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E-Book Collections in High School Libraries: Factors Influencing Circulation and Usage

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Abstract

When school librarians justify the purchase of electronic books (e-books) for their collections, they need to understand e-book usage patterns and whether or not e-books are meeting the recreational and informational needs of their students and teachers. Although a sizeable body of research is available examining the circulation and usage of e-books in academic and public libraries, there has yet to be a scientific study examining these variables in high school libraries. The purpose of this study was to gain a better understanding of high school e-book collections through the analysis of circulation data and interviews with school librarians. A Relative Use Factor analysis was conducted. Quantitative results revealed that e-book circulation represented a significantly low total circulation for most of the high school libraries examined. Analysis of the interviews revealed commonalities and differences between e-book collections. Findings suggested that purchasing practices and marketing strategies can have a considerable impact on the circulation and use of e-books in high school libraries.

Introduction

Today's students need to develop the ability to consume, analyze, discover, and communicate in multiple formats (AASL 2013). When electronic books (e-books) first became available for acquisition, school librarians were excited about the possibilities that the format provided, including fewer lost books and twenty-four-hour access to resources. However, school librarians were quickly faced with the challenges of navigating a confusing purchasing decision: What format is best for students? Should e-books be purchased if they provide access to only a single user, or should purchases be limited to simultaneous-access e-books? What does it mean to lease an e-book versus subscribe to a database?

Access to e-books continues to raise additional concerns about the decision to invest in e-books. No single device can access all e-books. Therefore, school librarians are faced with a choice based on the types of devices that students might have access to, whether provided by their school districts or through their own personal means. Researchers have also raised concerns about comprehension when reading e-books in comparison to comprehension when reading print books (Jabr 2013). Additionally, *School Library Journal*'s most recent report on e-book usage in school libraries stated that students prefer print when choosing what to read outside of research and class assignments (School Library Journal 2015, 4). When faced with these issues and others, school librarians must determine if e-books are an effective use of their limited funds. An examination of e-book usage patterns and whether or not e-books are meeting the recreational and informational needs of their students and teachers can assist school librarians in making future purchasing and marketing plans.

Research Questions and Rationale

To date, there is a significant shortage in the number of empirical studies pertaining to the circulation and use of e-books in K–12 schools. In contrast, numerous studies have been conducted regarding e-book collections in academic and public library settings. The purpose of this study was to contribute to the understanding of the appeal of e-books to young readers and e-book usage in K–12 schools. For this study we analyzed circulation statistics and interviewed school librarians in eight high schools in the southeastern United States. An exploration of patterns of usage in e-book collections and of school librarians' perceptions of e-books and experiences with e-books can inform the direction of future e-book practices in schools. The data can be used to help justify purchasing, weeding, and other collection-development and management decisions. To better comprehend the characteristics of e-book collections and their usage in high schools, the following research questions guided this mixed-methods study:

1. What does circulation data reveal about e-book collections in high school libraries?
2. What experiences and perceptions do high school librarians report about their e-book collections and usage?

Review of the Literature

Introduction

An analysis of e-book research conducted in the United States revealed that few studies have been conducted that focused on the use of e-books by patrons of school libraries. The body of empirical research examining e-books in libraries largely pertains to academic and public library settings, rather than to K–12 school libraries. Most of the literature regarding e-books in school libraries and classrooms is available through professional literature, such as practitioner journals, books for educators, and national reading reports. This literature, along with a limited number of school library studies about e-book collections and their use, revealed two recurring themes:

1) accessibility issues, and

2) reading preferences: digital versus print.

Findings on these two themes from academic and public library studies were included in this review because e-book research is well represented in those settings.

Accessibility Issues

In the *AASL Standards Framework for Learners* document, the fourth Common Belief is: “Reading is the core of personal and academic competency.” The expanded description of this belief includes the statement: “School librarians curate current digital and print materials and technology to provide access to high-quality reading materials that encourage learners, educators, and families to become lifelong learners and readers” (AASL 2018, 3).

However, studies have demonstrated that accessibility and platform issues for e-books can prove challenging for school librarians when developing an e-book collection because of the growing number of e-book sources and because platforms are constantly evolving (School Library Journal 2015; Kumbhar 2018; Rothman 2017). Also, according to the *e-Book Usage in U.S. School (K-12) Libraries* (School Library Journal 2015), school librarians reported that two of the most frustrating access issues regarding school library e-book collections were dissatisfaction with varying purchasing terms and a lack of reading devices. The uncertainty and challenges associated with e-book access has been affirmed in academic and public library studies, which addressed the evolutionary nature of e-book licensing, subscription availability, device-related issues, downloading, and other technical limitations (Kumbhar 2018; Potnis et al. 2018; Tracy 2018).

Further, in a national reading report published in 2013, Scholastic and the Harrison Consulting Group found that 57 percent of nine- to seventeen-year-olds reported that they were interested in reading e-books, and half of the respondents said that “they would read more books for fun if they had access to digital titles on electronic devices.” This finding was a 50 percent increase in three years 2010 (Harrison Consulting Group 2013, 14). (See the next subsection for study results related to young readers’ format preferences.)

