E-Book Information Behaviors and Formats among Graduate Students in Information Sciences

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abstract: This study reports on a survey of students in information sciences designed to test differences related to e-book formats and other factors. The results from 161 respondents suggest that strategic decision-making shapes use of different e-book and print format options for users who already have significant exposure to e-books. These format options include use in a browser, a downloaded pdf, an e-pub, or a printout. While distance student status related to reported use of library e-books, disciplinary background did not. On the other hand, experience in various fields of scholarship correlated to specific tasks pursued when using e-books, but distance status largely did not. These results suggest ways to tailor local and cooperative e-book collection strategies and related services for academic users.

Introduction

This study explores demographic patterns of e-book use and the relationships between user behaviors and format choices in a disciplinary population—information sciences—with significant e-book exposure. It builds on prior e-book research, especially studies of e-book use that examine how readers engage with multiple sub-formats of e-book content, such as in-browser interfaces, downloaded pdfs, or printouts, here called *microformats*. It expands on studies that identify relationships between distance student status, disciplinary background, and e-book use. It investigates the prevalence of shifting between multiple e-book and print microformats for a group of academic readers with routine access to e-books. It also examines which tasks trigger these shifts and how distance student status and prior disciplinary experience (rather than current discipline) affects e-book information behavior.

Because the word *format* in e-book studies is often used to distinguish between print and e-book formats, this study uses the term *microformat* to refer to specific variations in e-book and print formats with which readers may engage. The word *format* will be used when referring generally to e-books versus print books, and in the literature review. User workflows may involve moving between microformats, such as a browser interface, a downloaded pdf or other file format, a printout, or a print book, indicating that treatment of "e-books" as a uniform entity could be a problem.[1] This study seeks in part to test the impact of microformats on the information behavior of what it refers to as *strategic e-book users*—that is, users who have a mix of preferred formats depending on activities and who make strategic choices among different e-book and print formats based on their tasks.

In addition to descriptive analysis, the study employs a survey to investigate three hypotheses:

1. E-book information behaviors (tasks) will have a significant relationship with used and preferred microformats.
2. Distance student status will have a significant relationship with reported e-book use, activities using e-books, and attitudes toward e-book tasks and microformats.
3. Disciplinary background will have a significant relationship with reported e-book use, activities using e-books, and attitudes toward e-book tasks and microformats.

The present study investigates these hypotheses through a survey of graduate students in the information sciences at a large research institution, partly to follow up on prior research involving this population's use of e-books, but more importantly because this group of students has a longer history of e-book exposure than most populations due to collecting practices oriented toward a large enrollment of distance students. This population has previously exhibited not only heavy use of e-books but also specific forms of reluctance to use that format. Their considerable exposure to e-books provides an opportunity to explore factors that shape e-book decision-making for a population largely familiar with the format and with ample opportunities to choose how and when to use e-books. Many classes in this field regularly require reading from library-purchased e-books. In other words, this study intentionally focuses on a segment of the student body who have acclimated to e-book use. This research thus reveals challenges with e-book use that may persist even with broader adoption among other disciplines more resistant to e-books.

The strategic e-book user is not an either-or consumer of print and electronic text, but someone who has needs and preferences for both as well as predilections for various microformats depending on the task.

This research introduces the concepts of the strategic e-book user and microformats to the research literature on e-book information behavior. The prior literature hinted at these ideas but, especially concerning strategic users, has done little direct analysis. This study is also significant to academic librarians seeking to make decisions about not just whether to buy e-books, but which e-books are worth buying. It investigates under what conditions and to what ends students use e-books when e-book availability

and awareness are not limiting factors, and how e-books fit into a broader ecology of print books and e-books that users may access outside the library. These findings have implications for local collection development as well as cooperative collection development as we enter an era of greater e-book availability. The strategic e-book user is not an either-or consumer of print and electronic text, but someone who has needs and preferences for both as well as predilections for various microformats depending on the task.

Literature Review

Surveys of Academic E-Book Use

Surveys of e-book use by faculty, staff, and students have most commonly measured awareness, frequency of use, important features of e-books, and preference for e-books or print book formats.[2] These studies have sometimes found differences between levels of use of e-books among disciplines, although with some variation. Amjid Khan, Rubina Bhatti, and Asad Khan found that engineering students use e-books on a daily basis at higher rates than students in agriculture or the social sciences, for example. On the other hand, Alexander Carroll, Kelsey Corlett-Rivera, Timothy Hackman, and Jinwang Zou reported minimal differences between students in STEM fields (science, technology, engineering, and mathematics) and non-STEM students.[3] Corlett-Rivera and Hackman found more support for e-books for specific types of resources, such as proceedings and reference works, whereas users split on format preferences for essay collections and preferred print for monographs and literature.[4]

An important subset of academic e-book user surveys focuses on testing and extending the technology acceptance model, a theory that predicts the adoption of new technologies. These studies measure the impact of such factors as perceived ease-of-use and perceived usefulness of e-books on users' intention to use e-books and investigates more specific factors that influence these perceptions and intentions.[1] Eunil Park, Jungyeon Sung, and Kwangsu Cho found that text readability and satisfaction with prior e-book experiences directly affected intention to use e-books rather than indirectly through factors such as perceived ease-of-use and perceived usefulness.[5] Irawan Tri-Agif, Abdullah Noohidawati, and Seyedeh Ghazal Ghalebandi similarly determined that satisfaction drove intention to continue using e-books, though they also reported that interpersonal and external influences significantly impacted satisfaction.[6]

The studies of academic e-book use and preferences, including the technology acceptance model research, largely examine general use and preferences related to e-books, or attempts to predict whether users will adopt e-books. Some studies, however, also address the relationship between task and format. For example, Corlett-Rivera and Hackman had numerous "it depends" responses concerning format preference, wherein users specified task and convenience as key to any decision.[7] Jeff Staiger reviewed the research literature on e-book use and identified an overall pattern of e-books being "used" (for quick assessments of content or fact finding) versus print books being "read" (for in-depth, continuous uses).[8]

Two studies have proposed typologies of e-book users. Martin Borchert, Clare Tittle, Alison Hunter, and Debby Macdonald posited four categories: (1) learners/lurkers, who have low e-book use and low awareness and satisfaction; (2) browsers, with high

e-book use but low awareness and satisfaction; (3) efficient users, displaying low use of e-books but high awareness and satisfaction; and (4) satisfied users, who exhibit high use and high awareness and satisfaction.[9] Aaron Shrimplin, Andy Revelle, Susan Hurst, and Kevin Messner proposed a different set of four categories: (1) book lovers, who are print-focused; (2) technophiles, who prefer e-books; (3) pragmatists, who use e-books when convenient; and (4) printers, who find the usability and accessibility challenges of current interfaces too great, but do not disapprove of e-books per se. Users in the first two categories hold more format-exclusive opinions, while those in the other two have more format-flexible perspectives.[10]

Studies of Information Sciences Students and Distance Students

A number of studies have looked specifically at e-book information behavior among students in information science and library professionals for reasons including the professional role of librarians working with patrons as they encounter e-books. Other research investigated this population because they may have more facility with or exposure to e-books specifically or to information technology generally. Noa Aharony has published a series of studies about LIS student perceptions of e-books across academic levels. Aharony's first study found that LIS students generally favored the inclusion of e-books in libraries, with older students more likely to see e-books as a positive challenge and likely to change patron behaviors (as opposed to younger students who saw e-books as a threat).[11] A second study, examining LIS students and professionals, tested the technology acceptance model and motivation and found that higher computer competence and motivation led to greater intent to use e-books. LIS students had more computer competence and professionals had more motivation to use e-books, but both reported similar levels of e-book acceptance.[12] In 2018, Aharony and Judit Bar-Ilan surveyed LIS students and found that reported comprehension of e-books influenced use of the format, but primarily among younger students, and that the perceived relative advantages of e-books were related to their comprehension and adoption.[13] Devendra Potnis, Kanchan Deosthali, and Janine Pino studied barriers to using e-books reported by LIS students, finding issues related to e-readers, e-book features, respondent-specific personal traits, cost, and policies.[14]

