

Rowan University

Rowan Digital Works

Libraries Scholarship

University Libraries

6-17-2024

Graduate students' e-book awareness and usage at a public research university in the U.S.A.

Denise Brush

Rowan University, brush@rowan.edu

Daniel G. Kipnis

Rowan University, kipnisd@rowan.edu

Follow this and additional works at: https://rdw.rowan.edu/lib_scholarship



Part of the [Scholarly Communication Commons](#)

Recommended Citation

Brush, D.A. and Kipnis, D.G. (2024), "Graduate students' e-book awareness and usage at a public research university in the USA", *Digital Library Perspectives*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/DLP-03-2024-0036>

This Article is brought to you for free and open access by the University Libraries at Rowan Digital Works. It has been accepted for inclusion in Libraries Scholarship by an authorized administrator of Rowan Digital Works.

ACCEPTED MANUSCRIPT

This is the final accepted peer-reviewed version published in:

Digital Library Perspectives
DOI 10.1108/DLP-03-2024-0036

Online access:

<https://www.emerald.com/insight/content/doi/10.1108/DLP-03-2024-0036/full/html>

Graduate students' e-book awareness and usage at a public research university in the United States

Denise A. Brush, Daniel G. Kipnis

Digital Library Perspectives (ISSN 2059-5816)

Published June 17, 2024

Structured abstract

Purpose: We sought to understand the level of graduate students' awareness and usage of e-books purchased by our university library since the COVID-19 pandemic.

Design/Methodology/Approach: Authors created a Qualtrics survey with 13 questions that was sent to the university's graduate student email list. The survey was sent in the fall of 2023 and open for one month. The list had 3,318 subscribers; 113 complete responses were received for a response rate of 3.4%.

Findings: Our results found that doctoral students (80%) are more aware than master's students (64%) of e-book availability through the library, and usage rates are higher for doctoral students (78%) compared to master's students (52%). In addition, frequency of e-book usage since COVID-19 has changed with more than half of respondents using e-books more often. The majority of respondents who use e-books do so because they are required as a textbook. While international students use their laptop or smartphone for reading e-books, domestic students preferred laptops. Student comments at the end of the survey revealed ways for libraries to help improve e-book awareness.

Originality/Value: Our research looks at the current level of usage and awareness of specific populations (graduate students, online students, international students) regarding e-books. We focus on student perspectives regarding what devices they use to access e-books, and how their usage differs across academic disciplines.

Introduction

In early 2023, one of this paper's authors was walking through the Engineering (LC class T) section of our reference collection and came upon a student browsing the reference books. Upon

asking the student if he needed any help finding a book, he mentioned a specific book title. The suggestion that he check the library website using our discovery system, because it was likely that we have the book in e-book format, surprised him. He was unaware that this was a possibility. This encounter led to the question of how many of our current graduate students were aware that the library collection is primarily held in electronic format. Our library's collection policy has been "e-preferred" since 2014 and most of our science and engineering books are purchased as e-books. We wondered if libraries in the countries our international graduate students came from might still be purchasing books primarily in print, so the students were not accustomed to looking for library books online.

Founded one hundred years ago as a state teacher's college, New Jersey's Rowan University has ambitions of becoming an R1 research institution. Since 2020 the international graduate student enrollment at our university has skyrocketed. Only 63 international students enrolled in fall 2020, but 378 enrolled in fall 2023, an increase of 600%. The institutional data available for fall 2022 shows that 23% of incoming graduate students were international students (Figure 1).

