

Acceptable and Unacceptable Uses of Academic Library Search Data: An Interpretive Description of Undergraduate Student Perspectives

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Article abstract

Objective – This article presents findings about undergraduate student attitudes regarding search data privacy in academic libraries. Although the library literature includes many articles about librarian perceptions on this matter, this paper adds rich, qualitative evidence to the limited research available about student preferences for how libraries should handle information about what they search for, borrow, and download. This paper covers acceptable and unacceptable uses of student search data based on American undergraduate student perspectives. This is an important area of study due to the increasingly data-driven nature of evaluation, accountability, and improvement in higher education, which relies on individual-level student data for learning analytics. These practices are sometimes at odds with libraries' longstanding commitment to user privacy, which has historically limited the amount of data collected about student use of materials. However, libraries' use of student search data is increasing.

Methods – This qualitative study was approached through interpretive description, a rigorous qualitative framework for answering practical research questions in an applied setting or discipline. I employed the constant comparative method of data collection and analysis to conduct semi-structured interviews with 27 undergraduate students at a large, American, urban public research institution. Interviews included questions as well as vignettes: short scenarios designed to elicit response. Through inductive coding, I organized the data into interpretive themes and subthemes to describe student attitudes.

Results – Participants viewed academic library search data as less personally revealing than internet search data. As a result, students were generally comfortable with libraries collecting search data so long as it is used for their benefit. They were comfortable with data being used to improve library collections and services, but were more ambivalent about use of search data for personalized search results and for learning analytics-based assessment. Students had mixed feelings about using search data in investigations related to criminal activity or national security. Most students expressed a desire for de-identification and user control of data. Students who were not comfortable with their search data being collected or used often held their convictions more strongly than those who found the practice acceptable, and their concerns were often related to how data might be used in ways that harm members of vulnerable groups.

Conclusion – The results of this study suggested that librarians should further explore student perspectives about search data collection in academic libraries to consider how and if they might adjust their data collection practices to be respectful of student preferences for privacy, while still meeting evaluation and improvement objectives. This study also introduces the qualitative framework of interpretive description to the library and information science literature, promoting use of this applied qualitative approach, which is well-suited to the practical questions often asked in library research studies.

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Research Article

Acceptable and Unacceptable Uses of Academic Library Search Data: An Interpretive Description of Undergraduate Student Perspectives

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Abstract

Objective – This article presents findings about undergraduate student attitudes regarding search data privacy in academic libraries. Although the library literature includes many articles about librarian perceptions on this matter, this paper adds rich, qualitative evidence to the limited research available about student preferences for how libraries should handle information about what they search for, borrow, and download. This paper covers acceptable and unacceptable uses of student search data based on American undergraduate student perspectives. This is an important area of study due to the increasingly data-driven nature of evaluation, accountability, and improvement in higher education, which relies on individual-level student data for learning analytics. These practices are sometimes at odds with libraries' longstanding commitment to user privacy, which has historically limited the amount of data collected about student use of materials. However, libraries' use of student search data is increasing.

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conduct semi-structured interviews with 27 undergraduate students at a large, American, urban public research institution. Interviews included questions as well as vignettes: short scenarios designed to elicit response. Through inductive coding, I organized the data into interpretive themes and subthemes to describe student attitudes.

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Conclusion – The results of this study suggested that librarians should further explore student perspectives about search data collection in academic libraries to consider how and if they might adjust their data collection practices to be respectful of student preferences for privacy, while still meeting evaluation and improvement objectives. This study also introduces the qualitative framework of interpretive description to the library and information science literature, promoting use of this applied qualitative approach, which is well-suited to the practical questions often asked in library research studies.

Introduction

In order to meet demands for accountability, demonstrate value, and effectively serve users, libraries must embrace assessment and evaluation (Oakleaf, 2010, Prindle & Loos, 2017). Data about individual students' use of library collections and services can enable evidence based assessment techniques. However, librarians' long-standing emphasis on user privacy has resulted in minimal collection of search data: information about what users search for, borrow, or download (Malinconico, 2011; Town & Matthews, 2012; Shuler, 2004). Resistance to this type of data collection has limited the types of evaluation that libraries have used in the past. However, some libraries have begun to use student data in learning analytics models that more directly tie library use to measures of student success (Jones, Briney, et al., 2020; Oakleaf, 2010, 2018b). Learning analytics can be described as the use of

student data to improve student learning, student success, or institutional effectiveness and efficiency (Jones, Briney, et al., 2020).

Although many publications address librarian views on privacy, user perspectives are not well represented in the literature. A few studies examine student attitudes about search data privacy in libraries in the United States and the United Kingdom (Johns & Lawson, 2005; Jones et al., 2019; Sturges et al., 2003; Sutlieff & Chelin, 2010), but most are limited in methodology or scope. In addition, the results paint a mixed picture of student perspectives and suggest the need for additional qualitative research to enrich the small body of extant literature on the topic.

Literature Review

Statements from professional organizations have affirmed the importance of privacy in libraries (American Library Association, 1986, 2008,

2019a, 2019b; International Federation of Library Associations and Institutions, 2015; National Information Standards Organization, 2015). Historically, American librarians have espoused the belief that users cannot search freely for information if their searches are accessible to others. The majority of librarians consider the monitoring and collection of search data an invasion of library users' privacy (Zimmer, 2014). Therefore, many libraries retain as little data as possible about what their users are searching for and reading in order to guarantee unfettered access to information, and to prevent the scrutiny of library users' search habits by third parties (Malinconico, 2011; Town & Matthews, 2012; Shuler, 2004). In addition, the confidentiality of library records is protected by statutes, attorney general opinions, or state constitutions in all fifty states and the District of Columbia (American Library Association, 2018), although law enforcement and other government agencies are able to obtain library records through a course of due process (American Library Association, 2019b).

