THE MASSACHUSETTS SCHOOL LIBRARY STUDY:
EQUITY AND ACCESS FOR STUDENTS IN THE COMMONWEALTH

REPORT OF FINDINGS AND RECOMMENDATIONS
OF THE SPECIAL COMMISSION ON SCHOOL LIBRARY SERVICES
IN MASSACHUSETTS

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The successful planning, implementation, and publication of *The Massachusetts School Library Study: Equity and Access for Students in the Commonwealth* required the co-operation between the professions of librarianship and education. Researchers and practitioners from both of these fields collaborated to bring their specialized expertise and perspectives to create a study of school libraries, grounded in the context of K-12 education as it is evolving to meet the challenges and opportunities of teaching and learning in the digital age. The following institutions and individuals are acknowledged for their work and commitment to defining the status of school libraries today in order to make informed and thoughtful recommendations for the actions that can shape the school libraries of tomorrow.

Members of the Massachusetts Legislature

Representative Sean Garballey, Sponsor of the Commission
Kenneth Donnelly, [1950-2017] Sponsor the Commission
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The Commission acknowledges the contributions of the following entities:

Massachusetts Board of Library Commissioners (MBLC) is the agency of state government with the statutory authority and responsibility to organize, develop, coordinate, and improve library services throughout the Commonwealth. The nine MBLC commissioners set policy and conduct official business. The MBLC staff administers a wide array of statewide programs and services for libraries and residents. The Special School Library Commission included MBLC representatives.https://mblc.state.ma.us/ -

Massachusetts Department of Elementary and Secondary Education [DESE]. The Department of Elementary and Secondary Education aims "To strengthen the Commonwealth's public education system so that every student is prepared to succeed in postsecondary education, compete in the global economy, and understand the rights and responsibilities of American citizens, and in so doing, to close all proficiency gaps." Its work includes; Strengthen standards, curriculum, instruction, and assessment; Promote educator development; Support social-emotional learning, health, and safety; Turn around the lowest performing districts and schools; and Enhance resource allocation and data use. http://www.doe.mass.edu/commissioner/default.html#http://www.doe.mass.edu/commissioner/default.html.

Massachusetts Library System [MLS] is a state-supported collaborative, that fosters cooperation, communication, innovation, and sharing among member libraries of all types, e.g., school, public, academic, and other libraries. The MLS promotes equitable access to excellent library services and resources for all who live, work, or study in Massachusetts. MLS Services include online magazines, encyclopedias, newspapers, books, physical delivery, interlibrary loan, training, consulting, and cooperative purchasing. http://www.masslibsystem.org

Massachusetts School Library Association [MSLA] works to ensure every school has a school library program that is fully integrated at all grade levels across the curriculum and has a significant and measurable impact on student achievement**.** MSLA promotes school librarian leadership and school library programs that provide resources, instruction, and opportunities for collaboration that maximize student learning. Board Members provided support with distribution and promotion of the survey. http://www.maschoollibraries.org

Center for International Scholarship in School Libraries, Rutgers, the State University of New Jersey [CISSL]. CISSL is the leading international center dedicated to school libraries worldwide, provides an arena for the international community of school library scholars and practitioners to generate, produce, and share a substantial body of rigorous research on the dynamics and impacts of school libraries on student learning. CISSL enables the adoption, adaptation, and

transformation of systematic research to practice. The center provides professional development that supports the implementation of research findings to the learning-centered practice of school libraries. At the foundation of the center's planning is a strong financial foundation that supports its short and long-term research and research-to-practice agenda. http://cissl.rutgers.edu/ .

The Researchers Who Supported, Designed, and Conducted the Study

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The School Librarians of the Commonwealth who participated in the study.

Letter from the Special School Library Commission to the Legislature

The Role of the School Library

The Legislative Special Commission on School Library Services in Massachusetts was created by the Massachusetts Legislature in July 2014 to look at equity of access to school library programs in our public schools. In forming this Commission, there was an understanding that there are many factors that need to be considered in evaluating a school library program including:

- Access to technology;
- Staffing (licensing, quality and number of staff members);
- Access to the physical library;
- Access to digital resources [online resources, as well as access to technology devices, (e.g., computers and tablets)];
- Amount of library instruction delivered;
- Amount and quality of print and digital materials;
- Funding.

As we will show in our report, the Commission supports a series of recommendations backed by data from an extensive survey of school library programs that we believe will:

- Guarantee access to school libraries and school librarians;
- Ensure access to information resources in school libraries;
- Ensure access to information technology;
- Ensure access to library instruction and support;
- Guarantee access to funding.

The American Association of School Librarians (AASL) states that an effective school library program "focuses on accessing and evaluating information, providing digital training and experiences, and developing a culture of reading" (1). AASL goes on to report that "robust school libraries have high-quality, openly licensed digital and print resources, technology tools and broadband access. This environment is essential to providing equitable learning opportunities for all students. Over 60 studies in twenty-two states show that the levels of library funding, staffing levels, collection size and range, and the instructional role of a school librarian all have a direct impact on student achievement (2)." The Every Student Succeeds Act (ESSA), adopted by the Federal Government in 2015, includes language for funding "effective school library programs" in the provisions of Title I, Title II and Title IV (3). In Massachusetts, the Department of Elementary and Secondary Education has recently revised its educational frameworks in ways that indicate the importance of the skills and resources that are provided by a strong school library program. These standards focus on the need for strong print literacy skills for all students beginning in the early grades, as well as building technology capacity for all students (4, 5, 6). Information literacy skills, the ability to find, assess and critically think about

information, are now included explicitly in the new Digital Literacy and Computer Science Frameworks (6).

The Commission appreciates the opportunity to give the Legislature its input, and to add to the body of research and best practices that is already in place. We are aware that prior to the formation of this Commission, there have been no comprehensive data regarding school library programs in Massachusetts' public schools. The Commission includes a broad range of stakeholders, including those with extensive knowledge of school library programs. Members of the Commission representing the Massachusetts School Library Association (MSLA), Massachusetts Library Association (MLA), Massachusetts Library System (MLS), and Massachusetts Board of Library Commissioners (MBLC) were able to draw upon a wealth of expertise in the library community to guide our work. Members of the commission representing the Department of Elementary and Secondary Education (DESE), the Massachusetts Teachers Association (MTA), the American Federation of Teachers (AFT), and the charter school community were able to provide context and expertise regarding current educational standards and expectations. All Commission members understood that our work required a comprehensive academic study to accurately collect data from public schools and to analyze these data effectively.

The Massachusetts School Library Study: Equity and Access for Students in the Commonwealth includes five major recommendations. We urge the Legislature to accept these recommendations and work with DESE to ensure their implementation. We believe they have significant implications for the students in our public schools. In the Executive Summary, the researchers have included suggested long-range plans for achieving the goals recommended. Extensive data that provide support for the long-range plans are provided in the accompanying study.

Work of the Commission

The Commission's primary purpose was to study the public school library programs in the Commonwealth, and evaluate whether they were adequately serving the needs of students. The charge of the Commission included:

- Soliciting information from the public
- Collaborating to design a survey instrument and collect data on the eleven items outlined in the statute
- Soliciting participation in the survey by reaching out to public school districts throughout the Commonwealth
- Developing a summary report of the Commission's findings with recommendations for school library facilities, budget, staffing, collection development and curriculum standards for school library programs
- Sharing our report and recommendations with the Joint Legislative Committee on Education and the Massachusetts Department of Elementary and Secondary Education

The Commission was charged with using findings from this survey to provide recommendations and long-range plans for public school library programs, and guidelines for school library facilities, budget, staffing, collection development and curriculum standards.

Early in our work, we contacted two respected academic research experts in the field: Dr. Carol Gordon and Dr. Robin Cicchetti. Our head researcher, Dr. Gordon, served at Rutgers University

as Associate Professor in the Department of Library and Information Science School of Communication and Information and as the Co-Director of the Center for International Scholarship in School Libraries. Dr. Cicchetti is the Head Librarian at Concord-Carlisle Regional High School where she is nationally recognized for expertise in implementing the "learning commons" model of school libraries. Using the Commission's charge, Drs. Gordon and Cicchetti developed study questions which they tested in a pilot at Westborough High School in 2015 and then refined further in conjunction with the research team at DESE. In developing the study, researchers included questions that were designed to get at equity of access to the program and resources in each school. In addition they used the baseline data collected from the survey and analyzed those data by district type to determine statistically significant differences that point to lack of equity.