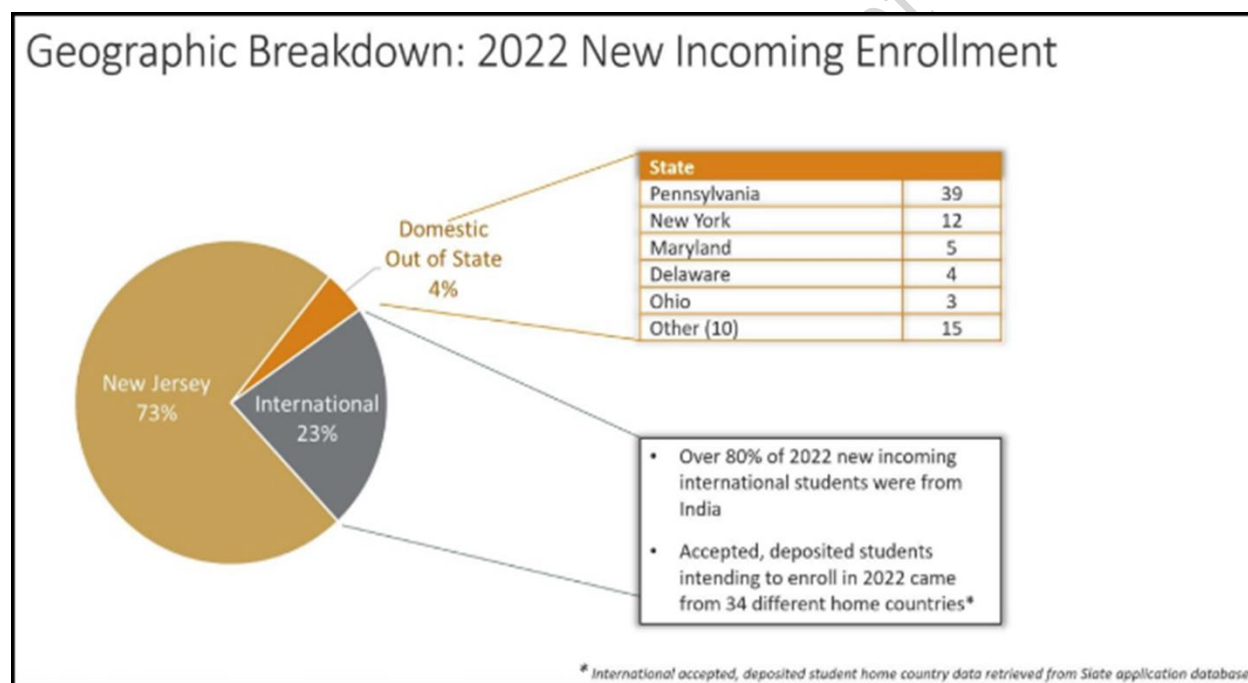


Figure 1: Geographic Breakdown of New 2022 Graduate Student Enrollment

The College of Engineering enrolled 175 new students in fall 2022 and 192 new students in fall 2023. While 38% of entering 2022 graduate students were in Education degree programs, 47% (29%+10%+8%) were in Engineering, Science, or Nursing/Health Professions programs (Figure 2).

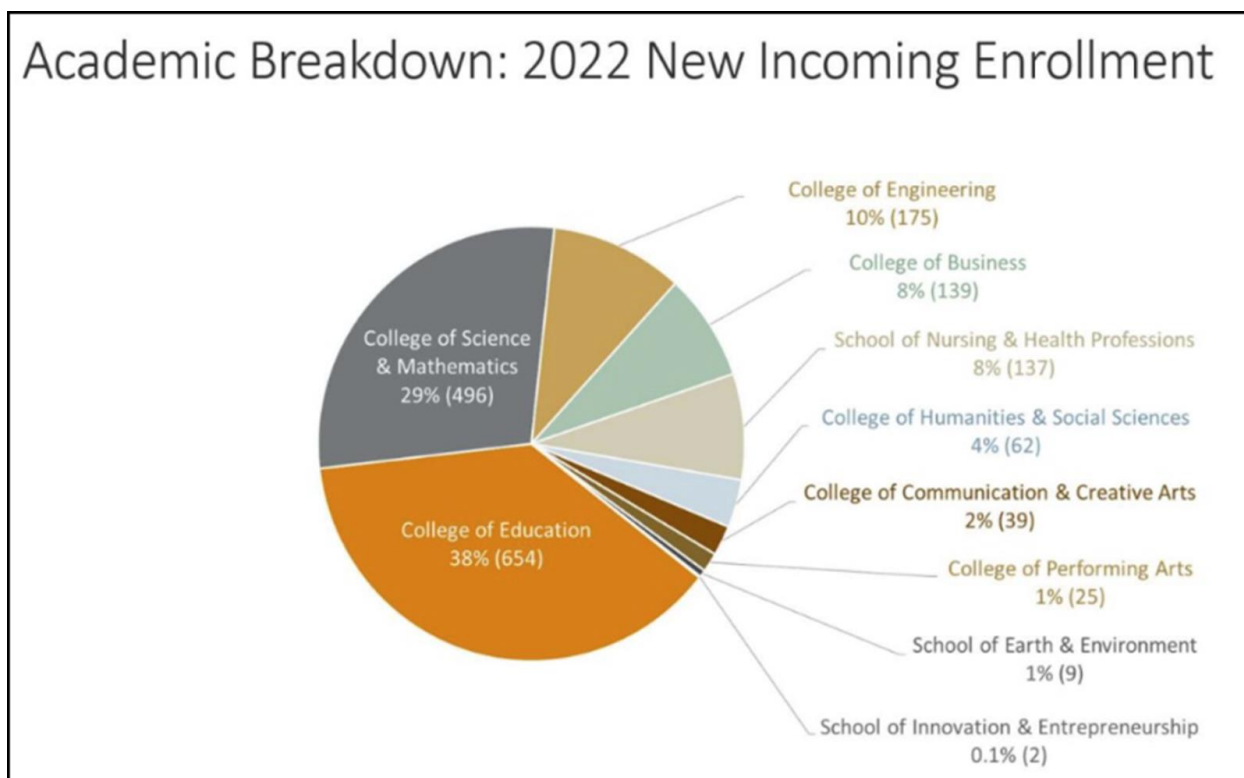


Figure 2: Breakdown by College of New 2022 Graduate Student Enrollment

More granular data on the enrollment of international graduate students, such as a breakdown by college, was not available from our Office of Institutional Research. Based on our experience with research consultations, the authors knew that many of our current Engineering and Science graduate students are international students. Conversely, we know that our College of Education graduate students are typically local teachers coming back to college for advanced degrees. Some of the Education students have been away from college long enough that they are unaware that academic libraries have transitioned to primarily digital formats over the past 20 years.