Finally, in terms of access issues related to e-book content, one study about school library e-book providers revealed a lack of diverse content in the vendor’s collections. The researchers examined the availability of e-books in Spanish and discovered that only 1 to 3 percent of e-book vendors’ collections were available in Spanish, although 10 to 17 percent of the overall national school population is Spanish-speaking (Paganelli and Houston 2013).

Reading Preferences – Digital Versus Print

In a nationwide survey representing 916 school libraries, 58 percent of the school librarians reported that students in their schools preferred reading print books to e-books. Only 6 percent of school librarians participating in that study said their students had “high” interest in e-books, while 37 percent said interest was “moderate,” and 50 percent said it was “low” (Library Journal 2015; Stoltzfus 2016, 1). Similarly, in 2013 *The Kids and Family Reading Report* revealed that 58 percent of nine- to seventeen-year-olds said they would always want to read books printed on paper even when e-books are available. This finding was a slight decrease from 2010’s 66 percent (Harrison Consulting Group 2013, 20).

The digital versus print reading preferences of middle school students were also examined in an action research study conducted by a librarian at a public middle school in California (Rothman 2017). During book club sessions in the school library, the librarian examined the students’ use of public library and open source e-books for pleasure reading on Kindle e-readers. At the end of the school year, 100 percent of the students in the book club said that they planned to continue reading e-books for pleasure. However, 50 percent of them said that they preferred the print experience, or that they did not have a preference. Although numerous students' had "thumbs up" and "love it" reactions to their experiences with e-books, Rothman reported that a "fair number" of "eh" and "just ok" comments were expressed by participants (Rothman 2017, 35).

Similarly, a survey of ninety-four fourth-graders in Kansas revealed that, although students developed an appreciation for e-books during the three phases of the study, at the end of the study more than one-third of the students still preferred traditional books over e-books (McVicker 2017).

The findings from these studies are consistent with studies examining the digital versus print reading preferences of youth in public and academic libraries, as well as studies regarding many students' preferences for reference versus recreational e-books (Chen-Gaffey and Getsay 2015; Fry 2018; Kumbhar 2018; Littman and Connaway 2004; Tveit and Mangen 2014).

Methodology

Introduction

This mixed-methods study employed an explanatory sequential design in which qualitative data are used to explain the differences in the quantitative data that were collected. According to Dabae Lee (2018), explanatory sequential design allows researchers to first collect quantitative data on a phenomenon (in this case, e-book usage) and then choose a qualitative design to help explain that phenomenon (differences in e-book usage).

Data Collection and Analysis

We selected eight high schools in the southeastern United States having library collections that included Follett e-books. Four high schools were chosen in each of two states. The eight schools were from eight different school districts. The schools were also selected for their geographic diversity. They represented rural (three), urban (four), and suburban (one) school settings.

Table 1. School enrollment and geographic location.

Library	Number of Students	Geographic Setting
Library A	996	Rural
Library B	1,627	Urban
Library C	1,623	Rural
Library D	1,906	Urban
Library E	1,741	Urban
Library F	1,127	Urban
Library G	1,978	Rural
Library H	2,054	Suburban

As indicated in Table 1, the student enrollment for the eight schools ranged from 996 to 2,054. Additionally, Library A is a designated Title I school receiving school-wide federal funding assistance.

The researchers limited their analysis to Follett e-book collections for consistency and because of the ease with which the school librarians in those schools could access and report the circulation and usage data for those materials. The librarian at each high school provided the researchers with collection and usage statistics for their entire collections and their Follett e-book collections for the 2016–2017 school year.

The researchers conducted a statistical analysis of the data, including comparisons of Follett e-book collection size to the total collection size and of e-book circulation to the total circulation. Additionally, a Relative Use Factor analysis was conducted to study the intensity of use of the e-book collections in each library.

After the quantitative data were collected from each school, the researchers conducted individual interviews with each participating librarian to examine experiences with e-books in their high school libraries. (Interview prompts are in Appendix A.) As recommended by John W. Creswell, each interview was coded independently by each of us, and then the codes were cross-checked to determine intercoder agreement (2014, 203). This initial cycle of independent coding was conducted using *in vivo* coding (that is, by extracting words or phrases from the responses to identify the subjects of the responses).

After code mapping of the initial cycle, we categorized the codes and then conducted a second cycle of coding using pattern coding (Saldaña 2016). Concepts and themes emerged from patterns of librarian responses.

Quantitative Findings

To address the research questions guiding this study, the following quantitative data were collected:

- Number of Follett e-books in the library collections in relation to the total number of items in the library collections
- Circulation percentages for the Follett e-book collections in relation to the circulation percentages for the rest of the collections

Table 2 lists the holdings and circulation statistics that were provided by the librarians at the eight libraries for the 2017–2018 school year. To ensure that the data collection methods were consistent, all eight of the schools selected for the study used the Follett Destiny Library Management system. Four of the school libraries had sources of e-books other than Follett. Library D had OverDrive, Gale, and Infobase. Library G had OverDrive and Infobase as sources of e-books. Libraries C and E had OverDrive only in addition to Follett. However, the circulation for these non-Follett e-book titles were not used for this study to ensure consistency in the data that were collected. The table shows each school's total number of items in the collection, the number of Follett e-books in the collection, the total number of circulations, and the relationship between the circulations of the Follett e-book collections to the total circulations.

