E-BOOKS: CAN PUBLIC LIBRARIES AFFORD THEM:
WHAT DOES THE FUTURE HOLD WHEN REVIEWING THE PAST?

BY

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A Special Project Submitted to the School of Graduate Studies in Partial Fulfillment of the Requirements for the Degree of Master of Science

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This special project proposal was prepared under the direction of the candidate's thesis advisor, Dr. Hak Joon Kim, Department of Information and Library Science, and it has been approved by the members of the candidate's special project committee. It was submitted to the School of Graduate Studies and was accepted in partial fulfillment of the requirements for the degree of Master in Library Science.

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Introduction and Overview

The presence of e-books in public libraries has increased dramatically over the last few years due in large part to the introduction of affordable e-readers. E-books themselves have "existed since the 1970's when Project Gutenberg began digitizing text" (Duncan, 2010, p. 44). However, the introduction of e-books and e-readers took a significant turn in December 2010 when I-pads, Nooks, and Kindles became an affordable holiday gift item, resulting in the activation of between "3 million and 5 million e-readers" (Minzesheimer & Memmott, 2011, p. 1) in the week following the holidays. The general public now had the tools to access e-books, dramatically changing the ownership model. "As a direct result public libraries experienced a substantial jump in e-book use" (Porter, Weaver, & Newman, 2012, p. 127) increasing demand for e-book offerings and e-reader expertise.

Patrons’ sudden interest in e-books required public libraries to respond quickly, to react to the need of the moment. How has this demand for e-books evolved since December 2010? Collection development librarians need to assess the initial flurry of interest and the progression that interest has taken since then. Understanding the circulation trends of e-books over the last few years requires viewing e-book circulation activity against a timeline, to determine when circulation trends started to stabilize. It is also beneficial to understand how e-book circulation affects the print book circulation within a library. Do e-books replace print books with the same title, or are we seeing an increase in circulation supplementing the print collection?

Another important factor that contributes to the popularity of e-book circulation is the vehicle by which patrons access e-books. Some small rural public libraries have the choice of subscribing to downloadable e-books through a consortium. The consortium incurs the cost for
the site hosting and maintenance, the digital rights management (DRM) software, which in this case is OverDrive, and technical experts required to manage the e-book database system. All participants in the consortium distribute the cost based on the size of the population each library serves. Participation in a consortium minimizes local collection development efforts. It will be valuable to compare high demand titles in the consortium with those titles of high demand at the public library level.

This study will focus on the e-book circulation trends since 2011 across small rural public libraries in the state of New Hampshire. In depth analysis will be done at the Hollis Social Library in Hollis, NH where this researcher works and has exclusive access to library statistics. Analysis and comparative statistics will be collected on a subset of NH public libraries with total materials expenses similar to the Hollis Social Library. On a statewide basis, e-book circulation will be analyzed using statistics from the New Hampshire Downloadable Books (NHDB) consortium.

Research will also be done to track patron interest in e-books by capturing new patron registrations on a monthly basis using statistics from the NHDB database. A cost analysis will be done at the Hollis Social Library identifying the cost of offering e-books versus the cost of print books.

**Significance and Relevance**

Most of the studies pertaining to e-books lending have been done in academic libraries focusing on the use of scholarly works in print and e-book format. This researcher has been unable to find any research on e-book circulation or cost analysis in rural public libraries. Although the studies done in academic libraries have been beneficial, the customer base and e-
book genres are distinctly different in a public library. Students and faculty frequent academic libraries to conduct research while public library patrons are looking for fiction and enjoyable reading for their leisure time. It has become apparent that research on e-books in rural public libraries would be beneficial.

