Abstract

This research project will investigate faculty perspectives of student privacy and their practices in relation to emerging learning analytics (LA) tools and initiatives. The research team, from the University at Buffalo and Indiana University-Indianapolis (IUPUI) will be supported by six scholar and practitioner experts with expertise in learning analytics, ethics, and privacy issues. The project is motivated by the team's previous research (under review) that analyzed more than 8,000 library and information science (LIS) syllabi. The study's literature review uncovered that student privacy research exists on learning analytics, including IMLS-funded projects, but there is no substantive research focused on faculty. The findings illustrated that there is a need to better understand how faculty perceive student privacy issues and strategize to address them in practice. Moreover, the team argues that librarians—professionals who receive education on informational privacy and overwhelmingly value privacy's instrumental role in education—can become student privacy advocates in partnership with faculty with strategic education and opportunities for discussion. Funding will support three phases of the project, two of which focus on conducting empirical research and one of which that will facilitate librarian-faculty discussions.

This research is not an isolated project – it builds upon and complements previous and current research and projects in the area of privacy and learning analytics. The project complements the co-PI's current research on privacy from the student's perspectives and research conducted by the Freedom Privacy Foundation on privacy from the higher education administrator's perspective. Although the project does not directly respond to the initiatives called for by the recent IMLS-funded National Web Privacy Forum, it addresses the expressed need for additional research and professional development in this area. Deliverables from the project will feed directly into the Library Freedom Institute's training program where there is a gap in training for academic librarians. The research, therefore, fits neatly into a knowledge gap, and the deliverables for the project fit neatly into an existing need.

During the first phase, the research team will conduct a survey with faculty from diverse disciplinary backgrounds who have online and face-to-face instructional experience. The interviews will focus on faculty views of student privacy, related instructional choices, and resources they use to make such choices, including working with academic librarians. For the second phase, the team will use phase-one data to pursue interviews with faculty members who participate in the survey. Interviews will enable the team to probe into issues of values, ethics, and conditions that promote or inhibit student privacy in instructional situations. In the third and final phase, the team will aggregate key findings from the research phases and the extant literature to facilitate discussions between faculty and librarians. Facilitated discussions will educate these key student privacy stakeholders and scaffold opportunities for collaborative advocacy.

The project's deliverables have broad appeal and potential for significant utility. Empirical research will lead to presentations at practitioner-oriented (e.g., for librarians, higher education instructors) conferences, and the team will target quality open-access journals for the publication of findings. A toolkit and protocol will guide the facilitated discussions, which the team will package and distribute for future use by academic librarians and faculty. The team will publish at its project website all artifacts developed as a part of the project along with resources and updates as the project progresses.

Student Privacy in the Datafied Classroom:
Researching Instructional Privacy Practices to Facilitate Privacy Advocacy Discussions

1. STATEMENT OF NATIONAL NEED

Introduction

Comprised of researchers at the University at Buffalo and Indiana University-Indianapolis (IUPUI), the research team requests $306,682 to conduct a three-year Research in Service to Practice project investigating faculty perspectives of student privacy and their practices in relation to emerging learning analytics (LA) tools and initiatives. The project is motivated by the team's previous research[1] that analyzed more than 8,000 library and information science (LIS) syllabi. The study's literature review noted the existence of research on student privacy in the learning analytics context, including IMLS-funded projects, but the lack of substantive student privacy research focused on faculty. The findings illustrated that there is a need to better understand how faculty perceive student privacy issues and strategize to address them in practice. Moreover, the team argues that academic librarians—professionals who receive education on informational privacy and who overwhelmingly value privacy's instrumental role in education—can become student privacy advocates in partnership with faculty. Funding will support three phases of the project, two of which focus on conducting empirical research and one of which that will facilitate librarian-faculty conversations.

During the first phase of the project, the team will conduct a survey with faculty from diverse disciplinary backgrounds who have online and face-to-face instructional experience. The surveys will focus on faculty views of student privacy, related instructional choices, and resources they use to make such choices, including working with academic librarians. For the second phase, the team will use phase-one data to pursue interviews with faculty members who participate in the survey. Interviews will enable the team to probe into issues of values, ethics, and conditions that promote or inhibit student privacy in instructional situations. In the third and final phase, the team will aggregate key findings from the research phases and the extant literature to facilitate discussions between faculty and librarians. Facilitated discussions will educate these key student privacy stakeholders and scaffold opportunities for collaborative advocacy.