However, librarian perspectives on how search data might be used are changing. Some support de-identifying and protecting the privacy and confidentiality of student search data instead of deleting it, enabling evaluation approaches aligned with increasingly prominent learning analytics models on university campuses (Brown & Malenfant, 2015, 2016, 2017; Davidson et al., 2013; Oakleaf, 2010, 2018a, 2018b; Town & Matthews, 2012). Similarly, standards documents from organizations outside of the American Library Association support the thoughtful collection, retention, and protection of library user data in order to improve services and collections (National Information Standards Organization, 2015).

Although the literature revealed historical and contemporary perspectives from the library profession about search data privacy, few studies addressed user perspectives. Johns and Lawson (2005) administered a survey to primarily undergraduate students in Iowa

regarding their awareness and attitudes about universities' and libraries' use of "online private information." Few respondents felt it was appropriate for university libraries to use students' private online data to enhance library services. Some indicated that it may be acceptable for libraries to view private online information, but only with informed consent, for a clearly stated purpose, and with the understanding that it would not be disseminated to third parties. Sutlieff and Chelin (2010) surveyed undergraduate students in the United Kingdom (UK) and found that respondents trusted libraries to manage their private search data. Nearly 60% were comfortable with the notion of libraries using their borrowing histories to make improvements to the library's collection – a finding that contrasts Johns and Lawson's results. Sturges et al. (2003) also conducted a survey that sought UK users' perspectives related to privacy concerns in libraries, and found that most respondents accepted that libraries should/could monitor use of electronic use of resources for misuse such as unauthorized access to materials, but felt that libraries should not pass along information about their activities in the library to commercial or official entities.

Unfortunately, none of these studies provided evidence of methodological rigor or the psychometric properties of the instruments used. Without evidence of reliability or validity, or clear definitions of key terms and constructs that the surveys purported to measure, the findings should be interpreted with caution.

In recent years, the Data Doubles (<https://datadoubles.org/>) research team published findings about student perspectives on privacy and learning analytics, including an emphasis on data collection in academic libraries (Jones et al., 2019; Jones, Asher, et al., 2020). The authors conducted more than 100 interviews with undergraduate students in the United States, approximately one quarter of which focused specifically on libraries and learning analytics, while the other interviews

focused on broader topics related to privacy and learning analytics in higher education.

Although most participants were considering data privacy in higher education and libraries for the first time, the interviews still yielded useful data. Students were generally accepting about data collection in academic libraries if it benefitted them, and saw potential advantages of using data to improve access to resources and provide personalized search results (Jones et al., 2019; Jones, Asher, et al., 2020). Similarly, they felt that learning analytics in higher education could be useful if the focus was on educational purposes and helping students. However, students were unable to detail specific practices that might achieve this purpose, given their limited familiarity with learning analytics.

Many students expressed trust in libraries and universities and believed they were well-intentioned. They assumed that their institutions collected data about them, and expected that it would only be used within the institution in ways that would advance student success (Jones et al., 2019; Jones, Asher, et al., 2020). However, some students stated that their relaxed privacy attitudes should not outweigh perspectives of peers who may feel differently, and acknowledged that students in vulnerable groups may have greater concerns about data collection. They opposed the idea of universities or libraries sharing any data about them with third parties with the exception of vendors like learning management systems or library databases. Overall, students favored de-identifying data or using it in aggregate to protect privacy.

The Data Doubles (Jones et al., 2019; Jones, Asher, et al., 2020) findings contributed the first in-depth understanding of student attitudes on search data privacy in academic libraries, especially as they pertained to learning analytics. Otherwise, the literature pertaining to student perceptions of search data privacy in academic libraries provided few useful or reliable findings.

Aims

The purpose of this study was to contribute to and build upon the small body of American and British research focused on user perspectives on search data privacy in academic libraries. Specifically, this article presents findings related to two research questions:

1. What are undergraduate student attitudes about whether academic libraries should collect and maintain user search data, and why?
2. What are acceptable and unacceptable uses of student library search data according to undergraduate students, and why?

Findings presented in this article are derived from a larger dissertation research study (Garipey, 2019), which examined other facets of student perceptions about search data privacy in academic libraries. Additional findings will be shared in future publications, including articles about how student perspectives on search data privacy are formed; how students' library search data privacy attitudes differ from their perspectives about internet search privacy, and an in-depth exploration of how student search data privacy attitudes are shaped by issues related to diversity, bias, and oppression.

Methods

Interpretive Description

The scarcity of well-designed, rigorous research examining student attitudes about search data privacy in academic libraries affirms the need for an in-depth understanding of this issue and calls for a qualitative approach. Questions well-suited for qualitative methods are those for which themes, patterns, and understandings have not been well documented or reported (Thorne, 2016). This study was conducted using the qualitative approach of interpretive description, a methodology developed in the discipline of nursing by Thorne (2016; see also

Thorne et al., 1997; Thorne et al., 2004). Interpretive description is a framework for gaining in-depth understanding of a phenomenon and subjective knowledge in clinical or applied disciplines. Interpretive description’s practical focus prevents the need for researchers to engage in “methodological acrobatics” (Sandelowski, 2000, p. 335), in which qualitative researchers try to fit their studies into established qualitative traditions, such as grounded theory, phenomenology, or ethnography, in an effort to signal rigor. Because most of those traditions were born out of disciplines deeply rooted in theory such as anthropology and sociology, they are not a good fit for answering research questions intended to inform practice in applied settings, guiding disciplines toward practical action.

