EXPLORING TEXAS PUBLIC ELEMENTARY SCHOOL LIBRARIANS'

INSTRUCTIONAL PRACTICES WHICH ENABLE ELEMENTARY

STUDENTS TO ACCESS AND CHOOSE E-BOOKS IN THEIR

ELEMENTARY LIBRARY COLLECTIONS

A DISSERTATION

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ABSTRACT

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This cross-sectional online survey investigated the instructional methods/tools/aids used by Texas public elementary school librarians when teaching their elementary students to access and choose e-books from their elementary collections. Participants included 516 Texas public elementary school librarians, serving PreK-Grade 6, who posted their professional emails online. PsychData gathered and aggregated the survey data online. Data analysis results revealed that a majority of respondents (65%) opted for "Modeling e-access" as their first choice of instructional methods. Participants most often preferred two "instructional tools/aids" (21% each) in teaching e-access: 1) PowerPoint and 2) Directions posted on the website using text/screen shots. Three findings emerged from in-depth cross analysis of the data: 1) the tenure of librarians was statistically of little to no importance with regard to e-book availability, 2) the "Modeling" method of instruction registered as statistically significant with regard to "exceeds librarian expectations" in student e-book circulation, and 3) having an e-book link/icon on the library website or homepage also registered as statistically significant with regard to "exceeds librarian expectations" in student e-book circulation, illustrating that convenience is conducive to use.

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CHAPTER I

INTRODUCTION

Public elementary schools have experienced a paradigm shift (Kuhn, 1996). In twenty-first century classrooms, technology has increasingly been integrated across the curriculum. Internet access, electronic devices, and networks for collaboration, discussions, and handing in academic assignments, as well as, storing academic information, and portfolios have permeated the grade levels.

Public elementary school libraries, as agents of curriculum support, depositories of information regarding the past and present, and providers of age-appropriate literature have also experienced a parallel paradigm shift (Kuhn, 1996). Card catalogs, once housed in multiple alphabetical sliding drawers holding typed three-by-five, subject-title-author catalog cards, are now online (Rubin, 2004). Library collections have transitioned from traditional print books only to a combination of traditional books and electronic books (e-books) (Brown, 2001; Polanka, 2012), or e-books only (Weber, 2014). *School Library Journal* (*SLJ*) has conducted library research since 1983 (Miller & Shontz, 2003). Their most recent research highlighted the technological paradigm shift regarding e-book usage in U.S. K-12 libraries (Girmscheid & Genco, 2015). Library reference sections have not escaped the winds of change. Traditional library reference sections have also transitioned to now include a variety of databases and online encyclopedias. In addition, digitized

primary sources may now be accessed through the Internet from such prestigious, resource-rich institutions as The Library of Congress, The Ford Museum, and The Smithsonian.

However, librarians' purpose has remained constant. Whether library collections have remained traditional, are transitioning to traditional and e-book combo, or have changed to all digital, the role of librarians is to help their patrons access their collection. This study is a snapshot of Texas elementary public school librarians in a transition time. Although some Texas public elementary schools do not have e-books at this time, a majority of them do. For those schools that do, the majority have only had them for a few years. With public school elementary students, other constants include segments of emerging readers, students with developing attention spans, and class scheduling time challenges, as well as, older, independent readers (Piaget, 1950; Piaget & Inhelder, 2000). Regardless of the format, the librarians' task is to facilitate and provide collection access in age-appropriate venues (Kuhlthau, 2004).

School libraries must have Internet access for children, librarians, and teachers to use online resources and digitized primary sources. Congress has been instrumental with the high percentage of Internet saturation by passage of the Telecommunications Act of 1996 (Judge, Puckett, & Bell, 2006). This legislation, designed by Congress, funded Internet access in public school classrooms and public school libraries across the nation (Goolsbee & Guryan, 2006).

According to the National Center for Education Statistics' (NCES) latest aggregated data, 2011-12, 92.4% of the traditional public schools in the United States had

a library media center. Of those library media centers, 97% had computer work stations. Of the library media centers that had work stations, 95% had Internet access. And of those public school library media centers with Internet, 86% provided student access to online, licensed databases (Bitterman, Gray, & Goldring, 2013). This is in comparison to the prior survey taken in 2007-2008, where 96.7% of the U. S. public school library media centers were connected to the Internet (NCES, 2016a).

During the time period of 2007-2008, the State of Texas was documented by NCES (2016b) as having 98.8% of their public school library media centers connected to the Internet. The current data now available for 2011-12 documented that in the State of Texas 96.9% of the library media centers had computer workstations. Of those library media centers that had computer workstations, 98.1% had Internet access. It is evident that in the intervening years between surveys conducted by the U. S. Census for the U. S. Department of Education that the percentage of Internet connection in Texas schools has decreased by 0.7% (Bitterman et al., 2013).

Books in e-book format are highly accessible and available today. Follett has 300,000+ e-books available for K-12 (Follett, 2016). According to the latest reports from the Association of American Publishers (AAP, 2014a) in 2014, e-book reading is embedded in our society. The number of e-books has increased to the extent that they "constitute 20% of the Trade market," while traditional hardcovers and paperbacks hold steady. One of the driving forces in the e-book increase continues to be children's fiction (AAP, 2014b).

Background of the Research Problem

When elementary school students walk into their school library, they can see the library's traditional, tangible collection. They can also see the electronic devices that the school or district has provided − computers, laptops, iPads, tablets, and/or e-readers (Carreiro, 2010; Cavanaugh, 2006; Polanka, 2012). However, what the students cannot see are the invisible, virtual offerings, or e-books, contained in their library collections for their aesthetic and efferent purposes (Rosenblatt, 1994).

E-books are now available in the majority of public school libraries in the United States (Cavanaugh, 2006; Girmscheid & Genco, 2015; Polanka, 2012). School library collections are available to the attending student body and may provide reasonable availability for the school populace (Chen & Price, 2006; Judge et al., 2006; Warf, 2012). Texas elementary school-aged children, on whom this study will focus, are not old enough to drive themselves to a public library. Although the same e-books may be available through both public elementary school libraries and public libraries, focusing this study on public elementary school libraries provides a broader cross-section of any community vs. limiting it to elementary-aged children whose parents take them to the public library.

It is important for children to learn how to find and select books. Two historically important research studies documented that student book self-selection is beneficial because children tend to be more interested in reading when they can choose their own books (Campbell, Griswold, & Smith, 1988; Fleener, Morrison, Linek, & Rasinski, 1997; Reutzel & Gali, 1997). Therefore, just as elementary students require training to locate

their choice of traditional books, they also need scaffolding to enable them to access and browse e-books in order to make an e-book, or digital book, choice (Hunt, 1970; Kuhlthau, 2004; Reuter & Druin, 2004; Vygotsky, 1978; Wood, Bruner, & Ross, 1976). Librarians are positioned to guide and help students take advantage of the school's digital collection.

If e-books are in schools, then we need to know how children are being taught how to access and choose e-books. One notable study, conducted by Reuter and Druin (2004), dealt with self-selection of recreational reading material in a digital library. The investigation used the International Children's Digital Library (ICDL) as the digital library. The findings of this study indicated that children's information seeking in regard to the book selection process moved through identifiable stages (Reuter, 2007; Reuter & Druin, 2004). Their study focused on the children; whereas, this survey study focused on the librarians' instructional choices.

Purpose of the Study

The purpose of this research is to describe how Texas public elementary school librarians provide e-book access/choice instruction. Therefore, the research question/focus is: "What kind of instruction is provided to Texas public elementary students by Texas public elementary school librarians in order for the elementary students to access and choose e-books from their elementary library collections?"

Significance of the Study

The ability to read is pivotal in education (Anderson, Higgins, & Wurster, 1985; Anderson, Wilson, & Fielding, 1988; Chomsky, 1972; Clay, 2001; Gray, 1984; Krashen,

2004; Rosenblatt, 1994; Ross, 1995; Samuels, 1994; Smith, 2002; Trelease, 2006). Its significance becomes evident with the fact that reading research has been conducted for more than one hundred twenty-five years (Alexander & Fox, 2004; Venezky, 1977). It is important that students read whether they turn the page of a traditional tome, click a mouse, slide a finger across a screen, or manipulate a touch screen.

Access to reading material is just as pivotal. In our 21st century, e-books corner a significant portion of the market (AAP, 2014a, 2014b). Schools provide electronic devices on which to read e-books. Therefore, it is vital that students are taught how to access this reading choice. Because school libraries house resources for their students, librarians are situated to instruct and help provide their students with opportunities to access the tangible as well as the intangible, virtual collection resources (Warf, 2012). Study results will provide a baseline of information regarding what kind of instruction librarians provide for their students to access and choose e-books.

Definition of Terms

Several of the following terms defined below are incorporated throughout the dissertation text and the research project. In addition, the remaining "other" terms are defined to provide topical clarity with regard to e-books and the related discussion. The pertinent terms are used with the following operative and/or formal definitions offered by knowledgeable individuals, entities, and/or experts.

Analog – "Analog, in the context of technology, refers to signals derived from physical phenomena that also may be interpreted as signals representing physical measurements.

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Light or visual input, for example, is an analog signal, so to capture video, its analog signal must be scanned and then translated into fluctuating electronic pulses. Analog was the only mainstream device choice until quite recently, when digital device technology became cheaper and easier to manufacture. Although inexpensive and easy to use, analog technology's downside is its limited data holding capability. Computers can only read digital data, but it is more efficient to transmit analog signals" (Techopedia, 2016).

Born digital - This phrase describes a type of electronic book. A "born digital" book originated online, exists only in electronic form, and is available only on the Internet or Web. Characteristics of books "born digital" often include interactive platforms and animation (Kaczmarek, 2006; Martin & Quan-Haase, 2013).

Caldecott Medal – This American children's book award was named in honor of the 19th century English illustrator Randolf Caldecott. It was established in 1938 and is awarded annually by the Association for Library Service to Children (ALSC), a division of the American Library Association, to the artist of the most distinguished picture book/illustration of the year (ALA, 2016; Huck, Kiefer, Hepler, & Hickman, 2004, pp. 25, 88).

Chrome Operating System – "The Chrome operating system (Chrome OS) is an operating system launched by Google that is designed for users who spend a large amount of their time on the Internet using Web applications. Users of netbooks, laptops, and mini laptops are the biggest fans of Chrome OS. The primary advantages of this operating system include its fast Web browsing and loading speed" (Chromebooks) (Techopedia, 2016).

Data Packet – "A data packet is a unit of data made into a single package that travels along a given network path. Data packets are used in Internet Protocol (IP) transmissions for data that navigates the Web, and in other kinds of networks. A data packet has other parts besides the raw data it contains – often referred to as the payload. Data packets also have headers that carry certain types of metadata, along with routing information. For example, IP data packets have a header containing an IP address of origin and destination IP address. Data packets also may have trailers that help refine data transmission. To provide more conventional data packet use for the Web and other networks, various groups have contributed to consistent standards for data packet transmission, For example, the International Organization for Standardization (ISO) put together the Open Systems Interconnection (OSI) model, which identifies certain data packet layers and maintains standards for each. All of this is the foundation of the modern make and use of data packets in diverse network scenarios" (Techopedia, 2016).

Digital – "Digital refers to electronic technology that uses discrete values, generally zero and one, to generate, store, and process data. In digital technology, data is transmitted and stored as strings of zeros and ones, each of which are referred to as bits. These bits are grouped together into bytes to represent data such as numbers, letters, images, or sounds" (Techopedia, 2016).

Digital library – A digital library is a library whose collection is solely electronic and is accessed and available online only.

Digitization – "Digitization is the process of converting analog signals or information of any form into a digital format that can be understood by computer systems or electronic devices. The term is used when converting information, like text, images or voices and sounds, into binary code. Digitized information is easier to store, access and transmit, and digitization is used by a number of consumer electronic devices. Digitization involves capturing analog signals and storing the results in digital form" (Techopedia, 2016).

Digitized analog material - This phrase describes a type of electronic book. In this type of book, existing print material is scanned and/or an electronic copy of existing print material is made (Kaczmarek, 2006; Martin & Quan-Haase, 2013).

E-book Forms:

1. Downloadable e-books – "The contents of a book are available on a website for downloading to the user's PC" (Hawkins, 2000, p. 16).

2. Dedicated e-book readers – "The book's contents are downloaded to a dedicated hardware device which has a high-quality screen and special capabilities for book reading" (Hawkins, 2000, p. 16).

3. Web-accessible e-books – "The e-book remains on the provider's website and can be accessed for a fee. Readers can 'purchase' the books to receive indefinite access" (Hawkins, 2000, p. 16).

4. Print-on-demand books – "The contents of a book are stored in a system connected to a high-speed, high-quality printer, from which printed and bound copies are

printed on demand. The contents may be available on a chapter-by-chapter basis to enable the creation of single copies of customized books" (Hawkins, 2000, p. 16).

E-book Reader – "An e-book reader is a portable electronic device for reading digital books and periodicals, better known as e-books. It is normally designed to operate over long hours by consuming minimal power. Most e-book readers use E Ink displays which closely mimic the appearance of ink on paper, being less strenuous to the eyes" (Techopedia, 2016).

E-book Reader – "Electronic book readers are hand-held computer devices like Amazon's Kindle, Barnes and Noble's NOOK, and Apple's iPad that makes it possible for books in digital format to be viewed and read by users" (Webopedia, 2015).

Electronic Book (E-Book) – "An electronic book (e-book) is a digital publication that can consist of text, images or a combination of both. An electronic book can be read on a proprietary digital device (an e-reader) or on a computer, which requires special software. E-books originated mostly as technical product manuals, but today, the format covers most publishing formats. Major publishing companies offer e-books as an alternative to hard copy publications. Some e-books use a proprietary format, such as those designed for Amazon's Kindle tablet. The alternative is an open format, like Adobe's PDF, which is compatible with most e-readers" (Techopedia, 2016).

Electronic Publishing – "Electronic publishing refers to the many different ways that publishers of others can publish books, articles or other types of literature as digital content. Electronic publishing can be done is many ways. There are now standard conventions for

e-book publishing, where digital versions of authored books are distributed through proprietary e-reader designs like the Amazon Kindle or other designs by the Barnes & Noble Nook, Sony and others. Electronic publishing is simply the new arm of the publishing world where literature is published, not in print form with physical pages, but in a digital form where it must be accessed in specific ways" (Techopedia, 2016).

Electronic Resources (E-Resources) --

1. "An electronic resource is any work encoded and made available for access through the use of a computer. It includes electronic data available by (1) remote access and (2) direct access (fixed media). In other words: Remote access (electronic resources) refers to the use of electronic resources via computer networks. (Shelley, AACR2, 2002 edition; glossary). Direct Access (electronic resources) refers to the use of electronic resources via carriers (e.g., discs/disks, cassettes, cartridges) designed to be inserted into a computerized device or its auxiliary equipment" (Library of Congress, 2016).

   "Examples of electronic resources include, but are not limited to: web sites, online databases, e-journals, e-books, electronic integrating resources, and physical carriers in all formats, whether free or fee-based, required to support research in the subject covered, and may be audio, visual, and/or text files" (Library of Congress, 2016).

2. "An electronic resource is any information source that the library provides access to in an electronic format" (Kumar, 2015, pp. 259-264; The University of Texas at El Paso University Library, 2016).

Elementary school – An elementary school for parameter purposes in this research project is defined as a school which includes grades pre-kindergarten through grade six, in any configuration.

Google Chrome – "Google Chrome is a web browser released by Google in 2008. This relatively new browser competes with other major browsers such as proprietary Microsoft Internet Explorer and freeware designs like Mozilla Firefox" (Chromebooks) (Techopedia, 2016).

Internet – "The Internet is a globally connected network system that uses transmission control protocol/Internet protocol (TCP/IP) to transmit data via various types of media. The Internet is a network of global exchanges – including private, public, business, academic, and government networks – connected by guided, wireless, and fiber-optic technologies. The terms Internet and World Wide Web are often used interchangeably, but they are not exactly the same thing. The Internet refers to the global communication system, including hardware and infrastructure, while the Web is one of the services communicated over the Internet" (Techopedia, 2016).

Internet Protocol – "Internet Protocol (IP) is the principal set (or communications protocol) of digital message formats and rules for exchanging messages between computers across a

single network or a series of interconnected networks, using the Internet Protocol Suite" (often referred to as TCP/IP) (Techopedia, 2016).

iPad – "An iPad is a tablet personal computer (PC) designed by Apple, Inc. It features a touch screen that users can interact with directly through finger strokes. This device is portable and can be used for a variety of activities, such as reading e-books" (Techopedia, 2016).

iPhone – "An iPhone is a touchscreen-based smartphone" (Techopedia, 2016).

Kindle Fire – "Kindle Fire is the brand name of a tablet produced by Amazon.com. It has a seven-inch display and lacks many of the features commonly found on more expensive tablets, such as embedded front-and back-facing cameras or microphones. Its inter-connectivity is limited to WiFi; it has no 3G; and it is limited to 8GB of storage. However, it is priced much lower than its competitors" (Techopedia, 2016).

Library media specialist – A library media specialist is an individual: 1) employed by a school district to direct and manage the school library media program; 2) licensed or certified for K-12; and 3) who may alternately be referred to as a library information specialist, school librarian, librarian, or teacher-librarian, etc.

NetLibrary – "The NetLibrary is a collection of full-text electronic books called e-books. The NetLibrary offers different sets of books to individual libraries through contracts. The NetLibrary's contract with the library does not allow remote users, so NetLibrary books can only be opened and read from computers located on campus. The NetLibrary has books

on a wide variety of subjects. While some are old classics, most are new, up-to-date files"
(University of Delaware Library, 2016).

Newbery Medal – "The Newbery Medal is an American children's book award named for
18th century English bookseller, John Newbery. He was called the "father of children's
literature" because he was "the first to publish books expressly for children." Established
in 1922, it was the first award in the world to be given for distinguished contribution to
literature for children. It is awarded annually by the Association for Library Service to
Children, a division of the American Library Association" (ALA, 2016; Huck et al., 2004,
pp. 25, 88).

Perceived ease of use – Perceived ease of use refers to "the degree to which a person
believes that using a particular system would be free of effort" (Davis, 1989, p. 320).

Perceived usefulness – Perceived usefulness refers to "the degree to which a person
believes that using a particular system would enhance his or her job performance" (Davis,
1989, p. 320).

Personal Computer – "A personal computer (PC) is a general-purpose, cost-effective
computer that is designed to be used by a single end-user. Every PC is dependent on
microprocessor technology, which allows PC makers to set the entire central processing
unit (CPU) on a single chip" (Techopedia, 2016).

Precision – Precision is the ability of a system to retrieve only items that are relevant in a
search (Schamber, 1994).

Recall – Recall is the ability of a system to retrieve all its relevant items (Schamber, 1994).

Relevance – Relevance has to do with precision and recall of an information need and search. Initially, relevance definitions tended toward information retrieval with regard to systemic considerations. Through the years the meaning of relevance gravitated toward more dynamic, situational definitions. 1) "Relevance is a multidimensional cognitive concept whose meaning is largely dependent on users' perceptions of information and their own information need situations. 2) Relevance is a dynamic concept that depends on users' judgments of the quality of the relationship between information and information need at a certain point in time. 3) Relevance is a complex but systematic and measurable concept if approached conceptually and operationally from the user's perspective" (Schamber, Eisenberg, & Nilan, 1990, p. 774).

Smartphone – "A smartphone is a mobile phone with highly advanced features, such as a high-resolution touch screen display, WiFi connectivity, Web browsing capabilities, and the ability to accept sophisticated applications" (Techopedia, 2016).

Tablet (device) – "A tablet is a wireless touch screen personal computer (PC) that is smaller than a notebook but larger than a smartphone. Modern tablets are built with wireless Internet or local area networks (LAN) and a variety of software applications" (Techopedia, 2016).

