

Community College Librarian and Student Perceptions of Student Information Literacy Needs

Abstract

Florida State University and the University at Buffalo, State University of New York seek funding for a National Leadership Grant to investigate community college librarians' and community college students' perceptions of information literacy (IL) instruction and student IL needs and experiences. This one-year project (July 1, 2019 through June 30, 2020) requests \$164,599 in support and is designated as Research in Service to Practice (Funding Category) and Lifelong Learning (Project Category). The project will focus on community college librarians and students in Florida (28 community colleges) and New York (40 community colleges).

While the literature on IL instruction in academic libraries is quite expansive, less is known about IL instruction at community college libraries and the extent to which librarians have access to all students in the course of their studies (Reed, 2015). Moreover, research has shown that community college students greatly overestimate their IL skills and that they are unlikely to gain proficiency on their own (Gross & Latham, 2007, 2012). Little is currently known about how librarians in community colleges perceive students' IL needs or how these perceptions compare to the self-perceptions of these students. There is evidence of a gap between perceptions of librarians and of students in other contexts; these gaps can have serious consequences for instructional success (Detlor, Julien, Serenko, Wilson, & Lavalley, 2011; Detlor, Booker, Serenko, & Julien, 2012; Julien, Detlor, Serenko, Willson, & Lavalley, 2011).

The proposed embedded mixed-method study will investigate current IL instruction practices and librarians' perceptions of student IL needs, by surveying instructional librarians in community colleges in Florida and New York. The co-principal investigators of this proposal previously completed the first national survey of the instructional practices of academic librarians and will tailor their survey instrument to meet the needs of the proposed study (Julien, Gross, & Latham, 2018). Understanding of the perceptions of IL among community college students within the context of their IL instruction experiences (skills versus frames training) and of their educational goals will be addressed through in-depth interviews with 60 students (30 in Florida and 30 in New York). The co-principal investigators are also active researchers in the transition from the ACRL *Standards* to the ACRL *Framework* and the information behavior of college students.

Findings from this proposed research will reveal key IL needs of community college students from the point of view of both students and librarians. The study will provide a snapshot of current instructional practices, the extent to which the *Framework* is being implemented, and the challenges community librarians face in serving their academic communities. It will also add to the literature on student perceptions of IL, the relationship between student goals and instructional experiences, and their view of IL.

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Statement of National Need:

Florida State University and the University at Buffalo, State University of New York seek funding for a National Leadership Grant to investigate community college librarians' and community college students' perceptions of information literacy (IL) instruction and student IL needs and experiences. This one-year project (July 1, 2019 through June 30, 2020) requests \$164,599 in support and is designated as Research in Service to Practice (Funding Category) and Lifelong Learning (Project Category). The project will focus on community college librarians and students in Florida (28 community colleges) and New York (40 community colleges).

Understanding information literacy instructional practices in community college libraries, as well as the perceptions of the librarians and students about student (IL) needs, is of national importance as more than half of institutions of higher education are community colleges and these colleges educate close to half of post-secondary students, particularly in rural areas of the country (Eddy, 2013). Both the state of Florida and the State of New York have robust community college systems that serve diverse populations in terms of age, race, ethnicity, socio-economic and military status, as well as urban and rural populations (City University of New York (CUNY), 2019; Florida Department of Education, 2019; State University of New York (SUNY), 2019).

The introduction of the new ACRL *Framework for Information Literacy for Higher Education* (2016) has placed academic librarians at a juncture where they are being asked to embrace a paradigmatic change in the conception of IL that rejects a skills-based approach in favor of a set of threshold concepts, knowledge practices, and dispositions. The new ACRL definition of information literacy is: "Information literacy is 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" (ACRL, 2016, p. 3). This definition is further expressed through the presentation of six core threshold concepts: (1) Authority Is Constructed and Contextual, (2) Information Creation as a Process, (3) Information has Value, (4) Research as Inquiry, (5) Scholarship as Conversation, and (6) Searching as Strategic Exploration. These concepts may be taught in any order and each concept is further elaborated through a set of knowledge practices and dispositions.