Table 2. Library holdings and circulation statistics.

Library	No. of Items (including E-Books)	No. of Follett E-Books	Follett E-Book Percentage of Collection	Total Circulations	Follett E-Book Circulations	Follett E-Book Percentage of Circulations
Library A	9,589	834	8.70%	2,666	5	0.19%
Library B	25,694	10,233	39.83%	6,320	1,704	26.96%
Library C	8,176	51	0.62%	4,376	45	1.03%
Library D	34,356	609	1.77%	15,242	150	0.98%
Library E	13,192	238	1.80%	19,983	758	3.79%
Library F	16,854	1,337	7.93%	4,113	78	1.90%
Library G	21,564	6,447	29.90%	14,160	113	0.80%
Library H	9,325	2,156	23.20%	1,735	234	13.49%

Figure 1 depicts the percentage of each library's Follett e-book holdings in relation to e-book circulation as a percentage of all circulation of the entire collection. For example, Library A's Follett e-book collection represents 8.70 percent of the collection, and 0.19 percent of the collection's total circulation.

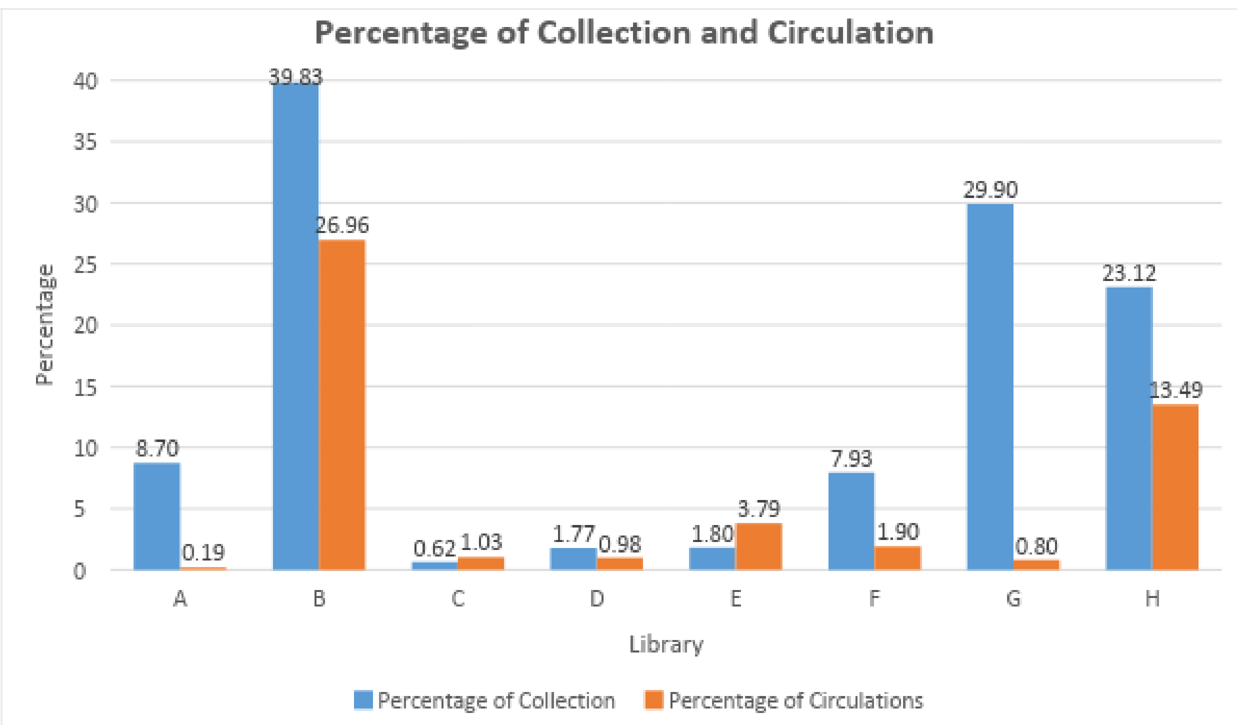

Figure 1. Percentage of e-book collection in relation to percentage of e-book circulations.

Several libraries' data in figure 1 are noteworthy. While Libraries C and E hold small e-book collections in relation to their overall collection size, the percentages of e-book circulations at these libraries were larger than might be expected. This finding suggests that the e-book collection at those schools is well-matched to student interest or need. Alternatively, Library G has a collection made up of almost thirty percent e-books. However, at Library G circulation of those e-books accounts for less than one percent of the total circulations of the collection. This low circulation percentage suggests that perhaps the e-books are not well-aligned with the curriculum or student interest, or perhaps insufficient marketing was done.

