



michael cohen group LLC
research, evaluation, consulting

***IF WE BUILD IT, WILL THEY COME?
DIGITAL BOOKS IN THE EDUCATIONAL LANDSCAPE***

FINAL REPORT

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1. Executive Summary

The shift towards the consumption of traditional print media such as newspapers, magazines, and books on digital platforms has presented the publishing industry with a significant challenge. At the same time, the increasing use of digital content also represents a new opportunity. While digital books are widely used in the consumer market, they are not yet as pervasive in schools. However, usage in this context is anticipated to increase dramatically as digital devices become an integral part of educational practice.

This report presents the findings and recommendations from a research project intended to inform the expansion of Ontario's digital book creation industry into the education market, specifically elementary schools. This project, *"If We Build It, Will They Come? Digital Books in the Educational Landscape,"* was comprised of four phases: foundational interviews with the project's partners, which included members of Ontario's digital book creation industry; an online survey with Ontario-based first and second-grade teachers and elementary school librarians; interviews with Ontario school policy makers; and a review of the existing academic literature and market data on digital books.

With children typically just learning to read in first grade and mastering fluent reading (reading without stopping to figure out words) in second grade, this is a pivotal time in their development. The interactive features that are possible with digital books (e.g., text highlighting, word pronunciations and definitions, etc.) would seem to lend themselves naturally to assisting children develop their literacy skills. The focus of the online survey was thus on educators serving children in these grades. Similarly, the school policy makers interviewed included elementary school principals. By contrast, the review of the literature and market data was broader in scope, including older children as well as adults, in order to provide a general overview of the current research on digital books as well as state of the market.

This report is structured in the following way. A summary of findings on the four phases of the project is provided in Section 5. For those who wish to review the complete findings from the online survey of educators and the review of the literature, individual reports for these are included as Appendix A and B, respectively. An integration of the findings from the four phases can be found in Section 6, followed by recommendations in Section 7.

Overall, the findings point to the current state of flux in Ontario's education market concerning the use of digital books in schools. This fluidity is not about whether or not to use digital books – it is a given they will be in the foreseeable future – but rather the best way to do so. School policy makers and administrators at the district school board and individual school level are actively grappling with this issue, in an effort to identify the most seamless, cost-efficient, and practicable manner in which to integrate digital books into their educational environments.

The majority of the educators who participated in this project read digital books in their personal lives, and most felt it was "somewhat" to "very" important for children to have access

to digital books in school (in addition to print books). When it comes to selecting digital books for their students, recommendations from their educator peers are the top influencing factor in their search and purchasing decisions. Subject area and curriculum tie-ins are also important aspects they take into consideration. Not surprisingly, these educators highly rated and valued interactive features in digital books that encourage reading/literacy skills, such as highlighting and sounding out of words in the text.

The findings also provide insight into current challenges of the integration of digital books in schools. Availability of e-reading devices is an issue, with over three-fourths of the educators surveyed identifying this as the biggest challenge to the use of digital books in school. Additionally, Ontario's school boards currently lack a system for making digital books available in schools in a cost-effective way. They face the challenge of implementing an affordable, district-wide digital content delivery system that allows individual schools to access content that's been licensed by the school board and that simultaneously allows schools to customize the content to fit their community's particular needs.

The findings from the various phases of the project form the foundation for strategic recommendations on the expansion of Ontario's digital book creation industry into the education market, with a focus on supplementary resources (as opposed to textbooks).

Highlights include:

- With decisions about digital content acquisition not yet fully in place at most school boards, this is an opportune time to approach entry to this market, especially for industry-wide partnerships seeking to provide content delivery systems to schools.
- The digital book creation industry should explore ways to enable schools to access a wide variety of digital content (from multiple publishers) through a single login interface to minimize frustration and encourage usage by educators.
- Focusing on supplying supplementary resources (i.e., those that cover less than 20% of the Ontario curriculum) affords easier entry. Curriculum materials have to undergo a more rigorous approval process by the Ontario Ministry of Education.
- Digital book creators and publishers should play to the strengths of digital books and set their products apart from print books by incorporating interactive features that enhance the development of children's literacy skills and increase their engagement and comprehension of the content.
- Authors and digital book creators/publishers should take advantage of opportunities to provide products that cover the content niches that are frequently overlooked, e.g., by producing French language or Canadian-focused content.
- Creators/publishers of digital books should design and market their products in ways that are tailored to the evaluative criteria educators use to choose digital books for their students, e.g., showcasing reviews or recommendations from other educators, and prominently displaying the book's subject area and curriculum content.

2. Background

Story Planet, a non-profit that provides workshops for young children to inspire them to be creative and effective communicators, in collaboration with the Michael Cohen Group (MCG), an applied research and evaluation firm, initiated this study to help inform the expansion of the children's digital book creation industry in Ontario. The project is titled, "*If We Build It Will They Come? Digital Books In The Educational Landscape.*" Story Planet received a grant for the project from the Ontario Media Development Corporation (OMDC) and is the project administrator; MCG conducts all research activities.

An unexplored arena of opportunity is the educational system market -- an essential commercial purchase landscape for children's books. The objective of the current project is to identify and understand the use and need for digital books in Ontario schools, with a specific focus on elementary level grades one and two. This level is the pivotal age at which children enter primary school and learn to read. The findings and knowledge reported here are designed to inform both product and communications strategies for the digital book industry in Ontario and expand its growth in the supplemental resources' education market, thereby adding a new distribution channel.

The project involved a **four-phase** program of primary and secondary market research.

- **Phase I** consisted of individual interviews (IDIs) with project partners. Project partners include the Canadian Children's Book Centre (CCBC), eBOUND Canada, Greenwood Books, Kids Can Press, and TVO. The interviews were conducted in order to identify the partners' informational needs on digital books in the education market and set the stage for the rest of the research.
- **Phase II** was comprised of an online survey conducted with Ontario-based first and second grade teachers and elementary school librarians about their perceptions, attitudes, and their students' current use of digital books in school.
- **Phase III** entailed individual interviews with school policy makers to identify and understand issues at the policy level.
- **Phase IV** consisted of a review of academic, research and market knowledge regarding digital books and the digital book industry, the context of children's digital book reading, ethical considerations in marketing, and the concerns of Canadian educational stakeholders (both elementary and secondary) about digital books.

This report is organized in the following way. A summary of findings for each phase of the project is provided in Section 5. The report then synthesizes findings from all four phases in Section 6 and provides recommendations for the digital book industry in Section 7. Readers wishing to delve into the detail of the teacher and librarian survey results (Phase II) and literature review (Phase IV) should refer to the full reports provided as Appendix A and B respectively.

3. Objectives

The *overall* objective of “*If We Build It, Will They Come?*” is to provide enhanced market knowledge to the Ontario digital book creation community regarding use of and needs relating to digital books in the elementary level education marketplace. The *specific objectives* of each of the phases are described below.

Phase I : Partner IDIs

- Identify and understand the informational needs of the Project’s partners concerning digital books in the education market; and
- Set the stage for the rest of the research to be conducted.

Phase II : Online Survey with Educators

- Gather information from first and second grade Ontario teachers and elementary school librarians about:
 - Their students’ access to and use of digital books in school;
 - Their students’ preferred and most frequently used platforms in school to access digital books;
 - Digital book content they perceive as preferable and features they deem beneficial;
 - Where and how they find and acquire this content;
 - How much they pay for content; and
 - Challenges to the use of digital books in schools.

Phase III : School Policy Maker IDIs

- Gather information from school policy makers (elementary school principals, school board members, Ontario Ministry of Education) on school use of technology in general and digital books in particular in order to provide an understanding at the policy as well as at the school level (rather than simply for grades 1-2).

Phase IV : Review of Literature and Market Data on Digital Books

- Synthesize and interpret the existing literature and market data on digital books to provide insight into their development and potential.

4. Methodology

In order to address the above-stated objectives, a multi-pronged primary and secondary program of market research was designed and implemented as follows:

PHASE	TYPE OF RESEARCH	METHODOLOGY	SAMPLE
I	Primary, qualitative	Individual in-depth interviews (IDIs)	5 representatives of the Project's partners from the Ontario digital book creation community: <ul style="list-style-type: none"> - Canadian Children's Book Centre (CBBC) - eBOUND Canada - Groundwood Books - Kids Can Press - TVO
II	Primary, quantitative	Online survey	122 Ontario educators ¹ : <ul style="list-style-type: none"> - 81 1st and 2nd grade teachers - 41 elementary school librarians
III	Primary, qualitative	IDIs	4 Ontario school policy makers: <ul style="list-style-type: none"> - 2 public school principals (Toronto District School Board) - 1 school board member (York Region District School Board) - 1 Ministry of Education representative (Curriculum & Assessment Policy Branch)
IV	Secondary	Review of literature and market data	n/a

¹ Participants were recruited through a professional recruiter as well as through intercepts at the Story Planet booth at the 2014 Ontario Library Association Super Conference.

5. Summary Of Findings

A summary of key findings from all four Phases of the Project is provided in this report. A complete report for Phase II, with the findings from the online survey of educators, is provided in Appendix A. Similarly, the full review of the literature and market data conducted on digital books is included as Appendix B.

5.1. Phase I: Findings from Foundational/Partner Interviews

A comprehensive and shared set of themes and questions emerged from the interviews. These themes and questions include:

- What are early elementary school teachers' and librarians' current practices regarding digital books?
 - What content do they want for their classrooms and libraries? What gaps exist?
 - What are teachers using?
 - Where are they buying digital content for their classrooms and libraries?
 - What kind of digital content are they buying for their classrooms and libraries?
 - What resources are librarians and teachers using to determine what to buy?
 - What adds value for teachers?

- What are the features of digital books that are important to early elementary school educators?
 - Do teachers like having options on digital books such as “Read to Me” or games?
 - Do teachers want something that is more interactive? If so, what features do they want?

- Strategies for gaining greater visibility with and access to schools/school boards
 - How to make schools and school boards aware of their content and incorporate it into their classrooms
 - How do non-traditional suppliers get into the educational system
 - Who they should be targeting -- Principals? School boards? Who are the influencers now?
 - How to compete with larger publishers who have more resources to devote to marketing

- Insight into elementary schools' and school boards' positions, policies, and practices regarding digital books
 - How can they get information on what school boards do or want to do?
 - What do schools want to pay, and what are they paying now, if anything?
 - What platforms are schools supporting?

5.2. Phase II: Findings from Online Survey of Educators

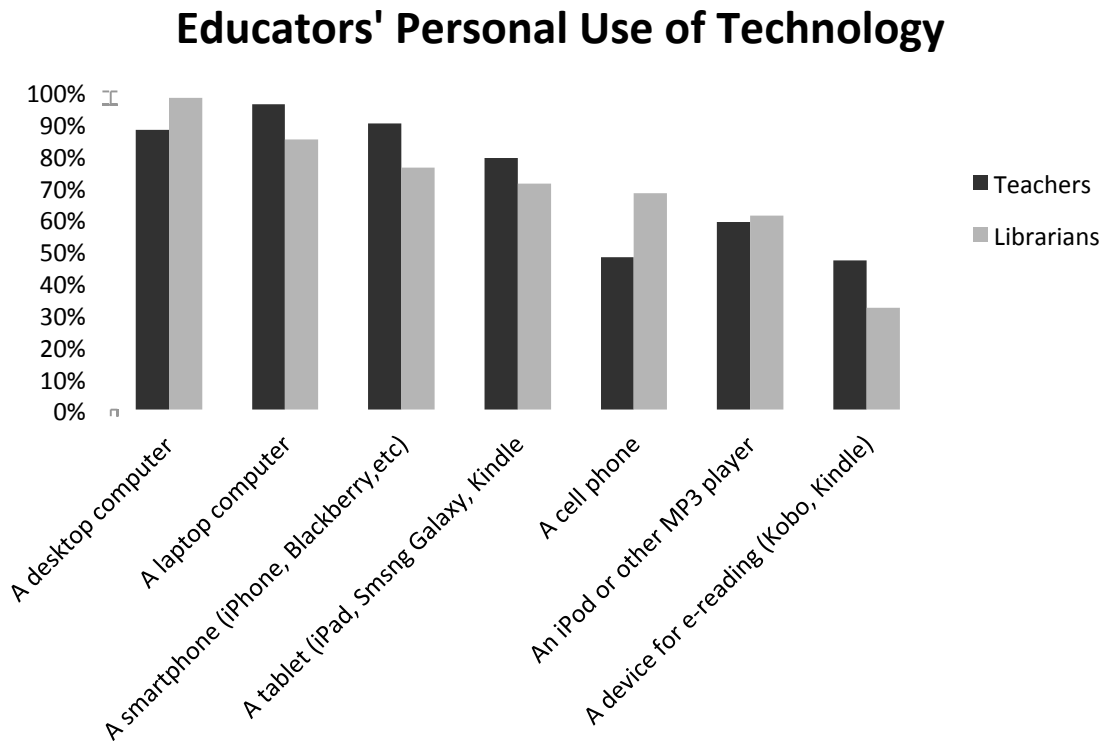
The findings from the survey of educators are derived from an online survey of 81 **first and second grade teachers**, and 41 **elementary school librarians**, all working in Ontario.

Participants were recruited through a professional recruiter as well as through the Story Planet booth at the 2014 Ontario Library Association Super Conference. Educators who reported using digital books were intentionally over-represented in the sample to ensure the validity of digital-book related findings. Additional information concerning participant demographics is contained in Appendix A.

With the exception of subsections A and B, the data in this section (5.2) reflects the subset of sampled educators that reported that their students used digital books in school.

A. Teachers and school librarians utilize a range of technologies both in their personal and professional lives

*Figure 1. Which of the following items do you use, either at home or at work?
(findings derived from entire sample)*

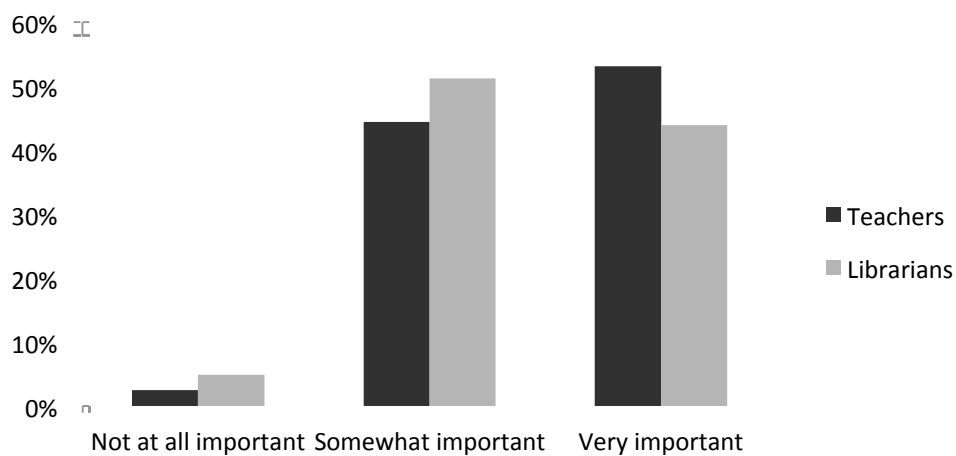


- B. Both teachers and librarians see the value of digital books, with 53% of the teachers and 44% of the librarians reporting that it was “very important” for children to have classroom access to digital books in school, in addition to print books.

Figure 2. How important do you think it is for children to have access in the classroom/school library to digital books (in addition to print books)? (findings derived from entire sample)

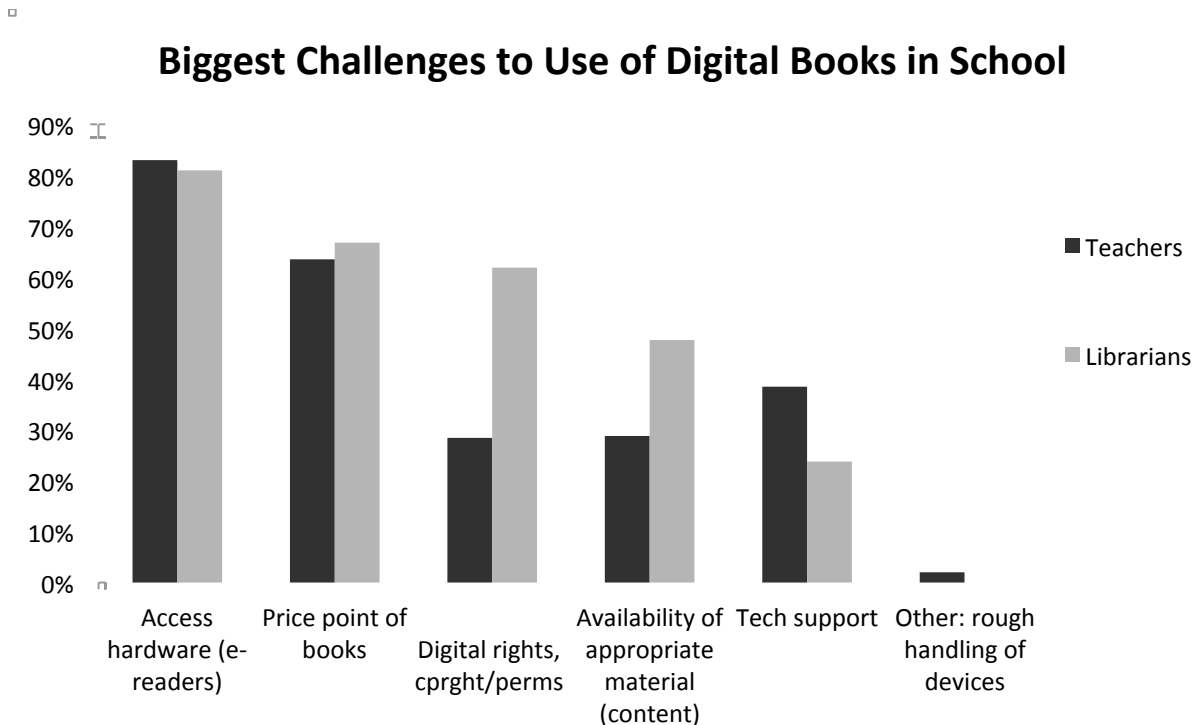
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Importance of Students Having Access to Digital Books in School



- C. Teachers and librarians agree on the top two challenges to using digital books in schools.
- For 83% of teachers and 81% of librarians the biggest challenge is access to the hardware (e-reader devices).
 - The price point of books is also a factor – it was the next most cited challenge by 63% of the teachers and 67% of librarians
 - Digital rights/copyrights are also of concern, more so for librarians (62%) than teachers (28%)
 - Availability of appropriate content is also an issue for 48% of the librarians and 29% of the teachers.

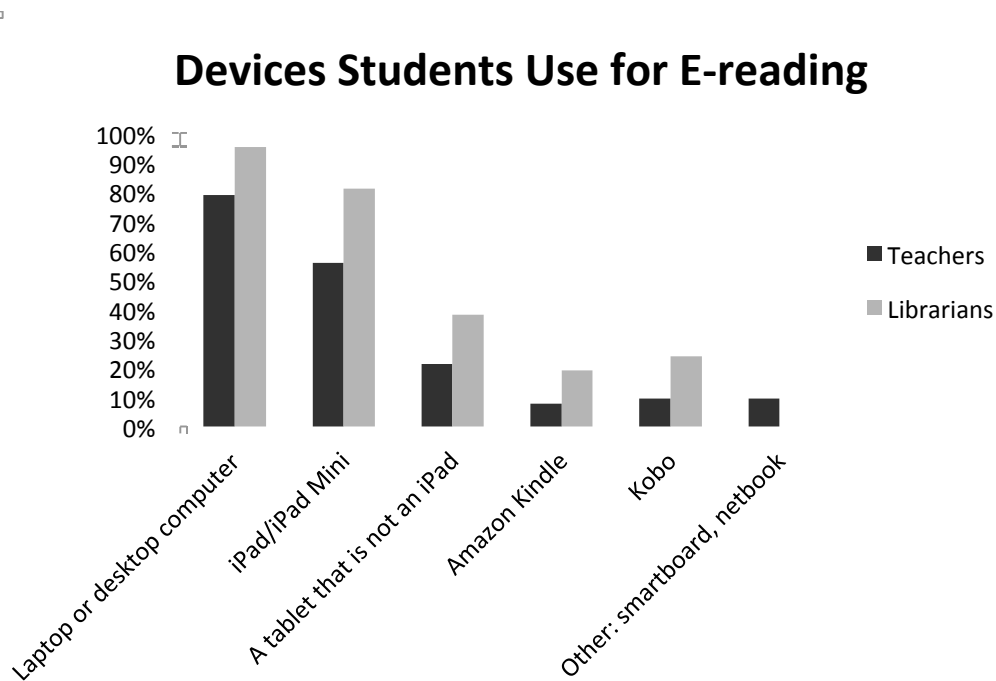
Figure 3. In your experience, what are the biggest challenges when it comes to the use of digital books in school?



- D. A variety of uses are reported for digital books, with the most common one in both classrooms (77%) and libraries (81%) being independent reading. Beyond this, patterns of use are different for classrooms and libraries.
- The second most cited use in classrooms (54%) is classwork/project work, while in libraries it is entertainment (71%)
 - Classwork/project work and completing assignments are also common uses in school libraries (both cited by 67% of librarians)

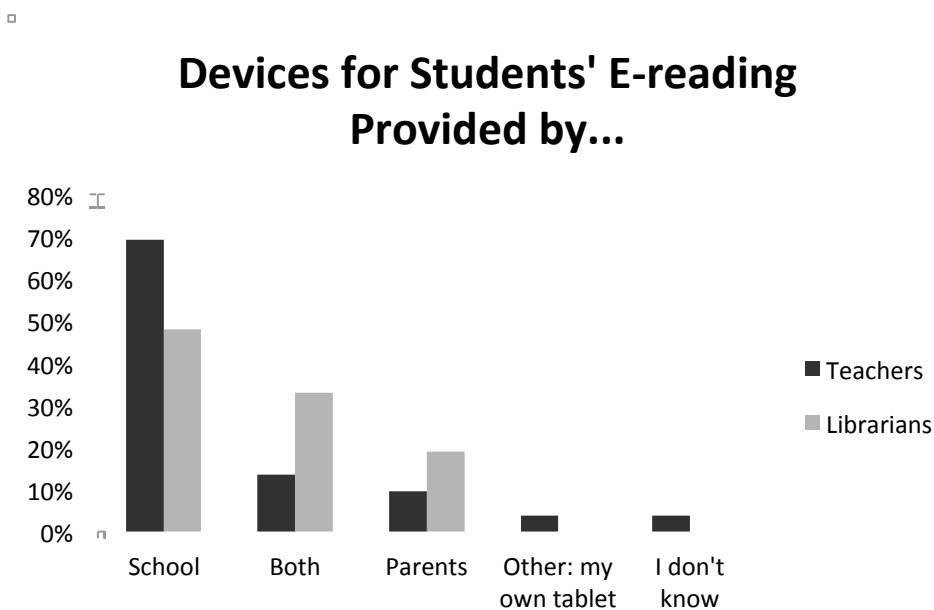
- E. The overall pattern as to which devices are used more in classrooms and libraries is mostly identical.
- Computers remain the most prevalent device on which students read digital books in schools, with 79% of teachers and 95% of librarians reporting their students use them
 - The iPad/iPad Mini is next, with 81% of librarians and 56% of teachers citing its use. Other tablets and dedicated e-readers had a much lower presence in these schools, with 21% of teachers and 38% of librarians reporting their use.
 - Dedicated e-readers have a smaller presence in classrooms than libraries (Kindle: 8% in classrooms vs. 19% in libraries, Kobo: 10% in classrooms, 24% in libraries), which may reflect more students using devices from home while in the library.

Figure 4. On which of the following devices do students read digital books in the classroom/library?



- F. Both teachers and librarians report that the schools are the main sources for students' devices for e-reading. There is some reported presence in libraries (and to a much lesser extent in classrooms) of students using devices provided by their parents. It appears that Bring Your Own Device (BYOD) practices are being considered and emerging at some of these schools.
- 68% of the teachers and 48% of the librarians reported that the e-reading devices are provided most often by the school.
 - 33% of the librarians but only 14% of teachers reported that the devices were provided by both the school and parents. Since the second highest reported use of digital books in libraries was for entertainment, it might be that in many cases students bring their own devices to use in the library.
 - 19% of librarians and 10% of teachers said devices were provided by parents.
 - 4% of teachers revealed they bring their own tablet and let the students use it.

Figure 5. The device that children use for e-reading at school is most often provided by:



- G. Findings indicate that there are some differences in the way teachers and librarians search for digital books, but peer recommendations and subject area play a key role for both of them.
- The most common ways for both teachers (65%) and librarians (71%) is getting recommendations from other teachers or librarians along with searching by content/subject area.
 - Searching by age is the next most popular way for teachers (48%) but for librarians it continues to be about getting recommendations -- whether from students, teachers, or the education section of digital book sellers (all 57%)
 - Top-rated books are not as significant a marker for either group – this was in the bottom three choices of ways to look for digital books in both cases (31% of teachers, 48% of librarians)

Figure 6. How do you typically LOOK FOR digital books for your students?

Figure 6a.

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How Teachers Look for Digital Books

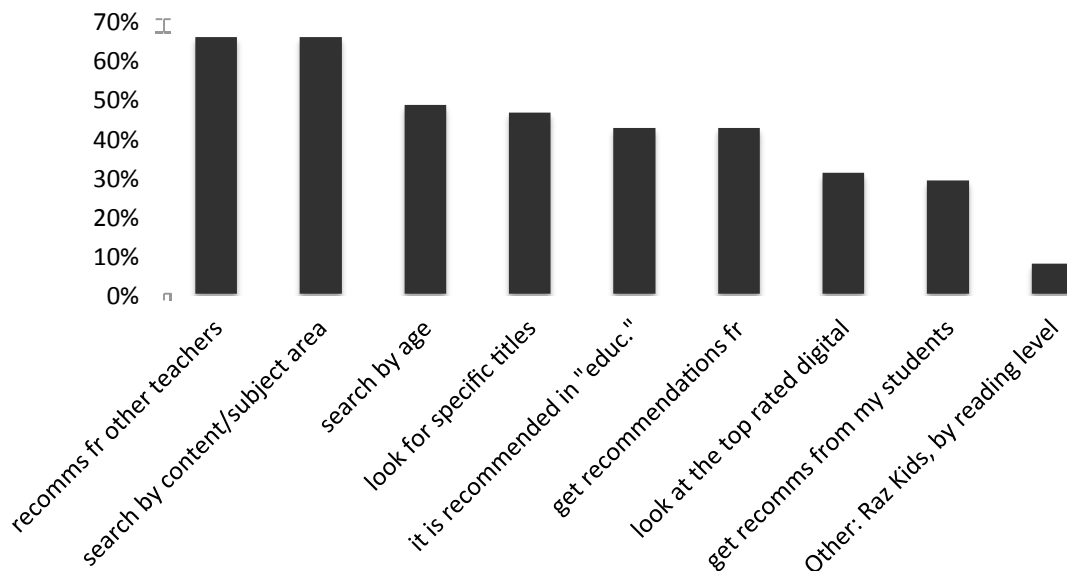
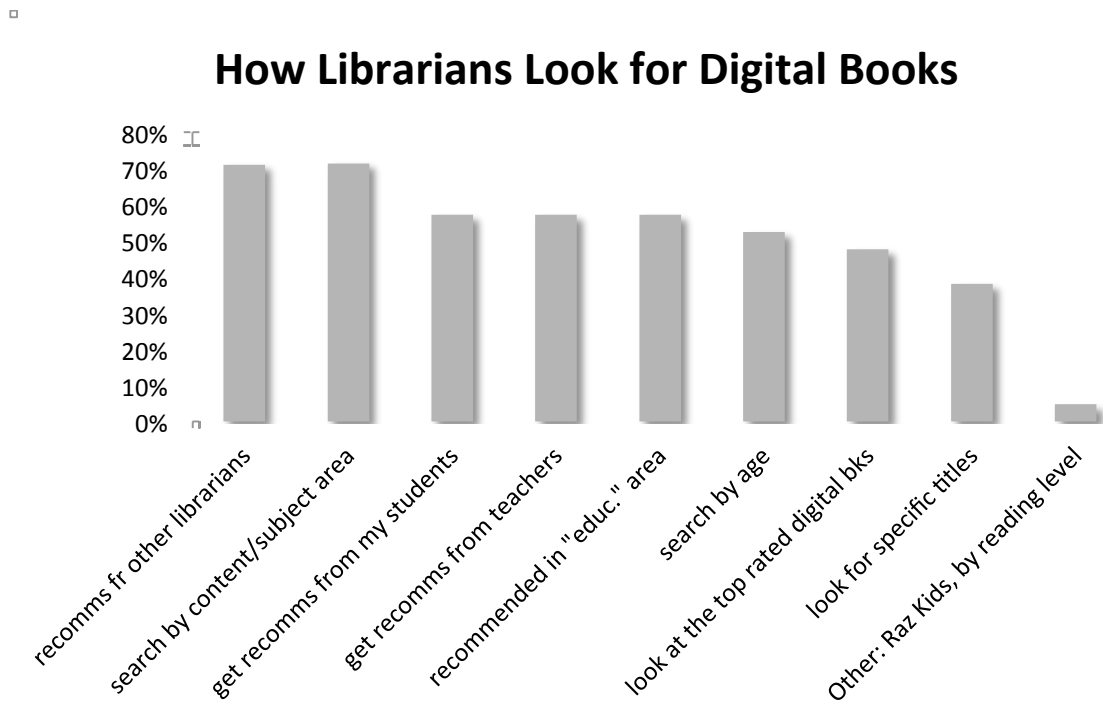


Figure 6b.



