Let's Get Ready to Read: Print Books vs E-Books

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Introduction

⎯⎯⎯The library is not only known as a place for research, it is also a sanctuary where people can come in, grab a book, and read to their heart's delight. Printed books have been the main resources of information for years. This type of resource helps make a library fulfill its purpose as an information provider, because it can never be thrown away. Instead, the books are kept as tools for research and resources of imagination. Reading a book, no matter the genre, can transport readers to places they have never imagined or inform them on certain topics of interest that have caught their eye. Years later, the library's collection of print books came across its opponent: E-books. Technology in the library has become more extensive than ever, and e-books are resources that allow patrons to find information with the touch of a finger. In the library, e-books are usually found on a library's catalog, and they can be accessed through electronic devices such as computers, e-readers, or cellphones. From electronically turning pages to marking notes on a book with a stylus, e-books provide an assortment of new possibilities for the user.

Compared to print books, e-books have their own weapons of choice; however, they have issues that need to be dealt with, such as privacy and confidentiality. As technology evolves and the shape of research in libraries changes, the main purpose of the physical space of the library, particularly the academic library, comes into question. Academic libraries, such as the Jackson Library at the University of North Carolina at Greensboro, should evolve to fit the needs of students, but the real question is: With the onset of e-books, do public and academic libraries still have value as a provider of printed books? So let us get ready to read and see which one wins.

Background on the First Competitor: Print Books

The first runner-up in the Battle of the Books is the champion of all the resources in the library: the printed book. Printed books have been around for centuries. When the book first entered the ring, it started out with a basic and vague definition: "a collection of printed sheets of bound paper, encased between 2 covers." ("The First Book Ever Written", 2010) There is no support for that background, is there? Well that was just the beginning. The book evolved in a more powerful way as it went from a piece of papyrus on a scroll to entering as a fully bound piece of information to academic and public libraries in wanting to fulfill its purpose: to provide information for users to build up their knowledge or to read for pleasure.

The book came into the ring with a fascinating historical background that blew the minds off of every user. Before the book became the ultimate champion, it all started in ancient Egypt where hieroglyphics became the first "words" to tell stories with. These hieroglyphics were "printed" on papyrus scrolls where everyone can come and read the many stories that the ancient Egyptians wrote. Then, in 868, China wanted to have what Egypt had, so they created woodblocks as the "printer" and stamped them on clay and stone tablets (Newitz, 2012). Chinese writers would use letters or images from the wood to "type" on the paper or other material to create writings of their own. These so-called "books" were made in order to make copies "before the wood was no longer usable" (Newitz, 2012). The first book ever recorded through woodblocking was the Chinese classic *Diamond Sutra,* which was done around the same time woodblocking became a popular typing movement (Newitz, 2012). Woodblocking became the

most useful procedure for book writing until it made its last stand in the "ring" in the Middle Ages.

It was time for the book to bring in its next weapon and it also needed someone who could take this magnificent creation to its highest peak. In the mid 1400s, there was one man who truly saw the book a champion: Johannes Gutenberg. In 1452, Gutenberg invented the printing press, which was the famous invention that made books become a star (Bellis, 2017). The support and coaching of Gutenberg really made an impact in book-making that In 1455, Gutenberg published the first printed book on the printing press that was then sold all over Europe: *The Gutenberg Bible* (The History of Printing and Printing Process, 2017). Some book fans believed that the first-printed book was the *Gutenberg Bible,* but other book fans argued that the first book published was *The Whole Booke of Psalmes.* It was printed in 1640 in Massachusetts and "11 copies of the first edition are known to exist." ("The First Book Ever Written," 2010) As a coach, the printing press used its manual moveable-type motivation to help the book build its muscular pages by letting Gutenberg himself put the letters "in metal...and added...a screw-type press to stamp the inked letters against the paper." Each muscular page had to be written and printed one at a time to make the book perfect for fighting (Newitz, 2012).

From the printing press, all of Europe and the United States tried out this amazing coach of books in many other kinds of printing such as "iron-printing, embossed printing, electrotyping...photogravure printing," and in 1865, paper was printed on both sides for the first time (Bellis, 2017). In entering the 1900s, the printing press began printing "90,000 4-page papers per hour," (Bellis, 2017) and the book became a star. Gutenberg's invention had traveled all around the world seeking more fans to root for its champion and asked libraries if they could keep its champion as their main source. Eventually, everyone wanted to be a printed book fan including the libraries. The legacy that the printed book's coach left was that it "laid the foundation for the commercial mass production of books and with the adaptations and success of the printers and publishers that soon [would follow]" in libraries. (" Johannes Gutenberg", 2017) After the printing press gathered its fans from academic and public libraries, "books became cheaper and more plentiful with wider sections of society able to find them." (" Johannes Gutenberg," 2017) The printed book is still continuing with its fight to stay in the library, and it will fight to its very last page.

Advantages of Print Books

Researchers have found that the overall public perception regarding libraries is that they are spaces for displaying print books. With the onset of e-books, it would be hard to completely take out physical books from the library because patrons have a preconceived notion that libraries will be full of books. In order to incorporate more technology into the library, this public perception has to change. Patrons have to alter their mindset that libraries are only for books and instead think of libraries as places of information (Kahn & Underwood, 2013). This is extremely difficult to do, however, because many patrons see print books as "physical artifacts" (Anderson & Pham, 2013, p. 48). Since the beginning of libraries, print books have been the "norm." The space of the library has always been centered around physical books, therefore giving books an advantage as the foundational resource in a library.