Two previous studies at the University of Illinois at Urbana-Champaign, the same institution as the present study, also looked at LIS students (or more broadly information sciences) students and e-books. Daniel Tracy and Susan Searing explored LIS student use of library resources in general and noted a disparity between distance and on-campus students, with distance students reporting lower use of e-books despite targeted collection of e-books to serve them.[15] Tracy performed a qualitative study of e-book information behavior among information sciences students (including LIS students and students in an information management program). This study identified patterns in troubleshooting and behaviors that suggested downloadable formats were important for more in-depth "reading" tasks if e-books were to stand in for print. More generally, though, it found that most users made strategic choices among different e-book and print formats depending on their tasks.[16]

The finding regarding LIS distance students reported by Tracy and Searing in 2014 is even more pronounced than the results of a study by Rosie Croft and Corey Davis, who

found no preference for e-books over print among distance students, to their surprise.[17] However, Yingqi Tang and Paula Barnett-Ellis reported that distance students in nursing, while not showing greater acceptance of e-books, used them more than other groups did.[18]

Methodology

After final IRB approval, all graduate students in the School of Information Sciences (henceforth, the iSchool) at the University of Illinois at Urbana-Champaign received an e-mail invitation to complete the survey over two weeks in April 2017. These graduate students included all students pursuing master's degrees in library and information science (MS-LIS) and in information management (MS-IM), certificates of advanced study (CAS), and doctoral degrees (PhD) in LIS. It also included students from other departments or universities taking iSchool classes. E-books have long been preferred in collection development for information sciences due to a large distance student and distance instructor population. Therefore, this population has extensive access to e-books across diverse sub-disciplinary areas that draw from the humanities, social sciences, computer science, and other fields of study. These students also have frequent occasion to choose not just

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between print books and e-books but also among various microformats of e-books. The invitation included the opportunity to register for a drawing for one of two gift cards at the close of the survey.

Respondents filled out the survey in their browser by following a link to the university's in-house Webtools platform, which only recorded their responses if they clicked "submit" at the end of the survey. The survey platform supports standard survey-related questions, including radio (single response selection) and checkbox (multiple response selection) questions, which permit one choice out of many options and can be organized as a matrix and short and long answers. The platform allows some fields to be restricted to particular data types and permits some question skipping, though it does not allow true branching. The survey was tested by a student and was estimated to take 10 to 15 minutes. It asked questions related to perceptions of e-books, with some queries related to print books for comparison. A qualitative study using participant diaries and interviews had investigated information behavior and workflows with e-books during the prior semester, revealing a wide range of behavior, often by the same individuals in relation to different e-books.[19] These behaviors varied according to the general information need, the tasks at hand, and the download and microformat options available with the e-books. That study confirmed that asking questions about e-book use abstractly, without regard to the variety of e-books that provide different user experiences, could pose problems. Individuals had varying perceptions of e-book convenience, usability, and value, depending on access options and their information needs. Therefore, where possible, survey questions in the present study focused on distinguishing electronic and print formats and interfaces as well as different activities while reading. In doing so, it sought to dig deeper

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and show broader patterns among this group of students than could be achieved through a qualitative study and attempted to explore the relationships of reading behaviors to choices of formats and microformats.

Appendix A shows the full set of 68 survey questions (many of which were grouped as matrix response questions to simplify the design). Only participants who indicated a history of e-book use saw 21 of the questions. After four initial demographic questions related to respondents' status in the program and disciplinary background, the survey posed general inquiries about perceived frequency of use and satisfaction with print and e-books, and about ease of use of e-books. The phrasing of these questions made them comparable to a survey about use of library resources four years previously.[20] All questions required close-ended responses, except for four questions: one asking the title or subject of the participant's most recently used e-book, a query about the software and hardware used to read the e-book, and two questions requiring a numeric response.

Unless respondents indicated that they had never used an e-book for academic work, the survey routed them to a page that asked targeted questions about the most recent e-book used for their studies or other academic work (for example, doctoral students teaching classes or MS-LIS students working in the university library as graduate assistants). These questions mirrored items asked in the qualitative study the prior semester, where students had tracked uses of e-books over an eight-week period. This approach to measuring prevalence of e-book behaviors draws from the methodology of studies of faculty and graduate student reading behavior by the LibValue program. These surveys are based on the critical incident technique, a set of procedures for collecting direct observations of behavior having special significance. When asked about the last reading, "respondents should have a better memory of that reading."[21] This technique assumes that polling a large sample of participants about their most recent reading will reflect reading patterns overall, even if individual responses may not represent the user's general behavior. However, the questions in the present study focus more on specific e-book reading activities and challenges and may not be comparable to the LibValue results in all cases.

After these questions, all participants completed a set of queries about general perceptions of e-books and print books, importance of features of e-books, and preferred microformats for different reading activities. For questions related to attitudes or preferences, response options reflected that preferences and attitudes may not be consistent across e-book uses because platforms, information needs, and tasks may differ. Rather than frame responses on a scale from "strongly agree" to "strongly disagree" about statements regarding e-books generally, the survey asked respondents to identify how often statements were true in their experiences. The possible responses were "always," "sometimes," "rarely," "never," and "don't know or not applicable."

The researcher analyzed the survey results in Excel and SPSS. Due to the use of nominal and ordinal data, he used chi-square tests with a significance cutoff of $p < .05$ to establish the significance of differences in crosstabs for categorical variables. In a

small number of cases where the crosstabs did not meet the minimum conditions of the chi-square tests, Fisher's exact test, another procedure for determining statistical significance, was used. Additionally, the questions revealing preferences for microformats for particular tasks were used to derive two measures of the persistence of microformat choices: totals for how many tasks a user preferred each microformat to complete, and the number of distinct microformats selected by each user across the various tasks.

The survey received 161 valid responses. Of these, 151 were iSchool students (MS-LIS, MS-IM, CAS, or PhD candidates), for an overall response rate of 23.6 percent. MS-LIS students (123 of 501, 24.6 percent) and PhD students (13 of 49, 26.5 percent) participated at higher rates than did MS-IM (13 of 80, 16.3 percent) or CAS (2 of 10, 20 percent) students. For non-iSchool students taking iSchool courses, the response rate was unavailable due to an unknown number of external students who qualify. Participants from the iSchool identifying themselves as on-campus students responded at a slightly higher rate (83 of 331, 25.1 percent) than did distance students (68 of 311, 21.9 percent). Students with primarily humanities backgrounds (99 participants) made up 61.5 percent of respondents, with another 26.7 percent coming from the social sciences and education (43 participants). For analysis, the investigator combined disciplinary backgrounds outside these groups into a single "other" category due to the smaller number of participants. This category included students in engineering, computer science, and other science programs (9 participants) or those who answered "none of the above" related to academic background (10 respondents), who made up 11.8 percent of participants. For disciplinary background, baseline information is not available to calculate response rates.

Results

General Use

Participants reported using e-books slightly less frequently than print books for academic purposes. However, these differences were relatively small compared to those between print and e-book use for personal reasons. Respondents reported especially heavy use of print books for personal reasons and lower rates of e-book use than in their academic work (see Figure 1). Indeed, 21 participants (13.1 percent) declared never using e-books for personal purposes. When asked about their satisfaction with the campus library's collections, about 60 percent described themselves as satisfied or very satisfied with both e-books (96 respondents) and print books (97 respondents), with some greater satisfaction with print (see Figure 2). However, for these questions, participants reported relatively high nonuse of print (52, 32.5 percent)