Librarians are being asked to adapt their instructional practices and expand students' exposure to these threshold concepts in order to infuse IL instruction throughout programs of study in collaboration with other campus stakeholders, such as faculty and administration. This paradigmatic change comes at a time in which we have a limited understanding of the perceptions of IL that are held by librarians and students and how the need for IL instruction may vary based on student goals and the types of instruction students have experienced. There is a significant opportunity now to investigate the instructional practices of librarians as they transition to the *Framework* and for understanding student perceptions of what their instructional needs are regarding IL within the context of their educational goals and ability to be lifelong learners. Equally important is to understand how these perceptions differ between students who experience traditional IL skills-based instruction versus those who are being exposed to the *Framework* concepts.

While the need for these data to inform both research and practice exists for all academic libraries, this gap in understanding is of particular importance for community colleges. Community colleges, and community college libraries, face unique challenges due to their mission (education for all), the students they serve (from a wide variety of backgrounds), and the faculty they employ (often large numbers of adjuncts). In addition, students who attend community colleges have a variety of post-graduation goals: some are pursuing GEDs, some plan to continue their college education, while others are focused on training for a career. The need for IL instruction in community colleges must also acknowledge that many of these students can only study part time, may need to take breaks in their education, and many of them will leave higher education without attaining a degree or credential (Dougherty, Lahr, & Morest, 2017). It is not unusual for community college students to be older, currently employed, responsible for children, have limited economic resources, and need remedial education (Dougherty, Lahr, & Morest, 2017; Rosenbaum, Ahearn, & Rosenbaum, 2016).

While the literature on IL instruction in academic libraries is quite expansive, less is known about IL instruction specifically in community college libraries and the extent to which librarians have access to all students in the course of their studies (Reed, 2015). The literature suggests that there are several concerns related to the implementation of the *Framework* at the community college level. These concerns include worry that the *Framework* is “too complex” for the community college environment (Reed, 2015), that two-year programs do not allow adequate time for students to assimilate threshold ideas, and that several of the frames are not relevant for students’ career goals (Ludovico, 2017; Reed, 2015; Swanson, 2014).

Research has shown that community college students greatly overestimate their IL skills and that they are unlikely to gain proficiency on their own (Gross & Latham, 2007, 2012). Little is currently known about how librarians in community colleges perceive students’ IL needs or how these perceptions compare to the self-perceptions of these students. There is evidence of a gap between perceptions of librarians and of students in other contexts; these gaps can have serious consequences for instructional success (Detlor, Julien, Serenko, Wilson, & Lavallee, 2011; Detlor, Booker, Serenko, & Julien, 2012; Julien, Detlor, Serenko, Willson, & Lavallee, 2011).

Findings from this proposed research will address gaps in the research by revealing the key IL needs of community college students from the point of view of both students and librarians. The study will provide a snapshot of current instructional practices, the extent to which the *Framework* is being implemented, and the challenges community librarians face in serving their academic communities. It will also add to the literature on student perceptions of IL, the relationship between student goals and instructional experiences, and their view of IL.

The analysis of the data in this study will address the Research in Service to Practice funding category by filling gaps in the research and relating findings directly to implications for practice in IL instruction. These findings will be shared with the participating community college systems and more broadly as they emerge from the project through traditional forums such as publications and presentations. Findings will also be shared via a project website as well as through social media, and professional electronic discussion lists such as ili-l and cjcls-l. It is expected that findings will inform instructional practice in community college libraries as well as academic libraries in four-year colleges and universities. Further, findings will inform pedagogy in MLS programs preparing librarians for instructional work and will be disseminated through venues focused on LIS education, such as publications and presentations. Another important contribution of this work is to the research on community college student IL needs during a time

of transition in which the concept of IL has been redefined for academic librarians. This project will complement IMLS's "Community College Librarians and the ACRL *Framework*" grant, which focuses more narrowly on librarians' experiences with the *Framework*, by filling a data gap this project was not meant to address. Our proposed project will provide both a general view of community college librarians' current IL instruction practices and perceptions of student needs, as well as taking the voices and experiences of students into considerations of how to best teach the *Framework* to this population. To ensure the free flow of information between these two projects, Susan Wengler, PI on the "Community College Librarians and the ACRL *Framework*" grant will be a member of our Advisory Board (discussed below). A second IMLS funded project, "Community College Libraries & Academic Support for Student Success," deals more broadly with a wide range of student experiences, not just (or even primarily) information seeking, in order to inform policy development through an understanding of student perceptions of success. Our project focuses tightly on student experiences with IL instruction and will be the first to compare student perceptions of their experiences with skills-based training versus IL instruction that responds to the new ACRL *Framework*.

