

The Impact of Technology on Elementary School Libraries As Reported through a Questionnaire Survey of Elementary School Librarians

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ABSTRACT

The purpose of this qualitative research was to examine the impact of technology on elementary school libraries/media centers as reported through a questionnaire survey of elementary school librarians so that media centers can be better used and student and faculty users can be better served. The project was conducted in various elementary school libraries of a local suburban school district in a metropolitan Georgia community. The participants were surveyed through a self-reporting questionnaire to examine their perceptions about the results that the digital age of information and other factors have had on the student and faculty users of the library/media center. The surveys and their relevant responses were analyzed to provide an understanding of user needs which is of great value for practicing librarians and school administrators in planning for the future.

A majority of the respondents reported a decline in the circulation coupled with a decline of both students and faculty in their usage of the media center. At the same time, most of the respondents reported a preference of their student and faculty users for reading materials in hard-copy print format rather than on a computer screen or electronic database. The impact of the economic decline on the media services was discussed. Analysis of the narratives provided in the surveys revealed several common themes applicable to elementary school libraries.

Findings suggest implications that the elementary library and the role of the librarian must change and grow with that of the quickening pace of technology, and they must receive adequate funding to help students harness the power of new ideas to learn, work, and live in the 21st century. Results are expected to provide guidance for elementary librarians to increase the understanding of the ways in which librarians connect learning with technology to better serve the needs of their student and faculty

Keywords: *Technology, Elementary Education, Impact of Technology, User Preferences, Resistance to Change, Digital Age of Information, Budget Constraints*

1. INTRODUCTION

Technology has changed the world in a way unlike that of any other modern invention, and it is changing all the time. In fact, the primary researcher is one of those “native...wired kids” (Curwood, 2012) born in the Next generation created by both the Mac and word personal computers of Steve Jobs and Bill Gates that have transformed our global culture. Today, it is impossible to envision how our world might exist without computer technology.

It is the primary job of public schools in the United States to educate students so that they can function well in the real world and become productive members of society. Technology is becoming more and more inclusive in every aspect of society (Chang, 2008). The researcher has always found technology interesting. There are a great many amazing things technology can do, especially as instructional aides. Computers, projectors, networks, faxes, printers, scanners, CD-ROM, educational software, and flash drives are common sights in most schools.

Over the past few decades, administrators have been putting more and more money into the technology they add to their schools. Miranda and Russell (2011) reported that while all American public schools are connected to the Internet, the “student-to-computer ratio dropped from 4.4 in 2003 to 3.8 in 2005” (p. 301). Because of this investment in technology, one of the most technologically centered places in a school is the media center or library. The media center is one of the most essential aspects to a successful and effective school, and it should be the hub of activity, information gathering, and research for both students and teachers. Students and teachers use the media center for a wide variety of uses.

However, the role of the public school librarian or media specialist is changing dramatically. Those changes in roles can be visualized by the following terms and concepts:

Table 1: Comparison of Terms and Concepts that Contrast the Traditional School Library Vs. the Modern School Media Center

Traditional School Library	Modern School Library
Quiet reading center	Virtual as well as physical reality
Whispered voices	Library playground
Dim lights	Bright open welcoming environment
Scholarly atmosphere	Communications hub
Circulation and Check-out books	Multi-literacy communications
Warehousing and clerking	Multi-media network
Maintain print materials	Promote information fluency
Reference consultant	Network human intelligence
Cataloging and print management	Integrate dynamic multimedia
9 to 3 pm hours of operation	Open access with flexibility
Focus on homework	Collaborative teamwork
Passive learning	Interactive learning center
(Tenopir, 2003, House right and Schonfeld, 2006, Uwaifo, 2008, DuRant, 2010)	

Placing these contrasting terms and concepts side-by-side presents a stark visualization of the real change that has confronted the elementary school librarians of the digital age. Based on the impact of these changes, it is fair to question, like Danner (2008), “Is it not likely that...the library is in many ways falling off the radar of faculty (p. 10)” [and students]?”

2. TOPIC SELECTION

Based on the dramatic changes that are occurring in libraries and media centers in the country (House right and Schonfeld, 2008; Liu, Liao, and Guo, 2009; DuRant, 2010), the researcher has chosen to research the impact of technology on elementary school libraries or media centers as the topic for this paper.

Leading the charge for change in school libraries around the United States is the American Association of School Libraries (AASL, 2011), which has recognized that the definition of literacy has become more extensive beyond its traditional view of using the library as a resource center simply to find information. Today, the modern school library or media center must think progressively of multiple sources of literacy (e.g., digital, visual, textual, and technical) as necessary and vital skills needed for American youth to be competitive in the global economy. In fact, the new standards of the AASL (2011) promote this idea: “the continuing expectations of information demand that all individuals acquire the thinking skills that will enable them to learn on their own” (p. 2). To meet these AASL standards, schools who seek the highest levels of accreditation for their libraries understand that their students must be exposed to training and opportunities to choose, appraise, use, and reflect

upon digital information for research and communications purposes.

One of the guiding themes for my research is to question the truth or validity of the statement: “the library is in many ways falling off the radar screens of faculty” (Danner, 2008, p. 10). The writer believes that the library is an organic and dynamic center of information that has to change like society itself as we move into the Twenty-First Century to meet the needs of modern students. As vital as the libraries envisioned by Andrew Carnegie have been in the past century, the library of the future has an important tradition to uphold to serve and to make a difference in this new age of digital communications.

3. LITERATURE REVIEW

3.1 Statement of the Problem

The Internet may have been created originally as a network for communications purposes; however, it has had a profound effect on moving the traditional 19th Century-designed elementary library or media center from the focus on archives and memorabilia into the global digital age (Tenopir, 2003; Liu, Liao, &Guo, 2009). Modern educators and school administrators envision a new participatory role for the school librarian to be an instructional leader who keeps students and teachers connected and who collaborates in the construction of knowledge and skills that positively impact student teaching (DuRant, 2010). With this advanced role of the librarian as an information specialist,

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it is important for librarians to be instructional leaders who create greater opportunities for student learners in this expanding informational age of digital communications.

The statement of the problem for this research to consider is that the emergence of the digital age has fostered a change observed in the new role of the modern elementary school library (Eldringhoff, 2000). In effect, the school librarian's role has been revitalized today to advocate the literacy of students and teachers as communicators and competitors in the digital world (DuRant, 2010). With the challenge of current economic constraints, the school library, like all public institutions, is under assault to do more, be more, with less.

This research paper reviews the way the library has developed in the last century as "a collection of validated and structured information" (Kani-Zabihi, Ghinea, and Chen, 2006, p. 395), and this study discusses some of the challenges that librarians face to create a web presence. Further, this paper explores issues that will impact the changing and continuing role of the elementary school library in the new digital age. In order to be relevant in a changing world, school librarians must consider how to better serve their student and faculty users in a Google world.