> **Respondents reported especially heavy use of print books for personal reasons and lower rates of e-book use than in their academic work.**

and e-books (29, 18.0 percent) from the campus library as compared to their academic or pleasure reading, indicating significant reliance on other sources for both formats. The high number of distance students likely impacted this result. Asked about general ease of use of e-books, most respondents gave positive assessments, although 22 (13.7 percent) reported e-books either difficult or very difficult to use (see Figure 3).
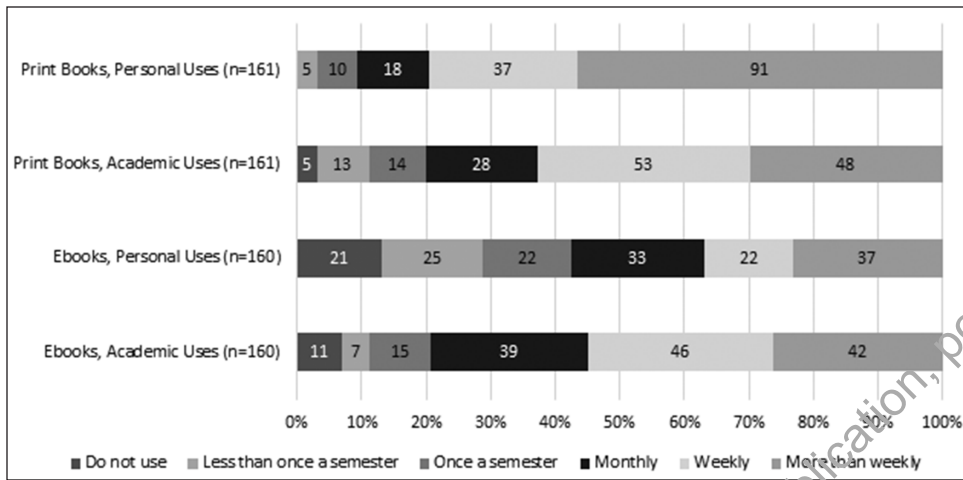
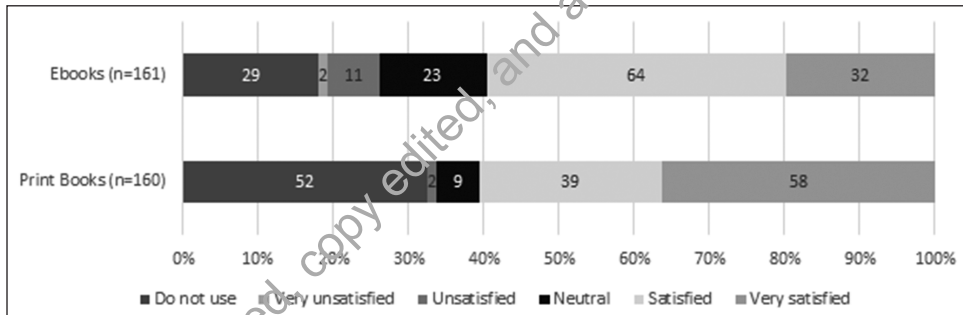Figure 1. Frequency of use of print versus e-book formats by purpose.

Figure 2. Satisfaction with print versus e-book formats from the University Library, University of Illinois at Urbana-Champaign.
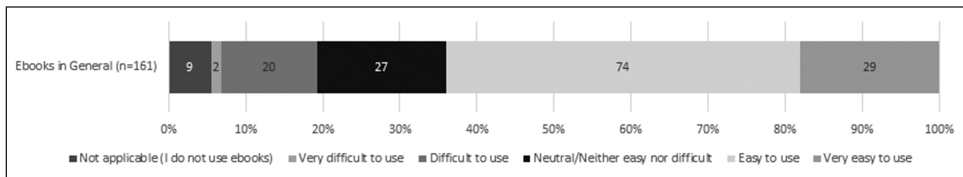

Figure 3. Perceived ease of use of e-books.

The study revealed no differences between distance and on-campus students in the frequency of their use of print and e-books (from any source) for academic or personal

use. However, the satisfaction query related to print and e-books asked specifically about perceptions of library resources, and these showed a significant difference. Distance students reported never using either of these resources from the library at much greater rates than did on-campus students (see Table 1). No significant differences in general use and perception appeared between students with different disciplinary backgrounds.

> **The study revealed no differences between distance and on-campus students in the frequency of their use of print and e-books (from any source) for academic or personal use.**

Patterns of Behavior with Most Recent E-Book

The questions related to the most recent e-book used included any academic purpose, such as coursework, professional development, or academic job responsibilities. Reporting the relationship of the use of the e-book to any usage of a print copy of the same book (question 13), 29 percent of respondents had also looked at a print copy at some point. These uses included consulting a print copy before (6 of 137, 4.4 percent), after (27 of 137, 19.7 percent), or simultaneously with (12 of 137, 8.8 percent) the e-book copy. Asked about the primary purpose of their use (question 14, only one best option allowed), most e-book uses were for required class readings or research for class assignments (see Figure 4).
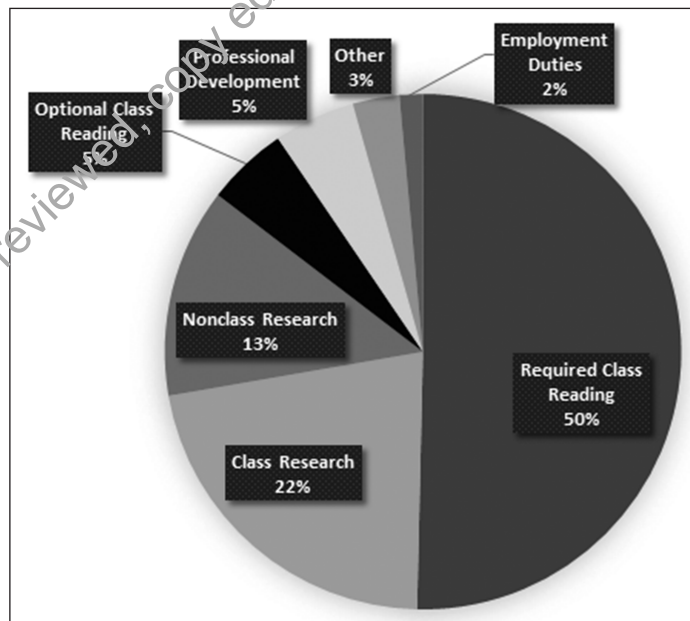

Figure 4. Primary purpose for last e-book used.

Table 1.

Satisfaction with print versus e-books, by distance student status

	Print, distance students	Print, on-campus students	E-books, distance students	E-books, on-campus students
Very satisfied	9 (12.5%)	47 (55.9%)	9 (12.3%)	23 (27.1%)
Satisfied	10 (13.9%)	28 (32.9%)	25 (34.2%)	37 (43.5%)
Neutral	7 (9.7%)	2 (2.4%)	11 (15.1%)	11 (12.9%)
Unsatisfied	1 (1.4%)	1 (1.2%)	3 (4.1%)	8 (9.4%)
Very unsatisfied	0 (0%)	0 (0%)	1 (1.4%)	1 (1.2%)
Do not use	45 (62.5%)	7 (8.2%)		
	24 (32.9%)	5 (5.9%)		
Chi-square				
p-value	64.223	22.386		
.000*				
.000*				

*Tested as significant at the level of p < .05.

Table 2.
Rates of use for various e-book and e-book-derived formats (N = 137)

Format	Participants using	Participants using exclusively
Browser	94 (68.6%)	62 (45.3%)
Download (section, entire, or both)	68 (49.6%)	38 (27.7%)
Print (section, entire, or both)	10 (7.3%)	4 (2.9%)
Digitized	6 (4.4%)	N/A
Other	2 (1.5%)	N/A

Table 2 shows the rates of use for specific microformats during the different occasions respondents used the e-book (question 15). It also extracts from those data instances where individuals used only one of the primary three microformats (browser, downloaded copy of a chapter or entire book, or printout of a chapter or entire book). Most respondents (104, 75.9 percent) used only one microformat (browser reading, downloaded portion, or printout), but about a fifth (30, 21.9 percent) used two. A few (3, 2.2 percent) used all three.

Table 3 shows the percentage of respondents who had attempted particular tasks with their e-book, as well as the percentage who used exclusively a browser, downloaded, or printout format. For every activity listed, those who exclusively used the browser version of e-books pursued the task at a lower rate than the rest of the respondents, in several cases at statistically significant levels. For most tasks, participants who used only a downloaded copy pursued the task at a greater rate than all other respondents, though these results are statistically significant in just two cases: comparing passages within the text and bookmarking pages in the text. Printing was so rare, with only four participants reporting exclusive use of printed copies, that chi-square tests were not possible. Figure 5 shows the distribution of how easy each task was for those who attempted it.