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Learning Analytics and the Datafied Classroom

Higher education institutions (HEIs) are connecting the nodes in their digital infrastructures to open up student data flows.[2] "Every click, every Tweet or Facebook status update, every social interaction, and every page read online" leaves a digital trail of student behaviors available for aggregation and

[1] Jones & VanScoy, under review
[2] Rubel & Jones, 2016

analysis.[3] In addition to personalizing educational experiences and resources, student data- driven infrastructures can potentially surface cost-saving processes and improve fiscal administration—both of which are goals HEIs target to decrease accountability pressures.[4] Advocates of data-driven education and HEI administrators position this emerging work under the term "learning analytics (LA)." LA is defined as the "measurement, collection, analysis, and reporting of [student and other data] for the purposes of understanding and optimizing learning and the environments in which it occurs."[5]

However, not unlike businesses deploying data mining practices, LA must mitigate very real privacy issues.[6] Students may assume that institutions have their best interests at heart and would not exploit them, but that may not be the case.[7] In most cases, students are neither informed nor asked to give consent to participate in LA, because HEIs have few legal obligations under federal law (e.g., FERPA, human subjects research).[8] Since students are uninformed, LA's opacity raises related questions about student autonomy and institutional power.[9]

This question takes shape: What are HEIs doing about the problems? Some model policy has emerged; codes of ethics have been discussed; and professional groups, like advisors and academic librarians, are considering their roles in protecting students.[10] But what role do faculty play in protecting and advocating for student privacy? This is unknown. The literature on faculty and LA generally focuses on use practices and feature preferences.[11] One article suggests that instructors are uneasy about access to some LA data and visualizations, fearing that such access would bias their instruction.[12] The research team recently conducted a study of over 8,000 LIS syllabi published since 2010 for student privacy language; only 33% of syllabi included some form of student privacy language discussing policies, rights, and instructions for protecting one's privacy.[13] The lack of literature and the findings in our study signal that faculty may neither be aware of the emerging student privacy problems, nor able to address them in their instruction.

The student privacy issues learning analytics (LA) create are significant, and faculty are arguably on the frontline of student privacy. Their tool choices, instructional designs, and course policies impact the degree to which students retain privacy. Consequently, we need answers to the research questions motivating this project, listed in the next section.

2. PROJECT DESIGN

Theoretical Framework

Instructor Attitudes. There is an extensive body of research on how instructors' beliefs, values and attitudes about teaching influence their behaviors.[14] Although these studies are often not explicitly grounded in theory, the assumption made is that attitudes influence behavior. A number of

[3] Shum & Ferguson, 2012; Siemens & Long, 2011
[4] Goldstein & Katz, 2005
[5] Siemens, 2012
[6] Liao, 2017; Rosenberg, Confessore & Cadwalladr, 2018;
[7] Jones & LeClere, 2018
[8] Slade & Prinsloo, 2013
[9] Mittelstadt, 2016; Rubel & Jones, 2016; Selwyn, 2015
[10] Asilomar II: Student Data and Records in the Digital Era, 2018; Jones, 2019; Jones & Salo; Prinsloo & Slade, 2013
[11] Bentham, 2017; Knight, Brozina & Novoselich, 2016
[12] Knight, Brozina & Novoselich, 2016
[13] Jones & VanScoy, 2018
[14] Clark & Peterson, 1986; Fang, 1996

psychological models address this relationship between attitude and behavior. Perhaps the most relevant to our proposed work is the theory of planned behavior[15], which in part shows that intention to act is influenced by attitudes, subjective norms, and perceived behavior control. In addition, beliefs and attitudes are changed and reinforced through social interaction. When librarians and faculty engage in conversations about attitudes and beliefs about student privacy, changes in behavior, including decision-making, may occur. These conversations may also influence faculty members' perception of the subjective norms on their campus and of their control beliefs regarding student privacy. Thus, the theoretical assumption of this study is that understanding instructors' attitudes toward and knowledge of student privacy are key to understanding their behaviors in this context. Furthermore, the interaction between librarians and faculty may lead to important changes in attitudes and behaviors.

Intellectual Privacy. Pinning down privacy has proven an elusive if not foolish undertaking. As Solove remarks, there is a "vast literature" in this area, all of which tries to distill privacy down to "essential elements common to the aspects of life we deem 'private' and then formulate a conception based on these elements."[16] Some theories map privacy to human flourishing, others argue that privacy is key to democracy. Given the spectrum of theories, it is an important for the team to choose a particular theoretical framework that expresses why privacy is valuable—especially student privacy.