In terms of the project category, Lifelong Learning, understanding the perceptions of IL held by librarians and students at community colleges is deeply concerned with how librarians, through IL instruction, can foster critical thinking, creativity, and an understanding of information that will serve students in their academic pursuits, in the workplace, and in their personal lives. The results of this research will be an aid to the design of instruction that responds to students' perceived needs, informs collaborative relationships between librarians and other stakeholders such as teachers and administrators, and will assist LIS educators in teaching programs at the master's level how to develop, implement, and evaluate replicable programs that are responsive to student needs.

Project Design:

The goal of the project is to gather data about community college librarians' and community college students' perceptions of students' information literacy needs. These data will inform librarians' information literacy instructional strategies and allow them to more effectively meet their students' information literacy needs. It will also fill gaps in the research literature concerning information literacy among community college students.

This integrated mixed-method study will investigate current IL instruction practices and librarians' perceptions of student IL needs, by surveying instructional librarians in community colleges in Florida and New York. The co-principal investigators of this proposal previously completed the first national survey of the instructional practices of academic librarians and will tailor their survey instrument to meet the needs of the proposed study (Julien, Gross, & Latham, 2018). Understanding of the perceptions of IL among community college students within the context of their IL instruction experiences (skills versus frames training) and of their educational goals will be addressed through in-depth interviews with 60 students (30 in Florida and 30 in New York). The co-principal investigators are also active researchers in the transition from the ACRL *Standards* to the ACRL *Framework* and the information behavior of college students (see CVs in the Resumes document).

The participants in the project will be community college librarians and community college students in Florida and New York. The audience for the findings will consist of community college librarians and administrators, LIS faculty who teach pre-service librarians, and researchers interested in information literacy and the community college context. The

inclusion of an Advisory Board made up of community college librarians will allow for external input on the development of the survey, interviews with students, project findings, and useful dissemination venues. Dissemination of project results through conferences, publications, and social media will also allow external feedback on findings and implications as well as allow for consensus building about best practices for information literacy instruction.

This project will address the following research questions:

RQ1. What are the instructional practices of community college librarians responsible for IL instruction?

RQ2. What are the perceptions of community college librarians about student IL needs?

RQ3. What are the self-perceptions of students concerning their IL needs?

RQ4. Do student self-perceptions of their IL needs vary based on their educational and career goals (transfer to university, enter the general job force, practice a trade, or join a profession)?

RQ5. Do student self-perceptions of their IL needs vary based on the type of instruction they receive (skill-based vs. threshold concepts)?

RQ6. How do librarian perceptions and student perceptions of student IL needs compare?

This project will make use of a grounded theory approach. Data will be gathered and analyzed with an eye toward identifying categories and themes related to the research questions. The ACRL *Framework* will inform data interpretation, and categories and themes from the data will be compared to the frames, knowledge practices, and dispositions.

This project will employ an integrated mixed-method design that will allow us to collect both quantitative and qualitative data. The project will consist of the following activities:

1. We will develop a survey of community college librarians in Florida and New York who are responsible for information literacy instruction. The survey will be based on that used in our national survey of IL practices (Julien, Gross, & Latham, 2018), which is included as a supporting document. Questions will collect basic demographic information, data on the librarians' instructional practices (RQ1), and their perceptions of students' information literacy needs (RQ2). The development of the survey will be informed by the ACRL *Framework*. Some of the questions will deal with the extent to which the librarians may or may not be incorporating the ACRL *Framework* into their instruction, as well as the extent to which they perceive the *Framework* can effectively address students' needs. Open-ended questions will be included in the survey; however, most of the questions will be quantitative in nature. The survey will be developed with feedback from the Advisory Board and pre-tested in **July, August, and September 2019**.
2. The survey will then be built in and deployed via Qualtrics, which is available through FSU. Recruitment for the survey will occur via email, using the email addresses of the instructional librarians at each community college as identified in each college's directory. We will work with our Advisory Board to determine effective strategies for promoting the survey in order to get as high a response rate as possible. The survey will be deployed in **October and November 2019**.
3. Analysis of the survey data will begin immediately after the survey closes in **mid-November 2019 and will continue into December 2019**.
4. Development of questions for the student interviews will be guided, in part, by the findings from the surveys, and will also be informed by the ACRL *Framework*. The Advisory Board will assist in the development and review of the interview questions. The interview questions will be developed in **December 2019 through mid-January 2020**.