Trade books – "Trade books include most of the books in a retail bookstore, such as novels, stories for children, travel books, "best-sellers," volumes found in public lending libraries, or religious books. E-books and audiobooks are considered part of the trade book market – they are different formats of trade books. So, trade books are the books

that the consumer is most likely to be reading in print or on their device, or listening to, on their commutes." Retrieved from:

http://publishing.about.com/od/BookPublishing/glossary/.

Texas Literacy Initiative – This program is sponsored by the Texas Education Agency. The goal of the Texas Literacy Initiative is "to ensure that every Texas child is strategically prepared for college and career literacy demands by high school graduation" (TEA, 2016).

Transmission Control Protocol – "Transmission control protocol (TCP) is a network communication protocol designed to send data packets over the Internet" (Techopedia, 2016).

CHAPTER II

LITERATURE REVIEW

This study focused on the instructional methods/tools/aids provided by Texas public elementary school librarians in order for their students to access and choose e-books from their elementary library collections. No one body of literature adequately supported the research framework. Therefore, multiple, intertwined topics which constituted interlocking puzzle pieces have brought us to where we are today with e-books. The concepts, topics, and industries that related to the research focus and operated in tandem to simultaneously undergird the e-access process were: 1) the Diffusion of Innovations Theory (DOI), 2) the Zone of Intervention (ZI) and the information search process, 3) technology and the Technology Acceptance Model (TAM), 4) information retrieval, 5) relevance, 6) e-books and e-readers, 7) the publishing industry, and 8) digital libraries.

Diffusion of Innovations Theory

This study looks at where Texas public elementary school libraries are now – ten years after the first Texas public elementary school libraries surveyed brought e-books into their elementary school collection. A theoretical framework that pervades the study is Everett Rogers' *Diffusion of Innovations Theory*. According to Rogers, "*diffusion* is the process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas" (Rogers, 2003, p. 5). The "relatively" new idea examined

in this research study pertains to e-books and their access in Texas public elementary school libraries.

Back in the 1950s, when Rogers established his theory, it was not with e-books in mind. Instead, he chronicled his research observations with regard to how long it took a new idea in farming to spread throughout his home agricultural community in Collins, Iowa. His documentation entailed the social communication network by which the idea spread, the various individuals involved in the process and their responses. In other words, he analyzed responses to new ideas or change. His subsequent *Diffusion of Innovations Theory* has been applied in diverse fields such as agriculture, medicine, business, education, technology, and politics on several continents (Rogers, 2003). In this dissertation research study, the theory inherently manifests itself through the compiled statistical participant responses with regard to adoption, rate of adoption, and rejection.

In the State of Texas, public elementary school librarians are part of an educational system or organization; i.e., an elementary school, which, in turn, is part of a school district, which, in turn, is part of a larger organizational entity, depending on the established organizational structure legislated and enacted by the state. In the *Diffusion of Innovations Theory* Rogers categorized adopters of change into five "ideal" categories for purposes of discussion based on an early-to-late continuum timeframe: 1) innovators, 2) early adopters, 3) early majority, 4) late majority, and 5) laggards. These categories, based on research observations, held true whether the research involved individuals or organizations (Rogers, 2003). In this research the librarians who responded may or may not be categorized

correctly along the adopter continuum, because it is not a given that an elementary librarian is the ultimate decision-making individual with regard to e-books and the related technological equipment and infrastructure or budget allocation. Regardless of whether the librarian is or is not an early adopter, he/she must cope wherever along the adopter continuum the administrative decision-making individuals fall. Therefore, the data that posits an early or late adoption category provides a more reflective profile of the decision-making administrator(s).

Information Retrieval

Information retrieval is at the heart of each and every library. The information in a library must be in a retrievable form. The information retrieval process is only as good as the information retrieval (IR) system and the technological, organizational capabilities with which it has been programmed. Information retrieval systems using computer technology began during and after World War II. Some of the first experiments regarding information retrieval occurred at Cranfield, England, in 1957 (Meadow, Boyce, & Kraft, 2000). At the beginning, initial data structures and representations framed retrieval system logic to match a query with relevant documents without the seeker's need necessarily in mind (Meadow et al., 2000; Schamber et al., 1990). However, in subsequent years those IR systems developed were more responsive to the information seeker and his/her needs (Meadow et al., 2000). Although varying concepts abound regarding IR models, several assumptions can reasonably be made: 1) a user has an information need, 2) the user inputs a request into a system, 3) the system processes the request, 4) the user evaluates the system's

information response – either accepting or rejecting the response, and 5) the user continues to look for information to meet his/her need (Schamber, 1994).

Zone of Intervention and the Information Search Process

The library patron must learn how to access/retrieve the information. In the field of Library Science, Kuhlthau (2004) conceptualized the information search process and formulated the concept of a Zone of Intervention (ZI) which parallels Vygotsky's Zone of Proximal Development (Vygotsky, 1978). She defined the concept of the ZI as "that area in which an information user can do with advice and assistance what he or she cannot do alone or can do only with great difficulty" (Kuhlthau, 2004, p. 129). In the ZI a librarian elicits information needs and parameters from a patron in order to mediate age-appropriate, individualized intervention. In these parallel concepts the student is helped in the learning process to bridge a learning gap by someone who has already bridged the gap. In the case of elementary students in their school library, this pertains to the learning journey from do-not-know-how to access e-books to do-know-how to access e-books with the available library equipment. The knowledge permits the invisible and unknown e-books to become visible and known to an elementary patron, thus allowing the patron an opportunity to make an e-book choice. Because each student enters the library with an individualized schema, the journey from do-not-know-how to do-know-how to execute e-book access and choice constitutes a similar, yet unique path. The lesson/instruction/tutorial prepared or provided by the librarian, as well as, student queries proffered to obtain clarity and understanding about the process and subsequently answered or modeled by the librarian functions as a

scaffold bridging the gap. It brings students to a level of understanding that they may not have achieved by themselves (Wood, Bruner, & Ross, 1976).

Related to this research, Reuter (2007) focused on the information search process with elementary participants making a leisure/recreational digital book choice from the International Children's Digital Library (ICDL). Research findings, while indicative but not generalizable based on the small sample number, included the information that in a digital library the age and gender of children influenced their searching and selection. For example: 1) boys ran more queries, whereas, girls chose more books; 2) younger children seemed to prefer a simpler, more interactive interface, while older children employed more sophisticated search concepts; 3) for younger children, opening books was a key strategy in book selection; whereas, older children seemed to be more choosey in their book selection habits (Reuter, 2007, pp. 346-347).

Technology and the Technology Acceptance Model

With card catalogs currently online in most of the public elementary school libraries, the student must be willing to use the available library technology to retrieve a/an book/e-book. Because technology is such an integral part of this research paradigm, the next topic to be discussed is the Technology Acceptance Model (TAM). When Davis initially formulated the TAM in 1986 (Davis, 1989, 1993; Park, Roman, Lee, & Chung, 2009), computers were not widespread in public school libraries and public libraries. Passage of The Telecommunications Act of 1996 by Congress provided widespread computer access to public school libraries and public libraries (Park et al., 2009). In the

beginning, the attitude toward computers was marked by reluctance. The intervening years and continued access have changed the reluctance factor. Nevertheless, Davis's model continues to be important because it examined the critical factors "of user perceptions of the systems' usefulness and ease of use in their adoption behavior" (Davis, 1989, 1993; Park et al., 2009, p. 197). Does a user perceive a system as user-friendly? Does a user perceive that the technology is useful in satisfying an information need, despite being difficult to use? In studies conducted by Davis (1993), students were willing to forego ease of use in favor of perceived usefulness of information. Another important finding in the research was that "library assistance plays a crucial role in the dynamics of digital library use" (Park et al., 2009, p. 205). At the elementary level this finding assumes attitudinal, mind-set significance because the students are forming initial impressions and adopting behaviors toward digital equipment use based on technological experiences mediated by the librarians.

Relevance

When elementary children engage in a search in the elementary library, he/she hopes to find his/her choice of book(s) as a result of the search process. The extent to which a child is successful or not highlights the next topic or theoretical framework of Relevance. According to Saracevic (1975, p. 321), "in the most fundamental sense, relevance has to do with effectiveness of communication." The first person "to use the term *relevant* in the context that it is used today in Information Science was S. C. Bradford…in the 1930s and 1940s" (Saracevic, 1975, p. 324). The element of relevance has been a part of the search-

and-find considerations of Information Science since the inception of IR in the 1940s and 1950s (Meadow et al., 2000; Saracevic, 1975). Relevance emerged as the criterion for IR effectiveness back in the 1950s and 1960s. Experiments conducted regarding IR and relevance occurred in England in 1957 and 1963, known as Cranfield I and Cranfield II. The two experiments tested the effects of various types of controlled vocabulary and natural-language indexing in IR. They also set standards for IR design and were the first to use the relevance-based measures of recall and precision; recall being the ability of a system to retrieve all its relevant items and precision being the ability of the system to retrieve only items that are relevant (Schamber, 1994).

Therefore, relevance has to do with precision and recall in searching, i.e., does the search result in the information need being met? Relevance is dependent upon the inherent programmed capabilities of the retrieval system being used and such characteristics as accompanying types of searches possible based on classification hierarchies, indexing terms, Boolean operators, fields, and limiters – electronic mechanisms which exist behind the scenes for the younger students (Meadow et al., 2000; Schamber, 1994). Another critical component in the search process is the elementary user's degree of sophistication in conducting a search to meet information needs as he/she interacts with the IR designed interface (Schamber et al., 1990). The elementary student brings into the information search process the components of his/her previous knowledge, an awareness of the information that is available, his/her affect, the intended use of information located, and any time constraints under which he/she is working (Barry, 1994; Barry & Schamber,

1998). With regard to relevance for this study's purpose, an operational definition of relevance will prevail. Does the student find what he/she is looking for? If he/she ends up with a satisfactory e-book choice, then the search will be considered relevant to the user (Anderson, 2005; Cooper & Chen, 2001).

E-Books and E-Readers

A vital part of e-books is the device on which the words appear. Without the development of the e-reader devices, e-books would not be in libraries. Therefore, e-books and e-book readers comprise the next factor. The foundational prerequisite technology for e-books was the Internet. The pre-internet was created in the United States in 1969 as a Pentagon network. The Internet spread first from the United States because of government funding, next to North America, and then to the rest of the world. "The Internet spread in North America first because the U.S. and Canada were on the leading edge in computer science and communication technology" (Lebert, 2009, p. 14).

Despite the new, burgeoning technology of e-books and associated e-readers, not everyone readily adopted a positive perspective toward them. Hane's view was that "e-books were a solution to a problem that did not exist. Print books work. Most readers see no need to replace print books" (Hane, 2006, p. 22). Nevertheless, despite the negative prognostication regarding e-books, in the following years e-book formats and e-readers experienced technological improvements in quality, as well as, lower prices, expanding title lists, and better marketing strategies (Dougherty, 2010; Hane, 2006). This resulted in an increase of e-books in school libraries. In 2013, 56% of the United States' K-12 school

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libraries surveyed had e-books in their collections. In 2014, 66% of the school libraries contained e-books (Sun, 2014). "The median number per school was 189 digital titles, compared to 11,300 print books in a typical school collection" (Sun, 2014, p. 12). The slow growth of e-book adoption in school libraries was attributed to limited access to e-reading devices and the cost of e-books according to an October, 2014, survey report sponsored by Follett (Sun, 2014). "Low e-book usage was also attributed to user preference for print book, lack of student awareness of e-book availability, and lack of training about the downloading process" (Sun, 2014, p. 12). Another causative factor of low e-book usage was - there was not enough equipment for everyone to access e-books at the same time (Hendricks, 2013). Although the final determination has yet to be made regarding e-books in school libraries, they do occupy a niche in many current school library collections.

Definite positives regarding e-books were that they have proven "helpful for both struggling and advanced readers because of [features such as] interactive dictionaries, highlighting, note taking, adjustable text size, and audio" (Cavanaugh, 2002, p. 56; Guernsey, 2011; Taylor, 2012). Other positives were that "e-books provide…varied subjects, new vocabulary, challenging and current information and varying areas of interest for students and 'just in time' scaffolding support for all students" (Guernsey, 2011; Taylor, 2012; Weber & Cavanaugh, 2006, pp. 57-59).

E-books have advantages that traditional print books do not have. A single e-reader may contain many books. In addition, the distribution of e-books online has less environmental impact. A third advantage is that they have a faster turn-around time with

regard to entering the market than traditional print books (Upton, 2008). Hawkins (2000) listed eight other e-book advantages: 1) available on demand, 2) do not wear out, 3) easy to update, 4) do not go out of print, 5) can be linked to the dictionary and thesaurus, 6) saves paper, 7) cheaper to produce, and 8) higher royalties can be paid to authors. Hawkins (2000) also enumerated disadvantages or issues connected with e-books: 1) screen print quality, 2) users reluctance to switch media and read books from screen, 3) must buy e-reader device, 4) obsolescence of device as new standards developed, 5) may need technical support, 6) device may become obsolete, and 7) book files are not interchangeable among devices. Manley and Holley (2012) included other challenges associated with e-books: 1) battery life, 2) difficulty in recharging, 3) slow refresh time when turning pages, 4) page glare, and 5) expensive purchase price.

Upton (2008) reiterated the many advantages already mentioned regarding e-books. In contrast, he discussed the characteristics that favor traditional print books: 1) made from renewable resources, 2) requires no power source, 3) can be reused and transferred to new owners, 4) efficient recycling procedures in place, 5) biodegradable, and 6) carbon footprint substantially less than an electronic e-book reader.

Although the "e-book's roots can be traced back to early computers" (Manley & Holley, 2012, p. 293), the idea for electronic books was first conceived and written about in 1930 by Vannevar Bush and subsequently presented to the scientific community in an essay entitled, "As We May Think" in the July, 1945, issue of *The Atlantic* (Bush, 1945). Bush envisioned a machine which would access, store, and connect the expanding

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knowledge in various fields of endeavor in order that further improvements might be invented for the betterment of living conditions of mankind (Bush, 1945). With the technological advancement of computers during and after World War II, industry giants like IBM joined in the development process. One of the software products that IBM introduced was "Book Manager" in 1989. This product allowed files to be viewed on many platforms (Manley & Holley, 2012).

There were a number of issues for e-book vendors to address: 1) improvement in e-book selection, 2) improvement in hardware, 3) cost, 4) lack of interactivity and connectivity, and 5) the inability to share e-books with other users (Hane, 2006). Consequently, e-books and e-book readers experienced a series of technological improvements. In 1998, "Bill Gates admitted that the reason e-books had not taken off in the past was because of the hard-to-read type" (Hilts, 1998). E-book readers have come and gone. Hane (2006) documented in 2000 that 24 e-book readers were reviewed. Six years later, in 2006, only eight were still available. In the interest of space and time, only three e-book readers will be briefly noted or addressed: 1) the Sony PRS-505, 2) the Amazon Kindle, and 3) the Barnes & Noble NOOK. This discussion comes with the knowledge that by the time that this information is published, technological changes/improvements are more than possible, if not inevitable.

The Sony Reader PRS-505. In 2008, Sony introduced the PRS-505. This model attempted to address some of the issues and challenges previously noted. Sony focused on improved readability when they attempted to improve E Ink technology. Unlike earlier e-

readers where clarity and readability were issues, E Ink technology provided a bright paper-like display and could be read in bright sunlight. E Ink technology mimicked the look of paper better than any other technological display (Valore Books, 2016). Other improvements included longer battery life, magnification up to 200%, and the ability to read various formats such as Word, TXT, and JPEG. Because the device can be connected to a PC by using a USB port, users may purchase more than 10,000 titles from the Sony Connect e-book store (Hane, 2006). In fact, the only place that you could buy copyrighted material for the Sony Reader PRS-505 was from the Sony Reader Store (Sontag, 2008). This data became obsolete in 2014 when "Sony customers were transferred to Toronto-based eReading company, Kobo" (C/NET, 2016).

The Amazon Kindle. The Kindle was launched November 19, 2007. It featured E Ink technology, which gave users a clear, glare-free image. Another feature of the Kindle was that it was wireless. Thousands of book choices were available for Kindle (Sontag, 2008). However, the only place an individual could buy copyrighted material from the Amazon Kindle was from the Amazon bookstore (Manley & Holley, 2012). One of the drawbacks of e-books was once e-books have been purchased, resale was not possible (Manley & Holley, 2012). On the other hand, it was possible to put one's purchased e-books from Amazon on up to six Kindle accounts (Sontag, 2008). In 2011, Kindle announced that Kindle customers would be able to borrow, free, from more than 16,000 U.S. libraries. This enabled Kindle customers to download books to individually owned e-readers (Haq, 2011; Manley & Holley, 2012).

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"Here's how it works. Libraries must first purchase digital copies of books. The e-books are then loaned out as if they were physical books. Patrons don't need to make a physical trip to the library to borrow an e-book. Instead, they can download books from library websites. Most, but not all, major public libraries offer free digital-e-book lending. Though each library sets its own e-lending policy, only one person can check out a book at a time and typical lending periods are 14 or 21 days" (Haq, 2011, p. 1).

The Barnes & Noble NOOK. The NOOK was released in 2009. "Its WiFi capability rendered it competitive with the Amazon Kindle and Sony Reader" (Manley & Holley, 2012, p. 305). Current NOOKs contain glare-free screens consistent with the latest E Ink technology. Various enhancements and options exist in the name of technological improvements and advancements. Barnes & Noble, like their competitors, comply with the digital rights management legislation that was passed by Congress, i.e., e-books must be purchased for each e-reader individually (B&N, 2016b).

Some of the initial books digitized for elementary students to access and choose included the Newbery Medal and the Caldecott Medal award winners. These two American children's book awards represent some of the best in children's literature (ALA, 2016; Huck et al., 2004). At the time of this research project, Newbery winners from the last 30 years, 1987-2016, were canvassed online with regard to availability. Twenty-nine out of 30 years' winners were available in the Amazon Kindle format (Amazon, 2016). Similarly, Newbery winners in e-book format for the Barnes & Noble NOOK also were available for

29 out of 30 years (B&N, 2016a). Neither the Amazon Kindle nor the Barnes & Noble NOOK had the 1987 Newbery winner, *The Whipping Boy* by Sid Fleischman, in e-book format. With regard to Caldecott winners from the same last 30 years, 16 years out of the 30 years were available in the Amazon Kindle format; whereas, Caldecott winners in e-book format for the Barnes & Noble NOOK were available for 13 years out of the 30 years reviewed in the research (ALA, 2016; Amazon, 2016; B&N, 2016a). The lesser number of Caldecott winners currently available highlight technological issues inherent in digitizing text and pictures to configure to a variety of sizes/shaped screens as opposed to digitizing text only, in addition to the possible inability of the publishers to obtain current or posthumous digital publishing rights (Jonker, 2011) . Cross comparisons could not be made regarding the availability of the Newbery and Caldecott Medal award winners with the Sony Reader Store because it closed in the U.S. and Canada on March 20, 2014 (C/NET, 2016).

The technology of today has expanded beyond these e-reader devices that may be used in elementary school libraries to access e-books. The launch of the Apple iPad in 2010, "ushered e-books out of the dedicated-reader era and into the tablet age" (Albanese & Reid, 2016, p. 20). Meanwhile, prices of e-readers continue to drop while at the same time technological challenges are continually being addressed and improved (Manley & Holley, 2012).

The Publishing Industry

The cornerstone of e-stories or e-books is stories. From where do the stories come? They originate from authors, with publishers acting as a conduit. Consequently, the publishing industry cannot be overlooked because they are the traditional source of books and evolving provider of e-books. From the paradigm shift of Gutenberg's invention of moveable type in 1450 to the year 2000, printing/publishing changed relatively little. Then, after 550 years, another paradigm shift occurred due to the Internet and e-publishing with the emergence of e-books in the latter years of the 20th century and first few years of the 21st century (Kuhn, 1996; Lebert, 2009).