Interpretive description provides a rigorous, epistemologically credible framework for research in applied and clinical disciplines that acknowledges the importance of subjective, experiential, and constructed knowledge. This

aligns with the assumptions undergirding my motivation for this study: that different students experience the world differently, and that their diverse experiences, attitudes, and perspectives of the realities should be a critical component of how libraries approach the way we think about and handle search data privacy. Figure 1 explicates the epistemological underpinnings of interpretive description.

Interpretive description is not a discrete method, but rather an overall approach. It encourages the thoughtful utilization of methods from various qualitative traditions to answer specific research questions, which are posed in a way that allows answers to be resituated within the context of the applied field. Interpretive description has potential to advance the quality and utility of qualitative research in librarianship, a discipline in which research tends to be highly practical and often informs practice. Based on the publications located in the literature search, this article is the first introduction to the use of interpretive description in library research.

Interpretive description studies:
<ul style="list-style-type: none"> • are conducted in as naturalistic a context as possible in a manner that is respectful of the comfort and ethical rights of all participants,
<ul style="list-style-type: none"> • Explicitly attend to the value of subjective and experiential knowledge as one of the fundamental sources of applied practice insight,
<ul style="list-style-type: none"> • Capitalize on human commonalities as well as individual expressions of variance within a shared focus of interest,
<ul style="list-style-type: none"> • Reflect issues that are not bound by time and context, but attend carefully to the time and context within which human expressions are enacted,
<ul style="list-style-type: none"> • Acknowledge a social “constructed” element to human experience that cannot be meaningfully separated from its essential nature,
<ul style="list-style-type: none"> • Recognize that, in the world of human experience, “reality” involves multiple constructed realities that may well at times be contradictory, and
<ul style="list-style-type: none"> • Acknowledge an inseparable interaction between the knower and the known, such that the inquirer and the “object” of that inquiry influence one another in the production of the research outcomes.

Figure 1
Epistemological underpinnings of interpretive description (Thorne, 2016, p. 82).

Within the framework of interpretive description, I identified the most effective data collection and analysis techniques to answer my research questions. I conducted in-depth, semi-structured interviews with undergraduate students at Virginia Commonwealth University (VCU), an urban, public, research university in Richmond, Virginia, United States of America, with more than 31,000 enrolled students. VCU is known for its racial and ethnic diversity: nearly half of the student body indicates that they are a member of an ethnic/racial minority group. The participants in this study were all currently enrolled undergraduate students at VCU, who had at least some experience using academic research libraries.

Recruitment and Sampling

Before beginning recruitment, I obtained approval for the study from VCU's Institutional Review Board. The study was subject to expedited review given its low-risk nature. Study participants were recruited through emails to faculty and students with whom I had a pre-existing relationship, posts in the VCU daily newsletter, social media posts, and flyers. A \$15 Amazon gift card incentivized participation. Convenience sampling was the initial sampling method for the study (Creswell, 2013), and 53 students expressed interest in the study. Students were asked to complete a brief screening survey to ensure they had used academic libraries before and to provide demographic information.

I scheduled interviews on a rolling basis between March and May of 2019. Because more students expressed interest in the study than I could practically interview, I used information provided in the screening survey to seek demographic diversity in terms of race, ethnicity, gender, major, and rank when selecting participants. I intended to seek participants who mirrored VCU's rich diversity to the extent it was possible. Despite efforts to increase diversity among interview participants, this qualitative study is not intended to be

generalized. The goal of including heterogeneous students was to increase the richness of the data and findings.

This sampling approach was consistent with Maxwell's (2013) discussion of convenience sampling as a method of participant selection that can also be purposeful, especially when intended to increase the heterogeneity or richness of the participant pool. In addition, I used elements of purposeful, theoretical, and maximal variation sampling when selecting students to interview from the pool of those who expressed interest in the study (Glaser & Strauss, 1967; Maxwell, 2013; Thorne, 2016). Glaser and Strauss (1967) described theoretical sampling as "the process of data collection... whereby the analyst jointly collects, codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges" (p. 45). An important component of theoretical sampling is maximal variation sampling, in which the researcher seeks participants who, based on the emerging themes and theory of the data, might illuminate a new angle of a particular concept or phenomenon (Thorne, 2016).

After 27 interviews, I reached a point at which no new themes were emerging. Thorne (2016) challenged the traditional notion of saturation in which a researcher can be confident that s/he has captured all variations in a subjective body of knowledge when one begins to hear the same information from different participants with no variation (Sandelowski, 2008). Thorne asserted that a lack of new information from study participants does not necessarily mean that all perspectives or manifestations of a phenomenon have been captured, and recommended that researchers acknowledge that other perspectives probably exist that will not or cannot be captured within the practical constraints of most studies. Accordingly, I acknowledge that while no new themes were emerging after 27 interviews, I expect future studies to continue to reveal new themes, or delve deeper into specific themes that emerged in this study.

Characteristics of the 27 students interviewed included:

- More than half of the students interviewed indicated that they were members of racial or ethnic minority groups.
- Most participants were women, but there were several men as well as two transgender/nonbinary students.
- Students from all undergraduate ranks were represented, from first-year students to seniors, but the highest proportion were first-years.
- Many participants were honors students. The high concentration of first-year students and honors students was largely a result of faculty members in the Honors College enthusiastically encouraging participation in the study.
- All participants were between the ages of 18 and 24.