DESE was instrumental in distributing the survey to school districts throughout Massachusetts. The survey was announced through the Commissioner of Education's weekly report in the spring of 2016 and members of the library community used a variety of channels to communicate with the school library community to encourage a strong response. Dr. Gordon arranged for the study data analysis to be conducted with assistance from the Center for International Scholarship in School Libraries at Rutgers University. Data analysis was completed late in 2016 and forms the basis of the report included here.

Findings and Implications

The *Massachusetts School Library Study: Equity and Access for Students in the Commonwealth* provides a comprehensive report of the survey findings. Commission members are confident that the research conducted by Drs. Gordon and Cicchetti with the assistance of DESE researchers and CISSL is of the highest quality and reflects the rigor and depth required to make effective recommendations. Based on the research and conclusions drawn by Drs. Gordon and Cicchetti, the Commission can report that the data indicate equity issues for Massachusetts' students, and these include:

- Equity of access to professional staff;
- Equity of access to the school library;
- Equity of access to information digital resources;
- Equity of access to information technology;
- Equity of access to funding and subsidized resources;
- Equity of access to library instruction and help.

The specific data that demonstrate these findings are provided in the study that is included here and summarized in the Executive Summary. Based on the data and significant findings they reveal regarding lack of equity, especially for students from urban and rural districts, the Commission members urge the Legislature to work with DESE toward the development of equitable and effective school library programs. Library programs that align with national standards can provide public schools with a cost-effective means to provide all students with significant digital learning support. School librarians are trained to address the information literacy standards in the Digital Literacy and Computer Science framework. Access to digital resources through an effective school library program provides a measure that can close the technology gap between high-income, high-performing students, and low-income, low-performing students. In addition, ESSA recognizes that school libraries provide schools with meaningful literacy support, and federal grants are now available to fund them. Effective school

library programs also provide schools with an instructional leader to help coordinate curricular work. School librarians are experts in project-based learning. They are trained to provide appropriate resources to meet the needs of all students.

In order to achieve equitable access to strong library programs across the Commonwealth, the Commission approves the recommendations of the researchers, who suggest specific actions that can be taken to achieve this end. These recommendations, include:

Recommendation 1: Guarantee Access to School Libraries and School Librarians

● 1A: Ensure that every public school in the Commonwealth of Massachusetts has a school library and a certified school librarian.

● 1B: Establish the position and responsibilities of School Library Specialist at the Department of Elementary and Secondary Education.

● 1C. Support a culture of inquiry in schools that sustains inquiry and resource-based learning, collaborative teaching, and the integration of digital technology to improve access for all students.

Recommendation 2: Ensure Access to Information Resources in School Libraries

● 2A. Increase access to print resources in school libraries

● 2B. Increase access to electronic resources in school libraries.

Recommendation 3. Ensure Access to Information Technology

● 3A. Improve access to internet and digital devices in school libraries.

● 3B. Increase access to Information Technology through staffing

Recommendation 4. Ensure Access to Library Instruction and Support

● 4A. Promote best school library practices in instruction in the school library.

Recommendation 5. Guarantee Access to Funding: Recommended Guidelines for Budget Allocation and Expenditure to Support Recommendations

The action plan to support achievement of these recommendations is outlined in both the Executive Summary and Study Report for The Massachusetts School Library Study: Equity and Access for Students in the Commonwealth. The Commission looks forward to seeing the Legislature adopt these recommendations, and collaborate with the Massachusetts Board of Library Commissioners and the Department of Elementary and Secondary Education to ensure that every student in our public schools has access to an effective school library program.

References:

American Association of School Libraries. 2016. *"Definition for Effective School Library Program." Knowledge Quest 45(1): 4-5. 2. Gretes, Frances. 2013.*

School Library Impact Studies: A Review of Findings and Guide to Sources. Harry & Jeannette Weinberg Foundation. <www.baltimorelibraryproject.org/wp-content/uploads/downloads/2013/09/Library -Impact-Studies.pdf> (accessed July 31, 2017) 3.

American Library Association. 2015. "P.L. 114-95, The Every Student Succeeds Act of 2015 Conference Agreement to Reauthorize the Elementary and Secondary Education Act: Opportunities for School Librarians" <http://www.ala.org/aasl/sites/ala.org.aasl/files/content/aaslissues/esea/ALA-ESSA_Library_Opportunities.pdf> (accessed July 31, 2017) 4.

Massachusetts Department of Elementary and Secondary Education. 2017. <http://www.doe.mass.edu/> (Accessed February 24, 2018)

"Massachusetts Consolidated State Plan Under the Every Student Succeeds Act. <https://ed.gov/admins/lead/account/stateplan17/macsa2017.pdf> (accessed July 31, 2017) 5. Massachusetts Department of Elementary and Secondary Education. 2017

English Language Arts and Literacy Framework. <www.doe.mass.edu/frameworks/ela/2017-06.pdf> (accessed September 8, 2017) 6. Massachusetts Department of Elementary and Secondary Education. 2016.

2016 Massachusetts Digital Literacy and Computer Science (DLCS) Curriculum Framework. <http://www.doe.mass.edu/frameworks/dlcs.pdf> (accessed July 31, 2017)

Executive Summary of the Research Report

The Massachusetts School Library Study: Equity and Access for Students in the Commonwealth aims to collect data on the status of school library facilities, resources, staffing, instruction, and information technology through the lens of access. This means that data were also collected to determine the status of equitable access to school library resources and services in urban, suburban, and rural schools.

The Charge. The Commonwealth of Massachusetts Senate established the Special Commission on School Library Services in July 2013 (Bill S.1906). The charge of the Commission was to conduct a study on the status of school library programs in the Commonwealth and to make recommendations based on the findings. To accomplish this charge the Commission established *The Massachusetts School Library Study: Equity and Access for Students in the Commonwealth*. The Commission identified 11 data points for investigation that served as indicators to determine the status of school library programs. These data points served as a baseline to determine equitable access to school library resources and services for school communities, i.e., students, educators, and parents.

Indicators include:

(i.) How school library programs can be further developed to ensure that the programs reflect changing technology and best serve the students;

(ii.) How many schools in each district have a school library and a licensed school librarian and in how many schools is the librarian a full-time position;

(iii.) The ratio of students per licensed school librarian;

(iv.) What other library support staff work in the school library program;

(v.) How many employees are scheduled to work in school libraries;

(vi.) How many hours school libraries are open each week for students and faculty to use the library;

(vii.) How many hours each week school librarians provide direct library-related instruction to students;

(viii.) The number of computers in school libraries for students to access;

(ix.) The size and age of the collection in each school library;

(x.) The extent to which electronic and digital materials are available for students to access;

(xi.) Current funding for school library materials and services per student.

Research Methods. Data were obtained through an online survey that was designed, piloted, and uploaded to the internet in collaboration with the Massachusetts Department of

Elementary and Secondary Education (DESE). A letter of support from the Commissioner of Education encouraged principals to support the study. The study was supported by the Center for International Scholarship in School Libraries [CISSL] at Rutgers, The State University of New Jersey through the provision of Institutional Review Board certification for Dr. Carol Gordon, access to state-of-the-art statistical analysis software, and the services of a doctoral candidate.

An online survey gathered quantitative and qualitative data on the dimensions outlined in the Commission charge. Participating school librarians self-identified as either serving suburban, urban, or rural populations. There were three types of data generated by the survey. The study posed questions that collected baseline data on the status of individual school libraries with regard to quantitative indicators of library staffing, print and digital information resources, information technology, funding and subsidized resources, and instruction and help. The survey also posed questions about access to the school library facility, staffing, and resources that indicate equitable provision of school library resources and services. These data were analyzed in three ways:

1] Descriptive statistics, such as percentages, displayed in charts and graphs measured the status of individual school library programs by aggregating these data to establish a baseline for the key indicators of library resources and services.

2] Statistical analyses of data, such as ANOVA and Pearson correlation tests, that measured access to school library resources and services to determine levels of significance of the differences among school libraries located in urban, rural, and suburban school districts. These statistical analyses determined whether there was equitable access to the eleven dimensions in the Legislature's charge across school districts, i.e., urban, rural, and suburban.

3] Qualitative verbal data from survey respondents that described the barriers and enablers to adequate and equitable delivery of school library resources and services. These data also indicated how school library programs can be further developed to ensure that the programs reflect changing technology.