Researchers also discussed the usability of a print book. Van der Velde & Ernst (2009) discussed a study in which students and researchers analyzed that if e-books are influencing print book usage. According to the study, students tended to enjoy e-books, but found that print books

were easier to use because they did not have a screen. Anderson & Pham (2013) found that images were easier to view in a print book as they usually had a higher quality. In regard to thoroughly reading a book, many researchers found that students and patrons preferred print books. Vander Velde & Ernst (2009) found that e-books were better for specifically finding information instead of reading a book fully; whereas, a study by Publisher's Weekly found that 74% of college students preferred using print textbooks because they found them easier to read. Likewise, some researchers have found that the overall reading experience is simply better for those who use print books, due to facets such as an increased learning experience, the ability to more easily pay attention to the material, and an increase in the pleasure of reading (Marques de Oliveria, 2012). These researchers did not consider the reading experience of individuals with disabilities, however.

Finally, for libraries, the cost of print books is generally lower than the cost of subscribing to electronic resources. When acquiring print books, librarians only have to understand copyright laws instead of dealing with complex e-book subscriptions and aggregators (Kahn & Underwood, 2013). In other words, the cost is cheap because libraries do not have to pay for the software, digital rights, etc. involved with e-books. Print books also provide publishers with more revenue. For example, Marques de Oliveira (2012) states that e-books only provide 10-15 percent of revenue for publishers (538). Print books are a large part of the book market and this is why patrons still want to use them even as e-books are catching up.

Disadvantages of Print Books

While there are many advantages to using print books, researchers found a few disadvantages as well. One of the main disadvantages is the inability to access books at the library. Unlike e-books, patrons cannot simply access resources as long as they have Wi-Fi and an electronic device. In order to acquire a print book from the library, users have to physically go *to* the library. As Van der Velde & Ernst (2009) stated, "Print books can only be read by physically going to a library, while through the internet, basically the whole world has access to the content at any time of the day." This can also be detrimental for those who do not have the means to travel to the library, such as users who do not own cars, are physically disabled, or have no Internet access.

Furthermore, the advantages of e-books, provided in Marques de Oliveira's (2012) study, can be reversed to show more disadvantages of print books. For example, while the researcher found that students enjoyed e-books for their portability, their light weight, and easy access from anywhere, this also implies that print books are the opposite: they have no portability, they are heavy, and have harder access. Researchers also found that the amount of copies of a certain material is an issue when it comes to print books. Rojeski (2012) discovered that students sometimes found it difficult to acquire a print copy of a book because the library had limited copies. Therefore, they had to compete with other students in order to get a copy of the material they wanted. The same is true of textbooks. Marques de Oliveria (2012) found that students had trouble acquiring print versions of textbooks from the library because there simply weren't enough copies. The inability of users to find copies of the resources they are looking for is a huge disadvantage in the fight against e-books because there is usually an ample amount of electronic versions for a resource.

Background on the Opponent: E-Books

Now the Battle of the Books introduces the printed book's number one opponent: the electronic book or "e-book." When the printed book was still bringing glory to the world, the e-book was hot on its trail. E-books started to come into the world of books in the late 1990s when electronics emerged from its shell. As these books were emerging, it had a slow start. Why was the e-book the tortoise in the ring? It was "limited to specialized markets such as libraries," because media sources were increasingly becoming a huge success for young readers. Social media became more popular, and e-books broke through their chains and started to popularize themselves with the start of Kindles and Nooks in 2007. Kindles and Nooks were huge supporters of e-books, and they made this fighter increase tremendously (Anderson and Pham, 2013 p. 40).

As the e-book became a slow runner-up, it had developed some problems along the way toward success. It had "access problems presented by copyright, licensing, and the technical challenge for users." (Anderson and Pham, 2013 pg.41) Saying that its status is electronic, this would mean fast and the furious, right? If you think that, then you are wrong because once the title's license expires, the title of the book must be purchased again but with only one condition: the library must decide to keep it available (Copeland and Gray, 2012, pg. 336) Speaking of libraries, this fighter has some fans in academic libraries but opposers in public libraries. For those fans in academic libraries, e-books have been growing due to a "combination of new titles, popular readings, vanity publishing, and public domain works." (Anderson and Pham, 2013 pg. 41) From this level of popularity, a study showed that some academic library users have been able to gain access to "30% of new material [and] 31% of the titles received in print format were available as e-books." (Anderson and Pham, 2013, pg.42) Academic library e-book fans have been rooting this fighter for its improvements but public library users are questioning whether they should also support this contendant in the ring. Public library users, when using all types of technology to gain e-book access, have been thinking negatively about this fighter because of their demands to the public libraries to "improve their virtual offerings or risk losing relevance" of the titles (Copeland and Gray, 2012, pg 334; also see Terrell, 2015, pgs. 58-59). This fighter, though, has one positive thing against the actual print book in public and academic libraries: they cannot get "lost, stolen, referred late, or mutilated." (Anderson and Pham, 2013, pg. 48) After having medium support from Nooks, Kindles, and academic library users, there needs to be more support for this rookie otherwise the printed book will easily defeat the electronic book and luckily, it is slowly building up its muscles.

Advantages of E-Books

In 2012, *The Guardian* proclaimed that "Kindle e-book sales have overtaken Amazon print sales" due to what it calls a "reading renaissance" (Anderson & Pham, 2013, p.40). Much like online booksellers, libraries have seen the advancement of e-books over the past few years. This advancement or "renaissance" has brought into question the need for print books, whether it be in the library or in the store. E-books certainly offer users a plethora of advantages over the print book. In fact, the entire layout of the library's space could change based on the influx of electronic books. According to research by Kahn and Underwood (2013), there are three basic library arrangements based on technology usage: reader-centered, book-centered, and learning-centered. As e-books become more popular, the need for books on a shelf may dwindle, thus

freeing up floor space in the library. With more floor space, libraries could transform to a more "learning-centered" environment, where there are more computers, work stations, and reading areas.