5. The six community college librarians serving on the Project Advisory Board will recruit students to participate in interviews. Ten students will be recruited from each community college—for a total of 30 students from three community colleges in Florida and 30 students from three community colleges in New York. The librarians will strive to recruit students who represent the demographics of their particular college; however, because participation is voluntary, representativeness cannot be guaranteed. Various strategies will be used, including posting flyers, sending emails (if permitted), and making announcements in classes. The Advisory Board members can brainstorm with us and with one another about effective recruitment strategies, well in advance of actual recruitment (the Board will meet twice prior to recruitment, in August and December 2019). Recruitment and interviews will occur **January 2020 through April 2020**.
6. Community college students will be interviewed by the research team via Zoom online meeting software. Each interview will last approximately 45 minutes. Interviewees will be compensated for their participation with a \$30 gift card, which will be administered by the librarian at their community college who is on the Project Advisory Board. The interview questions will include basic demographic questions, but will mostly consist of questions designed to collect data on students' perceptions concerning their information literacy needs (RQ3), their educational and career goals (RQ4), and the type(s) of information literacy instruction they have received (RQ5). The Advisory Board will be asked to provide feedback on the interview questions and the questions will be pre-tested before the interviews take place. The interviews will be digitally recorded, and the recordings will be transcribed by a transcription service. Interviews will be conducted **January through April 2020**.
7. Coding and analysis of the interviews will be iterative and will occur essentially simultaneously with the interviews, **February through May 2020**.
8. The survey and interview findings will be compared in order to compare librarian and student views of students' information literacy needs (RQ6). The comparison will occur in **June 2020**. Project findings will be shared with the Advisory Board for review and feedback.
9. Meetings will be held with the Advisory Board at key points in the project: **mid-August** for feedback on development of the librarian survey; **mid-December** for feedback on survey findings and on development of the student interview questions; and **mid-June** for feedback on final project findings and potential dissemination activities beyond the end date of the project.
10. Dissemination of project findings will be **ongoing** both during the project period and beyond.

This study does require IRB approval from Florida State University and the University at Buffalo as well as the community colleges where the student participants are enrolled. An IRB application will be submitted at all institutions while this grant proposal is under review. Typically, IRB reviews for this kind of research take approximately one to two months. We expect to have approval no later than June 1, 2019.

Qualtrics will generate descriptive statistics on the survey data. Text responses to open ended questions will be categorized and reported using descriptive statistics. The research team will then analyze the data in order to answer RQ1 and RQ2 and will use the data, in part, to develop interview questions for community college students.

The research team will use NVivo qualitative data analysis software to code and analyze the interviews. They will code the interviews using open coding and a grounded theory approach. Consistent with the use of grounded theory, codes will be allowed to “emerge” from the data, rather than imposing a pre-determined set of codes on the data. A subset of the interviews will be coded independently by the three principal and co-principal investigators and then compared and discussed in order to arrive at consensus. The remaining interviews will then be divided among the three investigators and coded. After the coding is completed, the investigators will review one another’s coding in order to insure consistency. Any disagreements in coding will be discussed with the goal of reaching consensus. Coded interviews will then be analyzed in order to identify data and themes that relate to RQ3, RQ4, and RQ5.

The survey and interview findings will then be compared in order to compare librarian and student views of students’ information literacy needs (RQ6).