Richards' theory of "intellectual privacy" provides a privacy frame for this project. According to Richards, "intellectual privacy is protection from surveillance or interference when we are engaged in the processes of generating ideas—thinking, reading, and speaking with confidants before our ideas are ready for public consumption." The team argues that intellectual privacy correctly captures why privacy is important in educational contexts. Privacy protections enable students to reference materials and develop ideas on their own, with peers, and with scaffolding by an instructor in a classroom, an intellectual safe space. One purpose of higher education is to challenge students' values, accepted norms, and behaviors in order to prepare them for successful participation in a liberal democracy. To do so, however, requires the opportunity to tackle difficult subjects and challenge the worldviews they believe to be true and the worldviews of their peers. Intellectual privacy is instrumental in this process, and it justifies why instructors should take student privacy seriously.

Research Questions

RQ 1: What privacy resources do faculty incorporate into their courses?
RQ 2: How do faculty address student privacy in their instructional designs and adoption of educational technologies?
RQ 3: What student privacy issues are faculty aware of, especially in relation to learning analytics?
RQ 4: What student privacy values do faculty espouse, and how do these values inform their instruction?
RQ 5: How do institutional conditions impact faculty's student privacy views, and how and with whom can they address student privacy in their instruction and at their institution?

Project Goals

1) Close the gap in knowledge about how faculty address student privacy in instructional situations.

[15] Fishbein & Azjen, 1975
[16] Solove, 2008

Mapped Research Questions
- ✓ RQ 1
- ✓ RQ 2
- ✓ RQ 3

Outcomes
- Results of the Phase One survey.

Deliverables
- ★ Two project updates at project website.
- ★ Disseminate summaries of findings on project website and privacy organization websites (e.g., Future of Privacy Forum).
- ★ Presentation of results at faculty and academic librarian-focused conferences.
- ★ Publication of one peer-reviewed paper in an education-oriented journal.
- ★ Publication of one practitioner commentary piece at an education site (e.g., EDUCAUSE).

2) Develop new knowledge about faculty perceptions of student privacy, and investigate how librarians and instructional technologists view their role in supporting how faculty address student privacy.

Mapped Research Questions
- ✓ RQ 3
- ✓ RQ 4
- ✓ RQ 5

Outcomes
- Results of the Phase Two interviews.

Deliverables
- ★ Two project updates at project website.
- ★ Disseminate summaries of findings on project website and privacy organization websites (e.g., ALA's "Choose Privacy Everyday").
- ★ Presentation of results at a scholarly LIS-focused conference (e.g., ALISE, ASIS&T).
- ★ Publication of one peer-reviewed paper in an LIS-oriented journal.
- ★ Publication of one practitioner commentary piece at an academic library site (e.g., College & Research Libraries News).

3) Facilitate discussions among faculty, librarians, and instructional technologists to improve baseline knowledge about learning analytics and student privacy, share ideas and concerns, and develop collaborative strategies for addressing student privacy in instructional settings and throughout their institution.

Mapped Research Questions
- ✓ RQ 5

Outcomes
- Development of materials to run facilitated discussions, including: recruitment documents, lesson plans, presentation artifacts (e.g., slides), and participant guide, among other materials.

Deliverables
- ★ Two project updates at project website.
- ★ Dissemination of Facilitated Discussions Toolkit on project website.
- ★ Two facilitated discussions using the Toolkit.

- ★ Repackaging of Toolkit materials for a Library Freedom Institute module.
- ★ Presentation of project findings and reflections on using the Toolkit in a national webinar sponsored by an academic library organization (e.g., ACRL, ARL).

Project Structure

Phase One: Survey. The research team will conduct a survey investigating how faculty incorporate student privacy resources into their courses and address student privacy in their instructional designs and adoption of educational technologies. Furthermore, the survey will explore the student privacy issues faculty are aware of as they relate to learning analytics. The team will work with its statistical and survey consultant to develop, pilot, and validate the survey.

The sampling target includes faculty who actively provide instruction. The sample will represent faculty in a variety of disciplines (e.g., humanities, sciences, social sciences) and across an array of not-for-profit higher education institutions (e.g., doctoral/masters, baccalaureate colleges, associate's colleges). The team will work with Qualtrics Panels, a service that can quickly facilitate sampling according to the team's requirements, administer the survey, and gather results. Qualtrics Panels can deliver a sample size of 500 which will allow inferences to the population of 1.5 million faculty in the United States. While survey length and time for completion cannot be calculated exactly at this time, the research team and consultant will aim for a survey of no more than an estimated completion time of 30 minutes. The survey and statistical consultant will help the team analyze the data using SPSS. The team will run descriptive and inferential statistics.

Phase One addresses the first goal of the project, which is to close the gap in knowledge about how faculty address student privacy in instructional situations. The findings from this phase will enable the team to develop generalizable findings to inform practices by faculty, librarians, and instructional technologists alike. For instance, if the findings reveal underused resources, misunderstandings about privacy, or a real need for faculty education about privacy, librarians and instructional technologists will be able to use the findings in their settings to inform program development and outreach strategies. Furthermore, institutions may be able to develop more informed student privacy policy based on the survey findings.