- H. There are differences among teachers and librarians in terms of the factors that play a role when it comes to the actual purchase of digital books. This makes sense when one takes into consideration the different environments in which they operate.
- Seeing as how the top ways teachers search for digital books are by content or subject area and through peer recommendations, it is not surprising that the top 3 factors influencing them when it comes to actually purchasing digital books are: “It has a curriculum tie-in” (69%), “I am searching for a specific theme or subject area” (56%), and “I heard about it via word of mouth from another teacher” (48%).
 - For librarians, on the other hand, the top influencer is demand from the students: “my students ask for it” (71%). Peer recommendations (“via word of mouth from another teacher”) comes in next with 62% as well as “it is offered at a good price” and “it gets good reviews”.
 - Books being on the school board’s list of recommended materials matters more to teachers (46%) than librarians (38%).
 - For both teachers and librarians, the least important factors are traditional marketing channels such as advertising, information sent to their emails, and notifications sent through the book, app, or device.

Figure 7. What influences your decision when it comes to PURCHASING digital books for your students?

Figure 7a.

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Purchasing Decision Influencers for Teachers

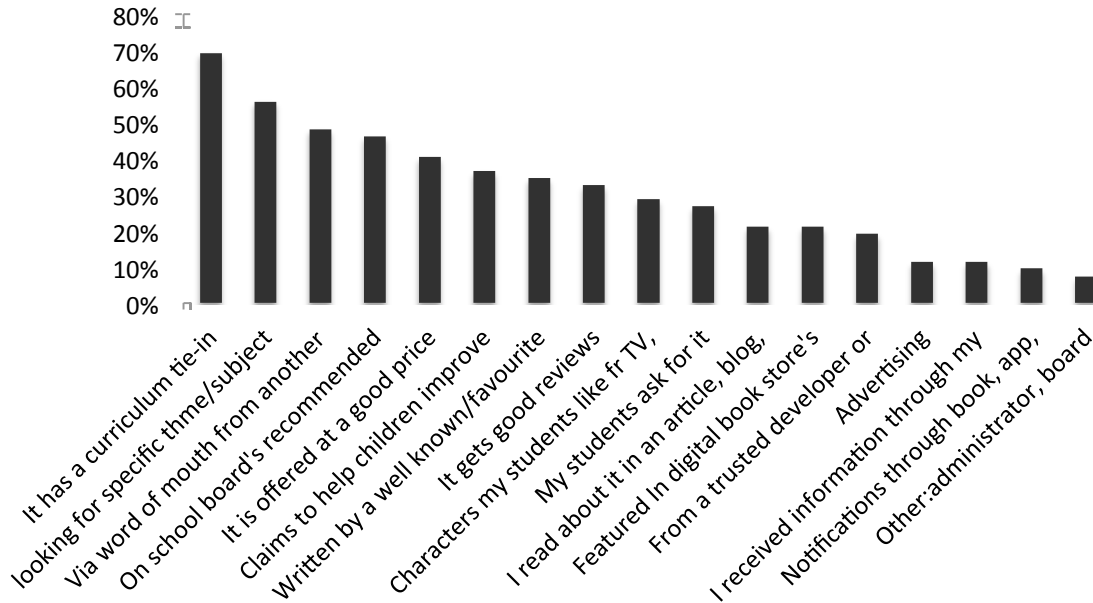
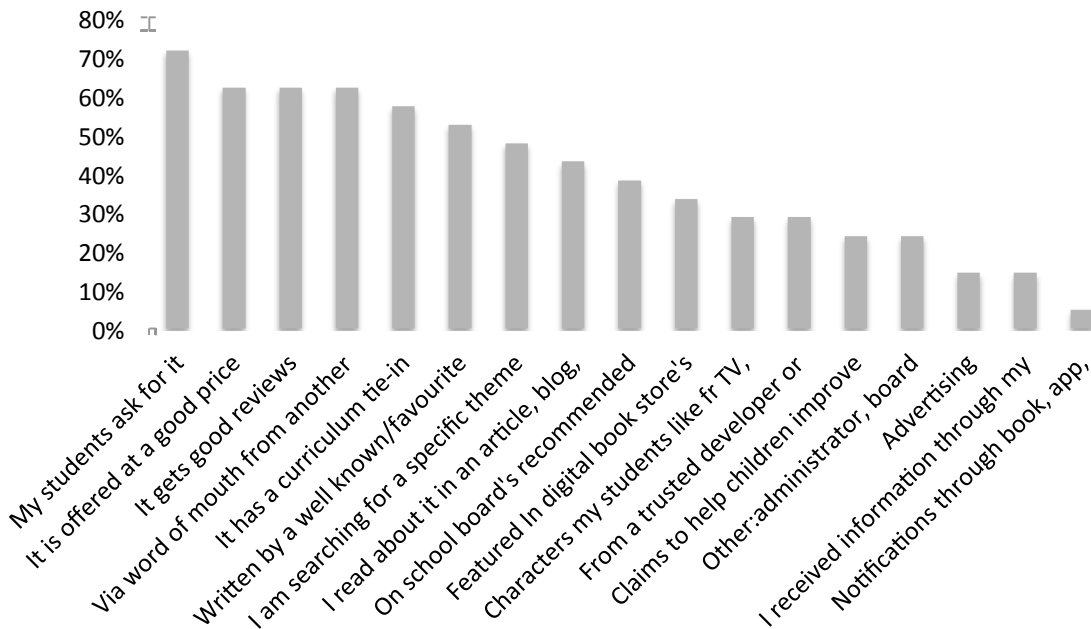


Figure 7b.

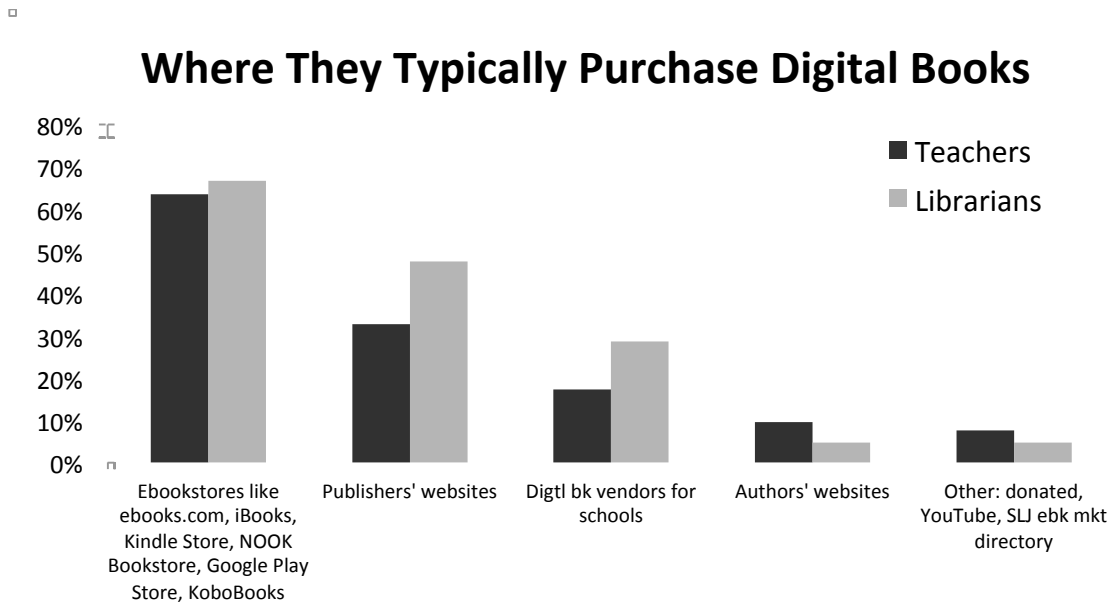
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Purchasing Decision Influencers for Librarians



- I. E-bookstores are the most popular choice (63% of teachers, 67% of librarians) for where to purchase digital books.
 - Publishers’ websites are next (33% of teachers, 38% of librarians)
 - 29% of the librarians and 17% of the teachers also use digital book vendors that offer subscriptions to schools.

Figure 8. From where do you typically purchase digital books for your students?



- J. Findings indicate that there is a ranking of features that are perceived to be beneficial.
 - There is consensus among teachers and librarians as to the top three features that were selected most often as “beneficial,” albeit with a slight difference in the order.
 - The feature 87% of teachers found beneficial is “clicking on a word sounds it out,” followed closely by “words highlight during narration” (85%), and “audio narration of text” (79%)
 - Similarly, 81% of librarians found “audio narration of text” as beneficial, followed by “clicking on a word sounds it out” (71%), and “words highlight during narration” (62%)
 - Interestingly, while 46% of teachers labeled “games provided in the digital book” as “somewhat beneficial,” 15% of them thought they were “somewhat detrimental,” while 8% labeled them as “detrimental.”
 - Likewise, 62% of librarians labeled “games provided in the digital book” as “somewhat beneficial” but 14% perceived them to be “somewhat detrimental.”

Figure 9. Consider the following list of features. Which do you find beneficial or detrimental to your students' e-reading experience when reading an educational digital book?

Figure 9a.

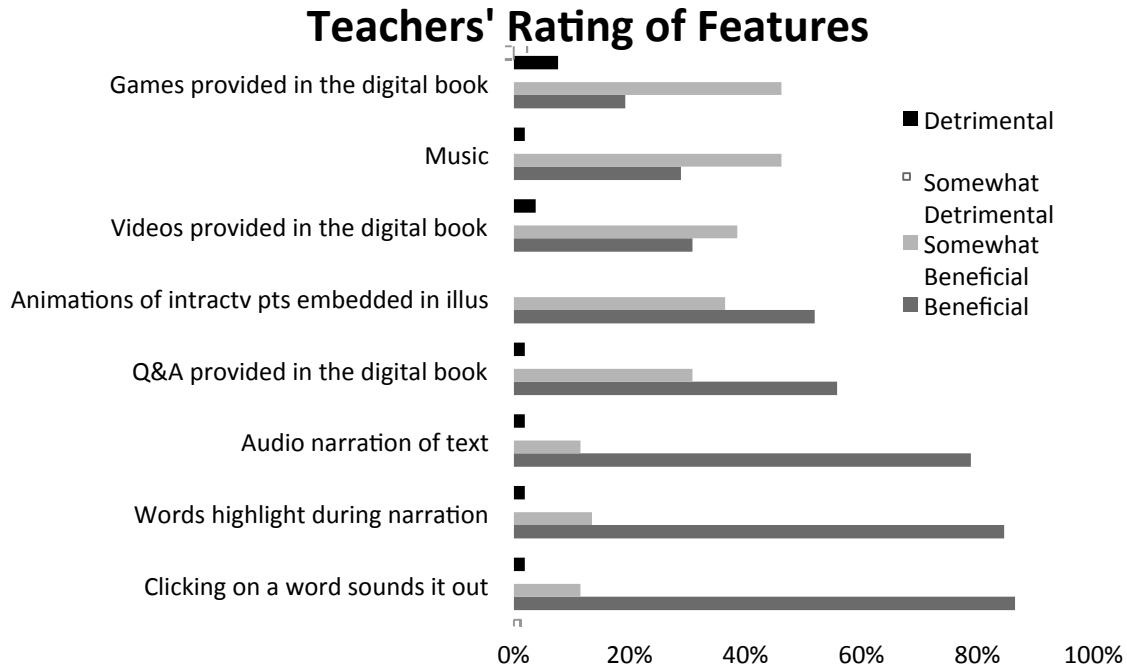
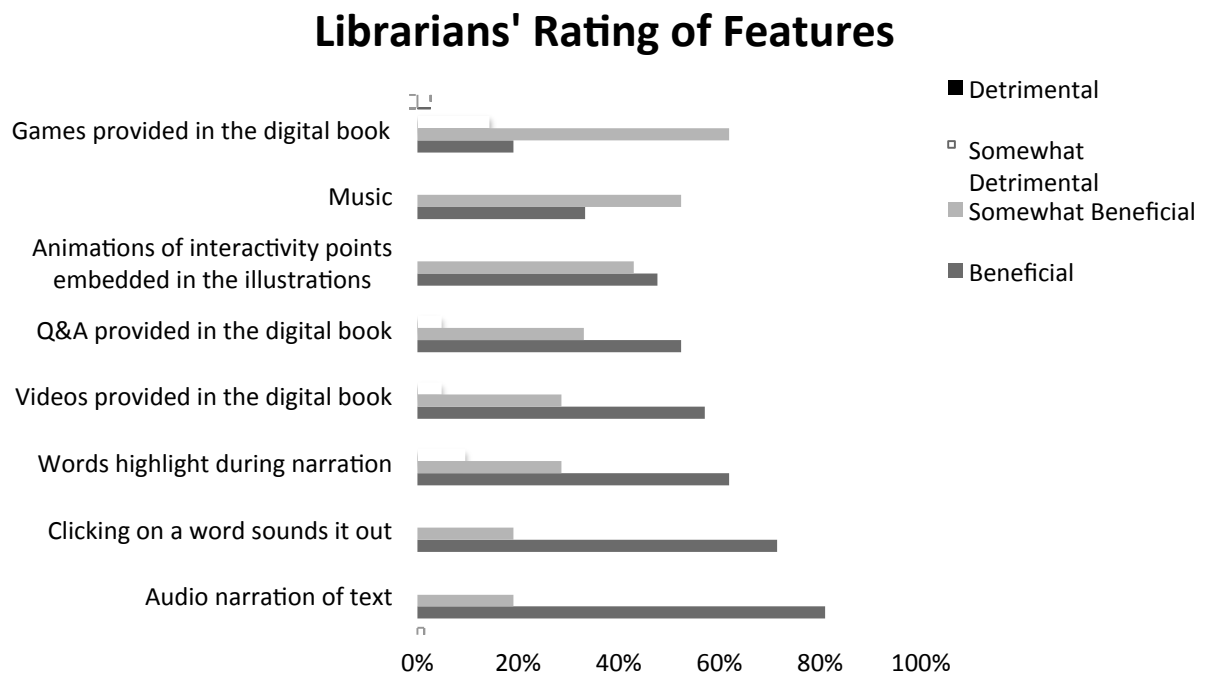


Figure 9b.



- K. Findings indicate that teachers and librarians differ slightly in their perceptions of the top three most important features of an educational digital book.
- In terms of the top three most important features of an educational digital book, the most important one for teachers is “encourages reading /literacy skills” (85%), followed by “interactive content,” and finally “tracks children’s progress”
 - The most important feature for librarians is also “encourages reading/literacy skills” (62%), followed by “interactive content,” and finally “endorsed by your school board” and “aligns with traditional subject areas” (both 19%)

Figure 10. Please select what you consider to be the **top three** most important features of an educational digital book, and number them from 1 to 3, with **1 being the most important**.

Figure 10a.

□

Teachers' Top 3 Digital Book Features

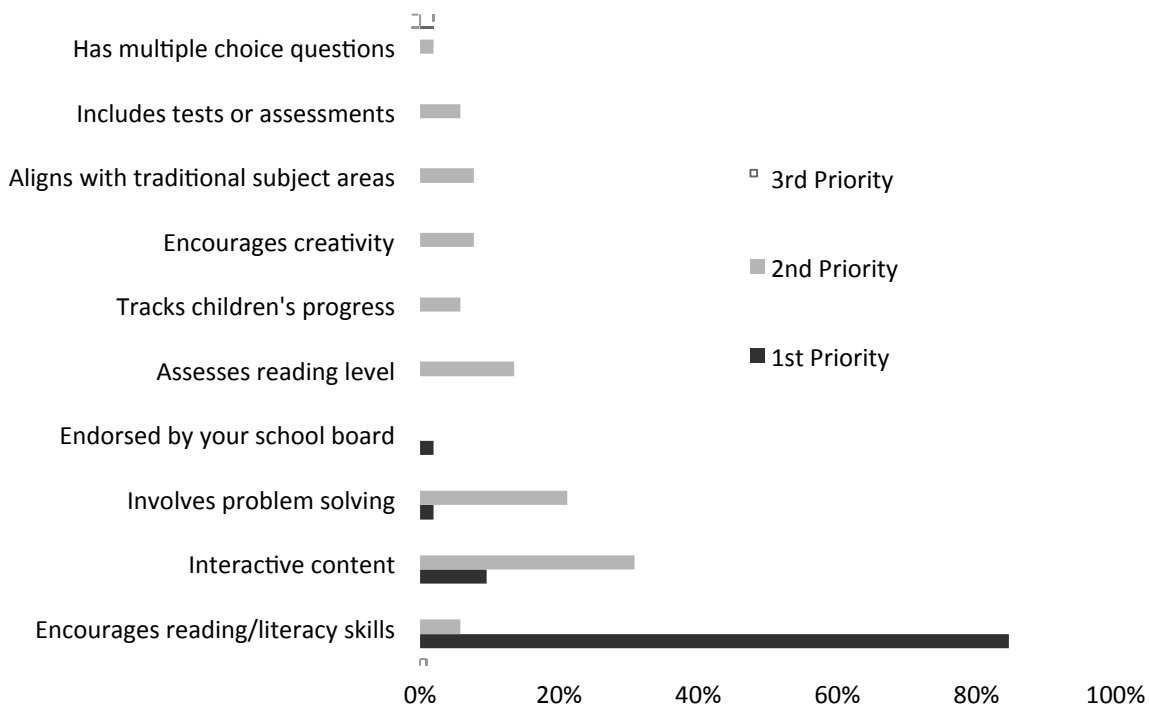
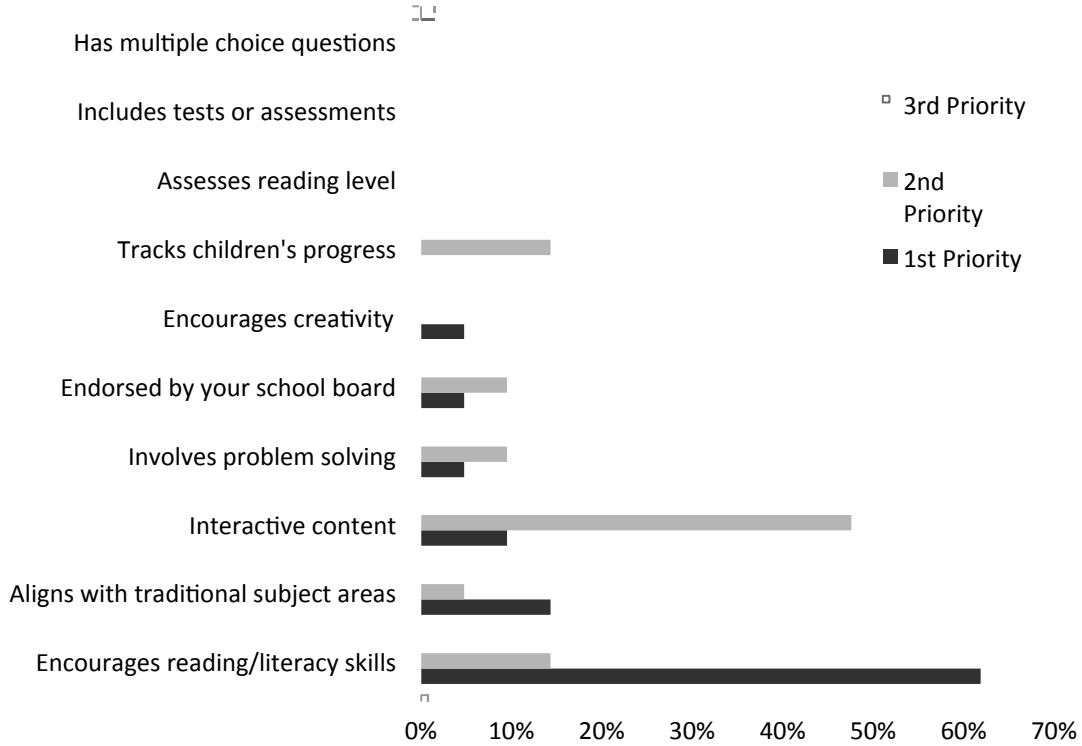


Fig 10b.

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Librarians' Top 3 Digital Book Features



5.3. Phase III: Findings from School Policy Maker Interviews

Interviews were conducted in order to provide insight into current practices and processes concerning the use of technology at the Ontario school, board and Ministry levels. Four interviews were conducted, two with elementary school principals, one with a school board representative, and one with a Ministry of Education representative. The two principals interviewed are from public schools under the Toronto District School Board (TDSB). One of the schools serves a mostly lower income population; the other serves a middle-income population. The school board representative serves on the York Region District School Board (YRDSB). Schools in this district are mostly in urban settings, but they also extend into more rural communities. The schools serve families of mixed income levels. The Ontario Ministry of Education representative is from the Curriculum and Assessment Policy Branch.

Technology in Schools

The school policy makers have a positive attitude towards the use of technology in schools, and reported a variety of technologies currently in use in their schools (e.g., computers, SmartBoards, tablets, Wi-Fi). To date, the focus has been on creating the infrastructure and acquiring the hardware, to be followed by acquiring content for the new technology.

One of the schools described in the principal interviews is less technologically equipped (relative to the other) due to cost constraints. The school in question contains several old stand-alone computers, some SmartBoards, and several iPads. There is also some Wi-Fi connectivity around the school. The iPads are a fairly new purchase and not yet widely used by the students. The school is still figuring out plans for their optimal usage as well as what content they should feature. The other school has Wi-Fi across the school, and each classroom is equipped with one iPad, laptop, and desktop computer. The iPads are used by students primarily for communicating (e.g., recording voice, text observations then posting these) rather than for app use. The school also has two SmartBoards and a projector. The library has computers as well as 15 e-readers. The e-readers are new to the school, and the principal reports they are still figuring out how to integrate them into educational activities and will be exploring how to use them during the next school year. They currently do not have any digital books. This school is also moving towards a Bring Your Own Device (BYOD) approach, which helps stretch the school's supply of tech devices further.

The York Region District School Board representative described the board as being fairly advanced, in terms of technology, compared to other school boards. It has made a significant investment in hardware and infrastructure (wireless access) for its schools. They already have a progressive BYOD approach and wireless is available at all their schools. The technology present

in their schools runs the gamut from PC and Mac computers to tablets and 3-D printers. At this time they have some digital resources (Discovery Education), but for now securing more content is taking a back seat.

According to the representative from the Ontario Ministry of Education, the Ministry has for many years encouraged teachers to use technology in their classroom, as long as it is appropriate for the subject matter and the students. Recently, the Ministry has been involved in some innovation research across the province, supporting school boards' work in exploring and expanding their use and understanding of technology to support teachers and enable learners. For example, a number of district school boards are looking at how they might make use of working in the cloud. Others are looking at particular sorts of technologies that might support learning in math or science. Discussions are ongoing about elements of the research that show promise and how they might be more widely applied.

Digital Books/Resources

Principals reported that they have not yet acquired digital books for their schools. They were not aware of any specific policies or recommendations made by the TDSB on the use of digital books in schools. The school board representative reported that YRDSB is taking a "wait and see" approach to digital books, and that it will be developing a more long term strategy in the next school year. During that time he expects them to release several requests for proposals (RFPs) around digital resources. However, he also said that some of the schools have their own vision and are moving forward and not waiting for the board.

At the Ministry level, there is no directive around the use of digital resources. This sort of decision is left to individual school boards.

Budgets for Digital Resources

Ontario school boards are funded through a "funding formula," within what's called the Grants for Students Needs (GSN). The Ministry allocates funding to each board using a formula that's based on student enrollment and the unique needs of the students in each board. The number of schools, their distribution, and their physical condition are also factors. Boards then make local decisions needed to serve and educate their students, including how much money is given to individual schools. While schools are expected to support the priorities of their board and the province, they are also given some choices in the way they spend money so that they can meet the needs of students in their communities.

YRDSB manages the technology budget for its schools centrally. This includes funding for any resources purchased at the enterprise level (i.e., district school board-wide), as well as for hardware, infrastructure, and some professional development for teachers (to learn to use the

hardware and resources). Their schools can also sometimes access some of their own budgets to purchase additional technology. Cost sharing is another option, where YRDSB matches, up to a certain amount, the funding raised by the schools.

At the local level, both principals reported not having a budget line specifically allocated to digital resources. Rather, these fall under categories like “classroom materials” or have to be purchased with funds from their budget for textbooks and learning resources or through outside funders and donations.

Procurement Process

The school board’s purchasing department issues RFPs for any products or services the district school board requires. Principals have to go through the purchasing department in order to acquire anything. Materials are typically purchased through vendors that have been approved by the school board.

Textbooks have to go through a Ministry of Education vetting process in order to get on the Trillium List of approved resources. Once on the list, schools are able to purchase them. However, supplemental resources (i.e., those which cover less than 20% of the Ontario curriculum) do not have to be approved by the Ministry. District school boards and schools have the freedom to select and purchase their own supplemental resources. Should schools wish to purchase something from a vendor that is not in the system, they are able to do so (through the Purchasing Department) as long as the materials are deemed appropriate and not offered at a lower cost by an approved vendor. One of the principals also reported attending book fairs organized by their board’s library learning department to which approved vendors are invited to exhibit and promote their products.

Challenges of Digital Resources and Content

Cost is, not surprisingly, a big challenge. All pointed out that the costs for equipping schools with technology involve not only the hardware, but the content and the required licences for the content as well. Licensing and maintenance costs were cited as being prohibitive. YRDSB is trying to develop a strategy for the purchase, licensing and distribution of all digital resources that can be integrated into a usable system for the district school board and its schools.

Another concern is that professional development for teachers is expensive. Not only do teachers need to be shown how to use new hardware and resource systems, they also need to be trained to think about pedagogy and classroom practice in a different way when using technology.

An added complication is allowing for customization of resources – so that individual schools are able to acquire and access the digital resources that best meet their communities’ needs.

Potential vendors must work to ensure that their products are designed to function as seamlessly as possible within the constraints set up by a school’s internet access, hardware, and software. Technical problems that arise with the use of digital products can be difficult to address, given the number of devices potentially affected and a school’s limited resources. For example, if a class is using a digital resource and the technology shuts down due to bandwidth issues, this not only frustrates teachers but also might cause them to become reluctant or unwilling to use the technology again.

Having to access multiple websites with their own respective logins was also identified as challenging, with teachers getting frustrated at having to enter different login credentials in order to access various digital resources.

Ideally, both the principals and the school board representative would like to have a single sign-on user, easily accessible, centrally controlled system of digital resources that allows schools to secure and add the resources that are best suited to serve the needs of their community, within a licence arrangement established at the district school board level.