Dissemination of project findings will be accomplished through several venues. Progress reports and project findings will be posted on the project website on a monthly basis and disseminated through social media and professional electronic discussion lists. Proposals will be submitted for various members of the research team to present at national and international conferences—specifically the LOEX Conference (May 2020) and the Canadian Association for Information Science Conference (2020) (an international academic conference that falls within the timeframe of the study and is attended by a number of faculty from the United States). The research team will also submit articles discussing the research findings to professional and academic journals, such as *Community & Junior College Libraries*, *College & Research Libraries*, *Communications in Information Literacy*, *Journal of Information Literacy*, and *Library & Information Science Research*. The findings will also be presented in the final project report, which will be submitted to IMLS and also posted on the project website (June 2020). Dissemination activities will be ongoing both during the project period and beyond, and the Advisory Board will be asked to identify other appropriate dissemination venues. Research and dissemination of research findings are a key part of the PI’s and Co-PIs’ assignment of responsibility at their respective institutions, so it is expected that dissemination of project findings will occur well beyond the end date of the project. In addition to dissemination activities, the data from the surveys and the interviews will be made freely available through the FSU Research Repository (see the Digital Product Form).

The integrated mixed-method design (QUAN+QUAL) gives equal weight to findings from the survey and the interviews. The use of two methods to respond to the research questions ensures that the voices of both instruction librarians and students are heard regarding community college students’ information literacy needs. Using two data collection methods strengthens the research design, helps to ensure that the research questions are given adequate and appropriate coverage, and increases the validity of the data when the two data sets lead to similar conclusions (Schutt, 2015). Having two sets of data allows exploration of the complexities inherent in teaching and learning in the social context of community colleges. The surveys will allow us to describe instructional practice in community colleges in Florida and New York. The interviews will provide rich, in-depth descriptions and insights about the place of information literacy skills and instruction in the lives of community college students. The two types of data will allow us to compare librarians’ perceptions with students’ perceptions and to see to what extent the data converge and where gaps in perceptions between the two populations exist, both of which will inform instructional practices.

The following table demonstrates how the research methods will answer each research question.

Research Question	Data Collection	Data Analysis
1. What are the instructional practices of community college librarians responsible for IL instruction?	Librarian survey	Descriptive statistics
2. What are the perceptions of community college librarians about student IL needs?	Library survey	Descriptive statistics
3. What are the self-perceptions of students concerning their IL needs?	Student interviews	Qualitative analysis
4. Do student self-perceptions of their IL needs vary based on their educational and career goals (transfer to university, enter the general job force, practice a trade, or join a profession)?	Student interviews	Qualitative analysis
5. Do student self-perceptions of their IL needs vary based on the type of instruction they receive (skill-based vs. threshold concepts)?	Student interviews	Qualitative analysis
6. How do librarian perceptions and student perceptions of student IL needs compare?	Librarian survey Student interviews	Descriptive statistics Qualitative analysis

This project involves neither a treatment nor a program. However, the sample will consist of a demographically diverse group representing two large community college systems in the United States—Florida and New York. The survey will attempt to achieve a census of instructional librarians working in these in community colleges. While response rates tend to be low with online surveys, a number of researchers have identified factors that can help improve response rate, including length of the survey, relevance to the topic to respondents, and wording of the initial invitation and reminder messages (Evans & Mathur, 2018). As stated above, the research team will work closely with the Advisory Board to develop a survey that will optimally meet these criteria. Also, it should be noted that in the research teams' previous survey of academic librarians, a high number of responses (622) was achieved (Julien, Gross & Latham, 2018). The interview sample size will be sufficient to achieve data saturation. The comparison of the data will strengthen the findings where the data sets agree and will expose new research questions and considerations should the data not align. All data gathering instruments will be pretested, and the Advisory Board (made up of three community college librarians from Florida and three from New York) will provide professional knowledge and expertise that will also inform data gathering and analysis. In addition, they will provide ongoing feedback on and evaluation of project activities.

The research protocol could be replicated at other community colleges and in other states. It could also be replicated at other institutions of higher education, including universities and

four-year colleges. The survey and interview guide will be made available through various dissemination outlets so that others who wish to replicate the study may easily do so.