The Sample. The sample, which establishes the external validity or the generalizable of the findings from the sample to the population, was self-selected from 351 districts in Massachusetts. Only one survey per school library was accepted. Survey responses were submitted by a total of 722 school librarians indicating at least that many schools currently have library programs. After incomplete surveys were removed, the total number of responders was 521. The researchers have constructed an argument that 521 viable responses to the survey represents at least 22% of the greater population of Massachusetts school libraries, which established the validity and reliability of statistical analysis and findings. 63.9% of respondents reported that they work in school libraries in suburban districts; 24.8% are in urban areas; and 10.9% are in rural schools. This sample is representative of the general populations in these three district types.

Summary of Findings. This section presents the major findings of the study organized by the Legislative charge, or 11 dimensions of the study as shown in the figures below. The findings discussed in this Executive Summary describe the data that address the 11 categories in the Legislative's charge with references to the figure in the main research report that provide more

detail, interpretation, and discussion which builds the foundation for recommendations and long range plans.

Access to library staff. Access to library staff is critical to delivering information literacy education to students in the context of inquiry learning through the use of information and technology. These skills including: Information literacy or the organization, retrieval, and use of information to transform it to new knowledge in the academic content areas; digital literacy, or the responsible and safe use of technology to create content, and critical thinking/problem-solving.

Table 1. Summary of Findings About Access to a Licensed School Librarian and Staff

Legislative Charge	Findings
(ii) How many schools in each district have a school library and licensed school librarian and in how many schools is the librarian a full-time position.	**Fig. 6. Licensed and Non-Licensed School Librarian Positions** shows that 80.4% of schools have licensed school librarians who hold professional or initial licenses. 12% of schools have non-licensed personnel in library positions and 11.7% have paraprofessionals in library positions, which indicates that almost one-quarter [23.7%] of school libraries do not have licensed personnel in library positions. **Fig. 7. Comparison of School Librarians' Certification by District Types.** There is no statistical difference with regard to district type, urban, rural, suburban, of licensed and non-licensed library personnel. This means that 20%, or one in five school libraries, across district types, do not have professionally licensed school librarians.
(iii) The ratio of students per licensed school librarian.	**Fig. 8. Ratio of Students to Library Staff.** A strong trend in the data shows there is one school librarian per school regardless of school populations that range from 500 to 1,900 students.
(iv.) What other library support staff work in the school library program;	**Fig. 9. Total FTE Support Staff** shows 61% of school libraries have no full-time equivalent support staff. The largest number of full time support employees who work in the school library is 1.0 [one full-time equivalent] staff member in only 17.6% of school libraries.
(v.) How many employees are scheduled to work in school libraries;	**Fig. 10. Comparison of FTE [Full Time Equivalent] Support Staff by District Types** shows that urban and rural school libraries have significantly fewer FTE support staff than suburban school libraries.

Note: The data designated as figures in this summary refer to the figures found in the full report.

Access to the School Library

Access to the school library is critical to student interaction with information resources and digital technology in an independent learning environment with the instruction, intervention, and help needed to master information and technology skills.

A significant finding is that most urban school libraries are closed more days per year than suburban school libraries and that when there are closures they are most often attributed to the library being used for standardized testing (fig. 21, 22). Overall, children in urban schools have significantly less access to their school libraries than students in suburban schools. Significantly fewer urban and rural school libraries have flexible scheduling (open to students throughout the

day) than suburban school libraries. After-school access is common, as is access during lunch, but most often provided by the school librarian without compensation. These findings are corroborated by the qualitative data (fig. 102) that indicates scheduling barriers due to school library closures for testing, other school duties, coverage of multiple school sites, and lack of support staff to keep the school library open when the librarian is unable to do so because of competing professional demands.

Table 2: Findings About Access to the School Library and the School Librarian

Legislative Charge	Findings
(vi) The hours school libraries are open each week for students and faculty to use	**Fig. 16. Weekly Access to School Library.** The range of hours of access on a weekly basis ranges from more than 50 hours [2.5%] to less than 5 hours [1.9%]. These variations are tied to size of student population and grade levels. More than half of the libraries [53.2%] are open 36 to 50 hours per week. About one-third [34.9%] are open 21 to 31 hours per week. When combined, these two sets of data show that 88.1% of school libraries are open 21 to 50 hours per week. One librarian needs 25 hours per week of contact time dedicated to instruction to see 625 students. This means that in schools with populations of more than 625 students it is not possible for those students to have, on average, one week of library instruction. **Fig. 17. Comparison of Hours Per Week School Libraries are Open.** An ANOVA test determined there is no statistically significant difference among urban, rural, and suburban school libraries with regard to the number of hours school libraries are open per week. This mans that regardless of district type, school libraries are not open an adequate number of hours per week for one librarian to teach all students on a consistent basis. **Fig. 18. Access to Library Before and After School Hours** Students have additional access for extra curricular activities held in the library before school [10.8%] and after school [29.4%]. Librarians offer access to the library for extra curricular activities three times more often after than before school hours, with over 40% of librarians providing a venue for before and after school extracurricular activities. Only 2.7% of school libraries offer weekend service hours. **Fig. 19. Types of Library Services Outside of School Hours** Respondents selected the library services they offered outside of regular school hours. These services included book circulation, printing, readers' advisory and research support, technical support, and access to resources. Fig. 19 shows the types of library services offered outside of school hours, including before and after school and on weekends. These services are categorized as teaching and non-teaching services and school activities. Teaching services include personalized help, in the library and electronically, for students, professional development for faculty, and classes for parents. School activities most often include programs, meetings, and events.
(vii.) How many hours each week school librarians provide direct library-related instruction to students	Student access to instruction varies with grade levels and how use of the school library is scheduled. Fixed schedules, usually found in elementary grades, provide one instructional hour [which varies from 30-50 minutes] per class for each grade level. During this time school librarians supervise and teach classes in the absence of the classroom teacher. Flexible schedules, or open access, are usually used in high schools and in some middle schools. The teacher schedules lessons or unites of study relevant to school curriculum and often collaborates with the school librarian to plan and/or teach the lesson or lessons. This allows for information and technology skills to be taught in the context of state standards. Hybrid scheduling models combine fixed and flexible schedules

Fig 14. School Library Schedules. 28% of respondents have a fixed schedule. 12.1% have a modified fixed schedule. This means 41.9% of schools offer a library program based on fixed scheduling in which students visit the library one time per week. 24% of respondents reported that their library schedules are flexible with some open access. Librarians who provide open access are more likely to work in library environments that have flexible rather than fixed scheduling.

Fig 15. Comparison of Flexible Schedules by District Types. There were significant differences in flexible scheduling among school libraries in urban, rural and suburban districts. Since 41.9% of school libraries have fixed scheduling, almost half of students across district types may not benefit from sustained instructional time that develops reading comprehension, critical thinking and information technology skills. Given that these types of scheduling are a function of traditional school schedules, school districts across the Commonwealth struggle with the issue of time on task, especially on the elementary level.

Fig. 20. Library Closings During School Hours. Respondents provided the number of days during the past school year that their libraries were closed, for any reason, to students and faculty. F20.5% of respondents reported they were closed 0-1 day a year. 45.5% said they were closed 2-10 days per year and over 31.7% were closed 11-21 days per year. Over 11.9% were closed more than 22 days.

Fig. 21. Comparison of Days Per Year School Libraries are Closed: Analysis determined that urban and rural school libraries are closed significantly more days per year compared with school libraries in suburban schools.

Fig. 22. Reasons for Lack of Access to School Libraries: Over 63.7% of respondents cited standardized testing as the most common reason for library closings during school time. This finding suggests that urban schools may spend more time on preparing students for standardized tests and that the library may be the venue for "practice testing." Further study is needed on this equity issue.

Table 3: How Access to a School Library can be Improved to Develop School Library Programs?

Legislative Charge	Findings
i) How school library programs can be further developed to ensure that the programs reflect changing technology and best serve the students with regard to access to the school library?	**Respondents suggested how to expand school library hours.** *"Because I stay late to get administrative work done, I end up providing services to students and to staff. It's not required, but somewhat expected."* *"I stay late 2-4 days a week and provide services as [the need] arises, but the library is not required to be open. However, I cannot get all my instructional work done if I don't stay late."* *"I also support student research by email seven days a week."* *"I try to stay available through technology on the evenings and weekends to provide support."* **A school librarian explained why she offers before and after school hours**:

"Students do not have 'free periods' in their schedules so their access is limited to before and after school hours, and whether or not their teachers bring/send them to the library."

Another respondent observed,
"The library is open to classes all the time but to individual students only half the time."