Another advantage of e-books is their overall availability and accessibility. With the right technology, they can be accessed from anywhere at any time. Van der Velde & Ernst (2009) explained that an electronic book is much more versatile than a print book because the content can be accessed through a variety of different formats (tablet, smartphone, etc.), and it can be displayed in a variety of different ways (PDF, HTML, etc.) The authors also claimed that e-books are much easier to access across the globe. It should be noted that e-books require Internet access, and many countries do not have access to the Internet. Likewise, Marques de Oliveira's (2012) study examined student responses to surveys regarding using print versus electronic textbooks and books at Andrews University. The top five features of e-books were "portability," "instant access to content," "lightweight," "high quality screens," and "glossary lookup" (p. 550). Students liked how easy it is to have access as well as the ability to take the content on the go.

E-books also offer advantages when it comes to the library's acquisition of materials and the circulation of those materials throughout the library. Digital libraries help to eliminate the manual labor that derives from print books, such as shelving, and the collection is much less likely to see damage, since it is not being physically circulated throughout the library (Marques de Oliveira, 2012). This change in acquisition has allowed libraries to use technology in order to better serve patrons. For example, research by Kahn & Underwood (2013) explains a new "patron-driven acquisition," where the library does not actually purchase an e-book until enough people have accessed the resource through the library's catalog. This method allows the library to keep from officially purchasing materials that patrons will not use; however, privacy becomes an issue as patron activity would have to be monitored in order to achieve this type of acquisition.

Finally, e-books provide users with quick access to information, especially since users are able to easily skim through an e-book or search an e-book for specific terms. For example, the students from Andrews University mostly believed that e-books, specifically e-textbooks, are great for finding specific information, but are not as beneficial for fully reading a resource (Marques de Oliveira, 2012). Van der Velde & Ernst (2009) stated that "[Researchers] prefer the electronic version [of books], as this allows them to bring much more content. Print books are still preferred for cover-to-cover and heavy reading" (pg. 572). As we have seen, this fight is still going to have two winners. Which would be the one who calls it quits?

Disadvantages of E-Books

While there are many advantages to accessing books electronically, the format also has its disadvantages. When compared to print books, most libraries do not provide as many e-books, for example. Anderson and Pham (2013) reference a study from 2012 regarding The College of New Jersey Library, in which researchers assessed e-book availability between 2009 and 2010. The study found that only 17% of physical titles were available as e-books. Similarly, Anderson and Pham (2013) explained that the inclusion of more e-books could affect how many physical books are in the library and thus open up floor space; however, the authors found that the inclusion of more e-books only opened up about 26% more floor space. So, while there was more space to put things like work stations, the difference was not exponential.

Accessibility and cataloguing can also be an issue in regard to electronic books. For example, students from Olveira's research (2012) mentioned that the use of e-books led to eye-strain and difficulty when reading. The students were also hesitant to use e-books and e-textbooks for they did not know how to access the materials. Internet accessibility is another problem facing users who want to access e-book titles. If patrons do not have personal access to the internet as well as some form of technology to view the e-book on, then they have to find a place of access that has Internet. If users do not have the ability to physically come to a place of access, the quest for e-books becomes more complicated. Thus, users may find it difficult to actually access e-books unless they are in the library (Kahn & Underwood, 2013). E-books can also be difficult to catalogue as they can be easily withdrawn from a library's system, yet some discovery layers must be manually updated so that material no longer exists in the catalogue (Kahn & Underwood, 2013). Newer discovery layers are working to improve this feature so that it is easier to delete e-book inventory from a library's catalog; however, the collection and organization of electronic materials will always be different from that of a print book.

Furthermore, most e-books are subscription-based, meaning the materials are loaned from aggregators. This could threaten the library's traditional role as an "archive," because these subscription-based materials may give the impression that librarians do not have control over what titles are included in the library's collection (Kahn & Underwood, 2013). Similarly, e-books become a large expense for libraries because library funds must be reallocated to pay for the electronic materials. This means that less money is spent on physical books and with less physical books, there are less materials to place on library shelves (Kahn & Underwood, 2013). The cost of e-books is also higher for aggregators place strict policies on libraries regarding the software, digital rights, and print runs. For this reason, librarians tend to dislike the subscription model; however, other models of business are becoming more popular. For example, libraries have started using a "perpetual access model" to acquire e-books, in which libraries can purchase small packages of e-books. There is also an "open-access" (OA) model in which all online academic content is available for free, however, it would be hard to get publishers to do this as they would not make a profit (Kahn & Underwood). For librarians., the struggle of what business model to choose is yet another disadvantage of e-books, because each model is extremely complex.

The final disadvantage of using an e-book is the possibility of infringement on one's privacy. Electronic activity can easily be tracked, therefore, there is no guarantee that patrons will maintain their privacy while using an e-book (Kahn & Underwood). Patrons may be unaware that their e-book is being tracked, and if they were informed of this infringement, it might influence their decision about whether or not to pick up an e-book instead of a print book. This sounds like defeat for the e-book; let us see where this takes us.

Ethics: Privacy Issues on E-books

Over the years, libraries have served as important sources of information for different areas of society, whether it is in a private or public facility. They could be considered "guardians" of the public's access to this information. Libraries influence the lives of people as well as the consciousness of the public or society by providing patrons with informational resources. Patrons have learned to trust the library and whatever information they may gather from it. Why wouldn't the public trust the library? Most of the information users need is right

there on paper in black and white. Reading is an act that many library patrons enjoy and therefore, it is one of the main attractions of the library. Now, since the digital world has sprung into action, it has changed how the libraries provide information and how the public can obtain this information. As the digital era continues to evolve, libraries remain in playing a significant role in ensuring that people gain access to the information that they desire, regardless of their age, income, race, education or geographical barrier (Caldwell-Stone, 2012).   With the influx of digital materials, one may find it important to learn if this has changed the demand for physical books over e-books and if library patrons are putting their privacy and personal information at risk because of this advancement.