When participants estimated the number of occasions (defined as different individual days) and total minutes during which they used the e-book or derived printouts (questions 30 and 31), the number of occasions ranged from 1 to 50, with a mean of 6.75, and the total minutes extended from 2 to 1,500, with a mean of 147.64. Figure 6 shows a scatterplot of the total occasions and minutes reported, with different shapes representing individuals who only used the e-book in a browser and those who employed other microformats exclusively or in addition to the browser. As shown, browser-only uses cluster among the e-books used on fewer distinct occasions than uses that included multiple or alternate microformats, although in some cases, individuals did read e-books in the browser for moderate or lengthy amounts of time. A final question (question 32) asked how recently the participant last used the e-book, with responses including 24 people (17.4 percent) who had used the e-book in the last one or two days, 29 (21.7

Table 3.
Specific tasks with e-books or e-book-derived microformats

Tasks	All reported uses	Browser only uses	Downloaded copy only uses	Printout only uses
Searched full text	80/135 (59.3%)	34/61 (55.70%)	25/36 (69.40%)	2/4 (50.00%)
chi-square (p-value)		.572 (.450)	2.109 (.146)	N/A (.539)+
Used table of contents	120/136 (88.2%)	54/62 (87.10%)	32/36 (88.90%)	2/4 (50.00%)
chi-square (p-value)		.142 (.706)	N/A (.577)+	N/A (.068)+
Used index	52/135 (38.5%)	18/61 (29.5%)	18/36 (50.00%)	2/4 (50.00%)
chi-square (p-value)		3.915 (.051)	2.733 (.098)	N/A (.500)+
Skimmed/scanned passages	129/135 (95.6%)	59/62 (95.20%)	34/36 (94.40%)	4/4 (100.00%)
chi-square (p-value)		.042 (.838)	.143 (.508)+	N/A (.832)+
Read passages in depth	129/135 (95.6%)	56/61 (91.80%)	35/36 (97.20%)	4/4 (100.00%)
chi-square (p-value)		N/A (.066)+	.321 (.492)+	N/A (.832)+
Compared passages on different pages	76/135 (56.3%)	29/62 (46.8%)	26/36 (72.2%)	3/4 (75.00%)
chi-square (p-value)		4.225 (.040)*	5.061 (.024)*	N/A (.410)+
Compared to another document	83/136 (61.0%)	35/62 (56.50%)	23/36 (63.90%)	3/4 (75.00%)
chi-square (p-value)		1.004 (.316)	.168 (.682)	N/A (.492)+
Referred to contents while writing	105/136 (77.2%)	43/62 (69.4%)	30/36 (83.30%)	3/4 (75.00%)
chi-square (p-value)		3.991 (.046)*	1.045 (.307)	N/A (.649)+
Annotated the text	72/136 (52.9%)	21/62 (33.9%)	24/36 (66.7%)	4/4 (100.00%)
chi-square (p-value)		16.633 (<.001)*	3.792 (.054)	N/A (.075)+

Took notes separate from the text	87/136 (64.0%)	38/62 (61.30%)	20/36 (55.60%)	3/4 (75.00%)
chi-square (p-value)		.355 (.551)	1.504 (.220)	N/A (.544)†
Bookmarked or "dog-eared" pages	48/135 (35.6%)	15/61 (24.6%)	19/36 (52.8%)	2/4 (50.00%)
chi-square (p-value)		5.840 (.016)*	6.355 (.012)*	N/A (.447)†
Used embedded multimedia	27/136 (19.9%)	7/62 (11.3%)	3/36 (22.20%)	2/4 (50.00%)
chi-square (p-value)		5.250 (.022)*	.173 (.678)	N/A (.176)†
Copied and pasted text	66/133 (49.6%)	27/61 (44.30%)	21/37 (56.80%)	2/4 (50.00%)
chi-square (p-value)		1.296 (.255)	1.043 (.307)	N/A (.685)†

* Indicates p-values significant at a level of $p < .05$.

† N/A value indicates distribution did not meet requirements of chi-square test. In these cases, the p-value reported is for Fisher's exact test.
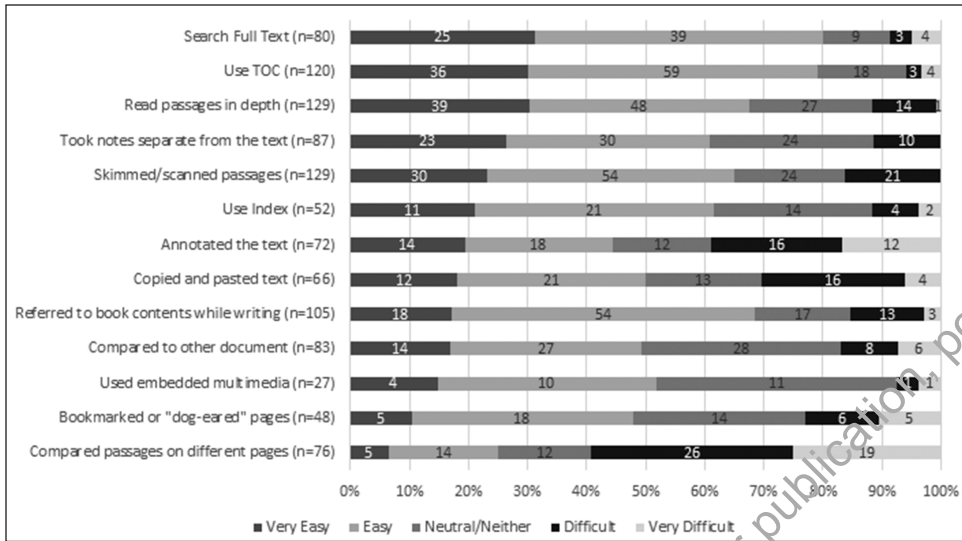
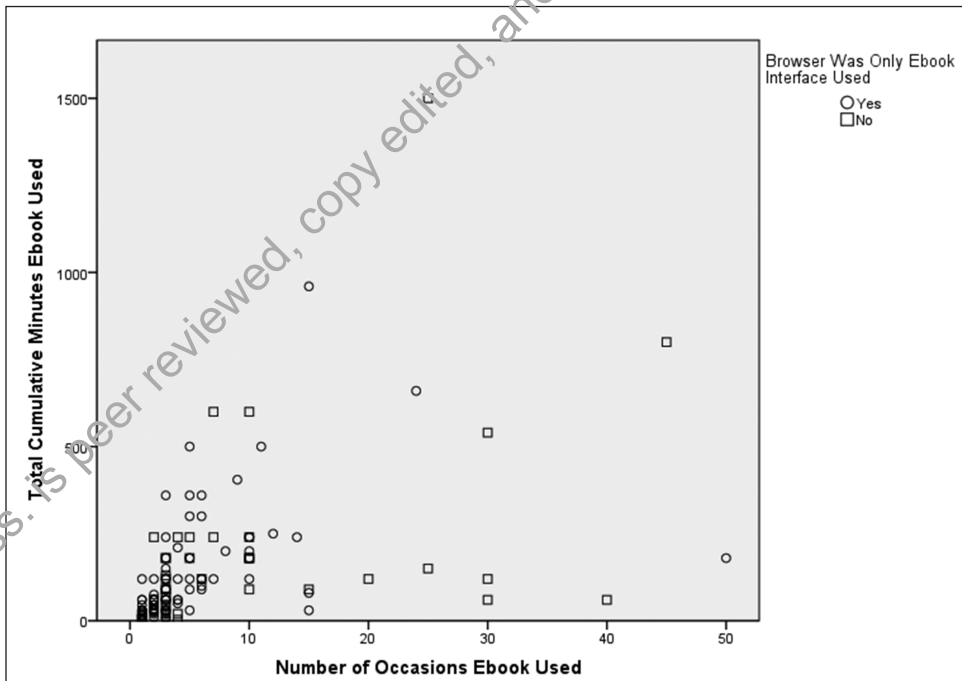Figure 5. Ease of tasks attempted with last e-book used.

Figure 6. Number of occasions and cumulative minutes of use for last e-book consulted.

percent) who had used it between the past two days and a week, 50 (36.2 percent) who had used it between a week and a month past, and 33 (24.6 percent) who had used the e-book more than a month previously.