Given that large cohorts of international graduate students in STEM fields are common across universities in the United States, the authors felt that the results of a survey on this topic might be of interest to other academic librarians. Like the authors, academic librarians elsewhere might be assuming that their graduate students know to check the library discovery system for books in e-book format. But unlike undergraduates, graduate students may not receive library instruction, so there is not the same opportunity to inform them of the library services available to them. Additionally, international graduate students are less likely to have done their undergraduate work in academic settings similar to the ones they are in now.

Thinking about international graduate students led us to wonder more generally about graduate students in 2024 and their level of awareness that academic libraries have become predominantly an online resource, albeit one restricted to authorized users matriculated or employed at the university. The local answer to this question has implications for the work of academic librarians doing instruction, outreach, and collection development at research universities.

During the summer of 2023, a research plan was developed to conduct an online survey of our university's graduate students on e-book usage and awareness. The study protocol was approved by the university's Institutional Review Board and we were given the go-ahead to run the survey in the fall. We analyzed the data from the survey results to try to answer some specific research questions, described below in the Results section.

Literature Review

While the primary focus of this research was awareness and use of e-books by students, awareness has not yet been studied extensively. Most of the library literature on e-books in the university setting focuses on student preferences for print or e-books and the reasons they identify for each preference. This research is relevant because it informs our understanding of why students may not be using library e-books even if they are aware of their availability.

In one of the earliest research studies, Cummings *et al.* (2015), surveyed 254 students across different disciplines to compare preferences in print versus e-book use at Troy University in Alabama, and found that in general, students in the humanities are more likely to use books while students in the sciences rely more on journal articles, arts and humanities students in this study typically preferred print books while science students appreciated e-books, citing their convenience and accessibility.

In 2015, Potnis *et al.*, surveyed 25 online Library and Information Science graduate students. These future librarians planned to continue using e-books and indicated that the greater accessibility of e-books outweighed any disadvantages. A key advantage cited was "searchability"(p.325). The authors offered several recommendations to publishers for increasing future usage of e-books by students, such as "having DRM with easier access, note-taking feature improvements, enhanced hardware to make viewing the e-book easier" (p.325).

In 2016, Wang and Bai published results from a survey they conducted at a Chinese university which addressed both awareness and usage of e-books, as our study does. They found that Chinese university undergraduate students used e-books mainly for leisure reading, while graduate students used them more for academic purposes. While students were aware that e-books existed, they "did not use e-books often, especially those academic e-books provided by the library" (p. 255). Many did not connect e-books with the library, with "27.53% of the respondents" not knowing that the library provided access to e-book collection (p.255). Moreover, "70% of respondents believed that the library should organize related training on using e-books and provide guidance for improving usage"(Wang and Bai, 2016, p.255).

In 2016 Goertzen and Bakkalbasi conducted a study at Columbia University using student focus groups and faculty interviews. They found that the use of e-book versus print depended on the reading task at hand. Print formats were preferred for "continuous reading" which was defined as "prolonged reading without interruption for research or learning purposes, making annotations" while electronic formats were preferred for "discontinuous reading and quick reference" and this included "confirming citations and referring to quotes" (Goertzen and Bakkalbasi 2016, p.87).

Also in 2016, Carroll *et. al.* published the results of their survey which received 2,188 responses from students, faculty, and staff at the University of Maryland. The results indicated that visitors to the physical library were more likely to frequently use online library resources, including e-books; that the ease in downloading an e-book in PDF should be a “critical feature” (p.695) in deciding whether to purchase an e-book; and that respondents preferred e-books over print for accessing conference proceedings and general reference materials. Navigating interfaces and the digital rights of e-books was still a problem for users; for close reading print was still preferred. Respondents also urged librarians to market e-books and offer training on finding, accessing and using them.

Mueller *et. al.* in their 2019 article studied the usability of library e-book platforms at Sam Houston State University. Students were given tasks to perform using each platform and results were analyzed to assess user experience. Six platforms were examined:

1. IGI;
2. Oxford;
3. Gale;
4. Safari;
5. Proquest E-Book Central and
6. EBSCO.

For each platform, the authors gathered quantitative data from user testing. All the platforms had pros and cons, but E-Book Central was the overall favorite.

A study conducted by Alhammad and Ku at the University of Northern Colorado in 2019 found that graduate students generally prefer using e-books to printed texts. Benefits of e-books cited included:

- animated images,
- videos,
- audios,
- keyword searching,
- highlighting,
- ability to add notes,
- word definitions,
- visual searching, and
- bookmarks.

