL discourse for libraries was then dominated by the belief that training individuals in a set of skills would yield an information literate society (Jacobs, 2011).

With over a decade of professional focus and research on IL in librarianship, critiques of this skills-based approach have yielded new ways to engage in IL instruction. Critiques of librarianships’ approach to IL have rejected the ways in which instruction programs often frame information as a neutral and universal resource (Kapitzke, 2003). In recognizing that information neutrality obfuscates the ways information is contextualized within the conditions of its production and consumption, IL definitions and practices in librarianship have been called to address the ways in which information is produced and

represented (Kapitzke, 2003) (Pawley, 2003). This questioning of the underlying assumptions of IL represents both a major intellectual shift in understanding IL and a significant challenge to existing models of instruction informed by critical pedagogy.

Elmborg's (2006) introduction of the term critical information literacy (CIL) provided an approach to library instructional practice rooted in critical pedagogy. Drawing from critical theorists like Freire, McLaren, and Giroux, Elmborg identifies the need for instruction programs to move beyond models that promote standardized and hierarchical approaches to how IL is taught and exhibited by learners to a collaborative model, which encourages learners to explore the political, social, and cultural nature of information to "...[solve problems] and to create their own understandings and identities" (2006, p. 198). Like OP, CIL-informed teaching and learning promotes a liberatory perspective, alongside a reflective critique, of the politics of information production, dissemination and consumption. CIL focuses instructional practice on, "... [examining] the social construction and political dimensions of information, and problematizes information's development, use, and purposes with the intent of prompting students to think critically about such forces and act upon this knowledge" (Tewell, 2015, p. 36). The purpose of CIL instruction then is to, "... resist the tendency to reinforce and reproduce hegemonic knowledge" (Beilin, 2015, para 12), which occurs when literacies are reduced to skill development. This transition to critical information literacies encourages engagement with issues of the social construction of knowledge (Elmborg,

2006, 2012; Jacobs, 2008; Mackey & Jacobson, 2011), how the production and dissemination of information is impacted by information authorities (Elmborg, 2006, 2012; Jacobs, 2008; Tewell, 2015) and the critical evaluation of how information is organized and structured (Elmborg, 2006, 2012; Beilin, 2015). Engagement with CIL then shifts the instructional role of the librarian from a public-service oriented problem-solver to a critical theory informed problem-poser (Jacobs & Berg, 2011; Elmborg, 2012; Kapitzke, 2003).

While CIL perspectives have become increasingly integrated into the way IL is discussed and identified in the profession, professional definitions of IL reflect a tension between utilitarian and critical perspectives. The introduction of the ACRL Framework for Information Literacy (ACRL Framework) in 2015, replacing the previous ACRL Standards, redefined IL as a social process by which learners are granted "... agency to critique the social and institutional hierarchies surrounding information production and distribution" (Foasberg, 215, p. 206). The purpose of the ACRL Framework was to guide post-secondary institutions in the instruction of IL, defined as a "... set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (ACRL, 2015, para 7).

Though the ACRL Framework's provision of more flexible and interconnected IL concepts represents a significant intellectual shift from the previous skills-based ACRL Standards, a number of authors have suggested that the ACRL Framework, as well as our understanding of IL

in the University more generally, remain conflicted. This conflict can be seen in the repeated reference in the ACRL Framework to advanced IL learners as “experts”, which frames IL as a competency that can be possessed by an individual who has mastered a specific set of skills reflecting the “... passive information bank where students and faculty make knowledge deposits and withdrawals”, critiqued by Elmborg (2006, p. 193). Academic librarians have traditionally focused on teaching measurable skills that can be performed and assessed to show belonging in academic environments; a skill which is at odds with incorporating CIL’s critique of information authority, context, value, and power (Elmborg, 2006) (Bailin, 2005). Seale (2016) argues that the ACRL Framework’s emphasis on “dynamism, flexibility, [and] individual growth” represents a neoliberal perspective at odds with principles of CIL. Nicholson (2014) echoes this idea that, as a situated practice, IL is tied to the individualistic skills-based agenda of the neoliberal university.

The ACRL Framework attempts to bridge the gap between skills-based competencies and critical pedagogy through the incorporation of CIL principles; yet much of the professional practice of IL instruction continues to focus on the simplification of complex academic engagement in order to transform the information illiterate into literate individuals. Though the ACRL Framework does not reflect all of the principles of CIL, it does represent a significant evolution of our professional conceptualization of IL towards an acknowledgement and exploration of power in information systems. Throughout this paper when we use the term IL, we refer to this somewhat conflicted professional understanding

of the term. We also acknowledge that our understandings of IL will continue to develop as new technologies and pedagogical approaches impact how we use and teach information systems.

OPEN PEDAGOGY & INFORMATION LITERACY INTERSECTIONS

While critical pedagogy is an obvious connective thread through OP and IL, OP’s commitment to openness, by empowering learners to collaborate in building new knowledge and sharing through technology, creates a unique opportunity to see IL fully embrace critical pedagogy in action. The potential for students to engage in “... [using] information in creating new knowledge and participating ethically in communities of learning” (ACRL, 2015, p. 3) is greatly increased when the focus of IL is on collaboration and contribution. The focus on collaboration actively addresses the oversimplification of academic engagement when IL is reduced to assessable skills. As students negotiate and collaborate in the creation of information, they have the ability to not only find and evaluate sources but can engage in a critical understanding of the tools for information creation and organization. By allowing students to make decisions about how to showcase, describe and interact with their information objects, they have the opportunity to develop a greater understanding of how tools work within systems that have defined values and structures of authority. As students engage with technologies to openly share information objects, they can create connections with communities outside of the classroom—adding value to the information “landscape” and inviting further critical dialogue which reflects the

academic practice of negotiating diverse ideas and perspectives. If the technologies the students are using to create information are open collaborative tools (like wikis), the students have the ability to modify other contributors work to reflect how information evolves over time. When teaching closed information systems (like the library catalogue), discussions of value, authority, and power can occur, but enacting change within those systems is neither swift nor open to public modification. Including diverse voices that reflect how communities identify and describe themselves can occur within systems that are collaboratively developed, providing a greater opportunity to reflect diverse experiences. Finally, OP offers an authentic opportunity for students to investigate issues of intellectual property, copyright, information security, privacy, and freedom of information by situating these issues in the students' experiences of openly sharing their work. This can provide students with an authentic experience of these IL issues as it pertains to their own creative and intellectual practice.

A PRACTICAL APPLICATION

During the Fall 2018 term, the University of British Columbia (UBC) Library partnered with a course in the First Nations and Indigenous Studies (FNIS) program on a Wikipedia-based assignment. The assignment contained three parts: a Wikipedia gap analysis, a group editing activity, and a personal reflection. Two classes were dedicated to library instruction. Though we did not formally assess the outcomes of this collaboration, we were able to explore the pedagogical

intersections of OP and IL in a practical classroom setting.

The gap analysis assignment, which will be the focus of this section of the paper, asked students to analyze Wikipedia articles on Indigenous subjects for omissions and errors, focusing on how these gaps might be addressed. Grounding their analysis in the article by Siobhan Senior (2013), *Indigenizing Wikipedia: Student Accountability to Native American Authors on the World's Largest Encyclopedia*, the students were directed to think about issues of notability in open spaces like Wikipedia and how these information spaces are culturally and politically charged. We covered the following in these sessions: analysis of publishing practices in open and closed systems; analysis of Wikipedia's neutral point of view, categorization, consensus, and reliable source guidelines; and editing Wikipedia.

We began the first library session with a discussion in which students explored publishing practices in both closed and open systems and how these influence knowledge creation. We framed the discussion of how knowledge becomes a part of our academic information ecosystem around the scholarly communication cycle, focusing on how knowledge production is the purview of experts (e.g. faculty) who gather and contextualize information which they then publish in sources approved within their field of study that are subsequently stored in academic institutions (i.e. the library). We asked students to discuss the questions: Who is missing from this knowledge creation process? Who verifies what is considered knowledge? Who has access to that knowledge? And, how does knowledge change

in that system? We then introduced students to the open creation processes of Wikipedia—that of freely accessible, collaborative and openly editable content. We asked them to compare how the systems differ when knowledge construction is a community process that focuses less on the expert creator and more on discussion and negotiation. Students discussed the constraints of traditional knowledge production processes and how a dynamic and open system like Wikipedia impacts what information can be included, who has access to that information, and who can be a part of knowledge production.

While open systems like Wikipedia were identified as having the potential to subvert traditional knowledge production processes, students were asked to examine the ways this open system can purposefully or inadvertently replicate the constraints of closed information systems. To engage in a critical analysis of Wikipedia as an information system, the students engaged in critically evaluating three articles using the Think, Pair, Share learning strategy – a strategy whereby students think about a question posed, share their ideas with a partner, and then share out to the entire class what they have learned, pose additional questions, and discuss with each other their opinions. The students analyzed and discussed the following examples:

Naomi Osaka Talk Page

We introduced students to the Wikipedia guidelines on consensus. When articles in Wikipedia are disputed and consensus cannot be achieved through the editing process, editors initiate a consensus-building process that can

include soliciting third party opinions (Wikipedia: Consensus, 2019). We then asked students to review the talk page for Naomi Osaka, where statements about her racial identity were contested by a number of Wikipedia editors. To facilitate the discussion, we asked students to consider the perspectives of editors engaging in consensus building and the sources they used to prove their interpretation of Osaka’s racial identity. The discussion led to students critically evaluating the claims made by editors to reach consensus, assessing the complexity of synthesizing opinion on issues related to racial identity, and how the framing of her racial identity could impact representation within Wikipedia.

Trans Mountain Pipeline Protest Heading and Citations

We briefly introduced students to the Wikipedia guidelines on reliable sources when writing articles. The guidelines state that published third-party sources with a “reputation for fact-checking and accuracy” are considered reliable (Wikipedia:Reliable Sources, 2019, para 5). These sources include academic and peer reviewed publications, such as journal articles, books published by respected publishing houses, and mainstreams news sources, including newspapers and magazines (Wikipedia:Reliable Sources, 2019). We then asked students to review the “Protest” heading in the Wikipedia article for the Trans Mountain Pipeline with a specific focus on the information sources cited. To facilitate the discussion we asked students to consider who and what is being discussed in this section of the article; what sources editors provided as proof

for the content; and, what questions this approach raises? The students discussed the lack of Indigenous publications being used on a section about protests from First Nations community. This led to critical engagement with ideas of authority and the ways that knowledge production, in both closed and open systems, relies on standard scholarly or mainstream publications that potentially exclude those with lived experience.

Aaron Nelson Moody - Categorization

Finally, we introduced students to the Wikipedia guidelines on categorization. Categories are used in Wikipedia to make links between both individual pages and topic-based lists of pages. While the conventions for categories primarily relate to structure and grammar, they do also address terminology (Wikipedia: Categorization, 2019). We asked students to analyze the categories of the Aaron Nelson Moody article. To facilitate a comparative discussion, we also asked the students to review the subject terms used for *Continuum: vision and creativity on the Northwest Coast*, a book containing Aaron Nelson Moody's artwork found at UBC Library. The students discussed how the Wikipedia article on Moody was missing categorization about his Skwxwú7mesh (Squamish) identity and how the library system categorized his work under "Indian Art". This led students to think about how information systems are organized, the importance of organization to access, and how language used for description can impact the visibility of sources. Students further identified how open systems like Wikipedia support immediate change whereas descriptive systems in libraries are restricted to classification systems

(e.g. Library of Congress in this instance), which are slower to change.

In the second library session we broke students into thematic groups of 3-4 based on their gap analysis topics. We asked them to share their gap analysis findings and then, as a group, select one article to collectively edit. To get them started, we introduced the students to basic editing processes and supported them in making their edits, which included finding and adding reference sources, changing and adding categories, adding additional information, and restructuring the articles. This assignment allowed students to not only critically reflect but also actively improve representation in the open platform. This engagement also prompted students to grapple with issues related to sharing their work openly.

CONCLUSION

OP and critical aspects of IL instruction both have alignments with critical pedagogical approaches; they subvert traditional expert hierarchies and promote more critical understandings of the social, cultural and historical context impacts on how information is produced and consumed. The practical classroom applications described here demonstrates how OP might be used to extend both the reflective and skills-based learnings of IL into active engagement with an open platform. Based on our experiences, we believe this integrated approach has the potential to shift student literacy learning from a passive process of receiving knowledge, to a more holistic learning process that is explored through collaborative, critical conversations—implemented

through negotiations in an information production community. From this initial research, there seems to be significant potential in this intersectional pedagogical approach; however, there also remains many important questions to explore. How might we assess this form of learning that focuses on agency, creative self-actualization, and the tenants of social justice that are integral to OP and IL? Might the emerging practices of critical assessment offer alternative approaches that avoid the quantitative, skills-based metrics of traditional library assessment metrics? In terms of the use of OP in the area of Indigenous knowledge, there is yet more complexity to explore. How might OP as an approach uphold (or not) the First Nations Information Governance Centre (FNIGC) principles of the Ownership, Control, Access and Possession (OCAP®)? Finally, how are we possibly replicating existing conflicts and challenges within the realm of traditional knowledge by inviting editing and editors to Wikipedia that are unaware of, and do not serve, Indigenous community values around information sharing? We invite others to consider these questions and move the conversation forward as we engage in OP and IL in practice.

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ACCIDENTAL INFORMATION LITERACY INSTRUCTION: THE WORK A LINK LANDING PAGE CAN DO

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ABSTRACT

This article reports on a surprise finding from a larger, long-term study that explores ways to provide effective information literacy instruction (ILI) in asynchronous, online-only courses. The finding occurred during a term in which students participating in the study received no formal ILI. However, these students did not turn to the web at large when doing independent research as some literature might predict. Instead, analysis of their final research project bibliographies suggests students modeled the search scopes of select prior assignments from that same course. This finding has potential to inform parameters for adapting pedagogy for asynchronous, online-only instruction as well as ways librarians and teaching faculty collaborate to incorporate ILI into curricula, particularly in online contexts.

Keywords: Model, Modeling, Links, Asynchronous, Online, Online-Only, Information Literacy, Information Literacy Instruction, Instruction, Collaboration, Pedagogy, Curriculum, Curricula, Scaffolding, Research Skills, Search Scope, Teaching Faculty, Instructors, Search Behavior, Research Behavior

INTRODUCTION

According to a 2018 report from the Babson Survey Research Group (Seaman, Allen, & Seaman), enrollment in online courses by undergraduate students in the U.S. increased for the 14th consecutive year. In keeping with this national

trend, Portland State University (PSU) in Portland, Oregon has offered an increasing number of online courses every year for the past several years. According to the Office of the Registrar, PSU offered 65% of its courses online only in the 2016-2017 academic year. However, PSU Library statistics show that during that time only

1% of librarian-taught information literacy sessions were for online-only courses. Across universities, face-to-face sessions regularly involve a librarian visiting a class to teach students research skills, especially with respect to developing search terms, locating and accessing credible information such as refereed articles and book chapters, and evaluating information for credibility. These are some of the learning objectives particular to information literacy instruction. Thus, the discrepancy between number of online-only courses offered and information literacy sessions taught raises questions about if, and to what extent, students receive information literacy instruction (ILI) in their online-only courses.

In a representative case at PSU, instructor, Professor Sarah Sterling, had been teaching anthropology courses online for six years without including any formal ILI when she and librarian, Elizabeth Pickard, began a research study to see which modes of ILI worked best in asynchronous, online-only courses such as hers. In thinking about modes of ILI to try, the instructor stated, “The big difference between online versus face-to-face is the element of real-time interaction, the ability to explain how to distinguish credible from less credible sources, and why these are important.” Librarians and teaching faculty at many universities face similar questions as they struggle to meet the relatively unexplored challenge of how to adapt ILI for online-only contexts. Online-only courses, especially asynchronous ones, require different modes of ILI than those used in face-to-face, hands-on sessions typically taught by librarians. As universities continue to move courses online,

librarians are compelled to consider different ways to provide ILI in an asynchronous context, and, in the name of parity, how to ensure comparable rigor and effectiveness to that of ILI received in face-to-face courses. The most effective ILI—that which incorporates fundamental aspects of face-to-face sessions such as active teaching by an ILI expert and hands-on work by students—occurs in a piecemeal way online at PSU. In the rare cases that an asynchronous course does involve ILI, it usually consists of some combination of scaffolding research skills into the course curriculum and the provision of digital learning objects such as pre-recorded ILI sessions, online tutorials, and quizzes.

This case study reports on a surprise finding from the ongoing larger study. The larger study, currently titled “ILI in Online-Only Courses: Which Approaches Work Best?” explores ILI best practices in asynchronous contexts. The surprise finding provides a particularly granular look at student search behavior as it relates to the instructor’s purview, modeling aspects of prior coursework, and link landing pages. The finding is from the first term of the study during which students received no formal ILI. Despite the lack of formal ILI, students did not immediately turn to Google when doing independent research. Instead, they modeled specific aspects of prior assignments from the class. The finding points to ways librarians and teaching faculty might leverage this modeling to incorporate ILI into curricula, generally, and provides examples to consider when developing assignments for asynchronous, online-only instruction. It also reveals an avenue for easy-to-implement, low-risk collaboration between librarians and teaching faculty.

LITERATURE REVIEW

How do students go about choosing sources? Even in broad strokes, this is a multi-part question: where do students search, how do they choose where to search, and how do they select specific sources from among their search results? Within the answers to these questions lie a multitude of possibilities, each of which offers opportunities for targeted information literacy instruction. Existing literature on information literacy instruction has looked at bibliographies to explore student research behavior but has focused primarily on face-to-face courses.

Bonnie Gratch (1985) made one of the earlier claims that research paper bibliographies reflect the effects of “research skills instruction.” Since Gratch’s early work, numerous researchers have analyzed citations with this idea in mind, including Lantz, Insua, Armstrong, and Pho (2016), who looked at bibliographies with the idea that “Discovering the reasoning behind student research behaviors will allow information literacy instruction librarians to make more informed pedagogical choices for library instruction” (p. 263). In both face-to-face and online-only contexts, bibliographies can provide a granular view into how students conceive of credibility at a given point in time. While most studies have looked at bibliographies from face-to-face courses that included ILI, this study explores the “reasoning behind student research behaviors” in online-only courses that did not involve formal ILI.

In terms of searching for sources, multiple studies have found that students prefer what they perceive as ease-of-use over credibility. Several

studies have identified students’ preferences for databases that were easy to find and use and sources that were easy to get in hand over credibility of sources (Biddix, Chung, & Park, 2011; Head & Eisenberg, 2009; Joo & Choi, 2015; Purdy, 2012). However, what students perceived as easy was relative to what they were accustomed to doing. Head and Eisenberg found that while college students “had fewer techniques for conducting research and finding information than for writing papers” (2010b, p. 19), their search methods also “appear to be driven by familiarity and habit” (2009, p. 15). Joo and Choi found that, while credibility had the weakest influence on students’ selection of the internet over library resources, and “usefulness” combined with ease-of-use had the strongest influence (p. 272), students’ familiarity with sources and “good search skills” (pp. 286-7) actually made students more likely to choose library resources. These findings allow for the possibility that ILI could change what is “familiar” and help students develop new habits including solid “techniques for conducting research” and “good search skills.”