The publishing industry is a multi-billion dollar business (Hawkins, 2000). Therefore, publishers moved slowly into this uncharted realm of e-books because of non-consensus and uncertainty regarding who received what part and how much of the financial pie. In other words, several problems existed in the publishing industry regarding e-books, namely, proprietary formats, licensing, and circulation mechanics (Manley & Holley, 2012). In addition, "due to several technological publishing challenges such as price, color limitations, and small screen sizes, picture books were not digitized as quickly or easily as chapter books" (Jonker, 2011, p. 58).

The publishing industry was influenced on the world stage via the United Nations. The World Intellectual Property Organization, one of the 17 specialized agencies of the U.N., made treaties during the Berne Convention in 1988 that protected intellectual digital property throughout the world through cooperating countries (Lebert, 2009). The Berne

Convention treaties became a catalyst for the Unites States to act. Response on the national front took the form of the long-overdue updating of publishing/copyright issues addressing the protection of intellectual digital property. Congress passed the Digital Millennium Copyright Act in 1998. The legislation instituted major changes, because it tightened previous copyright laws. One provision of the law discouraged copying copyrighted materials by enacting new anti-circumvention restrictions (Lebert, 2009; Manley & Holley, 2012). This resulted in digital rights management (DRM) that served as a policeman who attempted to control use and distribution of intellectual digital property. This law facilitated companies like Amazon.com and Apple to develop and use "proprietary formats that limited users to *their* e-book inventory and [*their* e-book] readers… and made it impossible to sell e-books through the doctrine of first sale because e-books are licensed rather than purchased" (Manley & Holley, 2012, p. 300).

While DRM benefitted the publishing companies, it challenged the libraries who purchased materials for multiple users. "Many agreements treated e-books as physical books and did not allow more than one check out simultaneously" (Manley & Holley, 2012, p. 302). The DRM affected e-books and e-book readers because it prohibited or limited copying and many times did not allow the transfer of an e-book to a new device. Some publishing companies feared reduction of revenues, and therefore adopted the business model of one e-book – one checkout vs. one e-book – multiple, simultaneous checkouts. This presented financial restraints for libraries (Manley & Holley 2012). Even though

various business models were available, initial model choices of one e-book – one check out effectively prevented libraries from acquiring e-book titles (Kelley, 2012).

Library lending has always been a thorny issue for publishers. And e-book lending even more so. In an e-lending scenario, as with the lending of physical books, publishers lose out on multiple individual sales of an e-book….Unlike physical books, digital copies don't wear out, which means libraries don't have to reorder heavily used popular titles and publishers – well – they lose out again (Haq, 2011).

While many U.S. publishing companies exist, the "Big Five" is a nickname for the major trade book publishing companies in the United States. All of the "Big Five" publishers have their main U.S. headquarters located in New York City. Each "Big Five" publisher consists of multiple divisions/imprints. The "Big Five" publishers are: 1) Hachette Book Group, 2) HarperCollins, 3) Macmillan, 4) Penguin Random House, and 5) Simon & Schuster (Peterson, 2015). Manley & Holley (2012) documented that the honor of publishing the first trade e-book did not go to one of the "Big Five."

"The first notable electronic book… (electronic storybooks on CD) was Discus's *The Tale of Peter Rabbit* created in 1990 for the Macintosh" (Cavanaugh, 2006, pp. 18-19). According to Lebert (2009), in 1994, publishers began to go digital with the National Academy Press in the U.S. being the first publisher to post free e-books with the author's permission. In 1995, MIT Press published an e-book. Also in 1995, Amazon.com became the first main online bookstore. Following suit, Barnes & Noble, the leading book seller in the U.S., went online in 1997 (Lebert, 2009). Two smaller companies printed/published

their first e-books in 1997: 1) Donnelley and Sons (Manley & Holley, 2012), and 2) Living Books which published *Stellaluna* by Janell Cannon (Guernsey, 2011). Three years later in 2000, according to Striphas (2006), one of the "Big Five," Simon & Schuster, published their first e-book, Stephen King's novella, *Riding the Bullet*. Others of the "Big Five" have jumped on the proverbial bandwagon and today all of them provide e-books for purchase.

Today, publishers may produce two kinds of digital books. "Digitized analog materials" means that someone scanned or made an electronic copy of existing print material (Kaczmarek, 2006; Martin & Quan-Haase, 2013). The collections of Project Gutenberg and the International Children's Digital Library are comprised of "digitized analog materials" (ICDL, 2016; PG, 2016). The second kind of digital book, "born digital," means that it originated online, exists only in electronic form, and is available only on the Web. Characteristics of books "born digital" often include interactive platforms and animation (Kaczmarek, 2006; Martin & Quan-Haase, 2013).

Digital Libraries

Not only books, but libraries have gone digital. Most digital libraries (DL) serve a specific purpose or a defined group of potential users. They are usually funded or sponsored by some type of organization. The DL normally supply librarians to facilitate the technical services involved. Based on the latest, most flexible business models, DL provide free, multiple access to the well-organized collection resources that may contain multiple formats (Schwartz, 2000).

"Libraries began to pay attention to e-books in 1998 when NetLibrary began to provide content" (Valore Books, 2016). In 2002, NetLibrary was purchased by OCLC (Online Computer Library Center, Inc.) who continues to provide content to libraries today (Valore Books, 2016). The American Library Association, according to their website, began to feature access to e-books, albeit through apps, in 2013 (ALA, 2016).

One of the earliest and longest-lasting digital libraries, Project Gutenberg, began text digitization in 1971 at the University of Illinois's Materials Research Lab. Michael Hart, originator of Project Gutenberg, named Project Gutenberg in honor of Johannes Gutenberg who lived in the 15th century and whose invention of moveable type enabled any person to have print books for a small cost. Mr. Hart envisioned a digital library that was inexpensive and easy to use. His original goal was to have 10,000 e-books by 2001. Fast forwarding to the 21st century, Project Gutenberg has in excess of 50,000 titles available for the public to access. The books that were digitized and became part of the collection of Project Gutenberg were books from the public domain (Lebert, 2009; Manley & Holley, 2012; PG, 2016). Thus, the "goal or mission of Project Gutenberg to put at everyone's disposal, in electronic versions, as many literary works from the public domain as possible for free" has become a reality (Cavanaugh, 2006; Lebert, 2009, p. 12). The first e-book available from Project Gutenberg in July, 1971, was *The United States Declaration of Independence* (Lebert, 2009; PG, 2016).

Another digital library of world renown is the International Children's Digital Library (ICDL). The ICDL website was established with the purpose of making children's

literature from around the world available online (Urschel, 2003). Founded in November, 2002 (Bilal & Bachir, 2007; Druin, 2005a; ICDL, 2016), the "ICDL was initially created by an interdisciplinary research team at the University of Maryland….Members of the team included computer scientists, librarians, educational technologists, classroom teachers, graphic designers, and graduate students" (ICDL, 2016). The ICDL was unique in two aspects. First, it was established mainly for use by children from 3 to 13 years of age. And second, the computer interface was designed with the help of children specifically for children (Bilal & Bachir, 2007; Druin, 2005b). This free online library contains over 4,600 digitized children's books in 59 languages from around the world (ICDL, 2016). They may be accessed by clicking on colorful icons with child-friendly topic designations. This internet resource is free to whomever in the world wishes to access it – children, teachers, librarians, parents, or other individuals. Although users originate from all over the world, circulation data on the ICDL website documented that the United States at 53% by far surpassed any other country in using the rich resources of the now independent not-for-profit ICDL Foundation (ICDL, 2016).

According to e-book devotees, bookless libraries herald the future. The whole idea that libraries require a specific geographical location has also done an about-face. Hence, the first public library to house no traditional tomes, BiblioTech, originated in San Antonio, Texas, in 2014 (Weber, 2014). In BiblioTech, instead of rows and rows of shelved books, rows and rows of computers and e-readers await patrons. Or, if a patron wants to borrow

an e-reader downloaded with up to five collection items, he/she only needs to present his/her library card (Weber, 2014).

Digital libraries have advantages. For example, digital content occupies less space than traditional tomes. In addition, architecting space configurations for bookless libraries are more cost efficient because of the lighter load-bearing designs necessary for e-equipment than are required for the heavy weight of books. Other advantages abound. There are no misshelved books, or lost books. There are no books with torn pages, dog-eared pages, pages ripped out of them, pages sticky with unknown substances, or pages stuck together from water or other liquids having been spilled or leaked on them in a backpack (Weber, 2014). Digital content may be made simultaneously available to library patrons. Access to online digital content is immediate for anyone, regardless of his/her location. Digital content may support research by making "documents, artifacts, and records" readily available (Lebert, 2009).

Summary

As was readily seen, the underlying, interlocking puzzle pieces which represented topics, concepts, technology, and industries that supported this research project did not develop necessarily in tandem. Nor did they appear simultaneously. Each part of the puzzle was, however, necessary to provide understanding of the tremendous amount of cooperation among market players for e-books to be available in elementary school libraries for students to access and choose.

CHAPTER III

METHODOLOGY

The methodology of this research project was quantitative. Information was gathered via an online self-administered questionnaire survey (Dillman, 2007). According to Babbie (1990), the three general objectives of survey research are description, explanation, and exploration. The research study explored an area of hitherto unknown information - what kind of instruction is provided to elementary students by librarians in order for them to access and choose e-books in their elementary library collections. Accompanying library information and pertinent data regarding the infrastructure and equipment required to accommodate e-access was also sought.

This chapter presents the research study. It covers the research question, the research design, the survey, the survey participants, data collection, data analysis, a summary, ethical considerations, and the limitations of the study.

Research Question

The research question addressed in this study was:

- What kind of instruction is provided to Texas public elementary students by Texas public elementary school librarians in order for the elementary students to access and choose e-books from their elementary library collections?

Information was also gathered in the survey about related issues in order to present a fuller understanding of situations currently extant in Texas public elementary school libraries because the research question inherently included a network of intersecting information:

- o Background, experience, or training of the librarians,

- o Availability of the Internet,

- o Vendors situated to provide appropriate e-book products for elementary-age students,

- o Current e-book collections available in Texas public elementary school libraries, and

- o Types of equipment and number of various devices available in the elementary school library that enable elementary students to access and choose e-books.

Research Design

The research design implemented in this study was a cross-sectional survey. According to Babbie (1990), a cross-sectional survey is appropriate for gathering information at one point in time from a sample of a larger population. Public elementary school librarians constitute a sample, or cross-section, of all librarians. The intent of the questionnaire survey was a single gathering of information regarding the instructional choices of Texas public elementary school librarians pertaining to e-book access, in addition to related data concerning their schools, their libraries, and available, related infrastructures.

The online survey venue used encompasses several advantages. When potential participants are Internet users, it is advantageous to use Web surveys because electronic surveys include a low budget, as well as, a relatively fast respondent response time in comparison to paper-and-pencil surveys. Another positive characteristic of an online survey is the anonymity of potential respondents (Connaway & Powell, 2010). Using IBM SPSS Statistics software for the survey with its data compilation features simplified data collection and analysis (SPSS, 2016).

The information derived from the survey provided a snapshot of current instructional practices and related items with regard to e-books and e-resources/equipment in Texas public elementary school libraries. Data gleaned from the questionnaire was used to present statistically significant relationships or tendencies of the target population existent at the time of the survey with the public elementary school library being the unit of analysis (Babbie, 1990).

According to the five TEA reference documents (see Appendix B), Texas school district types A – H numbered 1,026 with approximately 4,491 elementary schools, which included Pre-Kindergarten (PreK) through Sixth Grade (TEA, 2016).

Survey

The research survey questionnaire offered to the potential participants was generated by the researcher, who worked as an elementary librarian. The survey contained 34 questions with a total of 59 answers. The four major sections of the survey covered the following topics: 1) general demographic information, 2) providing services, 3) e-book

information, and 4) the future. Three question types were included on the survey: 1) free response, 2) multiple choice with single item select, and 3) multiple choice with multiple item select (see Appendix A).

The online survey (see Appendix A) was sent and administered through PscyhData, which is licensed for use and sponsored through Texas Woman's University. PsychData is "an online survey software tool," tailor-made for academic research. PsychData features a "faster turnaround" for data collection without the cost of printed paper surveys and the accompanying postage. "The software program is user-friendly," allowing the researcher to "self-author, distribute, and collect data on the web at any time" (PsychData, 2016).

Survey Section One. General Information - Questions 1-5. In section one of the survey the demographic information included five questions. The information requested was: a) the name of the respondent's school district, b) the name of the respondent's elementary school, c) the enrollment of the respondent's elementary school, d) certification status of the librarian, and e) the total number of years as a librarian. Questions one and two were free response items. A text box was provided for the participant to type in the requested information. Questions three through five were multiple choice with single item select. Consecutive number values were attached to each of the answers for each question.

Survey Section Two. Providing Services – Questions 6-15. These ten questions addressed the current library services with regard to the available equipment infrastructure undergirding e-book access and choice. Question six queried Internet connection. Questions seven through twelve gathered information about specific equipment types

provided for student use in the library. Nine of the "Providing Services" questions, Questions 6-13, were constructed as multiple choice questions with a single select format. Question 14 was constructed as a multiple choice question with a multiple select framework.

Survey Section Three. E-book Information – Questions 16-33. Question 16 was a Logic Question. If a participant answered "Yes" to "Does your elementary library collection contain e-books?", then the participant was directed to answer questions 17-33. However, if the participant responded "No" to that question, then questions 17-33 were skipped and the participant moved to the last section/question. Question topics in the E-book Information section covered: a) size of elementary e-book collection, b) organizational system used with e-books, c) number of years the elementary library had had e-books, d) availability of e-Picture books, e) availability of e-Chapter books, f) access to library circulation records, g) access to e-book circulation numbers, h) e-book vendors, i) district purchaser(s) of e-books, j) stated expectations of lower elementary students with regard to e-book check out, k) stated expectations of upper elementary students with regard to e-book check out, l) e-book circulation, m) instruction provided students in order for them to access and choose e-books, n) instructional tools/aids used in teaching the e-access process, o) library website e-book link, p) library website link to ICDL, and q) tips and hints for new librarians regarding helping students find/access e-books. Of the 18 questions contained in Survey Section Three, 13 questions were constructed as multiple choice questions with the single select format. Two questions were framed as free response items;

while three items were formatted as multiple choice questions with the multiple select feature.

Survey Section 4. The Future – Question 34. The last question in the survey was focused on the non-e-book library's/district's future intent with regard to adding e-books to the elementary collection. The last question was multiple choice with a single select answer.

This research questionnaire survey was emailed to the 2,677 potential participants, sandwiched by the initial and second invitation to participate in the survey and showcase Texas public elementary school libraries and the e-books available for the Texas public elementary students.

Participants

The potential participants were limited by two parameters. The first parameter limited potential research participants to Texas elementary public school librarians in Texas public school district types A-H (TEA, 2016). For this research study, the term "elementary" was defined as and limited to Pre-Kindergarten through Sixth Grade. The second parameter, which limited the number of participants, dealt with the key part of the data collection method - the online survey. This second parameter limited Texas public elementary school librarians in Texas public school district types A-H *only* to those Texas public school elementary librarians whose email addresses could be found online. Therefore, any public elementary school librarian who did not have a posted email was automatically excluded from the survey.

Potential participants were gathered through a multi-step process. First of all, the five TEA documents integral to the research process, heretofore mentioned, were accessed from the TEA website (see Appendix B). Next, these five documents were processed in order to gather the maximum potential participants possible. The researcher methodically attempted to access each of the 1,026 Texas public school district types A-H containing the approximately 4,491 elementary schools online. When the researcher was successful in accessing a school district, then, each elementary school website possible in the district was accessed and combed for the elementary school librarian's posted professional email address. Next, the available contact email address was transferred to an Excel spreadsheet organized by Texas public school districts A-H in alphabetical order.

Several primary prohibitive factors were encountered which ultimately prevented access to 1,814 Texas elementary public school librarians' email addresses. First, some Texas public school districts were unavailable online during the research time window due to stated technology issues or other unknown factors. Second, other Texas public school districts required a user name and password to access the school district. Third, in some other Texas public school districts, the district itself was accessible, but individual elementary schools within the district required a user name and password. Fourth, not all elementary school websites provided an email address for the individual who served or functioned as the elementary librarian. Fifth, not all elementary school websites, even though faculty and staff email addresses were posted, designated job title positions; i.e., whoever held the position of elementary librarian was not indicated anywhere on the

elementary school website. Sixth, some elementary librarian emails posted online did not work. Seventh, some Texas school districts in the process of changing URLs, between the time that the emails were initially gathered and the survey was emailed to the potential participants, opted to move to a user name and password format. That decision caused district-specific email bounce-backs, essentially eliminating their availability. Even though these seven primary factors ultimately prohibited and reduced access by 1,814, or 40 percent, to Texas public elementary school librarians' emails in 611 districts, they did not eliminate any of the Texas district category types A-H.

In addition to the primary factors encountered, other secondary inhibiting factors occurred, which while not ultimately preventing the researcher from extracting the necessary data for the research study, instead, served to lengthen and complicate the process. The first inhibiting factor the researcher encountered was of a logistical, technological nature. Each Texas public school district A-H accessed had an individualized home web page. Each district home web page exemplified individualized formatting by varied placement of the district's list of elementary schools' access links. Subsequent librarian email placement on individual elementary school websites within a district proved to be different for some elementary schools and similar to other elementary schools in the district. A second inhibiting factor, also of a technological nature, dealt with district firewalls. District firewalls bounced back large groups of email addresses in the process of sending out the research survey. Consequently, the questionnaire survey was emailed to groups of less than ten elementary librarians at a time to prevent "email bounce-backs."

The third inhibiting factor consisted of Uniform Resource Locator (URL) issues. In the interval between a specific district's librarian emails being found and the survey being sent out, a few districts changed their URLs. Consequently, when the survey was sent to a specific district, all of the librarian emails in the specific district bounced back. In the course of reinitiating the search for a specific district's librarian emails, the new school district URLs were inserted into the email templates/formats.

The fourth inhibiting factor existed in the realm of district organizational placement of the librarian. Organizational categorization of librarians differed from district to district. Districts alternately aligned the librarian's position with staff, faculty, administration, technology, learning enhancement, curriculum support, or specials. Each of the organizational groups extant in each district was located in various areas on the district websites and subsequent elementary school websites.

The fifth inhibiting factor dealt with nomenclature. From district to district, the terminology used for "librarian" varied. Job titles appeared to indicate district philosophy and perception regarding the position of librarian, preferred district focus of the position, degree of district importance attached to the position, and the possible attendant level of education and certification. Following is a list of job titles for "librarian" encountered across the state of Texas in district types A-H. The position titles are listed in no particular order with regard to encountered use: literacy specialist, information learning specialist and coach, librarian, library specialist, library informational specialist, teacher librarian, library media specialist, information literacy specialist, information technology support, media

technology specialist, media resource specialist, library media technology specialist, learning commons assistant, library manager, library clerk, library assistant, library aide, library para-professional, para-librarian, and library para-educator.

Actual access to an elementary librarian's posted email address might occur on a library website page. Another avenue of actual access to a librarian's posted email might be the result of a single click or double click on the position name, profile information, or link to a library website. An additional avenue to accomplish actual access of a librarian's posted email was to peruse a list of employees at an individual elementary school whose information format included not only name, but position and email. An alternate way of finding a librarian's posted email, when no employee list was provided, was to type "librarian" (or other related term) in the text box of an elementary school home page website and "enter" or click on "search" for possible actual results of posted librarian emails. A few districts provided elementary librarian emails at the district library level or provided links to each elementary school library web page for librarian email access.