Additional benefits included: lower cost, immediate accessibility, and being easier to carry. Moreover, 18 out of 20 liked searching for external resources through YouTube, Google Images, Google and Google Translate. Students preferred print books when studying for exams because they needed to feel comfortable. Nevertheless, students expressed positive perceptions and attitudes towards using e-books for learning.

Welsen *et. al.*, (2020) investigated the impact of mandatory use of an e-book textbook at the University of Nottingham Ningbo China. The study investigated Science and Engineering students' usage and attitudes towards e-books when using e-readers, which included PCs or portable devices. A cross-sectional survey was deployed to final year students from Electrical

and Electronic Engineering and Mechatronics Engineering. Students appeared to be evenly divided between those who prefer e-books and those who prefer physical media. They found that students preferred reading materials that are shorter and leisure-focused in digital format, but they prefer print for content they need to remember. They liked having both options available. In the Welsen *et. al.* study, 56% of students used e-books daily, 27% used e-books twice a week and 10% used them occasionally. The Welsen *et. al.* (2020) article suggests that the COVID-19 pandemic accelerated the adoption of online/e-learning approaches, and e-books have become the preferred option, if not the sole option, because libraries were closed for so long. The study indicates a subtle shift in student attitudes towards electronic reading. The text also suggests that future policy makers ought to make provision for both types of media in libraries, because students are likely to digitize their physical media (and might print their digital media), depending on their preferences. The study concludes that there is a need for further investigation into the use of e-books in academic contexts, especially among engineering students.

Casselden and Pears in a 2020 study at two universities in the UK found that their doctoral students “were less keen on e-books, displaying the lowest percentage of frequent usage amongst respondents (57%), and the highest percentage of seldom use (29%)” (p.607). In addition, they found that all students preferred laptops and personal computers for reading e-books, with “tablets and smartphones less favoured” (p. 611). When students were asked if a library should only contain e-books, comments were “generally slightly more negative than positive” (p. 614).

A 2020 article by Pierard *et. al.* surveyed graduate students in an instructional design program at the University of New Mexico. They concluded that usability depends largely on each student’s learning styles, so usage and preferences are also individual. Students were negative about the usability of e-books (as of 2020) and particularly negative about the significant differences in usability between platforms.

Blummer and Kenton’s systematic review of e-book user studies (2001 to 2017) found that there is a “lack of awareness and familiarity among students, faculty, and staff of their institution’s e-books (Blummer and Kenton, 2020, p.79). Blummer and Kenton assert based on several user studies that library patrons are largely unaware that e-book formats are available in academic libraries. They attribute this lack of knowledge to poorly designed vendor interfaces, “inferior metadata,” and difficult-to-navigate discovery tools (Blummer and Kenton, 2020, p.82).

Hackman *et. al.* published in 2022 the results of a follow-up survey to their 2016 study at the University of Maryland mentioned previously (Carroll *et al.*, 2016). They received 3,000 responses evenly distributed between STEM and other disciplines. They observed that since 2014 the landscape has changed significantly, with users becoming more accepting of e-books and more libraries going to e-preferred purchase models. Some users were not aware that the library provides seamless access to the e-books they use, while other users expressed frustration with licensing restrictions and blamed the library. The authors of the present paper used this article as a resource in developing our survey questions.

The most recent work on e-books in academia as of this writing is the Owens *et al.*, 2023 study. They found that use of academic e-books has increased significantly over the past decade, with more students and faculty relying on e-books for academic assignments and research projects.

Despite the growing popularity of e-books, they found that some users still prefer print books. Issues include difficulty in using and navigating e-books in general, frustration with time lag, different or clunky interfaces, and checkout time & accessibility. Some respondents found it difficult to annotate, highlight, and take notes in e-books, and others mentioned that e-books required more screen time, when they would prefer to spend less time in front of a screen each day. The study (conducted at Sam Houston University in Texas) identified printing as an indispensable feature for e-book users. Digital Rights Management (DRM) rules may prevent illegal downloading or copying of materials, but it can also hamper overall e-book user experience, and some users may even avoid e-books for this reason. The Owens *et. al.* study was the only one that asked about the impact of the COVID-19 pandemic on e-book use. While “most respondents (74%) indicated that their use of e-books stayed about the same during the pandemic”, “among graduate students, 32% said their use of ebooks somewhat or greatly increased” (p. 8).