Data Collection and Analysis

Data collection and analysis occurred simultaneously using the constant comparative method (Glaser & Strauss, 1967). Thorne (2016) stated that “while straight description could occur in a study that gathers data first and thinks later, interpretive description will inevitably require that the ongoing engagement with data be strategically employed to confirm, test, explore, and expand on the conceptualizations that begin to form as you enter the field” (p. 109). Interviews were held in person and audio-recorded, then professionally transcribed. The average number of minutes per interview was 56. All participants provided informed consent. They were advised that their identities would be kept confidential and that no one except the primary researcher would have access to their interview recordings or transcripts in order to protect their privacy.

A semi-structured interview approach ensured that pertinent questions were asked in each interview, while still allowing flexibility in order

to reveal information germane to the study as data collection and analysis progressed (Guest et al., 2013; Roulston & Choi, 2018). The interviews were composed of both questions and vignettes (Finch, 1987). The inclusion of vignettes, defined by Finch (1987) as “short stories about hypothetical characters in specified circumstances, to whose situation the interviewee is invited to respond” (p. 105), enabled participants to respond to concrete situations in order to elicit more abstract ideas and attitudes (Hazel, 1995). A domain-organized interview guide (Appendix A) permitted flexibility to ask questions at the most logical time in the interview based on participants’ responses, as opposed to adhering to a strict order (Guest et al., 2013).

I developed codes through inductive, emergent coding in ATLAS.ti (<https://atlasti.com/>). Codes were developed without the aid of a coding schedule to ensure that they authentically reflected the attitudes of study participants. I engaged Miles et al.’s (2014) approach of First Cycle and Second Cycle Coding to advance a thorough and reflective process. The final coding structure consisted of nearly 100 individual codes, grouped into 19 code families that I used to identify themes related to the research questions (Appendix B).

Evaluative Criteria

To ensure integrity and rigor in the design, collection, and analysis of this study, I employed strategies described by Thorne (2016) and Lincoln and Guba (1985), all of whom provided evaluative criteria for qualitative studies. Thorne’s four criteria – epistemological credibility, representative credibility, analytic logic, and interpretive authority – have been developed specifically for the purposes of evaluating interpretive description studies. Lincoln and Guba developed their criteria – credibility, authenticity, transferability, and dependability – more generally for an array of qualitative studies, and remain prominent in the literature today. The primary strategies for

meeting both sets of criteria were: ensuring alignment of the research questions with the purpose of the study, accounting scrupulously for decisions about sampling, data collection, and data analysis through analytic memos, and controlling for researcher bias through reflexive journaling. I also paid careful attention to extreme or negative cases whose perspectives represented significant differences of perspective from other participants, and clarified and confirmed findings during data collection with participants as appropriate.

Findings

Pseudonyms were assigned to all participants in order to share quotes that support themes. For clarity and readability, these themes are numbered, but the order and numbering does not reflect the significance of a theme in comparison to others.

Foundational Themes

The data revealed several themes about student awareness and assumptions related to privacy, academic libraries, and related topics. These foundational themes often played a pivotal role in shaping student thoughts about search data privacy in academic libraries and undergird other themes detailed in this article.

Theme 1: First-time/Evolving Thoughts and Limited Awareness of Library Practices

Although students were very much aware that their internet search habits were being tracked, most had not considered whether their library search data was being monitored. As one student said: "This is the first time that I've ever thought about it, if we're being honest." Because students were considering issues related to privacy and academic libraries for the first time, the decision to use vignettes in the interviews proved to be prudent for eliciting rich responses. In some cases, student perspectives evolved over the course of the interview as they considered the vignettes.

Theme 2: Academic Libraries are Mostly Used for Academic Assignments

Many students thought of their academic library search data as impersonal because they typically used library resources for academic assignments. They typically did not see research associated with their assignments as reflective of their personal selves, and thought of library search data as "less sensitive" as a result:

...but I mean, libraries aren't getting a full picture of patrons just because our research is so skewed. Like I feel like if you were to look up like what I like [at an academic library], I'd be weirdly into like whatever project I have rather than like who I am. (Yoofi)

However, some students who were personally passionate about research in more controversial areas were more concerned about the privacy of library search records.

Theme 3: Acknowledgement of Different Privacy-Related Perspectives and Experiences

As participants shared their own views on search data privacy in academic libraries, they also assumed that a plurality of viewpoints existed among fellow students. This expressed awareness was most prevalent when a student expressed low levels of concern about privacy themselves but acknowledged that others may have greater concerns. Participants particularly noted that search data privacy may be more important for students who are members of vulnerable populations, or who are researching controversial or sensitive topics. Some participants who were members of vulnerable or minoritized groups had firsthand experience with bias and described an increased need for privacy, and others acknowledged that data collection and use is often steeped in systemic bias. Specific concerns about government access to search data was also raised, especially regarding vulnerable populations.

Participant Attitudes about Library Search Data Collection and Privacy

Themes presented in this section address student attitudes about search data privacy in academic libraries, as well as students' nuanced views about acceptable and unacceptable uses of that data from their perspectives.

Theme 4: Comfort with Libraries Using Search Data to Benefit Students or Improve Services and Collections

Participants were largely comfortable with academic libraries collecting search data for purposes that benefitted students. This perspective was rooted in trust in libraries, combined with the fact that students reported they are largely desensitized to search data collection given their experiences on the internet and social media. As one participant put it, the library is "the least of my concerns" when it comes to data tracking.