Access to e-books in small public libraries through consortia is especially prevalent in the state of New Hampshire. However, this researcher found few studies that focused on the cost of e-books acquired through a consortium arrangement. One study done by Robert Slater (2009) at Oakland University examined the academic use of locally selected books versus books purchased through a consortium (p. 31). In contrast, a recent study done on e-books in public libraries, authored by Gray and Copeland (2010), focused on a county-wide public library system that did "not participate in a consortium for access to e-books; all selection is done locally" (Gray & Copeland, 2012, p. 336). Providing statistics on consortium costs and associated collection development trends would provide small rural public libraries with valuable information.

Previous studies on e-books in public libraries frequently performed their research using surveys, which provided qualitative results. This research paper will collect quantitative data using transaction logs from several years of e-book circulation results from the New Hampshire Downloadable Books consortium. A cost analysis will also be done comparing the cost of e-book ownership through a consortium versus purchasing e-books directly from OverDrive, the vendor used by the NHDB consortium.

Public libraries are faced with tight budgets, yet patrons expect the latest books in their favorite format. In addition to print, large print, audio book, and Playaways, patrons want the option of e-book format for their Kindle, Nook, or the newest e-reader. "Though overall use of
e-books is still relatively small compared to print books and other types of digital content, libraries across the country have seen significant growth in patron demand for e-book titles, especially new releases and bestsellers" (Zickuhr, Rainie, Purcell, Madden, & Brenner, 2013, p. 11). Public library directors face a significant challenge in determining how to re-allocate their materials budget to provide some portion of the collection in e-book format. This study will provide directors with statistics on the actual circulation numbers of e-books for libraries across the state of New Hampshire.

With the introduction of new e-readers and a lack of cooperation from publishers, small rural librarians face a dynamic environment. This quote from the Chief Officers of State Library Agencies (COSLA) study: "Ebook Feasibility Study for Public Libraries" (2010) captures the current condition. "Both libraries and publishers are living in a climate of fear about their futures. These groups seek leadership and need solid information to support strategic decisions during uncertain times" (p. 33).

This research project will provide NH library directors with e-book circulation statistics and cost analysis. The study will communicate any additional findings deemed beneficial. This research will also be provided to the NH State Library to support the NHDB consortium project.

**Literature Review**

The literature review revealed more studies done in academic libraries than public libraries. This was especially apparent when it came to small rural public libraries. The majority of the research has come from large institutions, such as academic libraries in universities and county-wide public library systems. These findings, although informative, do not align with the small public library budget structure and clientele. Academic libraries serve students and
faculty, and the e-books purchased support research and scholarly topics. Public libraries serve a distinctly different clientele than academic libraries, members of the community in which the library resides. The e-books purchased by public libraries target the leisurely reading interests of the community, from toddlers through seniors. Public libraries also offer varying levels of reference resources for students in the local public schools, elementary through high school, complimenting collections held in the schools themselves.

Gray and Copeland (2012), in their article "E-Book versus Print", wrote one of the most relevant studies. Their study "examines e-book usage and cost in a public library by comparing the most popular electronic format to print format by title to discover if e-book and print copies of the same title circulate at similar rates" (Gray & Copeland, 2012, p. 334). The library in this study, a mid-sized suburban public library, is a "county-wide system that serves just over seventy thousand people and includes a main library, one branch location, and a bookmobile" (Gray & Copeland, 2012, p. 334). This library was not part of a consortium, so books could be selected locally with the immediate community in mind, and they did not have to share their e-book collection with other libraries.

Gray and Copeland (2012) used a sample of 50 titles for the study. It was determined that the "findings will not be generalizable to the greater population of both libraries and public library users as this sample is small and based only on one library system" (Gray & Copeland, 2012, p. 337).

Another study of Australian public libraries written by Ross Duncan (2010) focused on the popularity of e-books among library users. Duncan (2010) created a survey containing 10 questions that he "distributed electronically to 40,000 library members on the Sunshine Coast to
ascertain the level of usage of ebooks and electronic audiobooks (e-audiobooks) and emerging local trends" (p. 44). This study provided qualitative results on the interests of e-books by library patrons but did not touch on the cost or circulation of e-books.