Methodology

The authors created a Qualtrics survey with fourteen questions that was sent to the university’s graduate student email list managed by the Graduate School staff. The fourteen questions were designed to help us understand how graduate students at our institution are using e-books. The email with the survey link was sent on October 31, 2023, with a reminder email on November 15, 2023. The survey closed on November 28, 2023. The list had 3,318 subscribers; 113 complete responses were received for a response rate of 3.4%. Results were coded and analyzed in Google Sheets. The authors divided the analysis into seven research questions described in the next section. Our seven research questions exploring our graduate students’ experience with e-books were:

- RQ1. Are graduate students aware that the library has e-books?
- RQ2. Do graduate students use library e-books?
- RQ3. For what reasons do graduate students use library e-books?
- RQ4. Has graduate students’ frequency of e-book use changed since the COVID-19 pandemic that began in March 2020?
- RQ5. What are graduate students’ prior experiences with using e-books in general (not necessarily in the university library)?
- RQ6. What electronic devices do graduate students use for accessing e-books?
- RQ7. What general thoughts or comments do graduate students have about library e-books?

Results

The first six questions of our survey asked for demographic information about the respondents. Of the 113 complete survey responses, 67 respondents identified as master’s students and 46 as doctoral students. A total of 95 students were from the USA and 18 self-identified as international students. A total of 42 respondents said they were 100% online students, and 70 students were in a degree program requiring a thesis or dissertation.

In response to the question asking them to select their college from a list, 49 students (43% of respondents) were enrolled in degree programs in Education; 26 students were in Science, Nursing, or Health Professions programs (which includes Computer Science); and 17 were in an Engineering program. A total of 11 students selected their college affiliation as Global Learning and Partnerships, which runs all our 100% online degree programs. The remaining ten students were distributed among the university's degree programs in Business (5), Communication (4), and Performing Arts (1) programs.

As science and engineering librarians, we were most interested in results from students in Science, Engineering, and Nursing/Health Professions, which made up 43 of 113 or 38% of survey respondents. Those STEM students plus the Education students (43% of respondents) cover 91% of responses. While international students only represented only 16% of responses, they are nearly all in the STEM fields. That's why our analysis focuses mainly on those populations. However, we include all results here and break them out by degree program where appropriate.

Survey questions 7 through 13 asked about the respondents' experiences with library e-books and will be discussed individually here. Question 14 (asked first) was "Are you 18 years or older and consent to participate?" Individuals who responded No then exited the survey. A copy of the survey will be made available in our institutional repository, Rowan Digital Works.

RQ1 – Are graduate students aware that the library has e-books?

Table 1 summarizes our results from survey question 7, which read:

- **Were you aware (prior to this survey) that the university library provides students access to many free books in digital format, called e-books for the remainder of this survey? (Yes/No)**

<u>Student group</u>	<u>Aware of library e-books?</u>	<u>Totals</u>
Doctoral (n = 46)	37 Yes 9 No	37 of 46 (80%) 9 of 46 (20%)
Master's (n = 67)	43 Yes 24 No	43 of 67 (64%) 24 of 67 (36%)
Degree program requires thesis or dissertation (n = 70)	55 Yes 15 No	55 of 70 (79%) 15 of 70 (21%)
International (n = 18)	12 Yes 6 No	12 of 18 (67%) 6 of 18 (33%)
Domestic (n = 95)	68 Yes 27 No	68 of 95 (72%) 27 of 95 (28%)
100% Online (n = 42)	25 Yes 17 No	25 of 42 (60%) 17 of 42 (40%)

Table 1: Graduate Student Awareness of Library E-books

Doctoral students had much greater awareness of library e-books than master's students. However, looking just at students at either level whose programs required a thesis or dissertation, nearly as many of them (79% versus 80%) were aware of library e-books.

Domestic (United States) students had slightly higher awareness than international students. While more than half (60%) of fully online students were aware of library e-books, their percentages were lower than for any of the other populations in Table 1.

RQ2 – Do graduate students use library e-books?

Table 2 summarizes our results from survey question 8 which read:

- Have you ever accessed an e-book through the library website? (Yes/No)

<u>Student group</u>	<u>Used library e-books?</u>	<u>Totals</u>
Doctoral (n = 46)	36 Yes 10 No	36 of 46 (78%) 10 of 46 (22%)
Master's (n = 67)	35 Yes 32 No	35 of 67 (52%) 32 of 67 (48%)
Degree program requires thesis or dissertation (n = 70)	52 Yes 18 No	52 of 70 (74%) 18 of 70 (26%)
International (n = 18)	11 Yes 7 No	11 of 18 (61%) 7 of 18 (39%)
Domestic (n = 95)	60 Yes 35 No	60 of 95 (63%) 35 of 95 (37%)
100% Online (n = 42)	25 Yes 17 No	25 of 42 (60%) 17 of 42 (40%)

Table 2: Graduate Student Usage of Library E-books

Seventy-eight percent of doctoral students, but only 52% of master's students, responded that they had used a library e-book. However, if they were in a degree program requiring a thesis or dissertation, seventy-four percent had used a library e-book.

RQ3 – What are the reasons for graduate students using a library e-book?

Question 9 of the survey allowed respondents to choose one or more choices from a list.

- **What was your reason for reading the library e-book you chose?** Select all that apply:
Recommended by instructor for a course; Recommended by advisor for your research;

Acquiring information for your own learning goals; Part of a literature search for your thesis or dissertation; I have used e-books for more than one of the listed reasons; I have never used a library e-book; Other.