At every stage of the search process, variations occurred. Consequently, the primary and secondary factors encountered resulted in a complex, extended search for each district and subsequent elementary school accessed as the researcher combed individual elementary school websites for an elementary librarian's posted email address.

As a result of the attempted access of the 1,026 Texas public school districts A-H containing approximately 4,491 public elementary schools, and because of, or rather in spite of, the previously discussed primary prohibitive and secondary inhibiting factors,

2,677 elementary librarian email addresses were gathered as potential participants for the study.

The 2,677 potential participants represented 415 Texas public school districts and every district type A-H. They were emailed an invitation to participate in the survey, followed by the questionnaire survey itself. The survey was emailed again to the potential elementary librarian participants, encouraging them to participate in the study, after an approximate two-week interval. Survey data results were adjusted for duplicate submissions and potential participants who accessed the survey, but declined the invitation to participate. According to the survey data gathered by PsychData, the final number of respondents, or actual participants, totaled 516. These 516 respondents represented 168 Texas public school districts across the length and breadth of Texas and every one of the A-H district types (see Table 4.1). The process of searching approximately 4,491 Texas public elementary school websites for potential participant emails took approximately four months (December 2014-April 2015).

Data Collection

The dataset was collected through an online, self-administered survey. Based on the email addresses obtained of the potential librarian participants, the online survey, using PsychData, licensed for use and administered through Texas Woman's University (TWU), was emailed to the potential participants. When a potential participant finished the survey, responses were submitted and returned online to TWU, and captured at the PsychData

website. At the completion of the three and one-half week survey time frame, survey access was turned off.

Data Analysis

The compiled statistical research data was downloaded from PsychData to an Excel spreadsheet for subsequent analysis. Each of the 34 survey questions contained 59 possible answer items in all. They were subjected to analysis. For each survey question, Excel provided some preliminary data analysis tools. Each column was given a consecutively alphabetic designation which represented respondent responses to one answer item. At the bottom of each answer column, Excel via PsychData provided a total number, representing the number of responses for each specific question item. The left side of the Excel spreadsheet contained a running count of the row numbers. That feature aided in counting the number of responses. In addition, each row provided all of the answers of one respondent.

PscyhData also provided other preliminary data analysis tools. Free response items were given no numeric value. In contrast, consecutive number values were attached to each of the answers of the multiple choice with single select answers, as well as, to each of the answers to the multiple choice with multiple select answers. This feature provided the ability to disaggregate and tally like numeric values and make comparison statements based on the statistics derived from the various value tallies and the consequent percentages calculated.

Questions one and two were free response questions asking the name of the Texas public school district and the elementary school where the librarian was employed. To analyze questions one and two, the researcher used the document, *Texas Public School Districts Categorized by Type* (see Appendix B). Each school district name ("x") was located in the document, category noted, and "x" district placed in alphabetical order on a spreadsheet. Each elementary school reporting from "x" district was inserted under the district name in ABC order. Notations were made when an elementary school submitted more than one time. Total number of districts, district category types, and elementary schools were derived from this listing.

For those questions which were multiple choice, the prominent Excel feature of total number at the bottom of each column expedited the data analysis process. Based on the total number at the bottom of each item answer, each column was disaggregated and like numeric values were tallied, making sure that each of disaggregated tallies, when added together, equaled the aggregated number total of the column provided by Excel via PsychData.

One of the free response items dealt with e-book vendors. Tallies of like answers were made. Then, with the total tallies for each e-book vendor, percentages for each -- vendor were calculated based on the total number of responses. These calculations, listed in descending numerical order revealed e-book vendors most often used and those least used by elementary school librarians, based on the reported response of the research

participants. The other free response item that was just listed involved the tips and hints that librarians found helped their student to find/access e-books.

The survey was subjected to further, more sophisticated analyses by using IBM's SPSS Statistics to determine any Pearson correlations. The research questionnaire dataset was read into SPSS. This analyses ascertained any small, moderate, or significant correlation between various items. The list of correlation questions that were explored included the following:

1. Is there any correlation between the number of years as an LMS and the kind of instruction provided to elementary students in order for them to access and choose e-books from their elementary library?

2. Is there any correlation between the number of years as an LMS and the kind of instructional tools/aids used in instructing elementary students how to access and choose e-books from their elementary library?

3. Is there any correlation between the enrollment of an elementary and the equipment provided in the library to access and choose e-books?

4. Is there any correlation between the approximate size of an elementary library traditional print collection and the approximate size of an elementary e-book collection?

Summary

The research focus revolved around public elementary librarians and the libraries in which they serve. A quantitative cross-section online survey, which consisted of free

response and multiple-choice questions, was emailed to potential participants, who consisted of public elementary school librarians across the length and breadth of Texas. The self-reporting quantitative data gathered provided representative data indicative of and surrounding the current instructional practices for accessing e-books/e-resources available in public elementary school libraries. Data analyses consisted of straightforward tallies, subsequent percentage calculations, and statements based on the derived statistics/data gathered online by PsychData. In addition, sophisticated analyses were performed by SPSS upon the research dataset gathered online to ascertain if any possible Pearson correlations existed.

Ethical Considerations

This survey was voluntary. Potential participants, Texas public elementary school librarians, had the opportunity to accept or decline to participate in the study. The return of the completed online questionnaire constituted the participants' informed consent to act as a research participant. The questionnaire survey did not request the names of the participants. Names of school districts and individual schools were requested for clarity and data analysis purposes based on the TEA description of district types. Names of individual districts and elementary schools were not used in reporting results. TEA district types were employed in reporting the data analyzed. Because this was an online survey, potential participants were informed that there was a potential risk of loss of confidentiality in all email, downloading, and internet transactions; however, confidentiality would be protected to the extent that is allowed by law.

Study Limitations

Indications and tendencies revealed by respondent statistical data analysis would be limited to Texas public elementary school libraries only. The results would only apply to those involved in the survey. It remains unknown how the data would have been modified, had more than 60% of Texas elementary school librarians invited to participate chosen to do so. It correspondingly remains unknown how the data would have been adjusted had the public elementary school librarian respondents been composed of a different set of participants. It would not necessarily be generalizable to secondary or other level school libraries. Nor would the results necessarily apply to other states which may provide similar services for their elementary students.

CHAPTER IV

RESULTS

This cross-sectional online survey of Texas public elementary school librarians was conducted in the spring of 2015. The survey opened on May 11 and extended through June 3, a period of three and one-half weeks. Out of the 1,026 Texas school districts which had approximately 4,491 Texas public elementary schools at the time of the research project, the researcher attempted to access each public elementary school online in order to gather librarians' email addresses. As a result, 2,677 librarians' emails were successfully located. These Texas public elementary school librarians were subsequently emailed a researcher-generated survey regarding their instructional choices regarding e-books and their elementary libraries. A total of 516 public elementary librarians in Texas chose to participate in the survey. These participants, who represented small, medium, and large TEA school districts A-H located in urban, suburban, and rural areas throughout the state of Texas, provided a representative group of respondents (see Table 4.1).

The research results presented an ever-present caveat – the research project captured a transient moment. Temporal situations change and adapt to external and internal influences, and the field of education is no exception. The ensuing research focused on the question, "What kind of instruction is provided to Texas public elementary students by Texas public elementary school librarians in order for the elementary students to access and choose e-books from their elementary library collections?" Two pivotal areas which

exerted influence on the stated research focus were probed prior to the main research question: 1) Texas public elementary school librarian research respondents and their schools, and 2) the corresponding Texas public elementary school libraries and their related infrastructure. Research results pertaining to these two pivotal areas will be presented and discussed before the central research question, because their discussion informed and supported the central research focus data.

Texas Public Elementary School Librarians and Their Schools

Who were these Texas public elementary school librarians who took the time to respond to the doctoral research questionnaire? Synthesizing survey results, the researcher constructed a profile of the Statistically Average Texas Public Elementary School Librarian (SATPES Librarian). Because 99% of the library survey respondents were female, feminine referents were used throughout the discussion with regard to the hypothetical SATPES Librarian. The certified SATPES Librarian had worked nearly ten years and was currently employed at an elementary school with an approximate enrollment of 600-649. She had access to circulation records of both traditional print materials and e-books. The circulation information provided her data with which to evaluate, verify, and justify collection and budget decisions, as well as, generate reports required by administration. Our SATPES Librarian was the predominant purchaser of e-books for the library, with Follett being the vendor of choice.

When Pre-K through Second Grade students visited the library to return and check out books, the SATPES Librarian told the younger students that e-books were available to

check out, if they were interested. Whenever the older students, Grades 3-6, came to the library, however, she encouraged them to check out e-books. When the SATPES Librarian was asked to rate e-book circulation in her library, she reported that e-book circulation did not meet her expectations.

The individual elementary library website of the SATPES Librarian provided an e-book link for her students and their parents. This e-book link facilitated access to the elementary library's e-collection. Conversely, her library website did not contain an access link or icon to the International Children's Digital Library (ICDL).

When the SATPES Librarian taught her elementary students how to access e-books in order to make an e-book choice, she modeled the e-access process, followed by student hands-on experience. The amount and availability of e-access equipment, as well as, allotted library time determined the extent of students' hands-on experience. The SATPES Librarian used PowerPoint as her instructional tool or aid of choice. She also posted e-access directions on the library's website using text and screen shots. In addition, she generated bookmarks and gave them to her students. These bookmarks contained printed step-by-step e-access directions to be used by her students and their parents.

With the SATPES Librarian delineated, let us examine the statistical data from whence the hypothetical librarian was derived. From urban to suburban to rural, the respondent librarians spanned the length and breadth of Texas, representing public elementary schools of various sizes, differing demographics, and all of the Texas Education

Agency School District Type Categories A-H (see Table 4.1). An overwhelming majority

of the survey participants, 85%, were certified.

Table 4.1.

Incidence of Texas Education Agency School Districts in Survey

Texas Education Agency School District Type Categories	Total Number of Districts in Each Category	Districts Sent to	Districts Rec'd from
A – Major Urban	11	11	11
B – Major Suburban	80	62	47
C – Other Central City	41	33	28
D – Other Central City Suburban	165	94	40
E – Independent Town	70	47	14
F – Non-Metropolitan: Fast Growing	32	5	2
G – Non-Metropolitan: Stable	182	68	14
H - Rural	445	95	12
Total	1026	415	168

Although 78% of their elementary school enrollments ranged between 400 and 850,

some schools at the lower extremity enrolled up to 249 students while the upper extremity

of elementary school enrollments ranged between 1300 and 1349 (see Figure 4.1). The

survey respondents represented approximately 318,150 Texas public elementary students.
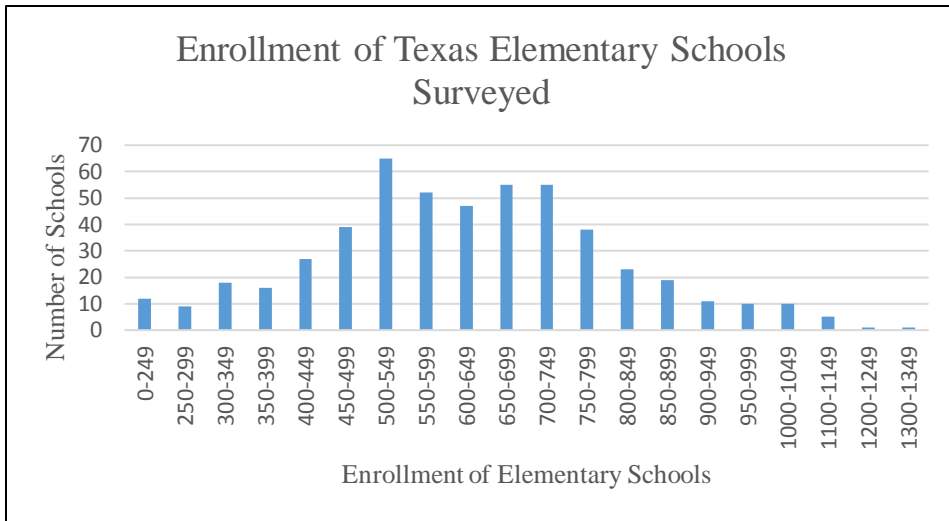
Figure 4.1. Enrollment of Texas elementary schools surveyed

Only 3% of the survey respondents were first-year librarians. More than half of the participants (69%) had worked as a librarian for less than ten years. One veteran respondent had served as a librarian for 47 years. The bulk of librarian respondents (94%) had 20 or less years of experience (see Figure 4.2). The mean number of years as a librarian documented by reporting participants was 9.68 years.
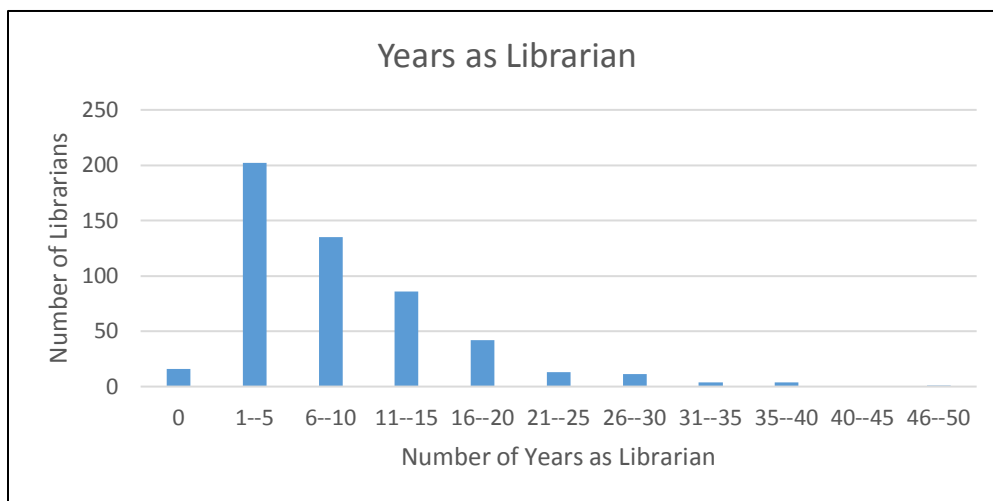
Figure 4.2. Total number of years as librarian

When technological resources were integrated into the curriculum, school districts established appropriate policies and procedures, along with accountability measures which assisted in evaluating whether or not said additional resources attained the desired goal(s). To this end, 98% of the respondents stated that they had access to library traditional print circulation records. In contrast, only 65% of the participants reported that their library circulation records included specific e-book circulation numbers. It would appear that the comparative trending circulation statistics with regard to traditional print books as opposed to e-books cannot be fully evaluated at this time based on the current information access gap between the two data sources. During the four months (December 2014-April 2015) that the researcher combed Texas public elementary school websites for librarian email addresses, only one eventual survey participant's library website posted e-book circulation numbers.

E-book vendors play a critical part in the educational process. According to the survey data, 94% of the librarians knew the vendors from whom e-books were purchased. A total of 33 vendors were listed by the reporting librarians. Follett was cited as a vendor more than twice its nearest competitor. Statistical disaggregation of compiled survey data revealed that 54% of the respondents reported only one vendor, indicated by an asterisk after the vendor's name in Table 4.2. Of those librarians who reported only one vendor, 35% of the survey participants named Follett. Thirty-nine percent of the surveyed librarians as a whole listed multiple vendors.

Table 4.2.

List of E-Book Vendors

E-Book Vendors	Participant Choice
Follett Shelf (Destiny)*	65%
Capstone (PebbleGo)*	30%
Mackin*	20%
Overdrive*	10%
ABDO*	7%
ESebco*	3%
Permabound*	3%
TumbleBooks	2%
Rourke	1%
Gale	1%
Lerner	1%
Scholastic (BookFlix), Amazon, Rosen, Bearport, MyON, Barnes & Noble*	.7% (ea.)
Dorling-Kindersley, Star Walk, World Book, Escue*	.5% (ea.)
Amicus, iTunes, ePoint, Davidson, Britannica, Opal Booze, Delaney*, Brain Hive, Gumdrop, Garth Stevens*, Big Universe, Weigl	.2% (ea.)

Note.*Names of vendors when only one vendor listed for an elementary school

From the possible variety of personnel or entities that might be assigned purchase of e-books for the elementary library as one of their duties, the library media specialist, or librarian, was most often given the responsibility for choosing collection additions (81%). She may have made the choice alone or in conjunction with other school personnel. The district library administrator/coordinator was the other individual most often responsible (47%) for purchasing e-books. Other entities or personnel were assigned the responsibility of e-book selection as noted in Table 4.3.

Table 4.3.

Responsible Personnel/Entities for Purchase of E-Books

Responsible Personnel/Entities	Percent
Librarian (Library Media Specialist)	81%
District Library Administrator	47%
Technology Personnel	2%
Principal	2%
PTA	2%
Library Consortium	2%
Regional Service Center	2%
Texas Library Initiative (TLI) Grant	1%
District grant/funds	1%
Committee of Librarians	1%
District Personnel	.5%
Public Library, Literacy Specialist, Title I Peer Facilitator, Library Clerk – Paraprofessional	.2% (ea.)

With the e-books available to access and check out, librarians reported that stated expectations for PK-2 and Grades 3-6 varied. Older students were encouraged more often than younger students to check out e-books. Statistically speaking, few of the younger or older elementary students were actually required to check out the e-books provided.

Table 4.4.

Stated Expectations for Elementary Students to Check Out E-Books

Stated Expectations	PK-2	Grades 3-6
Available, if interested	63%	43%
Encouraged to check out	35%	54%
Required to check out	2%	3%

The survey results documented that a relatively small percent of the respondents rated their e-book circulation as "exceeds expectations." Slightly more than a quarter of the participants were satisfied with e-book circulation in their library. It may be noted that the average Texas public elementary school library has had e-books incorporated into the elementary library collection for only three years. That statistical fact of e-books being "the new kid on the block," at the time of this survey, may be a pertinent factor why a majority of the librarians were not satisfied with the current e-book circulation at their school (see Table 4.5).

Table 4.5.

Librarians Rate E-Book Circulation

E-Book Circulation Rating	Percentage
Not available	8%
Does not meet expectations	61%
Meets expectations	27%
Exceeds expectations	4%

Different districts employed various policies and procedures with regard to the e-access accorded their elementary patrons/clientele. Based on the research conducted by the ICDL planning committees, which included elementary pupils, e-book links/icons appeared to be the most user-friendly elements for elementary students to navigate on websites (Druin, 2002, 2005a, 2005b; Druin et al., 2001). According to the reported survey results, 72% of the librarians responding stated that their library website contained an e-book link/icon. In contrast, only 12% of the respondents provided a link to the International Children's Digital Library on their library website.

According to the compiled statistical data, 15% of the librarians reported no e-books in their current collection. Those specific librarians represented all of the TEA district type classifications from urban to suburban to rural throughout Texas. The "no-e-book" respondents were queried about future district plans with regard to e-books. A little over a quarter of the "no-e-book" participants, 28%, stated that their district planned to purchase e-books in the future. Fourteen percent of the "no-e-book" respondents answered

"No," indicating their district had no future plans to buy e-books. Almost half of the "no-e-book districts" (48%) reported "Maybe" their school district would buy e-books in the future. Consequently, the issue for the "no-e-book districts" ("No" and "Maybe") of whether or not to buy e-books in the future for their district resided at the time of this survey on the negative side of the e-book ledger with 62% either undecided or definitely not going to buy e-books.

In response to future availability of e-books in one elementary school, a respondent stated, "I support that all students use the public library's e-book collection." Regardless of which answer a participant selected, the information regarding future e-book purchases/non-purchases ultimately reflected the effect of administrative philosophy and the reality of budget constraints.