This one-year project will begin July 1, 2019, and end June 30, 2020. **Don Latham** (Professor, FSU) will serve as PI and will administer, coordinate, and participate in all aspects of the project. **Melissa Gross** (Professor, FSU) and **Heidi Julien** (Professor and Department Chair, Buffalo) will serve as co-PIs and participate in all aspects of the project. Julien will oversee developing the survey and Gross will oversee developing the interview questions. Two graduate student assistants (one at FSU and one at Buffalo) will assist with identifying instructional librarians at community colleges for the survey deployment, conducting interviews, and administering the project. The Advisory Board will be comprised of six community college librarians (three from Florida and three from New York): Sheri A. Brown (Florida State College at Jacksonville), Angel Hernandez (Miami Dade College), Diana Matthews (Santa Fe College), Timothy Arnold (Jamestown Community College), Kathleen McGriff Powers (SUNY Erie), and Susan Wengler (Queensborough Community College). They will assist with development and review of the survey and interview questions, recruit the students for interviews, and provide ongoing feedback on and evaluation of the project. Total funding requested is \$164,599. This includes: salaries & fringe (\$46,135), GA tuition (\$11,004), Advisory Board honoraria (\$3,000), participant incentives (\$1,800), Zoom for meetings and interviews (\$180), transcription services (\$4,050), travel (\$6,390), subaward to the University at Buffalo (\$45,300), and indirect costs (\$46,740).

Diversity Plan:

This study seeks to better meet the IL instructional needs of a highly diverse population. Community college students represent a diverse group in terms of race/ethnicity, income, and educational background. Citing various sources, the Community College Research Center at Columbia University provides key demographics in their FAQs (1): In fall 2014, 56% of Hispanic students and 44% of Black students were enrolled in community college. Forty-four percent of low-income students (family income less than \$25,000/year) attend community college as their first college, as compared to only 15% of high-income students. Only 14% of low-income students actually complete an associate's degree within six years of enrollment. Of the students who began community college in 2003-2004, 68% took one or more remedial courses within six years of enrollment; 48% took two or more. These statistics paint a picture of the challenges facing community college students and therefore the challenges facing community college librarians as they seek to build the IL skills of these students, to enhance their learning outcomes and their career opportunities.

This project will recruit community college students, a diverse group from two states that reflect the demographic diversity of the U.S. (Henry J. Kaiser Family Foundation, 2018). The librarians who serve on the Advisory Board have been selected to represent geographic diversity within the two states included in the project. These librarians will review and provide feedback on the interview questions to ensure that they are appropriate for the diverse range of students to be interviewed. In addition, these librarians will be asked to recruit students for the interviews who reflect the demographic and academic diversity of their college and state. Thus, we will be seeking to interview community college students representing a range of genders, ages, ethnic and racial backgrounds, as well as a diversity of academic programs. The project calls for interviews with 60 students in total, a number that will provide ample opportunity to ensure diverse representation among participants.

National Impact:

Community colleges are the most inclusive institutions of higher learning making postsecondary education available to many people who are not ready for or cannot afford other forms of higher education (Community College Research Center, 2018). Thus, this project has the potential to impact a large proportion of the students in higher education in the United States. The project findings will be shared widely with community college librarians through presentation at the national LOEX Conference (May 2020), the Canadian Association for Information Science Conference (2020) (an international academic conference that falls within the timeframe of the study and is attended by a number of faculty from the United States), and through a project website and social media sharing both findings and their practical implications. The website link and a short summary of findings will be shared on the ILI-L electronic discussion list devoted to academic librarians (including community college librarians) and *cjcls-1*, focused on community and two-year college libraries discussions about IL issues. In addition, the findings will be shared in journals such as *Community & Junior College Libraries*, *College & Research Libraries*, *Communications in Information Literacy*, *Journal of Information Literacy*, and *Library & Information Science Research*, bringing them to the attention of a wide readership. Through these varied outlets, the project findings will be extensively disseminated, ensuring that it has strong potential to come to the attention, and influence the actions, of community college librarians nationwide.

The American Association of Community Colleges recognizes that IL is critical to the success of community college students (Henry J. Kaiser Family Foundation, 2018). However, community college students remain understudied, even though they are a very diverse population whose IL needs are likely to be very different from the needs of students in university contexts. Findings from this study will provide a much needed, holistic understanding of how community college students, and the community college librarians teaching IL, perceive students' attainment of IL.

What impacts are anticipated?

Findings have the potential to affect the development of accreditation policy, by focusing attention on the critical role of effective IL instruction on the learning outcomes and career opportunities for community college graduates. In addition, the missions of community colleges may be influenced by greater understanding of the importance of effective IL instruction for their students. Importantly, a clearer picture of community college students' perceived IL instruction needs and their IL learning outcomes has the potential to lead to transformative change in IL instruction pedagogy.