Table 3 summarizes the responses to survey question 9:

<u>Graduate student reasons for using e-books</u>	<u>Only reason</u>	<u>One of several reasons</u>	<u>Total</u>
Have never used an e-book	37	0	37
Recommended by instructor for a course	19	34	53
Recommended by advisor for your research	1	21	22
Part of a literature search for your thesis or dissertation	7	28	35
Acquiring information for your own learning goals	3	28	31

Table 3: Graduate Students Reasons for using an E-book

A total of 36 students said they had never used a library e-book, and one chose “Other” and wrote that they had only read an e-book from a public library. Most of the 76 other students selected more than one reason, with the most popular reason being “Recommended by instructor for a course”, selected by 53 of 76 students. Next most popular was “Part of a literature search for your thesis or dissertation”, selected by 35 students, followed by “Acquiring information for your own learning goals”, selected by 31 students. Only one student chose “Recommended by advisor for your research” as their only reason for using an e-book, but 21 chose it as an additional reason.

RQ4 – How has frequency of e-book use changed since the COVID-19 pandemic?

Question 12 of the survey asked:

- **How would you describe your frequency of e-book use now compared to 2020 (before the pandemic started) and earlier?** I use e-books more often now; My use has stayed the same; I use less often now; I have never used an e-book.

The responses are summarized in Table 4:

<u>Response</u>	<u>All respondents</u>	<u>Education students</u>	<u>Science & Nursing students</u>	<u>Engineering students</u>	<u>Fully Online students</u>
I use e-books more often now	60 (53%)	5 (10%)	11 (42%)	8 (47%)	9 (82%)

My use has stayed the same	28 (25%)	28 (57%)	6 (23%)	6 (35%)	2 (18%)
I have never used an e-book	20 (18%)	4 (8%)	8 (31%)	3 (18%)	0
I use e-books less often now	5 (4%)	12 (24%)	1 (4%)	0	0

Table 4: Frequency of E-book Usage Compared to Pre-2020

More than half (53%) of all respondents use e-books more often now. One quarter say that their use has stayed the same. Only 4% use e-books less often in 2023 compared to before the pandemic and 18% have never used an e-book. Nine of the eleven fully online students use e-books more often now, but only five (10%) of our education graduate students do. A total of 42% of science and nursing respondents and 47% of engineering respondents use e-books more now.

The number of responses from the remaining degree program groups (Business, Communication, and Performing Arts) were too small to include.

RQ5 - What are graduate students' prior experiences with using e-books in general?

Question 11 of the survey asked:

- Even if you have never used a library e-book, have you used e-books for any of the following purposes? Select all that apply: Required textbook; Non-academic book; Other; Never used any e-book.

Table 5 shows how many students selected each possible reason for using an e-book.

<u>Graduate student reasons for using an e-book</u>	<u>Number</u>
Required textbook	39
Required textbook, Non-academic book	24
I have never used an e-book	21
Other	15
Non-academic book	10
Required textbook, Other	3
Required textbook, Non-academic book, Other	1

The reasons selected by the largest number of respondents was required textbook or non-academic book. Other responses included literature reviews, a class assignment, or writing a dissertation.

RQ6 - Which electronic devices do graduate students use for accessing e-books?

Question 10 of the survey asked:

- What device(s) have you used to access library e-books? Select all that apply: Desktop computer, Laptop computer; Tablet (iPad, Kindle, etc.); Smartphone; None.

The responses from doctoral students for survey question 10 are shown in Table 6. Doctoral students who responded to our survey are using multiple devices (laptops, desktops, and tablets) in reading e-books. Only six (13%) of the 46 doctoral students are not using e-books.

Devices used	Master's (67)	Doctoral (46)	International (18)	Domestic (95)
None	27	6	5	28
Laptop computer	21	14	6	29
Desktop Computer	2	2	1	4
Tablet	0	2	1	1
Multiple devices	17	22	5	33

Table 6: Comparison of E-Reading Devices Used by Student Population

Forty percent of our master's students are not using e-books, while laptops and multiple devices are commonly used for those to do (38 out of 67 respondents).

No respondents answered only Smartphone or only Desktop; the largest number selected only Laptop or a combination of Laptop and other devices. No respondents answered only Smartphone, but 14 selected only Desktop or Desktop and Laptop. However, the most popular device was a laptop.

RQ7 - Student comments on awareness and use of e-books

The final survey question (Question 13) was a free text field asking, "Do you have any other thoughts about library e-books you'd like to share?"

Graduate students responded with a variety of responses regarding e-books. The themes included: the need to promote e-books, affordability (specifically free access to e-books), preference of print over e-books, overall convenience of using e-books including searchability and portability, and miscellaneous suggestions such as requesting audio books and having more e-books in a specific discipline.