However, comparing the use of different parts of a library collection is difficult to do using only circulation data because circulation data do not represent the number of materials from which the circulation is derived. For example, if there are 1,000 circulations of the 800s collection and 1,000 circulations of the 900s collection, it would appear that the two collections are being equally used. However, if varying numbers of titles are in sections of the collection (1,000 books in the 800s and 2,000 books in the 900s), then a significant discrepancy in the use of the two collections exists.

To allow for this differentiation between collection sizes and their circulation, a method called the Relative Use Factor (RUF) was developed (Bonn 1974). The RUF enables librarians to measure the intensity of the use of their entire collections or of a specific part of the collection. Calculation of RUF values was the method used in this study to assess e-book collections and their circulation in school libraries. The formula for the RUF is:

$$\frac{\text{\% of circulations of a particular collection}}{\text{\% of holdings the particular collection represents}}$$

If an RUF factor is greater than 1, then that section of the collection's percentage of the total circulations (of the whole collection) is greater than the section's percentage of the collection. A high RUF number implies that a high demand exists for the materials in the collection, and the collection may need to be expanded to meet students' needs. An RUF of less than 1 indicates that the collection is being underused, with fewer e-books circulating for a small number of times, suggesting that the collection may not contain titles that interest students, or that the titles do not support the curriculum.

Table 3 provides the RUF for the collections of the eight high school libraries included in this study.

Table 3. Relative Use Factor for the eight libraries.

Library	Follett E-Book Percentage of Collection	Follett E-Book Percentage of Circulations	Relative Use Factor
A	08.70	00.19	0.022
B	39.83	26.96	0.677
C	00.62	01.03	1.649
D	01.77	00.98	0.555
E	01.80	03.79	2.103

Library	Follett E-Book Percentage of Collection	Follett E-Book Percentage of Circulations	Relative Use Factor
F	07.93	01.90	0.239
G	29.90	00.80	0.027
H	23.12	13.49	0.583

A one-sample t-test was used in this study to determine whether or not the RUF for the eight schools was significantly different from 1. A one-sample t-test is used to make inferences about how the value of a parameter relates to a specific value. The sample for this study was the eight high school libraries from which data was obtained, and the parameter was the mean RUF. Because an RUF greater than 1 implies that the percentage of the circulation is greater than the percentage of the collection, the hypothesized value that was tested was 1. Figure 2 illustrates the RUF for the eight libraries.

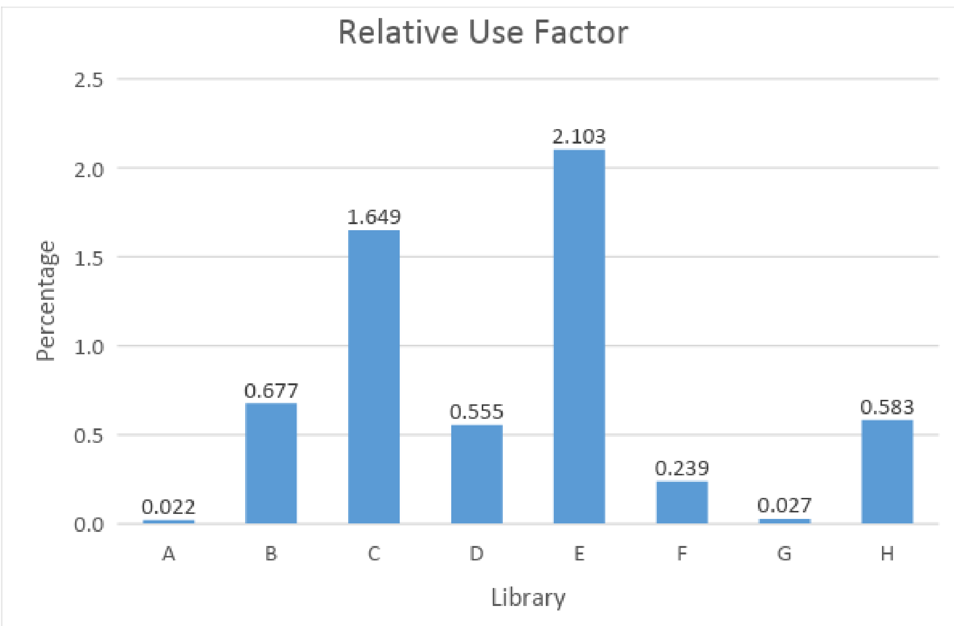

Figure 2. Relative Use Factor for the eight libraries.

As presented in table 3 and figure 2, the RUF for the eight libraries ranged from 0.022 to 2.103, and the average RUF was 0.732. An RUF greater than 1 implies that e-books' percentage of the circulation is greater than e-books' percentage of the collection. If the RUF is significantly higher than 1, that indicates a high demand for materials, and, as previously mentioned, suggests that the collection may need to be expanded to meet students' needs. Conversely, an RUF lower than 1 suggests underutilization of the collection, which may need to be examined for alignment with the curriculum and students' interests. Additional purchases may need to be made to better align the collection and increase its usage. Further, marketing strategies may need to be implemented to increase visibility of the e-book collection. (Note: See discussion of marketing strategies in a later section.) The data were analyzed using Statistical Package for the Social Sciences (SPSS), Version 22.0 software. Table 4 provides descriptive statistics for the RUF. Table 5 provides the results of a one-sample t-test (test value = 1).

