This study describes a series of interviews with humanities graduate students at UNC Chapel Hill. The interviews were conducted to determine ways in which humanities graduate students managed references for their academic papers.

Thirteen graduate students in the fields of art history, classics and history were interviewed for an hour on the methods in which they manage bibliographic information, their exposure to technology growing up, reasons for changing or not changing methods, and the influence of others on that decision. The results of these open-ended interviews are useful in forming the basis for a more comprehensive study of bibliographic management by humanities graduate students by librarians so that better service can be offered to this population.

Headings:

- Use studies --College and university libraries
- College and university libraries --Services to graduate students
- Echo boom generation
- Information Services --Evaluation
- Surveys – Academic libraries
- Personal information management
BIBLIOGRAPHIC MANAGEMENT BY HUMANITIES GRADUATE STUDENTS

by
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Approved by:

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Advisor
Introduction

While there has been a lot of study of the needs of undergraduates and faculty members, few studies have been done specifically on graduate students in particular. Equally sparse are the articles on the needs of humanities scholars compared to scientists or social scientists. Studies on humanities graduate students are non-existent. As a significant part of the university population, they deserve to be studied in more detail. More than that, the special needs of humanities graduates need to be studied as they will be the professors of the future. The brevity of the graduate student's time at the university and their lack of strong ties to the institution on one hand, and the relative lack of financial gains to the university through tuition dollars or later donations make graduate students less of a priority than either professors or undergraduates. However, while the institution may not reap the direct benefits of educating graduate students, habits created in graduate school will influence these students' habits at their future institutions.

The university library serves a wide variety of people, in a number of diverse fields and with a myriad of needs. The librarian thus must analyze her population to decide what programs and resources best fit her client base. Essential to this endeavor is knowledge about the base being served. This can involve a number of different strategies including monitoring resource use and conducting surveys to collect objective data on research needs or use. As put more elegantly by Elizabeth Sadler, “In-depth interviews
are recommended when a researcher wishes to understand a situation from another’s point of view. The aim is not only to understand what the participant does in a given situation, but also to explore their attitudes and feelings, as well as the broader context in which a behavior takes place” (Sadler, 2007, p. 119).

The primary objective of this investigation is to examine several phenomena:

1) To determine the general extent to which humanities graduate students were aware of and satisfied by the current options for personal information management available to them.

2) To probe the factors that inhibit or encourage the adoption of a particular technique for bibliographic management. The interview also included questions

3) To assess their relative comfort with technology.

A currently popular concept is that of the digital divide between Millennials (people born in or after approximately 1982) and the rest of the population. Millennials are posited as being more comfortable with technology because they grew up with computers and accept technology's presence in their lives more than previous generations do (DiGilio, 2004, 15). As this generation is beginning to be enrolled in graduate school, it is possible that Millennials will approach technology in scholarship differently than their older fellow students and their professors (Goldenberg-Hart, 2008). The entrance of Millennials in graduate school suggests the possibility for the greater introduction and acceptance of digital technologies for teaching and research in academia. The increasing population of Millennials as undergraduates has greatly shaped the role and appearance of libraries, including insisting on greater access to materials, the creation of more
comfortable library spaces, and the use of new technology such as Facebook and cell phones. They are likely to create the same disruptive effect on the libraries and departments they enter. It is important to understand their behavior so that policies can be instigated that serve both these new scholars and the large population of more traditional scholars.

A large percentage of humanities graduate education is honing the craft of research; it is natural that librarians, who manage the research materials, should be heavily involved in aiding the graduate students' teaching and learning. Libraries have the ability to extend valuable services to these students to make them better researchers and better manage the skills they have during a critical time in scholarly development. The age range of graduate students will also give a glimpse into changing views of technology as more Millennials enter graduate school in increasing numbers. In addition, the process of adoption or rejection of a technological innovation has been less studied than other parts of innovation studies (Rogers, 1995, 182). Understanding the reasons for adoption or rejection are critical for creating programs and technologies that are appealing to a demographic that is reluctant to embrace untried or complicated technology.