        The core principles of libraries such as privacy, intellectual freedom, and unbiased provision of information must, therefore, be well-preserved and strengthened in this digital era. With the increase of digital materials found on the library's catalog and with the continuous spread of technological devices such as Kindles, Nooks, and tablets, library patrons' information could be jeopardized. One of the ways that the ethical issue of privacy can cause damage to the e-book reader is through the e-book vending companies themselves. These companies are hacking into peoples' technology, especially when they use their own devices or use the academic library's devices (Alter, 2012). Companies such as Amazon have been tracking down "consumer information detailing what books are purchased and read" by Kindle readers and in return, the Kindle users "sign an agreement granting the company permission to store information from the device...in its data servers" (Alter, 2012). Amazon Spokeswoman Kinley Pearsall stated that because of this, she thinks that gathering information from all who read on a Kindle is a good thing for their company (Alter, 2012). If patrons were aware of this obstruction of privacy, they might decide to stop using e-books altogether.

        When the average patron steps up to the circulation desk at the library, they may not realize what information can be exchanged at that moment. It goes without saying that the library staff knows the title of the book patrons are checking out, but there is really more than meets the eye. In the library's database, there is a vast amount of information about all the library users. When patrons apply for that treasured library card, they have to give basic personal information, such as their name, address, phone number, and driver's license number. All of this was gathered to have proper identification of the person that the library card was being issued to. However, the library database also contains information about the books that one has checked out, any overdue notices, requests for interlibrary loans, and possibly database search records. Without the public realizing it, the staff acquires information when a patron requests a copy of a document or materials that could be located in the closed stacks and all the times that one has signed up to use the library computers or other resources. That is a lot of information about a patron just to check out one physical book from the library. Rest assured, all of the library personnel that patrons come in contact with during any part of this process must abide by the Code of Ethics of the American Library Association. Part 3 of the ALA Code of Ethics states "We protect each library user's right to privacy and confidentiality with respect to information sought or received and resources consulted, borrowed, acquired, or transmitted" (Eberhart, 2013). Libraries across the country, whether public or academic, take the privacy of the patrons seriously.

        The ethical issue of information privacy refers to the issues associated with the academic library's use of user information aimed at improving services and collection of materials. The question is how users' data is being collected and "whether users have been made aware that their personal data is being recorded while they are reading e-Books" (Haines, 2018). First of all, academic students who use the library may need to know the difference between privacy and

confidentiality. Privacy roots for the individual while confidentiality roots for the data (Knox, 2017). If a student needs privacy, then every academic library user or patron has the right to inquire and read anything, without the fear that they might be punished or judged by anyone. Now, for confidentiality, academic libraries' computers or other electronic devices protect their patrons' information with legality (Givens, 2018). Privacy is a great quality for physical books but is it a good quality for electronic books? Privacy and confidentiality may be an error on e-Books because librarians cannot share the information about the materials any patron checks out or has looked at unless there is a court order involved and a privacy audit. Privacy audits explain how organizations protect personal data. They can determine if privacy policies are being followed and "can determine areas for improvement...in security" (Givens, 2018). According to the late John A. Shuler, Associate Professor at the University of Illinois Chicago, this would include inquiries about materials and circulation information as part of what the library staff should and must ensure that they must keep private (Shuler, 2004).

      Information privacy is directly associated with the advancements in technology. When libraries, especially academic ones, use an outside source for their digital downloads of materials, they are actually jeopardizing the patron's personal information. Like all libraries, academic libraries have information on each patron regarding circulation records, computer sign-up request, websites visited, and reserve notices, just to name a few. However, under the ALA Code of Ethics, they are not allowed to share that information. If a patron's privacy is breached, they may feel less confident to use the library for fear that their reputation could be damaged, others like employers might learn of their interests, and even the possibility of being considered a criminal. When an outside source delivers digital material, they do not have to follow the same code of ethics. For instance, ordering and downloading an e-book leads to a considerable volume of information on the preferences of the user and also on the central ideas in the e-book (Caldwell-Stone, 2012). As such, advancements in technology have changed the manner in which information privacy is handled in libraries. Many libraries have now posted a notice to patrons informing them of this possible breach of their privacy. When a patron uses their Kindle device to download a book, the information regarding that checkout could easily be sent back to Amazon, since they are the governing source of that device.

      Since libraries tend to use commercial vendors as a source of digital material for their patrons, the e-books that the patron downloads are accessed over a network or the Internet. Therefore, this can also pose potential issues with information privacy. For example, when people browse the network for materials, they can actually be opening an entrance to their personal and private information in search engines, who in turn, are gaining knowledge of the patrons. These search engines, like social media, do not protect private information in any way. Since people can use almost any digital device to download e-books, the availability and advancements in mobile technology have increased the privacy issue due to agreement policies of some applications. Patrons can put any personal information that is stored on their devices as an act of jeopardy when downloading material. These other outside digital sources can also regulate what materials are available to the patrons of the library. If a vendor like Amazon decides that a certain book is not one they wish to sell anymore or do not feel is appropriate, they can delete it from their library at any time (Stone, 2009). If one has purchased that book, they may find that they no longer have access to it on their devices.

      Considering that service delivery is one of the core principles of any library establishment, they should be guided by the ethical values of privacy so that the information needs of patrons can be addressed effectively and without bias. The library should make the

privacy of their patrons one of their major priorities, no matter what materials they are checking out, physical copies or digital. Therefore, while librarians may have professional responsibilities and the knowledge to provide efficient and effective library services, they should and must be guided by the ALA Code of Ethics.