Other recent studies look broadly at how students develop better research techniques over the course of their time in college and if ILI is a factor in that change. These studies found that undergraduates began their research assignments by using the web at large, but that students’ preferences for where to search and whom to ask for help changed over the course of their education (Macmillan, 2009; Pickard & Logan, 2013; Thomas, Tewell, & Willson, 2017). Carol Perruso looked at how both ILI and instructors’ requirements might bring about such changes

to students' research practices. Perruso (2016) found that "students were more likely to start their research with library resources if they had librarian instruction that semester" but that instructors' source requirements were also associated with increased use of library resources (pp. 623-5). Not surprisingly, explicit ILI appears to help students become familiar with the broader landscape of resource possibilities. How, then, can librarians and instructors apply these insights to asynchronous, online-only courses for which the typical one-shot ILI sessions are not feasible?

One option is to adapt pedagogy and instruction to target places students are already looking for clues about how and where to search for credible sources. Research suggests that students look primarily to the instructor's course materials for such direction, even in the absence of detailed source-requirements. Head and Eisenberg (2009) found that for course-related research, in the absence of detailed source-requirements, students "turned to course readings because the resource was inextricably tied to the course...and [the materials] were sanctioned by the instructor" (p. 15). In later studies, Head and Eisenberg found that students sought two major research contexts during their research processes, namely "the situational context or figuring out an instructor's expectations for an assignment" (2010a, p. 6) and "the information-gathering context or locating and selecting research resources" (2010b, pp. 14-18).

Thus, existing literature suggests both that instructors' expectations strongly influence how students approach research and that students'

research behaviors are improved by having attended a librarian-led ILI session. In other words, collaboration between instructor and librarian is key to students becoming information literate. As Pickard (2017) notes, "Ultimately, academic teaching faculty and librarians share a common mission: helping students produce college-level research" (p. 180). However, collaboration between librarians and teaching faculty is not always easy to facilitate. Saunders (2013) discusses librarians' perceptions of the obstacles facing such collaboration and notes that they "...tend to believe that faculty are hesitant to give up class time for information literacy instruction because they already have too much content to cover" (137). Yvelson-Shorsher and Bronstein's (2018) research at least partially confirms this belief, noting a faculty comment that, "At the end of the day it [information literacy] gets pushed aside because we have so much material to teach, so much work to do..." (p. 543). Mackey and Jacobson (2005) identify several barriers to collaboration from the faculty perspective, some of which include "...lack of time, lack of awareness of students' information literacy needs, belief that students learn these skills and gain this knowledge elsewhere...and a belief that information literacy instruction is the job of the library" (p. 143). They go on to conclude that librarians must "...realistically demonstrate the benefits of collaboration" (p. 144). In other words, teaching faculty may have a librarian teach a research skills session, but often, they may skip the session to save time, or assume students have already learned elsewhere how to do research. Moreover, teaching faculty do not necessarily recognize the

benefits of collaboration with a librarian, and librarians may be hesitant to reach out to them for fear of imposing. In asynchronous contexts where conventional, one-shot research skills sessions are not an option, collaboration may be even less frequent. Again, at PSU, statistics have suggested this is the case. (Portland State University, Office of the Registrar, 2017; Portland State University Library, 2017). This study looks at options for facilitating collaboration between librarians and teaching faculty in asynchronous, online-only courses and imagines what collaboration might look like in this context.

This study is unique in several ways. Unlike prior studies, it looks at the work of students in online-only courses. Furthermore, while existing literature indicates that, in the absence of ILI or explicit source-requirements, students often turn to course readings to devise search strategies for their course-related research, this case study reports on nuances of that behavior. The study provides a more granular glimpse at the ways students engage with the instructor's purview to set the search scope for their independent research. It also considers the corresponding implications for ILI and for collaboration between librarians and teaching faculty.

METHODOLOGY

The focus of this case study is a surprise finding related to student search behavior, and its implications for instruction and collaboration. The larger study explored best practices for teaching information literacy skills in online-only courses. It examined student research projects from Anthropology 366 (ANTH 366) and Anthropology

368 (ANTH 368), taught by the same instructor, but incorporating different modes of ILI, over the course of six terms. This article discusses the work of students in ANTH 366 and ANTH 368 during the first term of the study, Spring Term 2016.

The researchers selected ANTH 366 and ANTH 368 because the instructor was already teaching them as asynchronous, online-only courses, and the 300-level courses shared the same prerequisites and structures. The assignments in both courses consisted of two reading review assignments, two discussion assignments, a take-home midterm exam, and a final research project that required students to generate a bibliography. For Spring 2016, the instructor taught both courses the same way she had been teaching them for several years, without any formal ILI or additional scaffolding of information literacy skills into the curriculum.

To recruit participants, the researchers sent an email to students in each class. Interested students uploaded a consent form to the course Desire to Learn (D2L) shell. Participating students received a \$10 Amazon gift card. A total of 17 students (71%) from ANTH 366 and 19 students (79%) from ANTH 368 participated, and they collectively cited a total of 74 sources: 41 in ANTH 366 and 33 in ANTH 368. While the sample size was small, as a case study it allowed researchers to get a sense of the relatively unexplored landscape of online-only student research behavior.

The researchers looked to the bibliographies as "reflections of research skills instruction" (Gratch, 1985), but did not assign a rubric to measure findings as most citation analysis does. Instead, they used a grounded theory lens, which allowed for the "surprise" finding to emerge even

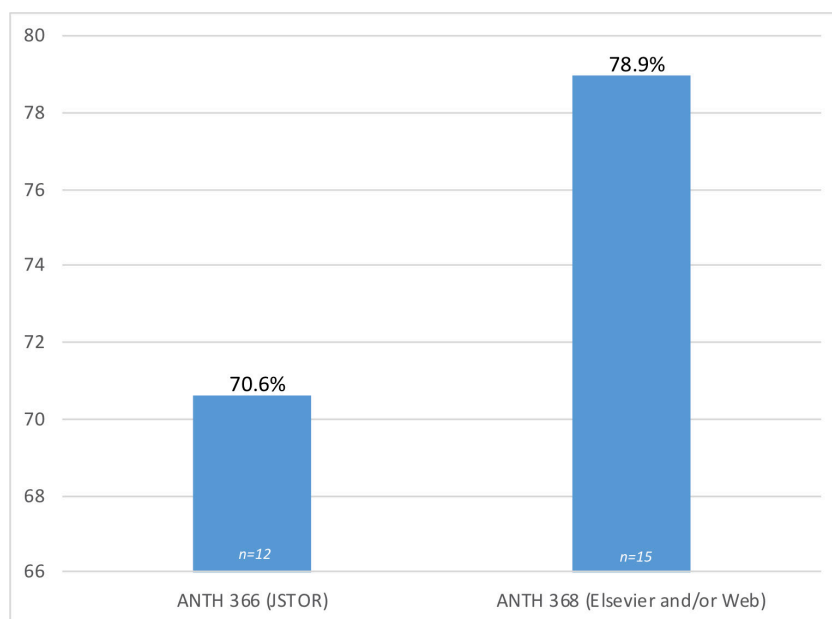


Figure 1: % Students Using Final Project Sources from Same Resources as Reading Review Assignments

though it was not the intended focus of the larger study. Grounded theory is useful when exploring new realms, such as online-only student search behavior, where existing theory might not fully apply or might not address broad or granular aspects of the new context. For the purposes of this article, the researchers used the “ask and answer” approach such that during coding they could ask which data to collect next and where to find them (Glaser & Strauss, 1967, p. 45). This approach was useful when it became apparent that, without instructor prompting, most students were visiting the same small number of resources. Unlike citation analysis using predetermined values, grounded theory allowed the researchers to notice the similarity and explore potential causes.

(SURPRISE) FINDINGS

What emerged from coding the participants’

bibliographies did not fully align with prior studies’ findings. In putting together their final research project bibliographies—even in the absence of formal ILI—students did not automatically set the scope of their search to the web at large, as Joo and Choi (2015) or Purdy (2012) might have predicted. Nor did students work with a broad range of library databases as Macmillan (2009) or Thomas, Tewell, and Willson (2017) might have predicted if students were further along in their college careers or had previously received ILI. Initial coding revealed that ANTH 366 students cited many of their sources as coming from JSTOR, while ANTH 368 students turned primarily to Elsevier as well as the web. When the authors looked for data to explain these patterns, they realized that the majority of participants appeared to have returned to the scope they unearthed from select previous assignments in the same course, namely the reading review assignments (see Figure 1).

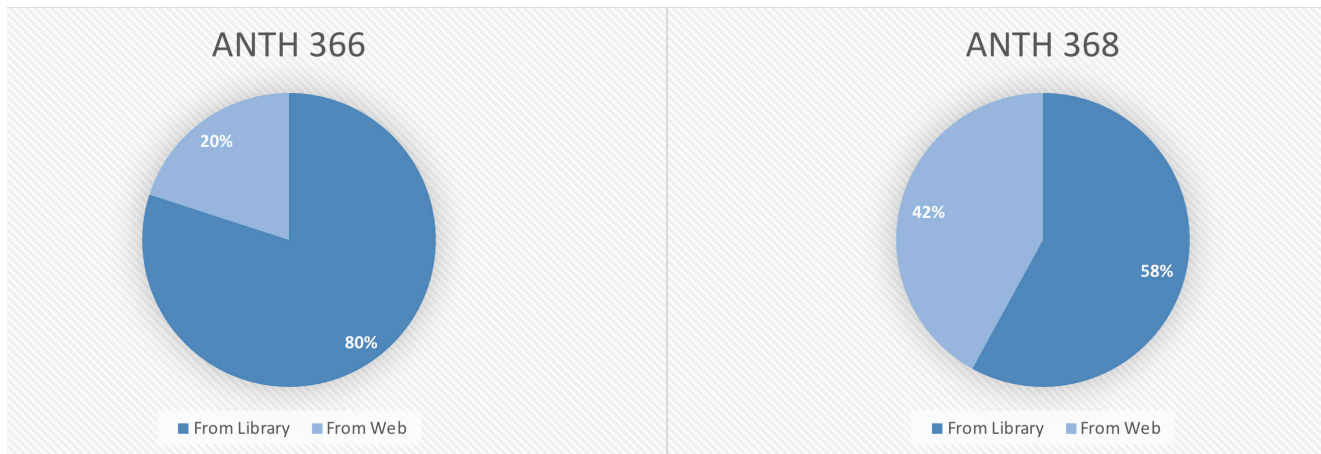


Figure 2: % Final Project Sources from the Library vs. the Web

Students seem to have inferred the scope and used it to look for sources for their final project instructions left them free to look for sources via whatever resource they chose. In ANTH 366, 12 of the 17 students used JSTOR in at least one of their citations. Of the 41 citations in ANTH 366, 26 (63.4%) came from JSTOR, 7 (17.1%) came from other library resources, and 8 (19.5%) came from the web at large. In ANTH 368, 15 of the 19 students used Elsevier and/or the web in at least one of their citations. Of the 33 citations in ANTH 368, 11 (33.3%) came from Elsevier, 14 (42.4%) came from the web, and 8 (24.2%) came from other library resources.

The final project instructions did state some limited source requirements, but students in both classes used them loosely. Students were directed to find an article “from PSU’s library holdings” and use “the library’s online search features” and “the library DIY guides to help locate an appropriate article” relevant to the focus of each class. Students were then to build “a kind of extended reading review” around this article

using references to support their work. The assignment mentioned only one parameter for finding supporting sources and that occurred at the very end where it asked, “Did you use library resources?” (see Appendices A and B). Students did not rely on the library “DIY guides,” which would have directed them to the alphabetical list of 300 databases and which only mentioned one database by name: MLA International. Students used JSTOR or Elsevier, neither of which the DIY guides mention, and neither of which are on the first page of the alphabetical list of databases. It seems clear that students sought out particular databases, and what is revealing is that most students in ANTH 366 sought out JSTOR, while students in ANTH 368 sought out Elsevier. In the earlier reading review assignments, ANTH 366 links landed only in JSTOR. For ANTH 368, links landed primarily in Elsevier, as well as on one webpage, and in one PDF document with no search functionality displayed.

Rather than heed the DIY instructions to search broadly across databases or explore the

alphabetical list, students seem to have modeled their final project searches on the reading review assignments (see Figure 1). In further support of this idea, students' use of library sources versus websites also parallels the link landing pages of the reading review assignments. In ANTH 366, reading review links never landed students in a website, whereas in ANTH 368, one of the four reading review links landed students in a website. Echoing this distribution, students in ANTH 366 cited only 20% websites in their independent research while students in ANTH 368 cited 42% websites (see Figure 2).

It is worth noting that students did not return to the scope of all assignments, nor to the scope of all links in the reading review assignments. The final project described itself as "a kind of expanded reading review," (see Appendices A and B), which might explain why students in both classes returned to the scope of the reading review assignments and not that of other assignments. Another factor might be the relative weight of the assignments. The reading review assignments were worth 25 points each versus the discussions which were worth 10 points each. Students may have assumed that the reading reviews were more important, generally, because they were worth more points and thus returned to what they perceived as the more important scope.

What seems most significant, though, is that while students did return to the scope of the reading reviews, they returned only to the points in the assignments that provided obvious additional search functionality. The links that landed students in JSTOR and Elsevier all landed on

pages with the database name prominently displayed, a search box readily available, and other hyperlinked "recommended articles." None of the students used Academic Search Premier, the database that indexed the one PDF document linked in the ANTH 368 reading review assignments. The PDF document provided no obvious additional search functionality, and it gave no indication it lived in a larger context. Thus, it appears that the link landing page may provide some implicit ILI if a broader context, such as additional search functionality, is readily apparent.

In summary, this finding is important because it provides a level of nuanced detail about how students engage with assignments, the instructor's purview, and search scope. As Perruso (2016), and Head and Eisenberg (2009; 2010a; 2010b) found, students look to the purview of the course instructor for cues about where to search for sources, and this study adds to the literature that students do not weigh all aspects of the instructor's purview equally. Students in these asynchronous classes modeled some assignments more than others, and they returned to the databases the instructor had used in prior assignments but only the ones where the reading links landed within an obviously broader context. These details offer opportunities for embedding ILI in other asynchronous, online only courses.

IMPLICATIONS FOR ONLINE INFORMATION LITERACY INSTRUCTION

While the study's surprise finding provides unexpected insight into how some students approach research in the absence of formal ILI, it

also serves to identify links as possible avenues through which to incorporate informal ILI into online curricula. Links are not just ways to direct students to content or track usage. They contain implicit ILI if strategically scaffolded into the curriculum. For example, what would have happened in ANTH 366 and ANTH 368 if all of the reading review assignment links landed in PDFs with limited-to-no additional search functionality? As appears to have happened in this study, the link landing page can expose students to new ideas and ways of seeing articles as part of a larger context (e.g., journal or database) that might provide additional search functionality and give them a means to find more sources.

Librarians can capitalize on the fact that students explore additional functionality when they encounter it as part of their coursework and that they model what they encounter. This awareness of the ways students engage with their coursework gives librarians specific types of situations to target in contexts where scaffolding smaller research skills steps, rather than delivering a one-shot session, is a productive means of delivering ILI. For example, librarians can think strategically about where links to readings land—what the landing page offers students in terms of potential search functionality and what it suggests about a larger context—when working to incorporate ILI into asynchronous, online-only courses.

Librarians and instructors also need to be strategic as they consider which assignments to target. The students in this study only modeled the scope of the reading reviews and not of the discussions, possibly because of the assignment name or the weight of the grade. In other words,

students do not appear to weigh all assignments under the instructor's purview equally. Thus, in the absence of formal ILI, whoever creates an assignment could use guiding language, such as "extended reading review," or give explicit instructions about the search scope they hope students will use. Librarians and instructors could also either grade ILI assignments or scaffold ILI into existing graded assignments.

IMPLICATIONS FOR COLLABORATION

The ability of links to serve as tools for incorporating ILI into online-only curricula also provides opportunities for easy-to-implement, low-risk collaboration between librarians and teaching faculty. Using reading links to scaffold ILI into courses avoids many of the obstacles to collaboration identified in prior research (Mackey & Jacobson, 2005; Saunders, 2013; Yvelson-Shorsher & Bronstein, 2018). It does not require the instructor to completely reconstruct their curriculum; in fact, it does not require them to change their curriculum at all, which makes it relatively easy to implement.

Librarians can play an important role in educating teaching faculty about the potential significance of the link landing page. This is an opportunity to share with instructors the tendency of some students to rely on instructor purview in the absence of formal ILI, per the findings of this study and research by Head and Eisenberg (2009; 2010a; 2010b), and Yvelson-Shorsher and Bronstein (2018). It may be compelling to show teaching faculty how more deliberate choices of links that land in a broader context are

consistent with students' reliance on materials provided by instructors. It would not be time-intensive for instructors to change their course reading links and librarians could assist in determining the best link landing pages. Furthermore, these changes would not require teaching faculty to give up class time, or in the case of online courses, "real estate" in the course management system. Instead, these changes would allow for subtle, scaffolded ILI that seamlessly aligns with the existing curriculum. In situations where collaborative relationships with teaching faculty have been a challenge to establish, this could be an opportunity to begin to gain their trust with low-risk, easy-to-implement ILI. In the case of PSU, such collaboration led the Anthropology Department to collectively change its practice to providing students with links instead of full-text PDF files because of the implicit ILI work this study showed link landing pages can do. The collaboration also generally strengthened the relationship between the library and the Anthropology Department.

CONCLUSIONS AND FUTURE RESEARCH

The findings examined in this case study provide a more detailed picture of how students engage with an instructor's purview, especially in an online-only class. These details can be useful for developing ILI, generally, but are particularly important as librarians consider how to best build it into asynchronous, online-only courses. Of specific relevance is that students seem to look to particular course assignments for guidance

on where to do their independent searching for sources, which makes it a strategic place to scaffold research skills instruction. Students also appear to explore the broader information landscape of assigned readings when the means by which they access the readings provides such context. More specifically, when instructors give students a link to an assigned reading, it can provide some ILI depending on where it lands.

Thus, faculty can provide reading links that land in the broader context (e.g., journal or database) rather than the full-text PDF. This makes it clear that there is more than just the full-text article available; students will notice, and even later make use of, obvious additional search functionality. In this way, students will implicitly become more aware of journals and databases as larger containers, which in turn reveals a larger scope of search possibilities. (Imagine the implications of taking this approach one step further: what would happen if the instructor gave students a citation instead of a link?) Not surprisingly, such scaffolding appears to be most effective in graded, more weighted, assignments. This echoes the experience of the instructor, Sterling, with the larger study, "ILI in Online-Only Courses: Which Approaches Work Best?" Sterling stated, "Graded library assignments carry the weight of being graded so students are more likely to participate thoughtfully. One of the most successful developments from our project was adding a graded library component to a reading essay." Librarians and teaching faculty could use such stepping-stones to scaffold research skills into assignments and expose online-only students,


who may never otherwise encounter the library, to the library's wealth of credible holdings.