The 2012 report "Ebook Usage in U.S. Public Libraries" was "developed by Library Journal and School Library Journal, to measure current and projected ebook availability in libraries, user preferences in terms of access and subjects, and library purchasing terms and influences" ("Ebook usage in U.S. public libraries," 2012, p. 99). Through an electronic survey, public libraries throughout the United States participated by invitation. There were "820 public libraries from across the country " ("Ebook usage in U.S. public libraries," 2012, p. 99) that responded. Given the size of this survey, generalized data can be ascertained from the results. Providing complimentary quantitative data based on transaction logs would enhance the findings from this study.

Library Journal has also done a survey on budgets and circulation of U.S. Public Libraries. Several of their survey questions pertained to e-books, such as "Has your library's ebook budget increased, decreased or stayed the same versus your last fiscal year?" ("Library Journal 2012 budget and circulation survey: U.S. public libraries," 2012, p. 10). In the Pew Institute for Libraries study, "Libraries, patrons, and e-books" by Zickuhr et al. (2013), the focus of the research was on the library patron and their experiences with e-books.

Studies were found that involved the circulation analysis of print books and e-books in academic libraries. The methods of analysis are applicable to this research, despite the different audiences found in academic versus public libraries. One study "compared the usage of 7,880 titles that were available in both print and e-book format at the Duke University Libraries"
(Littman & Connaway, 2004, p. 256). "Of the 7,880 titles that were available in print and e-book, 3,158 e-book titles were accessed and 2,799 print titles were circulated during the study period" (Littman & Connaway, 2004, p. 259).

Another study by Christianson and Aucoin (2005) measured the use of print books versus e-books at Louisiana State University. "The library identified over 2,852 print/ebook equivalents in its catalog. Use statistics for both formats were collected monthly for a year" (Christianson & Aucoin, 2005, p. 71). In this study, "print was used more than electronic, but the careful reader will note that the electronic book made an impressive showing" (Christianson & Aucoin, 2005, p. 80).

In several of these studies, this researcher noticed that subject matter made a difference in format to patrons. For example in Christianson and Aucoin's study, "Patrons appeared to prefer certain subjects, most notably philosophy, in print and some, such as library science, in electronic format" (Christianson & Aucoin, 2005, p. 80).

At Oakland University, Robert Slater (2009) conducted a study that included analysis "to determine if collections of books that were locally selected exhibit different usage than those purchased through a consortium" (p. 31). This was one of the few studies that involved e-book offerings through a consortium. The findings, although extensive, did conclude that locally selected collections had a much higher usage than the consortium collections. Statistics from the study indicated, "93.39% of the locally selected Safari e-books were accessed at least once. . . alternately, only 15.62% of the consortially selected NetLibrary e-books were accessed" (Slater, 2009, pp. 39-40).
Emphasis on statistics specific to small public libraries includes e-book consortium membership costs and local circulation statistics on e-book collections developed on a statewide level. One of the advantages of this study will be providing quantitative results, which has not been done by research organizations such as Library Journal and the Pew Institute. It is hoped that this research will validate the e-book strategy as it pertains to New Hampshire's rural public libraries.

This research study will help remedy the limited amount of research on e-books in small rural public libraries. Sufficient information is not available to provide a complete picture and predict the future of e-books in small public libraries. However, the purpose of this study is to increase the awareness of e-book use and associated costs as a foundation for future small public library e-book initiatives.

**Methodology**

**Data Collection**

This research study will focus on circulation statistics from the Hollis Social Library, libraries with similar collection development budgets as the Hollis Social Library, and circulation data from all the NHDB members. The data collection methodology used in this study will be transaction log analysis. The use of transaction log analysis enables "the researcher to capture and analyze large amounts of data and is a reasonably accurate representation of system users' behavior" (Wildemuth, 2009, p. 174).