In fact, a number of participants assumed that libraries were already collecting data about them. Some were surprised or perplexed when they learned through vignettes that librarians often decouple search data from specific users, or even dispose of the data altogether. One participant described these practices as "a little bit drastic." Another indicated that "getting rid of it and not making use of it is a waste." However, many students expressed a preference for deidentifying their library search data, and felt that libraries should be transparent about how they use it. Some suggested ways for users to control their own data, such as opt-in or opt-out models. Participants expected libraries to make reasonable efforts to create a secure information environment in order to protect student data from unauthorized parties.

Although most students felt comfortable with the idea of academic libraries using search data if the intent was to benefit students, this was not universal. Some students favored routine data

purging – or never collecting it to begin with – in order to protect academic freedom and the ability to search without interference.

Participants who had the most fervent opinions about maintaining user privacy in libraries often spoke of their experiences as members of minoritized or oppressed groups, or similar experiences of others, which significantly contributed to their perspectives on search data privacy.

Theme 5: Views on Uses of Search Data for Individually Tailored Search Results Varies

Students held varying attitudes about using library search data for individually tailored search results based on their previous search history. Some thought it would be helpful, but some participants were skeptical about how much personalized results would actually increase convenience, particularly for undergraduate students. Specifically, participants expressed that because individual undergraduate students' research assignments vary widely due to general education courses or diversified interests, the type of research they do for one class differs from their needs in the next, which could result in unhelpful tailored search results. Some participants also expressed concern that they would enter an "echo chamber" based on a system of tailored search results wherein they would only be exposed to information that aligned with their prior searches.

Theme 6: Use of Library Search Data for Learning Analytics Initiatives is Controversial

Students were mostly disapproving of learning analytics models as they related to library use, and found the learning analytics movement in general to be controversial. Most participants expressed negative opinions about learning analytics approaches that treated low library use as a sign of potential academic issues, because they did not see failure to use the library as indicative of potential academic risk.

Some participants were bothered by the idea of search data being used by academic advisors to flag students who may need extra support. They indicated that engaging in this practice of reporting “anonymous tips,” using library search data as an “academic issue detector,” or acting as the “GPA Police” could erode the trust that students have in libraries. This may cause students to view a place they once perceived as helpful as a place engaged in “tattletaling,” instead. Additionally, some found the learning analytics model to be generally patronizing, resembling a “helicopter parent”:

I get the intention but I don't feel like academic advisors or librarians should feel obligated to be responsible for the students ... college is where you become more of yourself, where you figure yourself out. I feel like doing that kind of stuff to me would make me feel like I'm back in high school. (Abeo)

On the other hand, some students felt that students who are coming from high school to college may benefit from the additional support of a learning analytics model in which the university used data to cue special outreach to students if there are signs of academic issues, including low library use.

Students were not as negative about employing a research model that looked at data in aggregate as compared to the learning analytics model previously described, which hinged on individual level data and intervention. However, they questioned the notion of correlation versus causation. As one student said: “...I don't know, the relationship between use of library materials and GPA... I just don't think that's enough to... draw any sort of conclusions generally about either students or about the source” (Kavya).

Theme 7: Varied and Ambivalent Views on Search Data for Preventing Bad Behaviour

Participants were asked to share their thoughts on library search data potentially being used by the government or law enforcement to prevent a variety of “bad behaviours” such as crime and terrorism. Opinions varied significantly on the use of library search data in the course of criminal investigations or national security matters. Some students felt that if lives could potentially be saved, then privacy should be sacrificed. Others felt that privacy should be preserved, even if there is potential to use it to prevent undesirable behaviours and outcomes. Both perspectives were sometimes held with strong conviction. Some participants saw merit in arguments for and against using data this way, and were ultimately ambivalent about the right balance.

Regardless of student perspectives on whether privacy or safety should be prioritized, a common theme emerged: students questioned the relevance of library search data in such investigations. Because most participants did not feel that their academic library search data is personal or representative of their true selves, they felt that the information was unlikely to be useful in investigations about crime or terrorism:

I just don't feel like that would be effective at all. I feel like ... monitoring Google makes more sense or online video chats ... that makes sense. But I really don't think there's anything in a library that's really going to help them that much. (Clayton)

Even if the usefulness of library search data in these circumstances was questionable from student perspectives, some still expressed concerns about how bias and stereotyping could present disproportionate risk to members of vulnerable groups if data was used for this purpose.

Discussion

Like Jones et al. (2019) and Jones, Asher, et al. (2020), this study revealed that most students expressed trust in academic libraries. Most participants indicated that they were comfortable with libraries using search data for certain purposes, and especially those that would benefit students or improve collections and services (Jones et al., 2019; Jones, Asher, et al., 2020; Sutcliffe & Chelin, 2010). However, not all participants felt this way. Students who expressed concerns about how library search data might be collected and used often mentioned their own experiences related to bias, oppression, or stereotyping. Many of those who were not concerned about their own search data privacy were attentive to the fact that others may be less comfortable or more vulnerable, depending on their race, religion, gender, sexual orientation, or abilities. Like Jones et al. (2019), Jones, Asher, et al. (2020), and Johns and Lawson (2005), this study revealed a want for transparency about how search data is collected and used, and many students supported models in which data is de-identified or anonymized.

In this study, I also presented findings not previously reported in the literature, and provided useful comparison to other studies. Through the use of vignettes, I was able to elicit detailed, nuanced data from students. Their complex and varied perspectives demonstrated that few types of search data use are entirely acceptable or unacceptable. Overall, students were open to the use of search data for improving library services and collections, but had mixed feelings about whether or not tailored results would be beneficial to undergraduate students, given the variety of topic areas they pursued during their studies.