Access to information resources

Access to information resources is basic to hands-on, personalized learning that aims to develop self-sufficient, confident information and technology users. The school library, where librarians and teachers collaborate, provides a unique learning environment to develop complex skills.

There are statistically significant inequities in access to library resources. More suburban school libraries have school library websites when compared to urban and rural schools. Additionally, urban and rural school libraries have significantly fewer print materials, e-book subscriptions, and alternative reading material (non-book materials such as magazines, graphic novels, and websites) in their collections than suburban school libraries. Significantly fewer urban and rural school libraries utilize interlibrary loan through the public library system as a way to supplement their collections. These findings are corroborated by the qualitative data (fig. 103) that indicates there is pressure for teachers to cover content-based curriculum and test preparation, squeezing out time during the school calendar for information literacy skills instruction and time for interest-based "free reading." Sub-sets of students, included but not limited to, special education, ELL, and METCO, and other sub-sets that have additional scheduling demands or would benefit from targeted outreach, experience a greater negative impact from the lack of access to information resources and instruction.

Table 4: Findings About Access to the Library Collection and Information Resources

Legislative Charge	Findings
(x) The extent to which electronic and digital materials are available for students to access. [Print materials are included in the data since they are access electronically through library catalogs and interlibrary loan systems]	**Fig. 23. Automated Circulation system in School Libraries.** 93.28% of respondents have automated circulation systems in their libraries to access print and digital collections. **Fig. 24. Comparison of School Libraries with Automated Circulations Systems by District Type.** A Chi-square analysis that found no significant difference among urban, rural, and suburban school libraries with regard to automated circulation systems. **Fig. 25. Electronic, Remote Access to School Library Catalogs.** 88.9% of respondents reported their school communities have electronic access to print and digital resources and help through the library website. **Fig. 26. Comparison of School Libraries' Access to Library Catalogs by District Types.** Findings show that despite the high percentage of school libraries with electronic, remote access to library

catalogs, urban and rural school libraries have significantly less remote access to their library catalogs than suburban school libraries. Most suburban school library users can access the library catalog and library resources 24/7 while most urban and rural library users cannot.

Fig. 27. Cataloged Print Materials. 47.1% of school libraries have 10,001 to 20,000 books and almost one-third [30.9% of libraries] report between 5,001 and 10,000 books. Combining these numbers we can determine that 78% of school libraries have catalogued print collections that range from 5,000 to 20,000 items.

Fig. 28. Comparison of Print Collections by District Types. A statistical analysis of the size of print collections across district types shows no significant difference in the number of cataloged materials in urban, rural, and suburban districts. It is likely that suburban districts are decreasing their print collections as they acquire e-books, e-reference materials, and e-journals.

Fig. 29. Added Print Materials to School Library Collections. 73.3% of respondents added 400 materials or fewer print materials to their collections for one school year. This chart shows an uneven distribution of added materials to the library collections.

Fig. 30. Comparison of School Libraries' Added Materials. Anova test showed no significant difference in the number of print materials added to school libraries in urban, rural, and suburban districts. Given the overall low rate of added materials for replacement and new books, this finding is interpreted as the lack of significant difference shows a low acquisition rate across school libraries regardless of district type.

Fig. 34. Comparison of Alternative Reading Materials by District Types. An ANOVA test showed a statistically significant difference between urban and rural districts with regard to the number of alternative reading materials [newspapers, low level reading materials, magazines, graphic novels, easy reading adapted from age appropriate sources, and new digital genres such as fan fiction]. Another test showed urban school libraries have significantly fewer alternative reading materials than rural libraries. These materials are critical for developing reading comprehension through sustained and focused reading.

Fig. 36. Interlibrary Loan. Over two-thirds [67.9%] of school libraries do not participate in interlibrary loan.

Fig. 37. Comparison of Interlibrary Loan by District Types shows there were no significant differences in interlibrary loan among urban, rural, and suburban school libraries. Given the low participation rate in Interlibrary Loan, that participation is low regardless of district type.

Fig. 38. Interlibrary Loan Operations. When asked the means by which their interlibrary loan systems operated 69.1% of respondents chose "not applicable."

Fig. 39. Interlibrary Loan Materials shows that when asked the approximate number of materials that their libraries obtained through interlibrary loan during 2014-2015 57.2% of respondents said they do not take advantage of interlibrary loan services.

Fig. 31. Access to E-Books. Respondents approximated the number of e-books available in their libraries through subscriptions. Fig. 31 shows that almost 39.7% of school libraries do not subscribe to e-books.

Fig. 32. Comparison of School Libraries' Access to E-Books An Anova test shows there are no significant differences among urban, rural, and suburban school libraries with regard to the number of e-book subscriptions. Given the slow adoption of e-books this finding is interpreted as a low rate of e-book adoption across district types.

Fig. 40. DVDs in Library Collections. 31.3% of school libraries have zero to 10 DVDs and 21.7% of libraries have 101 or more DVDs.

Fig. 41 Comparison of DVD Collections by District Types shows no significant difference in the size of library DVD collections among urban, rural, and suburban school libraries.

Fig. 42. Videocassettes in Library Collections shows more than half of school libraries [51.6%] have zero to ten videocassettes and 16.1% have 100 or more.

Fig. 43. Comparison of Videocassette Collections by District Types shows there are no significant differences in the number of videocassettes among urban, rural, suburban school libraries.

Fig. 44. CDs in Library Collections shows that 57.6 % of school libraries have zero to ten CDs.

Fig. 48. Digital Video Streaming shows almost one-third of school libraries [30.5%] have digital video streaming and 68.1% do not.

Fig. 49. Comparison of Video Streaming by District Types shows that statistically significant fewer rural school libraries have statistically less access to paid subscription video streaming service than suburban and urban libraries.

Fig. 45. Audiocassettes in Library Collections shows that almost three-quarters [73.5%] of school libraries have zero to ten audiocassettes while small numbers of libraries have larger collections.

Fig. 46. Comparison of Audiocassettes by District Types shows that statistical analysis of audiocassette holdings among urban, rural, and suburban school libraries shows no significant differences.

Fig. 49. Video Streaming

Analyses across analog devices and digital video streaming strongly indicates that urban and suburban school libraries reporting small analog collections are weeding these outdated technologies out of their collections while rural libraries with larger analog collections are retaining these collections because they do not have the capacity to adopt video-streaming subscriptions.

Table 5: How Can Access to the Library Collection and Information Resources be Improved to Develop School Library Programs?

Legislative Charge	Findings
(i) How school library programs can be further developed to ensure that the programs reflect changing technology and best serve the students with regard to access to print and digital information resources	Generating a formula for the size of the library collection that calibrates the size of the library collection to student population and grade level could ensure equitable access to print and digital materials. The focus for establishing equitable access to information sources is on digital access through an automated library catalog and a library website. These measures are particularly urgent for school libraries in rural districts. Alternative reading materials for struggling and reluctant readers are needed, particularly in urban districts. E-books can alleviate the inequitable sizes of collections and access to up-to-date materials. Slow adoptions makes important for all district types. Interlibrary Loan is a strategy for shared resources that can cut costs and promote equity. Slow adoption indicates the need for leadership and guidance through professional development for school librarians. An analysis of analog AV materials shows a strong trend that 31-73% of libraries have 0-10 of these items in their collections. They are replaced by digital access, particularly video streaming. Rural areas are in the most need for adequate bandwidth and technology infrastructure to support video streaming.

Access to Information Technology

Access to information technology is critical to developing the skills to access information, which is the raw material for knowledge construction in print and digital environments. Literacy support in multi-modal reading and media develops comprehension as well as students' skills to select relevant information, evaluate information, and apply information to build and express new knowledge in a variety of formats.

Significantly fewer urban and rural schools report having adequate bandwidth than suburban schools, limiting the ability of the school library to support current demands of technology, simultaneous access to the Internet, instruction, and curriculum requirements. Significantly fewer urban school libraries have access to the internet than suburban school libraries. The qualitative data (fig. 104) corroborates outdated technology as a barrier to equitable access to information skills and digital content.

Table 6: Capacity of Bandwidth to Support Instruction

Legislative Charge	Findings
(x) The extent to which electronic and digital materials are available for students to access [Access includes internet and hardware access.]	**Fig. 50. Capacity of Bandwidth to Support Instruction:** Almost two-thirds [64.5%] of school librarians report that bandwidth is adequate to support instruction in their libraries. One-third [33.6%] of librarians report they do not have adequate bandwidth to support instruction. As streaming video replaces analog audio-visual equipment it is imperative that schools are furnished with enough bandwidth to take full advantage of the investment schools are making in digital devices and software. **Fig. 51. Comparison of Bandwidth by District Types:** Analysis shows significantly fewer urban school libraries have adequate bandwidth to support

instruction compared with suburban school libraries.