Texas Public Elementary School Libraries and Their Related Infrastructure

Next, the researcher synthesized the statistics regarding the Texas public elementary school libraries included in the research study along with their related infrastructure and postulated a theoretical, "typical" Texas elementary library. The ensuing discussion presented the makeup of a hypothetically "average" Texas public elementary library with regard to e-books and their related infrastructure. One hundred percent of the Statistically Average Texas Public Elementary School Library(s) (SATPES Library) in the survey had Internet connection. A SATPES Library provided more than one type of equipment in the library for elementary students to access and choose e-books. Typically, a SATPES Library supplied 11 Computers, 9 Laptops, and 12 iPads for their student

clientele. In addition, elementary schools or school districts furnished a subscription to TumbleBookLibrary for pupils to access e-books.

The SATPES Library contained a traditional print collection, which ranged between 14,000 and 14,999. With regard to e-books, the average e-collection had been an integral part of the elementary collection for three years. The available electronic books numbered between 100 and 124 and were organized by the Dewey Decimal system. The e-book collection included both e-Picture books and e-Chapter books.

The derivation statistics provided by PsychData allowed a closer look at the libraries from which the SATPES Library was delineated. The size of Texas public elementary school library collections of traditional print material varied. Elementary collections ranged from under 5,000 tomes (2%) to 50,000+ (.4%) of those libraries included in the survey. The mean of elementary print collections was approximately 14,222. The mode of Texas public elementary libraries regarding the number in print collections was 14,000-14,999. A majority of the libraries surveyed (66%) reported traditional print collections that ranged between 10,000 and 18,000 (see Figure 4.3).
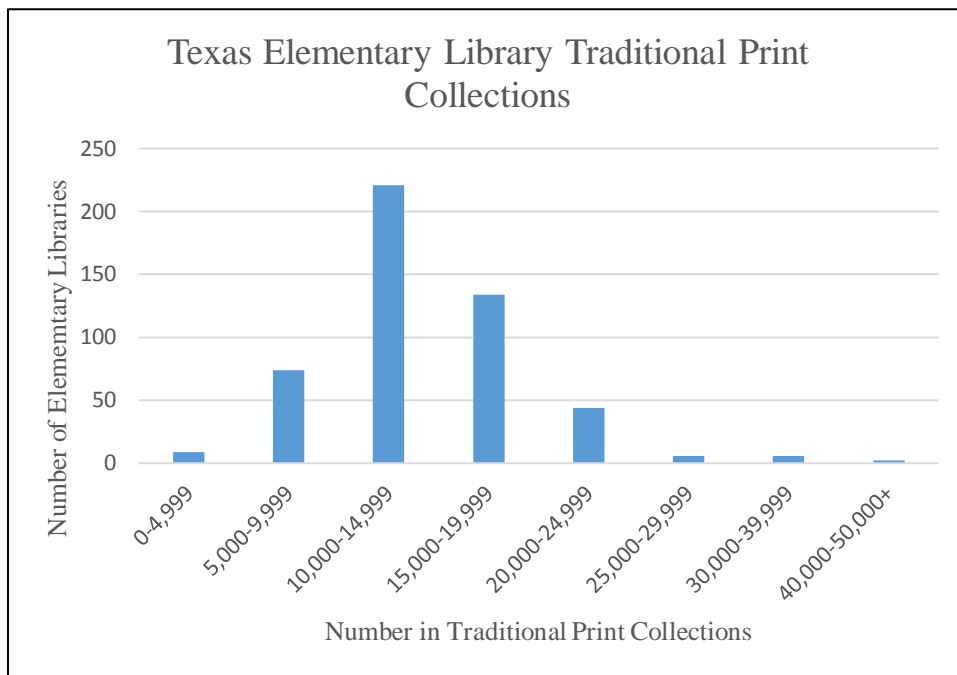
Figure 4.3. Size of Texas elementary library traditional print collections

With regard to e-books, 85% of the respondents stated that their elementary libraries contained e-books. As with the traditional print volumes contained in Texas public elementary libraries, e-book collections varied greatly in size. Disaggregation of garnered survey statistics supplied a clearer picture with regard to e-book collections. At the high end of the spectrum, a small percentage of respondents (.2%) indicated that their elementary libraries had had e-books for 4 years, with 26,000+ e-books currently in their collection. At the opposite end of the spectrum, 12% of the survey participants reported less than 25 e-books in their collection.   Seventy-six percent of the librarians stated that their library had less than 500 e-books. Forty-seven percent of the respondents had less than 125 e-books. The mode was the 100-124 range (see Figure 4.4).
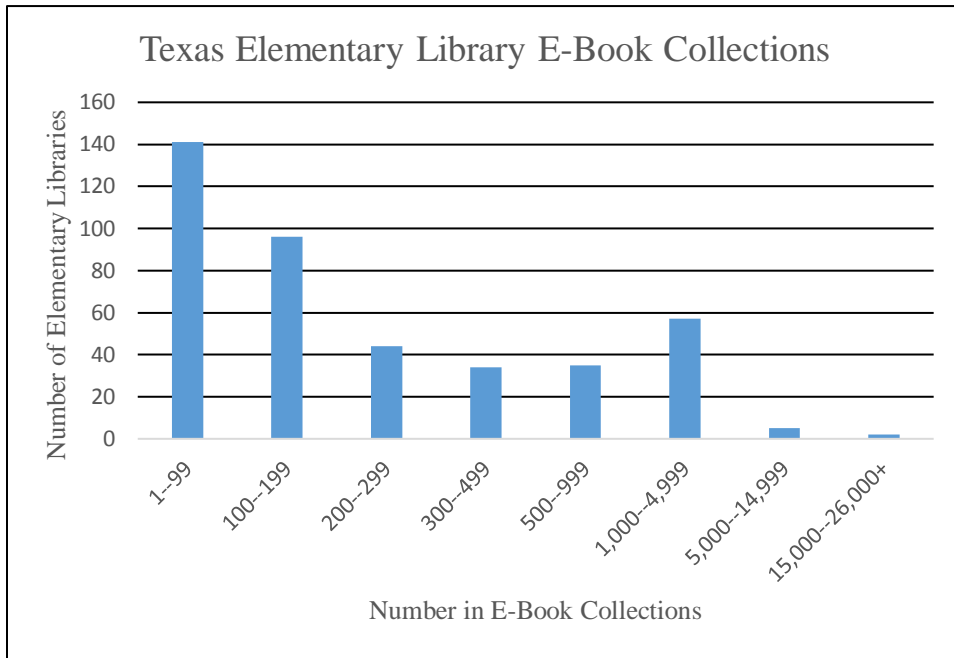
Figure 4.4. Size of Texas elementary library e-book collections

The Pearson correlational statistical analysis using SPSS was applied in order to elicit if there were any correlation between the size of the traditional print collection and the e-book collection. According to the results, the Pearson correlation between traditional and e-book collection was $r = 111$, significant at the 0.05 level (2-tailed) (see Appendix C, Table C1).

The organizational structure of e-books for access in the Texas public elementary libraries survey exemplified variety as indicated in Table 4.6 with almost half of the e-book collections being organized according to the Dewey Decimal system. Librarians who responded to the undesignated "Other" referred to district policies that "restricted e-book use to teachers only for teaching purposes or student research only in support of the curriculum."

Table 4.6.

Organizational Structure of E-Books in Texas Elementary Libraries Surveyed

Organizational Structure	Participant Choice
Dewey Decimal	49%
Topical	9%
Genre	10%
Fiction/Nonfiction	12%
Picture books/Chapter books	1%
Other (Curriculum area, Teacher Resources)	19%

Of those Texas public elementary school libraries surveyed that had e-books, none had had e-books for more than ten years. In fact, only 1% of the libraries reported having e-books for ten years. With the longest length of time with e-books in their collection of those surveyed, it could reasonably be assumed that the number in the e-book collection had increased more than other districts having had e-books for a shorter length of time. Statistical evidence, however, did not bear out that assumption in 75% of the cases. Fifty percent of the elementary libraries representing the 1% had e-book collections which ranged between 25 and 49. Twenty-five percent of the elementary school libraries representing the 1% had e-book collections which ranged between 50 and 74; and another 25% of the libraries representing the 1% had e-book collections which ranged between

7,000 and 7,999. Ninety-four percent of the respondents had had e-books in their collections for five or less years. The mode was three years. See Figure 4.5.
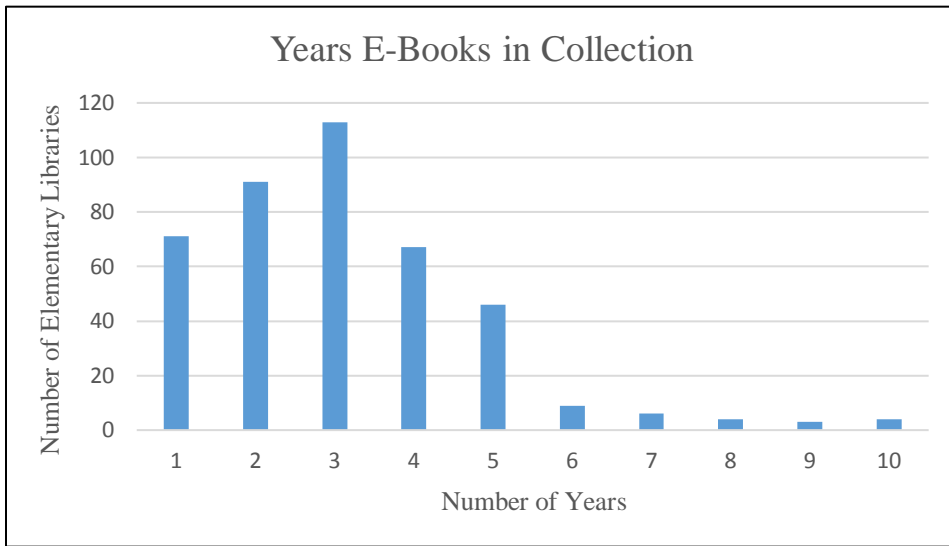
Figure 4.5. Number of years Texas elementary libraries included e-books in collection

For those Texas public elementary school libraries with e-books, there was little difference in the relative percentage of those libraries that provided e-Picture and e-Chapter books for their pupils. With regard to e-Picture books provided for the younger Texas elementary students – 86% of the survey respondents reported that their libraries provided e-Picture books in their collection for the benefit of their students. With regard to e-Chapter books provided for older Texas elementary pupils – 87% of the respondents stated that their libraries provided e-Chapter books for student use. Forty-one percent of the libraries that had e-books, which were neither e-Picture books nor e-Chapter books, reported that their district furnished informational e-books in support of the curriculum. Sometimes, according to district or elementary school policy, the informational e-books were

"restricted for teacher classroom use only or for purposes of student research in support of the curriculum."

In providing services in the elementary libraries, the technological infrastructure, i.e., available Internet and electronic equipment, were indicative of the extent to which the surveyed school districts/elementary school libraries in Texas have been able to invest for the benefit of their elementary students in order to support elementary student e-book access and choice. Although the survey questions were not all-inclusive regarding e-access equipment supplied for elementary patrons, participants were queried regarding six types of equipment potentially available in their libraries. In descending order, Table 4.7 listed the current equipment infrastructure for the approximately 318,150 elementary students represented in this survey. According to the survey statistics, iPads, Computers, and Laptops were most often the equipment of choice in elementary libraries. Table 4.8 provided descriptive statistical means via a comparative analysis in SPSS of library equipment available for student use to access and choose e-books.

Table 4.7.

Equipment Available in Surveyed Texas Public Elementary School Libraries for Student Use

Type of Electronic Equipment	Number Available in Library
iPads	5,574
Computers	4,774
Laptops	4,124
Tablet Devices	1,289
E-Readers	1,131
iPhones	188

Table 4.8.

Descriptive Statistics for Texas Public Elementary School Library Equipment Available for Student Use

	Descriptive Statistics
Equipment	Mean
iPads	12.35
Computers	10.57
Laptops	9.26
Tablet Devices	3.59
E-Readers	3.27
iPhones	1.38

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The Pearson correlation statistical analysis using SPSS was applied to ascertain if there was any correlation between the enrollment of an elementary and the equipment provided in the library to access and choose e-books. Only the equipment Laptops evinced any level of significance – and that at the 0.05 level (2-tailed), Pearson r = 105.

The secondary analysis conducted via SPSS dealt with the cross analysis of one type of equipment with each of the other types of equipment. Not all of the cross analyses resulted in a significant correlation. Following were the significant correlations that occurred as a result of correlation analysis. The Pearson correlation between Computers and Laptops was r = 115, significant at the 0.05 level (2-tailed). The Pearson correlation between Computers and Tablet devices was r = 177 and significant at the 0.01 level (2-tailed). The Pearson correlation between Computers and iPads was r = 142 and significant at the 0.01 level (2-tailed). The Pearson correlation between Laptops and Tablet Devices was r = 192, significant at the 0.01 level (2-tailed). The Pearson correlation between Laptops and iPads was r = 218, significant at the 0.01 level (2-tailed). The Pearson correlation between iPads and iPhones was r = 238, significant at the 0.01 level (2-tailed). The remaining Pearson correlation cross analyses are available in Appendix C, Table C2.

With regard to school districts and elementary schools providing the necessary technology and related e-book infrastructure, statistical disaggregation revealed that only a little over one-fourth of the elementary schools libraries (27%) had one type of equipment available for accessing e-books. Toward the other end of the continuum, a majority (73%) of the elementary schools provided more than one type of equipment for elementary

students to access and choose e-books; whereas, at the extreme, high end of the continuum, .8% of the reporting librarians stated that their districts provided as many as six different types of equipment for elementary students to access e-books. Other e-access equipment furnished that was specifically mentioned beyond what was covered in Table 4.7, in descending order, included Chromebooks, iPods, and PlayAways. Obviously, the list in 4.7 did not cover all the various types of equipment that libraries have for students to access and choose e-books. Nor did it elicit equipment policies established by the various Texas school districts. Three percent of the respondents stated that their elementary schools were partially or fully one-to-one (1:1) i.e., each student at grade levels designated by individual districts had an iPad or other electronic device for personal use. One percent of the Texas elementary schools represented in the survey have instituted some variety of "bring-your-own-device" (BYOD) policies.

More than half of the librarians surveyed (59%) stated that their elementary library provided a TumbleBookLibrary subscription for their students. TumbleBookLibrary exemplified one of the publishing companies which cater to the K-12 market. According to the TumbleBooks website, they provide "an online collection of animated, talking picture books" available to schools via subscription which are designed for young children (TBL, 2016). Six-tenths of one percent of the survey participants reported that although their specific school did not furnish TumbleBookLibrary subscriptions, "the students can access TumbleBooks through the public library."

This part of the survey clearly showed that there are not one-size-fits-all equipment/technology solutions across the myriad of Texas school systems surveyed. The survey results is reflective of each unique school situation, because there are no state library equipment requirements/norms. Therefore, each library's teaching/modeling goals vary to meet and match their specific available equipment.

Instructional Methods Used by Librarians

Based on instructional methods used by Librarians to enable Texas public elementary students to access and choose e-books from their elementary library being the central research focus, an in-depth analysis was applied to the pertinent statistical data compiled by PsychData. The survey question read: "What kind of instruction is provided to the elementary students in order for them to access and choose e-books from their elementary library? (Check all that apply.)" Five possible answer choices were provided:

1. No instruction provided,

2. Direct Instruction, followed by student practice and application,

3. Modeling e-access process by Library Media Specialist, followed by hands-on experience by students,

4. Watch training video of e-access, followed by student practice on available equipment, and

5. Other.

According to the aggregated data shown in Table 4.9, 12% of the survey respondents reported that no instruction was provided for their students to access and/or

choose e-books. A large majority of the "No instruction" respondents (94%) gave no reason(s) for their choice. Comments varied among the 6% of the "No instruction" respondents. One respondent stated, "Right now, it is our teachers who use them in the classrooms." Other respondents explained, "It is a new process and I have been learning the process so I can begin modeling and having students follow with hands-on experience next school year." Yet another respondent related, "Instructions are posted on my website." Of the elementary libraries surveyed having e-books in their collections, the 12% of students receiving "No instruction" regarding e-book access/choice represented approximately 32,452 Texas elementary school patrons.

The second possible response regarding instruction provided by Librarians was "Direct Instruction, followed by student practice and application." Direct Instruction refers to explicit, step-by-step directions given to students, who, in turn, are expected to perform a specific task (Allington & McGill-Franzen, 2004; Stahl & Hayes, 1997). Even though 47% checked this mode of instruction, only 16% of the respondents stated that this was their only method of instruction. This instructional method ranked second in preference by the Librarians, according to the data gathered (see Table 4.9). Various Librarians, who checked Direct Instruction, offered clarifying or explanatory comments and concerns:

"I show them how each year, but I don't have enough working computers to give every student the time and opportunity to use them;"

"I have iPads, but we were having problems with student identification numbers and confidentiality, so we don't use them for e-books;"

"I am giving direct instruction to the 3rd and 4th for the first time, hoping they will utilize our small e-book collection over the summer. If it becomes popular, I will purchase more titles;"

"Students practice at home if they have Internet access;"

"I show the kids and teachers where the e-books are and how to get to them, but very few of the kids have devices to read e-books;"

"Direct Instruction and directions sent home to parents and teachers for classroom and home use;"

"Beginning of the year introduction to library and library resources. Verbal reminders throughout the year when visiting library;"

"No chance for students to practice;"

"We have no devices other than the computer lab to encourage the use of our e-books;"

"Instruction during library class with project showing step-by-step process. Individual assistance with individual's account at library computers when needed;"

"Direct teaching with passwords and website posted on computer. Students work in pairs to practice."

The majority of participants preferred the third choice of "Modeling e-access, followed by hands-on experience by students," as their instructional method. Modeling as an instructional method refers to the Librarian showing the students how to do the appointed task (e.g., accessing and choosing e-books), followed by the students practicing what they have been shown. A shy two-thirds of the total respondents (65%) chose "Modeling," while slightly more than one-third of the participants (35%) chose "Modeling" only as their method of presentation (see Table 4.9). Here also, Librarians commented about their personal experiences and concerns:

"I access the e-books using my laptop and project it for the students to see (modeling). Then students use the Chromebooks to practice accessing the e-books;"

"Modeling e-access by librarian, then printed information is sent home for the parents;"

"Do not have time to have students practice due to lack of technology in library at one time;"

"Not much student practice due to lack of equipment;"

"Multiple modeling lessons;"

"I walk them thro the websites on the overhead projector or on an iPad. Students then try it themselves;"

"Walk thro weekly for about 8 weeks and then every other week, by second semester they are on their own;"

"Showed live on line instructions using Destiny Catalog with different students modeling my instructions and selecting books from the catalog in front of their peers projected onto my screen. Gave each student a bookmark with instructions to remind them of the steps and then turned them loose on the laptops to try it for themselves;"

"I model/show and they explore;"

"I personally show the teachers and students how to access our e-books thro our school website. They can access them at school, home, or wherever they have WIFI."

The fourth choice of instructional presentation offered to the participants was "Watch Training Video, followed by student practice on available equipment" (see Table 4.9). Few of the Librarians at 1% employed a Training Video as their only method of instruction, even though 8% of the participants checked this as a choice. According to the compiled data, fully 30% of the survey participants used more than one instructional mode to benefit students in learning how to access and choose e-books.

The fifth and final instructional choice was "Other." Sixteen percent of the Librarian survey respondents offered comments reflecting a kaleidoscope of schools and their differing philosophies, policies, priorities, procedures, and budget realities (see Table 4.9.1). Of that "Other" 16%, one-third of the participants (32%) sent home printed e-access instructions with their students in an effort to involve the parents. Some respondents shared, "Instruction was given at parent involvement events." Other schools prioritized technology learning groups and "taught the teachers first, followed by the students" (19%). Several participants mentioned challenges in teaching e-access due to limited equipment (11%) being available in the library. Eight percent of the respondents commented on instruction varying by grade level. One lower elementary Librarian stated, "Very little instruction, as my Pre-K thru 1st Graders are more concerned with print awareness." Another Librarian who served in a wider-age-range elementary school replied, "Instruction varies by grade level with more instruction given at 4th and 5th grades and little, if any, for Kindergarten." In the free response area of "Other," Librarians repeatedly remarked that there was little, or not enough, time to allow for student practice of e-access.