Most students held fairly negative views about learning analytics scenarios, a finding somewhat different from that of Jones et al. (2019) and Jones, Asher, et al. (2020), who found students to be conceptually positive about learning analytics. However, Jones et al. acknowledged

that student participants did not possess enough knowledge about learning analytics to imagine or provide specific examples of how data could be used, which may be partially responsible for the difference in findings. In this study, the use of a vignette about learning analytics in academic libraries provided an opportunity for concrete responses to specific scenarios. The concerns students expressed about learning analytics and libraries revolved mostly around their invasive, overbearing nature, and should be further researched and considered carefully as libraries increasingly embrace these approaches (Oakleaf, 2010, 2018b).

Finally, this is the first study that offered in-depth understanding of how students think about third-party access to academic library search data, including potential acquisition of search data by the government. This study revealed complex and nuanced views about the government's right to use search data to protect public safety. Although opinions varied about the extent to which government should have access to search data in academic libraries and under what circumstances, many participants felt that such data would not be useful, which reduced their conviction in the opinions they held about it. This sense of apathy was furthered because they viewed library data as neither reflective of their whole selves, nor likely to be of help in an investigation or screening for behaviours that could affect public safety. Although there were exceptions, this contrasted significantly with many of the reasons that librarians emphasize the importance of deleting user search data (Estabrook, 1996; Harper & Oltmann, 2017; Zimmer, 2013), which is to protect users from third-party access to data, often referring to government entities.

Like most qualitative studies, these findings are not intended to be generalized beyond the population of students in the sample, but can serve as a useful springboard for future research. Areas of particular importance include more perspectives from members of minority groups and other vulnerable or

underrepresented populations. In addition, the perspectives of other user groups beyond undergraduate students, such as graduate students and faculty, are likely different and important to understand. For example, undergraduates' perspectives that their library search data is not representative of their true selves may be significantly different than a faculty member whose sustained research is focused on difficult social problems or controversial topics that are also personally important to them.

The use of the interpretive description framework, along with vignettes, was well-suited to understanding respondents' complex views on privacy, and has potential for effectively exploring the perspectives of other groups, as well. Finally, the findings of this study could play a role in developing a quantitative instrument to capture more generalizable findings about search data privacy perspectives, the findings of which could be used to inform libraries' practices related to data privacy and assessment.

Conclusion

This study makes an important contribution to a small body of literature about user perspectives on search data privacy in academic libraries. The findings added to the rigorous scholarship of the Data Doubles team (Jones et al., 2019; Jones, Asher, et al., 2020), both by deepening the library profession's nuanced knowledge about student perspectives through qualitative research, and by focusing specifically on data privacy matters as they pertain to academic libraries as opposed to higher education more broadly. It also introduces a new research methodology – interpretive description – to library and information science practitioner-researchers.

Findings of this research suggested that while some students are comfortable with library search data collection and use, they are also concerned about equity, fairness, and bias. The

fact that some members of underrepresented or marginalized groups from the participant pool felt threatened by the notion of their data being collected should compel librarians to reflect on ways to protect the privacy of those who may be most adversely affected if data is misused. This is especially important as the profession continues to consider new forms of data collection and assessment that rely on individual-level student data.

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Appendix A Interview Guide

Since semi-structured interviews are intended to be flexible and evolving, the questions below are tentative. They exemplify the nature of questions that will be asked of study participants, but the questions themselves may change and evolve over the course of participant interviews. Although questions are loosely ordered by domain, both the interviewer and the participants will be free to be responsive to the discussions the interview facilitates, and questions may be asked in a different order.

Throughout the interview, probing questions will be used as appropriate in which participants are invited to further explain their answers. Frequently used follow-up questions will include:

- Could you tell me more about that?
- Why do you think you feel/think that way?

Introduction

- Introductions; small talk to establish rapport.
- Researcher seeks permission to record the interview.
- “This study is about understanding students’ perceptions about privacy when it comes to searching for data and checking things out in academic libraries. You’ll hear me refer to that throughout the interview as “search data privacy” – the things you search for, download, or borrow from academic libraries. Although the focus is on searching for information in an academic library environment, I might also ask some questions about your attitudes on searching for information in other environments, like on the internet, in order to contextualize the conversation.”
- “There are no right or wrong answers to any of the questions – your perspective is what I’m interested in! And there’s no such thing as talking too much – I’m interested to hear what you have to say.”
- “I’m interested in this research because I think it will be helpful for libraries to understand student perspectives on this issue when developing policies on search data privacy, and to help us use data to improve our services appropriately.”
- “Throughout the interview, I will make reference to ‘using academic libraries’ and being ‘in academic libraries.’ However, academic libraries are not limited to physical locations, so experiences you have related to searching academic libraries’ websites, for example, are equally relevant.”
- “I’ll also ask you to share some information about yourself with me, such as where you and your parents or family grew up. I’m interested in this because there’s some indication that people’s nationality or cultural background might help shape their views on privacy, and I’d like to better understand that.”
- Offer a brief overview of privacy and libraries, acknowledging that many students haven’t had a chance to think about this.

Questions about the participant

- What year are you at VCU?
- What’s your major?
- Where did you grow up? Tell me a little bit about the place you lived.
 - Diversity
 - Political climate
 - Overall experience

- Where did your parents/family grow up?
 - What brought you to [where they grew up]?
 - Did you visit there often?