Future research might explore other aspects of assignments librarians should consider when scaffolding ILI into curricula, online or otherwise. It would be helpful to delve further into what types of assignments provide better contexts for scaffolding and the granularity with which skills are best introduced. Furthermore, while the findings certainly suggested that students will not undertake a task unless it is required, the study did not definitively conclude that this was the case. Future studies would need to specifically test nuances of students' behavior around the types of assignments best suited to making students behave accountably and the weight of the grade necessary to induce such accountability. Finally, it would also be helpful to explore additional ways librarians and teaching faculty might collaborate to bring ILI expertise to situations, such as asynchronous online-only courses, in which active one-shot ILI sessions are not an option.

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ONE STEP AT A TIME: A CASE STUDY OF INCORPORATING UNIVERSAL DESIGN FOR LEARNING IN LIBRARY INSTRUCTION

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ABSTRACT

This paper introduces the principles of Universal Design for Learning (UDL), an inclusive pedagogical principle that works to make instruction accessible for all by incorporating different needs of learners into instructional design. This article provides a brief analysis of the literature on UDL within the field of academic libraries and focuses specifically on library instruction. The paper then concludes with a comprehensive case study of the authors' journey to actively incorporate UDL into their information literacy instruction sessions over a two-semester period, including lessons learned throughout their process.

Keywords: Universal Design for Learning, Inclusive Pedagogy, Library Instruction, Information Literacy, Accessibility, Academic Libraries

INTRODUCTION

According to the 2017 census data, the percentage of the United States population who identify as having a disability has increased over the last decade, from 11.9% in 2010 to 12.7% (Bureau, n.d.)¹. This gradual, but significant, increase in the number of people with disabilities means

colleges and universities are potentially enrolling more students with a wide variety of disabilities that may affect learning styles and capabilities. For example, invisible disabilities such as ADHD and autoimmune disorders are becoming more common and require different accommodations (Chodock & Dolinger, 2009). As a result, many colleges and universities have begun to adopt

1. From about 38 million to 41.4 million. We hope to have updated data which will be coming out in the 2020 census which should show continued growth.

Universal Design for Learning (UDL) hoping to meet the needs of this growing number of students. UDL promotes learning in the classroom by designing courses to be accessible for the widest range of abilities. While this growth demonstrates that librarians will be facing more students with disabilities in the classroom, incorporating UDL allows librarians to be pragmatic and removes the need for many accommodations. Because UDL accommodates the widest range of abilities, incorporating these principles do not just help people with disabilities but also any student who may learn differently than others in the classroom. This can include small changes, such as re-wording parts of a syllabus, or larger accommodations that involve classroom technology. While these changes are becoming more commonplace in the classroom, library instruction is not often incorporating such accommodations. UDL does occasionally appear in library literature, but few articles are directly related to library instruction and the majority of the literature is out of date. Unfortunately, disability accommodations need to match the rapid speed at which technology changes.

This article provides a brief analysis of the literature on UDL in library instruction and concludes with a comprehensive case study of two librarians' journey to actively incorporate UDL into their information literacy instruction sessions over a two-semester period at a four year public university.

WHAT IS UNIVERSAL DESIGN FOR LEARNING (UDL)?

The concept of Universal Design (UD) was

introduced in the 1970s by Ronald Mace, an architect and the director of the Center for Universal Design at North Carolina State University ("Center for Universal Design NCSU," 1997). Mace defined UD as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (Center for Universal Design, 2008, para. 2). While UD is centered primarily on spaces, places, and objects, UDL focuses on pedagogical techniques that create a more flexible and inclusive learning environment.

The concept of Universal Design made its way into higher education in the late 1990s and has taken on many derivative names, including Universal Instruction Design (Silver, Bourke, & Strehorn, 1998, p. 47), and Universal Design for Learning (Meyer & Rose, 2013). Universal Design for Learning has become the primary term used in higher education and pedagogical theory (Lombardi, Murray, & Gerdes, 2011). UDL has also made its way into libraries. In 2012, Ying Zhong wrote "UDL anticipates diversity in learners and takes their needs into consideration from the very beginning of course planning" (2012, p. 36).

The UDL framework consists of three primary principles:

- *Multiple means of representation*, which addresses WHAT students learn and attempts to give students multiple ways of acquiring information and knowledge;
- *Multiple means of action and expression*, which addresses HOW students learn and attempts to

give students multiple ways to demonstrate their knowledge;

- *Multiple means of engagement*, which addresses WHY students learn and attempts to engage and motivate students based on their interests (“CAST: About Universal Design for Learning,” n.d.).

These three primary principles are rooted in cognitive psychology and are intended to serve as a framework for improving learning environments (“CAST: About Universal Design for Learning,” n.d., sec. “The UDL Guidelines”). Over the years, the framework has been reorganized and redefined to meet various needs.

While the three primary principles of UDL remain the dominant framework, there are other constructions of UDL, such as the seven guidelines that were developed by the Center for Universal Design. It has been noted that while those guidelines were originally developed for the design of products and environments, they can also be applicable to educators (King-Sears, 2009, p. 199). Specifically, these guidelines are:

- *Equitable use*, which looks at whether or not course materials are designed in a useful way for a diverse group of abilities;
- *Flexibility in use*, which works to provide choice in the methods of instruction to accommodate different abilities and learning styles;
- *Simple and intuitive*, which evaluates whether the instruction is designed in a simple and clear manner to eliminate unnecessary complexity;
- *Perceptible information*, which looks at whether or not instruction provides effective communication styles for all students;

- *Tolerance for error*, which understands each student learns differently and will have different skills;
- *Low physical effort*, which works to design instruction without having nonessential physical effort;
- *Size and space for approach and use*, which evaluates whether or not the instruction is designed with consideration for a student’s body, posture, mobility, and communication needs (Connell et al., n.d.).

Together, these two sets of guiding principles allow educators to naturally provide accommodations to students with disabilities and students with varied learning styles. Most of the literature and other UDL resources provide examples of all these principles with a traditional classroom in mind: syllabi, assignments, activities, etc. (King-Sears, 2009). However, hardly any of the literature related to UDL and library instruction has taken these principles and reimagined them in the context of a library instruction session (Chodock & Dolinger, 2009; Zhong, 2012).

UDL, LIBRARIES, AND LIBRARY INSTRUCTION

The majority of the literature within the library field discusses Universal Design (UD) in relation to library spaces, with a small number of articles focusing specifically on incorporating Universal Design for Learning (UDL) into library instruction. A brief analysis of the search results within five major library science databases using the search terms “Universal Design” AND “Library Instruction” revealed in Table 1.

Database	Search Terms	Total Article Hits	Relevant Article Hits	Percentage of Relevance
Library, Information Science & Technology Abstracts (LISTA)	“Universal Design” AND “Library Instruction”	18	7	39%
Library Literature & Information Science Index (H. W. Wilson)	“Universal Design” AND “Library Instruction”	10	4	40%
Library and Information Science Abstracts (LISA)	“Universal Design” AND “Library Instruction”	20	5	25%
Information Science and Library Issues Collection (ISLIC)	“Universal Design” AND “Library Instruction”	8	1	13%
Library Science Database (LSD)	“Universal Design” AND “Library Instruction”	20	2	10%

Table 1: Search results from November 2019.

The search results revealed fewer than half of the articles with these specific search terms are directly related to library instruction and UDL. Relevance was calculated by identifying articles that addressed both UDL and library instruction. The search was limited to Library and Information Science (LIS) databases. Additionally, nearly all the databases searched had overlap with the articles that were considered relevant. However, it should be noted that the degree of relevance varied from article to article. Three major articles were identified as the most relevant because they dealt specifically with incorporating UDL into library instruction. The other articles, despite having a degree of relevance to the search terms, are not reviewed in this article because they do not focus on the incorporation of UDL in library instruction. These results support the claim that there is very little library literature related to the use of UDL in library instruction.

Three major articles in this literary review

do address library instruction and UDL principles. The first was written by Zhong from California State University, Bakersfield in 2012. Zhong conducted a study of a group of courses which incorporated the three principles of UDL into the design and teaching of the course. The lesson changed by making a Boolean Logic activity more inclusive by incorporating elements of representation, expression, and engagement. For example, providing accessible PowerPoint presentation, providing handouts, and verbally explaining the concepts (2012, pp. 38-39). After the courses were taught, Zhong sent a survey to students where they evaluated the changes. Overall, the changes were found to be effective and appreciated. Additionally, Zhong found that while students reacted positively to the application of UDL principles in library instruction, students still relied heavily on PowerPoint slides. Throughout the article, Zhong advocates for the importance of including UDL into librarians work, saying

“...librarians need to design and implement instruction that facilitates the learning process of all students in order to remove academic barriers and challenges and to provide equal access to the curriculum” (2012, pp. 33–34).

The second major article, written by Chodock and Dolinger from Landmark College Library, Vermont in 2009, focused primarily on learning disabilities. The authors developed their own concept which they call Universal Design for Information Literacy (UDIL). This principle is similar to Universal Design for Instruction and Learning but incorporates library principles into the seven guiding principles of UDL. It also adds two more principles: a community of learners and instructional climate. A community of learners “promotes interaction and communication between students and between students and faculty” and an instructional climate has “instruction...designed to be welcoming and inclusive...[with]...high expectations for...all students” (Chodock & Dolinger, 2009, p. 27). Chodock and Dolinger argue many of the components of UDL or UDIL “should already be a part of what librarians are doing if they are in line with the ACRL Standards for Proficiencies for Instruction Librarians and Coordinators.” (2009, p. 30). Thus, because the ideas of the ACRL standards—like designing instruction to meet all learners or presenting content in diverse ways—mimic many of the principles within Universal Design, applying these principles into library instruction would not be a major change for librarians (Chodock & Dolinger, 2009).

In the third major article, authors Hoover, Nall, and Willis participated in a collaborative project between East Carolina University (ECU)

and Project STEPP (Supporting Transition and Education through Planned Partnerships) to deliver inclusive library instruction using principles of UDL. This study focused primarily on people with learning disabilities (dyslexia, ADD, ADHD, etc.) and, with the implementation of UDL, librarians noticed increased confidence in information literacy skills of all students (Hoover, Nall, & Willis, 2013).

Our hope is this case study will begin to craft a narrative of how to incorporate UDL into Library Instruction. While the current literature has focused mainly on library spaces and briefly on library instruction attempting to prove the effectiveness of UDL, our case study focuses on direct experiences with incorporating UDL and provides the reader with experiences they can use in their own work.

CASE STUDY

Incorporating UDL into Library Instruction was not something we learned in our information science degree programs. Nor has it been something we encounter on a regular basis in professional development opportunities. The drive to incorporate UDL into our library instruction came from a chance encounter. In 2018 the Instructional Design Librarian was invited to be part of a campus-wide inclusive pedagogy and UDL community. The purpose was to help faculty understand and incorporate UDL principles into their credit-bearing courses. After the first meeting, the Instructional Design Librarian knew this was something that should also be incorporated into library instruction and began working with the Student Success Librarian to make it a reality

at the University of Wyoming Libraries, the only four year public university in the state of Wyoming.

When we decided to incorporate UDL into library instruction sessions, our first step was to gather all the resources about library instruction and UDL which, as the literature review revealed, were limited. The majority of resources we identified were rooted in higher education and focused on incorporating UDL into credit-bearing courses. As a result, the three primary principles of UDL (“CAST: About Universal Design for Learning,” n.d.), as well as the seven guidelines (Connell et al., n.d.), were quickly identified as the most useful tools. The biggest challenge was that it was difficult to imagine how the principles and guidelines could fit into a 50-minute one-shot session—the most common instruction format for our library work. Before we could really start re-designing elements of our instruction, we needed to reimagine the core concepts of UDL in a way that worked for library instruction. To accomplish this, we made charts that provided concrete examples of how to utilize the core concepts of UDL in library instruction (Cook & Clement, 2020). Creating the charts helped us to develop a deeper understanding of how the principles can work with library instruction, and with this new knowledge we began to map out how we would incorporate UDL into our one-shot, embedded, and online instruction sessions.

Implementation in Spring 2019

We knew we could not attempt to incorporate all seven guidelines or all three guiding principles of UDL into our lesson plans at once, as that would be overwhelming and potentially lead

to burnout. Instead, we began by identifying elements of our instruction that were less inclusive. For example, prior to incorporating UDL into our instruction, we would design a PowerPoint for an instruction session that was not shared with students. Additionally, based upon the type of instruction we typically do (primarily upper-level undergraduates and graduate students), we identified which specific principles would best fit the one-shot instruction model. To begin, we focused on two main ideas: providing inclusive access to all materials and redesigning active learning activities to incorporate inclusive principles. As we began to incorporate these materials into our instruction, we used instructional observations, verbal commentary, and library instruction evaluations to determine if we needed to make more changes or if the adapted materials and activities were successful. At this point, we consciously chose not to seek Institutional Review Board approval, as we wanted to test the waters at our institution and see if a full UDL study would be feasible in the future.

Inclusive Access to All Materials

Giving students access to all the materials for the one-shot instruction session was one of the easiest and most important principles to implement. Prior to the UDL implementation, we primarily gave students paper handouts of worksheets—no outline of the instruction session, and no online materials. We wanted to find a way to deliver a variety of materials that students might find useful in a variety of formats. The best way we found to accomplish this inclusive practice was to create a Google Drive folder for each class we taught. In the classes’ Google Drive

folder we placed an outline of the class, links to electronic materials we highlighted or shared during the instruction, relevant images or charts, copies of worksheets and handouts in multiple formats (i.e. Google Docs and PDF), and any other materials that supported the content of the instruction session. Physical copies of all materials were also brought to the instruction sessions. We figured that by providing students with a link to all the class documents at the very beginning of the class, or in some cases prior to the class, students could choose how they would engage with the materials. Additionally, students are able to continue engaging with the class content after the instruction session is over, utilizing a tool they are likely familiar with (Google Drive). All of the electronically provided materials are downloadable and shareable. Furthermore, by providing physical copies as well as electronic copies, students are able to choose how they wished to acquire the materials before, during, and after the instruction session.

Redesigning Active Learning

In order to incorporate the UDL principles in active learning, we looked critically at the activities we did in our one-shot instruction and identified areas where we thought we could be more inclusive of all learning styles and disabilities. For example, many active learning activities require physical movement. We realized that such requirements may unintentionally exclude or harm persons with invisible disabilities, or create a learning environment that is unintentionally anxiety-driven. To help make our activities more inclusive and allow students the opportunity to

choose their level of physical or non-physical involvement, we made small but significant changes to some of our activities. In one case, we had been using a Boolean Operator activity that asked students to get up and move into groups based on the clothing they were wearing. Instead of requiring students to get up and physically move, we shifted to a polling software that allowed students to anonymously respond to the Boolean Operator questions while staying in their seats. Using the polling software allowed students to see the results on the overhead screens and we were still able to effectively explain and visually represent the concept we were trying to teach.

Other small but effective changes included allowing students to choose the groups they wanted to work in rather than requiring them to move to a particular spot in the room and giving students the option to either handwrite or type their responses to worksheets and other activities. We allowed students to self-select their movement levels to promote a more flexible environment where the student had the agency to choose their own learning experience.

Fall 2019

Incorporating only select principles in the spring semester allowed us to fully master the concepts and make them a natural part of our instruction. After successfully modifying our one-shot instruction, we decided to integrate two additional inclusive practices into our instruction workflow. The first was making an effort to meet face-to-face with the professor, requesting instruction prior to the session. This may seem commonplace in library instruction but, in truth,

UDL Implementation	Three Primary Principles	Seven Guiding Principles
Providing a Google Drive folder with downloadable and shareable materials	Multiple Means of Representation Multiple Means of Engagement	Equitable Use Flexibility in Use
Provide a copy of all materials, both digital and physical	Multiple Means of Representation Multiple Means of Engagement	Equitable Use Flexibility in Use
Critical re-design of active learning activities	Multiple Means of Action & Expression	Perceptible Information Low Physical Effort Size and Space for Approach and Use

Table 2: Chart outlining which of the three primary principles and seven guiding principles were most applicable to our instruction re-design in Spring 2019.

librarians typically don't get as much face time with instructional faculty as we should. Meeting with the professor prior to the instruction session allowed us to thoroughly discuss the syllabus, the research assignment, and plan together which core concepts of information literacy to address. Working to better understand the professors and their classes allowed us to be more thoughtful about the activities we planned, ensuring they were as inclusive as possible while still delivering the content effectively. Planning ahead to incorporate principles of UDL into our instruction prepared us to offer students multiple ways to engage with the content, access their materials, and demonstrate their knowledge.

The second practice we adopted was re-examining the ways in which we provide check-ins for mastery throughout the instruction session.

Instructors and librarians are no strangers to the dead silence that follows the question, "Do you have any questions?" In order to make students more comfortable expressing questions, and confirming their mastery of concepts, we began to test different ways of checking knowledge. One of the more popular methods was using polling software to allow students to send in anonymous questions we could then address with the class as a whole. This method prevented students from being singled out and allowed us to reiterate or re-explain concepts with different learning styles in mind.

LESSONS LEARNED

As we have worked to incorporate UDL into different elements of our library instruction, the

UDL Implementation	Three Primary Principles	Seven Guiding Principles
Meet face-to-face with the professor to go over the syllabus, the research assignment, and design the instruction session together.	Multiple Means of Representation Multiple Means of Action & Expression Multiple Means of Engagement	Simple and Intuitive Perceptible Information Flexibility in Use Equitable Use
Provide alternative methods of check-ins throughout the session to see if students are mastering concepts.	Multiple Means of Action & Expression	Flexibility in Use Tolerance for Error

Table 3: Chart outlining which of the three primary principles and seven guiding principles were most applicable to our instruction re-design in Spring 2019.

most important lesson we learned was to not do it all at once. Instead, it was important for us to take these changes one step at a time. When we first thought critically about this implementation, we were overwhelmed with the amount of changes we thought we needed to make. This made incorporating UDL seem almost impossible. Instead, each semester we implemented one or two simple changes and focused on mastering those before moving on to the next step. This allowed the implementation to feel manageable rather than overwhelming.

Another lesson we learned is that, when mastering a principle, it is helpful to practice until that change becomes second nature in your instruction. Practice does make perfect and it allows the process of implementation to feel less stilted and more natural. Becoming comfortable with a new technique before adding more changes to our instruction seemed small and easy to manage. Even though, overall, we were making

big changes to our instruction, it didn't feel like we were because we had broken down the process into manageable steps.

Additionally, we have realized that incorporating UDL into our instruction is not linear but, rather, circular. We will revisit this assessment process as technologies shift, as instruction pedagogies and theories evolve, and as students change and grow. This is also a cycle that will allow us as librarians to constantly evaluate and grow in our instruction. For example, we originally created full slide decks that we shared with students. However, observations by the librarians showed students were using the outlines, not the slides, which led us to prioritize and emphasize the outlines in the Google folders that we made for each class.