Table 4.9.

Instruction Provided by Librarians to Enable Student E-Book Access

Instruction Provided by Librarians	Participant Choice	Participant's Only Choice
No Instruction Provided	12%	12%
Direct Instruction, followed by student practice and application	47%	16%
Modeling e-access by Librarian, followed by hands-on experience by students	65%	35%
Watch training video of e-access, followed by student practice on available equipment	8%	1%
Other* (Free Response Item)	16%	16%

Note. *See Table 4.9.1.

Table 4.9.1.

"Other" Instruction Provided by Librarians to Enable Student E-Book Access

Other Instruction Provided by Librarians	Participant Choice
Instructions printed, sent home for parents to be involved	32%
Taught teachers use only, initially	19%
Limited equipment	11%
Instruction varies by grade level	8%
Library video reference on website	6%
Individual, as needed	3%
Bookmarks with access information, Peer led training, Lack of professional on campus daily, Support public library e-book collection, App	2% (ea.)
No comment	13%

The Pearson correlation statistical analysis using SPSS was applied to ascertain if there was any correlation between the number of years as a librarian and the kind of instruction provided to elementary students in order for them to access and choose e-books from their elementary library. The one instructional method, "Watch training video," registered significance at the 0.05 level (2-tailed) with a Pearson correlation of r = 107. Librarians who chose this instructional method tended to have more experience, averaging at least ten years (see Appendix C, Table C3).

Instructional Tools/Aids Used by Librarians

In addition to methods of instruction, Librarians were asked what kind of instructional tools/aids they used in teaching the e-book access process. They were to check all that applied. Thirty-two percent of the survey participants responded that they used no instructional tools to teach the e-book access process to their students (see Table 4.10). Based on the circumstances and elementary clientele of one respondent, she explained her response, "None are necessary. Capstone and Tumblebooks are so easy and Mackin VIA isn't difficult."

Conversely, 68% of the respondents reported that they used tools/aids in teaching e-access. "PowerPoint" and "Directions posted on the website using text/screen shots" were most often chosen as an instructional tool or aid registering at 21%. "Poster with step-by-step directions" came in second with 17%. An in-depth analysis of the responses revealed that 20% of the librarians used more than one tool/aid. Further analysis disclosed that 27% of the respondents marked using a variety of instructional tools/aids. Table 4.10 lists the number and corresponding percentage of use various instructional tools were accorded in regard to Texas elementary librarians teaching e-book access to their respective students.

More than a quarter of the participants (27%) reported using "Other" instructional tools/aids in teaching the e-access process. "Bookmarks" tallied the highest number of

auxiliary instructional tools/aids used by Librarians. Table 4.10.1 lists in descending order

"Other" instructional tools/aids employed by librarians in teaching e-book access.

Table 4.10.

Instructional Tools/Aids Used by Librarians Teaching E-Book Access

Instructional Tools/Aids	Participant Choice
No instructional tools used	32%
Automated tutorial	6%
Web-based video	10%
Trailer	3%
PowerPoint	21%
Audio tape	1%
Poster with step-by-step directions	17%
Directions posted on website using text/screen shots	21%
Educational game	2%
Graphic organizers	4%
Other*	27%

Note. *See Table 4.10.1.

Table 4.10.1.

"Other" Instructional Tools/Aids Used by Librarians Teaching E-Book Access

Other Instructional Tools/Aids	Participant Choice
Bookmarks	22%
Projector & Screen	15%
Handouts (Brochures, Flyers, Pamphlets)	14%
Smartboard	5%
Cassette tape player, Document camera, Self- tutorial, QR code, YouTube	1% (ea.)

The Pearson correlation statistical analysis using SPSS was applied to ascertain if there was any correlation between the number of years as a librarian and the kind of instructional tools/aids used in instructing elementary students how to access and choose e-books from their elementary library. Analysis findings indicated only one instructional tool/aid that showed significance – PowerPoint – significant at the 0.05 level (2-tailed), Pearson correlation r = 108 (see Appendix C, Table C4).

Librarians' comments and explanations in the free-response textbox reflected the variety of situations in which they served. Instructional methods and instructional tools/aids, while two separate question items, merged as the respondents shared "what they did" and "what they did it with" in the process of teaching e-access to their elementary

patrons. Following verbatim quotes were indicative of their unique situations and challenges as they prepared and taught e-book access to their elementary students:

"I used a slide show to teach the teachers, then made it available to them at all times thro Google Drive. I am teaching students one at a time while they sit at a computer;"

"I created a YouTube video using screencastomatic and it is available on my website and thro our library's YouTube channel;"

"Printed bookmarks with step-by-step instructions, printed instructions on cardstock with holes punched for students' reading binders;"

"Follett has provided bookmarks with instructions;"

"Live modeling with online catalog using laptop and projector;"

"The entire process for e-access is demonstrated step by step using Laptop/In-focus and iPad combination at the beginning of the year to stimulate use of e-book circulation. Next year, in coordination with the School's Parent Outreach, we will have several parent Mee tings to demonstrate the process to parents/caregivers;"

"Bookmark with login and passwords unique to the campus for at home access to e-books and databases;"

"Bookmark with directions and access codes;"

"Handouts using text/screen shots and modeling by librarian;"

"Directions listed in summer news letter. Directions and practice time given at family night;"

"Librarian provides one-on-one instruction to students that bring devices to school;"

"Bookmarks given with link, instructions, usernames, and passwords."

CHAPTER V

DISCUSSION

Changes have permeated the public schools and the libraries associated with them. The foremost paradigm shift that has gathered momentum until it has overwhelmingly enmeshed itself into the public school daily routine in the 21st century is technology (Kuhn, 1996). School libraries, specifically Texas public elementary school libraries in this research project, have also grappled with their heretofore staple, the traditional print book, being transformed and available in electronic format (Brown, 2001; Cavanaugh, 2006; Polanka, 2012). Currently, there are literally hundreds of thousands of e-Picture books, e-Chapter books, and e-Informational books available (Follett, 2016).

Summary of Theoretical Framework

The Chapter 5 summary reiterates in a condensed manner the essence of the previous chapters. The guiding question for this research project was "What kind of instruction is provided to Texas public elementary students by Texas public elementary school librarians in order for the elementary students to access and choose e-books from their elementary library collections?" The following areas comprised the discussion. First of all, a brief reprisal of the theoretical framework was covered. Second, relevant background information, which informed and influenced the main research thrust, was discussed. Next, the survey results were presented in an abbreviated way. Fourth, a discussion followed, based on in-depth cross analyses of respondent data. Next, related

research was noted. Sixth, implications for librarians' and their choices along with the attendant stakeholders were examined. Finally, possible future areas of research were suggested.

Retrieving pertinent information is continual and paramount in a library (Meadow et al., 2000; Schamber, 1994). Texas public elementary school libraries provide resources to support the learning process and age-appropriate parameters dictated by the Texas Education Agency's elementary curriculum (TEA, 2016). To that end, librarians function as information bridges. Librarians' jobs are diverse because elementary school students span from younger, emerging readers to older, independent readers. Due to 21st century technology, many librarians' jobs have expanded to include intervening for and scaffolding elementary students in the process of learning how to access and choose e-books from their elementary collection (Kuhlthau, 2004; Wood et al., 1976). The librarians who instruct their students how to use their available equipment in the process of accessing and choosing e-books, beyond teaching the technology, also influence attitudinal mindsets regarding technology (Davis, 1989, 1993; Park et al., 2009).

Regardless of the instructional method(s) employed by the Texas elementary librarians engaged in showing/teaching their students how to access and choose e-books, this activity embodies Kuhlthau's "*Zone of Intervention Theory.*" Kuhlthau (2004) analyzed and conceptualized the information search process. She defined the Zone of Intervention as "that area in which an information user can do with advice and assistance

what he or she cannot do alone or can do only with great difficulty" (Kuhlthau, 2004, p. 129).

Elementary students entering an elementary library can see traditional print books lining the bookshelves. Elementary librarians instruct their students with regard to the organizational arrangement of the books so that the students may look for and find their book choices. However, the e-books contained in an elementary collection are not readily visible. In the case of this research project, Texas elementary librarians scaffolded their elementary students from the position of "do-not-know-how-to-access-and-choose-e-books" to "do-know-how-to-access-and-choose-e-books" from their elementary collections. Librarians through their instruction helped to make the invisible e-books visible. Student questions asking for clarity with regard to the information search process after the initial instruction had been presented provided the librarians with an opportunity to individualize age-appropriate, on-target intervention and mediation for the e-book information search process (Kuhlthau, 2004). As the librarians intervened and helped to clarify the process in student minds, instructed students were able to accomplish the desired student goal or task of being able to access and choose e-books from their elementary collection.

Students' goals in the library have remained the same -- to find what they want or what is relevant to their informational needs (Schamber, 1994). Available technology has not changed the students' goals. At the time of this research project, there was no state-wide mandate that required specific types or numbers of e-devices to be made available

from school to school across Texas in order for students to access and choose e-books. Nor were there preset parameters or guidelines which dictated the number of e-books that should have been included in individual library collections (TEA, 2016). So, as librarians addressed patron needs in Texas, each elementary school library presented an individual, unique technological collection profile. Regardless of the available devices provided for student use in the individual elementary libraries for accessing and choosing e-books, budget constraints rarely allowed for elementary libraries to always have enough or the most up-to-date equipment (Manley & Holley, 2012). Budgetary limitations may also have determined the number of e-books bought for a collection.

For Texas public elementary school libraries to provide e-resources, it is important to note that there is an evolving backstory featuring technology and the publishing industry. With e-book technology still being a relative newcomer, issues are continually being addressed with the goal of improvement (Manley & Holley, 2012). The e-book industry did not gain significant momentum and availability until after technological challenges were addressed and resolved after the beginning of the 21st century (Hane, 2006; Hawkins, 2000; Hilts, 1998; Manley & Holley, 2012). In addition, e-book momentum was hampered until financial publishing issues were dealt with internationally at the Berne Conference in 1988 and nationally when Congress passed two pieces of legislation: 1) The Telecommunications Act of 1996, which provided computer access in public school libraries (Park et al., 2009) and 2) The Digital Millennium Copyright Act of 1998, which protected intellectual digital property (Lebert, 2009; Manley & Holley, 2012).

As a consequence of evolving technology, the complexion of many libraries around the globe has changed from traditional print only, to digital only (Weber, 2014), or a combination of multiple formats (Schwartz, 2000). Project Gutenberg and the International Children's Digital Library are two world renowned examples of digital libraries (ICDL, 2016; PG, 2016). While e-book availability exists for schools now, not all Texas public elementary school libraries include e-books along with their traditional print collections at this time.

The slow emergence of e-books into Texas public elementary school libraries because of the multi market players involved and the accompanying financial/publishing/technology issues to be resolved well illustrate Everett Rogers' *Diffusion of Innovations Theory*. The statistics gathered and presented in this dissertation research, regarding the presence of e-books in Texas elementary school collections over a ten-year span, exemplify the truth that Rogers discovered and documented based on his initial study and subsequent studies, namely, "change takes time" (Rogers, 2003). See Table 5.1.

Survey Results Summary

The focus question of this cross-sectional, quantitative research project was "What kind of instruction is provided to Texas public elementary students by Texas public elementary school librarians in order for the elementary students to access and choose e-books from their elementary library collection?" The researcher, a former Texas public elementary school librarian, generated the survey. Question types included, multiple choice

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with single item select, multiple choice with multiple item select, and free response. One thousand twenty-six Texas public school districts containing approximately 4,491 elementary schools were canvassed in order to obtain all available public elementary librarians' posted emails. As a result, the doctoral research survey was emailed to 2,677 prospective Texas public elementary librarians. Five hundred sixteen (516) Pre-Kindergarten through Sixth Grade Texas elementary librarians chose to participate in the survey, for a response rate of 19.3%.

Online survey response rates vary. According to SurveyGizmo, this survey would be considered an external survey because the survey was "distributed to external audiences" (SurveyGizmo, 2017). The SurveyGizmo website stated that, "external surveys average between 10-15% response rates", which would equate to between 267 and 401 participants (SurveyGizmo, 2017). Survey Monkey, in an online survey sample size calculator with the population size being 2,677, the confidence level rated at 95%, and the margin of error at 5% +/-, calculated that the appropriate sample size was 337 (Survey Monkey, 2017). Based on these two websites dealing with online surveys, the participant response rate of 516 out of 2,677, or 19.3%, was above average.

Of the 516 Texas public elementary school librarians who chose to participate in this survey, 85% of the respondents had e-books in their elementary collections. Of that 85%, 12% of the participant librarians *did not* instruct their students with regard to accessing and choosing e-books. Conversely, of that 85%, 88% of respondent librarians *did* provide instruction regarding accessing and choosing e-books.

The 88% of the 85% that documented giving instruction to their elementary patrons reported that "Modeling e-access by the Librarian, followed by hands-on experience by students" was the instruction most used by the respondents registering at 65%. The second-most used instruction by survey respondents was "Direct Instruction, followed by student practice and application" at 47%. The two most often used instructional tools/aids chosen by librarians in teaching their elementary students how to access and choose e-books were "Directions posted on the website using text/screen shots" and "PowerPoint." Another auxiliary instructional tool/aid that librarians used with moderate frequency was "Bookmarks" on which the librarians printed e-access steps for their elementary students and parents. (See Table 4.9 and Table 4.10.)

Two survey information areas explored in juxtaposition to the focal question regarding instructional preference were: 1) librarians and their schools, and 2) libraries and their related infrastructure. The following statements regarding information related to the focal question represent the majority or statistical average based on the data gathered through PsychData, with some detailed data included for the sake of situational clarity.

Who were these librarians that participated in the survey? Ninety-nine percent of the respondents were female. A large majority of them (85%) were certified. The average librarian had worked approximately ten years at an elementary school. Seventy-eight percent of the elementary school enrollments at which the librarian respondents worked registered between 400 and 850 students. The librarian was the main person responsible for adding e-books to the collection. Even though 33 e-book vendors were listed by the

Texas elementary librarians, the participants surveyed chose Follett as their e-book vendor over other vendors 65% of the time (see Table 4.2).

What did a typical elementary library look like with regard to e-books and their related infrastructure? Regarding e-books – 85% of the research participants reported having e-books as part of their elementary collection. Those 85% reported that their libraries had included e-books in their collections from one to ten years. The mode was three years. The number of e-books contained in the elementary collections in the survey ranged from 1-24 to in excess of 26,000. The mode was the 100-124 range. The e-books were organized by the Dewey Decimal System in approximately half of the libraries surveyed.

The earliest inclusion of e-books in the Texas elementary libraries surveyed occurred in 2006. From 2006-2010, only 6% of the survey respondents had e-books in their collection. From 2010 on, the number of e-books increased yearly and peaked in 2013 when the largest statistical per year increase of 28% was documented (see Table 5.1). The data exemplified Rogers' *Diffusion of Innovations Theory* regarding changes taking time (Rogers, 2003). In Rogers's *Diffusion of Innovation Theory* (DOI), observations revealed that it took time for a new idea to pervade the community in which a new idea was introduced. Chronicled history proved the truth of the DOI in that it took the publishing industry a few years to come to grips with the new technology. Several reasons were involved. First of all, this new electronic book area involved technology that had to be worked out for e-books to be viable. Second, licensing and digital rights management with

publishing companies and authors, indicative of dividing the financial pie, had to be negotiated so that the field could move forward. Congressional legislation facilitated this collaborative effort with the passage of the Digital Millennium Copyright Act in 1998 (Lebert, 2009; Manley & Holley, 2012).

According to the compiled data, the e-book momentum in Texas public elementary school libraries began its uphill surge in 2011 with 17% of the respondents having e-books. The year 2013 recorded the largest per year increase at 28% (see Table 5.1). With e-books available shortly before and after the beginning of the 21st century, even the earliest Texas elementary libraries in the survey in 2006 to document having e-books doubly illustrate the nature of change and the time involved (Manley & Holley, 2012; Rogers, 2003).

Table 5.1.

Texas Elementary Libraries Surveyed with E-Books in Collection

Year	Number of Years Texas Elementary Libraries Had E-books	Yearly Percentage Increase of Texas Elementary Libraries Surveyed with E-books in Collection	Cumulative Percent
2006	1	1%	1%
2007	2	1%	2%
2008	3	1%	3%
2009	4	1%	4%
2010	5	2%	6%
2011	6	11%	17%
2012	7	16%	33%
2013	8	28%	61%
2014	9	22%	83%
2015	10	17%	100%

Note. The "Texas Elementary Libraries Surveyed with E-Books" represents 85% of the total respondents in the survey.

Regarding the infrastructure - the majority, or 73% of elementary libraries with e-books as part of their collection, provided more than one type of equipment for students to access and choose e-books. The three types of equipment found most often in elementary school libraries, in descending order, were iPads, Computers, and Laptops (see Table 4.5). Three percent of the survey participants reported that their schools were partially or fully one-to-one (1:1), i.e., each student, or grade level, designated by the specific district had an iPad or other electronic device for personal use. An even smaller percentage of the survey respondents, 1%, had some variety of "bring-your-own-device" (BYOD) policy.

Discussion

Based on the research survey results revealing that e-books were available in 85% of Texas public elementary school libraries surveyed, it is time to delve deeper and search for reasonable extrapolations from the survey facts gathered. Availability of e-books in elementary library e-collections included both "text volumes" and "text and picture volumes," whose technological features are continually being tweaked and upgraded. In addition, e-readers were available with their technological features continually being enhanced and improved. With that reality in mind, our research focus shifts to the patrons and their e-book usage. Questions emerge. If the Texas public elementary school students were using the e-books to their librarians' satisfaction, were there any trends or factors, reasonably deduced from the research survey statistics that were predictors of e-book usage success in Texas elementary libraries? Were there possible indicators in individual schools

that statistically set them apart from the others? Did any factors emerge that signified lower e-book usage? An in-depth cross-analysis was used to explore these questions.

In 2004, Moss and McDonald conducted research with regard to children's reading preferences. Their hypothesis was that children's reading choices could be obtained through the unobtrusive measure of library, or circulation, records. With regard to this doctoral research project, Texas elementary librarians were asked one question which alluded to e-book circulation records. The librarians were asked to rate their elementary school's e-book circulation. Other than the e-book circulation records not being available, the three possible answers were: 1) does not meet expectations, 2) meets expectations, and 3) exceeds expectations. For each of the three possible answers, an in-depth cross-analysis was performed in order to obtain a detailed profile of librarian practices/choices. For example, for all the librarians who chose answer number one, "does not meet expectations," the aggregated numerical data gathered by PsychData on eleven other survey items were cross-examined and compared with the general survey results. The same method was followed for answer numbers two and three. Subsequent data was presented in table format for purposes of clarity (see Table 5.2).

Table 5.2.

E-Book Circulation Disaggregation and Comparison

	Librarian-Mean # of Years	Instructional Methods						E-book Link	
		N.I.	D.I.	Model	V.T.	Multi	Other	Y	N
General survey	9.68	12%	47%	65%	8%	30%	16%	72%	28%
Subset A: Does not meet expectations	8.6	15%	44%	62%	7%	19%	11%	69%	31%
Subset B: Meets expectations	9.2	3%	56%	75%	12%	40%	11%	79%	21%
Subset C: Exceeds expectations	8.8	7%	47%	86%	0%	40%	0%	93%	7%

Note. N.I. = No Instruction; D.I. = Direct Instruction; Model = Modeling; V.T. = Video Trailer; Multi = Multiple Methods.