Domain 1: Experiences with searching for information

- Tell me a little bit about your experiences using academic libraries. How have you used them?
 - What kinds of information are you looking for when you search academic library resources?
 - Describe academic and/or personal uses of academic libraries
- How do your experiences searching at an academic library differ from your experiences searching elsewhere, like on the internet?
 - Do you search for different types of information?

Domain 2: Perceptions of and expectations for privacy when searching for information

- Have you ever thought about whether your search habits were being monitored either in an academic library or in another search environment like the internet? If so, please describe how that made you feel.
 - If you assume that your search habits are being monitored, does it affect the way you search? In what ways?
 - Do you use any other strategies to further protect privacy of your search activities?
- Who do you feel should or should not have access to data about what you search for, both on the internet and in academic libraries?
- Scenario A: For this question, I'm going to present a scenario, and then I would like you to share your reaction with me about how it makes you feel about privacy in that particular context. "An academic library wishes to improve its search features. To do so, they decide to collect and maintain data about what individuals search for, so that when that person logs into the library system, their results will be tailored based on their previous searches. An undergraduate student who uses the library regularly notices that when she searches for books and articles on the library website, that some of the results seem related to things she's downloaded in the past."
 - How do you feel about this scenario?
 - Can you think of benefits or risks of this scenario?
 - Have you had any experiences that affect the way you think about this scenario?
 - If you were to consider privacy and convenience on a spectrum of importance, with each at opposite ends, please talk about where you would fall on the spectrum. Do you value privacy, convenience, or both?
- Scenario B: For this question, I'm going to present a scenario, and then I would like you to share your reaction with me about how it makes you feel about privacy in that particular context. "An academic library wishes to use data about what students search for, check out, and borrow to assess use of the collection and ways we might improve it. The library maintains a record of each student's search data so that librarians can do data analysis by individual and group (for example, biology majors) about library use. This allows the library to make adjustments to the collection and to the services offered like teaching and outreach to serve students as effectively as possible."
 - How do you feel about this scenario?

- Can you think of benefits or risks of this scenario?
- Have you had any experiences that affect the way you think about this scenario?
- How would you feel if your search data were de-identified from your name and other identifying information?
- Scenario C: An academic library maintains a record of each student's search data. The library uses the data to explore the relationship between use of library materials and academic success (like GPA and grades). When students have not used the library at all but are enrolled in courses that usually necessitate library use, librarians notify those students' academic advisors as an early warning that the student could have academic issues.
 - How do you feel about this scenario?
 - Can you think of benefits or risks of this scenario?
 - Have you had any experiences that affect the way you think about this scenario?
- Please describe feelings of trust or distrust you have for academic libraries, if any, and why you feel that way.
- Does the level of trust you have for libraries differ from the degree to which you trust Google or other internet search engines? Why?
- Scenario D: For this question, I'm going to present a scenario, and then I would like you to share your reaction with me about how it makes you feel about privacy in that particular context. "An academic library elects to routinely purge any data about what library users search for, and what they check out, as soon as items are returned. The decision to do so was made because many librarians believe that people can only search freely for information if there is no possibility of someone else (be it the library or a third party) having access to what they search for. In routinely purging records, libraries forego data that could be useful in helping them design search tools and purchase collections that would serve library users' needs."
 - How do you feel about this scenario?
 - Can you think of benefits or risks of this scenario?
 - Have you had any experiences that affect the way you think about this scenario?
 - What do you think the right balance is between libraries collecting data about students' search habits in order to improve services and protecting user privacy?

Domain 4: Concerns about access to search data/borrowing histories from third parties

- Scenario E: For this question, I'm going to present a scenario, and then I would like you to share your reaction with me about how it makes you feel about privacy in that particular context. "Google maintains data about what people search for in order to better understand user search habits in order to improve the search experience and provide targeted advertisements. In an effort to prevent terrorism, the federal government begins routinely monitoring Google search data to look for suspicious searching behavior."
 - How do you feel about this scenario?
 - Can you think of benefits or risks of this scenario?
 - Are there particular circumstances you can imagine in which it would be appropriate for third parties to access data about what people have searched for?
 - Have you had any experiences that affect the way you think about this scenario?
 - Would your perspective be different about this scenario if we replaced Google search data with library search data/records?

Closing questions

- We've talked about a lot of things today. Can you offer me a quick summary of your views on privacy of search data in academic libraries as they are right now?
- Do you think any of your life experiences or influences to date have shaped your views about how your search data should be handled when searching online or at the library?
 - Ask for expansion of previously mentioned influences
 - Are you a social media? Do you feel that your use/non-use of social media has affected your views on privacy in general?
- Is there anything else you would like to share with me that you think would be important to this study?

Appendix B
Codes Organized by Code Families/Pattern Codes

Code Family/Pattern Code	Individual Codes
Academic and Intellectual Freedom	Academic/intellectual freedom and privacy: ambivalence/context/nuance Academic/Intellectual freedom and privacy: important Academic/Intellectual freedom and privacy: unconcerned Data collection for safety/public good: limits intellectual/academic freedom Internet: wary of filter bubbles Libraries search data for safety/public good: limits intellectual/academic freedom Monitoring changes behavior Monitoring changes thought Monitoring doesn't change behavior Privacy more important for sensitive/controversial topics
Academic Library Use	Academic library use blend of academic and personal use Academic library use blend of academic, professional, and personal use Academic library use focused on academic work
Context/Nuance/Ambivalence	Academic/intellectual freedom and privacy: ambivalence/context/nuance Data collection for safety/public good: ambivalence/context/nuance Data collection for safety/public good: context/nuance/ambivalence First time/evolving thoughts Internet data collection: ambivalence/context/nuance Internet tailoring: ambivalence/context/nuance Learning analytics: ambivalence/context/nuance Libraries search data for improvement: ambivalence/context/nuance Libraries search data for safety/public good: ambivalence/context/nuance Libraries tailoring: ambivalence/context/nuance Library data collection: ambivalence/context/nuance Privacy/convenience: ambivalence/context/nuance Rationale behind searching behavior: ambivalence/context/nuance
Anonymization/De-identification	Anonymization is imperfect Libraries: anonymization necessary Libraries: anonymization not necessary
Awareness/Assumptions	Acknowledges other perspectives Assumes monitoring: general Assumes monitoring: institutions/units/libr collect data Aware of privacy issues/surveillance First time/evolving thoughts
Challenges with Quantitative Data	Academic variables more important than demographics Alternate methods for learning about users Anonymization is imperfect