There were no significant differences between on-campus and distance students in relation to the activities they reported with their most recently used e-book, except that on-campus students unanimously reported skimming (see Table 4). However, students with different disciplinary backgrounds did report significant differences in their activities with these e-books (see Table 5). Individuals with "other" backgrounds, largely in the sciences and engineering, more likely used search, although a majority of students in the humanities and half of those from the social sciences also used search. Those from other disciplinary backgrounds also more likely used the index of an e-book, annotated the text (also common among those with a humanities background), bookmarked pages, and used multimedia in the book at statistically significant rates.

> **There were no significant differences between on-campus and distance students in relation to the activities they reported with their most recently used e-book, except that on-campus students unanimously reported skimming**

Attitudes toward Tasks and Microformats

The final section of the survey asked questions about specific normative statements, features, and microformats, with results shown in Figure 7, Figure 8, and Figure 9, respectively. Participants generally found print books much more reliable and convenient than they did e-books, but despite attachment to print among a select group and a much greater sense of difficulty with e-book interfaces, respondents showed great flexibility. Almost 30 percent would always agree that they did not care whether they used an e-book or print book as long as a copy of the title was available. Less than 10 percent thought it always a major barrier if they had access only to print or only to the e-book, though greater proportions thought such limited access sometimes or rarely posed a hindrance (see Figure 7). Among e-book features, the most important to respondents were ability to use off-line, distinct pages (versus reflowable text), and full-text search (see Figure 8). While participants strongly favored print for reading in depth, the preference for print barely outpaced use of a downloaded e-book file or a printout from an e-book for the purposes of annotation. Print also outpaced all e-book microformats for skimming, the only activity for which the browser version was the preferred microformat (see Figure 9).

> **Participants generally found print books much more reliable and convenient than they did e-books …**

Respondents typically preferred specific microformats for one or two tasks each, but downloaded copies and bound print copies had the most persistence with some individuals, who favored them for up to five tasks or all six (see Table 6). Seven users (4.4 percent) also registered complete

Table 4.

Tasks pursued, by distance student status

Task	Distance students	On-campus students	Chi-square	p-value
Search	33/57 (57.9%)	46/76 (60.5%)	0.094	0.76
Table of contents	49/58 (84.5%)	69/76 (90.8%)	1.244	0.265
Use of index	21/57 (36.8%)	29/76 (38.2%)	0.24	0.877
Skimmed text	52/58 (89.7%)	76/76 (100.0%)	N/A*	0.006†
Read in depth	54/58 (93.1%)	73/75 (97.3%)	N/A*	0.228
Compared passages within the book	29/57 (50.9%)	46/76 (60.5%)	1.233	0.267
Compared passages with a different book	31/58 (53.4%)	51/76 (67.1%)	2.584	0.077
Used while writing	43/58 (74.1%)	60/76 (78.9%)	0.428	0.513
Annotated text	29/58 (50.0%)	41/76 (53.9%)	0.205	0.65
Took notes about text	38/58 (65.5%)	47/76 (61.8%)	0.192	0.662
Bookmarked or "dog-eared" text	23/57 (40.4%)	24/76 (31.6%)	1.097	0.295
Used multimedia in text	12/58 (20.7%)	15/76 (19.7%)	0.019	0.892
Copied and pasted text	26/58 (44.8%)	40/75 (53.3%)	0.947	0.331

* N/A indicates distribution did not meet the requirements of the chi-square test. In these cases, the p-value reported is for Fisher's exact test.

† Indicates p-values significant at a level of $p < .05$.

Table 5.

Tasks pursued, by disciplinary group

Task	Humanities students	Social sciences and education students	Other students	Chi-square	p-value
Search	50/87 (57.5%)	16/32 (50.0%)	14/16 (87.5%)	6.537	.038*
Table of contents	76/87 (87.4%)	38/32 (87.5%)	16/17 (94.1%)	0.648	.723
Use of index	27/87 (31.0%)	13/32 (40.6%)	12/16 (75.0%)	11.11	.004*
Skimmed text	82/86 (95.3%)	30/32 (93.8%)	17/17 (100.0%)	1.045	.593
Read in depth	82/87 (94.3%)	30/31 (96.8%)	17/17 (100.0%)	1.247	.536
Compared passages within the book	47/87 (54.0%)	16/31 (51.6%)	13/17 (76.5%)	3.271	.195
Compared passages with a different book	53/87 (60.9%)	16/32 (50.0%)	14/17 (82.4%)	4.887	.087
Used while writing	70/87 (80.5%)	20/32 (62.5%)	15/17 (88.2%)	5.631	.06
Annotated text	49/87 (56.3%)	11/32 (34.4%)	12/17 (70.6%)	6.952	.031*
Took notes about text	58/87 (66.7%)	15/32 (46.9%)	14/17 (82.4%)	6.824	.033*
Bookmarked or "dog-eared" text	25/87 (28.7%)	11/32 (34.4%)	12/16 (75.0%)	12.65	.002*
Used multimedia in text	12/87 (13.8%)	4/32 (12.5%)	11/17 (64.7%)	24.589	.000*
Copied and pasted text	44/84 (52.4%)	11/32 (34.4%)	11/17 (64.7%)	4.779	.092

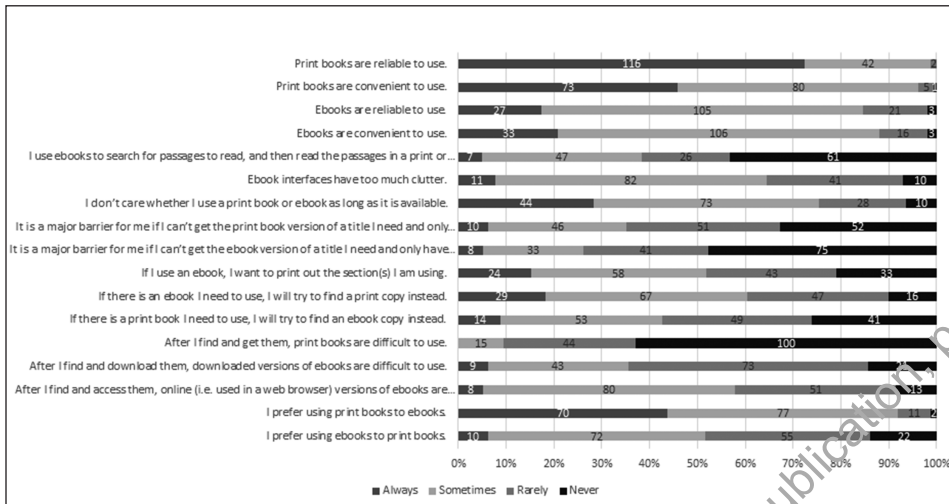*Indicates p-values significant at a level of $p < .05$.

Figure 7. Frequency with which the statements indicated are perceived as true.
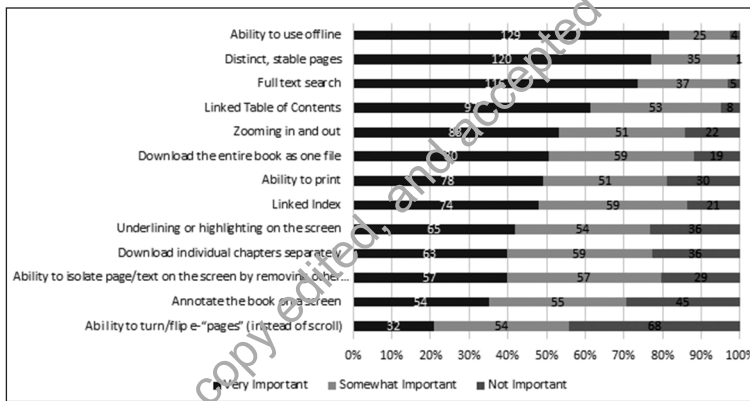

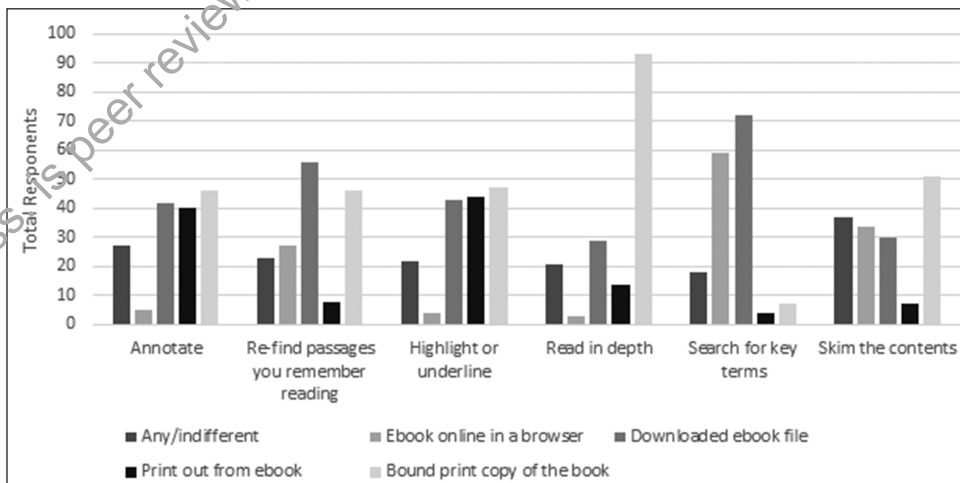Figure 8. Perceived importance of e-book features.