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Action Research

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In order to analyze the difference between e-book and print book usage, a survey was given to 3,000 undergraduate and graduate students who use the Jackson Library at UNCG. The specific purpose of this survey was to answer the question: With the onset of e-books, do academic libraries still have value as a provider of print books? The survey asked about the number of print books and e-books each student checked out of the library each semester as well as why the student preferred a particular material over the other. After receiving 128 responses, the results from the study demonstrated mixed results; however, more students from the sample survey preferred e-books over print books.

Methodology

To begin, a six-question survey was created on students' e-book and print book usage. The survey was created using Google Forms and contained five multiple choice questions and one short-answer question. The first question asked students to select their class standing. Each student chose from either "graduate," "undergraduate," or "other." If a student selected "other," he or she was required to describe their class standing. The second question asked students about the format of most of their classes. Students selected from either "face to face," "online," or "mixed." The third question asked students to select how many times per semester they checked out print books from the UNCG Jackson Library. Students could select either "0 times each semester," "1-5 times each semester," "6-10 times each semester," or "more than 10 times each semester." The fourth question asked students to select how many times per semester they accessed e-books from the UNCG Jackson Library. Students could select either "0 times each semester," "1-5 times each semester," "6-10 times each semester," or "more than 10 times each semester." The fifth question asked students to select what device(s) they used to access e-books. Students could select from "tablet or e-reader," "computer," "phone," "I do not use e-books," and "other." If students selected "other," they had to describe the device. Students could select more than one device. The sixth and final question asked students to briefly describe why they preferred either e-books or print books. This question was a short-answer question. A sample of the survey is displayed in **Figure 1.**

After the survey and study was approved by the IRB, a sample set of 3,000 student emails was acquired by the Office of Institutional Research at UNCG. (Note: No IRB full committee review was required for this study). The link to the survey and a short message about the survey were then emailed to 3,000 undergraduate and graduate students. A copy of the email is displayed in **Figure 2**. Each student was given one week to respond to the survey, and the email addresses of all of the respondents were gathered. Out of the 3,000 students contacted to participate in the survey, 128 responses were collected.

Battle of the Books Survey

1. Please choose your class standing:
   - ☐ Undergraduate
   - ☐ Graduate
   - ☐ Other _____

2. What is the format of most of your classes?
   - ☐ Face to face
   - ☐ Online
   - ☐ Mixed

3. How often do you check out print books from the Jackson Library?
   - ☐ 0 times each semester
   - ☐ 1-5 times each semester
   - ☐ 6-10 times each semester
   - ☐ More than 10 times each semester

4. How often do you access e-books from the Jackson Library?
   - ☐ 0 times each semester
   - ☐ 1-5 times each semester
   - ☐ 6-10 times each semester
   - ☐ More than 10 times each semester

5. What devices do you use to access e-books from the Jackson Library? Select all that apply.
   - ☐ Tablet or e-reader
   - ☐ Computer
   - ☐ Phone
   - ☐ Other _____
   - ☐ I do not use e-books

6. Please briefly describe why you prefer either e-books or print books.

   _____

   _____

Figure 1.
Figure 2.

Hello students!

If you have a spare five minutes, please participate in the attached survey regarding your e-book and print book usage at UNCG's Jackson Library. Your participation would be SUCH a big help for graduate student research in the Library and Information Studies program at UNCG!

Battle of the Books Survey

Thanks everyone,

Results

   The results of the survey showed that out of the 128 responses, 54.7% of them were from undergraduate students. 43.8% of the respondents were graduate students, and a small percentage classified themselves as "Post-Bac" or "DNP" (**Figure 3**). The survey also found that 72.7% of the participants had mostly face to face classes, while 15.6% had online classes and 11.7% had a mixture of both (**Figure 4**). In regards to how many of these students checked out print books from the UNCG Jackson Library each semester, 48.4% of respondents checked out print books 0 times each semester, 39.8% of respondents checked out print books 1-5 times each semester, 6.3% checked out print books 6-10 times each semester, and 5.5% checked out print books more than 10 times each semester (**Figure 5**).

   In regards to how many of these students accessed e-books from the Jackson Library each semester, 35.9% of participants accessed e-books 0 times per semester, 34.4% of participants accessed e-books 1-5 times per semester, 15.6% accessed e-books 6-10 times per semester, and 14.1% accessed e-books more than 10 times per semester (**Figure 6**). When asked what devices students used to access e-books at Jackson Library, 63% of students said they used a computer, 31.5% of students said they did not use e-books, 18.9% said they used a phone, 15.7% said they used a tablet or e-reader, and 0.8% said they would "be doing so in the future" (**Figure 7**).