Some educators think that there is a generational gap between students and teachers in regard to the Internet and the digital age (Bertot, 2009; Liu, Liao, and Guo, 2009; Bleidt, 2011). For example, students generally think of the Internet as a network for communications and entertainment; however, teachers basically regard the Internet as a reference resource. There is a parallel in this thinking that applies to the thinking about the Internet and its connection to and its use in the library itself. It is important for librarians/media specialists to be able to bridge this informational divide and to understand how they can make media services more visible, meaningful, and helpful to students and teachers.

It is one of the purposes of this research to help librarians better understand the reasons for the generational gap and to determine what we can learn from that information. Only then can the school librarians begin to understand the developing and evolving role of the library as the continued heart of learning, teaching, research, and professional development for the school and its community. It is hoped that the research and information gathered in this process will add to the information in the field by identifying the role of the library in transferring from a print to electronic format.

Further, the literature in the field can be increased by providing data for the greater responsibility of school librarians to understand their role as a collaborator and catalyst for change in the new digital age. Ultimately, this new information will strengthen the effectiveness of elementary school libraries.

For organizational purposes, the literature review has been sub-divided into the following three divisions: (1.) Knowledge is changing and resistance to change; (2.) The role of the librarian/media specialist is changing; and, (3.) The two concepts – knowledge and role of the librarian – must meet.

3.2 Knowledge is Changing and Resistance to Change

One of the major factors that schools and school librarians have to face in addressing the digital age is resistance to change (RTC). Nov and Ye (2009) conducted an integrative study that addressed the concepts of IT (Instructional Technology) adoption, social psychology, and digital-library acceptance. Using structural equation modeling, they confirmed RTC as a "direct antecedent of effort expectancy. In addition, [they] found ...computer anxiety" to be a serious factor in determining "user intention to adopt digital library technology" (Nove and Ye, 2009, p. 1702; Uwaifo, 2008). Kazu (2011) found that some of the many obstacles preventing teachers from using technology more effectively include inadequate infrastructure, lack of training and personal expertise, and weak technical support (p. 511). Mardis, Hoffman, and Marshall (2008) confirmed that the other barriers "inherent to technology integration generally in schools [were] access, skills, and institutional inertia" (p. 25). In other words, to promote the new technologies available to media centers, it is important for librarians to be prepared to overcome the potential negative cognitive and emotional responses that the cutting-edge technology brings.

Riley-Huff and Rholes (2011) reported on a study conducted to evaluate how well prepared libraries were for their positions, how they acquired their skills, and how difficult they were to hire and retain as professionals. Their study reveals that while change is necessary, "it appears many LIS (Library Information Services) programs are still operating on a two-track model of 'traditional librarians' and 'information managers'" (p. 129). Some of the most revealing data in this report include the open-ended responses from the librarian survey as noted by Riley-Huff and Rholes, 2011:

- a. I believe that because technology is constantly changing and evolving, librarians

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- in technology-oriented positions must do the same.
- b. My problem with being a systems librarian in a small institution is that the job was 24/7 365 with way too much stress with no down time.
 - c. I'm considering leaving my current position because the technology role (which I do love) was added to my position without much training or support. Now that part of my job is growing so that I can't keep up with all my duties (p. 139).

These are quite meaningful comments, and they continue to show the complex issues that face librarians in addressing change related to the school library.

The traditional way in which students utilize and perceive their school library is noted in a recent study of 1,509 students attending rural Texas public schools conducted by Shirley A. Bleidt (2010). According to the research, 92% of the students reported that they used the school library at least four times during the academic school year. As to what services the students used in the library, the top four responses were: read books (54%), use the computer (54%), checkout fiction books (53%), and research (47%). Bleidt's findings also showed that the "practice of reading to students was a rare occurrence in the library" (2010, p. 74). However, Bleidt (2010) also reported on the research of Scott and Plourde (2007) that school libraries are increasingly serving other functions: "in addition to a place that provides access to reading materials school libraries are trying to become more active, engaging, and places that promote active learning" (Bleidt, 2010, p. 76).

One of the new trends seen in media acquisitions is an innovation with e-book technology that has had a positive effect on school libraries and librarians (Landoni and Hanlon, 2007). Jantz (2001) analyzed the implications of e-book evolutions and how modern libraries do business. For example, Jantz(2001) says, "although we are at a very early stage of e-book evolution, business models, standards, and supporting technology are under development that will dramatically affect libraries and librarians" (p. 104). Apparently, the last great print medium to transfer to the popularity of the Web environment is books. According to Crestani, Landoni, and Melucci (2006), "We can get just about any newspaper or magazine online, but the contents of millions of printed books remain scarce" (p. 192). The recent technology innovations of the Kindle and the iPad with other mobile devices will allow people "to be able to

work, learn, and study whenever and wherever they want to" (Duncan, 2010, p. 45).

Looking forward, Martrellsays, "librarians must begin to design an imaginative, easily identifiable space in cyberspace as the centrality of the library as a physical phenomenon slowly fades" (as cited in Jantz, 2000, p. 104). In other words, it is the expectation of the writer that the use of the new e-book technology will allow school librarians to do things faster, easier, and better.

Robertson and Jones (2009) conducted a study addressing academic library user preferences of delivery methods for library instruction. Specifically, their research examined library and information science (LIS) knowledge about student use of digital games (e.g., video, computer, and online games like 'World of Warcraft' and 'Mortal Combat') for promoting library instruction. Among its findings, the Robertson and Jones (2009) study found a preference for the 2D webpage approach with a "notable enthusiasm for the 3D immersive graphical user interface (GUI), the principal user interface throughout current digital gaming technologies" (2009, p. 259). Further, there was a definite disinterest in audio-only educational podcasting. These student preferences can help librarians to facilitate library instruction and usage.

Some of the other trends noticed in library media centers included online encyclopedias, subscriptions databases, Web pages, search engine links, and other online electronic resources (Williams, Grimble, and Irwin, 2005). These researchers noted that "conventional wisdom among twelve- to eighteen-year-olds, is that the free Internet is their reference library" (p.26). In their survey, Williams, Grimble, and Irwin (2005) found the average high school teacher required their students to use the library one to three times during the school year. English and social science teachers required their students to use the library the most while most math teachers said "they never required use of the library media center" (Williams, Grimble, and Irwin, 2005). Interestingly, the study reported that more than 90% of the faculty said the library resources and collections were "current and relevant, yet 29% described themselves as unaware of the media center's resources" (Williams, Grimble, and Irwin, 2005, p. 26).

Cassidy, Britsch, Griffin, Manolovitz, Shen, and Turney conducted an extensive study at Sam Houston State University during the Spring 2010 semester (2011). The survey included 6,240 undergraduate and graduate students or 37% of the total student body, through an e-mail questionnaire. The purpose of the survey was to examine student ownership of electronic devices and

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student usage of technologies (i.e., e-readers, text messaging, Twitter, podcasts, social networks, Second Life, mobile phones, and others). The findings of the investigation revealed that, “while students do not wish to experience an overwhelming library presence on all social networking and Internet media, most do wish to have basic library services easily accessible through a few of the most popular social networking and Internet technologies”(i.e., Face Book, MySpace, YouTube, and blogs) (Cassidy, et al, 2011). It would be helpful for all librarians to study their own users and respond appropriately to the specific needs of their user community.