The specific needs of humanities graduate students must be understood to allow for proper services to be offered to them. This is especially true with citation and reference management. The humanities as a field continues to rely on books primarily for its research knowledge. As such, their needs are somewhat different from science or social science researchers who depend on recently published journal articles for their
information. The practice of citation management has changed radically from the days in which professors provided citations to recommended sources and students dutifully copied them onto 3 by 5 note cards and filed them away in boxes by subject. Today's graduate student is given far less guidance about bibliographic management. The wide variety of methods available, from the note card to the integrated citation and composition management systems, offer a barrage of choices. Along with those choices are numerous benefits and drawbacks of each system, some of which might not be discernible until considerable time and effort have been invested in learning the system. The purpose of this investigation is to examine both the essential features as viewed by users and the conditions necessary to cause a switch between methods. The exploratory information generated in a series of interviews in the spring semester of 2009 is just the beginning of an analysis into the needs of humanities graduate students.

Literature Review

Research on personal citation management is grouped under the larger computational division called personal information management, or PIM. Personal information management is an underdeveloped field despite its relevance to nearly every information user. The systems devised are as idiosyncratic and varied as their users (Kelly, 2006, p. 84) although there are several types or characteristics of many PIMs. As Barreau demonstrated, the management of files has not dramatically changed in the last ten years for a set of office workers who stayed at the same company (2008, p. 314). Office workers perform many of the same tasks as graduate students, namely managing large amounts of relevant information for later use by creating folders to place relevant
Patterns of management, once set, are difficult to change so the most effective time to enact change on the personal management systems of humanities graduate students would be at the beginning of their careers as scholars. Workers also tend to group documents into folders by project rather than by application type (Bergman, 2008, p. 239) and to scan through a list of files rather than search for a file specifically (Barreau, 2008, p. 314). There is also a certain moral component of personal information management; people blame themselves when they cannot keep up a system or their system fails (Bergman, 2008, p. 235). Their personal archive is considered their responsibility, and many distrust keeping their archives electronically because of the perceived danger of losing digital files (Kaye, 2006, p.278). The personal collection also includes items of sentimental value as well as completed documents and working papers (Kaye, 2006, p.281).

Graduate students, in the words of Betsy Wilson, Dean of University Libraries at the University of Washington are, “the most intense and persistent consumers of library services, collections, and resources” (Goldenberg-Hart, 2008, p. 1). Studies have been conducted on the information-seeking of undergraduates (Head, 2008, p. 428), faculty members (Kaye, 2006, p. 275), and the entire university community (Jones, 2008). Personal information management of faculty has been examined, at least ethnographically (Kaye, 2006). Graduate students are assumed to be facile with all types of technology when they instead are overwhelmed as academic technology use is different than personal technology use (Goldenberg-Hart, 2008, p. 5) and they perceive themselves as having little time to learn about new tools outside what they absolutely
need to know (Sadler, 2007, p. 127). It would also not be a stretch to say that like undergraduates, graduate students also wait until the last minute to do research (Head, 2008, p. 435) and are unsure how to go about performing it adequately (Sadler, 2007, p. 126). However, graduate students are an excellent group of people to target as they are just beginning serious research (Goldenberg-Hart, 2008, p. 3) but in the past have been overlooked by librarians (Sadler 2007 p. 130).