Content that Is Needed

Whether in the guise of digital textbooks or supplemental resources, the principals and school board representative cited the following as content that is lacking or underserved by current offerings:

- French content is needed for French immersion schools and French as a second language classes. According to the school board representative, a lot of publishers don’t have product in this area because it is not a large enough market for them.
- Canadian content is always needed – in social studies, history, geography. Similar to French content, other than a Canadian publisher like Nelson, the bigger publishers are not active in this area.
- Math books that reflect the current inquiry-based, critical thinking approach to teaching and learning.
- Up to date non-fiction books that cover topics that are attractive to children, such as nature or animals. Also, multi-language books that offer support in several languages so that children can, for example, hear the text read or view a video in their native language.

Gaining Access to Schools and School Boards

As previously mentioned, procurement of resources takes place through school boards' Purchasing departments. The school board representative acknowledged that it can be difficult to establish relationships with school boards and their Purchasing departments (especially when RFPs are issued). Nevertheless, the following thoughts and ideas were proffered as ways to embark on a dialogue with schools and district school boards.

- Representing a niche approach or subject area -- especially an underrepresented one such as advocacy, equity, innovation, etc. --- can help one stand out from other vendors
- Providing teachers and students with a connection to living authors is a distinguishing feature
- Become familiar with individual school boards and what is going on with their acquisition procedures
- Don't just target the Purchasing department. Consider also approaching the Curriculum Services department (may have a different name at other school boards). If someone has an amazing math resource, for example, they should get to know the school board's math specialist.
- Consider doing some grassroots work first before approaching the Purchasing or Curriculum Services departments. Get to know individual schools and if possible meet some of the teachers and show them your products. This can then be leveraged to gain access to the school board. An additional benefit is that if the teachers like the products, this could lead to their alerting their principal about them. The principal would in turn reach out to the Purchasing department to request them.

5.4. Phase IV: Review of Literature and Market Data on Digital Books

The review begins with a market overview of recent trends in the market presence and use of digital books in Canada and, to a lesser extent, the US. Recent statistics on readers' preferences for and use of devices for digital reading, and the context of that reading are also reported. Additionally, research on the ways that digital books may contribute to literacy, story comprehension, reading enjoyment, and vocabulary development are covered. Finally, relevant information for developers and marketers of digital books regarding ethical considerations and tactics for marketing to schools is covered. Full results of this Phase are in Appendix B. Highlights of the review include:

- The use of digital books has increased dramatically over the last 5 years, in terms of both raw numbers and as a percentage share of the overall book market
- Over the last 2 years, growth in digital book purchases (as a per cent share of the entire market) has leveled

- The percentage of people who read digitally and the frequency of digital reading have increased steadily over the past two years
- Presently, children use digital books more at home than in school
- Increasingly, digital reading is occurring on general-purpose tablets and smartphones with colour screens, in addition to black and white e-readers.
- There is a range of consumer preferences for digital and print books
 - Many value both
 - Research indicates that children enjoy both print and digital books
- Differences, however, exist between digital and print reading experiences and access
 - Print books have advantages (e.g., no battery required, a high contrast display that is readable in any form of light, are easily shared) that are overshadowed by digital novelty
 - Digital books require technology and currently lack a universal format
 - Enhancements (e.g., audio/video add-ons, interactivity) in digital books are a distinguishing feature from print and impact the reading experience both positively and negatively
 - “Considerate” enhancements or “add-ons” – interactive features that may deepen readers’ involvement with the story
 - “Inconsiderate” enhancements or “add-ons” -- interactive features that have no relation to the story and seem likely to distract children
- Differences in learning between print and digital books
 - Research indicates that children can learn from both
 - No overall dramatic differences in learning outcomes have been identified, although there is evidence that specific special needs subgroups benefit from digital books
 - Research indicates that digital book design often inhibits learning effectiveness – as a result of distracting, “inconsiderate,” non-essential interactive features
 - Simultaneously, research indicates that digital books offer enormous opportunity for enhancement when design includes “considerate” add-ons (e.g., highlighting of words, voiceover narration, dictionary, etc.)
 - Given the recent introduction of digital books, the research literature is understandably nascent. Ongoing scientific, evidence-based investigation is necessary
- Currently, the universal acceptance and use of digital books in schools has not yet occurred. The adoption and integration of digital books in schools remains dependent on individual decision makers including administrators, school boards, parents, teachers and students.
 - Administrators are appropriately focused on the potential of digital book use as a means to reduce costs

- Teachers’ concerns focus on the educational value and impact of digital books. Simultaneously, teachers report that their administrators are more focused on instructing students in how to utilize the technology
- Parents view the integration of digital content and technology as critical, preparing their children for a digital future. They report a desire to increase their own technology skills in order to keep pace with their digitally native children
- Parents, teachers, and administrators report concerns on the use of social networking features focused on their children’s online safety, privacy, and potential exposure to inappropriate material

6. Integration of Findings and Conclusion

The shift towards the use of digital content in schools is inevitable, and appears to provide an exciting prospect for digital book creators/publishers by dramatically increasing the demand for high quality digital content. Digital book creators/publishers can take advantage of this opportunity by matching their offerings and policies to the strategies that school boards develop to licence and utilize digital content.

Digital Book Use

Sales of digital books have increased dramatically over the last five years, in terms of both raw numbers and as an overall market percentage. While the growth in digital book purchases has begun to level off, the percentage of people who read digitally and the frequency of digital reading have increased steadily. Although use is far from universal, digital books are becoming more and more integrated into the daily lives of children and adults.

To understand the developing use of digital books, it is crucial to understand the contexts of use. Digital reading does not occur in a vacuum; it is affected by the context in which it occurs, including the devices used, the availability of those devices, the availability of content for the devices, the perceptions and attitudes of the user, and the broader social situations in which people read.

Digital reading occurs on a variety of devices. The most widely reported devices for digital reading in the home are various specialized e-readers; in school, they are laptop/desktop computers. This pattern of device use reflects the pre-existing availability of computers in schools, while that of e-readers is currently limited. However, many students use (and digitally read on) mobile devices that they bring from home. This use of personal devices reflects a shift in attitudes within Ontario schools towards the acceptance of digital device use in the classroom. This emerging consensus around a “bring-your-own-device” (BYOD) policy is one

way for schools to drastically increase the number of digital devices available to students. The transition to BYOD policies is important, as it impacts the choice of platforms digital book creators/publishers will need to consider for their products.

The digital books that students read in school, whether on their own or the school's devices, are typically selected by their teachers. Ontario educators have considerable flexibility in their choice of supplementary resources (materials that cover less than 20% of the Ontario curriculum) to use in school. Textbooks are vetted by the Ontario Ministry of Education and purchased at the district school board level. However, the choice of which supplementary resources to use is up to individual schools and they are usually selected by individual teachers and librarians.

When educators look for digital books to purchase for in-school use, the most common determinant in their search is a recommendation from another educator. They also commonly search by content subject areas, or students' age. An increasing emphasis on the digital format as a medium for in-school reading may change the way educators search for books by restricting the choices to those available in a specific digital format (to ensure compatibility with available devices), or providing new systems in which searches are carried out.

Digital Books as Educational Tools

Schools are increasingly open to students' in-school use of digital devices because of teachers' and administrators' recognition that the devices are important educational tools, particularly as they afford the development of literacy skills. Most of the educators considered students having access to digital books in school to be "somewhat" to "very" important. The majority of those educators who reported not currently using digital books in their classrooms cited a lack of availability or funding in their schools as their reason for non-use.

Research shows that the potential of digital books as educational tools is closely connected with the design of the book. This is mirrored by the perceptions of educators and education researchers, both of whom favor design features that aid literacy, such as built-in dictionaries, highlighting of words in time with a voiceover narration, and the ability to tap/click on a word to hear it sounded out. Interactive features that are irrelevant to the content or take the reader away from the activity of reading are frequently considered to be less beneficial or even detrimental to students' learning experience. This perception is supported by research findings.

Research findings involving consumer preferences for digital books and their features, as well as the educational efficacy of the books themselves, have important limitations. Particular features may be important in some digital books, but not in others. For instance, interactive

visual content may be very useful for learning certain math and science concepts, but detrimental to the development of literacy skills. Rather than treating digital books or their features as having specific effects on learning outcomes, they are better understood as a medium capable of supporting a variety of different activities.

Future Needs and Challenges

An essential element influencing the future of digital books in education over the next few years will be the successful integration of digital technology into educational contexts. This likely includes a gradual, partial shift away from the use of printed textbooks and other materials, and an increase in the availability of digital devices and content in schools. The way this shift plays out will shape the future of digital book use in education in Ontario, as well as the availability of specific digital books within particular school boards.

As this shift occurs, the central challenge for school boards is providing access to educational content on the digital devices used in schools. Ontario district school boards are seeking an arrangement whereby general licensing for content is provided at the district level for a single enterprise fee, allowing individual schools to purchase products through this licence. Ideally, the arrangement would include a single interface for educators (one username/password) for accessing educational content. For example, one district school board hopes to set up a shared metatag database that allows schools to licence a broad variety of different products (e.g., math content from Pearson, Nelson, or McGraw-Hill) through a system set up at the district school board level. Over the next year, several Ontario school boards are planning to release requests for proposals (RFPs) for developing and implementing these systems. Until an affordable and usable system has been worked out, school officials are holding off on acquiring significant digital content.

School boards' desire for digital content presents an important opportunity for industry partnerships or for others who are able to figure out ways to make a wide array of content from multiple publishers available on such a centralized system.

A crucial consideration with these systems is the cost of the digital content they make available to schools. Currently, digital content is prohibitively expensive for schools. For instance, a math program that one school board considered using was initially priced at \$62/student. A drop in price to \$20/student was still considered to be too high for a single software program.

While school policy makers see the shift towards digital content as inevitable, they are financially incapable of paying for significant amounts of digital content while continuing to pay for traditional print resources. Therefore, a feasible financial arrangement is most likely to

involve licensing an extensive amount of digital content from a single supplier, i.e., an amount large enough to incur a wholesale discount. School officials are hoping for something similar to the “textbook model” at a similar cost. Until such an arrangement can be made, schools are planning to continue using print textbooks.

It is important for producers of digital supplementary materials to pay attention to these issues. Although Ontario educators currently have some flexibility to purchase whatever supplementary materials they wish to use (provided these are or can be approved by their school board), new constraints on the availability of content to educators are likely to emerge with the shift towards digital. Supplementary resources must work on students’ digital devices, which raises issues of compatibility (i.e., ensuring that the content is in a format that is compatible with the device used) and accessibility (i.e., the content is easily reachable on students’ devices). For these reasons, digital book creators/publishers should plan to make their supplementary products accessible through the licensing and software frameworks that district school boards plan to develop. In order to do this, it is essential to pay attention to the release of RFPs from school boards, since these will specify their needs.

Digital books that are compatible with a school’s needs are still unlikely to be used unless they are visible and made known to educators. Successful marketing of digital books to schools involves developing contacts with various school board- and school-level stakeholders that can be leveraged to promote products to an otherwise inaccessible audience. The most promising approach is for digital book creators/publishers to develop a network of connections in order to capitalize on the various ways that different stakeholders can promote the adoption and purchase of specific books.

District school board officials, such as members of the purchasing or curriculum services departments, are important contacts insofar as they are involved in the creation and review of RFPs for digital content delivery systems and other digital needs, and the assessment of proposals themselves. However, these officials are likely to be difficult to contact, especially after the release of an RFP.

Educators are likely to be very useful contacts. If they are convinced of the utility and value of a product, they can facilitate its in-school use as well as mediate its promotion to higher level stakeholders in the school board who would otherwise be unresponsive or out of reach. Ontario teachers and school librarians have substantial power in their choice of materials. Although any resources purchased must be approved by the school board, materials that teachers request are generally approved unless they are objectionable.

The digital books themselves play a crucial role in developing relationships with stakeholders at various levels. Notable products provide a reason for education stakeholders to form relationships with digital book creators/publishers. This involves everything from developing novel interfaces for digital reading to providing content that addresses a specific niche overlooked by larger publishers. For instance, there is a particular need for Canadian content as well as French language content. Digital book creators/publishers may also set themselves apart by facilitating connections to living authors for schools. Providing a more personal and customized (as opposed to impersonal) sales process can be another point of distinction from larger, more institutional-type publishers.

There is substantial uncertainty in the future of content delivery as district school boards and schools figure out how to adapt to the digital age. Although larger, established content producers have certain advantages in marketing digital products, the unique possibilities of a new medium offer previously non-existent opportunities that may favour smaller digital book creators/publishers.

Conclusion

At a time when the publishing industry faces historically unprecedented challenges, the shift towards the use of digital content in schools presents a unique opportunity, since schools continue to require licensed content from reputable sources. Although digital books have already entered the consumer market, and are already being used in some schools, this use is anticipated to increase dramatically as digital devices become an integral part of educational practice. Ontario digital book creators/publishers can take advantage of this situation by developing products that match the needs of educational stakeholders. To do this, producers must stay abreast of the unfolding efforts of schools and district school boards to make the transition to the use of digital content, while drawing on existing knowledge about what works, and using ingenuity to adapt this to the challenges of a new medium.

7. Recommendations

The following recommendations are derived from an analysis and synthesis of the findings from the four phases of the Project.

Description/Finding	Recommendation
Formats and Features of Digital Books	
<p>Accessibility issues arise due to the use of different devices for digital reading. Computers remain the most prevalent device on which students read digital books in schools, followed by the iPad/iPad Mini as well as other tablets. Other devices used included the Kindle, Kobo, SmartBoards and netbooks.</p>	<p>As is the case with the trade market, individual publishers (or industry consortia) may be well served by making digital books available to the educational market in more than one format, or in formats that work across multiple devices, beginning with those that are more prevalent in schools.</p>
<p>Enhancements in digital books are a distinguishing feature from print that can affect the reading experience positively or negatively.</p>	<p>Digital book creators/publishers should consider including the types of interactive features educators identified as helpful for students, such as a dictionary, voiceover narration, highlighting of words in time with narration, etc. Simultaneously, creators/publishers should consider avoiding the use of “inconsiderate” features.</p>
<p>Interactive features educators consider beneficial for students include having a word sounded out when clicked on; audio narration of text.</p>	
<p>The most important features of digital books according to educators are those that encourage reading/literacy skills.</p>	
Marketing & Communications	
<p>It is primarily teachers and librarians who select which digital books will be available to their students.</p>	<p>To increase visibility in the education community, digital book creators/publishers should consider doing outreach to schools and attending national and local teacher and librarian conferences, as well as making authors available whenever possible.</p>
<p>Peer recommendations are the most common way teachers and librarians look for digital books, along with searching by content/subject area.</p>	<p>In order to obtain some insight into educators’ current issues and concerns as well as the materials they are using in school, digital book creators/publishers should consider familiarizing themselves with the more popular teacher blogs, websites, Facebook groups, etc. that educators frequent.</p> <p>Encourage educators to post recommendations</p>

Description/Finding	Recommendation
	and reviews of books on social media and teacher blogs.
Important factors influencing teachers' purchase of digital books are: curriculum tie-in, deals with a specific theme/subject area, and peer recommendations.	Digital book creators/publishers should consider including the curriculum or subject area prominently in the digital book's title and/or description so that their products are easily searchable.
The top factors influencing librarians' purchase of digital books are: student demand, good price, peer recommendations, and good reviews.	<p>Digital book creators/publishers should consider monitoring relevant pop culture and youth sites in order to be knowledgeable of the context in which their target audiences lead their lives in order to develop appropriate content and marketing.</p> <p>Digital book creators/publishers should consider developing and implementing student-targeted marketing initiatives to increase awareness and drive student interest in their books.</p>
Educators purchase digital books through ebookstores.	Digital book creators/publishers should consider providing multi-channel distribution for their products to ensure their availability in the most popular ebookstores.
<p>The ability to provide more personal experiences -- either during or after the purchase phase -- to both teachers and students, is a distinguishing feature.</p> <p>Providing a connection to living authors is a plus.</p>	<p>Digital book creators/publishers (and industry partnerships, if applicable) should encourage their sales teams to be familiar with the unique characteristics and needs of the school boards and schools they contact.</p> <p>Digital book creators/publishers should also organize school visits or classroom Skype chats with their authors for clients.</p>

Description/Finding	Recommendation
Market State / Timing	
<p>The percentage of people who have read digitally, and the frequency of digital reading, have steadily increased over the last couple of years. While the use of digital books in schools is not yet universal, school policy makers expect it to become more widespread and mainstream.</p>	<p>With decisions about content acquisition not yet fully in place, this is an opportune time to approach entry to this market, especially for industry-wide partnerships seeking to provide content delivery systems to schools.</p> <p>Individual publishers as well as the digital publishing industry should consider initiating efforts to make inroads into this market while it is still in flux.</p>
<p>There are currently no specific policies or directives at the school board or Ministry of Education level concerning the use of digital books or resources in schools.</p>	
<p>The interviews with school policy makers reveal that much of the focus on technology has been on the procurement of hardware devices and infrastructure development. Decisions about content acquisition for the devices have not yet been finalized.</p>	<p>Digital book creators/publishers and industry partnerships should identify the first tier school boards and schools they would like to target and become familiar with their goals and initiatives.</p>
<p>YRDSB is planning to develop a more long term strategy for digital books/resources this coming school year.</p>	<p>Monitor the release of RFPs from school boards hoping to set up digital content delivery systems.</p> <p>Identify the individuals that are strategically useful to approach (especially teachers, principals, and the curriculum and purchasing departments within school boards), and devise and implement an outreach plan.</p>
Content Needs	
<p>There is not a lot of content available in French.</p>	<p>Digital book creators/publishers should create products that will fill the gaps identified by educators. Going forward, market research may be a useful tool to identify gaps in the market.</p>
<p>Canadian content – in social studies, history, geography – is always needed.</p>	
<p>Schools need to refresh their library collection with materials that are up to date, especially in non-fiction.</p>	<p>Take advantage of opportunities to fill specific niches (e.g., by providing French language or Canadian content).</p>
<p>Non-fiction books on topics to which children are drawn are needed. Non-fiction digital books whose content can be updated and is appealing to children are desirable.</p>	

Description/Finding	Recommendation
Education Market	
School purchases have to go through the District School Board's Purchasing Department.	Digital book creators/publishers should focus on providing supplementary rather than curriculum materials, which have to undergo a more rigorous approval process.
Schools have more freedom when it comes to choosing supplementary resources (cover less than 20% of Ontario curriculum).	
The adoption and integration of digital books in schools remains dependent on individual decision makers. Administrators are focused on the potential for digital books to help cut costs.	Digital book creators/publishers (and industry consortia that are developing content delivery systems) should keep in mind the needs and concerns of administrators, teachers, parents, and students when developing and marketing their products. Provide them with ways to reach their goals, and carry out ongoing research to stay up to date on what their needs and concerns.
Teachers' concerns focus on the education impact.	
Parents view the use of digital technology as important for their children because it provides practice for the future in which the use of these devices will be widespread.	
Parents, teachers, and administrators are wary of the use of any digital technology that provides social networking features.	
Cost Concerns	
Principals report not having a budget line allocated specifically towards digital books/resources. Monies from categories like "classroom materials" or textbooks are used instead.	During the product development process, digital book creators/publishers (and industry consortia that are developing content delivery systems) should be conscious of the budget constraints under which schools operate regarding digital resources. Attempt to implement fair and reasonable licensing fees.
With funds for digital books and resources coming from the text book or classroom materials budget, schools struggle with licensing costs for digital content.	

This project focused on adults – teachers, librarians, administrators, policy makers -- and their perspectives on digital books in school. Future research should also examine digital books from the point of view of the students. What are their preferences in terms of both content and platform for digital reading? What are their patterns of use, and do these differ when reading for school and when reading for pleasure? Another avenue of research to explore is the professional development that is needed for teachers and school librarians in order to enable the optimal implementation of digital books in schools.



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APPENDIX A:

TOPLINE REPORT OF PHASE II:
SURVEY ON THE USE OF DIGITAL BOOKS IN
ONTARIO GRADE 1 – 2 CLASSROOMS
AND ELEMENTARY SCHOOL LIBRARIES

Prepared by:



Prepared for:



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Introduction

The Story Planet project, *“If We Build It Will They Come? Digital Books In The Educational Landscape”* -- funded by a grant from the Ontario Media Development Corporation (OMDC) -- seeks to help Ontario’s digital book creation community find ways to maximize their investment in the digital shift and grow their business. An avenue that has not yet been fully explored is the educational system market -- an essential commercial purchase landscape for children’s books. This project aims to provide a greater understanding of the use of and needs for digital books in Ontario schools to help the project’s partners’ (digital book creators) grow their digital book business by entering and establishing a presence in the education market.

The project involves a **four-phase** program of primary and secondary market research. **Phase I** consists of individual interviews with several of the project’s partners in order to identify their informational needs and set the stage for the rest of the research. **Phase II, the focus of this report**, is comprised of an online survey conducted with Ontario-based first and second grade teachers and elementary school librarians about their perceptions, attitudes, and their students’ current use of digital books in school. To provide an understanding at the policy level, **Phase III** entails individual interviews with school policy makers. Finally, **Phase IV** consists of a review of the existing academic literature and market data on digital books.

With children typically just learning to read in first grade and mastering fluent reading (reading without stopping to figure out words) in second grade, this is a pivotal time in their development. The interactive features that are possible with digital books (e.g., text highlighting, word pronunciations and definitions, etc.) would seem to lend themselves naturally to assisting children develop their literacy skills. The focus of the online survey was thus on educators serving children in these grades. Phase II findings can be used directionally to understand the overall early elementary educator population in Ontario.

All the research is being conducted in collaboration with Story Planet by the Michael Cohen Group (MCG), an applied research and evaluation firm with extensive experience and expertise in the areas of children, media, and education.

1. Background

Digital versions of printed books (typically referred to as digital books or e-books) have existed for quite some time – an early example being Project Gutenberg, which began in 1971 - but it has only been relatively recently that there has been widespread consumer interest in and usage of them. Both devices and software for digital reading or e-reading have been developed since the 1990s, but it has been the rapid speed of innovation and development in the personal technology space over the past 7 years that is behind the increased momentum of the evolution and availability of digital books.

Widespread consumer interest in and adoption of digital books took off in the years leading up to 2010, with the launch of various specialized e-readers such as the Kindle, the Nook and the

Kobo. In addition, the introduction of the iPad and other tablets with their corresponding book apps, has contributed to the trend of enabling people to read digital content anytime, anywhere, and on many different platforms.

Recent Trends in the Sales of Digital Books

Sales of digital books went through an explosive growth period between 2009 and 2012. More recently, a slowdown in this growth has been reported in both Canada and the U.S., the largest book market. According to BookNet Canada, over the course of 2012, the percentage of digital books purchased (out of all books sold) fell from 18% to 13% before rebounding and stabilizing at 17% in 2013. A similar pattern was seen in the U.S., where digital books comprised 21% of all book sales in 2012, and then increased slightly to 23% for the year leading up to October 2013.

By comparison, print book sales in Canada were down by 3.41% compared to 2012, according to BookNet Canada's 2013 annual market report. Similarly, according to Nielsen Bookscan, sales of print books in the U.S. fell 2.5% in 2013 compared to 2012. Ongoing research is needed to provide an accurate, up-to-date gauge on this market.

2. Objectives

The *overall* objective of "*If We Build It, Will They Come?*" is to provide enhanced market knowledge to the Ontario digital book creation community about usage of and needs surrounding digital books in the education marketplace.

Phase II Objectives

The *specific objectives* of Phase II of the project is to gather information from first and second grade Ontario teachers and elementary school librarians about:

- Their students' access to and use of digital books in school;
- Their students' preferred and most frequently used platforms in school to access digital books;
- Digital book content they perceive as preferable and features they deem beneficial;
- Where and how they find and acquire this content;
- How much they pay for content;
- Challenges to the use of digital books in schools.

3. Methodology

In order to meet these objectives, an online survey was designed and conducted. The survey took 15-20 minutes to complete. A copy of the survey questionnaires (one for teachers, one for school librarians) can be found at the end of this Appendix.

Selection Criteria

The respondents were recruited through a professional recruiter and through the Story Planet booth at the 2014 Ontario Library Association Super Conference. The respondents were recruited to meet the following criteria:

- First and second grade teachers currently teaching at a school in the province of Ontario (this grade range was chosen because it corresponds to the point at which children begin actively reading);
- School librarians currently working at an elementary school in the province of Ontario;
- The majority had students who used digital books in school;
- A small number of educators whose students did not use digital books in school were included to collect data on non-users.

Sample Profile

The sample for this survey includes 81 first and second grade teachers and 41 school librarians from Ontario elementary schools, for a total of 122 educators. Educators who reported that their students used digital books in school were overrepresented in the sample to ensure valid findings regarding digital book use. In the final sample, 64% of the teachers and 51% of librarians reported their students use digital books in school.

Teachers

- *Gender*: 89% are female, 11% male;
- *Age*: 14% are between 22 and 29, 72% are between the ages of 30 and 49, 14% are between 50-59, and 1% are 60 or older;
- *Years of experience*: 1% have taught for less than 2 years; 54% have been teaching between 2 and 10 years; 33% between 11 and 20 years; and 11% for more than 20 years;
- *Subjects taught**: 68% report being generalists and teach all elementary subjects; 53% teach math; 51% arts/reading/composition; 38% science; 36% arts and/or music; 30% history and/or social studies; 17% teach other subjects such as physical education and health, special education, religion, information technology; 9% teach language(s) other than English or French; and 6% French;
- *Communities where they teach*: 57% teach in a large metropolitan area or large city; 32% in a small city or suburb; 7% in a small town; and 4% in a rural area;
- *Schools where they teach*: 62% teach at public schools; 30% at a public religious school; 6% at a private school; and 3% at a private religious school;
- *Students they teach*: 32% teach at schools with students from families from a range of income levels; 28% from primarily middle income families; 23% from primarily lower income families; and 16% from primarily upper or upper middle income.

** Note: percentages may add up to more than 100% due to selection of multiple responses*

Librarians

- *Gender*: Gender: 83% are female; 17% male;
- *Age*: All are 30 or older, with 29% between the ages of 30-39; 39% between 40 and 49; 29% between 50-59; and 2% are 60 or older;
- *Years of experience*: 17% have been librarians for less than 2 years, 46% between 2 to 10 years, 22% between 11 to 20 years, and 15% for more than 20 years;

- *Communities where they teach:* 46% work at a school located in a large metropolitan area or large city, 37% in a small city, 15% in a small town, and 2% in a rural area;
- *Schools where they teach:* 78% work at public schools, 10% at a private school, 10% at a public religious school, and 2% at a private religious school;
- *Students they teach:* 49% work at schools with students from families from primarily middle income families, 29% from a range of income levels, 17% from primarily upper or upper middle income families, and 5% from primarily lower income families.