Three significant findings emerged as a result of the in-depth cross-analysis. The first finding dealt with librarian tenure. Hypothetically, one might assume that the lengthening number of years that an individual had served as a librarian would influence the introduction of e-book technology in a negative way. One might also assume that the fewer years that an individual had worked as a librarian would influence the introduction of e-book technology in a positive way. The data did not support either hypothetical assumption. Based on the disaggregated data regarding the e-book circulation question, the librarian profile of mean number of years served ranged from 8.6 to 9.2. Therefore, the data indicates that librarian tenure seemed of little import with regard to introducing e-book technology.

The second finding dealt with instructional methods, the focus of this research project. In the general survey, the instructional method of "Modeling" was reported being used more often than other methods (see Table 5.2). In Subset A (Does not meet expectations), the respondents approximated the general survey, albeit dipping a few percentage points. Subset B (Meets expectations), registered an impressive ten percentage points above the general survey. Subset C, (Exceeds expectations) however, reported a significant 21 percentage points above the general survey. It can reasonably be stated, based on the statistical data, that the instructional method of "Modeling" yields "exceeds expectations" of elementary librarians with regard to students accessing and choosing an e-book from his/her elementary library collection. Of a secondary note in the instructional methods section of Table 5.2, Subsets B & C showed an impressive ten percentage points

above the general survey in the Multi instructional method. Therefore, the data suggested that the instructional method of "Modeling," in conjunction with other methods, indicated librarian expectations being met or exceeded with regard to elementary patrons accessing and choosing e-books from their elementary library.

The third finding dealt with technology infrastructure. The general survey reported that 72% of the librarians had an e-book link/icon on their website. Putting this link/icon on the library website would involve some kind of training for the librarian, *if* she were responsible for affixing the e-book link/icon to the library website. If, however, the school district technology department were responsible for library website links, then technology personnel would provide the link/icon, hopefully in collaboration with the library personnel. While Subset B (Meets expectations) reported seven percentage points higher than the general survey, Subset C (Exceeds expectations) again reported a significant 21 percentage points above the general survey. This data corroborated previous research data which stated that with regard to information-seeking behavior, convenience is conducive to use (Connaway, Dickey, & Radford, 2011).

Based on these findings, if a Texas public elementary school librarian wished to increase her e-book circulation to a more satisfactory level, she could incorporate the following. First, she could use the instructional method of "Modeling" in conjunction with other methods in teaching her students how to access and choose e-books from their elementary collections. Secondly, she could make certain that an e-book link was on her website for her students' and parents' e-book access and choice. These two actions are

doable and budget-friendly. This statistically-supported information should encourage any Texas elementary librarian who may experience budget constraints.

Related Research

The *School Library Journal* (*SLJ)* has conducted library surveys periodically since 1983 (Miller & Shontz, 2003). These surveys canvassed public and private K-12 schools in the United States. The first time that e-books were factored into the survey as a separate item was in the 2009-2010 academic year (Farmer, 2011). Parallel information regarding the *SLJ* survey, which defined elementary libraries in the United States as K-8, reported the average number of e-books per school being 172 (Farmer, 2011). Dissertation survey data registered the 100-124 range being the average number of e-books in Texas public elementary school libraries.

Beginning with the 2010 survey, *SLJ* has conducted annual, national e-book surveys in libraries noting trends and usage (Girmscheid & Genco, 2015). The six years of national library data from *SLJ* and the data gathered in this research of Texas elementary school libraries were not dissimilar when examining the statistics regarding the elementary level with regard to librarians, libraries, e-book collections, and the related equipment infrastructure. According to the *SLJ* 2015 research results, the data sets from 2010-2015 were as follows: 1) 2010 - 697 U.S. school libraries, 2) 2011 – 905 U.S. school libraries, 3) 2012 – 1,427 U.S. school libraries, 4) 2013 – 1,271 U.S. school libraries, 5) 2014 – 835 U.S. school libraries, and 6) 2015 – 916 U.S. school libraries (Girmscheid & Genco, 2015, p. 120). It should be reiterated that the *SLJ* parameters included U.S. public and private

school libraries K-12 (Girmscheid & Genco, 2015). In comparison, acknowledging the differing parameters, the 2015 dissertation data set of 516 librarians/libraries included *only Texas public elementary school libraries PK-6*.

Interesting, related research facts appeared in the latest available U.S. K-12 school libraries survey by the *School Library Journal* in 2015. They reported that the percentage of school libraries that offered e-books in their collections, while peaking at 66% in 2014, had dropped back to the 2013 level of 56% (Girmscheid & Genco, 2015). In an attempt to explain this phenomenon, according to synthesized research information, "quantitative and qualitative data suggest that a big part of it is that kids haven't warmed to e-books. They use them for research and class assignments, but left to their own devices…they seem to prefer print" (Girmscheid & Genco, 2015, p. 4). According to the *SLJ,* 2015, survey, the median number of e-books available per school in 2015 had grown to 235, while the median number of print books in school library collections had risen to 13,000 (Girmscheid & Genco, 2015). Dissertation statistics documented that the mean of Texas elementary print collections was approximately 14,222, with the mode of Texas public elementary school libraries regarding the number in print collections being 14,000-14,999. An in-depth analysis of dissertation research project statistics revealed that the approximate average percentage of e-books in Texas elementary school collections at the time of the survey was 3 %, while the mode was 1 %. The numerical e-book mode range was 100-124 (see Figure 4.4). Dissertation data paralleled *SLJ* research in that the overall percentage of e-books in collections remained relatively small. Technology with its gradual improvement handling

the combination of pictures and text in books could very well be a possible factor because elementary libraries house many picture books and informational books that are a mixture of text and pictures. Even so, *SLJ* postulated that faculty, staff, and administrators seemed more entranced with e-books than the students themselves (Girmscheid & Genco, 2015).

Implications: Librarians' Voices

In the research survey, Texas elementary library respondents were asked in a free response question "What tip would you share with a new librarian that you have found helps your students to access/choose e-books?" This section of the discussion melds the various words of advice that more than half of the participants chose to give.

Overarching Considerations

Librarians are not an island. They are set in individual district frameworks. They may have superintendents, district library coordinators, principals, school boards, etc., that create policies, decide on budgets, or whose approval may be needed for technology/equipment purchases or configuring existing spaces for new technology wiring or space reallocation.

Overarching considerations having to do with school district policies were inferred throughout the proffered comments. District policies, procedures, and parameters influenced administrative decision-making in such areas as 1) e-devices' checkout policies, 2) student personal devices accessing district Wi-Fi, 3) equipment available in the library, lab, or classroom, 4) 1:1 districts/campuses, and 5) BYOD districts/campuses.

District organization charts affected libraries depending on where they were aligned organizationally. The larger majority of libraries, based on canvassing elementary school websites throughout the state of Texas, tended to place libraries in at least three organizational areas: 1) the district technology department, 2) a specific district core curriculum area, or 3) a separate library division responsible to or under the umbrella of a designated area.

District funds were also inferentially alluded to as each reporting Texas elementary school librarian reported the various kinds of equipment and the number of each kind of equipment available in their libraries for their respective students. District funds and their allocation, the ultimate bottom line, determined the available infrastructure, which, in turn, affected each elementary school library. It resulted in: 1) the kind of technology equipment available, 2) how much equipment was provided, 3) Wi-Fi capability and compatibility, and 4) personnel available to: a) train employees on the electronic equipment use, b) troubleshoot problems with electronic equipment, and c) the maintenance and repair of said equipment.

Pre-Instructions

Veteran librarians repeatedly advised librarians new to the e-book scene to "Get Some Training!!!" Suggested sources for such training were varied: 1) the Regional Service Centers, 2) the Texas Library Association annual conference, 3) continuing education courses and webinars offered by the Texas Library Association, 4) the American Library Association, 5) library consortiums, 6) e-book vendors, 7) Library professors, 8)

local district training, 9) peer training/mentoring, or 10) online training. Again and again librarians said, "Make sure YOU know how to use it well, before trying to teach/train others."

Connecting to Stakeholders

Teachers, parents, and students were the focal groups that librarians may be called upon to instruct, include, involve, or inform regarding e-book access/choice. Acknowledging that librarians receive administrative directions regarding their job responsibilities, the first group that librarians may be given responsibility to train how to access and choose e-books was teachers. If that be so, librarians can encourage and model for teachers how to use e-books in their instruction. Librarians may also encourage and assist teachers if they choose to use e-books in classroom stations. Another way that librarians can collaboratively support teachers would be to provide a bibliography, or an annotated bibliography depending on time constraints, of catalog resources and e-resources for the curriculum area of a teacher's current focus.

The second group that librarians may train/instruct was parents. This proved to be especially crucial at the elementary level, because of the inherent level of parent involvement due to the continually improving reading ability of the elementary students. Librarians offered several venues by which parents could be instructed, included, involved, or informed regarding e-book access. Parents may be informed about e-books by sending home information regarding e-access at home, if the Internet was available at home. Give demonstrations showing how to access e-books. Invite parents for a special time of e-book

access instruction during a PTA meeting. Another avenue to inform parents was to provide a presentation of e-books and their access during Open House. Multiple librarians stated that parents of elementary students needed to be on board regarding e-book access.

The third group that librarians are involved with in instructing and training e-book access was, of course, the students. Students particularly interested in e-books, with their teacher's permission, could visit the library in their free time if they wanted further instruction. Other venues consisted of "lunch and learn" sessions. Interested students could also lead in peer training. Librarians could point out e-book benefits for students, i.e., e-books do not get lost nor can they be damaged. One strategy that librarians suggested was to "let students choose to read e-book-wise what they want to at first, then assign what you want them to read later."

What Librarians Can Do

Librarians gave suggestions in several areas regarding what to do in teaching elementary students how to access/choose e-books. First of all, "instruct students how to access and choose e-books in the available system." The teaching methods they mentioned most often included "modeling" where one shows or demonstrates to the students the step-by-step process of accessing and choosing e-books, and "direct instruction" where one explicitly tells "how to" access and choose e-books. With regard to instructions, librarians repeatedly reported that librarians new to e-books need to "repeat, repeat, and repeat" some more. Other librarians phrased it as "teach and reteach." These admonitions revealed that

telling or showing students one time how to access and choose e-books might not necessarily result in success.

Second, students need to be instructed in various size groups. The amount of equipment may determine the number of students that can be instructed at any one time. However, in general, students may be instructed a class at a time, in large groups, in small groups, one-on-one, or as needed. After instruction has been delivered, have the students "practice, practice, practice how to." Monitor students during their hands-on practice by walking around, so that you can answer any questions that they may have, or troubleshoot.

Third, librarians may promote e-book access/choice by providing visuals. These visuals may be hardcopy bookmarks with the e-book link and login access information. Other hardcopy visual options might include posters, flyers, digital resources brochures, handouts, or letters to parents. Technology visuals may include the e-access information on social media, trailers, videos, or provide on the library website text with screenshots of the e-book access steps.

Fourth, one definite thing that librarians new to the e-books could do to promote e-books was to have e-book lessons. Students could be shown how to identify e-books in the online catalog. Librarians could feature an e-book of the month. E-books themselves might also be incorporated into library lessons. An alternate method of promoting e-books in lessons would be to read an e-book during a class library time. Another inclusion in library lessons could be an emphasis on e-book access "cheat sheets" near the e-devices. One librarian suggested that Texas Blue Bonnet selections in e-book format could be

downloaded on e-readers for students to check out. Other librarians stated that students could be encouraged or reminded about e-books throughout the year. The various types of e-books that librarians brought to the students' attention included, high-interest, old favorites, new titles, and the e-book format when the hard copy was not available. One unique e-book lesson suggestion included focus on finding QR codes of e-books on shelf markers inserted in shelf order, making the invisible visible.

Technology Involvement and Support

Technology involvement and support is imperative when providing e-books for students. Librarians had numerous suggestions regarding this e-book topic. First and foremost – "Make e-book access easy!!!" Their admonition was to make access simple. Librarians suggested several examples. Use an e-book icon for access. Keep access to as few steps as possible. Or, devise a one-click, universal login.

Second, post an e-book access link on the library website or home-page. Third, have your e-books organized by the Dewey Decimal system, genre, etc., to mirror the same system as the rest of the library so that the students only had to learn one system for the e-books and traditional books. Fourth, provide students with the login and password information in advance. It helps to save time, especially at the elementary level. Fifth, make an e-book shortcut on the desktop.

The remaining suggestions dealt with technology personnel issues. Librarians said that it would be helpful for a school district technology department infrastructure to provide personnel for the following tasks: 1) train user personnel on upgrades and new systems, 2)

train user personnel in elementary, initial troubleshooting, and 3) perform regular maintenance and repairs in a timely manner.

Elementary librarians across Texas had three miscellaneous suggestions to help other librarians just starting with e-books. First, find a vendor that you like and stick with them. Second, if your e-book collection is small or nonexistent, promote the local public library's e-book collection. It will help to save money. Third, start small with a focused collection that meets specific client need.

The Future

This research project established a baseline for future e-book research in Texas public elementary school libraries. Future e-book research, again conducted in Texas public elementary libraries, would generate comparative statistics. Also, future e-book research in Texas public secondary school libraries would give a snapshot of the availability of e-books for Texas secondary students and provide a baseline of e-book resources for future similar research projects. In addition, future research would provide insights and comparisons for elementary and secondary librarian instructional methods, plus Likert indicators of librarians' satisfaction levels regarding patron e-book circulation. Comparisons between the makeups of elementary versus secondary e-book collections could also result. Given the nature of school districts incorporating wanted or mandated changes, future research regarding e-books in school libraries across Texas, be they at the elementary or secondary level, would shed light on the future current niches that e-books have in school library collections in comparison to what they currently do.

The future of e-books remains a fluid component. The Association of American Publishers publish monthly newsroom articles on their website (AAP, 2013; AAP, 2015). These articles synthesize information and measure the publishing pulse of "about four hundred member organizations…" (AAP, 2016d). One of the topics or trends that they track includes e-book sales. According to the aggregated statistics, e-book sales were down at the beginning of 2016 (AAP, 2016a). Subsequent monthly reports stated that e-book sales declined each month of 2016 in comparison to the comparable month in 2015 anywhere from approximately 10% to 23% (AAP, 2016a, 2016b, 2016c, 2016d,, 2016e). It remains to be seen *how* or *if* these facts will be reflected in the Texas public elementary school libraries.

As long as Texas public elementary school libraries contain print books and e-books in their collections, the majority of Texas public elementary school librarians will continue to instruct their students how to access and choose books/e-books. Kuhlthau's *Zone of Intervention Theory* will continue to operate for Texas elementary public school librarians, because each year new patrons are added to existing patrons coming into the library. The instruction cycle continues. New, emerging readers need scaffolding. Students seek information, ask questions, and search for books/e-books. Simultaneously, librarians' appellations and job descriptions may vary; however, librarians' goals of patron service remain constant. Librarians model the information search processes, mediate age-appropriate inquiries, and hopefully witness many times over their elementary students

successfully finding the information they looked for and the book they wanted (Kuhlthau, 2004).

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Appendix A

Texas Elementary Library E-Book Survey

Texas Elementary Library E-Book Survey

Directions: Please answer each question.

<u>GENERAL INFORMATION:</u>

1. What is the name of your ISD/CISD?

2. What is the name of your elementary school?

3. What is the enrollment of your elementary school?

   a. 0-239
   b. 250-299
   c. 300-349
   d. 350-399
   e. 400-449
   f. 450-499
   g. 500-549
   h. 550-599
   i. 600-649
   j. 650-699
   k. 700-749
   l. 750-799
   m. 800-849
   n. 850-899
   o. 900-949
   p. 1000-1049
   q. 1050-1099
   r. 1100-1149
   s. 1150-1199
   t. 1200-1249
   u. 1250-1299
   v. 1300-1349
   w. 1350-1399
   x. 1400-1449
   y. 1450-1499
   z. 1500-1599
   aa. 1600-1699
   bb. 1700-1799
   cc. 1800-1899
   dd. 1900-1999
   ee. 2000+

4. Are you certified as a library media specialist?
   a. Yes
   b. No
5. Total number of years as a librarian (library media specialist)?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10
   l. 11
   m. 12
   n. 13
   o. 14
   p. 15
   q. 16
   r. 17
   s. 18
   t. 19
   u. 20
   v. 21
   w. 22
   x. 23
   y. 24
   z. 25
   aa. 26
   bb. 27
   cc. 28
   dd. 29
   ee. 30
   ff. 31
   gg. 32
   hh. 33
   ii. 34
   jj. 35
   kk. 36
   ll. 37

mm. 38
nn. 39
oo. 40
pp. 41
qq. 42
rr. 43
ss. 44
tt. 45
uu. 46
vv. 47
ww. 48
xx. 49
yy. 50+

PROVIDING SERVICES:

6. Does your library media center have internet connection?
   a. Yes
   b. No

7. How many Computers does your library have for student use?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10
   l. 11
   m. 12
   n. 13
   o. 14
   p. 15
   q. 16
   r. 17
   s. 18
   t. 19
   u. 20

v.	21
w.	22
x.	23
y.	24
z.	25
aa.	26
bb.	27
cc.	28
dd.	29
ee.	30
ff.	31
gg.	32
hh.	33
ii.	34
jj.	35
kk.	36
ll.	37
mm.	38
nn.	39
oo.	40
pp.	41
qq.	42
rr.	43
ss.	44
tt.	45
uu.	46
vv.	47
ww.	48
xx.	49
yy.	50
zz.	51
aaa.	52
bbb.	53
ccc.	54
ddd.	55
eee.	56
fff.	57
ggg.	58
hhh.	59
iii.	60+

8. How many Laptops does your library have for student use?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10
   l. 11
   m. 12
   n. 13
   o. 14
   p. 15
   q. 16
   r. 17
   s. 18
   t. 19
   u. 20
   v. 21
   w. 22
   x. 23
   y. 24
   z. 25
   aa.   26
   bb.   27
   cc.   28
   dd.   29
   ee.   30
   ff.   31
   gg.   32
   hh.   33
   ii.   34
   jj.   35
   kk.   36
   ll.   37
   mm.   38
   nn.   39
   oo.   40

pp. 41
qq. 42
rr. 43
ss. 44
tt. 45
uu. 46
vv. 47
ww. 48
xx. 49
yy. 50
zz. 51
aaa. 52
bbb. 53
ccc. 54
ddd. 55
eee. 56
fff. 57
ggg. 58
hhh. 59
iii. 60+

9. How many E-Readers does your library have for student use?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10
   l. 11
   m. 12
   n. 13
   o. 14
   p. 15
   q. 16
   r. 17
   s. 18
   t. 19

u. 20
v. 21
w. 22
x. 23
y. 24
z. 25
aa. 26
bb. 27
cc. 28
dd. 29
ee. 30
ff. 31
gg. 32
hh. 33
ii. 34
jj. 35
kk. 36
ll. 37
mm. 38
nn. 39
oo. 40
pp. 41
qq. 42
rr. 43
ss. 44
tt. 45
uu. 46
vv. 47
ww. 48
xx. 49
yy. 50
zz. 51
aaa. 52
bbb. 53
ccc. 54
ddd. 55
eee. 56
fff. 57
ggg. 58
hhh. 59
iii. 60+

10. How many Tablet devices does your library have for student use?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5
   g. 6
   h. 7
   i. 8
   j. 9
   k. 10
   l. 11
   m. 12
   n. 13
   o. 14
   p. 15
   q. 16
   r. 17
   s. 18
   t. 19
   u. 20
   v. 21
   w. 22
   x. 23
   y. 24
   z. 25
   aa. 26
   bb. 27
   cc. 28
   dd. 29
   ee. 30
   ff. 31
   gg. 32
   hh. 33
   ii. 34
   jj. 35
   kk. 36
   ll. 37
   mm. 38
   nn. 39
   oo. 40

pp.   41
qq.   42
rr.   43
ss.   44
tt.   45
uu.   46
vv.   47
ww.   48
xx.   49
yy.   50
zz.   51
aaa.   52
bbb.   53
ccc.   54
ddd.   55
eee.   56
fff.   57
ggg.   58
hhh.   59
iii.   60+

11. How many iPads does your library have for student use?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10
    l. 11
    m. 12
    n. 13
    o. 14
    p. 15
    q. 16
    r. 17
    s. 18
    t. 19

u.	20
v.	21
w.	22
x.	23
y.	24
z.	25
aa.	26
bb.	27
cc.	28
dd.	29
ee.	30
ff.	31
gg.	32
hh.	33
ii.	34
jj.	35
kk.	36
ll.	37
mm.	38
nn.	39
oo.	40
pp.	41
qq.	42
rr.	43
ss.	44
tt.	45
uu.	46
vv.	47
ww.	48
xx.	49
yy.	50
zz.	51
aaa.	52
bbb.	53
ccc.	54
ddd.	55
eee.	56
fff.	57
ggg.	58
hhh.	59
iii.	60
jjj.	61

kkk.   62
lll.   63
mmm. 64
nnn.   65
ooo.   66
ppp.   67
qqq.   68
rrr.   69
sss.   70
ttt.   71
uuu.   72
vvv.   73
www. 74
xxx.   75
yyy.   76
zzz.   77
aaaa.   78
bbbb.   79
cccc.   80+

12. How many iPhones does your library have for student use?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. 7
    i. 8
    j. 9
    k. 10
    l. 11
    m. 12
    n. 13
    o. 14
    p. 15
    q. 16
    r. 17
    s. 18
    t. 19
    u. 20

v.	21
w.	22
x.	23
y.	24
z.	25
aa.	26
bb.	27
cc.	28
dd.	29
ee.	30
ff.	31
gg.	32
hh.	33
ii.	34
jj.	35
kk.	36
ll.	37
mm.	38
nn.	39
oo.	40
pp.	41
qq.	42
rr.	43
ss.	44
tt.	45
uu.	46
vv.	47
ww.	48
xx.	49
yy.	50
zz.	51
aaa.	52
bbb.	53
ccc.	54
ddd.	55
eee.	56
fff.	57
ggg.	58
hhh.	59
iii.	60+

13. Does your library have a subscription to TumbleBookLibrary for students?
    a. Yes
    b. No

14. Does your library have other equipment for students to access ebooks?
    a. Yes
    b. No
    c. Other
    d. Please specify.