The Hollis Social Library is a subscribing member of the NHDB consortium, which utilizes OverDrive's Content Reserve software to distribute e-books to its subscribers. Access to the Content Reserve reporting tools will allow this researcher to collect statistics for individual
libraries that subscribe to the NHDB consortium, with special emphasis on the Hollis Social Library. Statistics will also be collected from the NHDB consortium at the state level, providing statewide e-book circulation statistics for the "more than 190 public libraries" (Slossar, 2013, para. 1).

OverDrive's tool, OverDrive Advantage, allows a library to create an additional collection of e-books, still managed by OverDrive, but exclusively for their patrons. There is an extra cost for the initial setup and each copy of e-book purchased. It is important to understand that e-books purchased through this program are much more expensive than purchasing directly from Barnes and Noble or Amazon, due to licensing arrangements with various publishers. This researcher has invoices to validate this information. The Hollis Social Library broadened their e-book offering in 2012 to include additional titles through the OverDrive Advantage program. Circulation statistics will also be collected on those titles.

The sampling of libraries in this study include 16 NH rural public libraries. These libraries are members of the NHDB consortium and have annual materials expenses within 25% of the Hollis Social Library. Statistics from the New Hampshire State Library, "2011 Public Library Statistics" will provide the total materials expense data for each of the NH libraries. E-book circulation statistics will be collected for each of these libraries from 2011 through 2012.

Using Content Reserve, the researcher will identify the top 50 fiction e-book titles that circulated at the Hollis Social Library from 2011 through 2012. The top 50 fiction print titles that circulated at the Hollis Social Library will also be identified using The Library Corporation (TLC), Library Solutions reporting tool. Analysis will be done comparing and graphing the similarities and differences in titles. The top 50 fiction e-book titles that circulated throughout
the NHDB consortium will also be compared to the Hollis Social Library top 50 lists. Analysis will be done to identify similarities in patron interest and provide a measurement for consortium-level collection development effectiveness.

Using a small sampling of e-books and print books compare the cost per circulation of a single title in print to the same title as an e-book.

In order to determine the cost associated with loaning e-books from the Hollis Social Library, the consortium subscription price will be obtained from the current and previous years' invoices. The cost to join the OverDrive Advantage program and prices for e-books purchased in this program by the Hollis Social Library will also be obtained from 2012 invoices.

Data Analysis

Patron interest in e-books, reflected by titles circulated, will be collected annually and charted from 2011 through 2012, graphically reflecting the interest levels. This will be done for the Hollis Social Library, and the 16 NH public libraries with similar materials expenses to the Hollis Social Library and at the NHDB consortium level for all 190 library members. Circulation percentages reflecting patron interest will be compared across the 16 libraries and the consortium as a whole.

Patron interest in print books will be collected annually and compared to patron interest in e-books to see if there are corresponding shifts in circulation numbers. Circulation statistics for all holding codes will be analyzed to see if materials are replaced by e-books or the collection is increasing.

Performing a cost analysis will determine the individual cost to provide e-books to Hollis Social Library patrons. Consortium costs include the NHDB membership, setup cost for
OverDrive Advantage, and the cost of books added to OverDrive Advantage. Additional costs such as staff and patron training will be considered in the overall cost analysis.

Collection development for the NHDB consortium involves creating a collection that meets the interests of all 190 public library subscribers. To measure the effectiveness of local collection development versus consortium-wide collection development, analysis of the top 50 circulating print books in the Hollis Social Library will be compared to the top 50 circulating e-books in the NHDB consortium.

Upon completion of the data collection, data analysis will begin using the descriptive statistics method. The level of measurement that applies to this study is interval variables. These variables allow for "basic arithmetic operations (addition and subtraction), thus supporting a variety of data analysis methods" (Wildemuth, 2009, p. 339). The distribution of the values associated with this variable will be measures of central tendency, using the mean, median or mode, and the appropriate measure of dispersion.

The data analysis documentation will include graphs or tables to assist in the visualization of the findings.
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