Phase Two: Interviews. Building on the results from the Phase One survey, the research team will aim to conduct 30 semi-structured interviews with faculty, librarians, and instructional technologists. Interviews with faculty will enable deeper inquiry into some of the findings from Phase One. Additionally, interviews will provide the conditions necessary to discuss values and ethics related to student privacy in ways surveys cannot. These types of conversations require strategic follow-up questioning and probing to elicit answers about values. Interviews with librarians and instructional technologists will investigate how these professionals perceive their role in addressing student privacy and supporting faculty in their instructional efforts with respect to privacy. While the sampling strategy initially targets specific professionals, the team will primarily follow theoretical sampling strategies from grounded theory methods. Theoretical sampling will enable the team to develop conceptually-sound and grounded themes from the data; additionally, it will provide the team flexibility with their interviewing strategies to follow leads that are proving especially insightful.

The research team will digitally record and transcribe the interviews. Interviews will last approximately one hour. The mode of interviews will either be in-person or online using the web conferencing system Zoom. CaptionSync will professionally transcribe the audio from the interviews. The team will import

transcription files into MAXQDA, a qualitative data analysis application, to conduct line-by-line coding, build grounded themes, memo, and develop conceptual categories.

Phase Two addresses the second goal of the project, which is to develop new knowledge about faculty perceptions of student privacy, and investigate how librarians and instructional technologists view their role in supporting how faculty address student privacy. The transferable findings from this phase hold the potential to not only uncover why faculty value student privacy (if they do), but how librarians and instructional technologists view their own role in supporting faculty with their student privacy practices.

Phase Three: Facilitated Discussions. The final phase of the project uses the empirical findings from phases One and Two to facilitate student privacy discussions among faculty, librarians, and instructional technologists. The discussion will be led by the research team and supported by a privacy facilitation consultant; an individual who has local, regional, and national experience leading privacy conversations with librarians and non-librarians. Working with our privacy facilitation consultant, the team will develop a Facilitated Discussions Toolkit, of which parts will be used during the discussions. The team will include summaries of the research, curated literature, presentation slides, marketing materials, and discussion guides.

The research team will organize facilitated discussions at two sites. At each site, the team will work with a librarian to help with space planning, technology needs, and marketing the discussion opportunity. The team aims to include approximately 15 participants in total per session: five faculty, five librarians, and five instructional technologists. Discussions will generally follow a four-part structure. First, the research team will discuss emerging challenges to student privacy around learning analytics. Second, researchers will discuss useful findings from the first two phases of the project. Third, participants will engage in small-group discussions about specific student privacy scenarios before sharing strategies for addressing issues. Finally, all participants will strategize to create a collaborative action plan to address student privacy issues throughout their institution, which may include, among other things, programming, task forces, policy review and development, and the creation of student privacy principles.

Phase Three addresses the third goal of the project, which is to facilitate discussions among faculty, librarians, and instructional technologists to improve baseline knowledge about learning analytics and student privacy, share ideas and concerns, and develop collaborative strategies for addressing student privacy in instructional settings and throughout their institution. The Facilitated Discussion Toolkit will put to use the empirical findings from phases One and Two, and it will enable any number of higher education institutions to develop and run their own discussions.

Dissemination Plan

Online Presence. During Phase One, the team will develop and publish a website, which will serve as a key piece of a digital infrastructure to support the dissemination of project findings, insights, reflections, and resources. The website will also automatically publish new updates to a related Twitter account to tap into and share with existing social networks (e.g., @datadoubles, @libraryfreedom). Other privacy-related projects have offered to disseminate news of our project to help reach a broader audience as well, including the Future of Privacy Forum. In addition to facilitating communication with interested parties and stakeholders, the website will act as a repository for article pre-prints, presentation slides, and other project artifacts for which we retain a copyright. Most importantly, the

website will provide a home for the Facilitated Discussions Toolkit, which the team describes in full below.