Several students commented that they did not know about e-books access through the library and that more promotion should happen: "Use more advertising for these e-books - I didn't know about them until now!" and "I was unaware about access to e-books from the library." Another common response was the affordability benefit of having free access to e-books for courses,

Comments included: “Very easy to access and saves a lot of money” and “having access to e-books that are required for my readings in my classes has made coming back to school much more affordable. Also not having to worry about returning books is great.”

One theme that emerged from respondents is the preference for print versus e-books with comments such as: “I don't prefer e-books and use them because I have to” and “I prefer to have hard copies so I usually print so I can annotate and give my eyes a break from the screen.” Another theme was the convenience of e-books and the search functionality they provide with comments including: “They are a great on-demand resource. I find that the books that are searchable are more useful. When I need to review specific information such as a theory, author, or reference, the search feature saves a lot of time.” and “They are convenient. Adobe Digital Editions software gives the feel of a true e-book.” Lastly, respondents shared suggestions for what they would like to see including: more Computer Science e-books, e-book links in course syllabi, and expansion of audio book options.

Discussion

Awareness and use of e-books

Our doctoral students showed a greater awareness of e-books (80%) compared to master's students (64%). In addition, doctoral students' usage of e-books was higher (78%) than master's students (52%). There was minimal difference between domestic (72%) and international students (67%); awareness of library e-books between domestic (63%) and international (61%) students and usage of e-books was similar.

Surprisingly, forty percent of our online students were not aware of e-books - the highest percentage rate of all populations - and forty percent never used e-books. This is an indicator that more education is needed for our online graduate students about the e-books that are available to them.

Reasons for using e-books

The power of the faculty recommendation holds the most sway in graduate student use of e-books. For both master's and doctoral students, the recommendation from a faculty member was the most common reason to use an e-book. The least common reason for using an e-book was “recommended by advisor for your research.” The most common reason for using an e-book was because it was required or recommended. This could imply that our students only associate e-books with required textbooks, and do not realize the library has more than just textbooks.

Did the COVID-19 pandemic influence e-book usage?

Our study revealed disciplinary differences in how the COVID-19 pandemic influenced e-book usage. For example, graduate education students the majority indicated that their usage has stayed the same (57%), while nursing graduate students use more e-books (42%) as the most common response. The same was true of engineering graduate students (47%) and online graduate students (82%).

Similarly, Owens *et al.* found that most respondents (71.4%) indicated that their use of e-books stayed about the same during the pandemic, while graduate students (32%) said that their use of e-books “somewhat or greatly increased” during the pandemic.

Devices used to read e-books

The laptop computer is the most common device used to read e-books both for international students and domestic students. Neither population used their smartphone alone for viewing e-books; laptop and smartphone usage combined was also low, selected by only 17% of international students and 5% of domestic students. Tablets also generated low usage (6% of international students and 1% of domestic students). Our results indicate that laptops are still the preferred device for reading e-books among both international and domestic graduate students.

General comments

After many years of e-books being available, graduate students still prefer print books for retention while studying. Eye fatigue along with focus are two negatives in reading from an e-book. Graduate students like the convenience and searchability of e-books, but in small dosages. As the e-book market evolves, audio academic books may become more of an option as the general population embraces audio as another means of acquiring knowledge.

Conclusions

In our sample population, doctoral students and students in a program requiring a thesis or dissertation had a high level of awareness of library e-books, while master’s students in non-thesis programs were less aware. Many students had used e-books in courses or based on instructor recommendations. More domestic students were aware of and had used e-books than international students, but more than half of both groups knew about and had used them. Graduate students expressed excitement over e-books being available from the library at no cost offering affordability, portability, and convenience.

Based on the findings from our survey, graduate students are more likely to use e-books suggested by their faculty. Academic librarians can leverage their existing partnerships with teaching faculty to increase student awareness and usage of library e-books. For example, collaborating with faculty to make unlimited-licensed e-books available for their courses can be a way to make graduate students aware of library e-books. Since graduate students like direct links to relevant e-books in syllabi, reading list tools or curated research guides for courses can make e-book content easier for students to find.

Our results indicate that laptops are still the preferred device for reading e-books among both international and domestic graduate students. Although cell phones have reached saturation in the classroom, graduate students still prefer reading e-books on a device with a larger screen. One third of graduate students said that their use of e-books “somewhat or greatly increased” during the pandemic. During the COVID-19 pandemic, the majority of education students

indicated that their usage of e-books stayed the same, while nursing and engineering graduate students used more e-books.

While master's students who took our survey had less usage and awareness of e-books than doctoral students, it did not seem like the student the author encountered in the library was typical of graduate students. E-books are becoming an accepted and known technology in universities, even if some students are still getting used to them. As publishers make further usability improvements and more students grow up using e-books, the issues students have today with e-books will likely be a thing of the past a decade from now.