   For the short answer question on the survey, results were mixed. Many students preferred print books, because users do not need access to the internet in order to use them, they are easier to read, they do not rely on a battery, information is retained better with a print book, and the physical book is more appealing (See **Figure 8** for examples). On the other hand, students who preferred using e-books stated that e-books are better for commuter students who do not have access to the library, they are easier to acquire and return, they are lightweight, and they are easier to search for specific content (See **Figure 9** for examples). Some students praised both print books and e-books, however. Students praised e-books for allowing commuter students to easily access the materials; however, they also enjoyed the satisfaction of flipping through a physical book. Many other students explained that for thorough or pleasure reading, they preferred a print book; whereas, when reading short snippets or for academic work, they preferred using an e-book (See **Figure 10** for examples).
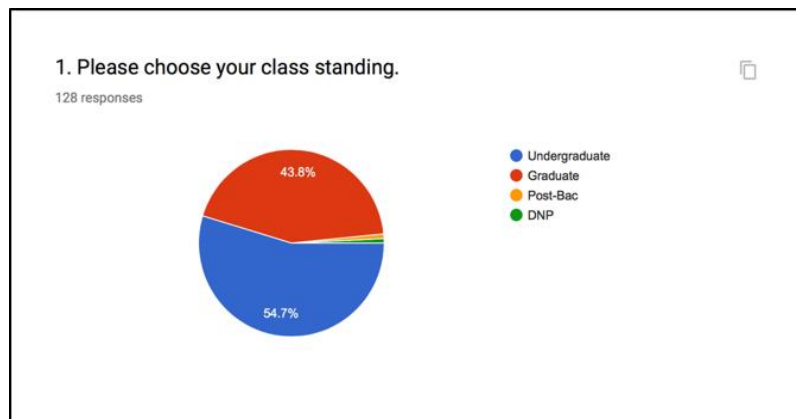
Figure 3.
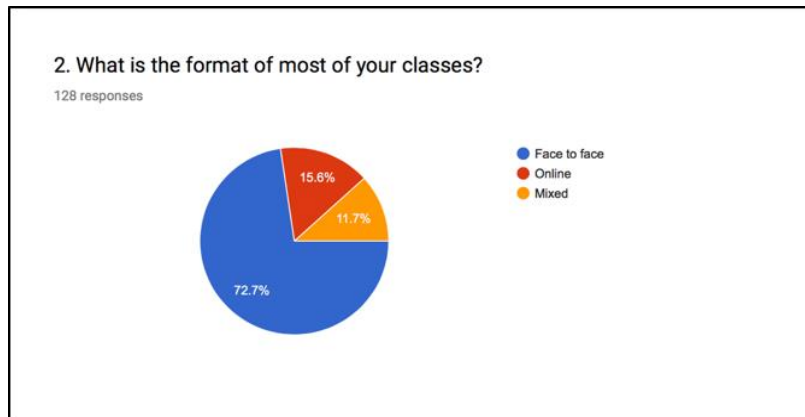
Figure 4.
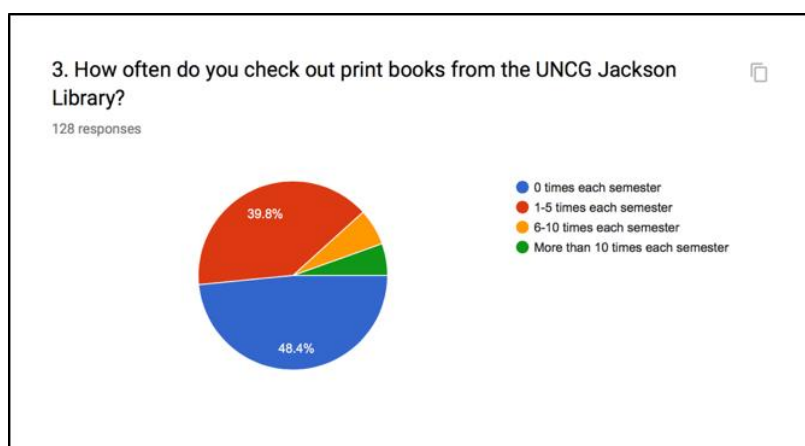
Figure 5.
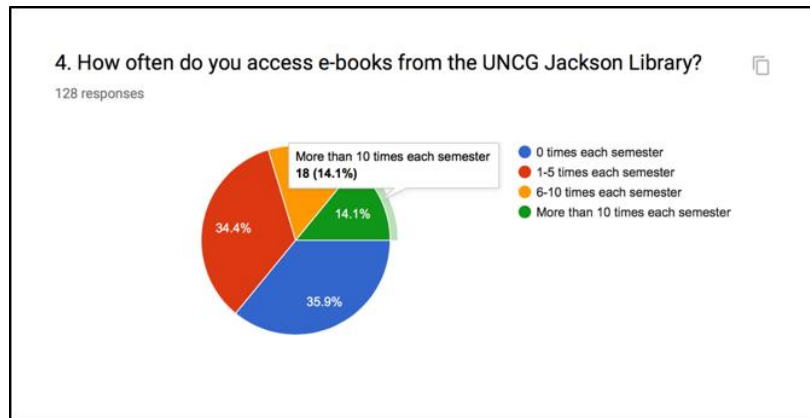
Figure 6.
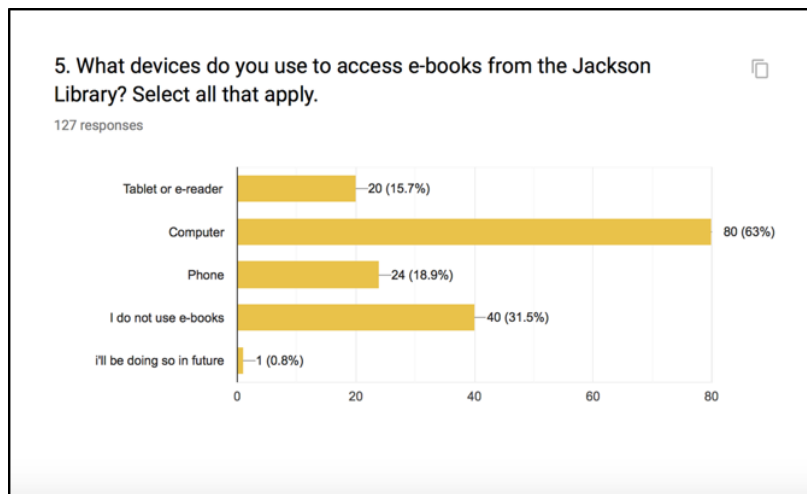
Figure 7.

Sample Responses for Print Books

While I appreciate the ease of use (portability and searchability) of e-books, I prefer print books because I find them easier to read and use.

Physical printed books are far superior because you don't need electricity to access them like e-books. E-books also take way longer to navigate.

I would prefer to have print books because I like having the actual book in my hand. Also ebooks aren't always reliable and neither is technology.

I personally always enjoy print books. I believe that they are easier to read, and you can use them without needing access to Wi-Fi.