Scholarly Outlets. Phases One and Two lead directly to peer-reviewed publications and presentations. With regard to publications, the team will target high-ranking, open-access journals in order to maximize the reach of disseminated findings. All pre-prints of journal articles will be accessible on the project website, regardless of their open-access status. Additionally, the team will present emerging findings and final analyses of data at scholarly conferences; related artifacts (e.g., posters, slides) will be accessible on the project website. Since this research crosses the disciplines of LIS and education, especially educational technology, the team is targeting a range of outlets for dissemination of findings; the team provides examples in the table directly below:

Journals	Annual Conferences
• *College & Research Libraries* • *The Journal of Academic Librarianship* • *portal: Libraries and the Academy* • *Learning, Media and Technology* • *The Journal of Learning Analytics*	• ACRL • ALISE • ASIST • AERA

Practitioner Outlets. The team's driving motivation for this project is to positively impact privacy practices of faculty, and additionally librarians and instructional technologists who support faculty. One important way to achieve this aim is to disseminate project findings in outlets where practitioners are actively engaged. The team will work with practitioner publications to publish commentary pieces, and present its work at practitioner conferences; examples are given in the following table:

Publications	Annual Conferences
• *College and Research Library News* • *EDUCAUSE Review* • *Inside Higher Ed*	• ALA • OCLC ARC • EDUCAUSE

Facilitated Discussions Toolkit. The final aspect of the dissemination plan includes a Facilitated Discussions Toolkit. The Toolkit serves two purposes. First, it will support the team's efforts when it runs facilitated conversations with approximately 30 participants at two academic libraries. After running and evaluating the discussions, the team will package the Toolkit and distribute it on the project website. Directions on how to use the Toolkit, along with the team's reflections, will be published on the project website and in a national webinar sponsored by an academic library organization (e.g., ACRL, ARL). The Toolkit will be published with a Creative Commons Attribution Non-Commercial 4.0 (CC-BY-NC) license and include the following materials:

- A summary of the relevant literature;
- Key findings from the empirical research phases;
- Curated thematic bibliographies on learning analytics and student privacy;
- A detailed lesson plan for facilitating a discussion, including annotations from the instructors;
- Presentation slides;
- Participant handouts and discussion guides; and
- Related marketing materials.

After completing the facilitated discussions, the team will work with the Library Freedom Institute (LFI) to modify the Toolkit for its uses. LFI has acknowledged to team members that there are opportunities to strengthen its curriculum by addressing student privacy issues in instructional contexts.

Project Team

Researchers. The PI is Amy VanScoy, Associate Professor at the University at Buffalo in the Graduate School of Education's Department of Information Science. VanScoy's research explores professional work and practitioner thinking in library and information service, with a particular emphasis on how practitioners' thoughts, beliefs and values shape their practice. Her methodological expertise is qualitative in nature and situated in interpretative phenomenological analysis. VanScoy's work is published in, among other journals, the *Journal of Documentation*, *College & Research Libraries, Library & Information Science Research,* and in conference proceedings, such as those published by ASIS&T.

The Co-PI is Kyle M. L. Jones, Assistant Professor at Indiana University-Indianapolis (IUPUI) in the School of Informatics and Computing's Department of Library and Information Science. Jones's research investigates information and professional ethics issues associated with learning analytics technologies in the context of higher education. Some of his research addresses aspects of information privacy, autonomy, and paternalism. Other work has empirically uncovered the ways by which learning analytics runs counter to practitioners' (e.g., librarians, advisors) ethics commitments and effectively structures their work practices. His methodological expertise is informed by the constructivist grounded theory tradition and, conceptually, he situates his work in the interdisciplinary area of critical data studies. Jones's work is published in, among other journals, *The Information Society; Learning, Media and Technology;* and *College & Research Libraries.* Additionally, he has published in conference proceedings for ASIS&T and the Learning Analytics and Knowledge Conference. He was awarded an ALISE Research Grant to study academic librarian participation in learning analytics, co-authored the ARL SPEC Kit on learning analytics, and is the PI on student privacy-focused IMLS grant LG-96-18-0044-18.

Advisors. The team's advisory board is comprised of scholars and practitioners who have expertise in learning analytics, educational technology, information ethics, information privacy, and instruction. The advisors are:

- John Budd, Professor Emeritus, School of Information Science & Learning Technologies, University of Missouri;
- Sara Collins, Education Privacy Project, Policy Counsel, Future of Privacy Forum;
- Christopher Hollister, Interim Scholarly Communication Librarian, University at Buffalo;
- Willie Miller, Informatics & Journalism Librarian, IUPUI;
- Megan Oakleaf, Associate Professor, iSchool, Syracuse University.
- Amelia Vance, Director of Education Privacy, Policy Counsel, Future of Privacy Forum.

Consultants. The research team will be supported by Kawanna Bright, Visiting Assistant Professor, Department of Research Methods and Information Science, University of Denver, who will fulfill the role of survey and statistical consultant during Phase One. In addition, Becky Yoose of LDH Consulting Services will consultant with the research team to develop effective plans and materials for the Facilitated Discussions. Ms. Yoose has experience developing and presenting workshops on privacy issues to a variety of audiences.

Project Management and Staff Roles

The PI will oversee the administration of the project with regard to its schedule of work, coordinated communications, and relationship with IMLS. The PI and Co-PI are jointly responsible for developing research artifacts, conducting research (e.g., participant recruitment, analysis), and disseminating research findings.