15. What is the approximate size of your elementary library traditional print collection?
    a. 0-4999
    b. 5000-5999
    c. 6000-6999
    d. 7000-7999
    e. 8000-8999
    f. 9000-9999
    g. 10000-10999
    h. 11000-11999
    i. 12000-12999
    j. 13000-13999
    k. 14000-14999
    l. 15000-15999
    m. 16000-16999
    n. 17000-17999
    o. 18000-18999
    p. 19000-19999
    q. 20000-20999
    r. 21000-21999
    s. 22000-22999
    t. 23000-23999
    u. 24000-24999
    v. 25000-25999
    w. 26000-26999
    x. 27000-27999
    y. 28000-28999
    z. 29000-29999
    aa.   30000-30999
    bb.   31000-31999
    cc.   32000-32999
    dd.   33000-33999

ee.	34000-34999
ff.	35000-35999
gg.	36000-36999
hh.	37000-37999
ii.	38000-38999
jj.	39000-39999
kk.	40000-40999
ll.	41000-49999
mm.	42000-42999
nn.	43000-43999
oo.	44000-44999
pp.	45000-45999
qq.	46000-46999
rr.	47000-47999
ss.	48000-48999
tt.	49000-49999
uu.	50000+

E-BOOK INFORMATION:

16. Does your elementary library collection contain e-books?
    a. Yes
    b. No

    (If [Yes] is selected, then go to next question.)

    (If [No] is selected, then skip to question [#34].)

17. What is the approximate size of your elementary e-book collection?
    a. 1-24
    b. 25-49
    c. 50-74
    d. 75-99
    e. 100-124
    f. 125-149
    g. 150-174
    h. 175-199
    i. 200-224
    j. 225-249
    k. 250-274
    l. 275-299
    m. 300-349
    n. 350-399

o.	400-449
p.	450-499
q.	500-549
r.	550-599
s.	600-649
t.	650-699
u.	700-749
v.	750-799
w.	800-849
x.	850-899
y.	900-999
z.	1000-1099
aa.	1100-1199
bb.	1200-1299
cc.	1300-1399
dd.	1400-1499
ee.	1500-1599
ff.	1600-1699
gg.	1700-1799
hh.	1800-1899
ii.	1900-1999
jj.	2000-2149
kk.	2150-2299
ll.	2300-2449
mm.	2450-2599
nn.	2600-2849
oo.	2850-2999
pp.	3000-3199
qq.	3200-3399
rr.	3400-3599
ss.	3600-3799
tt.	3800-3999
uu.	4000-4249
vv.	4250-4499
ww.	4500-4749
xx.	4750-4999
yy.	5000-5549
zz.	5550-5999
aaa.	6000-6549
bbb.	6550-6999
ccc.	7000-7999
ddd.	8000-8999

eee.   9000-9999
fff.   10000-11499
ggg.   11500-13999
hhh.   14000-15999
iii.   16000-17999
jjj.   18000-19999
kkk.   20000-21999
lll.   22000-23999
mmm. 24000-25999
nnn.   26000+

18. How are the e-books organized?
    a. Dewey Decimal System
    b. Topical
    c. Genre
    d. Fiction/Nonfiction
    e. Picture books/Chapter books
    f. Other

19. How many years has your library had e-books?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. 9
    j. 10
    k. 11
    l. 12
    m. 13
    n. 14
    o. 15
    p. 16
    q. 17
    r. 18
    s. 19
    t. 20
    u. 21
    v. 22

w. 23
x. 24
y. 25
z. 26
aa. 27
bb. 28
cc. 29
dd. 30

20. Does your library have e-Picture Books?
    a. Yes
    b. No

21. Does your library have e-Chapter books?
    a. Yes
    b. No

22. Do you have access to library circulation records?
    a. Yes
    b. No

23. Do the library circulation records include specific ebook circulation numbers?
    a. Yes
    b. No

24. Vendors from whom ebooks are purchased, if known?

25. Who purchases the e-books? Check all that apply.
    a. District library administrator/coordinator
    b. Library media specialist
    c. PTA
    d. Technology personnel
    e. Principal
    f. Library consortium
    g. Regional Service Center
    h. Other
    i. Please specify.

26. What are your stated expectations for grades PK-2 to check out e-books?
    a. Available, if interested
    b. Encouraged to check out
    c. Required to check out

27. What are your stated expectations for grades 3-6 to check out e-books?
    a. Available, if interested
    b. Encouraged to check out
    c. Required to check out

28. How would you rate your e-book circulation?
    a. Not available
    b. Does not meet expectations
    c. Meets expectations
    d. Exceeds expectations

29. What kind of instruction is provided to the elementary students in order for them to access and choose e-books from their elementary library? Check all that apply.
    a. No instruction provided
    b. Direct Instruction, followed by student practice and application
    c. Modeling e-access process by Library Media Specialist, followed by hands-on experience by students
    d. Watch training video of e-access process, followed by student practice on available equipment
    e. Other
    f. Please Specify

30. What kind of instructional tools/aids are used in teaching the e-access process? Check all that apply.
    a. No instructional tools/aids used
    b. Automated tutorial
    c. Web-based video
    d. Trailer
    e. PowerPoint
    f. Audio tape
    g. Poster with step-by-step directions
    h. Directions posted on website using text/screen shots
    i. Educational game
    j. Graphic organizers
    k. Other
    l. Please specify

31. Is there an e-book link/icon on your library website?
    a. Yes
    b. No

32. Does your library website provide a link/access to e-books in the International Children's Digital Library?
    a. Yes
    b. No

33. What tip would you share with a new library media specialist that you have found helps your students to find/access ebooks? (Please explain briefly.)

FUTURE:

34. If you do not currently have e-books in your collection, are there plans to add some in the future?
    a. Yes
    b. No
    c. N/A
    d. Maybe

Appendix B

Description of Texas Education Agency Documents Used in Gathering Data

Texas Education Agency Documents

Documents. Following is a list of five documents that were accessed from the Texas Education Association (TEA) website and used as integral reference documents during the research process. Explanation for each document is provided to inform and clarify as to the document's importance in the research study.

Document 1: *District Type Data* (2012-13)

"TEA classifies public school districts into community types using factors such as enrollment, growth in enrollment, economic status, and proximity to urban areas. These community types, or "district types," group districts into eight categories ranging from major urban to rural. The categories include:

A. Major Urban

B. Major Suburban

C. Other Central City

D. Other Central City Suburban

E. Independent Town

F. Non-Metropolitan: Fast Growing

G. Non-Metropolitan: Stable

H. Rural"

(Charter schools were not included in this study.)   (TEA, 2016).

Document 2: *District Type Glossary of Terms*, 2012-2013

The following paragraphs taken from the TEA website explain and quantify the TEA district type classifications.

A. Major Urban. Eleven (11) districts are classified as major urban. A district is classified as major urban if:

    a) it is located in a county with a population of at least 840,000;

    b) its enrollment is the largest in the county or at least 75 percent of the largest district enrollment in the county; and

    c) at least 35 percent of the enrolled students are economically disadvantaged. A student is reported as economically disadvantaged if he or she is eligible for free reduced-price meals under the National School Lunch and Child Nutrition Program.

An example of a major urban district is Austin Independent School District (ISD) in Travis County.

B. Major Suburban. Eighty (80) districts are classified as major suburban. A district is classified as major suburban if:

    a) It does not meet the criteria for classification a major urban;

    b) It is contiguous to a major urban district; and

    c) Its enrollment is at least three percent of the contiguous major urban district or at least 4,500 students.

A district is also classified as major suburban if:

a) It does not meet the criteria for classification as major urban;

b) It is not contiguous to a major urban district;

c) It is located in the same major urban district; and

d) Its enrollment is at least 15 percent that of the nearest major urban district or at least 4,500 students.

Two examples of a major suburban district are Castleberry ISD in Tarrant County and Goose Creek Consolidated Independent School District (CISD) in Harris County.

C. Other Central City. Forty-one (41) districts are classified as other central city. A district is classified as other central city if:

a) It does not meet the criteria for classification in either of the previous categories;

b) It is not contiguous to a major urban district;

c) It is located in a county with a population of between 100,000 and 839,999; and

d) Its enrollment is the largest in the county or at least 75 percent of the largest district enrollment in the county.

Two examples of other central city districts are Brownsville ISD in Cameron County and McAllen ISD in Hidalgo County.

D. Other Central City Suburban. One hundred sixty-five (165) districts are classified as other central city suburban. A district is classified as other central city suburban if:

a) It does not meet the criteria for classification in any of the previous subcategories;

b) It is located in a county with a population between 100,000 and 839,999; and

c) Its enrollment is at least 15 percent of the largest district enrollment in the county

A district is also classified as other central city urban if:

a) It does not meet the criteria for classification in any of the previous subcategories;

b) It is contiguous to another central city district;

c) Its enrollment is greater than three percent that of the contiguous other central city district; and

d) Its enrollment exceeds the median district enrollment of 817 students for the state.

Two examples of other central city suburban districts are Harlingen CISD in Cameron County and Port Arthur ISD in Jefferson County.

E. Independent Town. Seventy (70) districts are classified as independent town districts. A district is classified as independent town if:

a) It does not meet the criteria for classification in any of the previous categories;

b) It is located in a county with a population of 25,000 to 99,999; and

c) Its enrollment is the largest in the county or greater than 75 percent of the largest district enrollment in the county.

Two examples of independent town districts are Victoria ISD in Victoria County and Winnsboro ISD in Wood County.

F. Non-Metropolitan: Fast Growing. Thirty-two (32) districts are classified as non-metropolitan: fast growing. A district is classified as non-metropolitan: fast growing if:

a) It does not meet the criteria for classification in any of the previous subcategories;

b) It has an enrollment of at least 300 students; and

c) Its enrollment has increased by at least 20 percent over the past five years.

An example of a non-metropolitan: fast growing district is Jarrell ISD in Williamson County.

G. Non-Metropolitan: Stable. One hundred eight-two (182) districts are classified as non-metropolitan: stable. A district is classified as non-metropolitan: stable if:

a) It does not meet the criteria for classification in any of the previous subcategories; and

b) Its enrollment exceeds the media district enrollment for the state (817).

An example of a non-metropolitan district: stable is Snyder ISD in Scurry County.

H. Rural. Four hundred forty-five (445) districts are classified as rural. A district is classified as rural if it does not meet the criteria for classification in any of the previous subcategories. A rural district has either:

a) An enrollment of between 300 and the median district enrollment for the state (817) and en enrollment growth rate over the past five years of less than 20 percent; or

b) An enrollment of less than 300 students.

Two examples of rural districts are Valley View ISD in Cooke County and Mount Calm ISD in Hill County (TEA, 2016).

Document 3: *Texas Public School Districts and Charters, Alphabetic Index,* October 2013.

This document listed the district name, phone number, county-district number, mailing address, zip code, and superintendent for each Texas public school district (TEA, 2016).

Document 4: *Texas Public School Districts Categorized by T*ype, 2012-13.

This alphabetically organized list of Texas public school districts are categorized

by district types A – H, which have previously been defined (TEA, 2016).

Document 5: *Texas Education Agency Department of Assessment and*

Accountability: Division of Performance Reporting: Final 2014 Accountability Ratings.

This document lists alphabetically all Texas public school districts. Listed under each school district is the name of all of the individual Early Childhood, Pre-Kindergarten, Kindergarten, Elementary, Middle, Junior High, High School, and Senior High schools that are a part of the district (TEA, 2016).

Appendix C

Pearson Correlational Statistical Analyses

Table C1.

*Correlation between Approximate Size of Elementary Library Traditional Print
Collection and Approximate Size of Elementary E-Book Collection*

		What is the approximate size of your elementary library traditional print collection?	What is the approximate size of your elementary ebook collection?
What is the approximate size of your elementary library traditional print collection?	Pearson Correlation	1	.111*
	Sig. (2-tailed)		.025
	N	494	414
What is the approximate size of your elementary e-book collection?	Pearson Correlation	.111*	1
	Sig. (2-tailed)	.025	
	N	414	414

Note. *Correlation is significant at the 0.05 level (2-tailed).

Table C2.

Correlation between Elementary School Enrollment and Available Equipment in

Library for Student Use

		Enrollment of your elementary school?	How many Computers in library for student use?	How many Laptops in library for student use?
Enrollment of elementary school?	Pearson Correlation	1	.069	.105*
	Sig. (2-tailed)		.126	.019
	N	513	499	499
Computers available in library for student use	Pearson Correlation	.069	1	.115*
	Sig. (2-tailed)	.126		.010
	N	499	499	499
Laptops available in library for student use	Pearson Correlation	.105*	.115*	1
	Sig. (2-tailed)	.019	.010	
	N	499	499	499
E-Readers available in library for student use	Pearson Correlation	.027	.008	-.024
	Sig. (2-tailed)	.544	.858	.591
	N	498	498	498
Tablet devices available in library for student use	Pearson Correlation	.050	.177**	.192**
	Sig. (2-tailed)	.263	.000	.000
	N	497	497	497
iPads available in library for student use	Pearson Correlation	.079	.142**	.218**
	Sig. (2-tailed)	.078	.002	.000
	N	498	498	498
iPhones available in library for student use	Pearson Correlation	-.032	.029	.071
	Sig. (2-tailed)	.482	.519	.112
	N	498	498	498

Note. *Correlation is significant at the 0.05 level (2-tailed).

Note. **Correlation is significant at the 0.01 level (2-tailed).

		How many E-Readers in library for student use?	How many Tablet devices in library for student use?
Enrollment of elementary school?	Pearson Correlation	.027	.050
	Sig. (2-tailed)	.544	.263
	N	498	497
Computers available in library for student use	Pearson Correlation	.008	.177**
	Sig. (2-tailed)	.858	.000
	N	498	497
Laptops available in library for student use	Pearson Correlation	-.024	.192**
	Sig. (2-tailed)	.591	.000
	N	498	497
E-Readers available in library for student use	Pearson Correlation	1	.008
	Sig. (2-tailed)		.852
	N	498	497
Tablet devices available in library for student use	Pearson Correlation	.008	1
	Sig. (2-tailed)	.852	
	N	497	497
iPads available in library for student use	Pearson Correlation	-.014	.039
	Sig. (2-tailed)	.750	.390
	N	498	497
iPhones available in library for student use	Pearson Correlation	.030	.056
	Sig. (2-tailed)	.507	.211
	N	498	497

Note. *Correlation is significant at the 0.05 level (2-tailed).

Note. **Correlation is significant at the 0.01 level (2-tailed).

		How many iPads in library for student use?	How many iPhones in library for student use?
Enrollment of elementary School?	Pearson Correlation	.079	-.032
	Sig. (2-tailed)	.078	.482
	N	498	498
Computers available in library for student use	Pearson Correlation	.142**	.029
	Sig. (2-tailed)	.002	.519
	N	498	498
Laptops available in library for student use	Pearson Correlation	.218**	.071
	Sig. (2-tailed)	.000	.112
	N	498	498
E-Readers available in library for student use	Pearson Correlation	-.014	.030
	Sig. (2-tailed)	.750	.507
	N	498	498
Tablet devices available in library for student use	Pearson Correlation	.039	.056
	Sig. (2-tailed)	.390	.211
	N	497	497
iPads available in library for student use	Pearson Correlation	1	.238**
	Sig. (2-tailed)		.000
	N	498	498
iPhones available in library for student use	Pearson Correlation	.238**	1
	Sig. (2-tailed)	.000	
	N	498	498

Note. *Correlation is significant at the 0.05 level (2-tailed).

Note. **Correlation is significant at the 0.01 level (2-tailed).

Table C3.

Correlation between Number of Years as a Librarian (Library Media Specialist) and
Instructional Method

No instruction	Pearson Correlation	-.015
	Sig. (2-tailed)	.770
	N	398
Direct Instruction	Pearson Correlation	.032
	Sig. (2-tailed)	.525
	N	398
Model e-access	Pearson Correlation	.029
	Sig. (2-tailed)	.558
	N	398
Watch training video	Pearson Correlation	.107*
	Sig. (2-tailed)	.033
	N	398
Other	Pearson Correlation	-.040
	Sig. (2-tailed)	.422
	N	398

Note. *Correlation is significant at the 0.05 level (2-tailed).

Table C4.

Correlation of Years as Library Media Specialist (Librarian) and Tools/Aids Used in Instruction

No instructional tools/aids	Pearson Correlation	-.024
	Sig. (2-tailed)	.632
	N	398
Automated tutorial	Pearson Correlation	-.039
	Sig. (2-tailed)	.434
	N	398
Web-based video	Pearson Correlation	.025
	Sig. (2-tailed)	.623
	N	398
Trailer	Pearson Correlation	-.042
	Sig. (2-tailed)	.401
	N	398
PowerPoint	Pearson Correlation	.108*
	Sig. (2-tailed)	.032
	N	398
Audio tape	Pearson Correlation	.070
	Sig. (2-tailed)	.166
	N	398
Poster with step-by step directions	Pearson Correlation	.046
	Sig. (2-tailed)	.360
	N	398
Directions posted on website using text/screen shots	Pearson Correlation	-.016
	Sig. (2-tailed)	.744
	N	398
Educational game	Pearson Correlation	-.061
	Sig. (2-tailed)	.225
	N	398
Graphic organizers	Pearson Correlation	-.056
	Sig. (2-tailed)	.263
	N	398
Other	Pearson Correlation	.008
	Sig. (2-tailed)	.873
	N	398

Note.*Correlation is significant at the 0.05 level (2-tailed).