Much of the literature available for personal document management is promotional in nature rather than critical. Not nearly enough has been written on the ways in which the services available truly serve the demographic to which they are geared (Elsweiler, 2007, p. 23), or even metrics upon which evaluations can take place (Bergman, 2004, p. 1599). The field of Human Computer Interaction, of which PIM is a small portion, has been criticized because it relies heavily on innovation and the creation of new ideas and products. In contrast, other fields such as engineering and the physical sciences employ cautious, gradual expansion of knowledge that helps bring about a more thorough understanding of a phenomenon (Whittaker, 2000, p. 79). A lack of metrics in the field of personal information management in particular has been noted as recently as 2004 (Bergman, 2004, p. 2). Frequently new systems are proposed and touted as fulfilling the needs of their users but do not contain data to support these claims (See Canos, 2000 or Palmer, 2007 for examples.). Nor are there assessments after the release of an application, either by the creators or by an independent entity. The lack of metrics is especially problematic when attempting to evaluate the results of multiple studies in an attempt to create an overarching theory of personal information. Some of the difficulty
arises in developing standards for a phenomenon that is more idiosyncratic than larger information management systems (Kelly, 2006, p. 86). Personal information management involves a number of different activities that are manages in a variety of ways which makes the job of assessment that much more difficult (Kelly, 2006, p. 86). Most of the scholarship and writing about these systems are geared towards general tasks completed by people in a variety of fields (Dumais, 2003, Elsweiler, 2007), or towards the scientific scholarly community rather than towards social science or humanities communities (See: Marshall, 2008, Canos, 2000, Mani, 2007, Hendrix, 2004). Library evaluation methods such as LibQUAL+ are too broad in their approach, as the questions of LibQUAL+ focus on staff service, variety of resources provided and the physical space of the library (Saunders, 2007, p. 22), questions not especially relevant to the study of personal information management as they relate to the acquisition of information rather than its organization. LibQUAL+ is also not ideal because the data generated from its surveys is most helpful in ascertaining specific institutional strengths and weaknesses rather than the overarching quality of the library (Saunders, 2007, p. 23). The most helpful portion of the LibQUAL+ evaluation to the librarians analyzing the results was the free-form commentary which provided a larger context to the data generated (Jones, 2008, p. 498).

Humanities scholars in particular have a number of needs not adequately addressed by the makers of these software options. Scholarship in the humanities fields require a system to be flexible in dealing with articles and books written in a variety of languages, including those written in non-Latin scripts. In addition, many humanities
scholars work with unique materials that can be difficult to properly cite: archival documents, images, musical scores. The humanities rely heavily on monographs as their primary source for information (Tang, 2008, p. 368). Materials also retain their usefulness to a humanities scholar longer than they do to a science scholar (Tang, 2008, p. 369). A personal annotated bibliography serves the humanities scholar throughout their career, thus the building up of this bibliography is a central portion of a scholar's development. As a scholar becomes more involved in their field, it becomes increasingly difficult for that scholar to switch systems without a considerable amount of tedious and repetitive effort. The humanities scholar, especially the humanities graduate student, is a knowledge worker who performs a smaller percentage of administrative or structured tasks compared to the administrator or clerical staff. As a result, they require a different method for dealing with information than one needed by a clerical or administrative worker (Bondarenko, 2005, p. 124). Knowledge workers rely heavily on visual cues to determine their progress (Kidd, 1994, p. 188) and may even enjoy disorder in their workspaces as it gives the image expected of a mad professor (Kaye 2006 p. 281). The differences between knowledge and administrative/ clerical workers must be examined before an effective personal information management system can be designed for each of these subsets.

The adoption of technology is a complicated process: each person has a unique combination of circumstances bearing down upon them. One of the earliest comprehensive texts on the forces influencing technology adaptation is Everett M. Rogers' *Diffusion of Innovation*. Rogers outlines the curve at which a technology is
embraced over time. In the initial stages, a small number of people embrace an innovation but after a certain period of time the innovation rapidly becomes widespread, leaving a small population that gradually embraces that innovation over a long period (Rogers, 1995, p. 11). When an innovation is introduced to a society, each person goes through the innovation-decision process to decide whether or not to adopt a particular innovation. These steps are: knowledge, persuasion, decision, implementation and confirmation, although they do not necessarily need to follow in that order and may be repeated (Rogers, 1995, p. 20). The first step, knowledge, is one in which the person both formally and informally gathers information about a new technology. With the persuasion portion of the process, the person forms an opinion about a technology, and the decision process being a conscious decision to adopt or reject that technology. The person follows through with their decision in the implementation stage. Often at the end of the process, confirmation takes place, in which the person finds that the technological change brings about desirable effects. Technology expansion requires conduits for information diffusion. Rogers identifies mass media and interpersonal relationships, especially between a prominent member and the rest of their community as significant channels of innovation diffusion (Rogers, 1995, p. 18). Another, related theory is the Technological Acceptance Model (TEM) established by Davis et al. which was used as the theoretical basis for, “Sources of influence on beliefs about information technology use: an empirical study of knowledge workers,” to examines what prompts faculty members to accept new technology-based teaching methods (Lewis, 2003, p. 659). Factors for adoption of an innovation in the TEM system include ease of use, perceived
usefulness and institutional, social and individual factors. Social factors can be broken down to include influence by direct superiors, colleagues and friends while computer self-efficacy (the belief that the individual can master a computer skill) and personal innovation with technology are examples of individual factors (Lewis, 2003, p. 660). The results of Lewis' study indicates that in the world of academia, institutional support and individual factors mattered most in determining successful adoption of pedagogical technology (Lewis, 2003, p. 670). Elements of both of these theories have been incorporated into this study.