Table 4. One-sample statistics for the Relative Use Factor.

	N	Mean	Std. Deviation	Std. Error Mean
Relative Use Factor	8	0.7317	0.7578	0.2679

Table 5. Results of the one-sample t-test (test value = 1).

	t	df	Sig. (2-tailed)
Relative Use Factor	–1.001	7	0.350

In table 5, column "t" provides the test statistic of the t-test, while column "df" provides the degrees of freedom. The p-value of the t-test is given in the column labeled "Sig." The p-value of 0.350 is larger than the most-commonly used level of significance (0.05), indicating that the result for these eight libraries is not enough data for us to conclusively determine that, on average, e-books are underused in school library collections. Therefore, additional data is needed from a larger number of school libraries, and perhaps, over a longer time period, in order to make generalized statements.[1]

Qualitative Findings

Qualitative analysis of the eight interviews was provided through the coding of the interview transcripts. The school librarians were asked five open-ended questions and accompanying probes (see Appendix A) to examine commonalities and differences in the usage of e-books in their school libraries. Coding of the data revealed four main themes. Additionally, discussion of the strategies that the school librarians used to purchase and promote usage of the e-books revealed additional areas of commonality and difference. Because of the large quantity of qualitative data collected through these interviews, only a summary of these findings is provided below. The four major themes that emerged after analysis were:

- accessibility,
- digital versus print preference,
- role of the teacher in usage, and
- nonfiction versus fiction preference.

Following the discussions of these four themes are discussions of additional issues related to implementation and marketing that emerged from the interviews.

[1] *Table 5 and the accompanying text were revised, September 2020, to reflect an accurate interpretation of the data analyzed and presented.*

Accessibility

The accessibility theme emerged around two areas: issues relating to availability of technology and desires for providing summer access to the collection. Students in the eight schools had a variety of levels of access to technology that enabled them to access the e-book collections. Some schools were completely 1:1 (one device provided per student), and other schools had bring-your-own-device (BYOD) policies. In the schools that did not have 1:1 access to technology, the libraries had carts of Chromebooks, laptops, or iPads that enable students to access e-books at school. One librarian noted that the e-book interface from Follett had recently been improved, making the books more accessible to students.

While every librarian highlighted the value of 24–7 access to e-books, participants also noted that barriers still existed, such as student access to technology. Even when students had access to school-provided technology, they did not have access to those devices in the summer, or they might not have Wi-Fi in their homes. Only two of the eight schools provided 1:1 devices over the summer break. Students at the other six schools could still access e-books in the summer, but they had to use their own devices.

Additionally, Librarian A specifically mentioned her students' preferences for accessing e-books using their smartphones. However, she also noted that lack of access to unlimited-data plans proved to be a barrier for some of her students. Additionally, Librarian A's school is located in a very rural community with areas that have little or no broadband access. It was apparent that the digital divide was an issue regardless of the schools' locations. Librarian F, whose school is located in a large metropolitan area, noted: "We still have the digital divide…and all the kids don't have phones. We still have a number of children who don't have phones or who don't have data plans."

An additional area of focus in participants' comments was the large number of different vendors, and their varying platforms and pricing points for e-books. The librarians discussed purchasing e-books from a variety of vendors, including OverDrive, Infobase, Follett, and Gale. (For the purposes of this study, only circulation data for Follett e-books was collected, since it was common to all of the libraries.) Some librarians noted that their decision about which e-book vendor to choose might be determined by their district's choice of vendor, the type of platform the vendor used for access to the e-book (whether it was compatible with Chromebooks or iPads), and the ability to access the e-books through their online catalogs. In general, these were all accessibility issues.

Citing the difficulty in adding e-books with differing usage restrictions, Librarian G said, "... constantly changing collections and that is too hard to maintain in a library catalog for a media specialist that has all these other things to do. So I think if we could get a common platform where everything could be in one place, I think that you would see greater usage." She noted that keeping track of all of the different terms of usage was overwhelming (examples include limits on the number of checkouts, time limits on usage, whether permanent ownership is allowed, and whether access is one-person or simultaneous).

The issue of simultaneous access was one of concern for five of the eight librarians. Many canonical titles (that is, classic books that are often required or recommended reading in high school) and popular books were not available with simultaneous access, or, if they were available, they were prohibitively expensive. Librarian B stated that her English teachers wanted her to purchase a title for a whole-school read. However, the librarian felt that she could not find a popular title that would have simultaneous access. She would be willing to pay $1,500 even though it would be used for only one year because buying a print copy for 1,700 students would be even more expensive.