Figure 9. Preferred book formats for key tasks.

indifference—in other words, this small number of users claimed not to care what microformat they used for a task, at least for the range of activities indicated. Table 7 shows the number of distinct microformats (the options excluding "any/indifferent") participants indicated. Only 28 (17.5 percent) preferred the same microformat across all tasks. A plurality reported a preference for two specific microformats to satisfy the full range of tasks, with many choosing three micro-formats. Seven users (4.4 percent) preferred all four of the microformats for distinct activities. This number is equal to, but at the other extreme from, the number who reported indifference to microformats for all activities.

Table 6.
Format preference for numbers of tasks*

Number of tasks with preferred format	Browser e-book	Downloaded e-book	Printout	Bound print	Any format
6 tasks	1	9	1	6	7
5 tasks	1	9	0	8	1
4 tasks	2	14	3	20	5
3 tasks	6	17	4	16	9
2 tasks	29	22	35	24	12
1 tasks	37	22	17	38	30
0 tasks	84	67	100	48	96

*Values show number of participants who preferred the given format for the number of tasks in the left-hand column.

Table 7.
Number of distinct formats preferred*
(all responses = 1 format or that format plus indifferent)

0 formats (total indifference to format)	7 (4.4%)
1 format	28 (17.5%)
2 formats	69 (43.1%)
3 formats	49 (30.6%)
4 formats	7 (4.4%)

*Totals include all responses with the given number of formats, or that number of formats plus indifference for other formats.

Distance and on-campus students reported no significant difference related to the various normative statements about e-books and print books. In relation to the importance of features in e-books, only one difference registered as significant. Distance students saw the ability to "flip" pages in the e-book interfaces as more important than did their on-campus counterparts ($p = .028$, chi-square $= 7.175$). A majority of on-campus students found flipping pages not important (44 of 81, 54.3 percent), whereas the opposite was true for distance students: about two-thirds of distance students found virtual page flipping as somewhat (30 of 70, 42.9 percent) or very (17 of 70, 24.3 percent) important.

Regarding preferred microformats for tasks, distance students significantly more likely preferred a print copy (29 of 73 or 39.7 percent, versus 17 of 84 or 20.2 percent) or printout from a book (6 of 73 or 8.2 percent, versus 2 of 84 or 2.4 percent) for the task of relocating passages in a book ($p = .017$, chi-square $= 12.038$). Significantly more distance students also favored a print copy for skimming (32 of 72 or 44.4 percent, versus 18 of 84 or 21.4 percent, $p = .036$, chi-square $= 10.310$). While they did not demonstrate significant differences in other cases, distance students did report preference for a bound print book or printout from an e-book for all tasks at a higher rate than on-campus students did. Printouts, however, were popular at similar levels for highlighting in both groups, and on-campus students preferred printouts at twice the rate as distance students for in-depth reading.

Disciplinary background, like distance student status, did not result in significant differences related to the normative statements about e-books and print books. Regarding the importance of features, none proved significant at the level of $p < .05$. One, however, showed a difference close to the significance cutoff ($p = .051$, chi-square $= 9.459$) among users of different disciplinary backgrounds, with humanities students more likely to see annotation on a screen as a "very important" feature (37 of 95 or 38.9 percent). Almost a third of humanities respondents considered it unimportant (29 of 95 or 30.5 percent), far more than those with other backgrounds, who nearly all viewed annotation on a screen as either very (6 of 18 or 33.3 percent) or somewhat (11 of 18 or 61.1 percent) important. Those in the social sciences more generally identified annotation as somewhat or not important, with 15 of 41 or 36.6 percent giving this response for both categories. Disciplinary background did not result in statistically significant differences in preferred microformat for specific activities, largely because, in most cases, the distribution of data could not satisfy the baseline conditions of the chi-square test. However, those from other backgrounds preferred a downloaded copy of an e-book at greater rates for all tasks. Those from the humanities favored bound print copies of books at greater rates for annotation, and humanities respondents and social scientists demonstrated similar preferences for bound print books for highlighting

Search was the only activity where browser versions of e-books performed strongly with any group, but all groups still favored a downloaded copy of the e-book to the browser version for searching full text.

and reading in depth. Search was the only activity where browser versions of e-books performed strongly with any group, but all groups still favored a downloaded copy of the e-book to the browser version for searching full text.

Discussion

Relationships between Tasks and Microformats

The first hypothesis for this study predicted that e-book information behaviors (tasks) will have a significant relationship with the microformats used or preferred. This hypothesis was accepted for some of the pairings of task and microformat, with significant relationships found for individuals using only the browser or only a downloaded copy. Browser-only uses had a significant negative relationship with comparing of passages on different pages, referring to book contents while writing, annotating, bookmarking pages, and (perhaps most surprisingly, since it might be considered the hardest to extract from the browser) using of embedded multimedia. Use of only a downloaded copy had a positive relationship with comparison of passages on different pages and bookmarking pages.

The relationship of browser-only use to lower pursuit of tasks (generally those associated with more engaged reading) does not indicate whether browser-only use caused readers to pursue these activities less or whether a lack of need to pursue those tasks led to willingness to stay in the browser. The browser performed badlywhen users were asked to identify their preferred microformat for activities, with hardly any choosing it for engaged reading tasks (annotation, highlighting/underlining, or reading in depth). It also underperformed a downloaded copy for refinding passages and even for keyword searching. Over half of participants did not prefer the browser for any e-book task on the list. Taken together, these results suggest that users (except where prohibited by digital rights management) choose browser versions of e-books strategically for quicker uses, including evaluation of content, and rely on downloading for more complex, longer uses. These results echo but revise Staiger's division between "use" of e-books and "reading" of print titles, and extend Corlett-Rivera and Hackman's observation of significant "it depends" responses to task-format connections, by showing how e-book users parcel out their engagement among multiple microformats.[22]

> **The browser performed badlywhen users were asked to identify their preferred microformat for activities, with hardly any choosing it for engaged reading tasks (annotation, highlighting/underlining, or reading in depth).**

The ideas that users strategically choose microformats in relation to the tasks at hand and that the activities push users toward multiple microformats garner further support from the limited 17.5 percent of participants who indicated preferring only one microformat (browser, download, printout, or bound print) for all tasks. Most respondents indicated that either two or three microformats would be preferable for the six tasks specified in questions 63 to 68. Almost four of five users preferred multiple microformats for different activities, which confirms that e-book surveys asking abstractly about preferences for e-books versus print, or typologies based on this division, miss key distinctions about microformats.[23] This study, like its predecessor, suggests that users of e-books for academic purposes strategically consider the nature of their tasks when choosing among the microformat options.

Information Behavior and Distance Student Status

The second hypothesis for this study predicted that distance student status will have a significant relationship with reported e-book use, activities using e-books, and attitudes toward e-book tasks and microformats. The first part of the hypothesis, reported e-book use, was rejected for overall use of e-books, like the finding by Croft and Davis that distance students did not prefer e-books.[24] However, the hypothesis was confirmed for use of e-books (as well as print books) from the university library, both of which are used less by distance students than by on-campus students. This result is not surprising since distance students commonly have full-time jobs and may take a reduced course load. The second part of the hypothesis, relationship of distance student status with e-book activities, is largely rejected except that on-campus students more likely skim the text (although both groups did so at high rates). The final part of the second hypothesis, attitudes toward tasks and microformats, was also largely rejected except for a significant difference between distance and on-campus students regarding the importance of the ability to virtually "flip" pages (more important to distance students) and preference for a print copy for relocating passages and for skimming (stronger among distance students). Virtual flipping of pages, because it preserves an element of the print book experience in e-book interfaces, relates to the preference for print for these activities, suggesting an overall leaning toward print among distance students, though small.