The research team has established project management practices from previous collaborations. The team is committed to continuing its use of Freedcamp, a project management system, to, inter alia, schedule and track the progress of tasks, as well as facilitate and archive team communication. In addition to the guidelines outlined in the digital product form, the team will also develop a detailed data management plan to structure data and file naming conventions, ensuring that record keeping practices have high integrity and reduce potential data security issues.

The team will be supported by its advisory board, student research assistants, and its consultants. The research team will primarily consult with individual advisory board members as needed and depending on the board member's expertise. For research artifacts, like survey designs and interview protocols, that could benefit from full-board review, the team will strategically work with the board to get its input. The team will hire two graduate student research assistants to support various aspects of the research. Finally, the consultants will support the research team's construction, validation, and analysis of the survey to ensure the appropriate sample size is acquired and the analysis is accurately interpreted, in addition to the design and evaluation of the Facilitated Discussions Toolkit.

3. DIVERSITY PLAN

As a value, privacy has many facets. To some, privacy means secrecy or the ability to control information about oneself. For others, privacy is instrumental in the development of trustworthy relationships, among other things. To have a fully informed conversation about student privacy, the research must provide an opportunity for privacy perspectives to co-exist on a spectrum. The team's research is designed to accommodate diverse views on student privacy.

Diverse research also entails actively incorporating participants whose views, values, and interests can provide rich, non-monolithic findings. Sampling strategies will include data from the breadth of higher education environments. The survey will be widely distributed to reach many types of institutions and disciplines, and we will recruit interview participants from a variety of institutions, including those that focus on research and on teaching. Interviews with faculty, librarians, and instructional technologists provide a unique opportunity to compare and contrast findings across institutional roles who have not been brought together as the team's study will do. The Facilitated Discussion will allow us to gather additional input from these stakeholders for evaluative purposes to hone the Toolkit for use throughout American higher education.

The advisory board also has an impact on the diversity plan for the project. The team selected the board to represent a variety of perspectives on privacy that complement those of the research team. These scholars and practitioners, with expertise in learning analytics, ethics, and privacy issues will challenge the research team to think broadly about student privacy and its effect on diverse institutional stakeholders.

4. NATIONAL IMPACT

Faculty are at the frontline of student privacy. The instructional design choices they make ultimately affect student privacy protections, or invasions as the case may be. Yet, as we have previously

discussed, we know very little about the particular privacy practices faculty take, nor their perspectives on privacy—especially against a learning analytics backdrop. Higher education will continue to invest significant resources, financial and otherwise, to capitalize on learning analytics. Therefore, it is essential that researchers and practitioners develop an agenda that better understands the faculty-student privacy intersection as a means to privacy-protecting ends. The team's proposed project makes important scholarly and practical inroads in this area in three ways that will make a national impact.

The project holds significant potential to transform policy and practice on a national level. By identifying and articulating faculty knowledge and behaviors about student privacy, the research holds the potential to inform how faculty governance councils address privacy issues, such as those efforts already modeled by the University of California and University of Hawaii.[17] Disseminated research will allow faculty an opportunity to reflect on their own student privacy practices. Similarly, instructional technologists will have information at hand that will help structure conversations and support privacy-protecting instructional design choices.

The team also argues that the project will lead to systematic changes across higher education institutions. One of the overarching goals of the facilitations is to bring together individuals whose work is intimately tied to student privacy. Working with faculty, librarians, and instructional technologists in facilitations gives each an opportunity to discuss their values and perspectives. More importantly, the research team will structure the facilitations in such a way that it will lead to collaborative student privacy advocacy among these groups and motivate them to action at their institution.

The project's infrastructure enhances its sustainability and adaptability. All research artifacts (e.g., presentation slides, open access articles, resources) and the facilitation materials will be maintained on a project website hosted by UB to facilitate sustained access to results of the project. The facilitation materials will be supplemented with team insights for their use, which will enable other institutions to adapt them for their own facilitated discussions.

Finally, the research team also believes that this work complements the emerging funding agenda developing within IMLS. According to the team's research, IMLS has funded privacy-related projects totaling over $1.8 million. These projects have focused on web analytics and user privacy, developing digital privacy and data literacy among library professionals, training librarians to develop practical privacy workshops, and national forums on the value of privacy in library and information science.[18] More recently, IMLS has funded projects specifically on developing capacity for learning analytics in and with academic libraries, in addition to work being done by the Co-PI on student perspectives of their privacy in relation to learning analytics.[19] The team's proposed project supports and expands IMLS's focus by addressing privacy issues and perspectives from a faculty angle, while also developing new advocacy relationships among faculty, librarians, and instructional technologists.