Results from this project can support community college librarians across the nation to reconsider their IL instruction practices, to align their teaching goals and pedagogies more closely with their students' needs. In addition, the insights gained in this study will inform education of pre-service librarians. These future professionals can gain enhanced understanding of best practices in information literacy instruction, based on evidence gained in the study. For information literacy researchers, this project allows for the capture of critical data during an historic time of transition from the ACRL *Standards* (2000) to the ACRL *Framework* (2016) and begins to build our knowledge of the perceptions of community college students concerning their IL needs and how these are being met. This project has strong potential to provide a foundation and motivation for further studies, conducted by scholars and by community college librarians, which can enhance our understanding of best practices in IL instruction. Thus, there is broad

potential for multiple outcomes, including influencing community college accreditation and missions, pedagogical practices of community college librarians, education of pre-service librarians, and future research on best practices in information literacy instruction in the college environment.

How will these changes occur?

The changes outlined here will occur as community college libraries revise their missions, as librarians reflect on their IL instruction practices and modify them, as faculty in LIS programs modify their curricula for pre-service librarians, and as researchers conceive and design new projects that build on the findings of this project. Dissemination of project findings as well availability of the data through the FSU Research Repository will help to facilitate these changes.

Schedule of Completion

Activity	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20
Develop survey	█											
Deploy survey				█								
Analyze survey results					█							
Develop int. questions						█						
Recruit for interviews							█					
Conduct interviews							█	█				
Code/analyze interviews								█				
Compare findings												█
Meet with Adv. Board		█				█						█
Disseminate findings	█											



DIGITAL PRODUCT FORM

Introduction

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to federally funded digital products (e.g., digital content, resources, assets, software, and datasets). The products you create with IMLS funding require careful stewardship to protect and enhance their value, and they should be freely and readily available for use and re-use by libraries, archives, museums, and the public. Because technology is dynamic and because we do not want to inhibit innovation, we do not want to prescribe set standards and practices that could become quickly outdated. Instead, we ask that you answer questions that address specific aspects of creating and managing digital products. Like all components of your IMLS application, your answers will be used by IMLS staff and by expert peer reviewers to evaluate your application, and they will be important in determining whether your project will be funded.

Instructions

All applications must include a Digital Product Form.

- Please check here if you have reviewed Parts I, II, III, and IV below and you have determined that your proposal does NOT involve the creation of digital products (i.e., digital content, resources, assets, software, or datasets). You must still submit this Digital Product Form with your proposal even if you check this box, because this Digital Product Form is a Required Document.

If you ARE creating digital products, you must provide answers to the questions in Part I. In addition, you must also complete at least one of the subsequent sections. If you intend to create or collect digital content, resources, or assets, complete Part II. If you intend to develop software, complete Part III. If you intend to create a dataset, complete Part IV.

Part I: Intellectual Property Rights and Permissions

A.1 What will be the intellectual property status of the digital products (content, resources, assets, software, or datasets) you intend to create? Who will hold the copyright(s)? How will you explain property rights and permissions to potential users (for example, by assigning a non-restrictive license such as BSD, GNU, MIT, or Creative Commons to the product)? Explain and justify your licensing selections.

A.2 What ownership rights will your organization assert over the new digital products and what conditions will you impose on access and use? Explain and justify any terms of access and conditions of use and detail how you will notify potential users about relevant terms or conditions.

A. 3 If you will create any products that may involve privacy concerns, require obtaining permissions or rights, or raise any cultural sensitivities, describe the issues and how you plan to address them.

Part II: Projects Creating or Collecting Digital Content, Resources, or Assets

A. Creating or Collecting New Digital Content, Resources, or Assets

A.1 Describe the digital content, resources, or assets you will create or collect, the quantities of each type, and the format(s) you will use.

A.2 List the equipment, software, and supplies that you will use to create the content, resources, or assets, or the name of the service provider that will perform the work.

A.3 List all the digital file formats (e.g., XML, TIFF, MPEG) you plan to use, along with the relevant information about the appropriate quality standards (e.g., resolution, sampling rate, or pixel dimensions).