This particular study includes an evaluation of available bibliographic management systems, especially electronic bibliographic management software. The most prevalently referenced reference management tools are RefWorks, available free to all UNC students, staff and faculty members through a licensing agreement between the UNC libraries and RefWorks, and EndNote, another popular software choice available for a discounted rate though the University's bookstore. Both are proprietary software companies. Three other systems were referenced: BibDesk, NoodleBib and Zotero. BibDesk uses BibTeX, or more specifically the LaTeX markup system used extensively by scientists and mathematicians. Both BibDesk and BibTeX are free and open source and many citations in the sciences are already formatted in BibTeX format. Zotero is a free web-based service that is an extension for the Firefox web browser and produced by George Mason University. NoodleBib is proprietary software aimed primarily at K-12 schools, community colleges and colleges. It is relatively inexpensive for a year subscription ($8) and limits formatting options to ALA, MPA and Chicago/Turabian.
OneNote is a note taking software produced by Microsoft and is currently bundled with Microsoft Office 2007 student and home edition.

Methodology

Conducting interviews was chosen as the primary way of collecting data on the subject of personal citation management of humanities graduate students. As this is a relatively new field and lacks a large body of literature associated, the grounded method will be used; the primary purpose of this study is to create an ethnographic case study of a small cross-section of users to help generate hypotheses with the data collected (Kelly, 2006, p. 85).

The subjects involved in this study are humanities graduate students enrolled in Masters or Doctorate programs in the fields of classics, art, and history at UNC-Chapel Hill. They are between the ages of 22 and 51 and were not chosen based on gender or ethnicity given the difficulty in acquiring an adequate number of volunteers. This information would add richness to a larger study, given that it seems likely that race and gender affect PIM. Thirteen students were interviewed, representing a wide variety of technical proficiencies and places in the graduate school experience. This investigation relies heavily on the methodological example set by Elizabeth Sadler in “Avoidance theory: a framework for graduate students' informational behavior” (2007) as it too uses open-ended interviews with a relatively small sample size of eight participants (p. 18).

The study was entirely conducted by the author. Departmental secretaries of the Classics, Romance Language, German Language, Russian Language, English and Comparative Literature, Music, Art and History departments were contacted. The email
that they received requested that the attached message be sent to the graduate student listserv of their respective departments [see appendix A]. Thirteen graduate students from the departments of History, Classics and Art then initiated contact. This is only a fraction of the population of these combined departments, as an estimated 150 to 300 students were contacted. The investigator did not possess knowledge about the compositions of the departments of the people interviewed, so the study cannot be said to be of a representative sample. The large range in styles, ages and experiences, however, are likely to represent the majority of humanities graduate students at UNC. Further and more widespread surveys are necessary to confirm that the findings reported here are those of the community.

A time was set up by the interviewer and interviewed at a local coffee shop. A coffee shop was set up as the place to meet due to its neutrality and for the fact that it is a less clinical and more comfortable setting; the location was chosen in the hopes that it would encourage the interviewee to be more forthcoming with information.¹ The private room in the coffee shop was reserved and a drink was purchased for both the interviewer and interviewee. A consent form was read and signed by all interviewees before the interview began. The interview lasted approximately one hour, depending on the loquacity and experience interacting with writing academic papers and bibliographic management systems. Since the email requesting their assistance was explicit about the topic of the interview, most of the interviewees arrived with an idea of what they wished to talk about, and was not reluctant to express their views on the issue. A list of questions

¹ Or, more specifically, it put the investigator, a fairly shy person, more at ease conducting one-on-one interviews.
was used as a framework to guiding the interview [see appendix B], although the interview form allowed for deviation and elaboration upon topics as necessary. A few new questions were also added after the first interview based on the results garnered from that interview. Most notably, more questions were asked about a person's first exposure to computers and the applications they use most frequently on their current computers. The participant was thanked for their participation and given a $10 gift card to the coffee shop. They were also promised the opportunity to read the finished paper to see the results and analysis generated by the interviews.