Four of the eight librarians explained that access to e-books had helped their students with summer reading, whether for pleasure, for summer-reading assignments, or for preparation for statewide book competitions that had prescribed reading lists. Before increasing their e-book collection, providing students with access to required summer reading materials was more difficult. For example, Librarian F explained, “One of our roadblocks for summer reading was that the kids couldn’t access the books, and I’m not allowed to circulate the [hardcopy books] over summer, and so I finally had a lightbulb moment and bought all of the summer reading selections on e-book.” Librarian C said that she always purchased the competition titles for her e-book collection so that students would have the opportunity to read them during the summer to prepare for the next year’s Battle of the Books program.

Digital versus Print Preference

Seven of the eight librarians felt that students in their schools preferred print over e-books when reading for pleasure. Librarian D pointed out that her high school students preferred to read fiction with the book in their hands, especially if the book was one they chose. However, if the fiction title was for an assigned class reading, they often read it as an e-book simply because there were not enough print copies for the whole class.

Librarian C revealed that her avid readers and heavy library users preferred print over e-books. She noted that a student once requested a specific print version of a book. Even though an e-book version was available, the student preferred to wait until the print book was returned. She explained, “When students are given the choice, of … free-choice reading materials, …most times when we tell them, ‘Hey, there’s an e-book version!’ they don’t want it. They like to still have the book.”

Librarian A highlighted her attempts to increase fiction e-book usage by pointing out to students that they could immediately check out the more popular titles, as her fiction e-book collection rarely had wait lists, unlike her popular fiction in print. Librarian C pointed out that her students were accustomed to doing research online and, therefore, associated online reading with nonfiction sources and assignments. She believes that, although students are on devices much of the time, they have not yet made the transition to thinking of reading fiction or reading for pleasure on those devices.

Librarian B was the only librarian who felt that her students preferred digital over print books. To explain this, she cites the students’ previous access to technology and e-books through their middle school years. She explained, “Our middle schools are all one-to-one, and that actually drives our e-book collection use as well because we have these students that have had the one-to-one technology for three years.” (Of all of the librarians interviewed for this study Librarian B had the largest e-book collection, most of which was selected and provided by her district.)

Role of the Teacher

Four of the eight librarians discussed the role of the teacher in the selection of e-books. Librarian F felt that most of her teachers did not support e-book usage because, “I think a lot of my teachers have looked at the brain studies and would rather have the kids read the [hardcopy] text as they retain it a little bit better." Therefore, teachers in her school almost never promoted e-book usage in their classes.

Alternatively, Librarian G mentioned that she has one teacher on her faculty that is a heavy e-book reader for pleasure and, therefore, heavily promotes the usage of e-books with her students. The librarian examined data from her collection to determine if this promotion was having an impact on usage. She said, "I can always tell those are her kids that are reading the e-books because she's reading e-books." Conversely, the same librarian discussed one teacher who fears her students won't be on task when using their Chromebooks and, as a result, "will not allow her students to use e-books for research, only print books."

When marketing her e-books to teachers, Librarian H emphasizes the ability to project the book in front of a whole class or the multi-user capabilities of some titles. Almost all of the librarians interviewed said that their teachers don't require the usage of e-books for research projects, and one remarked that the only time her teachers use e-books is when the librarian and a teacher were collaborating on research projects.

While most of the librarians in this study indicated a lack of teacher enthusiasm for e-book usage, Librarian F explained that some teachers would check out an e-book for a class to view using the Smartboard in their classroom. She said this allowed the teacher to highlight passages or show illustrations with a graphic novel. She mentioned that graphic novel e-books were particularly useful with lower-reading-level classes who were struggling with vocabulary.

Librarian A also noted that she had purchased several Lightbox titles from Follett with the intention of increasing faculty use of e-books as instructional tools. The Lightbox feature is a recent addition to Follett's e-book titles that includes interactive e-book content intended for instructional use.

Finally, the librarians' own biases came into play when promoting and using e-books. Two different librarians admitted that they do not like to read using e-books and alluded to the fact that their own biases might be impacting students' and teachers' willingness to use them.

Nonfiction versus Fiction Preference

An additional theme that emerged during the interviews was the difference in usage of nonfiction e-books versus fiction e-books. Usage of e-books, as well as the decisions about which titles to purchase, was often tied to curricular needs. The librarians noted that when doing research, students almost immediately turned to e-books instead of print. Librarian C pointed out that her fiction e-book collection was primarily used by students who were preparing for the Battle of the Books, or a "handful" of students who preferred e-books over print. However, she felt her nonfiction e-book titles were used by a larger group of students because "they're used to doing research online," and they automatically associate online reading with assignments.

Usage of nonfiction over fiction e-books might also be impacted by the purchasing decisions of the librarians themselves. Librarian A explained that she does not purchase much fiction: "As far as purchasing the e-books, we were doing them mostly for reference." She simply does not purchase as much fiction as nonfiction. Librarian G stated that her e-book purchases are solely dependent upon nonfiction curriculum-based needs and teacher requests to support the curriculum. Additionally, three of the eight librarians cited the need for reference and nonfiction collections to maintain currency. Therefore, they were purchasing only e-books and digital sources for nonfiction and reference-collection development.