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[17] University of California, 2017: University of Hawaii, 2018

[18] LG-73-18-0100-18: A National Forum on Web Privacy and Web Analytics; LG-73-17-0062-17: Library Values & Privacy in our National Digital Strategies ; RE-95-17-0076-17: Library Freedom Project; RE-06-15-0050-15: Brooklyn Public Library; LG-06-14-0090-14: Montana State University

[19] LG-97-18-0209-18: Connecting Libraries and Learning Analytics for Student Success; LG-96-18-0044-18 Data Doubles; LG-98-17-0019-17: Library Integration in Institutional Learning Analytics

	Year One											
	2019				2020							
	S	O	N	D	J	F	M	A	M	J	J	A
Phase One												
Build and publish project website												
Develop survey												
Advisory board meeting												
Obtain IRB approval												
Pilot survey												
Post update to project website												
Conduct survey												
Analyze survey results												
Submit conference proposals												
Write phase one scholarly paper and commentary												
Post phase one report to project website												
Submit year one grant report to IMLS												
Phase Two												
Hire graduate research assistants												
Develop interview protocol												
Advisory board meeting												
Obtain IRB approval												
Recruit interview participants												
Interview participants												
Analyze interview data												
Post update to project website												
Submit conference proposals												
Write phase two scholarly paper and commentary												
Submit year two grant report to IMLS												
Post phase two report to project website												
Phase Three												
Develop materials for facilitated discussions												
Advisory board meeting												
Recruit sites for facilitated disccussions												
Propose webnar to associations												
Post update to project website												
Conduct facilitated discussions												
Analyze data from facilitated discussions												
Create final Facilitated Discussions Toolkit												
Conduct webinar												
Work with LFI to adapt Toolkit for their use												
Publish Facilitated Discussions toolkit to website												
Submit three year grant report to IMLS												

	Year Two											
	———————————				2021	———————————————————						
	S	O	N	D	J	F	M	A	M	J	J	A
Phase One												
Build and publish project website												
Develop survey												
Advisory board meeting												
Obtain IRB approval												
Pilot survey												
Post update to project website												
Conduct survey												
Analyze survey results												
Submit conference proposals												
Write phase one scholarly paper and commentary												
Post phase one report to project website												
Submit year one grant report to IMLS												
Phase Two												
Hire graduate research assistants												
Develop interview protocol												
Advisory board meeting												
Obtain IRB approval												
Recruit interview participants												
Interview participants												
Analyze interview data												
Post update to project website												
Submit conference proposals												
Write phase two scholarly paper and commentary												
Submit year two grant report to IMLS												
Post phase two report to project website												
Phase Three												
Develop materials for facilitated discussions												
Advisory board meeting												
Recruit sites for facilitated disccussions												
Propose webnar to associations												
Post update to project website												
Conduct facilitated discussions												
Analyze data from facilitated discussions												
Create final Facilitated Discussions Toolkit												
Conduct webinar												
Work with LFI to adapt Toolkit for their use												
Publish Facilitated Discussions toolkit to website												
Submit three year grant report to IMLS												

	Year Three											
	————————				2022	————————————————						
	S	O	N	D	J	F	M	A	M	J	J	A
Phase One												
Build and publish project website												
Develop survey												
Advisory board meeting												
Obtain IRB approval												
Pilot survey												
Post update to project website												
Conduct survey												
Analyze survey results												
Submit conference proposals												
Write phase one scholarly paper and commentary												
Post phase one report to project website												
Submit year one grant report to IMLS												
Phase Two												
Hire graduate research assistants												
Develop interview protocol												
Advisory board meeting												
Obtain IRB approval												
Recruit interview participants												
Interview participants												
Analyze interview data												
Post update to project website												
Submit conference proposals												
Write phase two scholarly paper and commentary												
Submit year two grant report to IMLS												
Post phase two report to project website												
Phase Three												
Develop materials for facilitated discussions												
Advisory board meeting												
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Work with LFI to adapt Toolkit for their use												
Publish Facilitated Discussions toolkit to website												
Submit three year grant report to IMLS												

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.

The digital products for this project are
two scholarly published papers
Facilitated Discussions Toolkit
project website to host the papers and toolkit and to post project updates
The Facilitated Discussions Toolkit will be openly licensed with a Creative Commons Attribution-Non Commercial (CC BY-NC).
We will attempt to publish papers in open access electronic journals, so that they will be freely available, as well as indexed and archived. "Open access" takes many forms in journal publishing. We will negotiate for our papers to have a license as close to CC BY-NC as possible.

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.

The University at Buffalo and Indiana University Purdue University Indianapolis agree that all content created for the project will be licensed under the CC BY-NC.