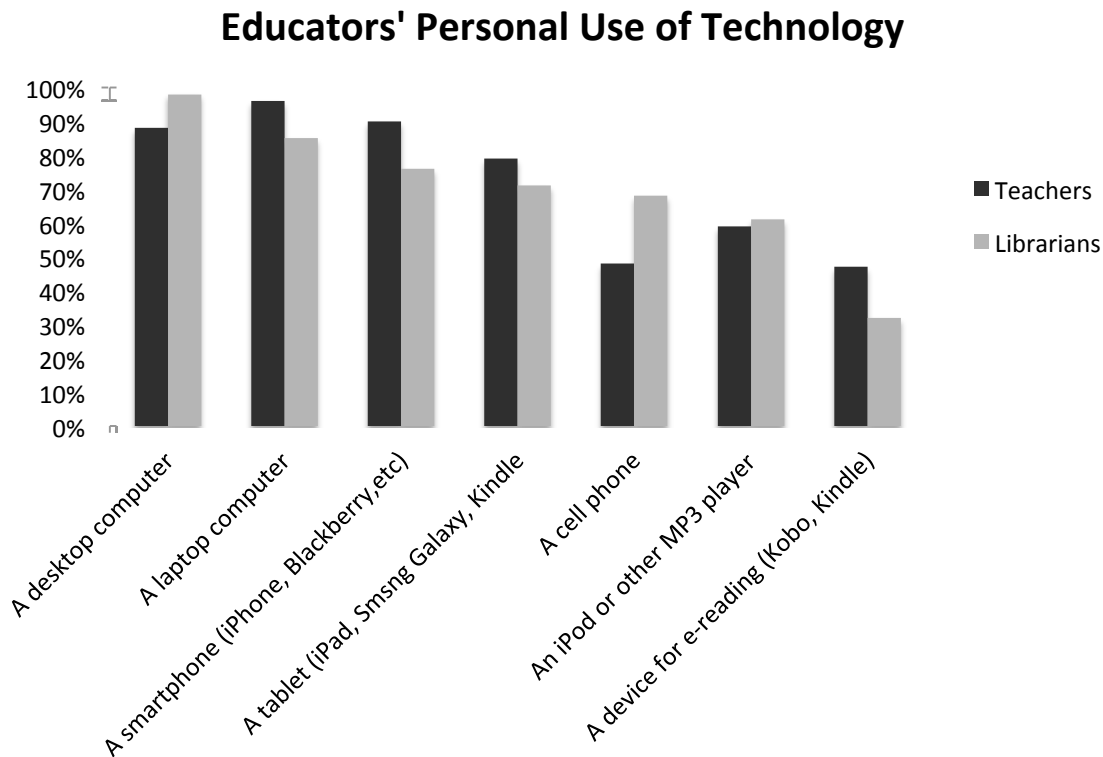
1. Findings

The following sections/charts report data from several overlapping sources -- the entire sample of educators, the subset of educators whose students use digital books in school, and the subset of educators who reported that their students do not use digital books in school (section C4, figure 10 only). Accompanying each section is a specification of the origin of the data, indicating whether it reflects the entire sample or another subset. Findings can be used directionally to understand the overall educator population.

A. Educators' Personal Use of Technology

A1. Devices They Use (entire sample)

Figure 1. Which of the following items do you use, either at home or at work?



Whether at home or at work, all of the teachers and librarians use some form of technology.

- The top three most used technologies were consistent in both groups. Computers, whether desk or laptop, had the highest penetration (desktop computers: 88% of teachers, 98% of librarians; laptops: 96% of teachers, 85% of librarians), followed by smartphones (90% of teachers, 76% of librarians), then tablets (79% of teachers, 71% of librarians)
- Both teachers and librarians uniformly reported lowest usage levels for e-readers (47% of teachers, 32% of librarians)

A2. Number of Years Reading Digital Books (digital book users only)

Figure 2. For how long have you been reading digital books?

Figure 2a.

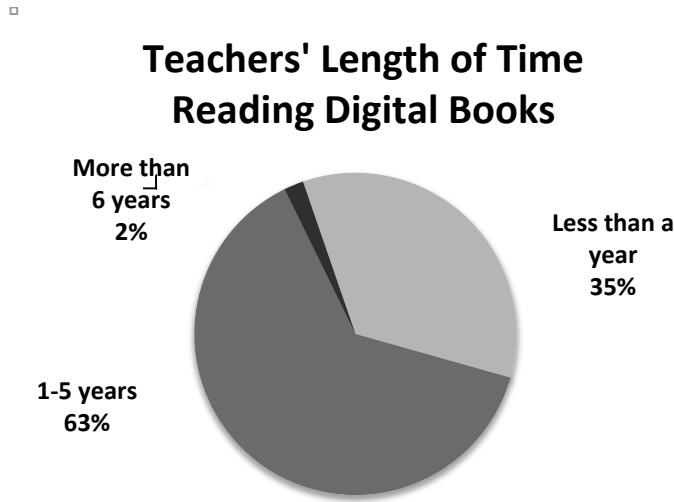
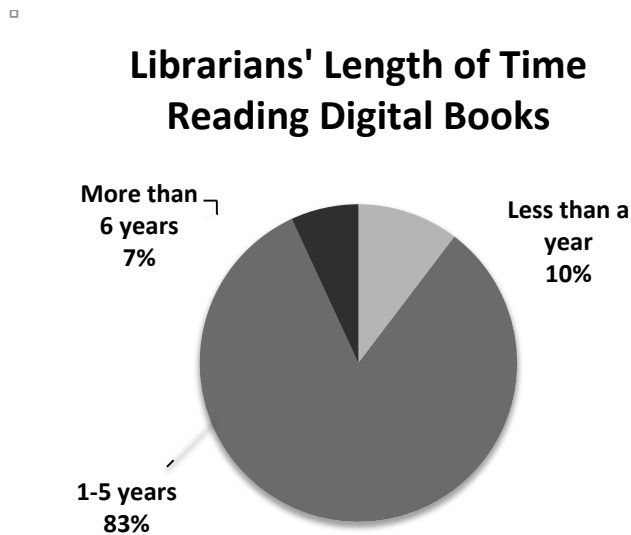


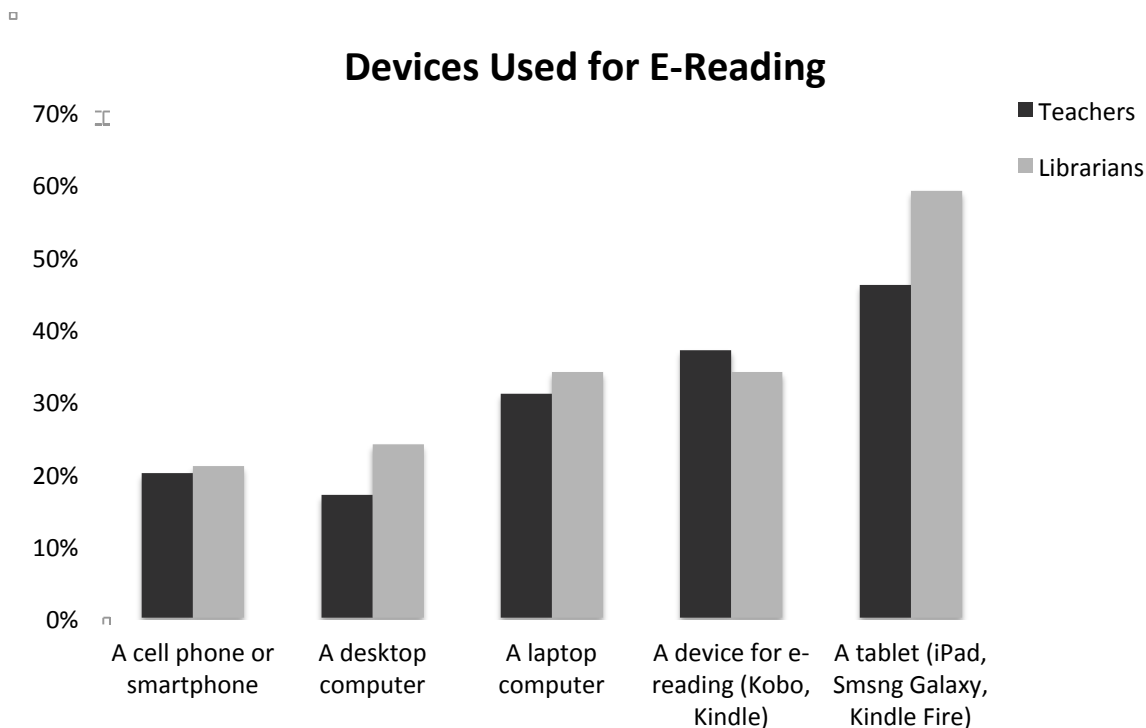
Figure 2b.



- While not quite as many librarians as teachers in the sample read digital books (71% of librarians vs. 78% of teachers), those librarians who did tended to have been reading them for longer, with 83% of librarians reporting having read them from 1-5 years (compared to 63% of teachers) and 7% for more than 6 years (2% of teachers).

A3. Devices Used for Reading Digital Books (digital book users only)

Figure 3. On which type of device do you usually read digital books?



- As far as the preferred device for reading digital books, tablets were the most favoured by both teachers (46%) and librarians (59%), followed by e-readers (teachers: 47%, librarians: 32%).

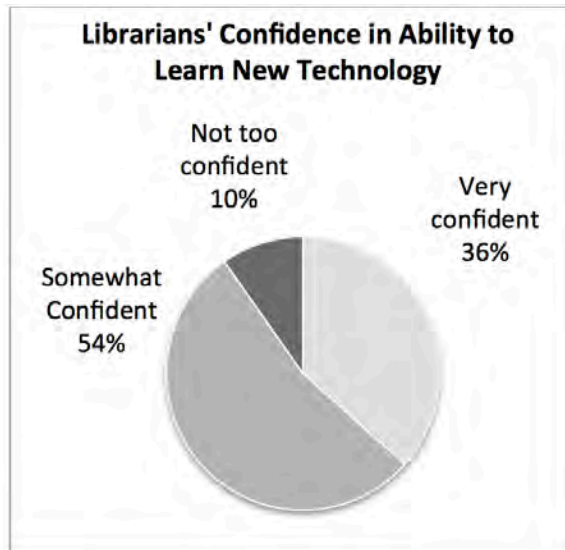
A4. Level of Confidence in Learning to Use Digital Technologies (entire sample)

Fig 4. Overall, how confident are you in your ability to learn how to use new digital technologies such as tablets, smartphones, apps? Would you say you are...

Figure 4a.



Figure 4b.



Educators were positive about their ability to use digital technologies. However, teachers tended to have more confidence in their technological abilities than librarians.

- 52% of teachers as compared to 36% of librarians reported feeling “very confident” in their ability to learn how to use new digital technologies
- 54% of librarians reported feeling only “somewhat confident” about their tech learning abilities, while only 38% of the teachers said this
- 10% of both teachers and librarians expressed little confidence in their ability to learn to use new technologies.

A5. Knowledge of How to Use Digital Technologies (entire sample)

Fig 5. Overall, when it comes to knowing how to use digital technologies (such as the internet and email, tech devices such as tablets, smartphones, e-readers, and gaming systems, apps, etc.), which of the following statements best describes YOU?

Figure 5a.

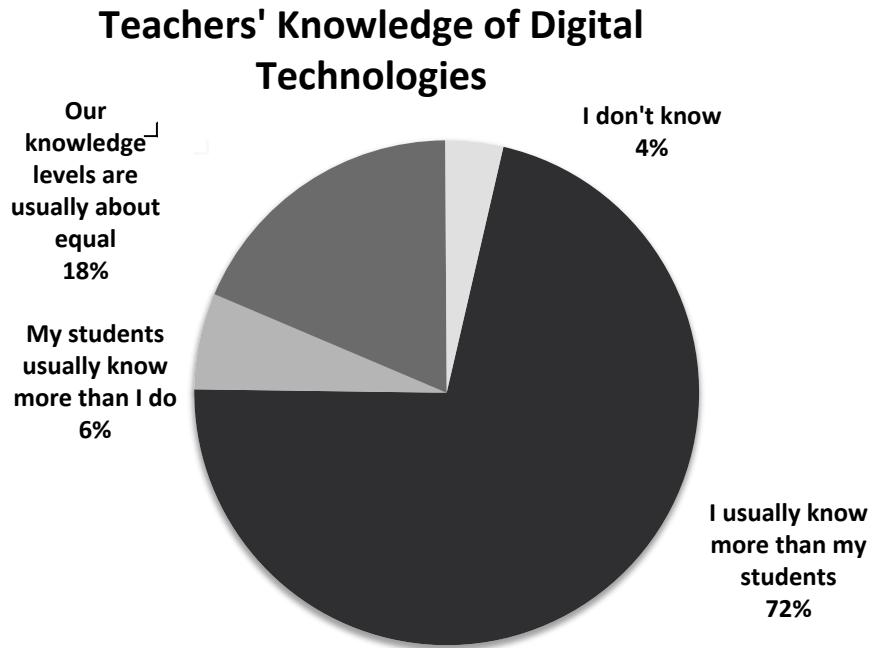
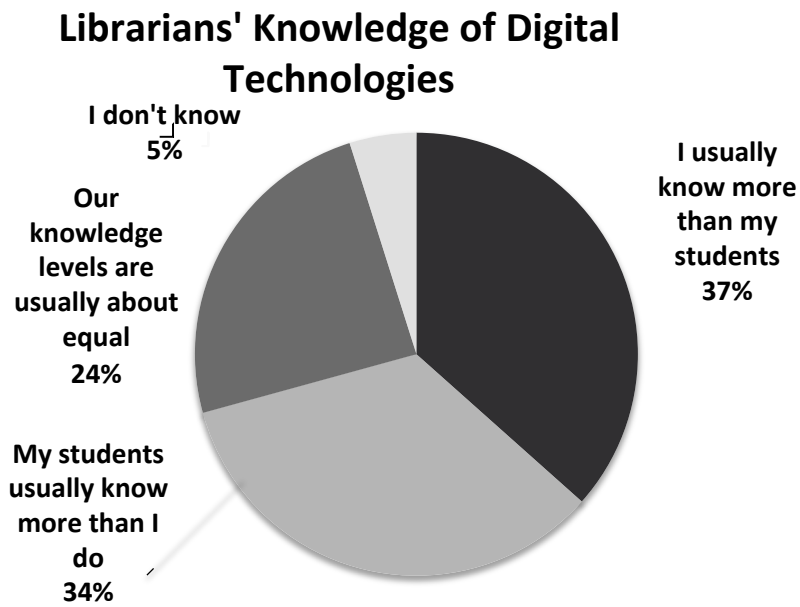


Figure 5b.



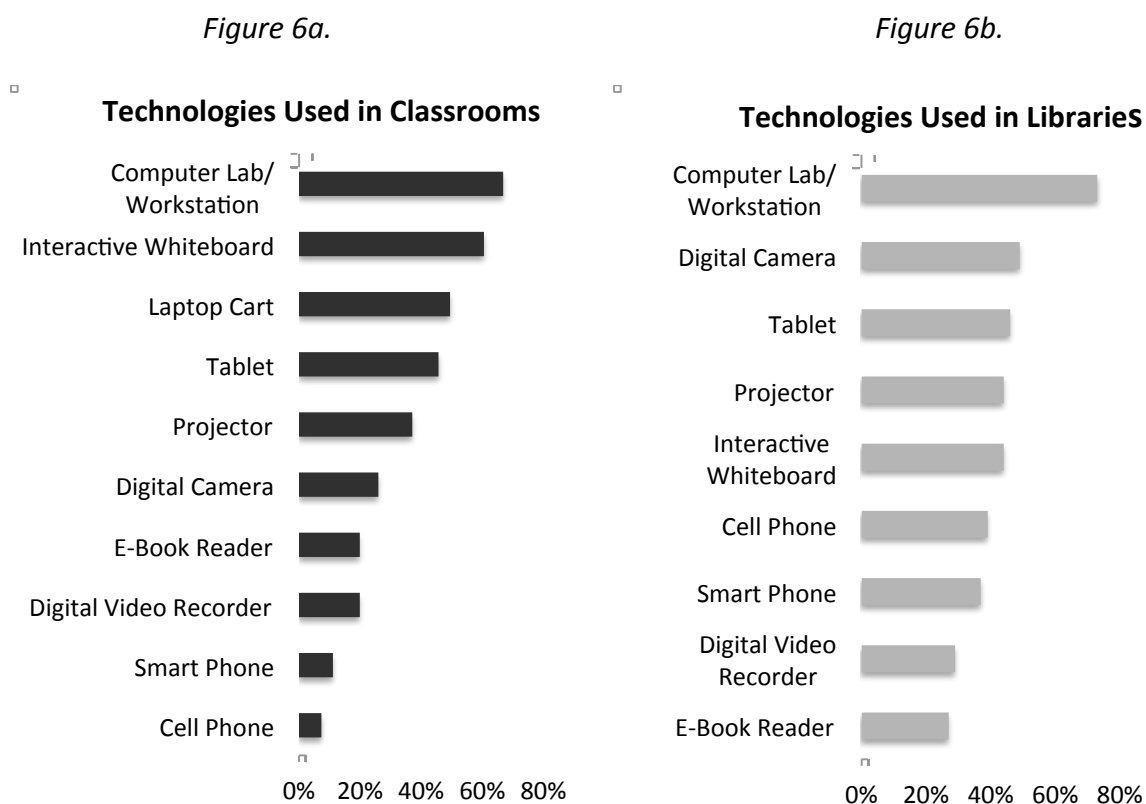
Educators were also positive about their knowledge of digital technologies. As was the case with level of confidence, more teachers than librarians felt they know more about how to use digital technologies than their students.

- 72% of teachers, as opposed to 37% of librarians, felt they know more than their students about using digital technologies
- 24% of the librarians felt their knowledge levels were about equal, compared to 18% of the teachers
- 34% of librarians, but only 6% of teachers, said their students know more than they do.

B. Technology in the Classroom and Library

B1. Technologies Used (entire sample)

Fig 6. Please tell us if you and your students use any of the following digital tools in your classroom/library.

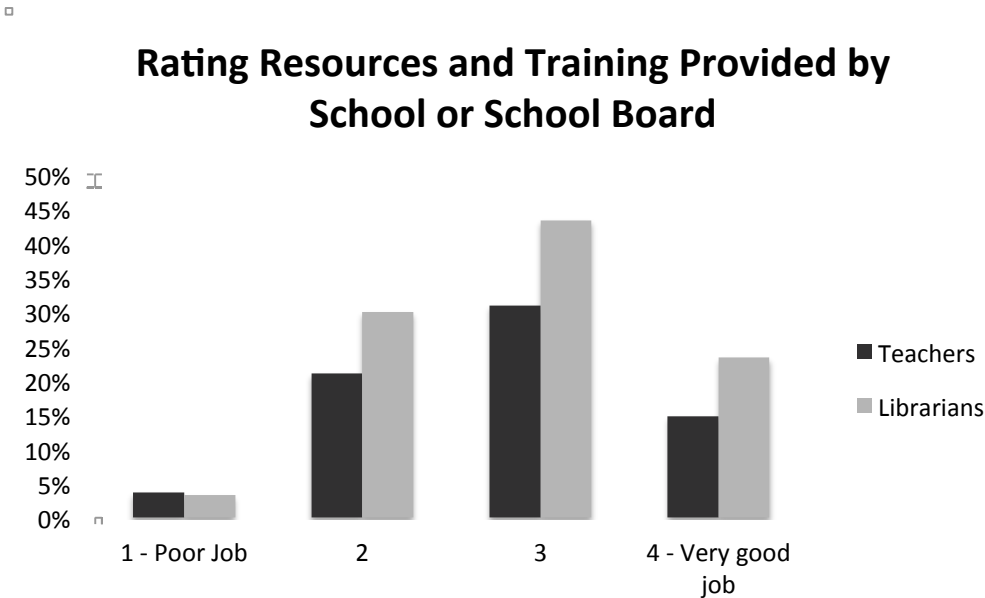


Both teachers and librarians reported a variety of technologies being used in their classrooms or school libraries by themselves and their students. There are some variations in usage, some of which can probably be attributed to the inherent differences between a classroom vs. a library environment, and the activities children engage in in each one.

- The technology used most by both students, teachers, and librarians is a computer (teachers + students: 67%, librarians + students: 73%)
- In classrooms, this is followed by interactive whiteboards (61%); in school libraries by digital cameras (49%)
- Not as common were e-readers, with 20% of the teachers and 27% of the librarians reporting that both they and their students use them in the classroom or library. This was the device with lowest reported use by both librarians and students in the library.
- The device with lowest reported use in classrooms was the cell phone, with only 7% of teachers reporting usage. On the other hand, cell phone use was much higher in the library, with 39% of the librarians reporting usage by both students and librarians.

B2. Training in Digital Technologies (teachers and librarians who reported being provided with resources or training in the use of digital technologies)

Figure 7. Please rate from 1 to 4 the level of resources and support provided by your school or school board to help teachers/librarians) effectively incorporate the newest digital technologies into your curriculum and pedagogy, with 1 representing the lowest rating (school does a poor job) and 4 being the highest (school does a very good job)



Seventy per cent of teachers and 73% of librarians said that their school or school board provides them with formal training on how to incorporate digital technologies into the learning process. Respondents were then asked to rate on a scale from 1 (“poor”) to 4 (“very good”) the level of resources and support provided by their school or school board to help them incorporate digital technologies into their curriculum and pedagogy. Librarians tended to rate this more highly than teachers.

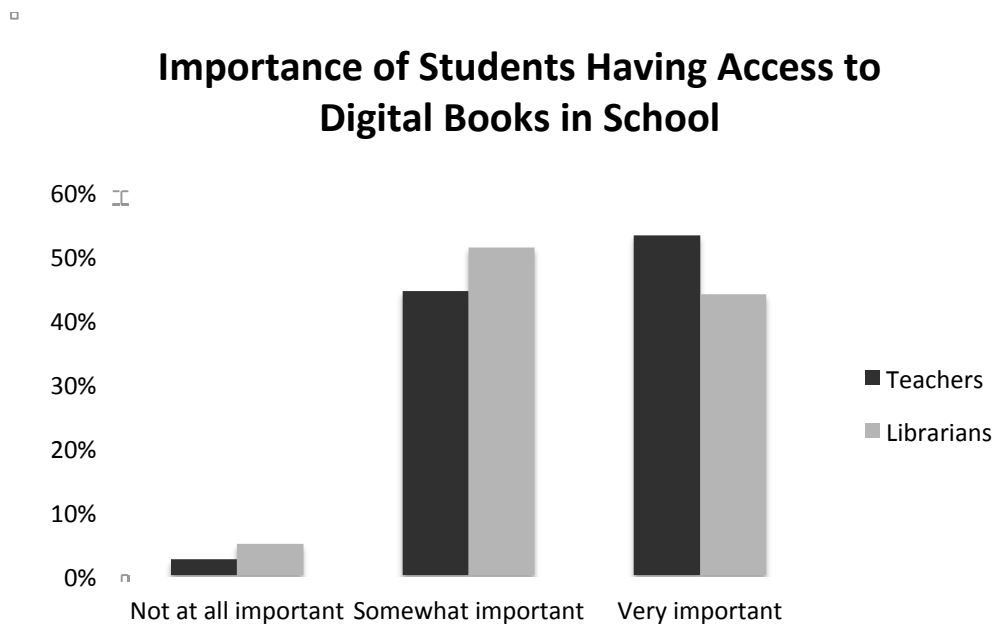
- 23% of the librarians as compared to 15% of the teachers rated the training as “very good”

- 43% of the librarians gave a rating of “3,” as compared to 31% of the teachers
- Only 4% of the teachers and 3% of the librarians gave the lowest rating of 1

C. Digital Books

C1. Perception of Their Importance (entire sample)

Figure 8. How important do you think it is for children to have access in the classroom/school library to digital books (in addition to print books)?



Both teachers and librarians see the value of digital books, with 53% of the teachers and 44% of the librarians reporting that it was “very important” for children to have classroom access to digital books in school, in addition to print books.

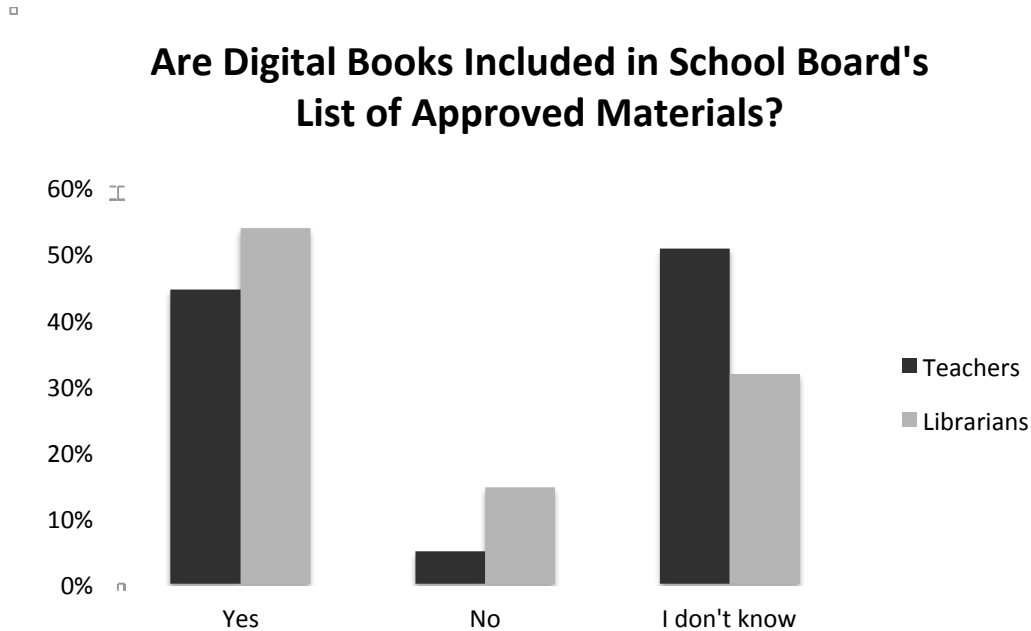
C2. Influence of School Boards (entire sample)

Most of the teachers and librarians reported having the flexibility to choose the supplemental materials they use.

- 70% of teachers and 83% of librarians reported they were able to select their own materials.
- The rest reported that they only use the supplemental materials recommended and vetted by their school board.

C3. Inclusion of Digital Books in School Board's List of Approved Materials (entire sample)

Figure 9. Does your school board include digital books in their list of approved/recommended materials for use in the classroom/library?



Not everyone was aware of whether digital books were included in the list of approved/recommended materials provided by the school board but, in general, they seem to be.

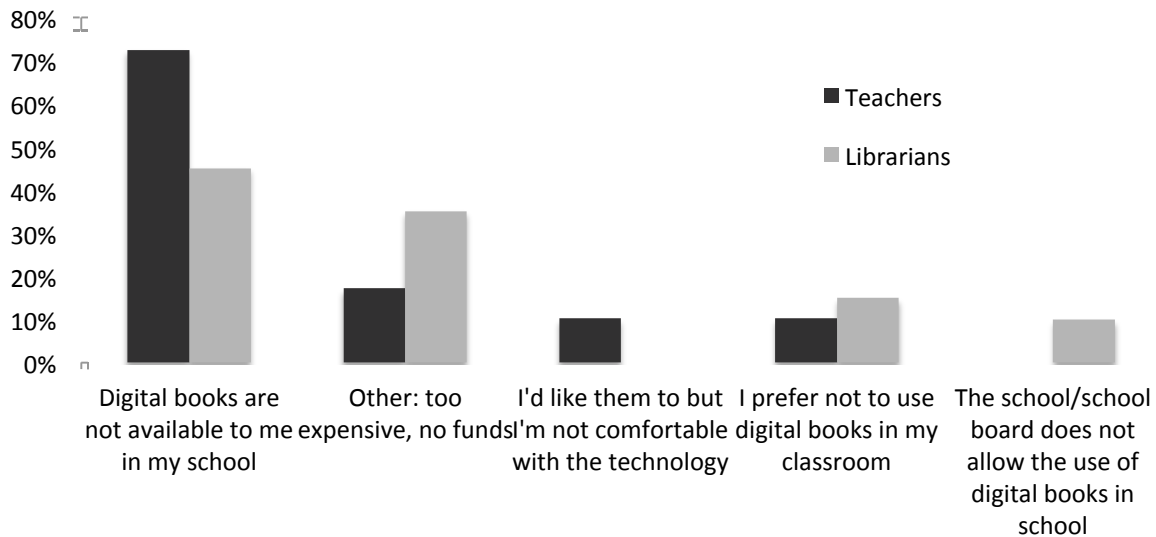
- 44% of teachers and 54% of librarians reported that they are included
- 5% of teachers said digital books are not included
- 51% of the teachers and 32% of librarians reported not knowing whether their school board includes digital books in their list of approved/recommended materials.

C4. Reasons for Not Using Digital Books in School (non-digital book users only)

Figure 10. Why don't students read digital books in the classroom/library?