In contrast, Librarian C explained that she predominantly buys fiction e-books because her nonfiction and research materials are accessible on the Web and through databases. Her school has a schoolwide reading program that requires all students to have reading material. As a result, she has heavily marketed e-books to classes in which teachers allow their students to use e-books for this program.

Implementation Issues and Marketing Strategies

Introduction

In addition to the four themes, commonalities and differences were noted dependent upon:

- how the librarians handled circulation,
- the degree of district involvement in purchasing,
- school-based budgets and purchasing, and
- the marketing strategies implemented by the school librarian.

Circulation

Each school library in the study has different policies about circulation of e-books. Some had very short checkout periods (loans) for e-books with as little as three days for a checkout of nonfiction titles. Some allowed renewals, and some did not. Others had a limit on the number of e-books that students can check out at one time. Some had separate policies for e-books versus print books, and some had the same policies. Also, there were differences in standard checkout lengths and maximum number of books specific to platforms: with Follett, the standard checkout length is three weeks with a maximum of three books at a time and with OverDrive, the standard check out length is two weeks with a maximum of ten books at a time. Five of the eight librarians simply were uncertain of their own library's circulation policies since those policies were initially set up by their instructional technology departments.

District Involvement in Purchasing

Two participating school librarians said that their districts made no district-level decisions about e-books, leaving the building-level librarians to decide whether to purchase e-books for their individual collections. Six of the eight librarians interviewed indicated that their school districts had some degree of involvement in e-book purchasing. Three of those six librarians discussed how their districts made the initial e-book purchases for the entire district to begin their e-book collections. To establish the collections, all decisions and funding came from the districts. However, since that initial purchase, each school has been left on its own to make purchasing decisions and to provide funding. Two librarians whose initial e-book collections were created by the district said that the titles chosen were primarily for younger students and were of little use to high school readers. It should be noted that the school with the highest circulation rate also has significant district purchasing of e-book titles. The librarian noted that the reason why her district had been able to afford an extensive e-book collection was through grant funding.

School-Based Budget/Decisions

Each participating librarian discussed her decision-making when choosing to purchase e-books. Most of the librarians were able to make local (at the school level) decisions about purchasing e-books when they had funds. Librarian D spent the most on her e-books in the previous school year, consuming 42 percent of her budget.

Librarian G explained that the purchase of Follett e-books was made and funded at the school level. In addition, her school district funded the access of e-books through OverDrive. She explained that her library funds were contingent upon the principal's discretion and was not a line-item budget item from the district level. Therefore, she chose to spend less than 5 percent of her budget on e-books since the district budget for libraries had been reduced by half. She supplemented her budget through a grant specifically for e-book purchases.

Librarian F said she was not planning to spend much more on e-books. (She had spent 5 percent of her resource budget on e-books in the previous year.) She could foresee spending more on e-books only if the summer reading lists at her school change.

Librarian H had spent 10 percent of her allocated resource budget on e-books as well as all the grant money she had received the previous year. She explained, "Where I do find great value in purchasing e-books is when I can get multiple copies of something that is heavily used at a price that is affordable, that fits within my budget. So in that case, yes, but I don't see building onto [our e-book collection] really any more than I have otherwise."

Librarian C purchased only four e-books at her school in the previous year; however, her district continues to purchase at the district-level.

Library E was the only library with multiple sources of funding for collection development, including from her school, district, and a per-pupil allotment that could be used only for print books. She used 7.4 percent of her previous year's budget for e-books.

Marketing Strategies

All librarians in this study discussed marketing their e-book collections to students at the beginning of the year or during semester orientations. In department meetings, faculty meetings, or separate professional development sessions all of the librarians provided some level of professional development for teachers on using e-books. Additionally, each of the librarians discussed marketing their e-book collections and demonstrating how to access and use e-books whenever they were collaborating with teachers or working with students on research projects.

Four of the school librarians went further in their efforts to market their e-book collections. Librarian D sends home fliers to parents that includes information about all of the digital resources the library offers, including e-books. Librarian G went to extra lengths to promote her library's e-books by holding a "Read an E-Book Day," which included recognizing classes and students who participated with freebies like pencils. She attributes increases in her circulation to her efforts at promoting their usage. Librarians at two schools promoted their e-books through posters displayed around their schools. They also created digital displays around the school highlighting popular or interesting e-book titles. Additionally, Librarian G included new or curriculum-related titles in her monthly newsletter to teachers, and she promoted new titles on her school's social media channels. She noted, "I saw such an increase [in circulation] when I did make such a concerted effort to promote [e-books] more."

Additional marketing strategies employed by the librarians included the following:

- Advertisements for e-books on the school's news show
- Principal's inclusion of information about accessing e-books in a robocall to parents
- Tutorial on the library webpage about a Follett app for accessing e-books
- Table-top mini posters highlighting new books, including new e-books

Discussion

The findings from this study enable school librarians to better understand issues related to e-book collections in school libraries and classrooms. School librarians can compare the circulation and use of their e-book collections with those of the eight high school libraries studied. Furthermore, the methodology used in this study can easily be replicated by school librarians. Analyzing circulation data through the Relative Use Factor (RUF) accurately portrays the use of a school's e-book collection and, along with other data, can help librarians gauge whether or not their collections are meeting the needs of students and teachers.