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.

There are no anticipated privacy concerns, no necessary permissions or rights, and no potential cultural sensitivities regarding the digital products created by the project.

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.

The digital products for this project are
two published papers (.pdf)
Facilitated Discussions Toolkit (.pdf and .html)
project website to host the papers and toolkit and to post project updates (.html)

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.

All digital products will be generated by the collaborators on the project.
Equipment, software and supplies used by the project will include:
icrosoft Office
dobe Acrobat
aptionSync
ualtrics
PSS
axQDA
oom videoconferencing

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).

All digital products will be formatted to standards that are compatible with the CC BY-NC license and will be most accessible for library practitioners, scholars, and instructors. This will include PDF and HTML.

B. Workflow and Asset Maintenance/Preservation

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

We do not expect significant quality control challenges. The PI will serve as the final inspector on all digital products and determine when resources are ready to be added to the website or submitted for publication.

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).

All digital products will be available on the project's website hosted by the University at Buffalo. Papers will be published and archived by an electronic journal, preferably an open access journal.

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).

N/A

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

N/A

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).

N/A

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).

All digital products will be available on the project's website hosted by the University at Buffalo. The website and its contents, as well as the papers, will be openly available to the public via standard web browsers.

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.

The project team has not previously created digital content together. Examples of digital content hosted by the University at Buffalo can be found here: https://ed.buffalo.edu/research.html.

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.

N/A

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.

N/A

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.

N/A

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

N/A

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

N/A

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

N/A

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

N/A

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.

N/A

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

N/A

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

Name of publicly accessible source code repository:

N/A

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.

The research project will generate three types of data: interview audio recordings, survey responses, and facilitation video recordings. The audio recordings will be transcribed and used to support qualitative analysis methods (e.g., coding). The survey responses will be analyzed using qualitative and quantitative methods (e.g., descriptive and inferential statistics). And the video recordings will be analyzed using qualitative methods. The schedule of completion reflects the period of time we will generate data and is also duplicated below:
Survey responses: February 2020
nterview audio recordings: November 2020 - April 2021
acilitation video recordings: January - March 2022

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?

The research will undergo IRB approval in stages. IRBs at University of Buffalo and Indiana University-Indianapolis will review each stage of research. The schedule of completion reflects the period of time in which we will seek IRB 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).

There exist two ways the team will collect PII in the course of the project. First, recruiting individuals will create a trail of documentation that identifies their interest and participation in the project. Second, PII may be collected as part of data collection and captured in digital files. To resolve the first issue, only the research team will have access to communications and documentation. For the second issue, disclosed research results will only include pseudonymized or aggregate results. We will not disclose data that could identify PII, confidential, or proprietary information.

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.

Research documentation will be stored with data in a secure Box folder. However, any identifiable keys will be stored apart from the data to reduce the risk of participant reidentification in the rare but possible case of a data breach or unapproved access to the Box folder. The research documentation will have the same lifespan as the data. We will maintain the data and related documentation for five years after the project's completion. it will be destroyed with the data three years after the project's completion.

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).

Data will be generated via audio recordings, survey responses, and video recordings. All audio will be produced using handheld devices (e.g., smart phones, web conferencing systems, digital audio recorders). The only technical requirement in this case is the ability to export the recording from the device to a computer. Survey responses will be captured using the Qualtrics survey system and then exported into quantitative data analytics software, such as SPSS. Video recordings will be captured using a handheld video recorder device. The audio and video will then need to be exported to qualitative data analytics software, such as MAXQDA.

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?

Project documentation will include spreadsheets and word processing documents to capture processes, tasks, organizational strategies related to the datasets. Documentation will only exist in digital formats and will be stored in the secure Box folder. The documentation and the data itself will follow a strict data management plan to help with strategic storage, organization, and retrieval.
The research team will index the data in a master spreadsheet that will capture storage location and processes related to the data. The file will be stored alongside the data in the secure Box folder. Box automatically creates revisions of documents, which will help the team keep track of changes and secure associations between documentation and data.

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

Only de-identified and aggregate results will be disclosed to the public in research artifacts (e.g., articles, presentations). The team will retain the data and related documentation for five years after the project's completion. At the five year mark, the team will ensure data is securely deleted from personal devices and shared workspaces (e.g., the secure Box folder).

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

Name of repository:

This is not applicable to our project. We will not deposit a raw dataset.

URL:

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

The research team is committed to the strategic and careful management of research data and related documentation. The team is resolved to follow the data management plan and review it as necessary during team meetings. If significant changes occur in the team's processes and/or infrastructure, the PI will work with IMLS to resolve any issues and maintain compliance with federal rules and requirements.