The lower rate of use of library e-books and print books by distance students resembles that found in the survey of library resource use four years earlier in that distance students reported never using library e-books and print books at greater rates than did their on-campus counterparts.[25] Those reporting never using print books from the library, however, increased from 54.5 percent to 62.5 percent among distance students and from 2.7 percent to 8.2 percent among on-campus students. Those reporting never using e-books decreased from 48.2 percent to 32.9 percent among distance students and 23.9 percent to 5.9 percent among on-campus students. Some of these changes can be attributed to greater availability of e-books for library purchases (and thus due to available formats for use) and greater assignment of excerpts from e-books in classes. Likewise, the steeper drop in distance students who reported using print books from the library may derive from the elimination of a once-a-semester weekend when all distance students came to campus and had access to the library, limiting them to use of print books either in their initial residency or through the library's request-by-mail program. It is not clear how much of the shift to e-books reflected in these numbers comes from greater willingness to use them or from a reduced preference for print, especially since the satisfaction responses among those who reported use of print and e-books did not change substantively from the last survey.

The authors of the previous study had speculated that distance students may rely on print collections from other libraries nearer to them instead of using e-books. While this may be partially true, the combination of factors here suggests that distance students in fact rely on other sources for both e-books and print books, not just for print.

> … distance students reported never using library e-books and print books at greater rates than did their on-campus counterparts.

Information Behavior and Disciplinary Background

The final hypothesis for this study predicted disciplinary background will have a significant relationship with reported e-book use, activities using e-books, and attitudes toward e-book tasks and microformats. This analysis rejects a connection between disciplinary background and overall reported e-book use. The results partially confirm the relationship of academic field to activities using e-books, although the importance is unclear because it involves students in the "other" disciplines pursuing some tasks more often than those in the humanities or social sciences. These tasks included search, use of the index, annotation, bookmarking, and use of embedded multimedia. Approximately half of the "other" group consisted of students from the sciences, and half were undetermined. Regarding attitudes toward tasks and microformats, the analysis confirms a relationship of discipline to importance placed on annotation: "other" disciplines almost unanimously identified on-screen annotation as somewhat or very important, yet humanities students had the strongest contingent of those indicating it as "very important." However, the results of testing for relationships between discipline and the preferred microformat for activities were inconclusive due to inability to meet the conditions of the chi-square test. The descriptive statistics in this area suggested more preference for downloaded e-book copies for all tasks by other disciplines and greater preference for print for more engaged reading among humanities students and, almost as often, among social scientists.

The ambiguities around the "other" grouping and the lack of confirmation of differences in preferred microformats for tasks make it difficult to reach conclusions related to differences in disciplinary background. However, the descriptive statistics suggest reason for further inquiry into academic field as a factor for some behavior. More generally, the results suggest reason to distinguish disciplinary background and current discipline in understanding information behavior with e-books. Some previous findings related to disciplinary variations may have been interpreted differently if background were considered as well as current department.

Conclusion

This study shows a broadly pragmatic and strategic approach to academic e-book use in a student population with significant e-book availability. Indeed, using the categories of e-book users described by Shrimplin and his coauthors, few students in this study seem to be "printers" or "technophiles," and those who might be "book lovers" in terms of stated preference appear to be "pragmatists" in action.[26] However, where Shrimplin's team described pragmatists as willing to use e-books because of their convenience, participants in the present study did not associate convenience more strongly with e-books than with print. In fact, they rated e-books as less convenient (and less reliable) than print books. A better explanation for the pragmatism seen in the present study may be that it took place in an academic environment involving significant amounts of assigned reading for students: half of the most recently used books reported were required class readings, and nearly another quarter involved class-related research projects. Students on a tight budget have a significant incentive to use an e-book from the library regardless of preference.

Related to this point, this study also shows that the concept of pragmatism needs to be expanded beyond willingness to use e-books over print to account for multiple e-book microformats and the intentionality users exhibit when choosing between microformats. Indeed, e-book use might be better described as "strategic" in an academic environment where e-books are broadly available. Only 17.5 percent of participants in this study had a consistently preferred microformat for the six reading-related activities about which the survey asked. Moreover, there is a significant relationship between the tasks and whether the reader uses only a browser or downloaded copy. This difference reveals the importance of downloadable microformats for some more engaged reading activities and demonstrates that differences in e-book microformats are as important as the difference between print and e-book formats generally, which often absorbs much of the attention of e-book studies. For this population in information sciences with routine access to e-books, shifting between multiple e-book and print microformats is both routine and strategic.

> **Students on a tight budget have a significant incentive to use an e-book from the library regardless of preference.**

For academic libraries looking to best serve their users, these results echo the qualitative predecessor study on the importance of downloadable microformats when choosing among e-book vendors. Downloadable microformats may be especially important for distance students, who report preference for e-book features that echo the print experience (allowing for flipping pages) or who prefer print copies at greater rates. These results also suggest an ongoing need for print alongside e-books. This dual need poses a conundrum for libraries since it puts further strain on already stressed collections budgets. Quick-delivery arrangements among library consortia members and related cooperative collection development agreements may offer a partial solution. Not every library needs both a print and an electronic copy, but users should be able to access a print copy if their needs exceed what they can do comfortably with online or downloaded versions of the e-book copy available. If vendors provide a downloadable microformat, e-books will, in most cases, fulfill the in-depth use needs, but for some users they will not. In the past, cooperative collections agreements may have focused more on limiting the number of print copies in the system to a defined maximum, but as a shift to e-preferred models occurs, consortia may want to consider ways to ensure a minimum number of print copies for core content.

> **Not every library needs both a print and an electronic copy, but users should be able to access a print copy if their needs exceed what they can do comfortably with online or downloaded versions of the e-book copy available.**

This study suggests a need for further research on the relationship between disciplinary background and tasks when using e-book and print formats and microformats. Particularly, a larger interdisciplinary population would allow testing of the significance of apparent differences in rates of behaviors that show those with science backgrounds

and those from some other disciplines (likely including business) pursuing a greater variety of activities than humanists or social scientists. More generally, studies of the relationship of discipline and use of print books and e-books need to look more at the impact of fields of study as much as current discipline. Individuals who migrate between disciplines may be shaped as much or more by acculturation into reading processes by their former disciplines than by any inherent needs of the discipline they inhabit. This idea could be tested by looking more extensively at graduate students and faculty across a broad range of academic fields.

This study demonstrates that library users are strategic about using books for academic purposes. They "make do" with formats and microformats they do not prefer to fulfill requirements, but they also choose among the different digital options based on their needs. In this context, too much may be made of the perennial question "are our users ready for e-books?" and not enough of the question "are e-books ready for our users?" For our strategic users, we need to push e-book vendors toward models that reduce the complexity of use decisions and workflows, and that decrease the sacrifices readers must make to get through required reading not available in their preferred format.

Acknowledgments

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Appendix A

Survey Questions

Demographics

Q1. Please indicate your primary enrollment status at the School of Information Sciences (formerly GSLIS): [radio box]

>   Doctoral student (PhD)
>
>   Certificate of advanced study student (CAS)
>
>   Library and information science master's student (MS-LIS)
>
>   Information management master's student (MS-IM)
>
>   Bioinformatics master's student (MS-Bioinformatics)
>
>   Graduate student from another department or university taking classes in the School of Information Sciences
>
>   Nondegree-seeking student (i.e., taking a course for professional development)
>
>   Other

Q2. Which of the following best describes your primary enrollment status? [radio box]

>   University of Illinois on-campus student
>
>   University of Illinois (distance education) student
>
>   Neither (i.e., nondegree-seeking students from outside the University of Illinois)

Q3. Regardless of your primary enrollment status, please indicate where you are living during the current semester [radio box]

>   I live in Champaign-Urbana.
>
>   I live elsewhere in Illinois.
>
>   I live elsewhere outside of Illinois.