References

- Alhammad, R. and Ku, H. (2019), "Graduate students' perspectives on using e-books for academic learning", *Educational Media International*, Vol. 56, No. 1, pp.75-91.
- Blummer, B. and Kenton, J.M. (2020), "A Systematic Review of E-Books in Academic Libraries: Access, Advantages, and Usage", *The New Review of Academic Librarianship*, Vol. 26, No. 1, pp.79-109.
- Carroll, A.J., Corlett-Rivera, K., Hackman, T. and Zou, J. (2016), "E-Book Perceptions and Use in STEM and Non-STEM Disciplines: A Comparative Follow-Up Study", *Portal (Baltimore, Md.)*, Vol. 16, No. 1, pp.131-162.
- Casselden, B. and Pears, R. (2020), "Higher education student pathways to ebook usage and engagement, and understanding: Highways and cul de sacs", *Journal of Librarianship and Information Science*, Vol. 52, No. 2, pp.601-619.
- Cummings, L.A., Larrivee, A. and Vega, L. (2015), "Comparing electronic vs print book preferences between students in the social sciences, the arts and STEM", *Library Hi Tech News*, Vol. 32, No. 4, pp.1-4.
- Goertzen, M. and Bakkalbasi, N. (2016), "Exploring academic e-book use: part II through focus groups and interviews", *Performance Measurement and Metrics*, Vol. 17, No. 1, pp.83-92.
- Hackman, T., Carroll, A.J., Corlett-Rivera, K., Macomber, K. and Ding, Y. (2022), "E-Book Perceptions and Use: A Longitudinal Follow-Up Study", *Portal (Baltimore, Md.)*, Vol. 22, No. 3, pp.681-723.
- Mueller, K.L., Valdes, Z., Owens, E. and Williamson, C. (2019), "Where's the EASY Button?: Uncovering E-Book Usability", *Reference and User Services Quarterly*, Vol. 59, No. 1, pp.44-65.
- Owens, E., Hwang, S., Kim, D., Manolovitz, T. and Shen, L. (2023), "Do you love them now? Use and non-use of academic ebooks a decade later", *The Journal of Academic Librarianship*, Vol. 49, No. 3, pp.102703.
- Pierard, C., Svihla, V., Clement, S.K. and Fazio, B.S. (2020), "Undesirable difficulties: Investigating barriers students' learning with ebooks in a semester-length course", *College & Research Libraries*, Vol. 81, No. 2, pp.170-192.
- Potnis, D., Deosthali, K. and Pino, J. (2017), "Investigating barriers to "using information" in electronic resources: A study with e-book users", *Proceedings of the Association for Information Science and Technology*, Vol. 54, No. 1, pp.318-326.

- Wang, S. and Bai, X. (2016), "University Students Awareness, Usage and Attitude Towards E-books: Experience from China", *The Journal of Academic Librarianship*, Vol. 42, No. 3, pp.247-258.
- Welsen, S., Pike, M. and Walker, J. (2020), "Engineering student attitudes to e-reading in remote teaching environments", "Engineering student attitudes to e-reading in remote teaching environments", *2020 IFEEES World Engineering Education Forum-Global Engineering Deans Council (WEEF-GEDC)*, IEEE, pp.1.

Acknowledgements

The author would like to thank Andrea Baer and the Library Writing Cooperative for providing their valuable feedback to our manuscript.

Citation

[Brush, D.A.](#) and [Kipnis, D.G.](#) (2024), "Graduate students' e-book awareness and usage at a public research university in the USA", *Digital Library Perspectives*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/DLP-03-2024-0036>

Appendix - Survey Questions from Qualtrics

1. Are you a graduate student at the Glassboro campus of Rowan University? (Yes/No)
[skip to end of survey if No is selected]
2. Which degree level is the program you are currently enrolled in? (Master's/Doctoral)
3. What is your student status? (100% Online/In person on campus)
4. Are you an international student or a domestic (U.S.) student? (International/Domestic)
5. What College or School are you getting a graduate degree from? (list of 11 colleges)
6. Are you enrolled in a degree program that requires a thesis or dissertation? (Yes/No)
7. Were you aware (prior to this survey) that the university library provides students access to many free books in digital format, called e-books for the remainder of this survey? (Yes/No)
8. Have you ever accessed an e-book through the Rowan University library website? (Yes/No)
9. Which of the following reasons have you used a library e-book(s) for? Select all that apply: Recommended by instructor for a course; Recommended by advisor for your research; Acquiring information for your own learning goals; Part of a literature search for your thesis or dissertation; Other; I have never used a library e-book
10. What device(s) have you used to access library e-books? Select all that apply: Desktop computer, Laptop computer; Tablet (iPad, Kindle, etc.); Smartphone; None.
11. Have you used e-books for any of the following purposes? Select all that apply: Required textbook; Non-academic book; Other; Never used any e-book.
12. How would you describe your frequency of e-book use now compared to 2020 (before the Pandemic started) and earlier? I use e-books more often now; My use has stayed the same; I use less often now; I have never used an e-book.
13. Do you have any other thoughts about library e-books you'd like to share?