Fig. 52. Access to the Internet. Almost 60% of respondents reported 81-100% student access to the internet.

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Fig. 53. Comparison of Internet Access by District Types. Analysis shows significantly fewer urban school libraries have access to the internet than suburban school libraries.

Fig. 59. Comparison of Access to the Information Technology by District Types. Analysis shows significantly fewer urban school libraries with access to information technology compared with suburban school libraries. There are no significant differences between rural and suburban school libraries and rural and suburban school libraries.

Fig. 54. Computers Connected to the Internet. 82.7% of respondents reported 100% of computers in their libraries were connected to the Internet.

Fig. 53. Comparison of Computers Connected to the Internet by District Type. Only 24.2% of respondents reported that there were 41 or more computers in their libraries available for student use. 24.2% reported 21-30 computers connected to the Internet. These numbers indicate that while the internet is available in their libraries, internet access is inhibited by inadequate numbers of computers. The implication is that electronic resources are underused.

Fig. 56. One Child, One Computer Policy. Only 16.3% of respondents reported this policy is implemented; 10.4% are planning to implement the policy. However 72.4% reported they do not have or plan to have the policy.

Fig. 57. Comparison of One Child, One Computer Policy by District Type. Statistical analyses showed there is no significant difference among urban, rural, and suburban districts with regard to the One Child, One Computer Policy. There is a low rate of adoption statewide.

Table 7: Access to Information Technology Materials [Software Tools]

Legislative Charge	Findings
x) The extent to which electronic and digital materials are available for students to access [Access includes software tools]	**Fig. 58. Internet Access to IT Tools.** Types of IT software reported included research and information resources, research organizers, presentations software, production tools, and communication tools. 95.2% of respondents reported student access to software tools. These included: Word, PPT and Excel. 74.1% reported wireless access and email access. Only 15-20% repotted access to content creation tools [e.g., Dreamweaver, social media, and an intranet]. 33% reported access to digital graphic organizers [note taking tool]. **Fig 59. Comparison of Access to IT Tools.** Significantly fewer urban school libraries have access to IT software tools compared with suburban schools. Respondents reported a need for more adaptive technology to meet the needs of special needs students and struggling readers.

Table 8: Library or Technology Director for School Libraries

Legislative Charge	Findings

x) The extent to which electronic and digital materials are available for students to access thorough a Library or Technology Director [Access includes software tools]	**Fig. 63. Library or Technology Director.** 43.7% of respondents reported that this position exists in their district. 39% reported it never existed; 15% reported it existed but was eliminated. **Fig. 64. Comparison of Library or Technology Director Position by District Types.** Significantly fewer urban and rural school libraries have a library or technology director than suburban school libraries. This indicates a lack of leadership for school libraries in these district types where technology resources and services are generally poorer. **Fig. 65: Technology Hardware Responsibility.** 60.7% of respondents reported they sometimes have responsibility for IT hardware; 25.8% reported they never have this responsibility. **Fig. 66. Time Spent on Technology Support in the School Library.** 26.8% reported one hour per week; 26.5% reported 1-3 hours per week; 8.8% reported 3 hours per week; 6.7% reported 3 or more hours per week. **Fig. 67. Time Spent on Technology Outside the Library.** 42.2% reported no hours spent; 38.2% reported one hour spent weekly; 12.7% reported one to two hours; 6.3% reported three or more hours. More than half of school librarians are spending time on technology outside of their school libraries on a weekly basis, reducing the amount of instructional time they can offer. **Fig. 68. Response Time for Technology Support.** 17.1% report support within two hours; 26.3% report support within one day; 13.4% report support response within two to three days; 12.1% report support within four days or more. Improvement in response time would result in an increase in instructional time for school librarians.

Access to Funding and Subsidized Resources

There are two dimensions of funding for school libraries. The first is the allocated budget, which is building or district based. The second is access to subsidized, electronic state-funded resources such as e-books, electronic journals and magazines, and e-reference materials such as electronic encyclopedias, which are critical as information moves from print to digital formats. This access is dependent upon technological infrastructure and networking, sufficient electronic equipment and devices, as well as professional librarians who provide instructional support to students and professional support to educators. The qualitative data (fig. 104) corroborates that lack of funding, or diminished funding, is a barrier to ongoing collection development and technology updates.

Table 9: Total Budget Allocation

Legislative Charge	Findings
(xi) Current funding per student for school library materials and services.	**Fig. 69. Total Budget Allocations** shows there is little consistence and a lot of inequity in budget allocations. The largest sector of school libraries reported a budget of $1,001 to $6,000. 10.6% of school libraries receive no funding while 13.8% receive over $10,000 per year. 57.5% of Massachusetts' school libraries have a budget of less than $10,000. This means that after operating expenses such as material replacement and updating, book processing costs, and added materials, most school libraries struggle to provide and maintain basic information technology such as an automated circulation and cataloging system, IT software and hardware, electronic journals [databases] and e-books. With

adequate funding information technology could become the means, rather than a barrier for providing equitable access to information and technology.

Fig. 70. Comparison of Budgetary Allocation by District Types. There was a statistically significant difference in school library budgets among urban, rural, and suburban districts. Urban school libraries have significantly lower budgets than rural and suburban school libraries.

Fig. 71. Library Materials Purchased with Allocated Budget. Data show that 84% of school librarians use their funding for trade and library books and 78.5% use funds to purchase supplies to process and circulation books. Almost 45% of librarians also use funding to purchase e-books and electronic materials. Similarly, funding for periodicals [56.6%] and newspapers [19.9%] as well as subscription databases, which contain electronic periodicals [40.7%] indicates that school librarians are maintaining their print and digital collections. Similarly, librarians purchase analog devices and software as well as their digital counterparts. In addition, It seems some of these expenditures, such as library furnishings and shelving, could be capital rather than operating expenditures. There does not seem to be a consistent, universal way of funding and budgeting school libraries across the Commonwealth. Some schools use building based budgeting; some depend on district allocations; and others have no provision for funding from city/town, district, or school funding agencies.

Fig. 82. Other Sources of Funding shows school libraries rely on supplementary sources of funding [fig. 82], particularly subsidized sources [57.4%] and donations [56.1%]. Almost half of libraries [46.6] supplement their funding through book fairs. Only 36.9% of respondents depend on grants. Bake sales [11.7%] and other fundraising events, and librarians' personal funds, and other budgets [11.7%] are reported by 11.7% of respondents.

Access to subsidized information resources is more critical than is generally acknowledged by school administrators and school librarians because these resources are potentially available to all schools at no additional cost to school budgets. Access to electronic collections is important for several reasons. These databases aggregate information sources such as newspapers, journals and magazines, reference books such as general encyclopedias and specialized references in the humanities and sciences. They provide a larger, more diverse, and affordable collection than is possible in print media. E-collections also overcome obstacles of availability. For example, it is difficult for school librarians to subscribe to the *Boston Globe* since their accounting procedures are not compatible with Boston Public Schools. Since the information in these databases is not restricted to a physical library, but can be accessed electronically through the school library's website on a 24-7 basis. Electronic collections are a key ingredient to maximizing universal access to information. The qualitative data (fig. 104) corroborates these findings and in addition to lack of or diminished funding, reveals that in some schools the library budget is set at the discretion of the principal, or there is no line item for the library in the annual budget. The tenuous nature of budgeting is a clear and persistent barrier to equitable access to library materials and instruction. School librarians expressed gratitude (fig. 106) for subsidized access to electronic databases through the services of the Massachusetts Library System, a non-profit library system subsidized by the Massachusetts Board of Library Commissioners. Is subsidized the right word?

Table 10: Access to Electronic Resources

Legislative Charge **Findings**

x) The extent to which electronic and digital materials are available for students to access through subsidized electronic resources.

Fig. 72. Cost of Electronic Databases. Respondents reported how much they spend on electronic collections for their libraries [fig. 71]. More than half of school librarians responded that the cost of electronic collections was not applicable to them. This is probably because they take advantage of subsidized resources. However, this finding raises the question, why aren't al school libraries building their digital collections? It may be the case that Information Technology pays database fees, or that libraries are subscribed to state-funded subscriptions to electronic databases. On the other hand, some respondents may not have the electronic infrastructure to make adequate use of the databases.