□

Reasons for Not Using Digital Books in Classroom/ Library

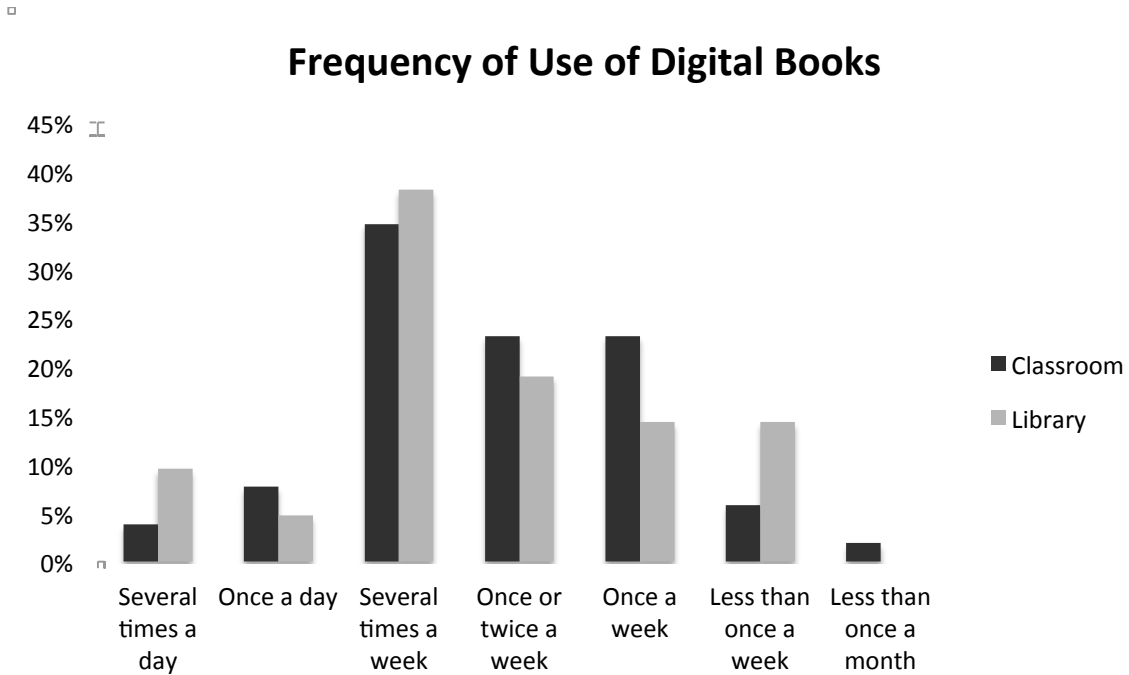


As mentioned in the Methodology section, the sample was recruited so that the majority of the educators had students who used digital books in school. Amongst educators who reported their students not using digital books in school, the main reason given for this was that the books were not available to them.

- 72% of these teachers and 45% of these librarians reported that digital books were not available at their school
- 35% of librarians and 17% of teachers said it was because they had no funds for them
- 10% of teachers said they weren't comfortable with the technology
- 10% of teachers and 15% of librarians reported it was due to their personal preference for not using digital books in their classroom/library
- Just librarians, and only 10% of them, reported that it was because their school or school board did not allow the use of digital books in school

C5. Frequency of Use (digital book users only)

Figure 11. About how often do your students use digital books in the classroom library?

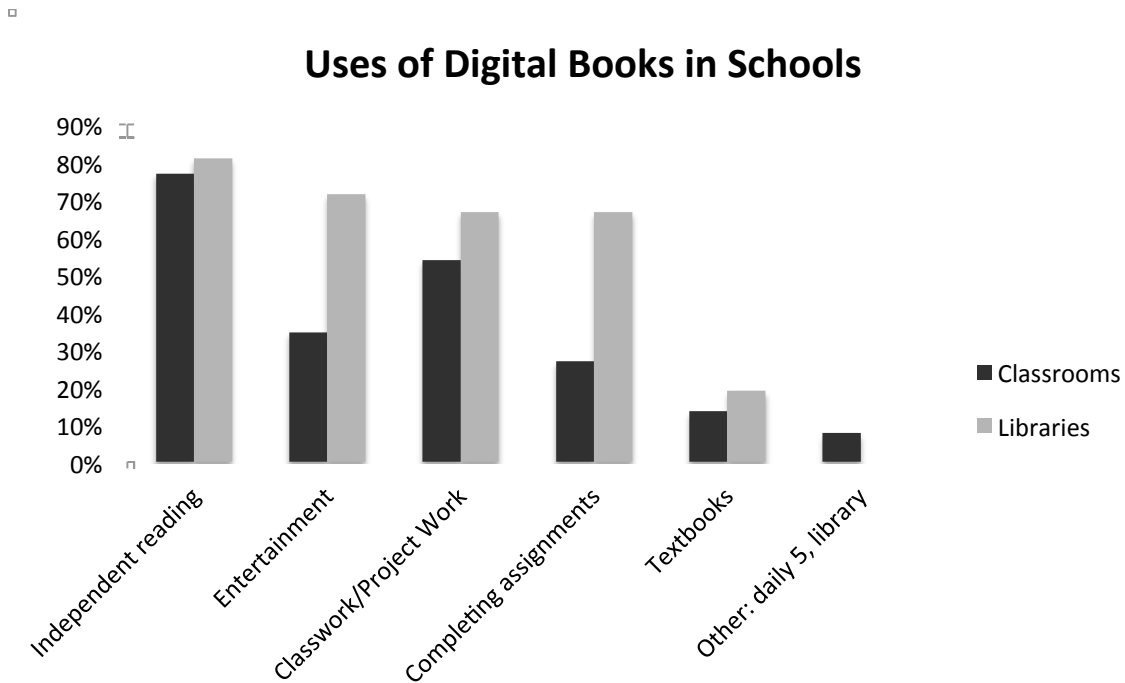


In general, digital books tended to be used in these classrooms and libraries fairly regularly.

- 35% of the teachers and 38% of the librarians reported that digital books were used by their students several times a week
- 23% of teachers and 19% of librarians reported usage once or twice a week
- 23% of teachers and 14% of librarians said their students used digital books once a week

C6. Purpose of Use (digital book users only)

Figure 12. My students use digital books in class/at library for:

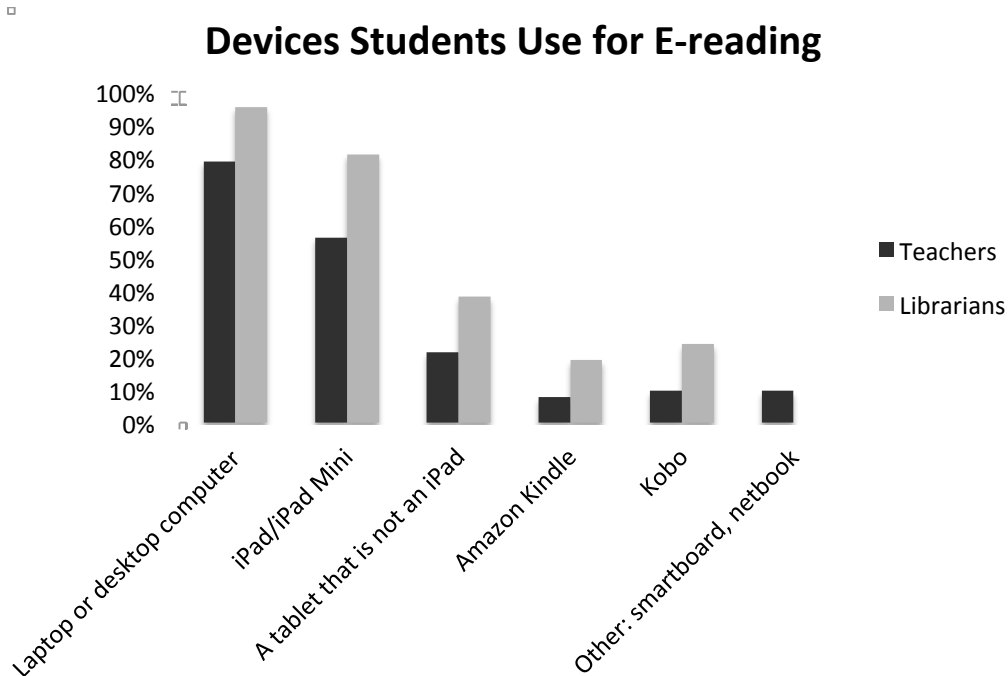


A variety of uses were reported for digital books, with the most common one in both classrooms (77%) and libraries (81%) being independent reading. Beyond this, patterns of use were different for classrooms and libraries.

- The second most cited use in classrooms (54%) was classwork/project work, while in libraries it was entertainment (71%)
- Classwork/project work and completing assignments were also common uses in school libraries (both cited by 67% of librarians)

C7. Devices Used for Reading Digital Books (digital book users only)

Figure 13. On which of the following devices do students read digital books in the classroom/library?

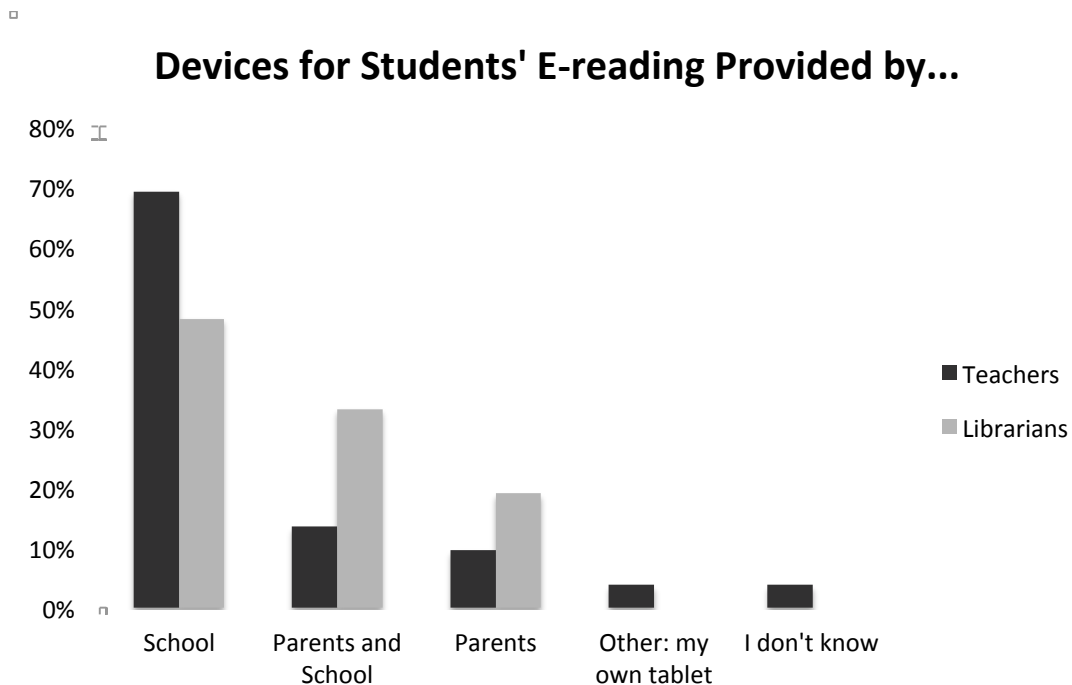


The overall pattern as to which devices are used more in classrooms and libraries is mostly identical.

- Computers remain the most prevalent device on which students read digital books in schools, with 79% of teachers and 95% of librarians reporting their students use them
- The iPad/iPad Mini is next, with 81% of librarians and 56% of teachers citing its use. Other tablets and dedicated e-readers had a much lower presence in these schools, with 21% of teachers and 38% of librarians reporting their use
- Dedicated e-readers had a smaller presence in classrooms than libraries (Kindle: 8% in classrooms vs. 19% in libraries, Kobo: 10% in classrooms, 24% in libraries).

C8. Who Provides the Devices for E-reading (digital book users only)

Figure 14. The device that children use for e-reading at school is most often provided by:

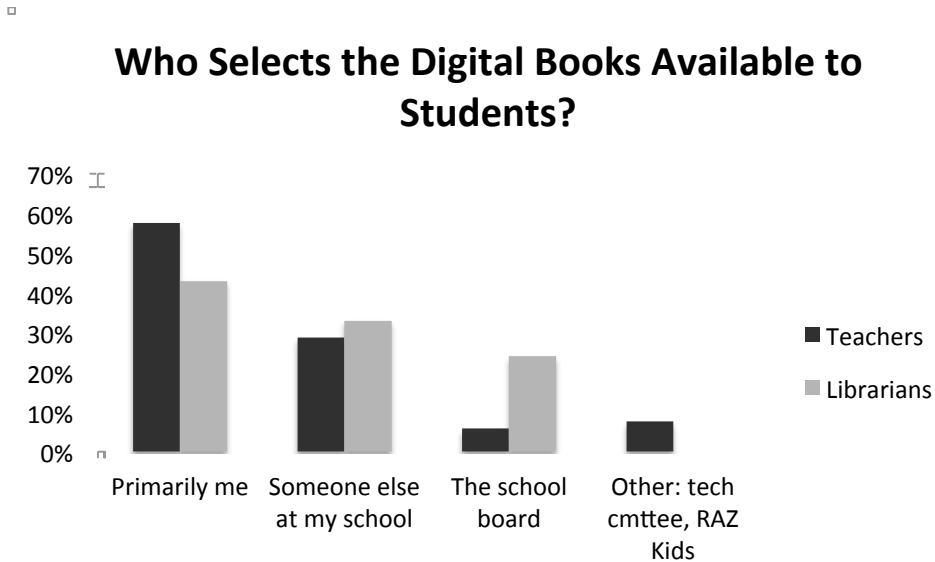


As for who provides the students' devices for e-reading, both teachers and librarians report that the schools are the main sources. Seeing as how the most prevalent device students are using for e-reading in school are computers, this is not surprising. There was some reported presence in libraries (and to a much lesser extent in classrooms) of students' using devices provided by their parents. It appears that Bring Your Own Device (BYOD) practices are being considered and emerging at some of these schools.

- 68% of the teachers and 48% of the librarians reported that the e-reading devices are provided most often by the school
- 33% of the librarians but only 14% of teachers reported that the devices were provided by both the school and parents. Since the second highest reported use of digital books in libraries was for entertainment, it might be that in many cases students bring their own devices to use in the library.
- 19% of librarians and 10% of teachers said devices were provided by parents
- 4% of teachers revealed they bring their own tablet and let the students use it

C9. Selection of Digital Books (digital book users only)

Figure 15. Who typically selects the digital books that will be available to students in your classroom/library?



Many of the teachers and librarians are the ones who select the digital books present in their classrooms/libraries, but in other cases that is the responsibility of someone else.

- 54% of the teachers and 43% of the librarians said they are the ones who select the digital books that are available to students
- 29% of the teachers and 33% of the librarians said someone else at the school makes the selections
- Only 6% of the teachers but 24% of the librarians said their school board made the selections

C10. Searching for Digital Books (digital book users only)

Figure 16. How do you typically LOOK FOR digital books for your students?

Figure 16a.

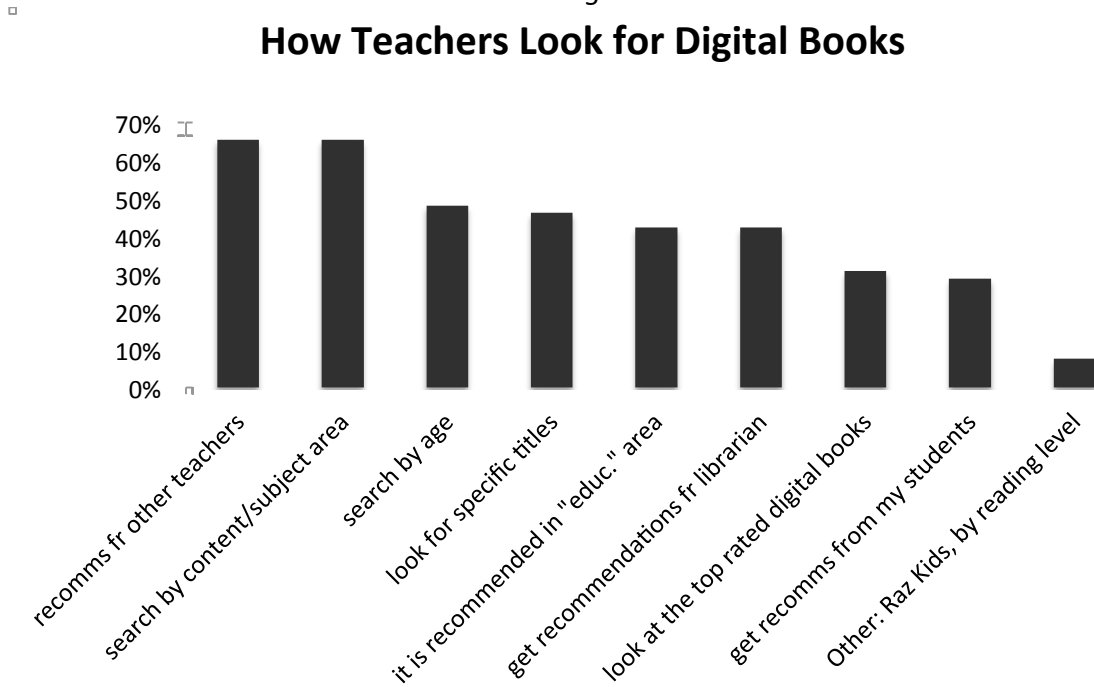
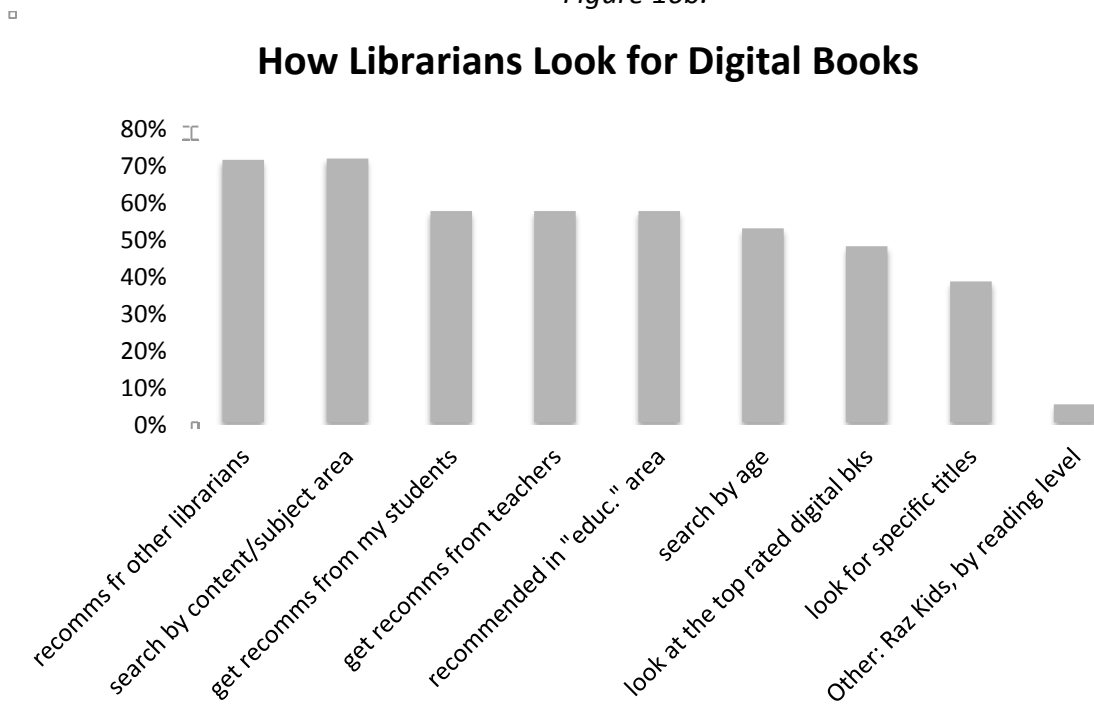


Figure 16b.



There are some differences in the way teachers and librarians search for digital books, but peer recommendations and subject area play a key role for both of them.

- The most common ways for both teachers (65%) and librarians (71%) was getting recommendations from other teachers or librarians along with searching by content/subject area.
- Searching by age was the next most popular way for teachers (48%) but for librarians it continued to be about getting recommendations -- whether from students, teachers, or the education section of digital book sellers (all 57%)
- Top-rated books were not as significant a marker for either group – this was in the bottom three choices of ways to look for digital books in both cases (31% of teachers, 48% of librarians)

C11. Purchasing Decision Influencers (digital book users only)

Figure 17. What influences your decision when it comes to PURCHASING digital books for your students?

Figure 17a.

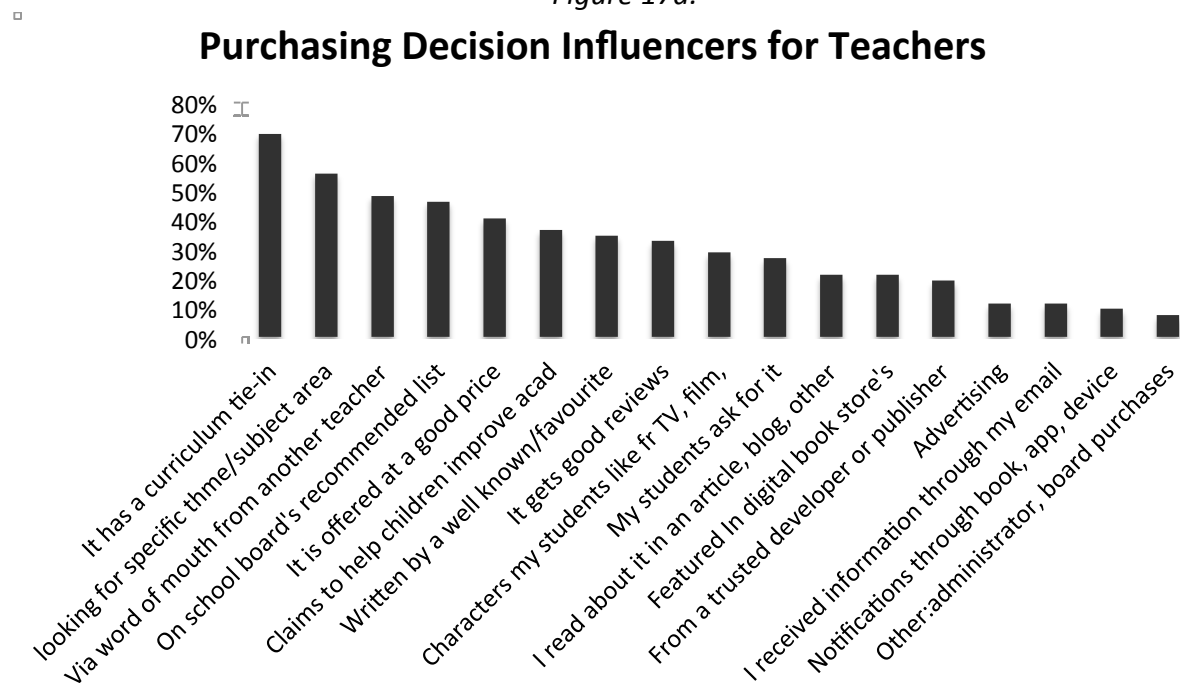
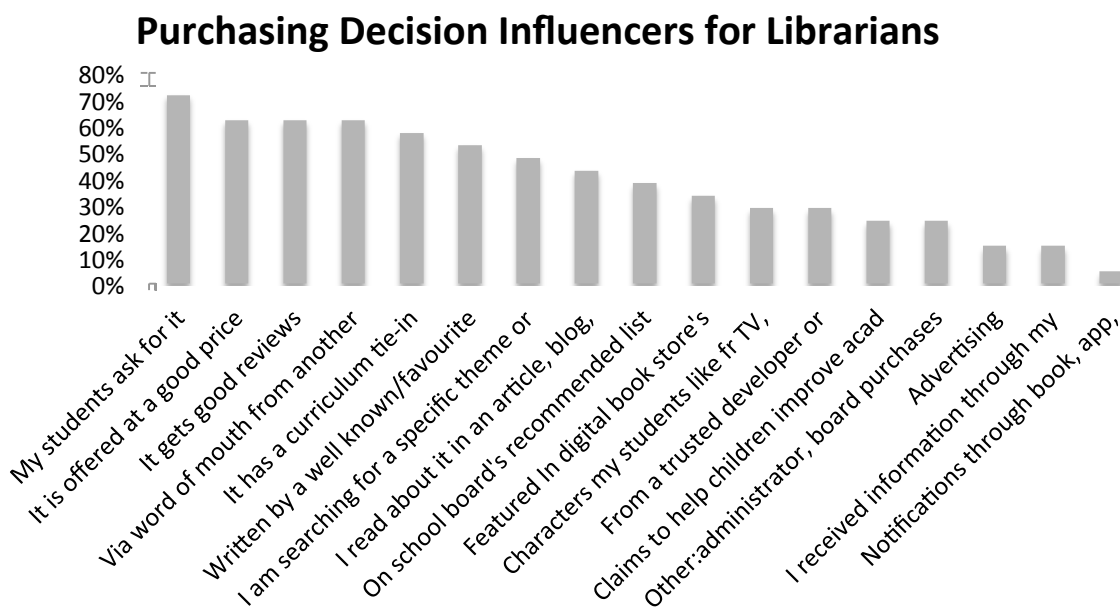


Figure 17b.



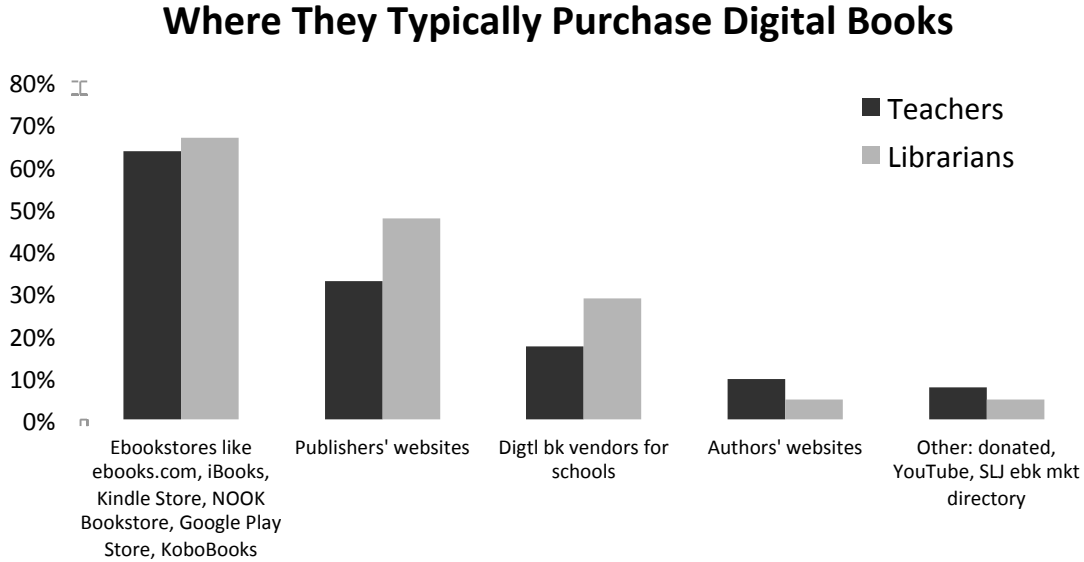
There are differences among teachers and librarians in terms of the factors that play a role when it comes to the actual purchase of digital books. This makes sense when one takes into consideration the different environments in which they operate.

- The top ways teachers search for digital books are by content or subject area and through peer recommendations. Consequently, it is not surprising that the top 3 factors influencing them when it comes to actually purchasing digital books are: “It has a curriculum tie-in” (69%), “I am searching for a specific theme or subject area” (56%), and “I heard about it via word of mouth from another teacher” (48%)
- For librarians, on the other hand, the top influencer was demand from the students: “my students ask for it” (71%). Peer recommendations (“via word of mouth from another teacher”) came in next at 62% as well as “it is offered at a good price” and “it gets good reviews”
- Books being on the school board’s list of recommended materials mattered more to teachers (46%) than librarians (38%)
- For both teachers and librarians, the least important factors were traditional marketing channels such as advertising, information sent to their emails, and notifications sent through the book, app, or device

C12. Where They Purchase Digital Books (digital book users only)

Figure 18. From where do you typically purchase digital books for your students?