I personally prefer print books because I like having a tangible product with me at all times. I like locating information on an actual book. Whenever a professor has a material available online I try to see if there is a print version available at the Jackson library. The only time I really check out books in the library is when they are relevant to the course. I wish I had more time to explore other books in the library, but due to the coursework I just don't have time.

I like print books because they're easier on my eyes and easier to keep track of my pages. Online sources can be difficult to manage and sometimes feel grueling to read. I like the library's ebooks though and appreciate the ability to use them. I just personally prefer paper.

I prefer print books only because I don't necessarily have to strain my eyes through screens. In addition to that I like how accessible a physical book is, I could take it with me almost anywhere without having to worry that it'll drain a battery or my usage will be limited due to connectivity issues. I also am more inclined to use a physical book instead of e-books. I've had an overall better experience with print books

Figure 8.

Sample Responses for E-Books

E books are automatically returned and I don't have to carry anything extra.

They're just more accessible to me. All the books I've needed have been available online. Also you can search the contents of the book easier.

E-books allow a more convenient access to textbooks/books that I use for classes. They lighten my personal load and because I use my laptop in all of my classes to access readings posted and homework, I always have the books I need with me. Having print books make it easier to forgot my textbooks and other materials.

I prefer e-books because it is easier for me to access them. I'm a commuter, so it works better for me to have access to e-books versus having to come to campus in order to rent physical copies of books.

I prefer e-books when the print book is more than 200 or so pages. My preference is always for on-the-go friendly books. If it is small and easy to carry, I don't mind getting a print book, if it is bulky I will always

opt for the e-book.

I prefer e-books because it's more efficient for me to have access to my textbook through my computer. However, I do feel as if print books are more effective when it comes to learning because it allows me to actively read.

Figure 9.

<u>Sample Responses for Both Print Books and E-Books</u>

Ebooks are convenient for distance learners; otherwise, I prefer print books. I like feeling the pages and find scrolling/turning pages online less satisfying!

I prefer e-books when expediency is priority and when I need to access a chapter/quote quickly to make a citation or connect research in my analyses. I use e-books like "Ready Reference" or how the majority of people used to use print encyclopedias, dictionaries, etc. I check out books when I need deep reading that requires lots of notetaking and deep analyses by me; not just connecting, like with e-books, but actually creating and synthesizing theories, etc. myself.

I think both have their benefits. For instance, I like being able to hold a book while I read it, but I do not live in close proximity to Jackson Library, so I am unable to check out print books. I like the freedom e-books provide as far as where and when I can access the material.

For books that are read cover to cover or consulted often, I prefer print. For reading a paragraph or article I prefer e-books.

If reading for pleasure (not that I ever have time for that) I prefer a print book. When needing to access materials quickly, or generally for more academic tasks, I prefer ebooks. Especially since I can link it with zotero. Thank you for all your hard work at the library. Though I am only in my first semester you have helped me with multiple things already!

I prefer print books for reading/reviewing resources. However, I like the flexibility of an e-book format as I can review/preview material in an e-book offsite when I am not on campus and/or validate if the information I am seeking is in the book/e-book.

E-books for class because they are cheaper and lighter. Print books when reading for enjoyment.

Figure 10.

Discussion

The results of this study demonstrate that students have a need for *both* e-books and physical books at the library. According to the qualitative data from the study, students were more likely to access an e-book than acquire a print book from the Jackson Library. Out of 128 students, only 15 were likely to check out a print book from the Jackson library more than five times each semester; whereas, 38 students were likely to access an e-book more than five times each semester. When compared to the short-answer questions, however, the results were very mixed. Some students enjoyed the feeling of a physical book, and some wanted to access books from anywhere using an electronic device. Many students even saw a need for both and acknowledged that *both* means of reading were useful for different situations.

This idea aligns with Kahn & Underwood's (2013) research on print books versus e-books. According to the researchers,*both* print and e-books serve a purpose. As Kahn & Underwood (2013) state, "The challenge for libraries is not about choosing which format is 'best,' but on focusing on the best management of the mixed collection that they have… libraries need to view their electronic collections as equal to, not better or worse than, their print collections" (p. 11). In other words, the means by which students access materials is less important than the information itself. Regardless of the preferred format, the student is still learning the material.

While the results of this study were mixed, the student answers did align with previous research on the advantages and disadvantages of both mediums. For example, Van der Velde & Ernst (2009) mention that e-books are better for finding specific information rather than thoroughly reading a whole resource. This finding is similar to students' responses in the short-answer question. Participants liked the "expediency" of reading and stated that e-books were better for reading "paragraphs or articles" rather than "cover to cover." Students from the survey also praised the accessibility of e-books, especially for commuter students. This proclamation is similar to Marques de Oliveira's (2012) finding that students like the "portability" and "instant access" involved with e-books. Likewise, students who chose print books rather than e-books lamented electronic books for the "eyestrain" and "needing access to Wi-Fi." This aligns with Marques de Oliveira's (2012) finding that students experienced eyestrain and difficulty reading when using e-books.

On the other hand, students who preferred physical books in this study acknowledge the quality and reading pleasure that stems from picking up a print book. For example, students stated that print books were "easier to read and use" and "you can use them without the internet." Other students acknowledged the "tangible" nature of books and the "lack of eyestrain" while reading. These findings are similar to Marques de Oliveira's (2012) research on the top features of a print book. For example, some of the top features included the ease/pleasure of reading as well as the ability to keep one's attention while reading a physical book. Likewise, the findings from the Jackson Library survey were also similar to Van der Velde & Ernst's (2009) argument that print books are simply easier to read, because they do not require a screen.