Fig. 80. Locally Funded Electronic Collections shows that 45.7% of respondents purchase no electronic collections with their library budgets. 36.3% purchase one to four electronic collections.

Fig. 81. Comparison of Locally Funded Electronic Collections by District Types shows that there are no significant differences between urban and suburban school libraries and between rural and suburban libraries with regard to their purchasing of electronic collections with local funds. This indicates that across district types it is generally the case that almost half of school libraries do use locally-funded electronic collections [fig.80].

Fig. 73. State-Funded Electronic Content Collections shows which databases respondents who subscribe to electronic databases choose for their libraries. About 75.2% of respondents subscribe to Gale Cengage, 73.3% subscribe to Encyclopedia Britannica sources and almost half [49.7%] subscribe to the Boston Globe in the Pro Quest database.

Fig. 74. Use of State-Funded Electronic Resources in Curriculum reports a total of 32.2% responded "No" and "Not sure" that electronic resources were used in the school's curriculum while 65.8% report that they do electronic resources are used to support curriculum. These responses reflect a missed opportunity to realize the potential of electronic resources for equitable access in schools.

Fig. 75. Comparison of State-Funded Electronic Resources by District Types. Statistical analysis shows significantly fewer rural libraries regularly use state-funded electronic resources in the curriculum than suburban libraries. It is not clear that rural school libraries have a low rate of access, or that they have access but not use the databases to support school curriculum and instruction.

Fig. 76. Membership in Massachusetts Library System by District Types shows responses 81% of respondents reported that their school libraries have membership in MLS, which gives them access to databases at no cost. If they have a strategic plan these libraries can also apply for federally funded grants through the Massachusetts Board of Library Commissioners. State-funded databases are funded by the Massachusetts Board of Library Commissioners, and are most often used by urban and suburban school libraries.

Fig. 77. Comparison of Membership in Massachusetts Library System by District Types. While there was not a significant difference between urban and suburban, possibly because respondents from urban districts responded "not sure" or "not applicable', there was a significant difference in memberships in the MA Library system between rural and suburban school libraries.

Fig. 78. Participation in the Commonwealth E-Book Collection shows that 71% of respondents reported that they did not participate in the Commonwealth e-Book Collection [fig. 7]. The Commonwealth eBook Collections

program was created to better serve, educate, and inform the patrons of Massachusetts Libraries who use this catalog to search for eBooks and more from partner vendors..

Fig. 79. Comparison of Participation in the Commonwealth E-Book Collection by District Types shows statistically more rural school libraries participate in the Commonwealth e-book collection than suburban libraries. Statistically fewer urban school libraries participate in the Commonwealth e-book collection than rural libraries.

Table 11: Subsidized Electronic Sources

Legislative Charge	Findings
x) The extent to which electronic and digital materials are available for students to access thorough subsidized sources	**Fig. 80. Subsidized Electronic Sources** shows that 45.7% of respondents purchase no electronic collections with their library budgets. 36.3% purchased one to four electronic collections. This is a missed opportunity to level the playing field for students since these collections could be accessed through the school library website. **Fig. 81. Comparison of Membership in Massachusetts Library System by District Types.** While there was not a significant difference between urban and suburban, possibly because respondents from urban districts and responded "not sure" or "not applicable', there was a significant difference in memberships in the Massachusetts Library system between rural and suburban school libraries.

Access to Library Instruction and Help

Access to library instruction and help ensures that a hybrid print and electronic library collection is well used to promote 21st century teaching and learning. Without adequate time-on-task and professional librarians who collaborate with teachers to deliver information and technology education, access is denied to the Commonwealth's students and educators.

Indicators of Time Spent on Instruction

The majority of school librarians teach at the elementary school level on a fixed schedule, limiting opportunities for collaborative lesson planning and curriculum development, but expanding opportunities for school librarian contact with students on a weekly basis. The qualitative data (fig. 103 in the full report) revealed additional barriers to access to instruction such as student schedules without free time to access the school library resources during the day, exacerbated when the library was closed before/after school due to lack of funding although a number of respondents reported that they tried to provide before/after school coverage on their own time, without compensation. The lack of support staff (fig. 103) was revealed as a barrier to the school librarian being able to participate in collaborative planning. **Support staff who manage the clerical aspects of the school library program make it possible for the school librarian to plan collaborative lessons with classroom teachers and other instructional activities.**

Table 12. Summary of Indicators of Time Spent on Instruction

Legislative Charge	Findings

(vii) How many hours each week school librarians provide direct library-related instruction to students.	**Indicators of Time Spent on Instruction** **Staffing** **Fig. 83. Number of Schools in Which School Librarians Deliver Instruction** shows less than 10% of schools provide instruction to two schools. One percent or less of school librarians deliver instruction to more than two schools. 88.3% of respondents report that they deliver instruction to one school. **Fig. 84. Number of Staff Managed by Multi-School Librarians** shows school librarians assigned to more than one school manage from zero to more than six staff. 6.1% of respondents have no staff and a total of 4.6 respondents have one to four staff. **Fig. 97. Non-instructional Activities of School Librarians** shows respondents who were assigned to more than one school indicated the total number of librarians and paraprofessionals they manage. School librarians assigned to more than one school manage from zero to more than six staff [fig. 83 in full report]. 6.1% of respondents have no staff and a total of 4.6 respondents have one to four staff. Additional staff includes paraprofessionals, volunteer students, and parents. **Fig. 98. Assignment of Non-Instructional Task**s shows that school librarians perform more than half [63.1%] of non-instructional tasks in the library. 20.2% reported that their aides perform these tasks and 13.6% rely on others, e.g., parent and student volunteers. **Fig. 99. Assigned Duties** shows that only 33.4% of respondents report they never have additional assigned duties, such as bus, cafeteria, or study hall duties, outside of the library. Almost the same number reported they have these duties on a daily basis. 18.2% are assigned duties outside their assigned duties. **Fig. 100. Time Spent on Extra-Curricular Activities** shows approximately how many hours per week they spent, if any, supervising student extra curricular activities [fig. 99]. Almost half [49.3%] do not spend any time on these activities while about one-third [35.7%] spend one to two hours per week. **Fig. 101. Time Spent on Faculty Committees** shows over 31% of librarians do not spend time on faculty committees, while over 33% spend one to four or more hours per week on committee work. Over one-quarter of those committees are academic or curricular, such as Supervision and Evaluation Committee; Teaching and Learning Committee; Literacy Committee; Technology Committee; Senior Internship Advisory; Reader Leader; Instructional Leadership Committee; Elementary Steering Committees for Science, Social Studies; School Library Activities Committee; Health Committee; Reading Incentive Committee; Specialist Cluster Committee. **Fig. 102. Students with Regular and Consistent Access to School Library Programs and Services shows** only 64.3% of respondents reported that 81 to 100% of students have regular and consistent access to school library programs [fig. 102]. Almost one-third claim that one to 80% of students have consistent access. **Who is Being Taught?** **Fig. 85. School Levels Least Taught by School Librarians.** Fig. 85 shows that almost half [44.2%] of respondents work on the elementary level, yet they teach classes on a fixed schedule almost every hour of the school day. Since a fixed schedule does not easily support collaborative, sustained information and inquiry learning, lessons are isolated from academic content. Middle [32.3%] and high school

[36.7%] librarians have more collaborative opportunities when they operate on flexible schedules.

Fig. 87. Classes Taught Weekly shows 27.6% of respondents teach less than five classes weekly; 22.6% teach five to ten classes weekly; 12.1% teach 11 to 15 classes; and 12.7% teach 16 to 20 classes. The portion of respondents who teach 21 to 25 [13.6%] and more than 25 classes [10.2%] are most likely to be school librarians in elementary schools.

Fig. 88: Grade Level[s] Taught show that all grade levels for which they provide instruction. It is evident that young children, pre-kindergarten, kindergarten, and first grade do not receive reading readiness instruction from school librarians. Grades two through five receive more instruction time than other grades but, as noted in other parts of this report, their instruction is not integrated with academic content, nor do the librarians teach collaboratively with classroom teachers.

Fig. 94. Title I Students shows that 51.6 respondents have zero to ten Title I students; 19.9% have 21 to 40; 10.2% have 41 to 60; only 5% have 61 to 80; and 10% have 81 to 100. While these numbers vary greatly, there are schools that have enough Title I students to warrant specialized programming that would provide small group and individual instruction in information literacy, readers' advisory for the purpose of reading improvement, digital literacy, and inquiry learning support.