Lastly, having a community of practice has been extremely important throughout this process. If we had attempted to implement UDL into our instruction without the support and guidance

of each other and our peers at the University of Wyoming, this process would have been a struggle. We recommend that library instructors develop a community through Twitter, their institution, or through peers to help them implement UDL into their instruction.

Next Steps

Throughout this process we have constantly worked to evaluate different places where our instruction techniques could be more inclusive. This has guided our future efforts to continue incorporating UDL in library practices. We have identified two additional areas where we can improve: incorporating UDL into our LibGuides and tutorials, and formalizing UDL in our department as the standard for instruction. It is our intention to design a full, IRB-approved research study in the coming year that will help us formally assess the effectiveness of UDL in the library classroom.

The University of Wyoming is the only four-year public university in the state. This means some of our students are not located physically on campus but participate in instruction remotely. The resources we provide to distance students include virtual and embedded library instruction sessions, LibGuides, and tutorials. These materials have traditionally had no standards for accessibility and inclusivity and are simply not meeting all of our users' needs. We hope in the next year to begin creating guidelines for how to better incorporate UDL principles into these types of resources to better serve the needs of all our students who come from a variety of backgrounds.

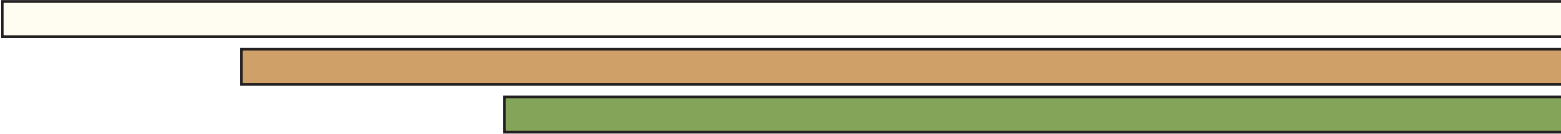
Additionally, the Instructional Design Librarian is working to redesign the UW Libraries basic instruction lesson plan to incorporate Universal Design for Learning. This change could potentially be implemented across all library instruction. Such a change in library-wide pedagogy will not happen overnight and will require buy-in from the different instructors within the libraries.

Overall, we believe that incorporating UDL into our instruction makes a positive difference for our students based on our casual observations. We have logged into Google folders months after instruction sessions and seen students still using our resources. There have also been instances in our instruction evaluations where students commented specifically on having access to content or indicated that they enjoyed our redesigned activities. And now, when we receive accommodation requests from instructors, we don't stress nearly as much about needing to adjust our instruction because the incorporation of UDL has already likely addressed the accommodation. While all these successes have likely made a noticeable difference, they have not come without hurdles. Overcoming those challenges meant taking every change one step at a time, mastering a technique before moving on, and developing a community at our university to encourage growth.

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ADVANCING COLLEGE STUDENTS' THESIS WRITING ABILITY: A CASE STUDY OF AN ONLINE LIBRARY INSTRUCTION COURSE

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ABSTRACT

The following case study adapted a library instruction course to support students' ability to construct a thesis statement. Given at an urban junior college, the goal of the credit-bearing course is for students to acquire effective research strategies for finding reliable information and to develop information literacy skills. For this study, pedagogy divided thesis writing development over the course of several weeks in which students reviewed sample theses and the work of their peers, providing feedback to fellow students and revising their own work based on feedback from both students and instructors. The class section in this study utilized Blackboard instructional technology for both lessons and assignments, and did not meet face-to-face. In an effort to simulate active learning in a virtual environment, the instructors prepared a form of think-pair-share for students to review and comment on each other's work. To review thesis statements, both students and the instructors utilized a set of questions aimed at examining the effectiveness of the argument. Results of the study will determine whether students improved thesis writing ability. It will also establish whether feedback, both from their peers and from instructors, helped students revise their thesis, and if think-pair-share was successful in an online environment.

Keywords: Library Instruction, Thesis Statement, Information Literacy, Feedback, Credit Courses

INTRODUCTION

Post-secondary studies on the teaching of writing commonly note the various genres that students write in college-level disciplines. In business or

engineering, students may write case studies or project reports. In the sciences, they write a lab report or a research report. In English or history, they write a research paper or argumentative essay (Johns, 2008, p. 249). Many of these

compositions do not have thesis statements, but the research paper or argumentative essay often requires a formal argument. Argumentative essays generally have an introduction or opening, a body of content, and a conclusion to summarize or close the essay (Owusu & Adade-Yeboah, 2014, p. 56). Typically, the introduction ends with the author's thesis statement. By definition, a thesis is "a statement or theory that is put forward as a premise to be maintained or proved" ("Thesis", n.d.). Petrić (2005) defines the thesis both as "the main thought to be developed and the statement of the purpose of the essay" (p. 223) and "an expression of opinion" (p. 224). In writing an argumentative essay, students often times have difficulty constructing a thesis statement. Common problems students face is that statements are often not specific in detail nor arguable (Owusu et al., 2014, p. 59). Statements can also be too narrow, or an announcement of fact rather than a unique idea (Langan, 2001, p. 53). Van Camp and Van Camp (2013) suggest that students struggle "providing synthesized evidence for their thesis statements, and summarizing an author's position when using it to support their own claims" (p. 86). In a study of business students using thesis statements in expository essays at two prominent private universities in Ghana, Owusu et al. (2014) concluded that "language teachers and lecturers should devote ample time in teaching students" thesis writing (p. 62). For the two-year college student, those working to receive the associate's degree at a junior college, writing an argumentative essay may be more difficult than it is for their four-year counterpart. The two-year college student may have "little knowledge concerning academic conventions and behavior, including academic writing conventions

and expectations" (Hansman & Wilson, 1998, p. 21). Developing academic writing skills is central to success and moving on to the four-year school.

The following case study describes a method for librarians and instructors who may have less experience teaching writing skills how to integrate thesis writing into a college-level course. Students typically receive library instruction while in college, often in a single session to introduce them to the library or to help finding resources for an argumentative paper. For-credit library instruction is also available at some institutions in a semester-long course. Given at an urban junior college and taught solely by librarians, the goal of the credit-bearing course in this study is for students to acquire effective research strategies for finding reliable information and to develop information literacy skills. For this study, the course instructors divided thesis writing development over the course of several weeks in which students reviewed sample theses and the work of their peers, providing feedback to fellow students and revising their own work based on feedback from both students and instructors. The class section in this study utilized Blackboard instructional technology for both lessons and assignments, and did not meet face-to-face. Online courses such as this became standard practice at colleges and universities throughout the world in the spring of 2020 following the COVID-19 virus pandemic (Lederman). In an effort to simulate active learning in a virtual environment, the instructors prepared a form of think-pair-share for students to review and comment on each other's work. To review thesis statements, both students and the instructors utilized a set of questions based on Harvard University's strategies for essay writing aimed at

examining the effectiveness of the argument. Results of the study will not only determine whether students improved thesis writing ability, it will provide suggestions for instructors looking to convert classroom practice into a virtual practice since the return to a physical classroom is uncertain in the aftermath of COVID-19. It will also establish whether feedback, both from their peers and from instructors, helped students revise their thesis. The authors want to make the case that course pedagogy utilized in the study to improve student writing skills can be adapted to college-level instruction, whether a three-unit course or single-session library instruction, or an online course or a course that meets face-to-face.

LITERATURE REVIEW

There is limited library instruction literature supporting students' writing ability. Library instruction, both in single sessions and in for-credit courses, primarily focuses on fostering information literacy skills. The Association of College and Research Libraries (2019) defines information literacy as "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (p. 3). In lieu, this literature review covers efforts to advance students' thesis writing skills, the value of feedback on student success, and the use of think-pair-share in the college classroom.

Advancing Students Writing Skills

To begin, there are disciplinary differences

in thesis writing. At the post-secondary level, instructors teach highly specific disciplinary texts and they rarely assign the generic argumentative essay. In the sciences, nursing, and social sciences, students need to formulate a hypothesis and then test it using empirical methods, presenting their work in a lab report or article. In business, social work, and engineering, students analyze a problem and then determine what information and disciplinary concepts can solve the problem (Johns, 2008, p. 249). Still, Beaufort (2007) suggests that instructors need to focus on teaching students how to write in new situations that they encounter. Often, instruction is content-specific and not adaptable to a variety of writing situations (p. 15).

Argumentative essays are more prevalent in the two-year school or high school. Freshmen composition classes teach not only how to write narrative and descriptive essays but expository and argumentative essays to get students to write at the college level. Knowing the difference between the narrative essay and the argumentative essay helps students understand that everyone comes from a different discourse community and that they can use their personal voice in a narrative but also need to write at the academic level (Wang, 2000, pp. 2, 5). Gokcora (2016) suggests that it "is essential that students learn to bring a critical perspective to the topics discussed" and that "acknowledging the opposite point of view verifies that writers can practice argumentation" in their writing (p. 45).

To help students identify thesis statements, Van Camp et al. (2013) designed a weekly assignment where students in a social psychology course read text and identified thesis statements, listing

three pieces of evidence the authors used to support it. Typically, the class examined the text as a group and the author provided guidance in how to identify the thesis (p. 90). In written feedback, one student added, “the weekly reading assignment really helped my vocabulary and finding evidence in texts to support the thesis” (p. 95). Another said, “Having to do the weekly readings I can say has greatly improved my ability identifying the thesis and evidence” (p. 95). On the other hand, in a study at the City University of New York Graduate School, Friend (2001) uncovered that summarization instruction in generalization aided students to construct a more effective thesis statement (p. 3). “Generalization is a cognitive process involving classification and categorization” (p. 6) where a reader distinguishes important and unimportant ideas as a hierarchy of related ideas in expository text. Likewise, in a pre-freshman writing class of entering college freshmen who had failed the university’s writing assessment test, students given summarization instruction in generalization wrote significantly better thesis statements, “synthesizing a global statement from the individual sentences and paragraphs of the original text” (p. 20), than students receiving summarization instruction using argument repetition.

At the high school level, instructors use composition exercises to advance thesis writing. Darrow (2005) suggests a six-step lesson plan. First, the class instructor distributes four different thesis statements and asks students to score them on a four-point scale. Second, the instructor divides the class into pairs and together students write a thesis statement on a future topic or assignment. Third, students write the thesis on a large piece of paper, without their names, later displayed in

the classroom. Fourth, students score each other’s thesis statements. Fifth, the instructor leads the class in creating a rubric-rating matrix of thesis statements. Lastly, the instructor leads a discussion focusing on why statements scoring a three or a four are examples of a well-written thesis (p. 36). In another approach, Moore (2006) developed a series of handouts to help high school students organize and develop their thoughts. The handouts guided students in identifying and interpreting literary elements, culminating in students writing a thesis statement based on the evidence that they found (p. 167). In the process, students develop critical thinking skills by analyzing a piece of literature and formulating an opinion based on their analysis (p. 168).

The Power of Feedback

Literature maintains that instructor feedback is constructive in helping students. In a study examining the effects of feedback on students’ writing in an English language class, researchers determined that teacher’s feedback on early drafts of written work improved writing skills. The study compared teachers’ feedback with electronic feedback in the online writing practice tool Criterion, developed by Educational Testing Service (Hefferman & Ootoshi, 2015, p. 64). Comments focused on four rhetorical features of writing, one being the thesis statement. While students receiving teachers’ feedback showed great improvement in constructing a thesis statement, students receiving feedback from the Criterion system did not show any improvement. The researchers concluded, “Instruction from a teacher is of the utmost importance when learning to write” (p. 73). In another study, Song, Hoon, and Alvin (2017) analyzed the

extent to which students made revisions of their work after receiving feedback from their instructor. Their findings suggest that when instructors provide feedback regarding thesis statements, students make appropriate changes. However, when instructors comment on the development of ideas in the rest of the paper, students only make superficial changes. The reason for the disparity is that in the former students focus on a single sentence, making it clearer and specific, rather than a larger, more complex portion of a paper that can take time (p. 367). A Pennsylvania State University study utilized video to give in-depth, specific, and personalized feedback. In one of the six focus areas of feedback, instructors commented on theses and the overall focus of student papers. Results of the study indicate that students utilized feedback to revise their thesis more than other areas, favoring video feedback over written comments (Moore & Filling, 2012, p. 9).

Few studies delve into the possibilities of peer feedback versus instructor feedback. When a course employs both, based on how they revised their work, Zhao (2010) suggests that students used more teacher than peer feedback. However, in the study of Chinese university English learners, Zhao argued that students used instructor over peer feedback without understanding its significance or value (p. 3). At the same time, students understood a larger portion of the comments and suggestions provided by their peers, but they did not make use of it because they viewed instructor feedback to be more trustworthy and important. Zhao concluded that student “use and understanding of feedback should be viewed as two equally important factors for deciding whether peer feedback should be integrated with teacher feedback”

(p. 14). Zher, Hussein, and Saat (2016) propose, “Peer learning provides enriching possibilities for feedback,” especially in large classrooms. They advocate, “Students are often better than the teacher in explaining to their peers in their language which is more accessible” (p. 12). In addition, in the role of providing feedback to their peers, students develop the skill of judgement by analyzing another’s work and determining its strength. Similarly, Cao, Yu, and Huang (2019) advocate peer learning because it enhances student learning. Their qualitative study evaluated students’ perspectives of what they learned or did not learn by giving and receiving peer feedback. Almost half of the students in the study believed that they could benefit from both providing feedback and giving it (pp. 106, 108, 110).

Through collaboration with faculty and campus endeavors, librarians can play a supporting role in helping students develop writing skills. In a case study at Middlesex University, Rahanu et al. (2016) highlighted the role of Library and Student Support, a one-stop shop for academic support where students receive help in academic writing. Rather than a lecture style approach, the initiative “facilitates student involvement by using games and other activities, and by focusing workshops on a central project theme relevant to the student group” (p. 221). Librarians help by identifying resource and support needs, and by teaching information literacy skills to incoming students through interactive workshops (p. 220). At the secondary level, Brown (2012) conceived of a method whereby the instructor works closely with the school librarian. After a lesson on developing a strong thesis statement, the librarian leads a discussion on the importance of supporting a

thesis statement with research findings, showing students research that provide good support and not-so-good support. For example, a not-so-good resource may be on the same topic as the student's paper but not support the argument. In the next phase, students work in groups with a sample thesis statement and examine resources related to the argument, both in print and electronic. Selected by the librarian, some sources are in support of the thesis and some are not. Using a worksheet listing all sources, students must decide which sources should be included in a paper with the particular thesis. In the next phase of Brown's concept where a librarian first supports thesis writing and then helps find good support materials, students develop their own thesis and search for sources to support it. Later, the instructor and the librarian assess student progress on thesis statements using a rubric and an Exit Ticket questionnaire that asks students what they learned in class and whether they felt confused (pp. 55–56).

Think-Pair-Share

The study herein used a form of think-pair-share, an active or performance-based method used to engage students in the classroom. Active learning differs from common lecture-style or passive teaching, in which students simply listen to the instructor or wait until asked to participate. In active learning, instructors may break a class into time segments or into groups, and students continually participate and contribute to the lesson. Think-pair-share usually entails the instructor asking students a question designed to make them “process or apply the content, which is then discussed with a partner and subsequently shared

with the whole class” (Gentile, 2010, p. 1951). Prah (2017) suggests metacognitive questions or application questions rather than fact-based questions. Questions with more than one possible answer best promote discussion. When designing the think-pair-share activity, the instructor should also have the learning goal in mind so that questions support the desired outcome (p.7).

Studies advocate the use of think-pair-share in the classroom. In a review of implementing think-pair-share in associate degree nursing curriculum, Fitzgerald (2013) observed an increase in both student preparation and confidence since students worked collaboratively and celebrated their knowledge with other students (p. 90). In a study, Kaddoura (2013) concluded that the think-pair-share strategy in class pedagogy improved critical thinking skills of baccalaureate nursing students since “they can formulate creative solutions to the problems, link ideas and make assumptions” (p. 20).

Think-pair-share is also not restricted to one-on-one classroom discussion. Some studies use a virtual environment. Slone and Mitchell (2014) used Google Drive to facilitate think-pair-share activities in a classroom setting where students recorded group reflections in a single Google document (p. 103). Azlin (2010) utilized Collaborative Environment for Teaching and Learning systems, allowing students to interact and share ideas in an online chatroom (p. 28). The following study used Blackboard's discussion forum to simulate the think-pair-share activity in the virtual environment, allowing students to post their thesis statement and then provide feedback to each other's work.

METHODS

The urban junior college in this study is a two-year, Associate's Degree granting institution in the United States. More than 60% of students are foreign-born and the majority are overwhelmingly low-income, with more than 70% coming from families with incomes of less than \$30,000 per year. The majority are also first-generation college students. These facts make for a unique data set. Many students did not come through the traditional American school system and some may be unfamiliar with the argumentative essay or constructing thesis statements. The findings of this study may suggest a better approach to improve thesis writing for students new to the concept.

LRC 103, Internet Research Strategies, is a one-unit course offered in both face-to-face and online sessions. Taken as an elective and typically by students nearing graduation who need one credit for completion, its primary goal is for students from any discipline or major to acquire effective research strategies for finding reliable information on the Internet, including resources in the Invisible Web not accessible using standard search engines. Instructed by the authors, the LRC 103 class section in this study was given online during the Spring 2018 semester. To simulate twelve face-to-face sessions in an online environment, the instructors used Blackboard instructional technology to build lesson content and assess assignments. Class curriculum mirrored that described in a previous study of LRC 103. Several lessons and assignments sought to advance student research ability by fostering information literacy skills. Like the former study, prior to the

midsemester examination in this study, students learned how to: 1) develop a research question, 2) find scholarly material using a library database, 3) find background information on a topic, 4) break down a topic in a concept map, and 5) craft a thesis statement. The midsemester examination assesses acquired skills, asking students to create an annotated bibliography based on a thesis statement and research they have done in the class to that point (Stadler & McDermott, 2018).

To advance students' writing skills, this study revised course pedagogy, adding a thesis-writing element to assignments given prior to the midsemester examination. The authors also modified lessons to better guide students in the thesis-writing process from week two through the midsemester examination. Rather than begin with an introduction to fundamental database tools and scholarly research, week two's lesson demonstrated how to find background information on a topic and how to develop a research question. Since the class was online, the authors created an instructional video demonstrating how to find background information using an encyclopedia and posted it to Blackboard. They also posted a second video from another academic institution explaining how to generate a concept map. A concept map breaks down a topic into related issues and examples for further research. It also helps generating keywords for subsequent searches (Appalachian State University: Belk Library and Information Commons, 2017). The assignment accompanying the lesson asked students to create a concept map of a topic found in the online encyclopedia Gale Virtual Reference Library and develop a research question using a research topic worksheet. Topic

suggestions given in the assignment prompt were gentrification, social media, minimum wage, and organic food.