	<p>Data collection can lead to bias/bad assumptions GPA correlation studies Imperfect data Library data collection: oversimplifies/disadvantages some groups/perspectives Not counting findings for small cohorts</p>
<p>Data Collection to Prevent Behavior</p>	<p>Data collection for safety/public good: ambivalence/context/nuance Data collection for safety/public good: context/nuance/ambivalence Data collection for safety/public good: limits intellectual/academic freedom Data collection for safety/public good: negative feelings Data collection for safety/public good: positive/okay Growing up in 9/11 era Libraries search data for safety/public good: acceptable/positive Libraries search data for safety/public good: ambivalence/context/nuance Libraries search data for safety/public good: limits intellectual/academic freedom Libraries search data for safety/public good: negative</p>
<p>Fairness, Bias, Vulnerable Populations</p>	<p>Data collection can lead to bias/bad assumptions Library data collection: oversimplifies/disadvantages some groups/perspectives Privacy and activism Privacy more important for sensitive/controversial topics Privacy more important to vulnerable populations</p>
<p>General Preferences/Attitudes for Library Privacy</p>	<p>Controlling data/privacy Intent/purpose/use is important Library data collection: acceptable/positive Library data collection: ambivalence/context/nuance Library data collection: negative Library data collection: oversimplifies/disadvantages some groups/perspectives Library data collection: should benefit students Nothing to hide Relationship/use of entity changes expectations/behavior Transparency Uncomfortable checking things out in person</p>
<p>General Preferences/Attitudes for Privacy</p>	<p>Controlling data/privacy Intent/purpose/use is important internet data collection: acceptable/positive internet data collection: ambivalence/context/nuance internet data collection: cynical/resigned internet data collection: negative internet data sharing/integration: acceptable internet data sharing/integration: negative Nothing to hide Privacy expectations have changed</p>

	Relationship/use of entity changes expectations/behavior Transparency
Impact on Behavior	Coping mechanisms Monitoring changes behavior Monitoring changes thought Monitoring doesn't change behavior Rationale behind searching behavior: ambivalence/context/nuance Relationship/use of entity changes expectations/behavior
Influences	Accustomed to being tracked, monitored Accustomed to privacy Anxiety/paranoia Assumes monitoring: institutions/units/libs collect data Aware of privacy issues/surveillance Close or invasive community/culture meant minimal privacy Disabled/Chronically Ill Family emphasized/discussed privacy and related issues Growing up in 9/11 era Immigrant family/participant Negative privacy-related experience No negative privacy-related experiences Nothing to hide Political inclination Privacy more important to vulnerable populations Relationship/use of entity changes expectations/behavior Religion/ethnicity Sham Use of social media and internet affects privacy perspectives
Learning Analytics	GPA correlation studies Learning analytics: ambivalence/context/nuance Learning analytics: negative Learning analytics: neutral/positive
Privacy-Convenience Continuum	Privacy/convenience: ambivalence/context/nuance Privacy/convenience: balance Privacy/convenience: emphasis on convenience Privacy/convenience: emphasis on privacy
Resignation/Cynicism/Acceptance	Accustomed to being tracked, monitored internet data collection: cynical/resigned Tolerance for privacy invasions increased
Search Data for Library Improvement	Libraries search data for improvement: acceptable/positive Libraries search data for improvement: ambivalence/context/nuance Libraries search data for improvement: negative
Tailoring	Controlling data/privacy internet tailoring: ambivalence/context/nuance internet tailoring: fine/good internet tailoring: negative internet: wary of filter bubbles Libraries tailoring: acceptable/positive

	<p>Libraries tailoring: ambivalence/context/nuance Libraries tailoring: control options Libraries tailoring: negative Libraries: wary of filter bubbles</p>
<p>Third Party Access/Data Sharing</p>	<p>Accustomed to being tracked, monitored Data collection for safety/public good: ambivalence/context/nuance Data collection for safety/public good: context/nuance/ambivalence Data collection for safety/public good: limits intellectual/academic freedom Data collection for safety/public good: negative feeling Data collection for safety/public good: positive/okay Distrust for government Growing up in 9/11 era internet data sharing/integration: acceptable internet data sharing/integration: negative Libraries search data for safety/public good: acceptable/positive Libraries search data for safety/public good: ambivalence/context/nuance Libraries search data for safety/public good: limits intellectual/academic freedom Libraries search data for safety/public good: negative Libraries: data access, sharing, third parties Universities: data access, sharing, third parties</p>
<p>Trust</p>	<p>Distrust for Google, internet, etc. Distrust for government Neutral about trust in libraries People and fines affect trust in libraries Trust for Google, internet, et al Trust for institution Trust libraries more than Google, etc. Trust/good feelings for libraries</p>