What is being taught?

Fig. 96. Library Instruction Ranked by Type shows how school librarians ranked types of instruction. A four-way tie ranked collaborative teaching, information skills, reading improvement for print literacy, and reading motivation for print literacy as the number 1. Other types of instruction were rated 2-7: Inquiry learning skills [2], critical thinking skills [3], digital citizenship [4], technology skills [5], reading improvement [6] and library skills [7].

Fig. 89. Does Your Library Have a Website? Respondents indicated whether or not their school libraries have a library website that is a portal to 24/7 access to resources and help from the school librarian. Fig. 89 shows that 84.6% of respondents said their libraries had websites while 14.8% said they did not.

F**ig. 91. Instructional Support on Library Websites** shows respondents who provide and maintain school library websites indicated whether or not those sites contained instructional support and/or tutorials about information searching and use.

Fig. 90 shows that 53.6% of respondents offer instructional support on their library websites and 30.5% do not, with 15.9% reporting "not applicable."

Fig. 92. Types of Support on Library Websites shows almost half [41.7%] of school librarians with websites for their libraries provide research guides and pathfinders to support student information searching and researching. 35.5% provide tutorials on citation [31.1%], database searching [31.1%], and internet searching [18.2%]. 19.4% of school librarians provide instruction in digital citizenship on their websites.

Fig. 93. Comparison of School Libraries with Instruction on their Websites by District Types shows significantly fewer urban schools that have library websites offer instruction/tutorials on their sites compared with suburban schools.

Recommendations and Long-Range Plan. In order to achieve equitable access to strong library programs across the Commonwealth the Special School Library Commission approved the following recommendations, or goals. Please see the full report for the actions or objectives that constitute a long-range-plan described in a Logic Model that includes a description of how the recommendations can be attained through specific actions, who is responsible for the actions, a timeline that establishes when the actions are completed within a three-year plan, and a rationale for why the actions are needed supported by relevant data from the school library study. Please see the full report for details of the plan. The recommendations are listed below.

Recommendation 1.0. Improve Access to School Libraries and School Librarians

Recommendation 1A. Every public school in the Commonwealth of Massachusetts has a school library and a certified school librarian.

Recommendation 1B. Establish the position and responsibilities of the School Library Curriculum Specialist at the Department of Elementary and Secondary Education.

Recommendation 1C. Support a culture of inquiry in schools that sustains inquiry and resource-based learning, collaborative teaching, and the integration of digital technology to improve access for all students.

Recommendation 2.0. Improve Access to Information Resources in School Libraries

Recommendation 2A. Increase access to print resources in school libraries.

Recommendation 2B. Increase access to electronic resources in school libraries.

Recommendation 3.0. Improve Access to Information Technology

Recommendation 3A. Improve access to internet and digital devices in school libraries.

Recommendation 3B. Increase access to Information Technology through staffing.

Recommendation 4.0. Improve Access to Library Instruction and Help

Recommendation 4A. Promote best instructional practices in the school library.

Recommendation 5.0. Establish Guidelines

Guidelines for Budget Allocation and Expenditure to Support Recommendations 1.0, 2.0, 3.0, and 4.0.

The Commission looks forward to the adoption of these recommendations by the Legislature to ensure that every student in our public schools has access to an effective school library program.

Respectfully submitted,

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The Research Report

Section 1. The Status of School Libraries in Research and Practice

"If we want a progressive nation, it is necessary that we educate the mass of people to a higher level of thought." Horace Mann

The beginning of school library research. Prior to 1837 libraries in Massachusetts were few in number and their book collections were small. In that year the legislature that created the State Board of Education authorized school districts to use self-imposed taxes to purchase school "apparatus," or resources, and to establish "common-school libraries." The amount of the tax was capped at 30 dollars in the first year and 10 dollars in succeeding years. According to O'Connell [1934, 12] Horace Mann, Secretary to the Board of Education, endorsed this legislation: "The provision about [common-school] libraries might seem trifling, yet [Horace Mann] considered it as hardly second in importance to any passed since the act of 1647 which created the common schools of the state." In his first report as Secretary to the Board of Education Mann points out the deficiencies of school resources and the potential of school libraries as the remedy. Mann was disappointed that school districts did not take advantage of the 1837 law but he was able to sell the idea of the common-school library by administering a statewide survey. Data were collected from school committees in every town of the Commonwealth. The data documented the number of school libraries, the size and nature of the collection, and the number of people that had access to both. Horace Mann noted, "What strikes us with amazement, in looking at these facts, is the inequity with which the means of knowledge are spread over the surface of the State – a few deep, capacious reservoirs surrounded by broad wastes. It has long been a common remark that many persons read too much; but here we have proof, how many thousands read too little. For the poor man and the laboring man, the art of printing seems hardly yet to have been discovered. " [O'Connell, 1934, 19]

School library impact studies. As a result of Horace Mann's advocacy there is a strong school library tradition in the Commonwealth of Massachusetts and a keen awareness of the inequities of opportunity and access for the young people enrolled in public schools. In addition, Horace Mann's survey was the first study of school libraries, setting a precedent for recognizing the importance of collecting empirical evidence of the impact of school libraries on student learning. This idea became a national tradition when Mary Gaver conducted a study at Rutgers University. *Effectiveness of Centralized School Library Services in Elementary Schools* [1963] involved 271 schools in 13 states. The study compared the standardized test scores of students in classroom with libraries, schools with centralized libraries run by non-librarians, and centralized libraries managed by qualified librarians. Gaver found that students in schools with qualified librarians scored higher than students without centralized libraries run by qualified librarians. An extensive body of research has grown from Gaver's study as over 60 states have undertaken school library impact studies that show there is a positive correlation between student achievement on standardized tests and the provision of school library services by licensed school librarians. These studies have looked at the effects of various dimensions of school library programs such as: Access; budget, collaboration between school librarians and classroom teachers; learning environment, instruction and information literacy curriculum; learning and motivation; outreach and community; poverty; resources and collection development; staffing; technology; and library usage.

There is only one study that focuses on the status of school libraries in Massachusetts. In 2003 a study was conducted at Simmons College (Baughman, 2003). The study provided data demonstrating a correlation between strong school library programs and achievement on the MCAS test. There are no other empirical data focusing specifically on Massachusetts public schools published in recent years.

How do school libraries help students learn? Findings from the most recent school library impact study in Pennsylvania [2012] "… were consistent with more previous research that indicates students in schools with well-supported, resourced, and staffed school libraries achieve a higher level of academic success. Consistently, reading and writing scores were better for students who had a full time, licensed librarian than those who didn't. This study adds to the evidence that all K-12 students need quality school library programs with full-time licensed staff to achieve academically. These findings also suggest that staffing libraries with licensed librarians can help close achievement gaps among the most vulnerable learners. [Lance & Schwartz, 2012]

The Pennsylvania study also shows access to a physical school library and librarian throughout the school day, as well as before and after school, is equally important. More students with such ample access scored 'Advanced' on achievement tests. Staffing of school libraries with full-time, certified librarians is also significant in impacting student achievement. At successful schools, in addition to providing access to books, school librarians play a key role in teaching. As leaders and instructional partners who collaborate with teachers, librarians develop in their students a life-long love of reading, critical thinking skills and digital literacy that prepare students for the 21st century workplace, and competencies to meet the Common Core State Standards.

School library impact studies show that students in schools with certified librarians consistently score better on standardized achievement tests in reading, compared with students in schools without certified librarians [Gretes, 2013]. The school library research tradition explores the role of school libraries in providing access to reading. Access is a primary factor in raising student test scores in all aspects of literacy [Gretes, 2013] including digital literacies, particularly for economically disadvantaged students. Research shows that access is the primary factor that leads to raising student test scores in all aspects of literacy [Gretes, 2013]. Results of numerous studies show that, "Children of poverty perform poorly on reading tests because they have very little access to books at home and in their communities." At least one study indicates that students in most need – those attending schools with the highest concentration of students living in poverty - have access to the fewest school library resources. All aspects of literacy improve when children have access to books. If they have access to books, they read them, and they read them for longer periods of time. [Gretes, 2013] Students who were economically disadvantaged, Black, Hispanic, and students with disabilities benefitted proportionally more than students generally. Staffing libraries with licensed librarians can help close achievement gaps among the most vulnerable learners. [Lance & Schwartz, 2012] Educators' responses to survey questions, which were correlated to their schools' PSSA [Pennsylvania System of School Assessment] tests scores, indicated that what librarians teach addresses academic standards and impacts students' standardized test scores [Gretes, 2013]. In addition, digital resources and digital access to information enhance the importance of the school library. . "Around-the-clock access to a library's digital resources is critical to 21st century learners" [Gretes, 2013].