B. Workflow and Asset Maintenance/Preservation

B.1 Describe your quality control plan. How will you monitor and evaluate your workflow and products?

B.2 Describe your plan for preserving and maintaining digital assets during and after the award period of performance. Your plan may address storage systems, shared repositories, technical documentation, migration planning, and commitment of organizational funding for these purposes. Please note: You may charge the federal award before closeout for the costs of publication or sharing of research results if the costs are not incurred during the period of performance of the federal award (see 2 C.F.R. § 200.461).

C. Metadata

C.1 Describe how you will produce any and all technical, descriptive, administrative, or preservation metadata. Specify which standards you will use for the metadata structure (e.g., MARC, Dublin Core, Encoded Archival Description, PBCore, PREMIS) and metadata content (e.g., thesauri).

C.2 Explain your strategy for preserving and maintaining metadata created or collected during and after the award period of performance.

C.3 Explain what metadata sharing and/or other strategies you will use to facilitate widespread discovery and use of the digital content, resources, or assets created during your project (e.g., an API [Application Programming Interface], contributions to a digital platform, or other ways you might enable batch queries and retrieval of metadata).

D. Access and Use

D.1 Describe how you will make the digital content, resources, or assets available to the public. Include details such as the delivery strategy (e.g., openly available online, available to specified audiences) and underlying hardware/software platforms and infrastructure (e.g., specific digital repository software or leased services, accessibility via standard web browsers, requirements for special software tools in order to use the content).

D.2 Provide the name(s) and URL(s) (Uniform Resource Locator) for any examples of previous digital content, resources, or assets your organization has created.

Part III. Projects Developing Software

A. General Information

A.1 Describe the software you intend to create, including a summary of the major functions it will perform and the intended primary audience(s) it will serve.

A.2 List other existing software that wholly or partially performs the same functions, and explain how the software you intend to create is different, and justify why those differences are significant and necessary.

B. Technical Information

B.1 List the programming languages, platforms, software, or other applications you will use to create your software and explain why you chose them.

B.2 Describe how the software you intend to create will extend or interoperate with relevant existing software.

B.3 Describe any underlying additional software or system dependencies necessary to run the software you intend to create.

B.4 Describe the processes you will use for development, documentation, and for maintaining and updating documentation for users of the software.

B.5 Provide the name(s) and URL(s) for examples of any previous software your organization has created.

C. Access and Use

C.1 We expect applicants seeking federal funds for software to develop and release these products under open-source licenses to maximize access and promote reuse. What ownership rights will your organization assert over the software you intend to create, and what conditions will you impose on its access and use? Identify and explain the license under which you will release source code for the software you develop (e.g., BSD, GNU, or MIT software licenses). Explain and justify any prohibitive terms or conditions of use or access and detail how you will notify potential users about relevant terms and conditions.

C.2 Describe how you will make the software and source code available to the public and/or its intended users.

C.3 Identify where you will deposit the source code for the software you intend to develop:

Name of publicly accessible source code repository:

URL:

Part IV: Projects Creating Datasets

A.1 Identify the type of data you plan to collect or generate, and the purpose or intended use to which you expect it to be put. Describe the method(s) you will use and the approximate dates or intervals at which you will collect or generate it.

A.2 Does the proposed data collection or research activity require approval by any internal review panel or institutional review board (IRB)? If so, has the proposed research activity been approved? If not, what is your plan for securing approval?

A.3 Will you collect any personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information? If so, detail the specific steps you will take to protect such information while you prepare the data files for public release (e.g., data anonymization, data suppression PII, or synthetic data).

A.4 If you will collect additional documentation, such as consent agreements, along with the data, describe plans for preserving the documentation and ensuring that its relationship to the collected data is maintained.

A.5 What methods will you use to collect or generate the data? Provide details about any technical requirements or dependencies that would be necessary for understanding, retrieving, displaying, or processing the dataset(s).

A.6 What documentation (e.g., data documentation, codebooks) will you capture or create along with the dataset(s)? Where will the documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the dataset(s) it describes?

A.7 What is your plan for archiving, managing, and disseminating data after the completion of the award-funded project?

A.8 Identify where you will deposit the dataset(s):

Name of repository:

URL:

A.9 When and how frequently will you review this data management plan? How will the implementation be monitored?