Bertot (2009) notes that technology planning for librarians is an endless process such as that described by one librarian: “being a gerbil on a treadmill. You go round and round and never really arrive” (p. 86). Some of the perpetual needs are calls for newer, faster, better hardware and software, improvements in tech support, and the constant pressure for training and professional development. In addition, local and state funding, which accounts for more than 90% of library funding, is “flat or declining” (as cited in ALA, Libraries Connect Communities, in Bertot, 2009, p. 86). The literature review in this subsection has supported the premise that knowledge is changing, and there is resistance to change by school librarians.

3.3 The Role of the Librarian/Media Specialist is changing

The role of the school library has changed from that of the traditional view of the library as the center of informational resources where librarians “had a near monopoly on access and most users had to rely on them” (Liu, Liao and Guo, 2009, p. 298). Today, students and teachers have unlimited access to web resources without the physical limitation of space or rows of books and the physical presence of a librarian is virtually obsolete (Housewright and Schonfeld, 2008; DuRant, 2010). The modern school library is changing from a repository of printed books and scholarly collections to an interactive resource center (Liu, Liao, and Guo, 2009; Grafton, 2009).

“A strange kind of war is being waged,” Grafton (2009, p. 87) says, between the traditional and the digital libraries of today. Older libraries, which Grafton identifies as the New York and Boston Public Libraries, Beinecke at Yale, Butler at Columbia, Widener at Harvard, the Chicago Public Library, and the new library of Rhodes College in Memphis, embody the style and culture of tradition. Grafton explains: “The names of

dead white male authors, incised in stone, parade across their facades” (2009, p. 88). And, the libraries themselves contain “endless rows of books, their spines appealingly faded but still colorful, which march down the equally endless Borgesian labyrinths of their stacks (Grafton, 2009, p. 88).

In contrast, Grafton identifies the more modern libraries to be in Seattle and Salt Lake City which he describes: “glass curtain walls surround vast open spaces. Gleaming banks of computers seem to be everywhere: books, not so much. The lofty atria are redolent not with the noble rot of ancient leather and buckram, but with the coffee and fresh baked goods on offer in their café” (2009, p. 88).

In an extensive study supported by a grant from The Bill and Melinda Gates Foundation, Weingarten, Bolt, Bard, and Windhausen (2007) found that over the last twenty-five years, use of the Internet among public libraries in the United States has increased from 20% to 100% (p.1). At the same approximate time, Bertot (2009) reported that the average number of public-access computers grew from 1.9 per public library in 1996 to 12 per public library in 2007 (p. 81). The issue for these libraries has moved over that quarter century from first getting connected to the need today for the progressive media specialist to continue to provide tech service, troubleshooting, software, assistive technology, and customized training to the users. According to the Winegarten et al. (2007), “this problem is made particularly difficult by both the rapid growth of society’s dependence on the Internet and the increasing demands on computing and communication capacity as new and ever more complex Internet applications are brought on-line” (p. 1). The rewards are great, however, for the progressive-thinking media specialist: “A library with improved connectivity (bandwidth) can become an ‘anchor tenant’ or an economic incentive for industry to build its infrastructure out to underserved communities” (Weingarten, Bolt, Bard, and Windhausen, 2007, p. 3).

So, what are the implications of this information for the current school librarian/media specialist? Bridging the gap between the traditional library to the modern media specialist who is a master of digital information use is the issue at hand. The tremendous explosion of interest and readership of e-books is one of the reasons that (Borsch, 2009) says that libraries “have become less necessary” (p. 1). According to Zmuda (2010), “the key is to create viable definitions of what is being looked for and then design the tasks that would measure that as it relates to the...21st century skills”—(e.g., information literacy, media literacy, and apply

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technology effectively....) (p. 6). The literature review in this subsection has supported the premise that the role of the librarian or media specialist is changing.

3.4 The Two Concepts – Knowledge and Role of the Librarian – Must Meet

The culture of the school library, as we know it, is changing in a new century that is already one decade old and is moving rapidly into its second decade. People continue to seek information and want to find ways to access that information faster and easier. A qualitative study of Fidishun (2007) confirmed that “women are still the ones who bring children to the library and encourage their use of books” (p. 328). While this practice shows the value women place on the library, it reaffirms the traditional regard that women have for the library as a place of solitude “where they can find books or just be by themselves” (Fidishun, 2007, p. 328). That value is changing rapidly, however, as the web information highway is helping men, women, and children of all ages make connections to the expanding world of global communications (DuRant, 2010).

The Groton Public School District of Groton, Connecticut conducted an extensive study on a rotating basis of their curriculum revision dealing with the integration of instructional technology and library media. They found developing “one unified curriculum to encompass traditional library skills as well as current and emerging technology concepts” (Crompton, 2004, p. 32) was critical to creating a rich learning environment for students. Some of their instructional components for a well-balanced integrated technology program included: a diverse population of learners, partnership among students, teachers, and media specialists, shared responsibilities among stakeholders, active and authentic learning experiences, differentiated instruction, classroom environment with abundant technology, positive learning environment, and a physical environment that is inviting and welcoming to learning and information navigation (Crompton, 2004).

Liu, Liao and Guo (2009) reported in their extensive survey that while only 8.7% of the students (graduate students and faculty) never personally used a library, the frequency of use of the library electronic resources at Peking University Library increased from 1,617,446 times in 2002, to 10,704,419 times in 2006 (p. 299). It is this combination of electronic resources with services that makes the library services valuable and complementary.

The Center for Information Behavior and Evaluation Research (CIBER) conducted some interesting research that reveals a radical change in the information seeking behavior of library users that has great significance for elementary librarians (Kwanya, Stilwell, and Underwood, 2009). Specifically, they found that modern library users are characterized as “being horizontal, bouncing, checking and viewing in nature and involves a form of skimming activity, where people view just one or two pages from an online resource or site and then ‘bounce’ out, perhaps never to return” (as cited in Kwanya, Stillwell, and Underwood, 2009, p. 70).

Kwanya, Stillwell, and Underwood (2009) promote the concept of “Library 2.0” as the way to address the changes currently affecting modern libraries (p. 71). The five basic summary points of “Library 2.0” according to Farkas (2008) include: understanding user needs; giving users a role in defining library services; learn from failures; awareness of emerging technologies; looking outside the box for applications, opportunities, and inspiration (as cited in Kwanya, Stillwell, and Underwood, 2009, p. 71).

In the past, little attention has been given to the concept of joint use of libraries. The increasing interest in governmental/institutional collaboration, economic advantages, social services, and educational progress has prompted schools to take a second look at “dual use” libraries. Bundy and Amey (2006) report that some collaborative partners include schools, colleges, and public libraries. In addition, other advantages of joint use libraries include: more efficient use of public money and sharing of staff; higher quality of service; extended opening hours (even over weekends); convenience to users on one site; and promoting greater community interaction and engagement. In these difficult economic times, the possibility of serious consideration of joint use libraries may be worth further review. In order for the school library of the future to be successful, it will take the very best of the time-tested traditions of the library and the most creative innovations of information sharing that will forge the partnership of student, teacher, librarian, and technology to respond to the continuing needs of user-centered service (Bundy and Amey, 2006).