The greatest problem about the interviews collected is that the participants were self-selecting. Those who had strong views about their particular system or especially disliked a system made up a majority of the responders. Also, despite emails sent out to English, romance languages, German and Russian, and music, no graduate scholars from those fields opted to be interviewed. Unfortunately, their lack of participation prevents their specific needs to be noted in this paper, although they are likely to be similar to those of other humanities graduate students given the similarity in methodology and sources of research used for scholarship.

Since the investigation is intending to use qualitative analysis of the interview results and the interviews are expected to be in great detail, the sample size will is smaller than it would be for a survey, being a total sample size of thirteen people. Future work on this subject would resemble the controlled experiments with larger numbers of participants as done by Elsweiler, in which specific tasks are assigned to the participants

2 Special gratitude is necessary for students in the history, classics and art departments. Without their generous assistance, this paper would not be possible.
and they are either monitored or given a journal in which to note their activities (2007). The primary purpose of the interviews is to conduct a general fact-finding mission that would create a picture of humanities graduate student research habits. This set of interviews is the beginning of a process that can continue towards more exact surveys of a larger part of the population and the formulation of possible further actions for academic librarians to undertake to improve services. Despite the relatively small sample size, the interview sample was large enough to determine certain trends across the group being surveyed.

Results and Discussion

Thirteen graduate students were interviewed for this study, which is not adequately large to do factor analysis on the numbers collected; trends can only be suggested as possible rather than confirmed through statistical analysis. Of the thirteen, four are in art history, five in history and four in classics. The age of the participants varied from 22 to 51, and experience varied from a post-baccalaureate student to a student in the last semester of dissertation-writing. One student had a home computer at the age of six while another became first acquainted with computers at work in the private sector after completing college. Of the rest of the participants, four first had a home computer in college, one while in high school, four while in junior high, and two in elementary school. Most also had some exposure to computers at school growing up.

The specific needs of humanities students need to be addressed and fulfilled for the success of bibliographic management software. The expressed needs of the three Classics doctoral students represent the diversity of materials and approaches used in
humanities scholarship. Classics scholarship is divided between philology, the study of ancient texts, and archeology, the study of artifacts; one is heavily text-based, the other involves the extensive use of photography for documentation purposes. The philologist interviewed specified that they were desiring a system that could adequately handle texts in Greek, the language and alphabet used for the majority of primary documents and a number of secondary documents. Also, given the origin of classical studies in Germany, much of the scholarship is written in German with additional scholarship written in French. Any system must be able to handle characters with diacritical marks such as umlauts and cedillas present in German and French for it to be useful to the Classics scholar. In contrast, the archaeologist does most of their research in distant places that often lack internet access. The historian also relies on a variety of primary documents for their research, which requires them to visit relevant archives and take accurate notes quickly given the general lack of access to primary materials after the archives visit.

A wide variety of bibliographic management methods were used by the participants. Five of the participants took notes as word documents and saved the documents on their computer, four used paper methods, including note cards and legal pads, one used OneNote, and one each used BibTeX, NoodleBib, EndNote and Zotero. All but one had heard of either RefWorks or EndNote, and all but three had used bibliographic management software some time in the past. Most of these experiences were with EndNote (2), RefWorks (4), or both (2). Of those who tried either EndNote or RefWorks, only one chose to continue using EndNote and no one uses RefWorks, although one did in the past. The person who tried only Zotero stayed with Zotero and

3 Note: Some respondents used more than one method, depending on context.
the person who tried NoodleBib continued to use NoodleBib. The person who uses BibTeX tried EndNote but was disappointed, returning to BibTeX while six returned to using paper or word documents after trying either RefWorks or EndNote. One of three tried EndNote and liked it, while none of the six who tried RefWorks now use it. One of two who tried Zotero decided to use it. Given the fact that only four students are currently using electronic reference software of the ten who tried at least one system, the majority found the options presented them to be inadequate to change their current system.