Lessons in week three introduced students to fundamental database tools and scholarly research. Instructional videos were either created specifically for the lesson or taken from other institutions such as Purdue University's Online Writing Lab. They helped students: find scholarly articles, use Boolean logic strategies to complement a keyword search, and create a thesis statement. The first part of the assignment given asked students to find a scholarly article in the Academic Search Complete database based on the research question developed for week two's assignment and to write a 200-word description of the article, summarizing the author's viewpoint on the subject and any evidence they provided in their argument. Next, students needed to construct their own thesis statement related to the topic. This was the first of three writing exercises designed to construct a better thesis (see Figure 1).

In week four, students learned how to generate a citation in MLA style. The assignment accompanying the lesson was the second thesis-writing exercise (see Figure 2). It utilized a form of a think-pair-share exercise, an active or performance-based method used to engage students in the classroom. To simulate the think-pair-share design in an online environment, the authors created a discussion board forum in Blackboard and divided the class into groups of three students in a discussion thread. Similar to a think-pair-share exercise, each group was given two thesis-driven student paper samples and asked to identify the thesis in each paper. Each

student was required to reply to the discussion thread, post their own argument for each sample, and explain why they selected it. They also needed to reply to the other students within their group and state whether they agree or disagree with their peer's choice. The goal of the exercise was that students could identify a thesis in a paper and argue the reason for their decision. It also allowed students to provide feedback to their fellow students in a virtual environment.

Week five's lesson introduced the Opposing Viewpoints in Context database, using a video developed by the Gale database aggregator and a video created by the instructors. The database is an excellent source of opposite viewpoints on contemporary global issues. The assignment accompanying the lesson asked students to revise their thesis statement from week three's assignment using instructor feedback and the student samples as a guide, and to post their revision as a reply to a discussion thread in Blackboard (see Figure 3). In the second part of the assignment, in another think-pair-share exercise, students analyzed the work within their group, examining and determining the quality of the other students' thesis and delivering feedback as a reply in Blackboard. As a guide, the instructors asked students to evaluate their peer's thesis based on five questions from the Harvard College Writing Center. First, did the thesis have a definable, arguable claim? Second, was it narrow in focus, clear and specific as possible? Third, was it not a question? Fourth, was it not a list? Lastly, was it not vague, combative or confrontational (Rodburg & Tutors of the Writing Center at Harvard University, 1999)? Although the questions are not open-ended, students needed to respond in

complete sentences and not simply supply a yes or a no feedback, giving as much detail as possible to support their answer. The goal of the exercise was for students to determine the strength of a thesis statement in order to learn how to improve their own skills.

The following week's lessons explained how to create an annotated bibliography, and introduced the midsemester examination (see Figure 4). The examination required students to: 1) provide a final, revised thesis statement, 2) create an annotated bibliography of at least three articles on their topic, with two in support of their thesis and at least one opposing viewpoint, and 3) write a 250-word paragraph reflection on their progress constructing a thesis. Reflection prompts included: 1) what was most difficult about creating a thesis statement and did you overcome it, 2) in what ways did class lessons and assignments affect your thesis statement development, 3) what class lesson helped you most to create a thesis statement, and 4) would you use techniques learned in this class in future assignments in other classes. Student reflection demonstrates metacognitive competence, one of the four domains in metaliteracy, as students show "a reflective understanding of how and why they learn, what they do and do not know, their preconceptions, and how to continue to learn" (Mackey & Jacobson, 2014). Metaliteracy stresses that the metaliterate student must continually learn given the evolving information landscape.

Assignments in the course were five points each. To grade assignments, the authors created an assessment rubric based on four criteria. For a full five points, students needed to: 1) submit

assignments and reply to the questions within the deadline indicated, 2) have enough information to answer the questions and demonstrate comprehension of the material covered, 3) demonstrate understanding of Internet concepts and issues related to the use of information, and 4) be able to identify scholarly and popular sources. If students did not meet any of these criteria, they lost a point for each. The grading criteria rubric for the midsemester evaluation was the same as the assignment rubric but adjusted to fifteen points.

For the study, the authors evaluated both the progress of students' writing ability and the mean average score of assignments from the first thesis-writing assignment through the midsemester evaluation to determine if class instruction and peer feedback helped students construct a better thesis. The authors developed criteria for student progress in four categories and calculated a student percentage for each. The four thesis benchmarks were: 1) the student's work did not need major revision and was a unique, arguable claim, 2) the student's work demonstrated substantial improvement, 3) the student's work displayed overall improvement, and 4) the student's work had minimal or no improvement. To demonstrate overall improvement, students revised a thesis that failed at least one question of the Harvard College Writing Center's suggestions. To display substantial improvements, students revised a thesis that failed in two more suggestions. The authors also reviewed student reflections in the midsemester evaluation to uncover what students thought they struggled with most and to determine what class instructional methods helped students best.

RESULTS

Twenty students enrolled in the class in the Spring 2018 semester. Fifteen students qualified for the study, agreeing to be included and having completed at least the first thesis-writing assignment and the midsemester examination. Four students were not included in this study. The most common student challenge was failure to develop a unique argument. For example, the statement “personal well-being contributes to living a healthier lifestyle and making healthier choices like eating organic foods” is not a distinctive argument, but rather in agreement with another author. Another common challenge was not constructing a narrow focus, as in the statement “social media has a good and bad impact on students; student should be able to be safe while using it if they are shown ways to protect themselves and others online.” Students were also unable to develop an arguable claim. While the statement “social media possesses addictive qualities like drug and alcohol addictions” is a claim, it is difficult to argue without indicating what the addictive qualities are. Other student challenges were writing multiple sentences without a solid claim or composing an overview of their paper, beginning with the line “this paper will discuss the effects of gentrification on minority communities,” rather than stating an argument.

Based on 100%, the student grade average was 80% in the first assignment, 98% in the second assignment, 88% in the third assignment, and 89.2% on the midsemester evaluation (see Figure 5). Two of the 15 students, or 13.34%, had unique, arguable claims on their topic in the first

thesis-writing exercise and did not need major revisions (see Figure 6). The instructors suggested only narrowing the focus of the argument. Two students, or 13.34%, demonstrated minimal or no improvement, failing in two or more areas of the Harvard College Writing Center’s suggestions. Of these two students, one student struggled to narrow down their focus in their revision on the midsemester evaluation while the other did not include a thesis revision. However, six students, or 40%, displayed overall improvement in their thesis-writing ability. For example, the statement “organic food makes a beneficial impact on the global trade market by helping local economies and the food industry” was too broad a focus. The student revised this statement to “organic food and its use should be part of school curriculum” for a focused, arguable claim. Five students, 33.34%, exhibited substantial improvements. The statement “what ways does social aspects of social media impact society” is not only a question, it is not arguable or narrow in focus. The student revised this to “the heightened enjoyment and temporal dissociation that social media causes on its users is highly associated with increased usage which leads to addiction with a final outcome of high levels of depression.”

Although they utilized instructor feedback to revise their thesis for the midsemester examination, students also revised their work based on their peer’s comments in the third assignment. In a comment, one student recommended narrowing a two-sentence thesis down to a one-sentence claim, which their peer took into consideration in their revision. In another comment, a student suggested the “thesis could be more narrow and

short --- it just needs to be short and straight to the point.” In an additional example, prior to feedback, a student’s thesis was “while there have been many positive outcomes from social media, there have also been some negative and damaging effects.” The feedback received was “thesis statement does not have a definable arguable claim... just stating an opinion and is a very broad statement.” Although somewhat wordy and still in need of further revision, the student revised the statement to “despite the fact that social media provide services such as, entertainment, information, and communication through Facebook, Instagram and Twitter, there are some negative consequences that the user has to endure, which are inclusive of; a lack of privacy, cyberbullying, and also the fact that it takes up a lot of our time, which can lead to social isolation.” These examples demonstrate that students revised their work not only from instructor feedback, but also from feedback received from their peers.

While generally students found class assignments and lessons helpful, the videos were the most beneficial according to some students:

- “I watched the videos a few times just to get a good interpretation of how I can form my thesis statement and combing my claims and key points in one sentence”
- “The videos that were posted on Blackboard about how to create a thesis statement were really clear and useful which helped a lot when it came to thinking about what I needed to write in the thesis statement section”
- “The videos from Youtube explaining the steps of writing thesis statement helped me the most and

the examples provided along with them made it more clear and easy”

Another student suggested that feedback given to fellow students helped their own development, adding, “I also enjoyed providing feedback to my other class members because it allowed me to think more deeply about my topic and how I presented it in the thesis statement.”

DISCUSSION

The limitations of this study was the small sample size. However, the majority of students demonstrated improvement. Student grade average between the first thesis-driven assignment and the midsemester evaluation exhibits gradual improvement in the course overall. The higher grade in second assignment suggests that students performed best when identifying theses in argumentative papers and working collaboratively with their peers in the Blackboard forum. The grade average in the third assignment was also better than the first assignment indicating that students improved their thesis and could successfully comment on another student’s work. Student reflections also suggest that course curriculum and the collaborative exchange with peers and instructors helped students revise and construct a thesis.

Overall, analysis indicates that feedback best influenced students to write a better thesis. How much of this was due to instructor or peer feedback is difficult to determine. The instructors provided feedback through the Blackboard assignment function. No student mentioned instructor feedback in their reflection, but some students

indicated that their peer's comments affected their work. According to Zher et al. (2016), students communicate with their peers better than their instructors do since they are in the same position as learners and speak the same language (p.12). Instructors providing guidance in thesis statements may consider this pedagogical strategy to advance students' ability in addition to traditional teacher feedback. Furthermore, Moore and Filling (2012) noted that students favored video feedback over written comments (p. 9). For a greater impact in an online course, instructors should contemplate giving video feedback. Likewise, students suggested the tutorial videos aided their progress, preferring visual learning to reading text-based instruction. Materials regarding thesis statements assigned in the course were mostly tutorial videos, with a few short readings from a free online textbook and the five-question Harvard strategy to evaluate thesis statements.

Librarians and instructors who may have less experience teaching writing skills can utilize the techniques presented in this case study. Whether it be a three-unit course or a one-session library instruction given to students at any college, instructors can design courses that adapt both instructor and peer feedback to improve thesis statements, instructional videos on thesis statements from Purdue University, and the Harvard Writing Center's five-step thesis assessment technique to improve students' writing skills. Writing an argumentative paper is typically an assignment given in most English classes at the junior college level. Constructing a focused and narrow thesis can also be a component in a science class where students need to make an argument and provide scientific evidence to prove it. Lastly, thesis statement skills

can also be integrated into library instruction given at most colleges and universities. Since the single information literacy session usually is designed to help students find sources for an argumentative paper, librarians can advance students' thesis writing skills by introducing techniques presented in this paper.

In a think-pair-share exercise, students can workshop each other's papers based on the Harvard Writing Center's suggested questions to critique a thesis statement. Slone and Mitchell (2014) utilized Google Drive to facilitate think-pair-share activities in a classroom setting to record group reflections in a single Google document (p. 103). In this study, Blackboard discussion forums offered a suitable alternative in a virtual environment. However, librarians and other instructors must be cognizant that students express their knowledge in the forum as they would in the classroom. It is important to give word limits to assignment prompts and ask students to illustrate their comprehension of class material in complete sentences.

CONCLUSION

The scaffolded lesson plan in this study taught students how to write a thesis statement and find sources to support it. At the same time, as students began to explore scholarly research, they identified and analyzed theses and utilized these skills to better their own writing ability. Two components that the authors argue that must be part of course pedagogy is feedback and reflective writing. As revealed in this study and in existing literature, constructive feedback, from both peers and instructors, helps students construct a better thesis to their argumentative paper. In addition, reflective

writing in class assignments supports metaliteracy as students get a better understanding of how and why they learn. Using active learning techniques such as think-pair-share, instructors can help students write better thesis statements while showing them how to find resources to support or oppose their argument. With the switch to remote learning in the wake of the COVID-19 pandemic, librarians and instructors who may have less experience teaching writing skills can incorporate course curriculum in this study into an online course to help students improve their writing and information literacy skills.

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MAKING METHODS RELEVANT: UNDERGRADUATE RESEARCH METHODS AND THE CONTENT ANALYSIS PROJECT

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ABSTRACT

Teachers of undergraduate research methods classes may struggle at times to keep their courses engaging and to have students view the material as relevant to the occupations they will soon enter. This article discusses a content analysis assignment and how it offers a way for students to demonstrate critical thinking and acquire data analysis skills. Through the use of multiple high-impact learning practices, the assignment requires students, individually or in a group, to identify data appropriate for content analysis and then, with faculty guidance, develop research questions, manage the data, conceptualize and operationalize themes, perform content analysis, draw conclusions from the data, and assess the validity and reliability of their work. We discuss the benefits and potential pitfalls of the assignment and analyze data (both quantitative and qualitative) derived from student evaluations of their content analysis project.

Keywords: Undergraduate Research Methods, Content Analysis, Assessment, Course Relevance, Critical Thinking, Data Analysis Skills, Student Evaluation Data, Active Learning, Project Based Learning

INTRODUCTION¹

Higher education increasingly focuses on maximizing recruitment/applicant pools, student retention, and return on students' investment in a college degree (Moran, Wells, & Smith,

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2015; Wismath & Newberry, 2019). Engaging students in high-impact learning assignments has been identified as a best practice for increasing the appeal of academic programs, thus enhancing recruitment, retention, and future employment that delivers a return on investment (National Survey of Student Engagement, 2007). While a number of high-impact activities, such as learning communities, writing-intensive courses, research with faculty, and field experience, have been identified (National Survey of Student Engagement, 2017), how best to incorporate high-impact learning experiences into individual courses remains an open question. Beneficial outcomes, especially for at-risk students (Bonet & Walters, 2016), have been noted when high-impact activities (National Survey of Student Engagement, 2017) have been incorporated into the classroom experience (Crowe & Boe, 2019).

Those who teach research methods know the challenge in engaging students who may not view such material as relevant to the careers they envision. Research methods, often a core course in the curriculum, was one of six content areas the Academy of Criminal Justice Sciences (ACJS) required in its certification standards for baccalaureate programs (ACJS, 2016). Undergraduate research methods courses typically emphasize training students to engage in critical evaluation as an informed consumer rather than to produce research (Hagan, 2012; Kessler & Swatt, 2001). The undergraduate-level research methods course ideally instills in students an array of key skills, values, and knowledge that together transcend a tight focus on research design and data measurement. The course should also help students overcome angst or indifference related

to working with mathematical or statistical data (Peyrefitte & Lazar, 2018; Wisecup, 2017). Thus, the research methods course should not only fit squarely within the liberal arts tradition but also provide analytical skills that can be used in a variety of careers, including criminal justice (Flanagan, 2000). Undergraduate research has also demonstrated positive associations with key goals of a liberal arts education (Kilgo, Ezell Sheets, & Pascarella, 2015).

The purpose of this article is to present a content analysis assignment as a high-impact learning exercise for use in an undergraduate research methods course. We believe that the content analysis project (CAP), through the use of high impact practices, increases student engagement and learning. The assignment requires students, individually or in a group, to identify data appropriate for content analysis and then, with guidance, to develop research questions, manage the data, conceptualize and operationalize themes, perform content analysis, draw conclusions from the data, and then assess the validity and reliability of their work. We then assessed the assignment using students' evaluation of, and feedback on, the assignment itself.

REVIEW OF THE RELATED LITERATURE

Student Engagement

Student engagement has been identified as key to student retention in higher education. One pedagogical approach that appears to bolster student engagement is the high-impact learning assignment. The National Survey of Student Engagement (NSSE, 2017) identifies six high-impact

practices: learning communities, service learning, research with faculty, internship or field experience, studying abroad, and a culminating senior experience. In addition to increases in the quality of faculty-student interaction, high-impact practices are associated with increases in the time required for projects, the intensity of the work, and collaboration with faculty.

High-impact activities typically take place outside of traditional classroom settings (Fink, 2016). Tukibayeva and Gonyea (2014) identify two important elements of high-impact practices: frequent feedback and direction, as well as the synthesizing of ideas and concepts. They also note that undergraduate research is connected to higher-order learning, which promotes the synthesis, evaluation, and application of theoretical concepts to specific inquiries concerning real-world situations. Sullivan and McConnell (2018) also emphasize the greater quality of student work produced for appropriately challenging and meaningful projects requiring a greater investment of time and energy.

Research project-based courses are fairly common and offer several benefits (Crowe, & Boe, 2019; Lanning & Brown, 2019). For instance, Bailey, Rembold, and Abreu (2020) measured undergraduate students' attitudes of skill development, self efficacy, enjoyment, relevance, anxiety, and aversion to difficulty while taking their project-based research methods course. Encouragingly, the researchers noted skills and enjoyment of research increased and research anxiety decreased after taking the research course. Likewise, Wollschleger (2019) noted significant increases in student course evaluations moving to an applied projects-based approach

in research methods in sociology. Crowe and Boe (2019) compared outcomes between student research offered through independent study and research based in a required senior seminar course. They report more favorable outcomes for students participating in research as part of a course allowing for greater participation and engagement in the entire process. In a broader application, Kilgo and Pascarella (2016) noted the importance of participating in undergraduate research opportunities outside of the classroom. While controlling for other variables, they noted no statistical association between participating in undergraduate research and increased four-year graduation rates, but students were more likely to pursue graduate work. This finding was reinforced by findings by Miller, Rocconi, and Dumford (2018). Incorporating research opportunities into required courses provides the opportunity for these activities without the additional time and credits to degree completion, which has been identified as a concern.

To stress the wide-ranging value of high-impact learning, the NSSE (2007) advocates enabling "every student to participate in at least two high impact activities during their undergraduate program" (p. 8). The NSSE annual *survey* (2018) measures student participation in a number of high-impact learning activities, as well as other types of engagement in classroom campus activities. This survey lists seven student activities that are integrated into our assignment: (a) preparing two or more drafts of a paper; (b) working with other students on a class project; (c) applying facts, theories, or methods to practical problems or new situations; (d) using examples or illustrations to explain difficult points; (e) reaching

conclusions based on the student's own analysis of numerical information; (f) writing a paper of more than 11 pages; and (g) working with a faculty member on a research project. The CAP incorporated activities deemed important for student engagement and academic challenge.

Critical thinking, effective writing, and the ability to integrate and apply concepts are key skills that students should acquire and polish in their university experience, and various studies (Sullivan & McConnell, 2018) have reported on methods that may improve these skills. Peat (2006) has evaluated the use of a rubric for scoring research design proposals that students developed in an undergraduate methods course. In her rubric, learning objectives focused on the literature review, research methodology, and the application of research concepts to a student's own project. Peat notes that the lowest average grade for the research proposal assignment was recorded in the semester prior to the use of this rubric. Peat also reports that the benefits of the rubric include clarifying expectations, facilitating communication on the assignment, and making the grading process more objective. We have also provided our rubric to students early in the semester to guide their efforts.