The ways that students and teachers do research and use resources is changing from the traditional view of Andrew Carnegie that dominated library culture for almost two centuries (Lonsdale, 2003; Grafton, 2009; Zmuda, 2010). It is important for educators to understand the background, traditions, and values of the culture that created John F. Kennedy, Martin Luther King, Jr., George Washington Carver, Ernest Hemmingway, Eleanor

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Roosevelt, and Maya Angelou. Because of the vast expanses of information and the phenomenon of the digital age, it is increasingly difficult for librarians/media specialists to keep abreast of the cutting-edge technology and the software and hardware innovations flooding the American marketplace (Zmuda, 2010; DuRant, 2010). With the recency of the 2008-2009 world economic crisis, there is little definitive information today that specifically addresses the full impact of the financial problems that appear in the future for education and public institutions. No professional literature apparently is on record detailing how school libraries dealt with financial issues and declining readership during the Great Depression. It may be that “the library, as we once knew it, may no longer be relevant” (Johnson and Valenza, 2009, p. 29).

If that is so, the premise of this research is we may have to change the library so that it becomes relevant. The current research and literature is available that deals with how flexible and resilient school librarians, teachers, administrators, and parents have worked and planned together to meet the challenges that faced them (Borsch, 2009; Zmuda, 2010). The history of the literature, research, theory, and practice available shows the success and the triumph that brings children and books together. In this new informational age of Google, it is the consensus of the research in this literature review that school librarians of the future will continue to be true to themselves and their traditions to find new and better ways to serve their readers.

The review of the literature has shown that the knowledge base of the traditional library/media center is changing and there is significant resistance to change. Synonymous with the change of the century, the age of Google has brought a change to the role of the school librarian/media specialist. The literature review in this subsection has supported the premise that the two concepts – knowledge and role of the librarian – must meet together to figure out how to serve their users in this exciting digital age.

4. RESEARCH METHODOLOGY

4.1 Overview of the Research Project

The focus of this qualitative research project was to examine the impact of technology on elementary school libraries/media centers as reported through a questionnaire survey of elementary school librarians. The project was conducted in the various elementary school libraries of the local suburban school district in metropolitan Georgia community that serve the Henry Regional Academic Center. These librarians/media

specialists were surveyed through a self-reporting questionnaire to examine their perceptions about the results that the digital age of information and other factors have had on the student and faculty users of the library/media center.

4.2 Assumptions of the Researcher

The primary assumption of this research was that using a sample population of elementary school librarians from the local suburban public school district of the suburban metropolitan community would produce results that are universally applicable to all elementary school librarians or media specialists.

In addition, it was the assumption of the writer that survey questions related to the change in recent computer technology would be best focused in length on the past three years, as the life-span or turn-over rate of most computers and digital technology generally falls within that period of time.

Further, it is the assumption of the researcher that all the participants would have prior knowledge and understanding of the role and function of a public elementary school library that was involved, in general, with the book and journal circulation, budget preparation, planning for the future, readership, retrieval of information, computer technology, and providing library media services for both their faculty and student users.

4.3 Limitations of the Research

The sample size of this research – ten librarians in a single public school district of a moderate or medium sized suburban school system, might be considered as a limitation of this study to ensure a broader representation that extends to both larger and smaller (rural) school districts within the state.

The questionnaire survey of this research study might be considered as a limitation because it relied exclusively upon the self-reporting collection of data and information, and it would be difficult to verify this information independently. Further, as in the nature of a qualitative study, it might be considered a limitation of this research because it relied upon the honesty and integrity of the participants as they answered the questionnaire.

Cultural bias and/or other bias might be a limitation of this research because of the survey's anonymous nature of reply. Age, experience, tenure status, longevity, etc. of the participants and other factors such as job satisfaction, stress, and increasing demands

for accountability might have produced negative connotations that impact the results and conclusions of this study.

4.4 Research Design

For the design of this research project, I chose to employ a qualitative study using a general self-reporting survey implementing an open-ended questionnaire format to report on the information gathered and to examine the ideas, opinions, and views about the impact of technology on the current librarians/media specialists in the elementary school libraries of the suburban local suburban school district of a metropolitan community.

4.5 Sample Population

The sample for this research was conducted in a local suburban public school district of metropolitan Georgia which is ranked in size by student population within the top ten school districts of the state. The local public school system reported a total of 40,000+ students with approximately 15,000 elementary students (grades pre-school through fifth grade). The district was considered to be of moderate size as several of its nearby, northern neighbors contain student populations in excess of 100,000 students.

Ten of the elementary school librarians in the local suburban public school district comprised the population for this research. All of the librarians were female. All of them held a minimum of a master's degree in library science, and they were fully certified as teachers or media specialists by the Georgia Professional Standards Commission.

4.6 Instrumentation

A survey questionnaire of a self-reporting nature was recognized as a well-known model of information gathering to obtain feedback from a selected population that "might otherwise not be unattainable" (O'Connor, 2006, p. 1). While the survey questionnaire asked a common group of people the same questions, it was chosen as the best vehicle to get feedback on the issue of the current impact of technology on the elementary school library. The aspect of improvements in technology coupled with the recency of economic strain on finances had created a phenomenon that had not occurred before as far as elementary librarianship was concerned. There was no current known research or literature that examined the impact of both change and financial restraint at the same time on elementary school libraries. This event justified reliable investigation now, and it would add a new dimension of information to the body of knowledge in the field of librarianship.

No research information was available in the current literature that documented any formal use of an instrument that might be useful for this study. However, two recent studies (House right and Schonfeld, 2008; and DuRant, 2010) did provide descriptor terms that were helpful to the researcher in considering how to draft or field test questions focused on attitudes and perceptions of school librarians.

The self-reporting instrument (See Appendix I) was formed with the intent to do a thorough and complete survey of the aspect of change facing each elementary librarian today. It was determined early that all of the survey questions should be relevant and directly applicable to the elementary school library and/or the librarian or media specialist.

4.7 Procedures

The self-reporting survey questionnaire with five polarized questions and five open-ended questions was e-mailed with a letter of invitation to participate in the survey (See Appendix II) to the school librarians/media specialists in the school district on January 25, 2012, with a recommended return date of one week (February 5, 2012). A second mailing was conducted by mail with a stamped and self-addressed envelope on February 5, 2012, for those librarians who did not respond to the first inquiry.

4.8 Validity and Reliability

From the literature review, a series of draft questions were formulated that linked the content design to the appropriate information that would measure the attitudes, knowledge, and opinions about elementary librarianship. To ensure validity and reliability of the instrument, this draft questionnaire was field-tested for readability among several local veteran librarians for their advice and guidance. Several comments and suggestions were made by the pilot group that helped the survey to achieve effectiveness in addressing the specifics of librarianship and information services.