Important qualities listed repeatedly by students included the ability to include notes along with the citation, a simple, easy-to-understand interface, quick and accurate importation of citations from the OPAC and article databases, citation insertion that does not require later hand correction, and rapid insertion of citations with minimal click-through menus.

Connected to this is the general outpouring of criticism for RefWorks; one student went as far as recommending her fellow graduate students not to try the program. In contrast, the NoodleBib, BibTeX, EndNote and Zotero users have recommended their system to at least one other person. The most prevalent issues mentioned regarding RefWorks were: a difficult-to-use interface, difficulty importing references due to a lack of support for RefWorks importation, inaccurately imported references, and the inability to import works that included correct diacritical marks, incorrectly generated citations into Chicago style, difficulty signing in, and general slowness and bulkiness. The major complaint about EndNote was that it was expensive given that other methods such as
Zotero or Word-based note taking are free, although there was similar discontent at the citations incorrectly exported.

Graduate students are an inherently heterogeneous population. Most of the respondents did not go to UNC for their undergraduate education and several went to other institutions for their masters degrees. As a result, students brought with them a variety of different citation management systems. One student in particular became accustomed to using RefWorks while getting their masters degree, but stopped when they came to UNC because RefWorks was not as well supported five years ago. That student expressed sadness at being unable to use RefWorks at UNC and indicated that they really liked the system and would possibly use RefWorks or another electronic method at some future point after completing their education.

The students interviewed gained knowledge of personal information management in a number of ways. Most were not formally taught how to do citations by either a teacher or a professor. Two learned correct citation from a book, two learned by being heavily downgraded by professors for improper citations, and one learned by modeling their citations on the citations of published authors in the field. Similarly, seven of the respondents said that their advisor at UNC had never advised them on methods to manage their citations and sources. Two advisors from other schools recommended a system, one each for Zotero and EndNote, the second going as far as to buy the software for their advisee. Only one student had an advisor at UNC recommended a digital bibliographic management system to them. In contrast, the exacting standards of one advisor regarding citations and their insistence on using the note card method for their
student advisee interviewed ultimately caused the student to use the note card system exclusively in their research. Due to their interest in the fairly complex system BibTeX, one student was actively discouraged from adopting the system from their advisor; however, because they had a good friend available for aid and their relatively high degree of technical knowledge, the student proceeded to invest time in learning the system anyway. To explain the general lack of discussion about bibliographic management, one student commented that they viewed bibliographic management as a highly personal activity that each person needed to figure out for themselves. Given that the strongest personal tie a graduate student has is to their advisor and a student's respect for their advisor's knowledge and scholarship, the advisor-student interpersonal relationship is one of the strongest sites of influence. Five of the students mentioned peers as sources of information about programs such as RefWorks; the recommendations of their peers were adequate for them to at least experiment with the system recommended. Students who chose digital bibliographic management typically most heavily evangelized their peers about trying their system. In contrast, six of the graduate students interviewed were unaware that the library offered classes on RefWorks and EndNote, suggesting that the library does not use effective advertisement of their services to graduate students. Other entities such as librarian uncles and archivist employers also influenced strategies for bibliographic management.

Two of the seven people who used computers at home when thirteen or younger used electronic notes or paper and pencil, and of the two, one expressed a strong interest in finding an electronic system rather than doing it by hand. The age at which a person
had regular access to a computer seemed to relate more strongly than current age did with using an electronic system, indicating a possible hypothesis to be more exhaustingly evaluated. There is not a clear watershed age or range of ages at which graduate students preferred citation management software over other methods. A much larger survey of graduate students is needed to determine if this is a trend or an aberration due to the small number of participants. If this assertion held, it would negate the need to include age as a relevant variable taken into account to calculate whether a given group of graduate students would prefer services such as citation management software. More data would need to be collected over the next several years to assert a trend indicating that younger graduate students wanted and used electronic-based PIM.