Applications in Criminal Justice

Kardash (2000) notes the value of learning experiences whereby students become familiar with conceptual material but then gain a deeper understanding of it when they encounter real-life examples of those concepts. Part of the value of the CAP comes from connecting it to skill sets and activities encountered in criminal justice work. For example, content analysis has been

used to analyze criminal motive, as in the case of the Unabomber (Gottschalk & Gottschalk, 1999). In content analysis using computer software that measured neuropsychiatric dimensions of the Unabomber's manifesto and written messages, Gottschalk and Gottschalk (1999) note, "the writings obtained from his cabin indicate violent and murderous motivations and revengeful intentions" (p. 27). Likewise, Grant (2008) discusses various questions for which forensic authorship analysis might provide answers. Forensic analysis can address legal issues such as the authorship of text messages, exploitive internet conversations involving minors, confessions, witness statements, and documents critical to investigations of illegal activity. Content analysis can be useful when analyzing police reports for key information that may indicate patterns of crime, such as estimated time of an offense, items stolen, method of entry, and physical attributes of the burglarized property (Scott, 2004, 2016).

The correctional literature also contains examples of content analysis. In a widely cited study of unobtrusive methods, Klofas and Cutshall (1985) used content analysis to categorize 2,800 graffiti in a shuttered juvenile detention facility in Bridgewater, Massachusetts, and thereby gain information on the lives of incarcerated youth. More recently, Block and Ruffolo (2015) used content analysis to examine the pre-incarceration mind-set of sentenced individuals who would be entering prison.

While an extended discussion of content analysis is beyond the scope of the current paper, there are a number of resources available that provide detailed descriptions of content analysis (see Berg, 2009; Mackey, 2014; Strauss, 1990;

Strauss & Corbin, 1990). Since research methods textbooks typically only provide scant (e.g. 1-2 pages) coverage of content analysis, for the purposes of the CAP assignment, this content is supplemented with additional readings that are provided to students. For the assignment described here, content analysis is both a research design and a data analysis technique. Holsti (1968, p. 608, as quoted in Berg, 2009, p. 341) defines content analysis as “any technique for making inferences by systematically and objectively identifying special characteristics of messages.” Berg (2009) stressed the role of content analysis as a mechanism for making sense of various forms of communication, as well as for identifying patterns within the content.

THE CONTENT ANALYSIS PROJECT

The CAP we assigned to our students has five specific learning objectives:

- (a) locating appropriate academic sources and then synthesizing the scholarship to compose a literature review
- (b) demonstrating writing skills appropriate for the discipline of criminal justice
- (c) demonstrating problem formulation, conceptualization, operationalization, and sampling techniques and assessing reliability
- (d) constructing and managing an original data set
- (e) analyzing original data and drawing conclusions

Appendix A contains the text of the assignment itself. Appendix B contains the grading rubric

for the assignment. Appendix C contains selected components of the course syllabus, including information about the CAP assignment itself and the semester’s schedule of events so readers can see how the assignment was apportioned during the course of the semester.

The most fundamental aspect of the CAP assignment is obtaining a data set. We urge students to access existing, publicly available sources of data. Publicly available data are ideal for student use because such data are not subject to Institutional Review Board rules per Department of Health and Human Services (2009) Title 45 Code of Federal Regulations Part 46, which defines human subject research as obtaining “(1) Data through intervention or interaction with the individual, or (2) Identifiable private information.” We therefore advocate using data sources in the public domain that do not require interacting with people and do not contain personally identifying information. (However, it is always a good idea to consult IRB representatives when planning coursework that involves using personal data of any type). Using an online data source has the advantage of allowing students to collect data in a relatively short period of time (Seale et al., 2010), which makes the CAP assignment feasible for a traditional 15-week course.

The first two steps in the CAP assignment are for the students to identify a data source amenable to content analysis and to formulate a problem statement based on the data found in that source. The data source must be one that facilitates later phases of the assignment (e.g., sampling). Examples of public domain data sources include comments posted about YouTube videos or online news articles offered by

mainstream media. These user comments may suggest a criminal justice topic, be sufficient in number to facilitate sampling, and be wide ranging enough to allow for category development. For example, the video titled “Open Carry Legal in New Hampshire?” (<https://www.youtube.com/watch?v=5FWXnK5UyRI>) is accompanied by nearly 2,300 comments.

When students begin their effort to identify a feasible data source and develop a problem statement, we stress the need for a narrow focus so that they can complete the assignment within the 15-week term. We then walk students through the steps of manual content analysis. For this, we use grounded theory techniques of immersion, open coding, and axial coding (Berg, 2009).

The first stage of manual content analysis is *immersion*, during which students read through the information found at the source and familiarize themselves with its content and tone. The second step is *open coding*, when students, having read the source material, determine all the possible themes that may be present in the material and divide those themes into categories. This step produces the full range of themes to be analyzed but does not reduce their number (Mackey, 2014). The unit of thematic analysis, whether individual words or something else, would depend on the student’s data source. As students determine the themes, or “open-code” the information in their data source, they typically judge only the information’s “manifest content,” or that which is on the surface and straightforward. Berg (2009) contrasts this manifest content with latent content, which depends on the coder’s interpretation of words and phrases. The third stage of content analysis

is *axial coding*, which involves “relating subcategories to a category” (Strauss & Corbin, 1990, p. 114). While open coding creates a wide range of categories, axial coding connects related categories and themes and thus reduces the number of categories. The coding process is described in more detail in the work of Block and Ruffolo (2015, pp. 313-314), Klofas and Cutshall (1985, p. 373), and Mackey (2014, p. 2). For example, in the video titled “Open Carry Legal in New Hampshire?,” the 2,300 comments were ultimately categorized into 17 unique categories (Mackey, 2013). Each category would need a mutually exclusive definition to distinguish it from other categories and a detailed process of coding to address potentially overlapping themes. For example, six of the 17 categories were: benefits of open carry, critical of open carry, favorable of the police handling of the encounter, critical of the police handling of the encounter, positive attributions of the main protagonist, and negative attributions of the main protagonist.

Once students have identified the themes in their data, we work with them to define those themes. The quality of the students’ coding and categorization of their data is demonstrated through *inter-rater reliability*, which they must assess. To do so, most students select a sampling technique, draw a sample from their data, and share their results with another student or group. Students who are working alone can determine *intra-rater* reliability by drawing another sample themselves and repeating the coding procedure. To help students navigate this process, we divide the project into increments, with each increment having its own due date. With the permission of previous students,

we also provide our students with examples of strong projects from previous semesters.

METHODS

To evaluate and assess the learning objectives of the CAP assignment, we collected four semesters' worth of feedback data (Spring and Fall 2016, Spring 2017, and Spring 2018) from research methods students for whom we were the instructors of record (four classes total). This analysis relies solely on the results of student feedback obtained from our face-to-face course offerings, as few students enrolled online provide faculty/course evaluations. The CAP was a course requirement for each of the methods classes for which outcomes were assessed. Because assessment of the CAP assignment would be a major component of this paper, we obtained a significant number of student evaluations ($N = 74$) over multiple semesters. We then organized the assessment data in the aggregate so that no one student or term could be identified.

Quantitative Assessment of Student Learning Objectives

Administered on the last day of class to each of four course sections, the evaluation instrument contained both closed- and open-ended questions (see Table 1 for the closed-ended questions, as well as the means results for each of these questions). We used SPSS software to analyze responses to the nine closed-ended (i.e., quantitative) questions. Students responded by placing a vertical slash on a 10-cm line (a variation of magnitude estimation) somewhere between “totally disagree” on the left and “totally

agree” on the right (scored 0-10). We have used this response category successfully in previously published research efforts. The first five questions emanated from the specific learning objectives of the assignment, but we also included a handful of other questions relating to measuring (1) the relevance of the assignment, (2) job tasks in CJ, (3) whether enough examples were provided for the CAP, and (4) the helpfulness of the required course text. Specifically, we were interested in measuring the extent to which the CAP facilitated student learning and engagement in the course.

Qualitative Assessment of Student Learning Objectives

Realizing that open-ended questions would provide richer feedback, we offered students three opportunities to provide comments. We organized and analyzed the responses to these open-ended questions by using NVivo (qualitative data analysis software). Student comments were coded into themes that emerged from the data. Manifest content of the student comments was used to determine themes, and all coding and content analysis was completed by one of the authors. Thus, to analyze our data, we used the same process (immersion, open coding, axial coding) we had taught our students to use in the CAP assignment. Describing the themes helped us to conceptualize them prior to operationalizing the themes (i.e., coding/dividing them into categories). A single sentence in a student comment could contain multiple themes. The number of themes that emerged from the data (student comments) and the “total comments” offered by students were summed and are listed at the bottom of every table of results

presented here. Each time a comment, or part of a comment, was identified as a theme, it was counted as a “reference” (the term that NVivo uses) and coded accordingly. Individual theme percentages were calculated by dividing the frequency counts of themes (references) by the total number of comments offered by students (see Table 2).

RESULTS

From the student evaluation instrument, we first assessed the quantitative questions addressing student learning objectives. We find that the

results were generally positive, with the two highest means/scores being Question 5, “The CA project allowed me to analyze original data and draw conclusions” (a mean of 8/10), and Question 7, “Examples were provided which helped explain the project, yet still providing the opportunity for students to develop their own unique projects” (a mean of 8/10). Because we spent so much time showing students the relevance of the CAP assignment to actual job tasks in CJ professions, we were pleased to see a mean of 7.3/10 on a question about relevance. The lowest assessment score, one that was unrelated to the objectives of

Table 1:
Student Evaluation Results—Quantitative Data

Item #	Question (response measured on 10 cm line, from totally disagree to totally agree, scored 0-10)	Mean
1	The CA project has helped me learn how to locate appropriate academic sources, synthesize, and compose a literature review.	7.7 / 10
2	Because of the CA project, I have been able to demonstrate appropriate writing skills for the discipline of criminal justice.	7.1 / 10
3	The CA project has helped me to demonstrate problem formulation, conceptualization, operationalization, and sampling techniques and to assess validity and reliability.	7.4 / 10
4	The CA project taught me to construct and manage an original data set.	7.8 / 10
5	The CA project taught me to analyze original data and draw conclusions.	8.0 / 10
6	The instructor explained the relevance of the content analysis assignment to actual job tasks in criminal justice professions.	7.3 / 10
7	Examples were provided that helped explain the project yet still gave students the opportunity to develop their own unique projects.	8.0 / 10
8	I was able to connect what I learned doing the content analysis project to terms, concepts, and procedures from the text and class.	7.2 / 10
9	The required textbook for the course was helpful in facilitating my learning of course material.	6.4 / 10
		N = 74

the CAP, concerned the required textbook. One class of 19 students had been asked to provide their thoughts on the textbook and 95% of them had very positive comments to offer about the book, suggesting that there may have been some confusion about this particular evaluation item, thus, we will look to reword this item in the future so students will know that “course material” includes content and qualitative data analysis.

The three open-ended questions concerned

what students liked most about the CAP, what they liked least, and how the assignment could be improved. First, we assessed what students liked most about the CAP. Representing the largest category of references (20) were students who stated that they enjoyed the project and/or believed that the CAP was fun and/or exciting. “I enjoyed creating my own data and analysing [sic] its meaning,” one student wrote. Another student offered, “To analyze 500 comments, first

Table 2:
Analysis of Student Responses to the Question “What did you like most about the CAP?”

Theme label	Theme description	# of references	%
Enjoyment of the project	Enjoyment of the project and/or the CA project was fun and/or exciting	20	20
Learned a lot	Learned a lot from the project in general or the project facilitated greater understanding or orientation of certain components of the project	18	18
Letting us choose the project	Could find and use our own data set on a topic that was more/most interesting to us	14	14
Could call it my own	Enjoyed compiling my own data and/or conducting my own research	7	7
Something new	Project was something completely new to me	7	7
Project was split up	Liked how the project was split up into smaller sections to make the project less overwhelming	6	6
Hands on	Enjoyed doing “hands-on” research	5	5
Topic was interesting to me	Liked the process of collecting and analyzing data on a topic that was of interest to me	5	5
Nothing or not sure	Didn’t like anything about the project, not sure [or response was vague]	5	5
Had lots of time to work on it	Appreciated that the instructions were provided at the beginning of the term and/or had a good amount of time to allot to each part of the project	3	3
(101 total comments / 18 thematic categories / top 10 themes)			

time ever in my life, it was cool.” Some students wrote that certain portions of the project were fun or exciting, such as the coding process itself or the sampling component of the project. “The sampling [portion] of the project (CA#3) because i [sic] had the opportunity to code. Coding was very exciting.” In addition to enjoying the project, several students confided that the CAP facilitated their learning and increased their understanding of certain components of the project (18 comments). Several students were grateful for having had the opportunity to choose the subject area of their project (14 comments). It should be noted that the CAP was required in addition to lecture material about other, more traditional research methods–related topics, such as sampling, survey design, and experimentation, among others. The CAP thus provided an opportunity for students to learn and then use and assess important procedures and concepts related to research methodology, such as sampling, assessing reliability and validity, using archival and secondary data sources, and so on. We believe that students learn more material and are better able to apply what they have learned when they actually complete the tasks and processes associated with research methods. Judging by several of their open-ended comments, the CAP did result in increased learning. One student wrote in the course evaluation, “Doing the project made me understand the concept [as] opposed to just hearing about it in a lecture.”

Although 18 comments referenced learning a great deal from the project, some students also noted the difficulty and time-consuming nature of the project. For example, one wrote, “[You] Cannot half-a@@ this project. [It was a] Good

learning experience.” Other common themes that emerged from the responses to the question about what students most liked about the CAP were: (a) being allowed to choose the topic/subject area of the project (14 references), (b) the novelty of the project (7 references), (c) being able to call the project their own (7 references), (d) the manageability of the project, given that it was split up into sections (6 references), and (e) the “hands-on” nature of the project (5 references), among others. Although students found the project challenging and time consuming, it is apparent to us after reading these comments that many students were better able to understand the concept of content analysis by actually “doing it” and walked away from the course with a greater understanding of the method and its relevance to the field.

Second, we assessed what students liked least about the project. Clearly, some students were confused by the CAP, as the response “the assignment was confusing” accounted for 15 references (Table 3). Some remained confused throughout the project (e.g., one student stated, “I still feel somewhat lost during the course of the assignment, I wasn’t exactly sure about whether I was doing the project the way it was supposed to be done”), while others were confused mostly at the beginning of the project but became less confused as their work on the project progressed (e.g., “Just was a little confusing in the beginning but became much clearer after it was discussed in class”). Many of the student comments citing the confusing nature of the project also mentioned its time-consuming nature. Although these two categories were coded into different themes, comments like the following were not uncommon:

“Not enough time and I still feel as if I don’t have a full grasp on what and how to do content analysis.” This is a good example of a student comment that could be, and was, coded under two different themes: not enough time to spend on the project and the confusing nature of the project.

Several student comments mentioned confusion with, and lack of time for, the assignment.

Fourteen comments specifically mentioned the “amount of time the project took” as something that they liked least about the project, while 11 mentioned that there was not enough time to produce a quality product. Although we believe that these two complaints represent distinct categorical themes, they both deal with time or the lack thereof, and, if combined, they represent 25 of

Table 3:

Analysis of Student Responses to the Question “What did you like least about the project?”

Theme label	Theme description	# of references	%
Confusing	Assignment was confusing, hard to understand, and/or vague	15	18
Amount of time it took	Project was time consuming	14	16
Not enough time to spend on the project	There was not enough time to work on the project to produce a quality result	11	13
Miscellaneous	[This is a kitchen sink category where no other themes emerged. Items included “there were too many parts to it,” “I had to work by myself,” and recommendations for the course as a whole, not the CAP specifically, among others	11	13
Literature review	Did not like the literature review component of the project	9	11
Overwhelming/difficult	The project was overwhelming at times and/or difficult	8	9
Not enough assistance or examples	Believed there was not enough assistance, guidance, and/or examples to complete the project	4	5
Coding	Did not care for the coding process, or found the coding process to be the most difficult and/or confusing aspect	3	4
Length the paper had to be	The length of the paper and/or how long the project was or had to be	3	4
Could not find an appropriate, interesting data source	Had difficulty at the beginning of the project finding an interesting, relevant, or appropriate data source to use	2	2
Total newness	Didn’t like how the project was something totally new and/or unfamiliar	2	2
(85 total comments / 13 thematic categories / top 11 themes)			

the 85 (29%) total references for this open-ended question. Clearly, this was a time-consuming project, and that is one reason we had decided to divide the project into four components. Our goal was to make the project more manageable. Among the other themes that emerged in the “least liked” open-ended response category were (a) the literature review (9 references); (b) the difficulty of the project, to the point of being overwhelming at times (9 references); and (c) not enough assistance or examples (4 references).

To assess the reliability of our thematic coding of the student comments, we trained a research assistant to do a random check. The assistant randomly selected the question “What did you like least about the project?” and coded the responses. We then compared these recodes to our original coding to determine the extent of congruence in applying coding rules. This process resulted in 63 agreements out of 85 themes (within 70 comments) generated from the individual responses to this question, resulting in a reliability coefficient of .74. Other research efforts exploring similar types of data and using similar methods have considered reliability coefficients in the .70 to .80 range to be acceptable or satisfactory (see, for instance, Block & Ruffolo, 2015; Dupre & Mackey, 2003). Most disagreements among coders occurred within the “difficult” and “confusing” and “time consuming” and “not enough time” themes, which suggests that coding rules and descriptions of these themes should be more narrowly defined in future analyses. Although we still believe that each of these themes represents a distinct category, all of them are certainly theoretically similar,

resulting in potential coding disagreements. In any event, given the high frequency of references for all of these themes and how they are displayed in Table 3 (by descending frequency), the reader can easily determine which themes are most numerous and thus most important to students.

Last, we asked the students if they had any suggestions to improve the project. Because the CAP was new and represented a great deal of work for students, we were very interested in student responses to this question. Among those students who responded to the question (versus those who left the space blank), 21 of the 70 total comments for this category (30%) offered no specific suggestions for improvement. This comment is representative: “I am afraid I have no real suggestions to give besides recommending you keep doing it.” As this example shows, some of these comments in the “no specific suggestions” theme recommended that we continue to do something that we were already doing with the project, like keeping the CAP divided into increments or continuing to use student examples to facilitate student learning (e.g., “Continue to use past students [*sic*] examples – they helped a lot!!”) (Table 4).

The second most commonly referenced theme comprised student recommendations that more time be spent on the CAP (15 references; 21%). One student commented, “I liked that you provided examples and I learned a lot from this project! Would suggest a little more time to complete each section of the project.” Of these 15 references, about half (8) specifically suggested that more class time be spent on the CAP. For example, one student wrote,

“Overall I liked the project but I think that we should have gone over requirements and how to do it in class more.” More specifically, “Some time in class to work on it; it would be nice to get insight from classmates and professor cause [sic] I’m not an outspoken person.” Additional themes that emerged from these responses were that more examples would have been helpful (9 references; 13%) and that more details and/or explanation of the project would have helped (8 references; 11%), among others.

DISCUSSION

The CAP described here allows students to become familiar with research design concepts and analysis techniques in a structured, intensive learning experience. For the CAP, students must not only learn methodological concepts but also evaluate and apply these concepts to a research problem. Although some improvements to the CAP could be made, a review of the student assessment data collected thus far reveals that we

Table 4:

Analysis of Student Responses to the Question “Do you have any suggestions for improvement?”