Because of the rapid and constant change that occurs in technology, all of the pilot group recommended that the span for "number of years" used in questions 1, 2, and 3 should be changed from five years to a span of three years, which they felt was generally estimated to be the life-span or turn-over rate of most computers and digital technology. According to the Library and Information Services for the 21st Century [a White House Conference on Library and Information] (2000), "in

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some fields the half-life of technical information can be as short as three months” (p. 3).

To increase the level of response to the survey, the entire pilot group suggested that the questionnaire stay within one page of length. Based on this recommendation, the questionnaire was reduced to ten total questions which were viewed to be the most significant for this study. The resulting preliminary draft of the questionnaire (See Appendix I) for this paper contained five “yes or no” or polar questions (“yes” and “no” answers) and five open-ended questions that prompted further response and reflection.

A further recommendation of the pilot group was implemented to promote and encourage written remarks and opinions by respondents. Therefore, a “comment” section was provided at the end of each question to get the narrative information of anecdotal comments needed for this research.

The strength of the field test helped to ensure the readability of the instrument and that the content, form, and construction of questions was appropriate for the sample population of elementary school librarians.

4.9 Ethical Considerations

The participation in this self-reporting survey questionnaire was voluntary, and the subjects were made

fully aware of the purpose, intent, and objectives of this research. The writer made every effort in this research to ensure objectivity and fairness, to eliminate personal bias, respect confidentiality of information, and to ensure the anonymity of participants surveyed. The writer gained permission or informed consent from the participants by the voluntary submission of the questionnaire. There were no risks, physically or mentally, from the implementation of this study. The identities of the librarians/media specialists and their data, information, comments, and anecdotal notes have been protected, and they were referred to by a number.

5. RESULTS

5.1 Purpose and Data Application

The purpose of this study was to research the impact of technology on elementary school libraries or media centers in a suburban school district of a metropolitan Georgia community. The results from the questionnaire survey of librarians or media specialists provided the following information: The average number of years experience from the respondents was 6.9 years experience working as a librarian or media specialist. Data from the survey questionnaire revealed the following information from the participating elementary librarians or media specialists:

Table 2: Data Analysis

Survey Question	Increased	Declined	Stayed Same
1. Has the circulation of books in your library increased, declined, or stayed the same in the last 3 years?	30%	60%	10%
2. Has the dependence of the students on the services of the library increased, declined, or stayed the same?	10%	50%	40%
3. Has the dependence of the faculty on the services of the library increased, declined, or stayed the same?	20%	60%	20%
	Hard-copy	Electronic copy	No preference
4. Do your students/faculty/staff prefer to use hard-copy collections of journals or electronic collections?	50%	30%	20%
5. Would your students/faculty/staff rather read the current issue of a journal in its original printed format or read it on a computer screen?	50%	40%	10%

Analysis of this data shows that 60% of the elementary librarians reported that the circulation of books had declined in the past three years. Thirty-percent(30%) of the librarians reported that the circulation of books had increased; and, ten-percent(10%)

of the librarians reported that the circulation of books had stayed the same.

In student usage of the media center, 50% of the librarians reported that the dependence of the students on the services of the library had declined. Ten-percent

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(10%) of the librarians said student usage had increased; and, 40% of the librarians reported that student usage of the media center had stayed the same.

When looking at the faculty usage of the media center, 60% of the librarians reported that the dependence of the faculty on the services of the library declined; twenty-percent (20%) of the librarians reported that the faculty usage of the media center had increased; and, 20% of the librarians reported that the faculty usage of the media center had stayed about the same.

Two librarians (1, 3) noted that a possible reason for the decline in circulation or usage was that all of their classrooms contained some computers for both the teacher and students to use. One librarian (5) explained that students use the library less due to “turning away students when we are teaching lessons because no paraprofessional [is available] on certain days.”

An explanation offered by one respondent (4) for the noted decline in faculty use of the library was “teachers are so overwhelmed, they don’t come in as often [as they used to].” Another librarian (7) noted, “Teachers are still afraid to open up and collaborate on a level that will assist them more.”

Further analysis of this data reveal that faced with a choice of using the hard-copy, print format or the computer screen, 50% of the elementary librarians reported that their students, faculty, and staff preferred to use hard-copy collections of journals over electronic collections. In faculty and staff use, 30% of the librarians reported that their adults preferred to use electronic formats. Also, 20% of the librarians say their staff split (50/50) between reading the current issue of a journal in its original printed format or reading it on a computer screen. One librarian (7) noted, “Students prefer the hard-copy, where the teachers prefer the electronic collections.” Another librarian (3) said, “Those in graduate work use the computer more.” Finally, another librarian (8) stated, “[Faculty] have no preference – they use what they can get their hands on.”

Analysis of the information collected in this study reveal that when given a choice, students/faculty/staff would rather read the current issue of a journal in its original printed format than read it on a computer screen or electronic database. Fifty-percent (50%) of the librarians reported their users preferred the printed format. One librarian (3) explained, “Print [is] more accessible to them.” Forty-percent (40%) of the respondents reported that their readers had a preference for reading materials on a computer screen or electronic

format. In addition, 10% of the librarians reported that the preference of their users was evenly divided (50/50) among printed format and electronic format.

Explanation for the user preferences was offered by one librarian (7): “Students prefer the hard-copy, where the teachers prefer the electronic collections.” Agreement among three of the respondents (1, 3, 8) was noted that a perceived movement toward electronic formats might be due to the fact that “computer[s] [are] more accessible in the classroom (8).

The findings in this study confirm the research of DuRant (2010) that the school librarian’s role has been revitalized today to advocate the literacy of students and teachers as communicators in the digital world. The data from the respondents show that the current economic constraints have challenged the school library to do more be more, with less.

This study finds two trends emerging at the same time among the surveyed elementary school libraries: (1) On an average basis, 55% or more of the respondents reported a decline in the circulation coupled with a decline of both students and faculty in their usage of the media center. (2) In looking at reader preference, on an average basis, forty-five-percent (45%) of the respondents reported a preference of their student and faculty users for reading materials in hard-copy print format; Forty-percent (40%) prefer to use/read materials on a computer screen; and, fifteen-percent (15%) are split evenly among a preference for either hard-copy or electronic format. A possible reason for the preference in hard-copy format came from one respondent (3): “print is more accessible to them.” One respondent (7) indicated “students prefer the hard-copy, where the teachers prefer the electronic collections.” When looking at the rising number of electronic users, one librarian (8) observed, “the computer is more accessible [to users] in the classroom.” Finally, another librarian (6) stated that the reason for high numbers of student preference for print materials was “our students still read hard copies because of limited e-books.”

Part of the reason for the growing shift of user preference from reading print format to electronic format was offered by one respondent (7): “The continuous growth of technology gives learners the opportunity to bring life experiences into the school library at the touch of a button. It promotes the concept that education should be fostered at an early age connecting home, school, and community.”

The elementary libraries are faced with a generation of users today whom one librarian said “are

born digital” (1). These are the same school population whom another librarian reported that “students are prepackaged like the technology” (10). The findings from this study reveal that while 60% of the respondents reported that faculty and staff use of the media center was declining, there might be even higher numbers for teacher users. For instance, three librarians (1, 3, 5) noted the availability of Galileo as a prominent search engine in all of the elementary school classrooms. Finally, a librarian (8) summarized the feeling of those three media specialists, “The technology is an asset to the library, [it] keeps us hip with the kids.”