Overall, the Jackson Library survey found mixed results, yet, more research is needed in order to gain more comprehensive results. With only 128 participants in the survey, the sample size was very small, and conclusions based on such a small sample are not fully reliable. The survey did provide valuable insight into user preferences regarding e-books and print books, however. These findings alone demonstrate that libraries still have value as a provider of print books, even with the onset of e-books. The results showed that students still check out and use print books from the Jackson Library, and print books are certainly not going to waste away any time soon.

The Advocates for This Fight

According to UNCG's Jackson Library technology use data from 2016-2017, there were 308,597 patrons who used all technologies, including their own devices, to search for e-books or just reading in general (**Figure 11**). Having this amount of users is a problem because patrons are using the Internet and their library's catalog to search for these books and they do not know that their information is being used. According to the article writer Derek Haines, the Internet is causing great damage to the e-book fans and he worries that if the e-book contendant keeps on

defeating the main champion of the fight, the physical book, it would cause such great worry (Haines, 2018). Academic and public libraries should, therefore, have clear guidelines on information privacy and the awareness of this issue as ways of dealing with the information privacy ethical issues. Privacy should be issued if the main priority is to take it seriously, but in this case, it is causing great damage to the users. In order to patch up this damage altogether and keep this fight going, academic libraries must follow the Code of Ethics of the American Library Association.

UNCG Jackson Library Statistics

	2014-2015	**2015-2016**	**2016-2017**	**2 year change**
Print Titles	1,004,225	1,055,599	1,023,536	1.9%
E-book Titles	634,015	808,985	844.669	33.2%
Total Tech Usage	316,848	292,935	308,597	-2.6%
Printed Checkouts	256,183	233,969	217,568	-15.1%
E-book Checkouts	211,961	199,225	206,702	-2.5%

Figure 11.

So here we are in the fighting ring (the library circulation desk), and we need to decide if the champion should be the heavy physical book or the lightweight e-book. If weight was the only circumstance that we had to consider in choosing which book, the choice would be easy. However, the answer isn't always cut and dry. In order to make our best choice, let's review the facts.

E-books have so much to offer patrons since they can be downloaded without the patrons leaving their homes. Patrons can carry a large number of books on a single device, which means they should never be without a book. E-books offer more choices for individuals with eye sight problems by having various font sizes and some can even be processed into audiobooks, which only increases the population of patrons that can enjoy this runner-up (Richardson, 2018). Printed books are usually available in standard and large print only and they do not offer a way to have the book read to you. If an individual needs to look up a certain fact or quote from an e-book, they merely have to use the search function. One could spend a lot of time flipping through the pages trying to locate the same information in a physical book.

While e-books contain many positive components, there are a few negatives. There will definitely be a time that one cannot read an e-book because the battery on their e-reader is not charged. Some doctors believe that the use of e-readers is hard on one's eyesight because of the lighting of the device (Richardson, 2018). Similarly, having an e-book is more of a service than a good. When someone reads an e-book, it is rented instead of owned. Also, if for some reason the

book lender decides to stop carrying that book, it can easily disappear from one's device (Library Policy and Advocacy Blog, 2018).

There is also the issue of privacy regarding e-books that needs to be resolved. Libraries need to continue to stay informed with the technological advancements that are constantly changing. Patrons of all libraries need to be aware of the privacy policies of the libraries and realize that lending from outside vendors can put their privacy at risk. Libraries need to use Overdrive as their e-book lender because it is a service that patrons can use with their library card without giving any additional personal information ("Overdrive Privacy Policy", 2018). Because libraries must follow the ALA Code of Ethics, privacy is still respected with printed books.

Physical or printed books have been around much longer than e-books but is that enough to make them more superior? Some will say that physical books make better gifts than an e-book because one is receiving an actual item and possibly not just a gift card to purchase one online. Printed books are definitely the better choice for young readers, as they will learn better with a physical object in their hands. Parents can set better examples to their children by reading a printed book instead of an e-book, which might make children think the parents are merely playing on an electronic device (Leibowitz, 2017). When doing research from numerous sources, it is easier for one to have several physical books open in front of them than to continuously flipping back and forth in an e-reader using just the swipe of the finger (Ferrer, 2018). Some believe printed books are more than just decorative items on a bookshelf; they are more appealing in one's hands and are easier to share with others (Kozlowski, 2018).

As with e-books, physical books also have a downside. Weight of the book and having to carry numerous printed books in order to have choices of what to read are just a few of the negatives. Printed books can easily be destroyed if pages get torn out or the book gets wet. One can lose a printed book or forget to turn it in on time, which both cases would cause them to have to pay fees to the staff. E-books do not really get lost and aren't late because they can be downloaded again from the source and will be returned to the library when the checkout time limit has expired. Some claim that e-books cost more than printed books but according to Amazon.com, 2 out of 3 bestsellers were more expensive in a hardcover than in the Kindle version (**Figure 12**).

Title	Author	Hardcover	Kindle
Elevation	Stephen King	$11.97	$7.99
The Reckoning	John Grisham	$13.96	$14.99
Every Breath	Nicholas Sparks	$14.95	$12.99

Figure 12.

There isn't a large difference in price but even the smallest of savings can add up. It seems that new releases are cheaper in e-book version but as for older books, they can be more expensive (Wilber, 2018).

Conclusion

      Now that we have reviewed the facts, we are back to deciding which form of book should be crowned the champion. There has been a lot of research completed on this subject and both sides are supported and criticized equally. Now can we answer our previous question of with the onset of e-books, do public and academic libraries still have value as providers of printed books? The answer would be yes. Printed books are still around and they do not seem to be disappearing in the near future. As one can see from our survey conducted at UNCG Jackson Library, both forms of books are acceptable. If we look at this very closely, the winner of this fight would be the printed book but the votes are on you: which book will you check out and crown as your winning champion, the e-book or the printed book? It really comes down to personal preference but why not embrace the best of both worlds and give all books a chance?

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