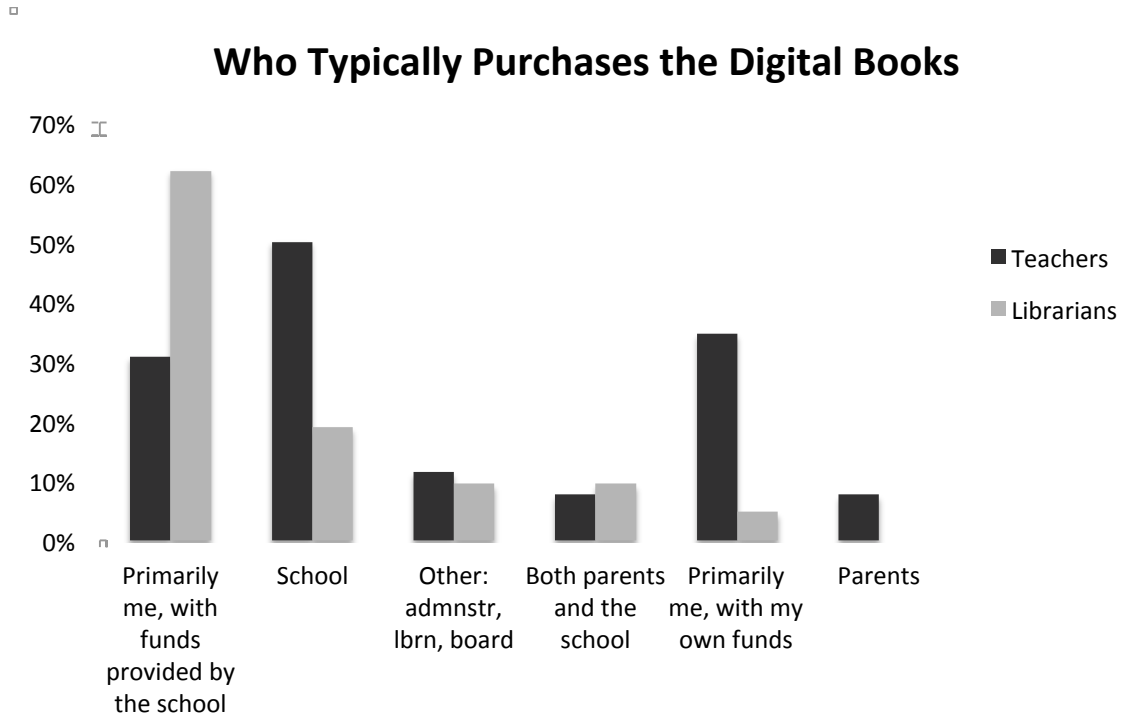
□



- In terms of where the digital books are purchased, ebookstores were the most popular choice (63% of teachers, 67% of librarians)
- Publishers' websites were next (33% of teachers, 38% of librarians)
- 29% of the librarians and 17% of the teachers also use digital book vendors that offer subscriptions to schools.

C13. Who Does the Purchasing (digital book users only)

Figure 19. Who TYPICALLY purchases the digital books that your students use in class/the library?

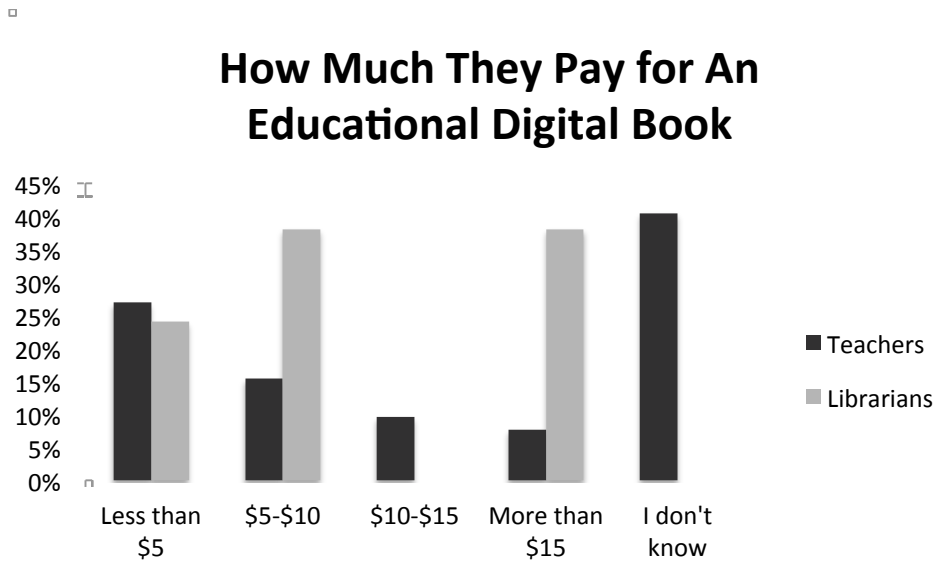


As far as the actual purchasing of digital books, schools are the primary buyers, whether by providing the funds for teachers/librarians to purchase or by buying them directly. However, many teachers also reported spending their own money on digital books for their students. Few librarians said they did this.

- 50% of the teachers and 19% of the librarians said their school purchases the digital books
- 62% of librarians and 31% of teachers reported purchasing the books themselves with school funds
- 35% of teachers, as compared to 5% of librarians, used their own funds towards digital books.

C14. What They Pay for Digital Books (digital book users only)

Figure 20. On average, how much do you pay for an educational digital book?



There was a lot of variation in the prices teachers and librarians reported paying for an educational digital book, with the latter tending to pay more. Additionally, 40% of teachers reported not knowing the price, which makes sense considering many said that their schools purchased them directly.

- 27% of teachers and 24% of librarians said they paid less than \$5
- 38% of librarians but only 15% of teachers reported paying between \$5 - \$10
- 38% of librarians but only 8% of teachers reported paying more than \$15

C15. Rating of Interactive Features (digital book users only)

Figure 21. Consider the following list of features. Which do you find beneficial or detrimental to your students' e-reading experience when reading an educational digital book?

Figure 21a.

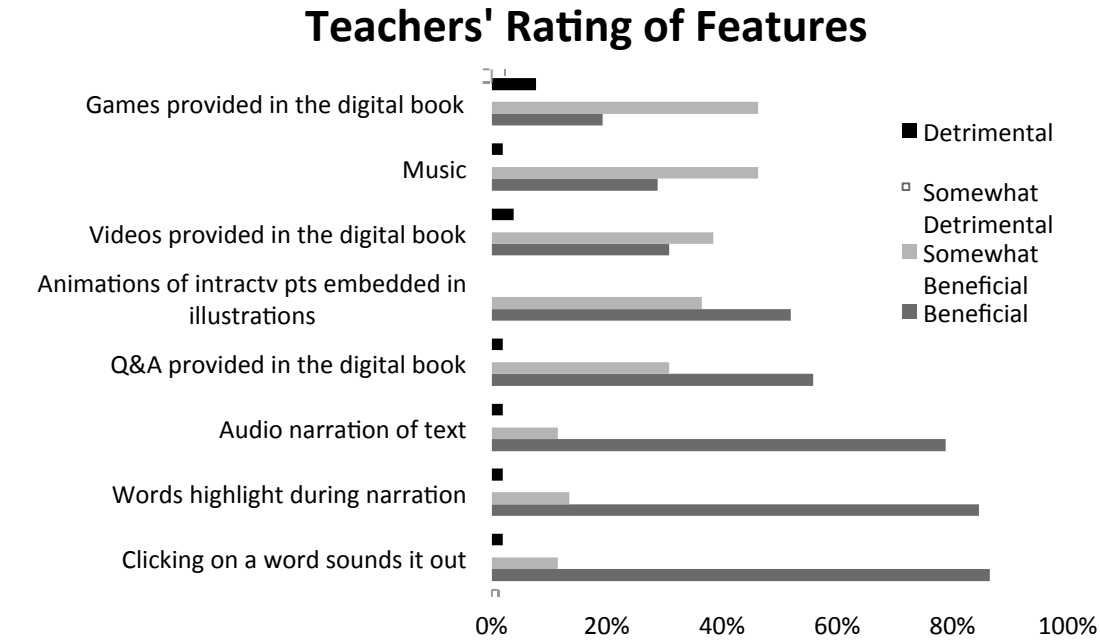
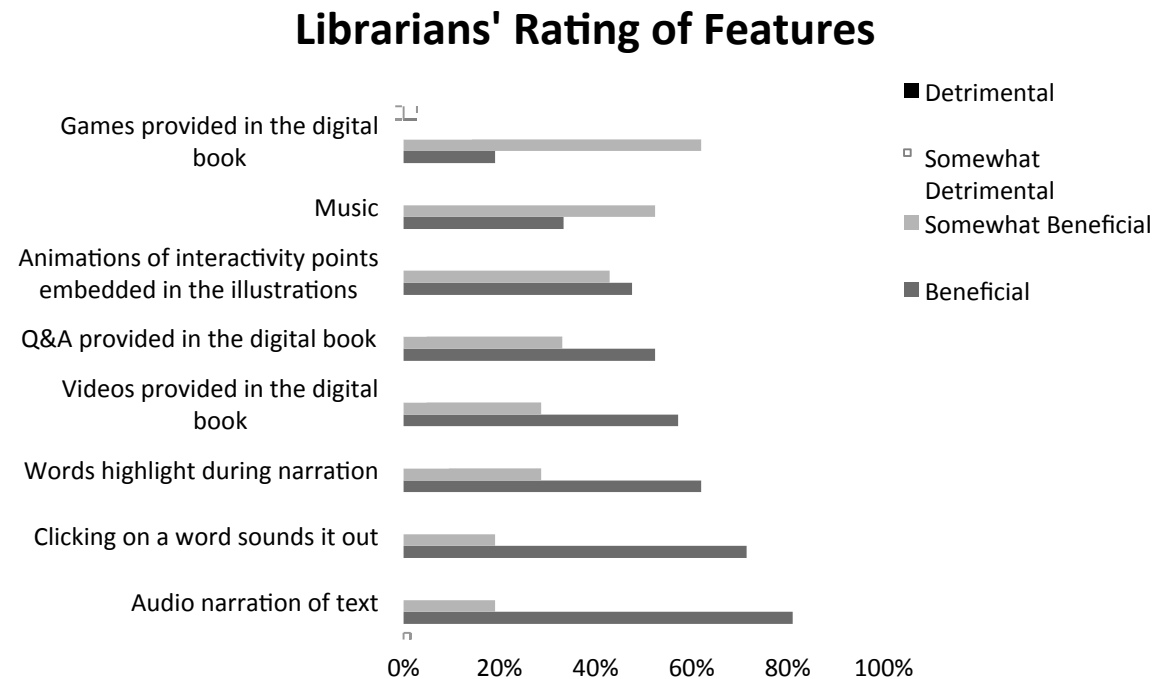


Figure 21b.



Survey respondents were given a list of features that are commonly found in digital books and asked whether they perceived them as “beneficial, somewhat beneficial, somewhat detrimental or detrimental” to students’ e-reading experience.

There was consensus among teachers and librarians as to the top three features that were selected most often as “beneficial,” albeit with a slight difference in the order.

- The feature 87% of teachers found beneficial was “clicking on a word sounds it out,” followed closely by “words highlight during narration” (85%), and “audio narration of text” (79%)
- Similarly, 81% of librarians found “audio narration of text” as beneficial, followed by “clicking on a word sounds it out” (71%), and “words highlight during narration” (62%)
- Interestingly, while 46% of teachers labeled “games provided in the digital book” as “somewhat beneficial,” 15% of them “somewhat detrimental,” while 8% labeled them as “detrimental.”
- Likewise, 62% of librarians labeled “games provided in the digital book” as “somewhat beneficial” but 14% perceived them to be “somewhat detrimental.”

C16. Rating the Top Three Most Important Features (digital book users only)

Figure 22. Please select what you consider to be the **top three** most important features of an educational digital book, and number them from 1 to 3, with **1 being the most important**.

Fig 22a.

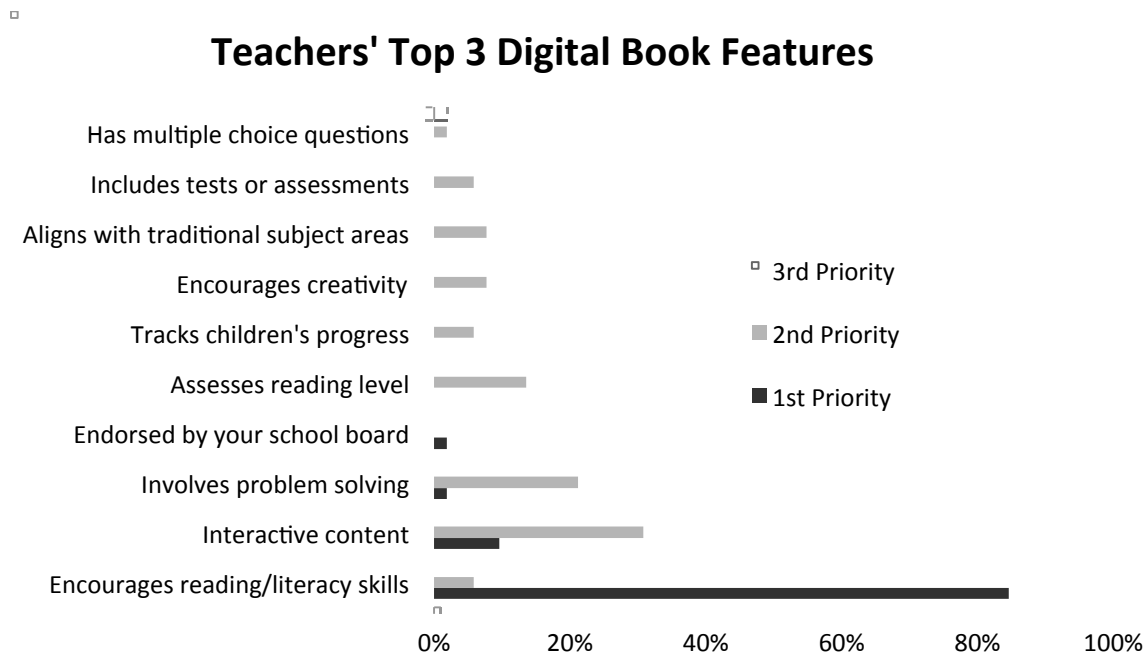
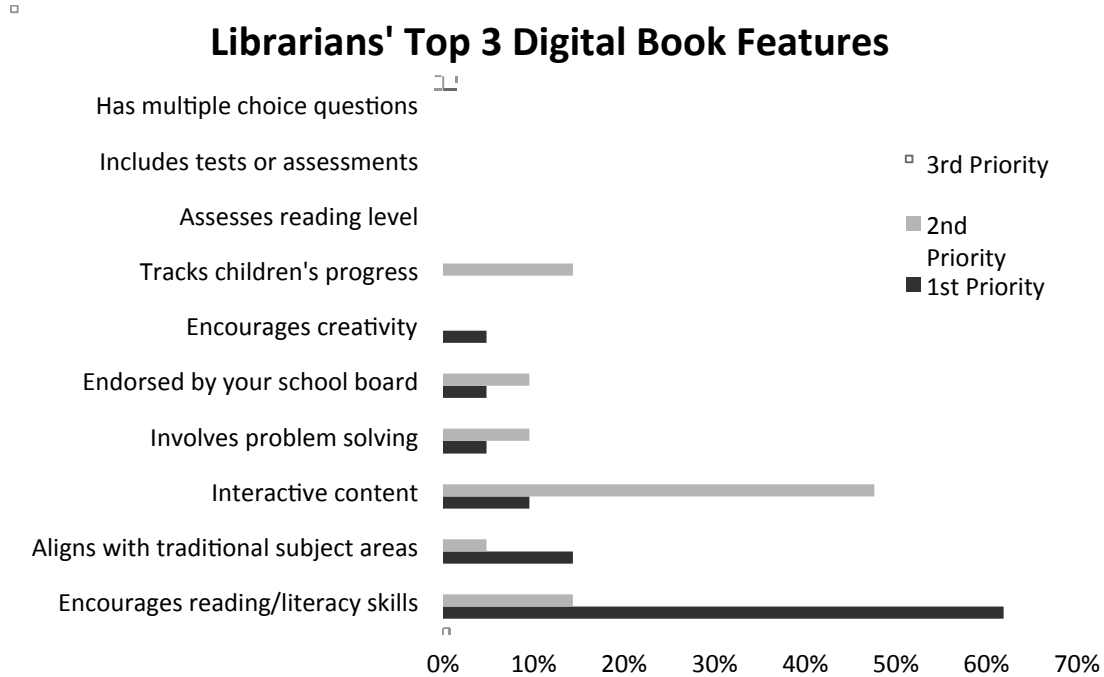


Figure 22b.



Respondents were also asked to select, from a different list, what they considered to be their top three most important features of an educational digital book. There were only some slight differences between the responses of teachers and librarians.

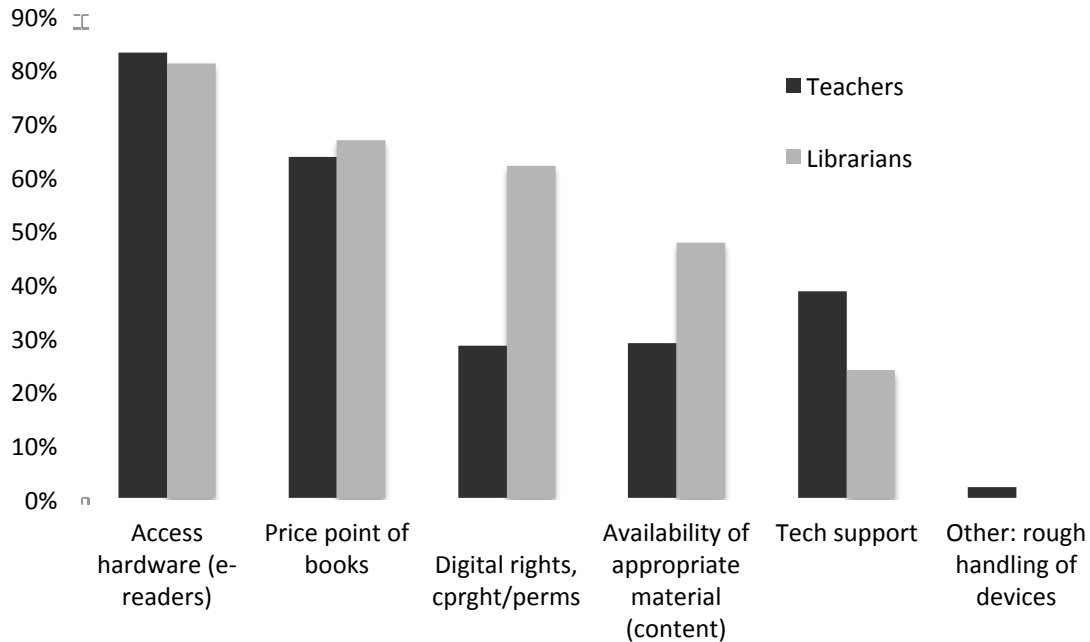
- In terms of the top three most important features of an educational digital book, the most important one for teachers was “encourages reading /literacy skills” (85%), followed by “interactive content,” and finally “tracks children’s progress”
- The most important feature for librarians was also “encourages reading/literacy skills” (62%), followed by “interactive content,” and finally “endorsed by your school board” and “aligns with traditional subject areas” (both 19%)

C17. Challenges to Use of Digital Books in Schools (digital book users only)

Figure 23. In your experience, what are the biggest challenges when it comes to the use of digital books in school?

□

Biggest Challenges to Use of Digital Books in School



Teachers and librarians agree on the top two challenges to using digital books in schools.

- For 83% of teachers and 81% of librarians the biggest challenge is access to the hardware (e-reader devices).
- The price point of books is also a factor – it was the next most cited challenge by 63% of the teachers and 67% of librarians
- Digital rights/copyrights were also of concern, more so for librarians (62%) than teachers (28%)
- Availability of appropriate content was also an issue for 48% of the librarians and 29% of the teachers.

4. Summary

- Teachers and school librarians utilize a range of technologies both in their personal and professional lives
- They feel positively about their ability to learn and knowledge about how to use, digital technologies
- The technology that is used the most by students, teachers, and librarians at school is a computer
- Both teachers and librarians feel that it is important for students to have access to digital books at school (in addition to print books)
- For both teachers and librarians, the biggest challenge to the use of digital books in school is access to the hardware required
- Peer recommendations are the most common way teachers and librarians look for digital books, along with searching by content/subject area
- The top factors that influence teachers' purchase of digital books are: having a curriculum tie-in, dealing with a specific theme or subject area and, peer recommendations. For librarians, they are student demand, good price, peer recommendations, and good reviews.
- Purchasing of digital books is mostly done through ebookstores
- There is a lot of variation in how much teachers and librarians pay, on average, for an educational digital book
- Having a word be sounded out when clicked on and audio narration of text are interactive features both teachers and librarians view as beneficial for their students
- For both teachers and librarians the most important feature of an educational digital book is that it encourages reading/literacy skills.

6. SURVEY QUESTIONNAIRE FOR TEACHERS

INTRO

Thank you for taking the time to fill out this survey. The goal of this survey is to understand Canadian teachers' beliefs, preferences, and practices regarding the use of digital technologies and content in their classroom, especially digital books.

Some important information about taking the survey:

- This survey is completely confidential. Results are reported in the aggregate, and responses are never attributed to any individual.
- Most questions ask you to select the single response that best reflects your answer. Other questions are labeled CHECK ALL THAT APPLY, and for these you can select more than one response.
- Grid questions list multiple items down the left side of the screen and the response choices across the top. Please provide an answer for each item in the grid.

Q1 In what (Canadian) province do you currently teach?

[NOTE: SURVEY IS ONLY INTENDED FOR THOSE CURRENTLY TEACHING IN ONTARIO]

Ontario

-
- | | |
|--|--------------------------------|
| <input type="checkbox"/> Alberta | <i>[thank & terminate]</i> |
| <input type="checkbox"/> British Columbia | “ |
| <input type="checkbox"/> Manitoba | “ |
| <input type="checkbox"/> New Brunswick | “ |
| <input type="checkbox"/> Newfoundland and Labrador | “ |
| <input type="checkbox"/> Nova Scotia | “ |
| <input type="checkbox"/> Prince Edward Island | “ |
| <input type="checkbox"/> Quebec | “ |
| <input type="checkbox"/> Saskatchewan | “ |

Q2 Please specify the region within Ontario and the school board where you work:

Region:

School board:

Q3 What grade level(s) do you currently teach?

[NOTE: SURVEY IS ONLY INTENDED FOR THOSE CURRENTLY TEACHING GRADES 1-2]

Grades 1 -2

-
- | | |
|--|--------------------------------|
| <input type="checkbox"/> Preschool/Junior Kindergarten | <i>[thank & terminate]</i> |
| <input type="checkbox"/> Kindergarten | “ |
| <input type="checkbox"/> Grade 3 – 8 | “ |
| <input type="checkbox"/> Gr 9 – 12 (High school/ Secondary School) | “ |

Q4 Which of the following subjects do you currently teach? (CHECK ALL THAT APPLY)

- Arts and/or music
- French
- Language(s) other than English or French
- History and/or Social Studies
- English/Language Arts/Reading/Composition
- Math
- Science
- Generalist/All elementary subjects
- Other (PLEASE SPECIFY)

SECTION II – TECH USE

The questions in this section are about your own use of digital technologies, including tech devices such as tablets and smartphones, whether at home or at work.

Q5 Overall, how confident are you in your ability to learn how to use new digital technologies such as smartphones, tablets, apps? Would you say you are...

- Very confident
- Somewhat confident
- Not too confident
- Not at all confident

Q6 Which of the following items do you use, either at home or at work? (CHECK ALL THAT APPLY)

- A desktop computer
- A laptop computer
- A cell phone
- A smartphone (e.g., iPhone, Samsung, Blackberry)
- A handheld device made primarily for e-book/digital book reading, such as a Kobo or Kindle e-reader
- A multipurpose tablet such as an iPad, Samsung Galaxy, or Kindle Fire
- An iPod or other MP3 player

Q7 Do you read e-books/digital books (on any platform)?

- Yes
- No [*skip to Q10*]

Q8 For how long have you been reading e-books/digital books?

- Less than a year
- Between 1 – 5 years
- For more than 6 years

Q9 On which type of device do you usually read e-books/digital books? (SELECT ALL THAT APPLY)

- A desktop computer
- A laptop computer
- A cell phone or smartphone (e.g., iPhone, Samsung, Blackberry)
- A handheld device made primarily for e-book/digital book reading, such as a Kobo or Kindle e-reader
- A multipurpose tablet such as an iPad, Samsung Galaxy, or Kindle Fire

SECTION III – TECHNOLOGY IN THE CLASSROOM

This section includes questions about you and your students’ use of digital technologies (such as computers, interactive whiteboards, tablets, e-readers) in your classroom.

Q10 Please tell us if you or your students USE any of the following digital tools in your classroom. (PLEASE PROVIDE AN ANSWER FOR EACH ITEM IN THE GRID)

	Yes, I use this	Yes, my students use this	Yes, both my students and I use this	Neither I nor my students use this
A computer lab or computer workstation available at your school or in your classroom				
A computer/laptop cart (that is shared among classrooms)				
A projector that is connected to a laptop or desktop computer or other digital device				
An interactive whiteboard				
A digital camera other than a cell phone				
A digital video recorder other than a cell phone				
A touchscreen tablet				
An e-book/digital book reader				
A cell phone				
A smartphone				
Other: (PLEASE SPECIFY)				

Q11 Overall, when it comes to knowing how to use digital technologies (such as the internet and email, tech devices such as tablets, smartphones, e-readers, and gaming systems, apps, etc.), which of the following statements best describes YOU?

- I usually know more than my students
- My students usually know more than I do
- Our knowledge levels are usually about equal

Q12 Does YOUR SCHOOL OR SCHOOL BOARD currently provide teachers with formal training in how to incorporate digital technologies into the learning process?

- Yes **[continue to Q12a]**
- No **[skip to Q13]**

Q12a Please rate from **1 to 4** the level of resources and support provided by your school or school board to help teachers effectively incorporate the newest digital technologies into your curriculum and pedagogy, with **1 representing the lowest rating** (school does a poor job) and **4 being the highest** (school does a very good job)

- 1 (school/school board does a **poor job**)
- 2
- 3
- 4 (school/school board does a **very good job**)

SECTION IV – E-BOOKS/DIGITAL BOOKS

This section concerns you and your students' attitudes towards and usage of e-books/digital books.

Q13 Do your students read digital books in class or at school?

- Yes **[skip to Q14]**
- No **[continue to Q13a]**

Q13a Why not?

- I'd like them to but I'm not comfortable with the technology
- I prefer not to use e-books/digital books in my classroom
- E-books/Digital books are not available to me in my school
- The school/school board does not allow the use of e-books/digital books in school
- Other (PLEASE SPECIFY):

[skip to Q27]

Q14 About how often do your students use e-books/digital books in class/at school?

- Several times a day
- Once a day
- Several times a week
- Once a week
- Less than once a week
- Once or twice a month
- Less than once a month

Q15 My students use e-books/digital books in class/at school for: (CHECK ALL THAT APPLY)

- Independent reading

- Classwork/Project Work
- Entertainment
- Completing assignments
- Textbooks
- Other: (PLEASE SPECIFY)

Q16 On which of the following devices do your students read e-books/digital books in class/at school? (CHECK ALL THAT APPLY)

- Laptop or desktop computer
- iPad/iPad Mini
- A tablet that is not an iPad
- Amazon Kindle
- Kobo
- Other device (PLEASE SPECIFY):

Q17 The device that children use for e-reading at school is most often provided by:

- Parents
- School
- Both
- Other (PLEASE SPECIFY):

Q18 Who typically selects the e-books/digital books that will be available to students in your classroom/at school?