5.2 Themes Emerging from the Data

Through my analysis of the narratives provided by the respondents to the survey questionnaires, several collective common themes were discovered that emerge for further consideration. Those themes include: The Role of the Librarian Has changed; The Role of the Library Users has changed; The Economic Decline Has Impacted the Library; and, Technology and Users of the Library Must Join Forces to Meet the Challenges of the Future.

5.3 The Role of the Library Has Changed

The findings of this study confirm the study of Liu, Liao, and Guo (2009) that the role of the elementary media center has changed from that of the traditional view of the library as the center of informational resources where librarians “had a near monopoly on access and most users had to rely on them” (p. 298). Further, these results support Bleidt (2011) in his report on the research of Scot and Plourde (2007) that school libraries are increasingly serving other functions: “in addition to a place that provides access to reading materials school libraries are trying to become more active, engaging, and places that promote active learning” (Bleidt, 2011, p. 76). One of the respondents (8) in this study said, the modern library is a “state of the arts technological center where students are able to communicate on a global level with people in the same city, across five states, or two continents across the ocean.”

To meet the needs of the students, one librarian (6) noted, “We are required to know more and a shifting [in the library’s role] to more technology based on learning for teachers and students.” Another respondent (9) said, “it has required that I stay on top of technology personally and that I encourage teachers and use technology myself in lessons. It has benefitted our students and instruction.”

Part of those benefits for the elementary library was reported by one librarian (7), “Everything is found at the touch of a button – now there is little need for all of the paper.” In addition, another librarian (7) agreed, “now things move quicker...at the touch of a button.” Thus, according to the respondents in this survey, the role of the media center has changed from that of a repository of printed information to that of a multi-media literacy hub of technology and related services.

The paradigm shift from the traditional library of the 20th century as a quiet reading center to that of the 21st century’s interactive learning center has resulted in one librarian (10) in this study reporting, “I am more of a service tech now.” All librarians were affected with the triple impact of an economic decline as described by one librarian (1): rising “costs of services and repairs,” and librarians and their paraprofessionals often called to do “sub work” (9) for teachers who are absent.

“Knowing technology makes lessons more creative,” said one librarian (4); however, to do this, one librarian (5) noted, “You must be able to trouble-shoot, train, up-date.” Another librarian (2) explained the changing role of the media specialist: “What we teach has to stay current – [e.g.] Internet safety lessons, research lessons have all changed in the past few years. We have to try to keep up [with] technology and how to fix things, use apps, etc.” Overall, another librarian (7) summarized the new role of technology in the media center: “The continuous growth of technology gives learners the opportunity to bring life experiences into the school library at the touch of a button.” The thematic review in this subsection has supported the premise that the concept that the role of the elementary library and the librarian has changed.

5.4 The Role of the Library Users Has Changed

This findings of this study confirm that the role of the elementary library user has changed from being a quiet reader in a repository of printed books and scholarly collections to becoming a dynamic participant in an interactive resource center (Liu, Liao, and Guo, 2009; Grafton, 2009). Today, students and teachers have unlimited access to web resources without the physical limitation of space or rows of books and the physical presence of a librarian may be becoming obsolete (House right and Schonfeld, 2008; DuRant, 2010).

Research has confirmed that the average number of public-access computers grew from 1.9 per public library in 1996 to 12 per public library in 2007 (Bertot,

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McClure, Wright, Jensen, and Thomas, 2008, as noted in Bertot, 2009, p. 81). Like the school librarians reported in this study, the issue for all of these elementary school libraries has moved over that quarter century from first getting connected to the new innovations, to where the role now is to continue to provide technical services, troubleshooting, software, assistive technology, and customized training to its users. One of the respondents (2) in this survey said: “K-5 students are convinced everything they need can be found on the web.” This study, therefore, confirms the findings of Weingarten, Bolt, Bard, and Windhausen (2007) that “this problem is made particularly difficult by both the rapid growth of society’s dependence on the Internet and the increasing demands on computing and communication capacity as new and ever more complex Internet applications are brought online” (p. 1).

Technology has changed the users of the elementary library because one librarian (3) said, “kids come wired.” Another librarian (6) noted the high use of the Internet among the students and commented, “Our students still read hard copies [only] because of limited e-books.”

As noted by the respondents in this research, the role of the library users has changed because people continue to seek information and want to find ways to access that information faster and easier. Clearly, the findings of this study affirm DuRant’s (2010) conclusion that the web information highway is helping faculty, staff, and children make connections to the expanding world of global communications. Under these circumstances, one respondent (9) stated, “It is required that they [and we] become more technologically savvy.” Thus, one librarian (8) summarized the new role of the library users: “The kids are changing on their own to accommodate technology. We have to change with them.” The thematic review in this subsection has supported the premise that the role of the elementary school library users has changed.

5.5 The Economic Decline Has Impacted the Library

Consistent with the research that 90% of library funding is “flat or declining” (as quoted from ALA, Libraries Connect Communities, in Bertot, 2009, p. 86), 100% of the librarians responding in this study agreed that the economic decline of the past three years has had an impact on their media centers and services. Respondents noted that “budget cuts” and “less money for services and supplies” (1), “minimal funds since 2008” (10), and a “pay decrease” (6) caused by “8 furlough

days” (3) had a diverse impact on their libraries. Those funding cuts resulted specifically in “no moneys for book and technology replacement” (1), “all subscriptions gone” (3), “very little money for supplies like ink, copy paper, and items to repair damaged books” (7), and overall, “less of everything” (3).

A significant effect of the economic decline was that all of the full-time media paraprofessionals were decreased “[from full-time] to one-half time paraprofessional[s]” (1). Another resulting result was “closing the library more often due to [my] absence without a para, or lessons being taught, and [students] can’t check out books” (5). Also, one librarian (2) noted that because of budget cuts, “I am only able to give lessons [to students] every other week instead of weekly.” The school’s policy for saving money by using librarians and media paraprofessionals to substitute for absent teachers was also mentioned as an economic consequence of the economic pressure on the media center by another librarian (1).

The overall impact of the economic decline was reported by one librarian (1), “now the librarian has to do that job (ITS – Instructional Technology Support) and the media specialists job, too.” To another librarian (8) these decreases in library funding resulted in “fewer funds, less stuff, less staff, more stress!” Finally, a librarian noted: “It is very hard to run a quality media program without [full] staffing and materials” (1).

One of the most notable impacts of budget cuts to the elementary libraries was in the cancellation of hard copy print editions of magazines, journals, books, etc. in preference for electronic formats. Several librarians (1, 3, 4, 7) reported the cancellation of all subscriptions of print editions magazines (e.g., Reading Teacher, and Reading Math journals) (9) and the Atlanta-Journal Constitution daily newspaper (6). Thus, “I will have to cut back more next year,” concluded a librarian (2). Other librarians (5, 10) consoled their losses with the reality that “the [magazines, journals, newspapers] are available on Galileo” (10).