Q4. Prior to your coursework and/or degree program in the School of Information Sciences, how would you describe the primary disciplinary focus of any higher education experience you have had (including undergraduate and any other graduate degrees)? Please choose the single best answer that describes the majority of your prior experience, even if you have experience in multiple disciplines: (radio)

>   Humanities.
>
>   Social sciences and education.
>
>   Computer science and math.
>
>   Engineering (excluding computer science).
>
>   Other sciences (biological, physical).
>
>   None of the above.

For the purposes of the questions below, an "e-book" can be defined as any digital text that is similar to a print book, but which may (or may not) have additional features that are only possible in a digital format, such as full-text search, links, multimedia, and other features. For the purpose of this study, e-books include digitized print books, such as those available through HathiTrust or the Internet Archive, or any book you may digitize yourself. E-books may include textbooks, reference sources such as encyclopedias, and collections of essays, but do not include electronic journals, journal articles, or newspapers. E-books do not include online databases, but you may find or access an e-book through a database, and such e-books do qualify. E-books may be used on a variety of electronic devices including computers, e-readers, and phones, or they may allow the user to print out sections (please consider use of such printouts of e-books to be e-book use for the purpose of these questions).

How frequently do you use each of the following sources of information for academic purposes? Please choose the most accurate response based on your best estimate. Please do not count use of these services to provide assistance to others as a library employee (for example, as a graduate assistant or staff member at a library). However, this question includes all other academic uses, including for courses, research, or other work as part of academic employment. A use includes any access of a book even if it is not read in depth.

More than weekly / Weekly / Monthly / Once a semester / Less than once a semester / Do not use

Q5. Print books.

Q6. E-books.

How frequently do you use each of the following sources of information for personal uses (for example, pleasure reading or personal interest)? Please choose the most accurate response based on your best estimate. A use includes any access of a book even if it is not read in depth.

More than weekly / Weekly / Monthly / Once a semester / Less than once a semester / Do not use

Q7. Print books.

Q8. E-books.

How satisfied are you with each of the following services from the University of Illinois Library? Please choose the most accurate response for each listed service?

Very satisfied / Satisfied / Neutral / Unsatisfied / Very unsatisfied / Do not use

Q9. Print books from the University of Illinois Library.

Q10. E-books from the University of Illinois Library.

Q11. Generally speaking, from your experience, how easy are e-books (from the library or otherwise) to use after you find them?

Very easy to use.

Easy to use.

Neutral/Neither easy nor difficult.

Difficult to use.

Very difficult to use.

Not applicable (I have not used e-books).

[Q12 to Q32 only answered by those who did not respond "not applicable (I have not used e-books)" to Q9]

For the following questions, please answer with responses related to the most recent experience you have using or trying to use an e-book for academic purposes (including a class, general research, professional development, teaching responsibilities, or other academic purposes). This includes times when you printed a section of an e-book or entire e-book to read on paper.

Q12. For the last e-book you used or tried to use for academic purposes, please indicate the title or general subject. If you have a link to the specific e-book you may provide that as well. [open response]

Q13. This e-book (choose all that apply):

Was chosen after initially using a print copy of the same book.

Led me to seek a print copy, or go back to a print copy for further use.

Was used simultaneously with a print copy of the same book.

None of the above.

Q14. What was the primary purpose of using the e-book listed above at that particular time? (choose the single best answer):

Required reading for a class I am taking.

Recommended/optional reading for a class I am taking.

Use for a class assignment outside of weekly reading requirements (e.g., for a research paper).

Academic research outside of a course (including dissertation or thesis work, or other non-course research in progress).

Reading related to teaching or employment responsibilities.

Professional development/interest.

Other (specify): _____.

Q15. What was the interface or format in which you used the e-book listed above in the course of your uses for that purpose (check all that apply):

Used online in an Internet browser.

Used downloaded individual pages or sections in an electronic format.

Used download/checkout of entire e-book in an electronic format.

Used digitized copy of print book that I scanned or someone scanned for me.

Used printout of individual pages or sections.

Used printout of entire e-book or "print on demand" copy.

Other (specify): _____.

Q16. For any electronic uses (the first three options in the previous question): list specific browsers (i.e., Firefox, Safari, Chrome), software (Adobe Digital Editions), apps, or devices (i.e., Kindle, Ipad) used with the e-book that you can recall: [open response]

For each of the following ways that you used the e-book listed above (or a printout from the e-book), please indicate how easy that function was. If you did not use the e-book in a particular way, click "Not applicable—did not do."

[options: Very easy to use, Easy to use, Neutral/neither easy nor difficult, Difficult to use, Very difficult to use, Not applicable—did not do]

Q17. Searched full text for keywords.

Q18. Used table of contents to find relevant content.

Q19. Used index to find relevant content.

Q20. Skimmed/scanned passages (for the gist, for specific information, etc.).

Q21. Read passages in depth (continuous, linear reading of paragraphs).

Q22. Compared passages from different pages of the book.

Q23. Compared the book to other documents (print or electronic).

Q24. Referred to book contents while writing.

Q25. Annotation of the text (including underlining/highlighting and marginal notes).

Q26. Took notes about the text (separate from text, not including annotations).

Q27. Bookmarked or "dog-eared" pages.

Q28. Used embedded multimedia (video, audio).

Q29. Copied and pasted text to another document.

Q30. As you can best recall, about how many different occasions (different individual days) did you use this e-book, including printouts from the e-book (enter a number)? [numeric response]

Q31: As you can best recall, about how much time (in minutes) did you spend using this e-book across all occasions (enter a number of minutes), including printouts from the e-book? [numeric response]

Q32: When was the most recent occasion that you used this e-book?

> Within the past 1–2 days.
>
> Between 2 days and a week ago.
>
> Between a week and a month ago.
>
> More than a month ago.

Please answer the following questions by indicating how often they are true of your experiences with e-books and/or print books for academic purposes.

[options: Always, Sometimes, Rarely, Never, Don't know, or Not applicable]

Q33: I prefer using e-books to print books.

Q34: I prefer using print books to e-books.

Q35: After I find and access them, online (i.e., used in a Web browser) versions of e-books are difficult to use.

Q36: After I find and download them, downloaded versions of e-books are difficult to use.

Q37: After I find and get them, print books are difficult to use.

Q38: If there is a print book I need to use, I will try to find an e-book copy instead.

Q39: If there is an e-book I need to use, I will try to find a print copy instead.

Q40: If I use an e-book, I want to print out the section(s) I am using.

Q41: It is a major barrier for me if I can't get the e-book version of a title I need and only have access to a print copy.

Q42: It is a major barrier for me if I can't get the print book version of a title I need and only have access to an e-book copy.

Q43: I don't care whether I use a print book or e-book as long as it is available.

Q44: E-book interfaces have too much clutter.

Q45: I use e-books to search for passages to read and then read the passages in a print or printed out copy.

Q46: E-books are convenient to use.

Q47: E-books are reliable to use.

Q48: Print books are convenient to use.

Q49: Print books are reliable to use.
How important are the following features of an e-book to you?

[options: Very important, Somewhat important, Not important, Don't know, or Not applicable]

Q50: Full-text search.

Q51: Distinct, stable pages.

Q52: Ability to isolate page / text on the screen by removing other features.

Q53: Download individual chapters separately.

Q54: Download the entire book as one file.

Q55: Annotate the book on a screen.

Q56: Linked table of contents.

Q57: Linked index.

Q58: Underlining or highlighting on the screen.

Q59: Ability to use offline.

Q60: Ability to print.

Q61: Zooming in and out.

Q62: Ability to turn / flip e-"pages" (instead of scroll).

For each of the following activities, please indicate if you would most often prefer to use an e-book online in a browser, a downloaded e-book file, a printout from an e-book, or a bound print copy of a book. Assume all are options for use.

[options: e-book online in a browser, downloaded e-book file, printout from e-book, bound print copy of the book, any/indifferent]

Q63: Annotate.

Q64: Refind passages you remember reading.

Q65: Highlight or underline.

Q66: Read in depth.

Q67: Search for key terms.

Q68: Skim the contents.

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