- Primarily me
- Someone else at my school (e.g., librarian, department head, principal)
- The school board
- Other (PLEASE SPECIFY):

Q19 How do you typically LOOK FOR e-books/digital books for your students? (CHECK ALL THAT APPLY)

- I search by age
- I look for what's recommended in the "education" area of e-book/digital book sellers
- I search by content/subject area
- I look at the top rated e-books/digital books
- I get recommendations from other teachers
- I get recommendations from the school librarian
- I get recommendations from my students
- I look for specific titles
- Other (PLEASE SPECIFY):

Q20 What influences your decision when it comes to PURCHASING digital books for your students? (CHECK ALL THAT APPLY)

- My students ask for it
- It is offered at a good price

- It gets good reviews
- It features characters my students like from TV, film or other books
- I am searching for a specific theme or subject area
- I read about it in an article, blog, or other publication
- It was written by a well known or favourite author
- I heard about it via word of mouth from another teacher
- Advertising
- It comes from a trusted developer or publisher
- It is recommended / featured in the e-book/digital book store's education section
- I received information through my email
- I received notifications through the e-book/digital book, app, or device
- It claims to help children improve academically
- It is on the school board's list of recommended materials
- It has a curriculum tie-in
- Other (PLEASE SPECIFY):

Q21 Who typically PURCHASES the digital books that your students use in class? (CHECK ALL THAT APPLY)

- Primarily me, with my own funds
- Primarily me, with funds provided by the school
- Parents
- School
- Both parents and the school
- Other (PLEASE SPECIFY):

Q22 From where do you typically purchase digital books for your students? (CHECK ALL THAT APPLY)

- Ebookstores like ebooks.com, iBooks, Kindle Store, NOOK Bookstore, Google Play Store, KoboBooks
- Publishers' websites
- Authors' websites
- Other (PLEASE SPECIFY):

Q23 On average, how much do you pay for an educational digital book?

- Less than \$5.00
- Between \$5 and \$10.00
- Between \$10 and \$15.00
- More than \$15.00

Q24 Consider the following list of features. Which do you find beneficial or detrimental to your students' e-reading experience when reading an educational e-book/digital book?

	Beneficial	Somewhat beneficial	Somewhat detrimental	Detrimental	N/A (I have not)

					experienced this feature)
Clicking on a word sounds it out					
Q&A provided in the e-book/digital book					
Words highlight during narration					
Animations of interactivity points embedded in the illustrations					
Audio narration of text					
Games provided in the digital book					
Videos provided in the e-book/digital book					
Music					
Other interactive functions (PLEASE SPECIFY):					

Q25 Please select what you consider to be the **top three** most important features of an educational e-book/digital book, and number them from 1 to 3, with **1 being the most important**.

- Encourages reading/literacy skills
- Involves problem solving
- Interactive content (sight, sound, touch)
- Encourages creativity
- Assesses reading level
- Aligns with traditional school subject areas
- Includes tests or assessments
- Tracks children's progress
- Has multiple choice questions
- Endorsed by your school board
- Other (PLEASE SPECIFY):

Q26 In your experience, what are the biggest challenges when it comes to the use of e-books/digital books in school? (CHECK ALL THAT APPLY):

- Price point of books
- Access to the hardware (e-reader devices)

- Availability of appropriate material (content)
- Tech support
- Digital rights/copyright/permissions (e.g., limiting access to a set number of devices or users)
- Other (PLEASE SPECIFY):

Q27 How important do you think it is for children to have classroom access to e-books/digital books (in addition to print books)?

- Not at all important
- Somewhat important
- Very important

Q28 Does your school board include e-books/digital books in their list of approved/recommended materials for use in the classroom?

- Yes
- No

Q29 How much does your school/school board determine the choice of supplemental materials you use in your classroom?

- I use only the materials that have been recommended and vetted by the school board
- I am able to select my own additional supplemental materials

COMMENTS BOX

If you have additional comments you would like to say regarding the use of e-books/digital books in schools, please enter it here.

SECTION V – DEMOGRAPHICS

We have just a few last questions for statistical purposes only.

Are you male or female?

- Male
- Female

What is your age?

- Younger than 22
- 22-29
- 30-39
- 40-49
- 50-59
- 60 or older

For how many years have you been teaching?

- Less than 2 years
- 2 to 5 years
- 6 to 10 years
- 11 to 20 years
- more than 20 years

Would you describe the community in which you teach as...

- A large metropolitan area or big city
- A small city or suburb
- A small town
- A rural area

Would you describe the families of the students you teach as...

- Mostly upper or upper middle income
- Mostly middle income
- Mostly lower income
- A mix of income levels
- Mostly living below the poverty line

Do you currently teach ...

- At a public school
- At a private school
- At a public religious school
- At a private religious school

At our school, courses are taught primarily in:

- English
- French
- English, but we have a French Immersion program

That completes the survey! Thank you again for participating.

7. SURVEY QUESTIONNAIRE FOR SCHOOL LIBRARIANS

INTRO

Thank you for taking the time to fill out this survey. The goal of this survey is to understand Canadian school librarians' beliefs, preferences, and practices regarding the use of digital technologies and content in their schools' libraries, especially e-books/digital books.

Some important information about taking the survey:

- This survey is completely confidential. Results are reported in the aggregate, and responses are never attributed to any individual.
- Most questions ask you to select the single response that best reflects your answer. Other questions are labeled CHECK ALL THAT APPLY, and for these you can select more than one response.
- Grid questions list multiple items down the left side of the screen and the response choices across the top. Please provide an answer for each item in the grid.

Q1 In what (Canadian) province do you currently work as a school librarian?

[NOTE: SURVEY IS ONLY INTENDED FOR THOSE CURRENTLY TEACHING IN ONTARIO]

Ontario

<input type="checkbox"/> Alberta	<i>[thank & terminate]</i>
<input type="checkbox"/> British Columbia	“
<input type="checkbox"/> Manitoba	“
<input type="checkbox"/> New Brunswick	“
<input type="checkbox"/> Newfoundland and Labrador	“
<input type="checkbox"/> Nova Scotia	“
<input type="checkbox"/> Prince Edward Island	“
<input type="checkbox"/> Quebec	“
<input type="checkbox"/> Saskatchewan	“

Q2 Please specify the region within Ontario where you work and the name of the school board that serves your school:

Region:

School board:

Q3 What grade level(s) does your school currently have?

[NOTE: SURVEY IS ONLY INTENDED FOR LIBRARIANS IN ELEMENTARY SCHOOLS]

- Grades K -5
- Grades K-8
- Grades K-12

<input type="checkbox"/> Preschool/Junior Kindergarten	<i>[thank & terminate]</i>
<input type="checkbox"/> Kindergarten	“
<input type="checkbox"/> Gr 9 – 12 (High school/ Secondary School)	“

SECTION II – TECH USE

The questions in this section are about your own use of digital technologies, including tech devices such as tablets and smartphones, whether at home or at work.

Q4 Overall, how confident are you in your ability to learn how to use new digital technologies such as smartphones, tablets, apps? Would you say you are...

- Very confident
- Somewhat confident
- Not too confident
- Not at all confident

Q5 Which of the following items do you use, either at home or at work? (CHECK ALL THAT APPLY)

- A desktop computer
- A laptop computer
- A cell phone
- A smartphone (e.g., like Blackberry, iPhone)
- A handheld device made primarily for e-book reading, such as a Kobo or Kindle e-reader
- A multipurpose tablet such as an iPad, Samsung Galaxy, or Kindle Fire
- An iPod or other MP3 player

Q6 Do you read digital books (on any platform)?

- Yes
- No *[skip to Q9]*

Q7 For how long have you been reading digital books?

- Less than a year
- Between 1 – 5 years
- For more than 6 years

Q8 On which type of device do you usually read digital books? (SELECT ALL THAT APPLY)

- A desktop computer
- A laptop computer
- A cell phone or smartphone (e.g., iPhone, Samsung, Blackberry,)
- A handheld device made primarily for e-book reading, such as a Kobo or Kindle e-reader
- A multipurpose tablet such as an iPad, Samsung Galaxy, or Kindle Fire

SECTION III – TECHNOLOGY IN THE LIBRARY

This section includes questions about you and your students' use of digital technologies (such as computers, interactive whiteboards, tablets, e-readers) in the library.

Q9 Please tell us if you or your students use any of the following digital tools **in the school library**. (PLEASE PROVIDE AN ANSWER FOR EACH ITEM IN THE GRID)

	Yes, I use this	Yes, my students use this	Yes, both my students and I use this	Neither my students nor I use this

Computers				
A projector that is connected to a laptop or desktop computer or other digital device				
An interactive whiteboard				
A digital camera other than a cell phone				
A digital video recorder other than a cell phone				
A touchscreen tablet				
An e-book reader				
A cell phone				
A smartphone				
Other: (PLEASE SPECIFY)				

Q10 Overall, when it comes to knowing how to use digital technologies (such as the internet and email, tech devices such as tablets, smartphones, e-readers, and gaming systems, apps, etc.), which of the following statements best describes YOU?

- I usually know more than my students
- My students usually know more than I do
- Our knowledge levels are usually about equal

Q11 Does YOUR SCHOOL OR SCHOOL BOARD currently provide teachers and librarians with formal training in how to incorporate digital technologies into the learning process?

- Yes [*continue to Q11a*]
- No [*skip to Q12*]

Q11a Please rate from **1 to 4** the level of resources and support provided by your school or school board to help teachers and librarians effectively incorporate the newest digital technologies into your curriculum and pedagogy, with **1 representing the lowest rating** (school does a poor job) and **4 being the highest** (school does a very good job)

- 1 (school/school board does a **poor job**)
- 2
- 3
- 4 (school/school board does a **very good job**)

SECTION IV – E-BOOKS/DIGITAL BOOKS

This section concerns your and your school's students' attitudes towards and usage of e-books/digital books.

Q12 Do students read e-books/digital books in the school library?

- Yes [*skip to Q13*]
- No [*continue to Q12a*]

Q12a Why not?

- I'd like them to but I'm not comfortable with the technology
- I prefer not to use e-books/digital books in my library
- E-books/Digital books are not available to me in my school
- The school/school board does not allow the use of e-books/digital books in school
- Other (PLEASE SPECIFY):

[skip to Q27]

Q13 About how often do students use e-books/digital books in the library?

- Several times a day
- Once a day
- Several times a week
- Once a week
- Less than once a week
- Once or twice a month
- Less than once a month

Q14 Students use e-books/digital books in the library for: (CHECK ALL THAT APPLY)

- Independent reading/studying
- Classwork/Project Work
- Entertainment
- Completing assignments
- Textbooks
- Other: (PLEASE SPECIFY)

Q15 On which of the following devices do students read e-books/digital books in the library?
(CHECK ALL THAT APPLY)

- Laptop or desktop computer
- iPad/iPad Mini
- A tablet that is not an iPad
- Amazon Kindle
- Kobo
- Other device (PLEASE SPECIFY):

Q16 The device that children use for e-reading at school is most often provided by:

- Parents
- School
- Both
- Other (PLEASE SPECIFY):

Q17 Who typically selects the e-books/digital books that will be used by students in the school library?

- Primarily me

- Someone else at my school (e.g., teacher, department head, principal)
- The school board
- Other (PLEASE SPECIFY):

Q18 How do you typically LOOK FOR e-books/digital books for your school library? (CHECK ALL THAT APPLY)

- I search by age
- I look for what's recommended in the "education" area
- I search by content/subject area
- I look at the top rated e-books
- I get recommendations from other school librarians
- I get recommendations from teachers
- I get recommendations from students
- I look for specific titles
- Other (PLEASE SPECIFY):

Q19 What influences your decision when it comes to PURCHASING e-books/digital books for your school library? (CHECK ALL THAT APPLY)

- My students ask for it
- It is offered at a good price
- It gets good reviews
- It features characters my students like from TV, film or other books
- I am searching for a specific theme or subject area
- I read about it in an article, blog, or other publication
- It was written by a well known or favorite author
- I heard about it via word of mouth from another teacher
- Advertising
- It comes from a trusted developer or publisher
- It is recommended / featured in the ebook store's education section
- I received information through my email
- I received notifications through the ebook, app, or device
- It claims to help children improve academically
- It is on the school board's list of recommended materials
- It has a curriculum tie-in
- Other (PLEASE SPECIFY):

Q20 Who typically purchases the e-books/digital books that your students use in the library? (CHECK ALL THAT APPLY)

- Primarily me, with my own funds
- Primarily me, with funds provided by the school
- Parents
- School
- Both parents and the school
- Other (PLEASE SPECIFY):

Q21 From where do you typically purchase e-books/digital books for the school library?
(CHECK ALL THAT APPLY)

- Ebookstores like ebooks.com, iBooks, Kindle Store, Google Play Store, KoboBooks
- Publishers' websites
- Authors' websites
- E-book/digital book vendors for school libraries (PLEASE SPECIFY):
- Other (PLEASE SPECIFY):

Q22 On average, how much do you pay for a single title e-book/digital book?

- Less than \$5.00
- Between \$5 and \$10.00
- Between \$10 and \$15.00
- More than \$15.00

Q23 On average, how much do you pay for an e-book/digital book collection (i.e., multiple titles from a series)?

- Less than \$20.00
- Between \$20 and \$50.00
- Between \$50 and \$100.00
- More than \$100.00

Q24 Consider the following list of features. Which do you find beneficial or detrimental to your students' e-reading experience when reading an educational digital book?

	Very Beneficial	Somewhat beneficial	Somewhat detrimental	Very Detrimental	N/A (I have not experienced this feature)
Clicking a word sounds it out					
Q&A provided in the digital book					
Words highlight during narration					
Animations of interactivity points embedded in the illustrations					
Audio narration of text					
Games provided in the digital book					
Videos provided in					

the digital book					
Music					
Other interactive functions					

Q25 Please check what you consider to be the **top three** most important features of an educational digital book, and number them from 1 to 3, with **1 being the most important**.

- Encourages reading/literacy skills
- Involves problem solving
- Interactive content (sight, sound, touch)
- Encourages creativity
- Assesses reading level
- Aligns with traditional school subject areas
- Includes tests or assessments
- Tracks children’s progress
- Has multiple choice questions
- Endorsed by your school board
- Other (PLEASE SPECIFY):

Q26 In your experience, what are the biggest challenges when it comes to the use of digital books in school (whether at the library or in the classroom)? (CHECK ALL THAT APPLY):

- Price point of books
- Access to the hardware (e-reader devices)
- Availability of appropriate material (content)
- Tech support
- Digital rights/copyright/permissions (e.g., limiting access to a set number of devices or users)
- Other (PLEASE SPECIFY):

Q27 How important do you think it is for children to have access in the school library to digital books (in addition to print books)?

- Not at all important
- A little important
- Fairly important
- Very important

COMMENTS BOX

If you have additional comments you would like to say regarding the use of e-books/digital books in schools, please enter it here.

SECTION V – DEMOGRAPHICS

We have just a few last questions for statistical purposes only.

Are you male or female?

- Male
- Female

What is your age?

- Younger than 22
- 22-29
- 30-39
- 40-49
- 50-59
- 60 or older

For how many years have you been a school librarian?

- Less than 2 years
- 2 to 5 years
- 6 to 10 years
- 11 to 20 years
- more than 20 years

Would you describe the community in which your school is located as...

- A large metropolitan area or big city
- A small city or suburb
- A small town
- A rural area

Would you describe the families of the students in your school as...

- Mostly upper or upper middle income
- Mostly middle income
- Mostly lower income
- A mix of income levels
- Mostly living below the poverty line

Do you currently work...

- At a public school
- At a private school
- At a public religious school
- At a private religious school

At our school, courses are taught primarily in:

- English
- French

- English, but we have a French Immersion program

That completes the survey! Thank you again for participating.



michael cohen group LLC
research, evaluation, consulting

APPENDIX B:

**TOPLINE REPORT OF PHASE IV:
DIGITAL BOOKS: THEIR DEVELOPMENT AND POTENTIAL
A LITERATURE REVIEW**

Prepared by:



Prepared for:



June 2014

Revised November 2014

Funding provided by:



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Project Background

The Story Planet project, “*If We Build It Will They Come? Digital Books In The Educational Landscape*” -- funded by a grant from the Ontario Media Development Corporation (OMDC) -- seeks to help Ontario’s digital book creation community find ways to maximize their investment in the digital shift and grow their business. An avenue that has not yet been fully explored is the educational system market -- an essential commercial purchase landscape for children’s books. This project aims to provide a greater understanding of the use of and needs for digital books in Ontario schools to help the project’s partners’ (digital book creators) grow their digital book business by entering and establishing a presence in the education market.

The project involves a **four-phase** program of primary and secondary market research. **Phase I** consists of individual interviews with several of the project’s partners in order to identify their informational needs and set the stage for the rest of the research. **Phase II** is comprised of an online survey conducted with Ontario-based first and second grade teachers and elementary school librarians about their perceptions, attitudes, and their students’ current use of digital books in school. To provide an understanding at the policy level, **Phase III** entails individual interviews with school policy makers. Finally, **Phase IV**, the *focus of this report*, consists of a literature review on digital books.

All the research is being conducted in collaboration with Story Planet by the Michael Cohen Group (MCG), an applied research and evaluation firm with extensive experience and expertise in the areas of children, media, and education.

Introduction

The emergence of digital books involves the adaptation of the print book to digital media, the adaptation of digital hardware and software to accommodate certain features of the print format, and the active role of the reader in forging new behaviours, perceptions, and attitudes regarding reading and literacy. Research on all of these provides an important way to understand and gauge the emergence of digital books, providing a basis for making valid predictions of the future.

This literature review begins with a market overview of recent trends in the market presence and use of digital books in Canada and, to a lesser extent, the US. Recent statistics on readers’ preferences for and use of devices for digital reading, and the context of that reading are also reported. After this, research on the ways that digital books may contribute to literacy, story comprehension, reading enjoyment, and vocabulary development are covered. Finally, relevant information for developers and marketers of digital books regarding ethical considerations and tactics for marketing to schools is covered.

This report is written for a Canadian audience, and the primary focus is on Canadian data. However, US data is used throughout this report for several reasons. First, the size of the US market and its proximity to Canada both make it relevant. Second, in cases where Canadian data

was not available or accessible, data on the US market is used as a proxy. Although reading is less common in the US than in Canada¹, and a one-to-one relationship between both countries cannot be assumed, rates of digital reading have been similar across both countries over the last several years (Wischenbart, 2014). Additionally, in both countries, rapid growth in the market share of digital books in the years leading up to 2012 transitioned to a period of relatively stagnant growth, as described in more detail below.

1. Market Overview

The introduction of e-reading devices around 2010 was followed by a dramatic increase in both the percentage of books purchased in digital format and in those reporting having read a book in digital format. This dramatic growth was most apparent in the period up to 2012. Since then, growth in the purchasing of digital books has slowed or leveled off. However, the percentage of the population that reads digital books has continued to increase, although at a slower pace.

1.1. Digital Books Emerge in the Mainstream

Attempts to develop hardware and software for digital (computer-based) reading occurred throughout the 20th century. However, it was not until the 21st century that digital books entered the mainstream. Widespread use of digital books was catalyzed by the emergence of a new and more prominent generation of e-readers, beginning with the Amazon Kindle in 2007, the Barnes and Noble Nook in 2009, and the Kobo e-reader in 2010. The first generation versions of these devices utilized electronic ink screens, designed to provide a digital screen that appears relatively similar to paper. While devices with these screens facilitated many consumers' entry into the digital book market and remain in widespread use, digital reading increasingly occurs on multi-purpose, colour-screen devices (e.g., the Kindle Fire or the Kobo Arc).

1.2. Recent Trends in the Book Market

The book markets in both Canada and the US have contracted in recent years. In 2012, the total value of the Canadian print book market was \$973.9 million with a volume of 54.7 million books sold² (BookNet Canada, 2013c). This represents a decline of -4.9% in value and -6.6% in volume from the previous year (BookNet Canada, 2013c). In 2013, this decline continued, with print unit sales at 52.8 million, a 3.41% drop from 2012. A similar pattern is seen in the US market, which shrank from a peak volume of nearly 800 million units in 2008 to less than 600 million in 2013 (Nowell & Henry, 2014).

¹ According to Genner, (2014) 88% of Canadians read a book in the last year, compared to 76% of Americans.

² These figures are for the print book market. BookNet Canada (2013c) reported that 15% of books sold in 2012 were digital books. Therefore, in 2012, the overall book market including digital books had an approximate volume of 64.4m and a value of around \$1b.

1.3. Trends in the Sales of Digital Books

Growth in purchases of digital books was most apparent between 2009-2012. At the beginning of this period, only a very small fraction of books were purchased in digital format—estimated to be somewhere between 2 to 5% of the Canadian market (Cowie, 2009). During the course of 2012, an average of 15% of books purchased in Canada were in the digital format (9.7m units), with an average price of \$6.97³, or an overall value of nearly \$68m (BookNet Canada, 2013b; 2013c). Similarly, in 2010, 3% of all books purchased in the US were in the digital format. By 2012, this had increased to 21% (Nowell & Henry, 2014).

Over the last two years, the growth rate in the market share of digital books has slowed, suggesting a plateau, according to BookNet Canada (2013b). Over the course of 2012, the percentage of books purchased in digital format fell from nearly 18% down to 13%, before rebounding and stabilizing at 17% in 2013 (BookNet Canada, 2014). A similar pattern was seen in the US, suggesting a more general trend. There, digital books comprised 23% of sales for the year leading up to October 2013, compared to 21% for the year 2012 (Newell & Henry, 2014).

1.4. Production of Digital Books

Publishers have responded to the demand for digital books by making their titles available in digital format. A recent survey of small, medium and large publishers and distributors of books in Canada shows the extent to which this has occurred. Nearly 50% reported that more than half of their available titles were available in digital format. Nearly one-fifth of respondents reported having all titles available in digital format. In contrast, fewer books from publishers' backlists (books published more than six months ago) were available in digital format (BookNet Canada, 2014). Notably, 90% of the publishers were already producing digital books, with the remaining 10% planning on doing so.

1.5. Trends in the Use of Digital Books

In both Canada and the US, it is common, but by no means universal, to read digital books. The percentage of people who have read digitally, and the frequency of digital reading have steadily increased over the last couple of years.

The leveling-off of growth in the market share of digital books has not corresponded to a plateau in rates of digital reading, which have continued to rise. A BookNet Canada survey reports that in 2013, 88% of Canadians read a book. Of these, 93% read a print book, 58% read a digital book, and 27% listened to an audiobook (Genner, 2014). Likewise, the percentage that read digital books at least several times per week has increased from around 10% to nearly 15% (Genner, 2014b). A slightly older survey from 2012 (BookNet Canada, 2013) found that 27% of children aged 0-13 years old, 27% of teens aged 13-17, and 41% of adults over 18 read digitally.

³ This figure includes ebooks with a price of \$0. When these books are excluded, the average price rises to \$11.83.

Forty-three per cent of parents of children 0-13 years old reported having digital book software loaded on their tablets or smartphones for their children's use (BookNet Canada, 2013).

As a comparison with Canadian data, a survey from the US indicates that between 2010 and 2012, the percentage of children who had ever read a digital book nearly doubled, from 25% to 46% per cent. This growth appears to be continuing: a 2013 survey found that more than half of children aged 2-13 in the US read⁴ digital books. Eighty-five per cent of children who read digital books do so at least once a week (Shuler, 2013). The same survey reported that the highest levels of digital reading were found in preschoolers and early elementary school children.

People of different ages read digital books in different places, where they have different constraints on their time, and access to different types of devices and books. General statistics about digital reading, and its relation to particular variables—where it happens, who is doing it, and the device used to support it—obscure the interrelations between these variables. As an example, consider Shuler's (2013) finding that the frequency of digital reading is different for children between the ages of 2-5 years, 6-9 years, and 10-13 years. To interpret this data, it is crucial to keep in mind that each of these age groups tends to use different types of devices, and read in different contexts. Therefore, the age-related frequency of reading may be partially a function of the availability of certain devices, which is in turn a function of the context in which the reading occurs, and so forth.

2. The Context of Children's Digital Book Reading

2.1. Home and School Use

Children use digital books more at home than in school. This is most likely a function of the limited availability of devices for digital reading in school. This could change dramatically if districts decide to purchase larger numbers of tablets or other devices capable of supporting digital reading, or if current restrictive policies on in-school device use are loosened.

A recent US survey reports that twice as many children aged 2-13 read digital books in the home (54%) than in school (19%) (Shuler, 2013). Most likely, this is partially a reflection of the availability of devices for digital reading in schools. As of 2013, devices used for digital reading in schools are as likely to be purchased by parents as by the school (Shuler, 2013). This could change in the future if more school districts follow the Los Angeles Unified School District's decision to provide every student with an iPad. Alternately, there may also be a shift towards *bring your own device* (BYOD) policies, which could enable a dramatic increase in digital reading in schools without large overhead expenditures for districts.

⁴ Although this was not noted in the survey, this presumably includes children who are read to by their parents.

A recent survey of Canadian students in grades 4-11 inquired about policies governing the use of personal devices in schools (Steeves, 2014). The results showed that 53% are able to use their own laptops, and 25% are allowed to use cellular or smart phones.

Amongst students who used any of the devices, 51% reported doing so to read class materials (books or textbooks). Twenty-nine per cent of students reported not being allowed to use any of the devices.

2.2. Digital Books in School Libraries and Media Centres

Digital books are increasingly prominent in libraries, and in school library media centres (LMCs), where they have shown steady growth. According to a US survey (*School Library Journal*, 2013), 56% of LMCs offered digital books in 2013, an increase of 16% since 2012. The average number of titles available at LMCs has increased dramatically — 325% — since 2010, and libraries' expenditures on digital books have doubled in the last year (*School Library Journal*, 2013). Lending services for digital content—of which the most visible are Overdrive, Ingram, Baker & Taylor (Blio), and Ebrary—play an important role in making increasing amounts of content legally available within libraries.

3. Devices Used for Digital Reading

The devices used for digital reading affect reading by opening up possibilities and creating constraints on how and when reading can occur. While specialized e-readers have been, and continue to be, the most common devices used for digital reading, this may be changing. An increasing percentage of digital readers report using smartphones and tablets for digital reading.

A 2012 study found that, in Canada, the Kobo was the most commonly used device for digital reading, used by 25% of the market, followed by the Kindle (18%) and the iPad (14%) (BookNet Canada, 2012). Another recent study investigated the devices primarily used by consumers for digital reading. That study found that the specialized e-reader and tablet were the most common, with both serving as the primary devices for digital reading for 34% of respondents, ahead of a desktop computer (21%) or a mobile phone (10%) (Genner, 2014). Yet another study found that 56% of respondents prefer to read digitally using a specialized e-reader, as opposed to a tablet, mobile device, desktop, or other device (Millar, 2014).

It seems likely that consumers are shifting towards increasing use of tablets and smartphones for digital reading, regardless of their preferences for specialized e-readers. Millar (2014) reports that the use of smartphones for digital reading has been steadily increasing in Canada, with nearly 30% of Canadian book buyers reporting such use in 2013. Genner (2014) found that less than 30% of consumers reported planning to purchase an e-reader in the next 12 months, whereas 75% planned to purchase a smartphone, and 50% planned to purchase a tablet. This suggests that, either consumers are content to use their existing e-readers for a longer period of time before replacing them, or that the devices will not be replaced, and readers will transition towards the use of tablets or smartphones for digital reading. The latter seems more

likely, as the similarity of the features of many specialized e-readers to general-purpose devices makes the specialized devices somewhat redundant.

Data from the US corroborates evidence of the trend towards the use of general-purpose tablets for digital reading. Shuler (2013) reported an increase from 48% to 60% of children's digital reading occurring on tablets (rather than other devices such as specialized e-readers) over six months, from January to July 2013. Other indicators of the shift towards more general-purpose devices include the development of the Kindle Fire and the Kobo Arc, both of which are general-purpose tablets that succeeded specialized e-readers.

The increase in the use of general-purpose tablets for digital reading has important implications. Unlike specialized e-readers, which are specifically designed to accommodate the demands of digital reading (e.g., the use of electronic ink screens), tablets are designed to accommodate a wide variety of activities. This means that digital reading is increasingly at the mercy of the characteristics of devices not necessarily designed for this activity.