Some positive thinking was noted from one librarian (8) who was dealing with the loss of print editions, “I have subscribed to online tools, such as books on line, education game subscriptions, etc.” Another librarian (1) said, “I hope that the electronic books and online resources will make up for the shortcomings in this area.” The thematic review in this subsection has supported the premise that the economic decline of the 21st century has impacted the elementary school library.

5.6 Technology and Users of the Library Must Unite to Meet the Challenges of the Future

The culture of the school library as we know it is changing in a new century that is already one decade old and is moving rapidly into its second decade. The findings of this study confirm the research of Kwanya, Stillwell, and Underwood (2009) that reveals a radical change in the information seeking behavior of library users that has great significance for elementary librarians. Specifically, these researchers in the literature review found that modern library users are characterized as “being horizontal, bouncing, checking and viewing in nature and involves a form of skimming activity, where people view just one or two pages from an online resource or site and then ‘bounce’ out, perhaps never to return” (as cited in Kwanya, Stillwell, and Underwood, 2009, p. 70). One of the survey respondents (7) noted the change that encompassed the media center today:

[It is a place where] learning takes place before, during, and after school as children learn to work with other people or groups to achieve their task. It allows the use of technology with the purpose of communicating on a global level for teaching, enhancing lifelong skills, or just seeking knowledge. These powerful devices allow learners to develop knowledge in a free instructionally based setting and to share their ideas from anywhere in the world at a moment's notice.

However, these media specialists recognized that the elementary library of the future can and must change to meet the challenges of technology and its users.

How will the elementary library of 2020 look? One librarian (9) said, “More e-books, maybe primarily e-books, more technology for daily use.” Another librarian (6) suggested the media center of the future will also have “e-books, I-pads, few print materials; media aides [employed] instead of media specialists/teachers.” Still another librarian (10) predicted that the media center of 2020 will be “all online or outsourced. We may be obsolete like the 1-room school house.” Due the strain of recent budget cuts, one librarian (1) noted: “I am very afraid there will not be an elementary school library by 2120, or if there....are, they will be poorly maintained and most likely not staffed by a trained school media specialist.”

One school librarian (3) envisioned that the elementary media center of the future will be “shared

with a middle school.” This study agrees with the research in the literature review that little attention has been paid in the past to the concept of joint use of libraries. However, the increasing interest in governmental/institutional collaboration, economic advantages, and technological progress in this time of economic stress may encourage schools to take a second look at “dual use” libraries. This research affirms the findings of Bundy and Amery (2006) that some collaborative partners, like schools, colleges, and public libraries, may need to look again into the potential advantages of the more efficient use of public money and sharing of staff; higher quality of service/ extended opening hours (even over the weekend); convenience to users on one site; and the promise of greater community interaction and engagement.

In these difficult economic times, the possibility of serious consideration of joint use libraries might be worthwhile. In order for the school library of the future to be successful, this study affirms the findings of Bundy and Amery (2006) that it will take the very best of the time-tested traditions of the library and the most innovative media of information sharing technology that will forge the partnership of student, teacher, librarian, and technology to respond to the continuing needs of user-centered service.

Whatever format the library of the future becomes is still conjecture at this point in time. One librarian (3) in this study envisioned that it would be open or accessible “24/7.” However, this same librarian (2) predicted, if funding doesn't increase, “media specialists are going to be challenged to stay current with all the technology advances.” And, if this happens, another librarian (5) observed, “the library, sadly, will be more out of date than it is today due to many budget cuts!”

Overall, the voice of the elementary librarians seemed to be best expressed by the respondent (4) who said of the 2012 library: “I hope students will be still reading whether it is on a book or [in] a nook.” Further, another librarian (1) looking into her crystal ball saw that in the school of the future, “every classroom will have or be its own library.”

The findings of this study support the idea that elementary media specialists may have to change themselves and the library so that they both become relevant to the times and the culture. The recent research of Borsch (2009) and Zmuda (2010) reported how flexible and resilient school librarians, teachers, administrators, and parents have worked and planned together to meet the challenges that faced them. The

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history of the literature, research, theory, and practice available, along with the information in this study, show the success and the triumph that brings children and books together. In this new informational age of Google, it is one of the findings of this study that school librarians of the future will continue to be true to themselves and their traditions to find new and better ways to serve their users and to meet the technological and economic challenges ahead. The thematic review in this subsection has supported the premise that the two concepts – to be effective in a rapidly changing world, technology and the student and faculty users of the library must join forces to meet the challenges of the future.

6. CONCLUSIONS

The findings of this study confirm the research of Olatokun (2008), “the Internet promises to have a far larger and more serious impact on our society than the introduction of television; possibly as great an influence on history as the industrial revolution or the printing press (as quoted from The UCLA Internet Report 1999 in Olatokun, 2008, p. 138). The results of this research show two trends emerging in the surveyed elementary school libraries at the same time: (1) On an average basis, 55% or more of the respondents reported a decline in the circulation coupled with a decline of both students and faculty in their usage of the media center. (2) Forty-five-percent (45%) of the respondents reported a preference of their student and faculty users for reading materials in hard-copy print format rather than on a computer screen or electronic database.

Clearly, the major reason for the decline in library [book] circulation was attributed by the respondents in this survey to the emergence of digital technology as an increasing preference of the students and faculty users. In other words, use of hard-copy books, magazines, and journals was gradually declining as more student and faculty users were taking advantage of digital and technology tools. However, elementary library users still reported a preference for what a respondent (3) reasoned was because “print [is] more accessible to them.”

The elementary libraries surveyed in this study are faced with a generation of users today, whom two librarians (3, 6) said, students were “wired” already. This opinion affirms the conclusions of Williams, Grimble, and Irwin (2005), “the conventional wisdom among twelve- to eighteen-year-olds, is that the free Internet is their reference library” (p. 26).

The findings of this study show that the technology advances that the elementary librarians have

seen in their media centers over the past decade are in jeopardy because of the current decline in the economy. One-hundred percent (100%) of the elementary librarians surveyed in this study reported serious impacts to their media services attributed directly to “no money to purchase books” (7), “minimal funds since 2008” (10), and less money for service, supplies, etc. (1, 3, 5, 6, 8). According to Bray and Hollingsworth (2011), the problem facing librarians today is “we face the most severe cutback seen in years” (p. 20). Further, all of the respondents in this research support the opinion of Schwelik and Fredericka (2011) that “funding is, at best, uncertain” (p. 7).

The review of the literature and the information reported in this study support the idea that elementary media specialists may have to change themselves and the library so that they both become relevant to the times and the culture. Like the librarian (3) who foresees a partnership between elementary and middle or high schools as a possible reality, she reflected the thesis of Lee and Klinger (2011), “To remain relevant in the school, the ... librarian must enhance the presence of the library within the school’s educational mission” (p. 24). School librarians of the past have shown how flexible and resilient they had to be to survive. As one librarian (3) noted, in the future [more services may be] “online or outsourced.” Overall, the librarians in this study agreed with the hope expressed by a fellow librarian (4) that students will still be “reading in a book or a nook.” Or, change may evolve like the prediction of another librarian (1) that “every classroom [in the future] will have or be its own library.”