Theme label	Theme description	# of references	%
No suggestions for improvement	No suggestions for improvement were offered	21	30
More time to spend on the project	More time to spend on the project would be beneficial	15	21
More class time for the CAP specifically	Specifically suggesting that more “class time” be spent on the CAP	8 (out of 15 above)	11
More examples	More examples would have been helpful	9	13
More explanation of expectations	More details and/or explanation of the project would have helped	8	11
Miscellaneous	[Comments here included “smile more,” “I liked the pizza party,” among others]	7	10
Be provided with a few topics to choose from	Pre-selected topics and data sources (provided by the professor)	2	3
Modification of deadlines	A modification of deadlines was suggested to make the project easier or more doable	2	3
	[Themes with 1 reference are not displayed]		
(70 total comments / 13 thematic categories / top 7 themes)			

are meeting the learning objectives. One of the advantages of the CAP is that we can have the students collect existing, archival, or other unobtrusive data, which does not require Institutional Review Board approval, thus saving valuable time during the brief weeks of the course term. In line with the observations of Block and Ruffolo (2015), we note that the typical data sources and methodology for the CAP have several limitations. While existing online discussions provide accessible data and typically do not require IRB approval, they present a number of challenges. For example, there is no opportunity for interaction and follow-up with individuals. In addition, the validity of the information typically used for these projects may be questionable. Depending on the specific source used, there may be data from trolls, advertisers, and posters. However, the positive attributes of the data may mitigate these concerns. Block and Ruffolo note that postings can be more authentic and naturalistic, since they are not produced by researcher prompts. They also point out that internet-based content analysis may be useful for accessing hard-to-reach populations. For this assignment, it is important to have a source of data that can be collected at one point in time. These limitations do not exist for content analysis of documents and archived material, which have been employed in research methods courses for sociology students (Peyrefitte & Lazar, 2018; Wollschleger, 2019).

Wisecup (2017) recognizes the importance of connecting research skills and experiences to career aspirations. Despite our efforts to demonstrate this connection, some students still struggle to see how content analysis is relevant to the

careers they envision. One way to address this problem might be to have guest speakers describe how they employ content analysis in their work. This could tie in nicely with an opportunity for students to conduct occupational/professional interviews and/or inquire about agency internships. We have discussed the process of these interviews, as well as the benefits thereof, elsewhere (e.g., Mackey & Courtright, 2014). Although Miller, Rocconi, and Dumford (2018) report a stronger association between undergraduate student participation in research with faculty outside of a course with their subsequent graduate school attendance, they also note undergraduate research had a positive correlation with students reporting starting a new job after graduation.

Given the student comments about what we could do to improve the CAP, it is clear that the examples we provide are helpful, so we intend to keep providing them. Some students wanted more examples. In the past we have asked students who wrote very strong projects for permission to digitize their work/proposals and share them with students enrolled in future sections of the course. It is also clear that some students struggle with how to actually code data into themes. Although we talk about how to code, as well as the different ways to code, it is possible that students would benefit from actually witnessing how this is done. In light of these comments, we intend to spend more time in actually *showing* students how to code data (i.e., words and sentences) into themes. This could be accomplished via using Excel and/or Word, and perhaps NVivo (qualitative data analysis software) to provide students with visuals of

the coding process via selecting and highlighting certain words or phrases from a data set and dropping them into themes (called “nodes” in NVivo). Walking students through this process, one step at a time in the classroom, would likely help them visualize and thus better understand the coding process. Through this modification, we expect that we could improve upon at least some of their confusion and their “suggestions for improvement” noted in Table 4. In addition to providing students with more specific coding examples, we will continue to look for ways to streamline the assignment, perhaps considering modifying the CAP into *one* stand-alone homework assignment (with reduced requirements of course) in a series of other (unrelated) assignments. We suspect that at least two of the top three “least liked” aspects of the assignment listed in Table 3 (“amount of time it took” and “not enough time to spend on the project”) would be improved in so doing. Future assessments of the project, given these modifications, would show whether or not such changes would influence student learning objectives. Using a previously developed topic and data set, we could illustrate conceptualization and theme/node creation and continue on to the coding process (making multiple passes through the data) and perhaps conclude the walk-through with assessment of reliability—all done in the classroom for students to see. Considering the feedback already received, we believe this approach would help at least some of our students.

As mentioned above, it is apparent that we need to at least explore ways to streamline the assignment. Because of the COVID-19 pandemic this past term, many classes that were initially

face-to-face were thrust online. This provided one of the authors the opportunity to attempt to streamline the assignment into an *analysis-only* portion of the assignment whereby students were provided a data set and a research question and were asked to analyze a random (10%) sample of last statements by Texas death row inmates (which are publicly available) with a specific research question in mind. In this streamlined assignment, students did *not* have to come up with a topic, find a data set, complete random sampling of the data, nor complete intra-rater reliability. Students could focus their efforts solely on analyzing textual data. The quality of these efforts seemed high, especially given the timeline for completing the assignment, which was three weeks. Due to the uniqueness of the spring 2020 term (i.e., the pandemic), this shortened version of the assignment was not evaluated, but this “experiment” seemed to go well enough to try again and can certainly be evaluated at a later date.

We continue to use this assignment in our research methods classes. Based on student feedback, we believe that the CAP, although it represents a substantial amount of work for everyone involved, is a worthwhile project and one from which students can learn a great deal. When viewed through the lens of the National Survey for Student Engagement, the CAP meets the definition of several of their recommended “high impact activities for an undergraduate program” (2007, p. 8). With so many students ($N = 21$) offering “no suggestions for improvement of the CAP,” we believe that the CAP is a successful and worthwhile assignment, and we will continue experimenting with it and expanding upon our baseline data. The CAP assignment increased our

interactions with students more as they navigated this complex assignment that involves learning a technique completely new to them. This is an assignment that students have to actively engage in to complete and do well in. Inevitably, some students chose not to take an active role, but most do. In our opinion, the students who engage are excited to use their creativity, imaginations, and critical thinking skills on such a unique assignment. As educators, it is refreshing to work with students as they use their imaginations and problem solving skills. Having said that, this is obviously a time consuming process for both students and faculty so this kind of assignment lends itself to smaller classes and faculty who are not afraid to hold office hours and meet with students outside of the classroom.

Lastly, we are pleased to report that at least four of our research methods students have participated in Edinboro University's annual Celebration of Scholarship (COS), a college-wide event in which students, in consultation with faculty, present their research in a competitive yet supportive forum. Two groups of students won recognition and financial awards (from the provost's office) for their research, so it is apparent that the CAP can result in high-quality and interesting student research.

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APPENDIX A

Research Methods in Criminal Justice: Multi-Stage Content Analysis Assignment

Learning Objectives

1. Locating appropriate academic sources, synthesizing sources, and composing a literature review
2. Demonstrate writing skills appropriate for the discipline of criminal justice
3. Demonstrating problem formulation, conceptualization, operationalization, and data sampling techniques, as well as assessing reliability of data
4. Constructing and managing an original data set
5. Analyzing original data and drawing conclusions based on that analysis

Grading

There are two grading options for the assignment: individual or group (group members would receive the same grade for the project). Students must choose a grading option at the start of the assignment. You should fully consider the advantages and disadvantages of each option prior to making your decision. The grading for this assignment is based on polished drafts and revisions. Therefore, it is key to turn in work by specific due dates. Material turned in late will be penalized at each stage of the process.

Topic Selection

The assignment is based on polished drafts and revisions. Therefore, it is key to hit specific due dates. Late papers will be penalized at each stage of the process. *This handout is not intended to serve as a “how to” list for the project, but instead is intended to give students some idea as to how the CAP will unfold throughout the term and what kinds of processes will be involved in each stage of the project. More specificity on each stage of the process will be provided to students as the CAP unfolds.* Although specific examples will be provided in class, points to consider before selecting a topic and gathering data:

- Is the topic researchable, given the available time, resources, and data accessibility?
- Do you have a personal interest in the topic that might help to sustain your attention throughout the project?
- Does the study topic fill a void or replicate, extend, and develop new ideas in the scholarly literature?

- The research problem needs more than a yes or a no response or a relation; you need an interpretation of data.
- The research problem is also not just producing a statistic or a number.
- Also, make sure it's not being used just to support a position. This would be more of a position paper rather than a scientific paper.

Part I: Introduction (two to three paragraphs, with sources properly documented in APA citation style)

The introduction to your content analysis paper should contain a brief overview of the issue/problem that you will study. This section should address the social or policy significance of the problem. The significance of the study is the “so what?” aspect of the project. The introduction should culminate with the purpose statement, which establishes the direction for the research. The purpose statement is a one-sentence synopsis of the overall purpose of the study. The writing style should be formal and use the third-person point of view. Write this introduction in a way that stimulates interest and conveys the importance of the issue; a broad readership should be able to relate to it. Although drafting the content analysis paper will begin with the introductory section, keep in mind that it may be necessary to revamp the introduction quite a bit by the time you complete your study and prepare the final version of your paper.

Part II: Literature Review (five to seven pages, minimum of 12 academic sources)

The purpose of this portion of the content analysis assignment is to produce a quality review of the existing literature related to your research topic. The review of the related literature should indicate how your study fits into the context of the research that has already been published. The literature review should discuss a minimum of twelve scholarly works related to your topic. Some of the scholarly academic sources you discuss may be the same ones you mention in your Introduction. The structure of the literature review will be determined by the nature of your research topic.

Part III: Methodology (four pages, appropriately documented) Key areas to address (checklist):

- Explain how your study picks up where the already published literature left off or how it follows the lead of previously published work
- Discuss why content analysis is a worthwhile tool in the field
- Describe the nature and type of data
- Conduct content analysis

- Describe the coding process
- Detail conceptualization & operationalization of themes
- Appendix to illustrate themes
- Assessment of the quality of the measures:
- Detail sampling used to determine reliability (inter-rater)
- Validity

Part IV: Results and Discussion (four paragraphs)

- Describe your findings
- Describe how your findings reflect your purpose statement
- Describe how your findings compare to those of the scholars whose works are discussed in your literature review

APPENDIX B

Content Analysis Research Project Scoring Rubric

Area	Below Satisfactory	Satisfactory	Point allocation
Title page per model (DEC 9)	Bland title	Conforms to the model Descriptive & interesting title for the paper	/5
ID data source (OCT 5)	Late	Workable data source for content analysis (feasible, ...)	/5
Introduction: Problem and significance (POLISHED Draft due OCT 16)	Spelling/APA errors Unfocused purpose statement or too broad/vague; not engaging development of topic; and/or significance of the topic not elaborated.	Clear and concise purpose statement; creates interest in topic; and addresses significance of the study (2 to 3 paragraphs)	/ 10
Introduction final (DEC 9)	Spelling/APA errors Unfocused purpose statement or too broad/vague; not engaging development of topic; and/or significance of the topic not elaborated.	*submit Introduction draft hardcopy with comments Clear and concise purpose statement; creates interest in topic; and addresses significance of the study (2 to 3 paragraphs)	/20
Literature review draft (POLISHED Draft due OCT 30)	Spelling/APA errors Lack of integration and synthesis of sources Excessive quotes	APA style referencing in text; APA reference page; Requisite amount of scholarly articles/sources; Integration of source material; Avoided overuse of quotes	/ 25

<p>Literature Review: (final DEC 9)</p>	<p>Ineffective use of transitions between paragraphs; No clear organizational structure, appears rambling and disjointed</p>	<p>Discussion of scholarly studies on the topic; How does this study relate to and extend the related literature Writer presents information in logical, interesting sequence which audience can follow; Headings used to organize material where appropriate (5 page/ minimum of 12 scholarly academic sources) Draft copy with comments resubmitted with paper; Draft comments addressed;</p>	<p>/ 30</p>
<p>Content analysis as a method (DRAFT NOV 9)</p>		<p>Describe the nature and type of data; Describe content analysis; Describe the coding process; Detail conceptualization & operationalization of themes; (4 pages)</p>	<p>/ 60</p>
<p>Assessment of the quality of the measures:</p>		<p>Reliability (inter rater reliability) * indicate who performed inter rater reliability Validity Detail sampling where appropriate (methods section)</p>	<p>/ 10</p>
<p>Results & conclusion DEC 9</p>		<p>Discussion of results; Restates and connects to the introduction Appropriate statistics to describe data Appendix to illustrate themes</p>	<p>/ 20</p>
<p>Mechanics and Sentence Structure DEC 9</p>	<p>sentence construction, organization, paragraph organization</p>	<p>Paper is meticulously proof read Paragraph transitions Writing style integrating citations Spelling errors- errors docked at 2 points each 0-2 errors 10; 3-4 errors 5; 5 plus errors 0</p>	<p>/10 Spelling already Deduct ∞</p>

<p>Referencing & Citation</p>	<p>Less than 12 scholarly academic sources; References listed but not cited in the body of the paper; APA Errors docked at 2 points each</p>	<p>Paper is formatted in APA style; citations in text and reference page formatted correctly. All references in the 'works cited list' are cited in the paper; Minimum of 12 scholarly academic sources are used 12=10, 11=8, 10=6, 9=5, 8 or less = 0 0-2 errors</p>	<p>/10 Deduct ∞</p>
			<p>/ 10</p>
<p>Total points: Letter Grade:</p>		<p><u>points earned</u> = <u>points</u></p>	<p>/ 160 Final grade: /100</p>

APPENDIX C

Selected Components of Criminal Justice
Research Methods Course Syllabus

CONTENT ANALYSIS PROJECT (CAP):

For the purpose of demonstrating an understanding of course materials and the ability to apply them to a practical situation, each student will be required to complete a content analysis research project. Each student will plan a reasonable research project -- starting with a topic and literature review and ending with a discussion of a results section. To make it more manageable, the project will be broken down into *four smaller projects*: 1) topic selection and justification of the topic as a research problem; 2) literature review; and 3) developing a viable design (methodology) to carry out the project, including operationally defining the terms and concepts that will be used in your proposed study and collecting data (methods), and 4) presenting your results and providing a discussion of same. In order to successfully complete these assignments, you will need to make extensive use of your class text, on-line resources, and the library. In its entirety, the project is worth 40% of the final grade. Due to time constraints and the number of students I will have this term, re-writes of the various sections of the proposal will not be possible or accepted, however, you are encouraged to call, email, or visit me during office hours *prior* to handing your assignment in to see if you are on the right track, particularly, if you are confused or have questions. **Please note:** All assignments are due in class on their respective due dates. *In fairness to all, assignments turned in late will be penalized 5 points for each day they are late.*

TENTATIVE COURSE OUTLINE / READING ASSIGNMENTS:

This outline is intended to 1) provide a tentative schedule for the topics and events of the semester, and 2) to provide students with a schedule of the assigned readings. **To do well in this course and successfully complete the project and all assignments, you will have to read and possibly re-read all the assigned readings AND be an active participant in the class. NOTE: This schedule is tentative and is subject to change at any time by your professor.**

- | | |
|--------------------|---|
| Week 1 –
(1/22) | Introduction; description of course requirements and policies;
Introduction: Why care about research methods?
Read Dixon et al. - Chapter 1 |
| Week 2 –
(1/29) | Science and social research
Read Dixon et al. - Chapter 2 |

last day to add or drop a course – Monday, January 29th Library presentation about here...

Week 3 – Designing, organizing, and writing a research proposal

(2/5) Read Dixon et al. Chapters 4 & 14

content analysis project #1 distributed about here quiz about here

Week 4 – Ethical considerations of social science research and Human Subjects Review boards

(2/12) Read Dixon et al. - Chapter 3

extra credit opportunity #1 distributed about here...

Week 5 – Concepts, operationalization, and measurement

(2/19) Read Dixon et al. - Chapter 5

content analysis project #2 distributed about here

Week 6 – Week #5 continued &

(2/26) Sampling introduction

Week 7 – Sampling

(3/5) Read Dixon et al. - Chapter 6

mid-term exam on Wednesday, March 7th extra credit opportunity #2 distributed about here

Week 8 – **SPRING BREAK**

(3/12)

Week 9 – Experimental and quasi-experimental designs

(3/19) Read Dixon et al. – Chapter 7

extra credit opportunity #3 distributed about here

Week 10 – Qualitative data and qualitative data analysis

(3/26) Read Dixon et al. – Chapters 10 & 13

content analysis project #3 distributed about here

Week 11 – Field research and interviewing

(4/2) Read Dixon et al. – Chapter 9

last day to withdraw from a course – Friday, April 6th

- Week 12 – Survey research
(4/9) Read Dixon et al. – Chapter 8
- Week 13 – Survey research continued
(4/16) **content analysis project #4 distributed about here**
- Week 14 – Evaluation research
(4/23) (A break on the reading for you here...)
- Week 15 – Course wrap-up and review for final exam
(4/30) **last day of class – Friday, May 4th**
- Week 16 – **Final exam – Wednesday, May, 9th from 12:30 – 2:30pm**
(5/7)



USING UNDERSTANDING BY DESIGN TO CREATE A UNIVERSITY ORIENTATION CLASS GROUNDED IN INFORMATION LITERACY

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ABSTRACT

This article describes the process of redesigning UC1130: Information Literacy for College Research, a class taught at the University of Toledo, in Toledo, Ohio. This redesign was conducted by Jennifer Joe and Wade Lee-Smith, librarians at the university, and facilitated by the University of Toledo's University Teaching Center, Denise Bartell, the Associate Vice Provost for Student Success, and Thomas Atwood, the Associate Dean of University Libraries, who was the creator of the original curriculum for UC1130. The course redesign was motivated by two factors: incorporation of the ACRL Framework for Information Literacy in Higher Education, and the class's inclusion in a FYE Pilot Program.

Keywords: Understanding By Design, Information Literacy, Instruction, First Year Experience

INTRODUCTION

The University of Toledo has taught a class entitled, "Information Literacy for College Research" since 2012. The home program, department, and college for the class has changed frequently over this time period due to university restructuring, but it has been taught exclusively by librarians. This class is credit bearing, with students earning credit in the humanities subset of the university's

general education classes and is distinct from the information literacy instruction taught by librarians as drop-in guest lecturers in other classes. Its latest iteration is housed in University College and was taught in Fall 2019 in two sections by two university librarians. The course description reads,

This course will provide information literacy skills specific to accessing sources and materials appropriate for university level

research. Students will acquire a broader knowledge of library services and resources. Additionally, students will learn to apply research logic in order to utilize library catalogs, electronic databases, the World Wide Web, and print resources. By building experiential knowledge, students will gain an understanding of information creation, dissemination, and applications through utilizing various research strategies and scholarly communication. (University of Toledo, 2018, p. 870)

These goals are accomplished through lectures, demonstrations, and various in-class and out-of-class assignments and are assessed through a research portfolio turned in at the end of the semester.

The class was originally designed by Thomas Atwood prior to the filing of the *Framework for Information Literacy in Higher Education*, published by the Association of College and Research Libraries, which has become a guiding document in the creation of information literacy documents, plans, classes, and programs in university libraries. Some additional modifications had been made, both formally and informally since the course was designed, but it was important to the new instructors to assure the alignment of the course to the Framework.