3.1. Current Patterns of Tablet/Smartphone Use

Recent research has revealed that tablet and smartphone ownership is widespread, and children's use of these devices is fairly common. Parents view their children's use as important for future skill development, something that is likely connected to limitations in their own perceived technological literacy.

A Canadian study carried out by Harris Decima (Pachovski, 2013) used surveys and focus group interviews of parents to assess children's use of tablets and smartphones, as well as parents' attitudes and expectations for these devices. The survey results showed that 66% of surveyed households⁵ reported having at least one mobile device (tablet or smartphone). Of these households, 70% reported that their children used the devices (the rate of use was higher for households with children older than 6, and lower for those with children under 6). A different survey studied children's access to devices that they could use to download apps (BookNet Canada, 2013). That study reported that 36% of children from 0-2-years, 68% of children from 7-8, and 78% of 11-13 year-olds have such access.

Parents interviewed in the Harris Decima study reported a lack of knowledge of the devices and a lack of fluency in using them. Only 6% of parents reported being well aware of the content of their tablets. They also report perceiving sharp differences in technological literacy between themselves and their children. However, because they feel that digital technology will only become more prominent in the future, they support their children's use—particularly when this use involves educational activities. This support and optimism may be attributed to the fact that parents (in the same study) reported believing that tablet use is instrumental in developing useful skills (Pachovski, 2013). Parents appear to be acting on this belief: BookNet Canada

⁵ Households containing children under 12 years of age.

(2013) reports that 43% of parents of children under the age of 13 reported having book-related apps on their devices intended for their children's use.

4. Differences Between Digital and Print Reading Experiences

There are advantages to reading in both the print and digital mediums, which are relevant to the design and marketing of digital books. However, digital books present a challenge for a consumer base accustomed to the benefits of print books and the free and ready availability of information on the Internet, as well as to a publishing industry organized around the copyright and sale of print books.

4.1. Advantages of Print Books

Several recent articles describe the frequently overlooked advantages of print books over digital books (e.g., Bohn, 2012; Mikanowski, 2013). Paper provides a very high contrast display that is readable in any form of light, and requires no battery power. It offers a spatial layout that provides immediate access to random information, or to a specific location via the standardized paging system (an equally usable version of this has yet to be developed for digital books⁶). Paper can also accommodate a wide variety of note taking systems, and direct interaction with a pen or highlighter. Print books cannot freeze, and with proper care, can last thousands of years. Over much of this time, they can be easily shared.

Despite the widely touted interactive possibilities of digital books, print books may also contain important features that elevate the user's experience beyond mere reading. Print books—particularly children's books—are salient objects for exploration. This is important for understanding children's reading preferences, since, as Columbo, Landoni and Rubegni (2012) report, children's choice of books is heavily influenced by features that adults might consider to be superficial: the cover, title, font size, pictures, etc. These features are immediately available for exploration in print books, whereas in digital books they are less accessible, or non-existent. Digital books tend to have a homogeneous outward appearance, being displayed as icons on a screen.

4.2. Accessibility and Formatting Issues with Digital Books

Digital books have introduced new kinds of accessibility issues. Differences in file types, as well as user interfaces require a user to acquire a new skill set (or in some cases, new hardware) to read certain digital books. An important challenge for digital book publishers and creators of software platforms for e-reading is to agree to the use of a universal common format for their books. The currently problematic state of affairs regarding a common format for digital books is evident in the fact that the most widely used format—EPUB—is not compatible with Amazon's Kindle, the second most commonly used e-reading device in Canada, and the most commonly used in the United States.

⁶ Digital books lack a standardized pagination system that is shared across formats or different devices (hardware).

Copyright issues present another challenge for digital books. Copyright issues have interfered with readers' ability to share and even access books. In one noteworthy case, copyright issues led to Amazon automatically deleting all purchased George Orwell books on customers' Kindles (Stone, 2009). More recently, Amazon's battles with publishers, most notably Hachette, have the potential to dramatically upset the digital book market, the publishing industry, or both. While Amazon is not the largest vendor of digital books in Canada, its negotiations and standoffs with publishers are relevant there, given the size of the company, and its influence on large publishers.

4.3. Enhanced Digital Books

The digital medium offers the possibility of enhancements—add-ons that incorporate audio, video, or active experiences that are a part of the story. Enhancements offer unique possibilities for digital books to distinguish themselves, either negatively or positively as a result of features that either interfere with, or constructively extend the reading experience.

While it's important for digital book designers to recognize the overlooked benefits of print, it's undeniable that digital books offer interactive possibilities that can transform the reading experience. These include additional media, features, and hotspots that the user can explore within the context of a story. While unique features can be found in print books⁷, digital books afford features or *add-ons* that are profoundly unique, with the potential to fundamentally change the role of the reader, the reading process, and psychological approaches to reading (Felvegi & Matthew, 2012).

4.4. "Considerate" and "Inconsiderate" Add-Ons

Roslund's (2012) framework for evaluating digital books (aimed at librarians) makes the useful distinction between "considerate" and "inconsiderate" add-ons. "Considerate" add-ons are interactive features that may deepen readers' involvement with the story, such as the highlighting of text in time with reading by a digital voice-over, or hot spots on characters that, when tapped, cause the character to offer their perspective about the events of the story⁸. "Inconsiderate" add-ons are interactive features that have no relation to the story and seem likely to distract children. These include hot-spots that, when tapped, emit noises unrelated to the story, or provide links to irrelevant or commercial content.

Itzkovich's (2012) analysis and review of enhanced digital books focuses on those that incorporate "considerate" add-ons. His analysis focuses on books that embody a more

⁷ *The Jolly Postman* (Ahlberg & Ahlberg, 2011) is one example of a print book that contains unique "interactive" features. Pages in the book contain folders, in which the reader can access items related to the storyline, such as letters, games, and even a miniature book.

⁸ Korat, Shamir & Segal-Drori (2013) describe how in the digital book *Elmo the King and the Prince*, a messenger arrives at a house where the main character's mother is waiting outside. Pressing the mother causes her to move around and exclaim "Wow, this is probably going to be very important."

innovative approach to integrating interactive features that considerately and constructively add to the reading experience. In particular, two examples (*Bobo Explores Light* and *The Magic of Reality*) both succeed at leveraging the unique affordances of tablets to provide a context in which readers can interact with complex scientific concepts. These examples suggest that constructive integration of features into digital books may result in something more closely resembling an app than a traditional book. Although the design of these “books” sets an example for future authors and developers, the interactive affordances are most directly applicable to non-fiction books that attempt to convey complex conceptual information and schematic concepts, since these are amenable to the types of interactive audio-visual exploration that are provided by some types of interactive add-ons.

4.5. The Future of Enhanced Digital Books

Whether they are viewed as “considerate” or “inconsiderate,” there is some evidence that interactive add-ons are becoming increasingly common. Despite this, it is not clear whether they will be profitable for publishers.

A recent survey of Canadian publishers (BookNet Canada, 2014) reports that, although only 19% of surveyed publishers are currently producing enhanced digital books, 13% are planning to produce them in the near future, and 32% are investigating the possibility of producing them. The most popular ways of enhancing digital books included audio (87%), video (73%), scripted animation (33%), interactive images (27%), slideshows (20%) and other/non-specified (13%).

Despite the increasing inclusion of interactive add-ons in digital books, it is unknown whether these will boost sales, and/or lead to an increase in digital reading. According to a recent Canadian study, only 7% of publishers responded that enhancements had produced a positive impact on sales. Most reported only a slight impact (33%), no impact (40%), or that they were unsure (20%) (BookNet Canada, 2014). There have been claims that enhanced digital books will not catch on over the long term. During a 2011 presentation at the London Book Fair, Evan Schnittman announced the death of enhanced digital books for recreational and narrative fiction reading (Schnittman, 2011). Importantly, he did not extend this prediction to education, an area where enhanced digital books have “an incredibly big future” (Schnittman, 2011).

While predictions like this are important, there is significant room for innovation in the design of enhanced digital books. In light of the unknown potential of enhanced digital books, it seems premature to claim that they have no future.

5. Consumer Preferences for Digital Versus Print Books

Overall, research on consumer preferences has not revealed a strong consensus on consumer preferences for either digital or print books. In both Canadian and US studies, participants are split fairly evenly between preferring print books, digital books, or having no preference. Some studies do report a slightly greater number who prefer print to digital books.

Available studies comparing consumer preferences on digital and print books show that only a minority prefer digital to print. Several studies found that more people preferred print books to digital books (BookNet Canada, 2013; Vaala & Takeuchi, 2012). While it is possible that a consensus on preferences for digital versus print books emerges within different age groups, the available evidence does not support this. A Canadian survey reported that, of the 27% of teens who read digital books, 37% prefer print books, 29% prefer digital books, and 34% show no preference (BookNet Canada, 2013). A US study reported that, as of Fall 2013, 17% of teens strongly preferred the print format, 33% generally preferred it, and 27% had no preference. Conversely, 15% per cent of teens generally preferred digital books, and only 6% strongly preferred them (Nowell & Henry, 2014). Longitudinal results from that study suggest that teens are becoming increasingly open to digital books. The percentage of teens reporting a strong preference for print has dropped sharply from Fall 2012 to Spring 2013.

Research on adults suggests that they value both print and digital books. While Canadian data is not available on this issue, a US study (Shuler, 2013) reports that 85% of parents who read digital books to their children still think that print books are important. Similarly, Vaala and Takeuchi (2012) report that most iPad owners who read digital books to their children still prefer to read print books to them.

Regarding enjoyment, current academic research suggests that there is no significant difference in children's average enjoyment of print and digital books (Grimshaw, Dungworth, McKnight & Morris, 2007; Jones & Brown, 2011).⁹ While aspects of the digital book medium may be exciting, and hence, more enjoyable for children, this may be counterbalanced by the fact that certain digital books, especially those with "inconsiderate" add-ons, are associated with lower levels of story comprehension than print books (Chiong, Ree, Takeuchi & Erickson, 2012; Jones & Brown, 2011), which may prevent readers from enjoying the narrative itself. It is possible that a third category of the reading experience, one that successfully integrates the best characteristics of both mediums, is emerging. This is something the marketplace is trying to figure out.

⁹ Research reviewed in this and the following section comes from a variety of researchers around the world. While research done on children in other countries is not necessarily generalizable to the Canadian context, only a small amount of research has systematically studied the effects of children's use of digital books. Recent international studies are therefore included.

Findings regarding subjective reactions to digital books have to be interpreted with the awareness that they reflect the design and style of the particular books/devices used in the study. Despite researchers' claims that their research compares the digital to the print medium, it is not possible to do research on a medium alone (i.e., treating the medium as a variable), only on particular examples of that medium. Therefore, general claims comparing digital and print books should be approached carefully. These claims are derived from the specific digital and print books used in a particular study, which are, at best representative of these books at a particular historical time period. Comparisons of multiple digital and print books may find larger or more significant differences between two digital (or print) books than between a digital and print book (e.g., Jones & Brown, 2011). It is important to be aware of the ways that variables like comprehension, enjoyment and preferences may be affected by the idiosyncratic features of the books used in research. It is not possible to control for these features, as if a given feature could be said to have a consistent type of effect regardless of the book in which it's found. The effect of a particular feature on reader experience depends on its context and how it functions within the unique context of the book.

The characteristics of the reader are also important to consider. Research findings on the effects of certain features may not be valid as a result of certain users' presence or lack of expertise, experience, and their orientation towards digital reading (McAnulty, Gertner & Cotton, 2012). If the reader doesn't know how to use the features in question, they cannot be effective.

6. Features of Digital Books that Enhance Literacy and Learning

Research comparing literacy and learning outcomes following the use of digital and print books has generally found similar effects with either type of book. Children can learn from both types of media. While certain digital books produce learning gains that are significantly below those in comparable print books, other digital books can produce learning gains that match or exceed those from print books. The most relevant aspect of digital books with regards to learning appears to be the presence and nature of interactive add-ons such as hot spots or dictionaries. Existing research suggests that interactive add-ons may play an important role in shaping the appeal and educational potential of digital books, in positive or negative ways. Still, the conflicting research findings suggest that more study is needed in order to provide clear guidelines for the design of educationally effective digital books.

6.1. "Inconsiderate" Add-Ons

The negative effects of "inconsiderate" add-ons are a prominent theme in the digital book literature. Several studies that associate lower story comprehension with digital rather than print books attribute this to "inconsiderate" features of enhanced digital books (i.e., digital books with interactive add-ons). Dalla Longa and Mich (2013) report that greater use of interactive hot spots in digital books was associated with lower story comprehension in 7- to 9-

year old children¹⁰. Schugar, Smith and Schugar (2013) found similar results using a wider sample of 4- to 12-year-old children. Chiong, Ree Takeuchi and Erickson (2012) found similar comprehension in children who read print and un-enhanced digital books, but significantly lower comprehension with enhanced digital books. Still, it is premature to conclude that it is only the “inconsiderate” features of enhanced digital books that lead to reduced comprehension. At least one study has found lower comprehension with digital (PDF files) versus printed texts (Mangen, Walgermo & Brønneck, 2013).

It may be the case that, despite the apparent interference with comprehension, the interactive features of the enhanced digital books may be effective in attracting less engaged readers who might otherwise stop or be averse to reading. The fact that a digital book doesn’t produce the same gains in comprehension as a print book is irrelevant and inapplicable in the case of the child who would not be reading in the first place. Still, even if readers are more engaged by digital books, this does not necessarily correlate with increased reading comprehension. In a comparison of digital and print books, Schugar et. al. (2013) found that digital books led to greater engagement, but lower comprehension than print books. This lowered comprehension may involve what Garner, Gillingham and White (1989) call “*seductive details*”—saliently interesting and engaging details that are unrelated to the main narrative, and tend to be memorable at the expense of broader story comprehension. These are particularly relevant to thinking about “inconsiderate” add-ons.

6.2. “Considerate” Add-Ons

While “inconsiderate” add-ons are seen as the single greatest impediment to the viability of digital books, “considerate” add-ons may provide their most important benefits. When asked about the most important digital book features for supporting literacy, a panel of childhood experts familiar with digital books mentioned the following: separate modes of activity (e.g., presence or absence of a voice-over), a dictionary option, activations that are congruent with the story, appropriate written register (e.g., developmentally appropriate lexicon), and simple and precise instructions (Shamir & Korat, 2006). Several of these exemplify “considerate” add-ons, specifically the dictionary option and activations (hot spots) that are congruent with the story.

Existing evidence concerning the effectiveness of “considerate” add-ons is mixed (Schugar et. al., 2013). Some researchers report that “considerate” add-ons provide no additional benefit to language and literacy related outcomes. Grimshaw, Dungworth, McKnight, and Morris (2007) found no differences in learning between 9- to 10-year olds who read digital or print books, even though the digital book contained a dictionary, which participants used significantly more than the traditional dictionary that was available alongside the print book. De Jong and Bus (2003) found that games incorporated into a digital book that related to the narrative had no effect on story comprehension.

¹⁰ These findings are based on a pilot study with only four children, and may not be generalizable.

The work of researcher Ofra offers reasons for optimism for “considerate” add-ons. In one study, Korat and Shamir (2012) found that children who read a digital book that contained visual embellishments of story content and a dictionary that provided definitions of harder words, showed improved knowledge of word meaning, compared to a group that read a print book/dictionary. The improvements in word meaning were restricted to words defined by the dictionary or illustrated visually, implying that these additions can be helpful. In a more recent review of research on digital books, Korat, Shamir, and Segal-Drori (2013) report that the use of digital books significantly increases children’s scores on a variety of measures of language and literacy. They attribute these benefits to the “considerate” add-ons in the digital books.

6.3. Digital Books and Literacy Skills

An important role for digital books may be in providing features that aid in literacy development that would be impossible for print books to deliver. Existing research has shown that reading benefits aspects of literacy involving general language and story comprehension skills more than word decoding skills (letter naming, word reading, and word writing (Dickenson, et. al., 2013; Scarborough & Dobrich, 1994). Digital books may be able to enhance decoding skills through the use of hot spots, highlighting of words in time with voiceover reading, or through the use of add-ons that break down words letter-by-letter and phoneme-by-phoneme.

There is emerging evidence that certain digital books do support these types of decoding skills (Zucker, Moody and McKenna, 2009). Reading digital books has been associated with significant improvements in children’s ability to read and write new words, although this effect is limited to words that are included in the story and several re-readings are generally required for this effect to be seen (Korat, et. al., 2013). These findings were obtained by researchers using custom-designed electronic versions of two existing books¹¹ in which readers could press hot spots on characters to see them perform the actions detailed in the story.

Highlighting of text in time with voiceover reading, a capability of digital but not print books, is likely to play an important role in enhancing word recognition. The potential importance of highlighting for younger readers was given further support by a recent eye-tracking study which found that children being read to looked away from the text 91% of the time for print books, but only 59% of the time when using a digital book with automated voiceover narration (Meegenius, 2013).

Overall, there appears to be potential for digital book use to aid in the development of literacy skills. Barring the distracting potential of “inconsiderate” add-ons, there is no reason why digital books should be unable to provide the comprehension-enhancing benefits of traditional reading. Furthermore, digital books may be able to play a greater role than traditional books in facilitating the development of decoding abilities. This will require the careful development of

¹¹ *The Tractor in the Sandbox* (Shalev, 1995; electronic version developed by Korat & Shamir, 2004) and *Confused Yuval* (Roth, 2000; electronic version developed by Korat, Shamir & Segal-Drori, 2005).

features that enhance the traditional reading experience, drawing children’s focus to the printed words, and supporting their decoding of them.

The existing research suggests that these features should be viewed in terms of how they function in the context of a particular book and a particular child’s approach to reading. Treating digital books and their features as general variables obscures the fact that the role of different features (or design elements) depends on their place within the wider context of use. In the words of van den Broek, Kendeou and White (2009) what matters “is the strategic use of the various media in such a way that the comprehending child engages in relevant processes in which he or she otherwise would not engage” (p. 69).

6.4. Digital Books and Text-Rich Environments

One final issue related to the topic of digital books and literacy is the question of whether digital books may function in the creation of text-rich environments. It is widely recognized that text-rich environments are important for the development of children’s literacy. Although digital books may contain an abundance of textual material, this material is hidden, existing virtually in an e-reader, tablet, or other device. It is therefore an open question whether an environment rich in digital texts will have the same benefits as a traditional text-rich environment. As was argued above, this too is likely to be at least partially a function of the digital books in question.

7. Ethical Considerations in the Design and Marketing of Digital Books to Children

Ethical issues raised in discussions of children’s use of digital books mainly involve children’s exposure to advertising and marketing, and the accessibility of social media features. Many parents and educators view advertising and marketing as inappropriate presences in children’s learning environments. Social media features are viewed by parents and teachers as problematic, because of how they enable the possible release of confidential information, and enable social interactions with others on the Internet.

7.1. Privacy Concerns

Given the current state of digital device use and widespread Internet access, it would be an oversight to talk about features of digital books without addressing ethical issues surrounding privacy and collection of user data, parental guidance, and the presence of advertising and marketing in children’s content. As digital reading is increasingly taking place on general-purpose Internet-connected devices, the potential to integrate the reading experience with personal identification information (PII), social networking tools, and targeted advertising mechanisms emerges. While some of these, particularly the social networking possibilities, offer potential for transforming the reading experience in positive ways, this is counterbalanced by the potential for breaches of privacy, the release of confidential information, and potential legal problems for vendors of educational materials and schools that may occur as a result. While the use of web-connected mobile devices is an increasingly central part of childhood,

Canadian parents remain strongly opposed to children (especially those under 13) participating in mainstream social networking sites like Facebook (kidsmediacentre, 2013). They perceive significant risks to their children’s privacy online as well as potential for involvement in inappropriate activities online. In response to this, Canadian parents have reported needing to take an active role in monitoring (often surreptitiously) their children’s online activity, as well as taking steps to prevent their participation in certain types of activities. A recent qualitative study reports that parents are “beleaguered by fear of danger and exhausted from the burden of constant vigilance” that they feel is necessary to protect their children from privacy and other risks involved with using digital technology (Steeves, 2012a, p. 3). This work has also left them feeling ambivalent about what they perceive as their own spying on their children (Steeves, 2012a). The clear implication of this is that any child-directed activities that incorporate social networking features, or collect identity information are going to be sharply scrutinized, and potentially very poorly received by parents.

Concerns about privacy and security online have led schools to both monitor user activity, and filter accessible online content. In many cases, this may include popular sites like YouTube (Steeves, 2012a). Consequently, book designers who incorporate enhanced features into digital books must be aware of how certain content may be inaccessible to students in schools—regardless of whether the content itself is considered objectionable. As an illustration of how content may be unintentionally perceived as objectionable, Steeves (2012a) reports that in one school, the site *Edukids* was blocked because it contained the keywords “education *slash* learning” [emphasis added].

7.2. Merchandising and Monetization

Additional ethical issues arise from the inclusion of merchandising and monetization in apps, and some of these may be applicable to digital books. App makers create opportunities for monetization in several different ways. While some apps are only available for a cost (paid up front), others can be downloaded and played for free initially, but require payment for continued play (sometimes referred to as *freemium*), or offer in-app purchases (microtransactions). These attempts at monetization are an increasingly common aspect of children’s apps, and they are treated as a major problem by reviewers of children’s apps, who view them as unethical ways of taking advantage of consumers (kidsmediacentre, 2013). It remains to be seen how monetization practices will play out with digital books for children, given the differences in that medium. To the extent that producers of digital books pursue the same monetization possibilities as app makers, it seems likely that these will be met with the same criticism they have received in apps.

8. Educational Stakeholders and Their Concerns

While there is clear educational potential for digital books, capitalizing on this potential in schools requires more than well-designed digital books and readers. In addition to providing an engaging educational activity for children, digital books must address the concerns of other educational stakeholders. Making the educational potential of new hardware and software a reality for more than a few research participants requires potential vendors of educational

materials to carefully and patiently earn the trust of key stakeholders in the educational systems where digital books may be used. In Ontario, the most important of these stakeholders are the Ministry of Education, the school board, the principal, and the teachers (particularly the heads of departments). While money for education (e.g., the Pupil Foundation Grants) is distributed at the local level, general recommendations and requirements that influence spending are made at the level of the ministry, as well as by the school board (Ontario Ministry of Education, 2007). In Ontario, actual spending decisions are made at the level of the district, or the individual school.

The success of vendors of educational materials depends on gaining the trust of these stakeholders, and demonstrating how their goals align with the stakeholder's own goals. These goals differ at each level. For instance, the most relevant goals to the principal are likely to be fulfillment of their school improvement plan (SIP), a way of demonstrating their success to the school board. Teachers' goals are more likely connected to the activities and realities of their particular classroom. At a higher level, particularly with the Ministry and the board, consideration of new products is increasingly dependent on prior successful demonstrations and pilot programs.

A recent series of qualitative research studies on Canadian teachers' perspectives on the use of technology provides a valuable source of information for vendors of educational materials. Teachers interviewed for the study (Steeves, 2012b) described a mismatch between theirs and their district's priorities around the use of technology. They claimed that districts emphasized the need for assisting students in discovering *how* to use new technologies in the classroom, whereas teachers emphasized the need for teaching students *why* to use new technologies. Programs that assist students in learning how to use technology lead students to use new devices to accomplish traditional tasks in familiar ways. By teaching students why they should use new devices, teachers hoped to engender truly novel types of activity made possible by the new technologies. As an example of such an activity, teachers mentioned how the use of computers allowed for them to transform their roles. As one teacher said, "the greatest thing is when they have computers in front of them, and I can walk around and actually connect with them. That helps a lot, instead of doing a lecture when you're just in front of the classroom talking. They're actually involved." (Steeves, 2012b, p. 12).

Digital books may also be able to address the needs and aspirations of parents. A recent study by Harris Decima (Pachovski, 2013) found that Canadian parents feel their children's use of tablets and smartphones is important for the development of technological literacy skills, which parents feel are crucial for the future. Second, they view tablet/smartphone use as providing a more enjoyable context for the development of educational and even entrepreneurial skills.

Parents also reported a desire for a guide that would facilitate their own use of digital technologies. They felt that this would provide them with a way to relate to their children, and their children's use of new technologies (Pachovski, 2013). Such a guide would also address

problems that parents perceive with their children being required to use the Internet for school assignments, without being adequately prepared by the schools to do so (Steeves, 2012a).

While the above findings are important to keep in mind, matching the goals of stakeholders on one level (e.g., teachers, parents, or children) is no guarantee of success with others. Resistance at any of the levels can prevent a new product from being picked up, or used. Extending or broadening the use of a certain product may be blocked by higher-level stakeholders due to a lack of systematic evidence that the product can “move the needle” on the measures that matter to them (while there is evidence that digital books can benefit certain aspects of literacy and learning, no research has examined their overall effect on standardized test performance). On the other hand, programs implemented from the top down may fail if teachers don’t buy into them at the classroom level (Avila & Wilson, 2011), which could happen for a variety of factors. While there is some evidence that digital books can help in the development of literacy skills, more definitive research needs to be conducted in this area.

9. Educational Funding in Canada

Canada’s progressive system of funding for education makes it a unique context for the implementation of education innovations. In Ontario (as well as in Alberta and British Columbia), funding for education is almost entirely determined at the provincial level. Specifically, the contribution of property and personal taxes to education is mandated at the provincial level, eliminating variation at the district/local level¹². If contributions from the tax base in a particular community are insufficient to cover educational costs, the provincial government contributes the remainder from a general education fund. The intent of this system is to promote equity by minimizing the influence of community-level wealth on educational funding (Herman, 2013). Despite the provincial-level restrictions on funding, decisions about how to spend money are made almost entirely at the district level (but as Herman (2013) notes, not at the school level), meaning that district-level stakeholders are particularly important for vendors of educational materials.

Despite these challenges and constraints, there are several reasons for optimism. First, digital books appear to offer something that is relevant to the current realities in the educational system. In recent years, Ontario schools have had to deal with budget decreases, and a declining percentage of schools that employ teacher-librarians (Avila & Wilson, 2011). These trends require schools to do more with less—to maintain an effective context for the development of early literacy without important resources for doing so. This offers a unique context for vendors of educational materials to take advantage of the possibilities of using digital books to fill gaps in the education system.

¹² Schools and district school boards in Ontario are allowed to pursue fundraising and charge fees in some circumstances. Money raised in this way can only be spent in certain ways. In particular, it cannot be used on learning materials or textbooks, or more generally for anything that is required to meet the expectations of a course (Ministry of Education, 2011).

10. Summary

This literature review has described various aspects of digital books including trends in their sales and use, differences from print books, and possibilities for integrating them in schools. In conclusion, several broad points can be made. The use of digital books has increased dramatically over the last five years, in terms of both raw numbers, and as a per cent share of the overall book market. During this same period, the print market as a whole has contracted. Over the last two years, the growth in digital book purchases (as a per cent share of the entire market) has slowed down, with data from both the US and Canada suggesting a plateau.

There are already well-established findings regarding the role of print books in recreational and educational practices and the benefits of their use. While more research needs to be done to extend these findings to digital books, one thing is clear: the educational benefits and user experience of digital books depends on the design and contents of the digital books in question and how they relate to the broader context of reading. Children can learn from digital books, but what they learn, the way that they learn, and how much they learn depends on the design of the books they read. The design features of digital books function within the context of the overall design of the book. Particular types of features cannot, on their own or in general, be considered effective or ineffective. In what is perhaps the most important example of this, research findings provide a clear demonstration of how digital books with interactive features that intrude upon and interrupt the storyline can detract from the reading experience. With a different design, interactive features in digital books might instead contribute to learning outcomes, story comprehension, engagement and enjoyment.

The studies covered in this review are suggestive of the potential educational role of digital books. Nevertheless, much more research is needed in order to better understand how they may be used to enhance literacy and other learning outcomes beyond what is already accomplished with traditional books. This research, in combination with a knowledge of the relevant ethical considerations, funding constraints, and concerns of educational stakeholders will be a particularly important tool for those working to market digital books within school systems.

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