Personal citation management systems are problematic given the difficulty of switching between systems. This is less problematic for people who already use electronic personal citation management as most products support data exportation and importation which makes the process of conversion much faster. The greatest time sink exists for students who already have a large collection of information on paper. An art student notes how useful using RefWorks would have been from the beginning as they are studying for comprehensive doctoral exams and need a complete list of critical books and their associated notes. They stressed that the main purpose of using a product such as RefWorks was to save time; entering existing data into the database is wasted time that they can't afford to spend given the pressures of graduate school. The benefits of having a database-based system are seen as not useful enough to motivate students to both learn a system and enter the existing data. Especially for students who learned how to do
citations manually and have such knowledge committed to memory, the process of formatting a footnote is effortless, even for difficult sources. A student who used word documents to manage citations and notes mentioned their unease at the rapidness of change in formats and technology, and how that would be detrimental when a major priority is stability and availability for the rest of their career. Such views are also coupled with a certain degree of unease regarding the use of computer tools. A student expressed that they enjoy the control when they do citations themselves, noting that failure would be due to their own mistakes rather than the fault of a computer error. They do not trust a computer to do as good or a better job than they can do. Such results are similar to those expressed in Kaye's article, “To have and to hold,” where professors feared the possibility of losing their digital archive despite low instances of information loss, especially when compared to the possible loss of paper archives due to fire or water damage (Kaye, 2006, p. 277).

Similarly, several students expressed unease with the idea of ceding control for citations to a computer because they believe that creating citations by hand both teaches important work habits and stresses the centrality of proper attribution to good scholarship. Some enjoy doing citations or thought they served pedagogical functions such as teaching being detail-oriented or going above and beyond expectations. Doing citations also confers a respect for the scholarly publishing system in general, in one respondent's opinion. Citations are seen as an essential component of the scholarly process. One of the students described using bibliographic management software as a shortcut, stating that they preferred to do the task well, suggesting that the student felt that the software
would not do the job equally as well as they did. Such feelings are related to what Sadler found, where graduate students were worried that using electronic tools were a type of crutch that when taken away made students unable to perform the same quality research their professors accomplished (Sadler, 2007, p. 126). These responses complicate the issue of libraries promoting the use of bibliographic management software for citation formatting and the worth in general of bibliographic management systems. It is not clear to whom these services are catered: undergraduates or graduate students and professors. If the purpose of bibliographic management and citation software is to create perfect citations, the software can be advanced to work perfectly. Most students will not be proceeding towards graduate school and professorship so perfection of citation is not a necessary professional skill for them. The undergraduate is often looking for very different features than the graduate student or professor. The differences in needs between the two groups require addressing before software can be developed and tested.

Conclusion

The students interviewed for this study represent a wealth of different approaches to technology, learning, and scholarship which create an equally dazzling array of choices for personal information management. The finding gathered by this study indicate that while there is widespread awareness of programs available for use such as RefWorks and EndNote among those interviewed, most did not find the software presented was useful enough to justify the effort or money necessary to make the system work. Humanities graduate students primarily desire an easy-to-use software that can import and export citations in a number of languages accurately. However, when the free

4 Unfortunately current software options, most notably RefWorks, do deplorably with this function.
and well-known software RefWorks was tried by most of the participant, only one student used it regularly at the time of the interview. Students who mastered doing citations by hand and using tools such as note cards have an increased resistance to switching methods, but students who choose to continue with a digital bibliographic management system tend to encourage their friends to adopt that method as well. Related to this point, the earlier a participant began using a computer regularly at home, the more likely they were to find a digital bibliographic management system that fitted their needs. Counseling on bibliographic management is also not a major concern among many of the faculty members advising the students interviewed, but the recommendations by faculty were frequently well-heeded by their students. In addition, peer discussion of bibliographic management methods also greatly influenced a student's willingness to try a new software system. A larger survey of students is necessary to confirm the tentative finding herein but greater understanding of the desires of students is likely to increase the effective design and implementation of bibliographic management software.

Recommendations

Having analyzed the responses given by humanities graduate students in this paper, the author recommends several actions to increase use of bibliographic management software. The library should focus heavily on attracting graduate students at the beginning of their careers, either the first semester of a student's master's degree or doctoral degree program. Consultations and recommendations by library staff about the system most suited to the student's needs would likely increase repeated and sustained
use of the method suggested. Classes and other services also need to be more heavily advertised to graduate students in particular. Given the influence peers have on the process of information-gathering and decision-making, the informal network of peer recommendations could be strengthened, possibly by offering peer-led instruction courses or targeting enthusiastic adopters and encouraging them to influence their colleagues. Increased steps must be taken to demonstrate that bibliographic software will save time in the long run, justifying the initial time-sink. Quality software that exceeds patron expectations must be used; otherwise situations like the ones described above where patrons try software and then abandon it will occur. The most difficult portion is convincing professors that bibliographic software produces the results they want from their students and they support the adoption of software such as Zotero as a legitimate tool for serious scholarship.