7. LIMITATIONS

This study and its conclusions about the impact of technology on elementary libraries add a new dimension to the body of knowledge in the field of librarianship. However, there are several limitations noted in this investigation. The small group of participants in this research was limited to ten elementary school librarians in a suburban Georgia school district located near a metropolitan community. While the sample population number was adequate, it did limit the generalizations that can be made and recognition must be made of the individual and collective differences in their ages, school experiences, library media and personal backgrounds. The designation of elementary schools as one population was deliberately made by the writer to avoid the bias that might be created by the use of diverse socio-economic or diverse cultural populations and to make the results of this study applicable to a wider segment of schools.

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This population might not be a true representation of the overall impressions or assessment of urban or rural school districts. Further, the diversity among the participants was lacking in both gender and race, as all participants were white females. Although unplanned and unexpected, the lack of diversity was not representative of the overall elementary teacher population in suburban metropolitan school districts like the one in which this study was conducted.

An anonymous questionnaire, such as the one employed in this study, was limited by the fact that follow-up open-ended interviewing in-depth was not possible. Assumptions and conclusions were made by the researcher upon the data obtained through the survey questionnaire. Since several respondents wrote additional comments on the questionnaires, it was possible that they might have welcomed the opportunity to discuss their views on the themes and focus addressed in this study.

Further, researcher bias or prejudice is another possible limitation to this research in the design of the choice of questions used on this questionnaire survey. Although it is completely unforeseen and inadvertent, my own personal views and opinions about library media and technology might have unintentionally influenced the phrasing of questions and ultimately the corresponding responses from the participants in this study.

Despite these limitations, the statistical and qualitative information gained from this study have interesting implications for librarians and administrators that will strengthen the effectiveness of elementary school libraries.

8. IMPLICATIONS

For the elementary teacher, administrator, or librarian interested in gaining a better understanding of the role of the media center or library and the role of the librarian/media specialist in the 21st century, or for the educator interested in what the users of the media center want and/or are doing to obtain information or to do research, this study has significant implications.

- a. In order to encourage young children to become lifelong readers and learners, parents, librarians, and educators should make a combined effort at home and school to expose children to both print-rich and technology-rich electronic-based formats.
- b. Working together, the teacher and librarian should assist the parent in keeping informed and

up-to-date on the most reliable and applicable best reading materials in our print-rich and technology-rich reading and writing environment.

- c. This study suggests that the elementary librarian must transition from helping youth to memorize and use the Dewey Decimal System to construct a library that is more meaningful to its users by creating a nurturing environment that showcases the power of technology to solve real problems and promote life-long learning.
- d. To be prepared for the future implies that elementary librarians must become familiar with and incorporate the newest technologies – e-books, talking books, e-journals, digital paper, and electronic ink – that will have a profound effect on the school media center and the user's reading experience.
- e. It is clear through this research that before students will willingly take the initiative to enter a library/media center, they must be immersed in a total print-rich and digital environment and surrounded by adults who themselves are vast literary readers who model those good reading habits daily.
- f. Elementary age children should be helped and encouraged by both word and example of their teachers, school administrators, librarians, and parents to borrow books to take home, to buy books, and to use e-books, etc. to keep for a variety of recreational and scholastic purposes.
- g. Educators should examine, promote, and celebrate the links between home and school, between parents and teachers, so that both places help the youth toward the same end of increasing literacy and preparation for a happy and successful career.
- h. The rapid expansion of Internet and communication technologies implies that educators and librarians must continue to explore student usage, preferences, and lessons to provide relevant and meaningful services. Librarians must be aware of these innovations, and they must be able to tailor their library services to the distinct needs and preferences of their student and faculty users.
- i. In a time of economic constraint, it is improbable that school libraries will receive additional funding until a period of fiscal stability is restored. It is important for educators and librarians to think creatively of ways in which they can meet their user needs while making efforts to raise funds, such as through grants, parent/teacher organizations, and even

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consideration of joint use libraries with a local middle school, high school, or public community library.

- j. The role of the librarian must grow with that of the quickening pace of technology to help students and faculty users of the media center to harness the power of new ideas to learn, work, and live in the 21st century.

9. RECOMMENDATIONS

During the review of the literature and from the information gathered through the survey questionnaire, it is clear that further research information about the following would be useful to educators:

- a. In the present study, subjects included a population of elementary school librarians/media specialists in a suburban school district of a metropolitan community in Georgia. For an expanded sample population, subjects in a replicated study could be expanded or broadened to address users of middle or high school libraries and/or other socio-economic or culturally diverse societies in rural or urban communities.
- b. According to the U.S. Commission on Libraries and Information Science (2005): "Students in schools with good school libraries learn more, get better grades, and score higher on standardized test scores" (p.4). It would be interesting for additional research to investigate the impact on students' reading achievement as determined by books borrowed from a school library versus books borrowed from a teacher's classroom library.
- c. No amount of innovative technology or media technique will take the place of the teacher or the media specialist. The partnership between teacher and media specialist must be promoted and cultivated to help students engage with a wide variety of information and instructional tools that create authentic learning experiences.
- d. Student and faculty usage of the elementary school library might be increased if the users are given greater flexibility in operating hours, such as opening the library before and after school hours, or even on weekends. Some opportunities for making the school library "open to the public" might broaden the library attendance and provide a vital service to the local community.
- e. The time for a shared library may have come in the wake of constrained budgets. The

consideration of a joint use library among elementary, middle, and high school students and/or a local community public library may be an alternative that provides some financial, social, and educational advantages. School districts should give serious consideration to such partnerships where some of the potential benefits include shared costs, efficient use of personnel and facilities, extended operating hours, convenience of services located on one site, and increased community engagement.

- f. The data in this study suggest that teachers and librarians would benefit from continuous professional development and additional training in the "cutting edge" technology tools and in the implementation of curricular activities applying these instruments and materials to the elementary classroom.
- g. The elementary librarian must be a change agent to help create competent users of ideas and information and to meet the challenges of the digital age. The effective librarian is the leader at the heart of the school who can strengthen the role of the library so that it truly becomes the magnet for all learning experiences in the elementary school.
- h. Further research in future studies should continue to examine the reasons for the generational gap between elementary students and teachers/librarians to understand the role of the library in transferring from a print to electronic format.
- i. On the basis of this study, the field of education – and particularly that of librarianship – will benefit from continued research that will seek new and innovative ways to bring readers and books together.

One of the purposes in conducting this study was to seek relevant information through a survey questionnaire because understanding user needs is of great value for practicing librarians and school administrators in planning for the future. The findings of this research do not agree with Borsch (2009) that libraries "have become less necessary" (p. 1). Instead, in order to be effective and remain relevant today, this study affirms that the school librarian must keep up with the needs and attitudes of student and faculty users, and the school libraries must receive adequate funding to provide the complex multi-services needed to serve their readers. The elementary librarian must think about how to best serve their students, often doing more with less, in a rapidly changing world, and this research contributes to that collective information.

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