Furthermore, findings from this study can inform librarians' e-book purchasing and marketing decisions. For example, quantitative results revealed that e-book circulation represented a significantly low circulation total for most of the libraries examined. Specifically, findings revealed that six of the eight libraries had an RUF below 1, which may indicate a need for the librarians to change purchasing practices and/or marketing strategies for their collections.

These findings are specific to each high school studied. Therefore, school librarians should collect and analyze data from their own collections, which can then be used to inform their purchasing, marketing, and planning for collaboration with teachers. For example, school librarians should conduct their own RUF analysis for their collections to gauge whether or not their collections have the capacity to meet students' and teachers' e-book needs.

Analysis of the librarians' responses during the interviews shows that librarians with strong marketing programs are experiencing greater usage of their e-book collections. Additionally, the school libraries with access to larger collections of e-books funded at the district level are able to more effectively integrate those e-books in both research projects and leisure-reading programs.

Findings from this study can inform school librarians about additional areas for marketing their existing e-book collections. For example, interviewees provided ideas for marketing e-books to parents, teachers, and students through newsletters, robocalls, and other forms of advertising in addition to the traditional orientation for new students.

The continuing difficulty in providing consistent access to devices and easily usable platforms remains an area of concern for school librarians. School librarians question consistent access to technology for their students especially outside of the school setting and during breaks from school. Currently, studies about the preferences for print versus digital formats are inconclusive. Additionally, there are not enough studies to determine the impact that e-books have on reading comprehension. These concerns cause school librarians to question the cost effectiveness of adding e-books to their collections. School librarians need additional studies, like this one, to guide them in their evaluations of existing e-book collections and their plans for using them for instructional purposes.

Conclusion and Further Research

Currently, a shortage of studies regarding e-books in school libraries is evident. The explosive growth of 1:1 initiatives in schools and the increasing emphasis on digital learning highlight the need for further studies examining patterns in e-book circulation and usage in K–12 schools. Further, as a rising number of informational and recreational titles become available as e-books, school librarians and teachers need to be aware of the ways in which students respond to this digital format. The results from this study can inform the practice of school librarians by helping them make sound collection-development decisions regarding the selection and use of e-books in school libraries and classrooms. The findings can also provide school librarians with an understanding of how to assess quality e-book collections that meet the informational and recreational needs of students and teachers.

This study provided evidence that many students prefer to borrow physical books rather than e-books. However, the findings also revealed strategies that school librarians can employ to influence an increase in e-book usage. As the data revealed, school librarians can raise learners' and classroom teachers' awareness of e-books in their collections through a variety of methods, such as targeted purchasing, marketing strategies, and informing readers of the advantages of using e-books over print.

This study was limited to school libraries serving grades 9–12 in the southeastern United States. Therefore, findings may not generalize to other grade levels and settings. However, the findings do provide information on the circulation and usage patterns in eight high school libraries, and they have significant implications for the development of school library e-book collections.

The study offers a starting point for future e-book research. To generalize the conclusions of this study, we recommend that researchers conduct future e-book studies in a variety of school library settings, on different grade levels, and with varying demographics, such as student populations and geographic locations. In an effort to acquire comparative data from all eight schools in this study, we chose to limit our circulation data collection to Follett e-books and libraries with Follett Destiny Library Management systems. Using one library management system allowed us to avoid inconsistencies in circulation data collection between different vendors' systems. Future studies may want to compare the circulation of e-books through different vendors to determine if platform preference and vendor marketing plays a role in increasing the circulation of e-books.

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Appendix A. Librarian Interview Protocol

eBook Study

The following interview questions, and their probes, will be used throughout this study. These, and the other interview questions that follow, are part of a question bank used as needed throughout the study.

QUESTIONS:	PROBES:
What are the methods you use to purchase e-book materials for your library collection?	Are you the sole decision maker in the process? Does your school district / central office order e-books for the district that your students can access? How do you determine which titles to purchase for your school? (Reviews, teacher recommendations, student recommendations, blogs, H.W. Wilson Core Collections, Follett reviews only? What time of year to you make decisions about your e-book purchases?
What are the sources of funding for your eBook collection?	What percentage of your overall budget is spent on e-books? Do you use book fair money to purchase e-books?

What type of technology does your school provide for students to access e-books?	Is your school a 1:1 device school? If so, do you think this has an impact on the circulation and usage of e-books in your school? If not, how do your students access e-books?
How is the circulation of e-books handled in your school?	Are there limits to the number of e-books students can check out? How long can they be checked out? Can students renew the e-books? Are students allowed access to e-books in your collection in the summer?
In terms of e-book usage, which circulates more, fiction or nonfiction?	What do you think is the reason(s) behind this preference in materials? Do teachers at your school assign e-books as part of their required resources for assignments? If so, how do you think this impacts the circulation of these materials?

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