In addition, bibliographic management software companies must develop software that helps the two greatly different bodies of users: those who wish the bachelors degree to be the terminal degree, and those who plan to or are in more advanced scholarship. All software should be easier to use and integrate more seamlessly into students’ working habits. In addition, the software available for graduate students must allow for exact control of the format for the citation, and the notes field must become a more central portion of the software system given the role of note taking in the process of graduate paper-writing and comprehensive exam preparation. Graduate students also need more convincing and less frustration regarding a product given that they are planning for the long term. An undergraduate can live with a poor system for
four years, the graduate student envisions forty years of annoyance with an inadequate system they are locked into given the high cost of switching systems. The process of making decisions about a software system is more elaborate with graduate students, with a very strong tendency towards maintaining a previously adopted system. The current software is mediocre; only the best-designed software is adequate enough for these students and they are right to demand more from their software.
Bibliography


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Appendix A

To whom it may concern,

My name is Suzanne Walsh, a graduate student in the School of Information and Library Science. I am conducting interviews of ten to twenty humanities graduate students about their methods of managing their research. All research will be confidential and steps will be taken to minimize identification of participants in the final paper.

In this endeavor, I am requesting your aid in reaching graduate students within your department. If it is possible for me to contact them, please relate to me your preferred method of contact to these students: email or a printed flier. The content of the notice is reproduced below:

Subject: Interview subjects needed

Dear fellow graduate students,
I am looking for volunteers to talk to me for an hour in person about how you manage your citations and sources for papers. In exchange, you will get a free drink at the time and a $10 gift card to Caribou Coffee.

A little about me and what I'm doing: I am a dual art history and library science graduate student and I'm writing my library science paper about how people choose to use a system to manage their sources, whether it be note cards or a computer program, or some other method. I'm curious about this because the information I gather can be used to help librarians make decisions on how to serve you better in the future. I am looking for ten to twenty humanities graduate students to interview about this. We'll meet at Caribou coffee, I'll buy you whatever drink you want and I'll ask you some questions for an hour (don't worry, they aren't embarrassing and you can be as honest as you want to be as everything said is completely confidential). When we're done, I'll give you a $10 gift card to Caribou and you'll have helped me graduate!

To contact me and get free coffee/tea, send an email to xxxxxx@email.unc.edu or call me at 610-613-xxxx and we can schedule a time to meet.

Thank you in advance,
Sincerely,
Suzanne Walsh

Please feel free to contact me with any questions you may have. Thank you for your assistance.
Sincerely,
Suzanne Walsh
Appendix B

Interview Questions

What is your age?
What is your current field?
Do you have any degrees in other fields?
Do you own a computer?
Do you own a laptop?
When was the last time you checked your email?
How many times a day?
Do you like using computers?
Why or why not?
How busy would you say you are?
How many courses are you taking?
How many hours are you working?
What kind of job is it?

Think of one of your research projects that you are currently doing or did last semester (such as a seminar paper or a masters' thesis). Can you describe for me how you keep track of works that you want to cite in papers later?
How long have you been using that method?
Do you remember why you started doing it that way?
Who taught or told you about doing it that way?
What method did you use before that?
Why did you switch?
What do you like about this method?
Was it easy for you to start using?
Would you recommend it to people?
Have you?
What would you change if you could?
Have you considered changing your method?
Why?
Why did you decide not to?
Have you tried something lately and disliked it and stopped using it?
What would get you to switch methods?
Describe what your perfect system would look like.
Has any professor (undergrad/grad) shown you or talked about how they manage their citations?
Have they ever spent class time on it?
Have you ever heard of EndNote, RefWorks?
Did you know the library offered free training courses in them?
Have you ever thought about signing up for a library course?