UNIVERSITY ORIENTATION AT THE UNIVERSITY OF TOLEDO AND THE FYE PILOT PROGRAM

University orientation has been offered at the University of Toledo in individual departments

and colleges and freshmen are required to take it in many programs. These orientation classes can vary, depending on the needs and desires of the program, but a typical class, AR/ARS100, is described in the course catalog as,

Course will introduce new students to the university and college, provide information on requirements, regulations [sic], campus resources and career exploration and help students develop academic skills. It is required of all new students. (University of Toledo, 2018, p. 26)

This example is a college-wide orientation class taught by a variety of individuals in disciplines housed in the College of Arts and Letters. Other colleges, especially in the STEM disciplines and colleges with professional programs, such as the College of Business & Innovation, have their own orientation classes designed for students which are discipline specific.

Recently, the Associate Vice Provost for Student Success, Denise Bartell, and an FYE Task Force proposed a pilot study focusing on changing how university orientation would be offered. This proposal involved embedding the elements of orientation in general education classes that already existed in the university. Bartell had implemented a similar program at the University of Wisconsin – Green Bay prior to coming to the University of Toledo and had impressive results, including higher retention through four years (Bartell, Staudinger, Voelker, Graybill, & Yang, 2018). Participants were also, “12 percent more likely to graduate in four years than their peers from similar backgrounds” (Bartell et al., 2018),

in addition to other self-reported benefits. Volunteers to teach sections of this pilot FYE combination course were solicited and two librarians were approached to teach Information Literacy for College Research (referred to going forward by its course designation, UC1130) as part of the FYE Pilot Program. The two sections would be offered among a total of fifteen sections in a variety of disciplines.

PROJECT TEAM AND PLANNING

The core of the project team consisted solely of the two instructors, Wade Lee-Smith and Jennifer Joe, but the project could not have been completed without a number of other people. The project began at the behest of Denise Bartell, when she discussed the inclusion of UC1130 in the FYE Pilot with Thomas Atwood, who had taught the class previously. He then subsequently asked Wade Lee-Smith and Jennifer Joe in early Spring 2019 to teach the class during the Fall 2019 semester.

Lee-Smith and Joe attended the first information session for the FYE Pilot Program on April 2, 2019. Between this session and other conversations with Denise Bartell and Thomas Atwood, it was clear that the pilot program necessitated the review and potential redesign of the existing information literacy class. In order to achieve this, the instructors for the two sections attended the university's week-long Course Design Institute (CDI) in May 2019. The design institute used Understanding by Design (UbD), also frequently referred to as backwards design, to frame the approach to redesigning the class; while the instructors attended the CDI in part

to receive instruction in UbD, this could be accomplished in other ways depending on an institution's available resources. The Course Design Institute was open to any instructor who wanted to design or redesign a class with guidance from the university's Office of Assessment, Accreditation, and Program Review, but space was limited. There were eleven people in the cohort, including the two librarians. They were the only instructors designing a class for the FYE Pilot Program in the cohort.

UNDERSTANDING BY DESIGN AS A FRAMEWORK

UbD is a way of thinking about teaching that focuses on students, rather than teachers. Wiggins and McTighe (2005) note that a lot of the talk about teaching among educators focuses on what the instructor might want or like but that a more "thoughtful and specific" approach focused on the learner might be more effective in teaching. This approach, taken in the CDI, starts with a big idea—which the facilitator referred to as a big rock (from the big rock parable relayed by Covey, Merrill, & Merrill (1994) in *First Things First*)—which relates the idea that one cannot fit a big rock (idea) in a container (class) if it has already been filled with smaller objects (ideas). Everything that comes after the big idea should connect back to the big idea. From this big idea, the instructor develops their goals, which are "formal" and "long-term" and usually derived from state, institution, or program standards (Wiggins and McTighe, 2005, p. 58). UbD then breaks the big idea down into measurable student learning outcomes (SLOs) using active lan-

guage, after which come assessments that evaluate how well students are working toward those outcomes, and then, finally, aligning course content and teaching methods to support students in the order they will be assessed and to the level at which they are expected to perform (Wiggins and McTighe, 2005).

UbD has become a hot topic in information literacy, with workshops and webinars on the application of UbD popping up with increasing frequency; at the ACRL Conference in Cleveland in 2019, there was a pre-conference workshop dedicated to applying UbD to information literacy instruction. This increase in focus may be due to the publication of the ACRL Framework, the critical orientation of which, it has been noted, naturally draws attention to the concepts of Understanding by Design (Hinchliffe, Rand, & Collier, 2018). While the focus of UbD is to better teach the content so that students will be able to learn it, there have been other benefits as well; Mills, Wiley, and Williams (2019), for example, had success in implementing backwards design in information literacy instruction and found it to be, “an effective way to collaborate with faculty (p.180).”

APPLYING UbD TO AN INFORMATION LITERACY COURSE FOR TRANSFORMATION

From the beginning, it was clear that information literacy and orientation had a common goal for students. The ‘big rock’ of this class was to provide students with the information and tools necessary for a good foundation in research skills and knowledge of the university so that they

would be able to move forward with confidence into other classes. It is hoped that, with this foundation, the playing field will be more level for underserved and underrepresented populations that would typically be at risk for non-completion, replicating the results Denise Bartell had seen at the University of Wisconsin- Green Bay (Bartell et al., 2018). The original paperwork for the course design and implementation of UC1130 had not included a succinct, overarching purpose to the class, so the librarians identified this ‘big rock’ based on their own experiences with teaching information literacy.

The next step in the process was to identify student-centered goals for the class. The original goal or goals of the class were not explicitly stated in the syllabus or course approval documents, so these, like the big rock, were unique to this version of the class. The two librarians identified six goals, four of which focused on information literacy, and two on orientation.

- *Students will know basic research skills applicable to a variety of information needs.* As an information literacy class, it was important to focus on research skills for the content portion of the class. It was also important from the additional contexts of this class that these research skills should be applicable not only to the research done for this class, but also the research for other classes, regardless of student major, as well as information needs outside of the classroom. Most, if not all, students taking this class were expected to be undeclared majors, so tailoring the class to a specific discipline was impossible as well as unwise.

- *Students will learn how good information seeking behaviors will help them in their daily lives.* The librarians also agreed that having the skills taught with explicit relation to real world information needs would give students more buy-in. It was also unclear when these students, first-semester freshmen, would have research assignments, so tying these skills to non-academic purposes would give students clear opportunities to continue using these skills and keep them fresh in their minds until academic assignments require them.
- *Students will learn how to competently address information needs.* It was the librarians' goal to not only give students an idea of how to do research, but to give them the tools to be able to do it effectively by the end of the course, because they could need these skills the very next semester, or even during the same semester. When they encounter instruction in information literacy after the completion of the course, this information should be a refresher, moving them toward an expert status.
- *Students will understand how information's value is relative to their objectives.* This goal is explicitly part of the Framework and reflects the fact that there are different uses for information. It will also include the fact that students are information generators, both passively (such as their personal data, which is frequently collected both inside and outside the university) and actively (as they continue with their studies and begin making contributions to the scholarly discussion.)
- *Students will appreciate the resources avail-*

able to them outside the classroom. This goal reflects the purpose of orientation. In order to help ensure student retention and wellness, it is imperative that they not only know what help is available to them as they encounter challenges both in their studies and in their lives outside academia, but value that help and use it when necessary.

- *Students will realize their agency in navigating their college journey.* Another part of orientation is making sure students know that they are the only ones who are responsible for what they achieve in college. In association with this goal, the librarians will inform students of the myriad of experiences, opportunities, and support services available to them through the university and related partnerships, and impress upon them the importance of utilizing the resources to make the most of their college experiences.

As is prescribed in UbD, these goals reflect what students need to learn from the class in order to meet the purpose of the class, rather than what the librarians felt was most important to learn from the class. From these goals, learning outcomes were developed.

Eleven learning student-focused outcomes were identified for the class. Seven of these learning outcomes were based in information literacy and four were based on orientation. They have been grouped below according to Bloom's Taxonomy (1956) and are as follows:

Knowledge

Outcome A: Students will be able to identify the research need in a given problem or issue.

Outcome B: Students will be able to identify the resources available to them.

Outcome C: Students will be able to identify first points of contact for resolving common university roadblocks.

Comprehension

Outcome D: Students will be able to discuss the strengths and limitations of information seeking methods.

Outcome E: Students will be able to employ research techniques to answer a given problem or issue.

Application

Outcome F: Students will be able to make use of one or more university resources to solve a problem or gain more information.

Outcome G: Students will be able to plan and develop a reasonable timeline to accomplish course assignments.

Analysis

Outcome H: Students will be able to select appropriate information resources to answer academic, civic, and social information needs.

Evaluation

Outcome I: Students will be able to justify the use of their chosen research techniques in answering their question.

Outcome J: Students will be able to evaluate information found in non-academic online sites.

Outcome K: Students will be able to assess search results for relevance and appropriateness to their research question.

The orientation outcomes for the class (B, C, F, G) were designed to span the first three thinking levels of Bloom's Taxonomy (1956), as the orientation part of class will teach students how to utilize specific skills and resources in the context of the university for immediate benefit; it will be up to them to question and evaluate the efficacy of these sources after they have experienced them. The information literacy outcomes (A, D, E, H, I, J, K) will require students to think more critically about information and give them a foundation for higher level thinking that will be expected in their university classes in the future. All student learning outcomes were based on the existing student learning outcomes for the class and conversations that the instructors had had with the other FYE Pilot Program instructors and the program coordinator, Denise Bartell. While they were reformulated to better reflect UbD thinking and uncover gaps in content, they map to the official learning outcomes designated by University College and the FYE Pilot Program for compliance with accreditation standards and uniformity between the different FYE classes.

The next step in redesigning the class was to think about the assessments that would be present in the class and make sure that they directly correlated with the learning outcomes that had been identified. There were several assessments in the original version of the class that were important to include in the new version of the class for continuity and to preserve compliance with university standards. These assignments included an information literacy self-assessment performed by the students at the beginning of the class and a research portfolio turned in at the end of class; these two assignments were foundation-

al to assessing the efficacy of the course. Several other assignments in the original class were also included to support the students' completion of the research portfolio. These assignments were found to be aligned with one or more of the identified student learning outcomes. Additional assessments were developed to provide support for learning outcomes not covered by the original assignments and to provide more reinforcement for the most important outcomes. These assignments included more reflections and discussion focused on non-academic information needs and assignments assessing students' knowledge and use of student support services. In order to ameliorate the overwhelming effect of this workload on underprepared freshman, some of these assignments are non-graded. A table of these assignments, their descriptions, and their associated SLOs, designated by letter, follows (Table 1.1).

The librarians were then asked by the Course Design Institute to evaluate the order of assessments and plan them against outside constraints, such as the university holiday schedule and likely student workloads. While some major assign-

ments are in the usual places (such as the final two weeks of the semester), other major assignments have been moved to times where students might not be as busy and would be more able to focus on UC1130, as opposed to their other classes. The librarians have also identified a need for more low-stakes assignments throughout the semester to balance the weight of those major assignments and to reinforce certain aspects of the class.

It was only then that the instructors could focus on the content of the course, in direct opposition to the way that classes are typically designed. At least one participant in the Course Design Institute, working alongside the librarians, had been unnerved by the order in which UbD approaches class design. However, it made sense in the context of being student focused that one would start with the goals and outcomes and work from there. This did require some shifting of how information literacy would be taught in this iteration of the class; the librarians chose to split the class into skills-based sessions and critical thinking-based sessions. The first eight weeks

Table 1.1: UC1130 assignments and their associated student learning outcomes.

Assignment	Description	SLO(s)
Information Literacy Self-Assessment	An assessment giving students the opportunity to reflect where they are at the beginning of the class.	B, H
Note Taking Assignment	Demonstration of their ability to take notes in a research context; students can use whatever note taking method they want to make notes on an assigned reading.	F

Information Need Reflection Essay	Students write about a time when they needed information and where they found that information at the time.	A, H
Topic Selection and Timeline Assignment	Students select a topic to research and complete a timeline for how they will accomplish this, taking into account major assignments in their other classes.	A, G
Web Checklist	Students evaluate website resources using a checklist.	E, H, J, K
Database Search Results Reflection Essay	Students evaluate articles and write about the process they used to find those articles.	E, H, J, K
Student Services Matching and Discussion	Students participate collaboratively to match common student problems to the resources available to deal with them.	B, C
University Resource Short Essay	Students write about their experience contacting a university resource, including how that university resource could help them.	B, C, F
Formal Class Discussion	Students participate in a topic-oriented class discussion that requires sources.	A, E, I, K
Information Need Reflection – Part 2	Students reflect on how they would seek information for their decision in the earlier Information Need Reflection Essay now that they have taken the class.	A, B, I
Presentations	Students present on their research process.	A, D, E, H, I, J, K
FYE Reflection Essay	Students write about what they have learned about the university, its resources, and college life.	B, C, F
Research Portfolio	Students find 15 sources on their topic and describe their process for finding, evaluating, and selecting the resources.	A, D, E, H, I, J, K

of the class would be about introducing students to the campus and teaching them how to create a research topic, plan a research timeline, and perform the act of finding resources in their various formats. The following seven weeks were about the ideas embodied in the ACRL Framework, and focused on showing students that research is important, that it is a process, that information can be used for multiple purposes, and that they are entering a conversation that they will be able to contribute to. This last part seemed most important, as the class was designed for underrepresented students who might not inherently understand that they had been invited to the conversation by entering college.

Upon finishing the course design institute, the course plan was not complete; there were several more conversations between the two librarians about the exact content of each class session and which readings should be assigned. Minor modifications to the course structure, session timelines, and exact content continued up until the start of the Fall 2019 semester, when the class was taught. The class will be taught again as part of FYE in Fall 2020; a section of the course was also taught in Spring 2020 but, because of its timing, was not part of the FYE Pilot program. Since teaching is an iterative process, lessons learned from the implementation of this class are being incorporated into the Fall 2020 instruction. At this time, the instructors have relied on guidance from the university Student Disability Services department and accessibility features built-in to Blackboard to accommodate students when necessary. Some of these accommodations will be built into future iterations of the class, such as making sure all

handouts are accessible and online where they can be reformatted (e.g., to audio).

IMPLEMENTATION

Classes began on August 26, 2019, with approximately 25 students in each section of the class. Unfortunately, there were not enough responses to the informed consent document to report reliable, statistically viable grading data, but both instructors made ample observation of how class progressed from their points of view. Both instructors agree that Understanding by Design allowed them the ability to organize the class more logically. There was nothing that could be considered filler content, and both instructors could articulate the purpose of each activity, assignment, or lecture in the larger context of the class. When re-writing assignments during the course of the semester, it was easier to ensure that the assignments truly reflected the learning outcomes, because these connections had been made during the planning stage. Upon reflection at the end of class, it is also clear where the deficiencies lie in addressing some of the learning outcomes, even without looking at student grades.

One element of the class that was successful for both sections of the course was the formal class discussion activity. This element brought together the information literacy components and the FYE components in the class. Students were required to use the information literacy skills they had been learning in the first half of the class to find two sources on a topic that the class had decided on. They brought these sources to a class discussion on the topic, where they navigated the expectations of a college level discus-

sion, something that many of them had not yet fully participated in. Virtually all of the students in both classes were engaged in the discussions in their respective classes, and most had found scholarly articles that they were able to reference in the flow of conversation. Those who did not use scholarly articles were still able to participate in the conversation through accounts of first-hand experience with the topics chosen. Both instructors consider this activity to be the most successful part of the class.

Another element that brought hands-on learning to the class was an activity wherein students had to find a book on their research topic in the library. Meeting the goal that students will know basic research skills applicable to a variety of information needs, students were asked to search the library catalog for a book on their chosen research topic that was available as a physical copy in the library. Because the class was taught in a classroom in the library, the students were then asked to find the book and check it out at circulation. These are skills that are frequently overlooked in one-shot classes in favor of searching for articles but are still important to every day knowledge seeking and have application outside of the classroom and research setting. In Jennifer Joe's class, this activity was successful; most of the students came back to class with an appropriate book for their topic, and those who did not had pertinent questions that allowed for more discussion about the activity. Some of the students who had similar topics were even able to help each other. Wade Lee-Smith's class, however, did not take advantage of the active learning opportunity in the same manner; many students came back empty handed, and engagement with

the students after the activity was hard. Ultimately, he found the activity unsuccessful in what he had been trying to convey.

Some elements were unsuccessful in both sections of the class. One such element came from the class session on visual literacy. Visual literacy had not been well covered in the original iteration of the class and had been identified as a 'missing piece' by the instructors. This missing piece affected the goal stating that students will learn how good information seeking behaviors will help them in their daily lives. Visual literacy impacts everyone's lives because the average person sees many images daily that are attempting to convey information, from advertisements to warning signs. In order to teach this class, the instructors relied on experts from another part of the university, who had more experience in visual literacy, to provide a lesson plan. Visual literacy has been an initiative outside of the library for many years, and the instructors felt it prudent to defer to their expertise. The lesson plans available, however, did not meet the true goals of the class for two main reasons. First, they attempted to cover information in far more depth than the students required as freshmen. Second, the active learning elements present in the lesson plan were brief and ultimately unengaging. Because of these two problems, this lesson plan is seen as a failure, though not a failure of Understanding by Design. If anything, it is an example of the necessity of UbD; had the instructors felt freer to create their own visual literacy lesson plan, it could have aligned better to the rest of the course.

It is clear from these examples that though both sections had been designed the same, the two instructors' experiences diverged. Some of

this could be because of the instructors' own styles, but some of it may also be due to the differences in the makeup of the two classes. Jennifer Joe found that the redesign of the class, and incorporating active learning especially, engaged her students in material they might have otherwise found boring. Her class was talkative and sociable from the outset, and active learning gave the students an outlet for this energy. The class discussion was especially successful from an engagement standpoint. Ms. Joe also found the universal design of the class made her more flexible in her teaching, so that when class did not proceed as planned, she was able to compensate more easily. Wade Lee-Smith, however, found that the class discussion, while successful, was an aberration—his class was not as amenable to the active learning concept, and struggled with engagement in many of the planned activities. It is unknown whether or not the engagement level of the students in this class impacted their grades, but the principle of constructive alignment espoused by Biggs (1996), gives a good foundation for the possibility. It is a concept that may be explored in subsequent semesters of this class.

CONCLUSION

Both instructors ultimately felt that the design concept implement here was helpful in restructuring the class and that the class needed to be restructured to meet both the demands of the FYE Pilot Program and the needs of the incoming generation of students. They would especially like to thank the Course Design Institute for the opportunity to reorganize the class with the

guidance and assistance of others who were more experienced in Understanding by Design.

As for the implementation, it is too early to tell whether or not the class as currently designed will be more successful than the previous design; from the first semester, though, it is clear that with some populations, the mere redesign and addition of active learning will not be enough to engage students. Both instructors, however, understand that teaching is an iterative process and look forward to implementing this design again with some adjustments and will continue to gather data to guide their changes.

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