What is the status of school libraries today? School library research has grown to become a global phenomenon as the study of school libraries has spread from English-speaking countries around the world, including developing nations on every continent. A study conducted between 2000 and 2013 [Tuck & Holmes 2016] determined the status of school libraries in the United States and differences in student access to libraries in public schools, to librarians/media specialists, and to up-to-date library/media resources. These differences are shown across all 50 states and District of Columbia based on school/grade level, on school poverty level, on ethnic minority status, and on the type of community in which a school is located, i.e., urban, rural, and suburban. Tuck & Homes [2016] reported the following findings.

1] 90 percent of U.S. public schools have a library/media center. This number has increased 1.4 percentage points. However trends since 2007 the number of school libraries has dropped .05percent.

2] The largest percentage of schools with school libraries are in Oklahoma [+99.3 percentage points] and Maryland [+98.5 percentage points].

3] Since 2007 eight states have experienced a decline of more than five percentage points, with the largest declines in Alaska [-15.1%] and 3] Massachusetts [-13.3%].

4] Eight states increased percentages in schools with school libraries by five percentage points or more with the largest increases in South Dakota [+10.3 percentage points], Maryland [+8.3 percentage points], and Utah [+10.3 percentage points].

What are the differences in student access across socioeconomic levels? Tuck & Holmes [2016] found the following differences in student access across socioeconomic levels.

1] Since 2007 student poverty levels, based on students eligible for free or reduced lunch, has had little impact on school library openings and closings.

2] Substantially fewer schools [85%] with the highest level of student poverty i.e., 75% or more of students in poverty have school libraries compared to schools at other income levels.

3] Fewer inner city schools have school libraries [85.5%];

4] Since 2007 slight increases in the percentage of school libraries have been reported in schools across all community locations except inner cities where there has been a five percentage point loss.

5] Small town, rural, and suburban schools have all increased in percentages of school libraries [+2.2 percentage points, +2.1 percentage points, and +0.61 percentage points.

The numbers of school librarians and support staff have risen and fallen but the ratio of staff per school and per student have generally fallen because of increases in the student population. In that time school library staffing ratios have been in continuous decline especially after the American Recovery and Reinvestment Act funds were depleted in 2011. In the past ten years school libraries have shown the largest increase in total of number of school librarians [full and part time] and the poorest schools have shown the largest increase with at least one full-time staff licensed school librarian. However, proportionally they still fall short of other school libraries in their ratio of school librarians to students. [Tuck & Holmes, 2016]

Most school libraries have been modernized to include automated circulation and cataloging systems but few have been upgraded to ensure that systems are accessible by staff and students with disabilities. The average number of book titles held by school libraries has increased during the past decade but the size of the collections is smaller in higher grades. Since 2007 only secondary schools have showed a net decline in book titles. The increase in book titles in urban schools was substantially smaller than in other communities. Most public school libraries provide staff and students with access to a broad range of media resources and other portable technologies. However, fewer than half of school libraries provide students with access to laptops outside of school and even fewer of the poorest school libraries provide such access. Most public school libraries provide staff and students with computers, but the number of computers available increases with grade level and decreases substantially with student poverty levels. Most school libraries provide access to online databases but access outside of school differs substantially, with less access provided to students in rural areas.

Annual spending of all school libraries varies widely by state; schools at lower grade levels spend more than upper grade levels. However, the poorest schools spend more per student on school library resources than do all other schools [Tuck & Holmes, 2016].

The current status of school libraries in Massachusetts. Since 2007 there is no documentation of the number of school libraries and licensed school librarians and paraprofessional staff who work in those libraries, nor is there a record of the schools that have school libraries and district-wide information about school libraries. The most recent documentation found on the site of the Massachusetts Board of Library Commissioners [http://mblc.state.ma.us/advisory/statistic/school/] was the *Massachusetts School Library Media Center Report* [2007], which contained the results of a survey including, but not limited to statistics on library holdings, print and non-print, number of computers, total expenditures, weekly circulation statistics, licensed staffing, hours open, number of class visits [MBLC, 2007]. The lack of recent statistics on school libraries, such as the number of school libraries, certified school librarians, collection size, and budget allocations present a challenge to this study. The researchers constructed a strategy to overcome this limitation, which is discussed in Development and Implementation of the Research section of this report.

The Commission recognizes that the Legislature acknowledges the importance of studying the status of school libraries in Massachusetts. The objective of *The Massachusetts School Library Study: Equity and Access for Students in the Commonwealth* is not to determine the mean, or average statistics for school library staffing, resources, technology, and funding. Rather, the study aims to determine whether school libraries in urban, rural, and suburban districts have the capacity to equitably meet the needs of their respective school communities. This report contains recommendations of the Special School Library Commission, derived from the evidence and findings of the study that can lead to the provision of access and opportunity of school library services for all children of the Commonwealth.

Section 2. Development and Implementation of the Research

Purpose of the study. The Massachusetts Legislature [Bill S.1906] voted in 2014 to create a Special Commission on School Library Services to study school libraries in Massachusetts. Members of the Commission included representatives from professional organizations representing librarians and educators, members of the business community, as well as agencies overseeing library and educational services in Massachusetts. The Commission was charged with conducting a study to evaluate school library services and partnered with the Massachusetts School Library Association [MSLA]. The Massachusetts Department of Elementary and Secondary Education [DESE] and the Center for International Scholarship in School Libraries [CISSL] at Rutgers University provided support to develop and administer a survey and analyze responses.

The charge of the commission is as follows:

"The special commission shall study the public school library programs in the Commonwealth. In its investigation and study, the commission shall include, but not be limited to determining:

(i.) How school library programs can be further developed to ensure that the programs reflect changing technology and best serve the students;

(ii.) How many schools in each district have a school library and a licensed school librarian and in how many schools is the librarian a full-time position;

(iii.) The ratio of students per licensed school librarian;

(iv.) What other library support staff work in the school library program;

(v.) How many employees are scheduled to work in school libraries;

(vi.) How many hours school libraries are open each week for students and faculty to use the library;

(vii.) How many hours each week school librarians provide direct library-related instruction to students;

(viii.); The number of computers in school libraries for students to access;

(ix.) The size and age of the collection in each school library and the extent to which electronic and digital materials are available for students to access;

(x.) The extent to which electronic and digital materials are available for students to access remotely;

(xi.) Current funding [per student] for school library materials and services. [The 189th General Court of the Commonwealth of Massachusetts, 2014] The charge of the Commission [Section 236] can be found in its entirely in Appendix A.

The objective of *The Massachusetts School Library Study: Equity and Access for Students in the Commonwealth* is to gather the data related to the Legislature's charge to address the question of how school libraries can be improved, particularly through technology, to deliver equitable school library resources and services to all children in the Commonwealth. The study aims to determine whether school libraries have the capacity to equitably meet the needs of their respective school communities. This report also contains recommendations of the Special

School Library Commission that derived from the data and findings of this study that can lead to the provision of school library services for all children of the Commonwealth.

Key benefits to be derived from the study include:

1] The accumulation of data on the state level of how school library services and programs can be improved to provide equitable access to students and educators;

2] Confirmation for school libraries of their role in Massachusetts schools and the impact of school libraries on student achievement and life-long learning;

3] Identification of what school librarians do to contribute to their schools' missions;

4] Provision of sustainable measures for the continuous improvement of effective library services across Massachusetts;

5] Identification of professional development opportunities for school librarians, teachers, and principals;

6] Provision of a framework for dialogue among parents, communities, school boards, administrators, school librarians, and teachers on the value of effective school libraries;

7] Support for school librarians across Massachusetts to develop and implement evidence-based practices that demonstrate the value of school libraries;

8] Data that can inform policymakers and stakeholders of the needs and benefits of school libraries in educating our youth for living and working in the 21st century.

Research goals. The goal of the *Massachusetts School Library Study: Equity and Access for Students of the Commonwealth* is twofold:

1] To construct a picture of the status of Massachusetts' school libraries in terms of the eleven dimensions described in the Legislature's charge to the School Library Commission.

2] To determine equity of access for members of the school community across district types: Urban, rural, and suburban.

This report contains:

1] Quantitative descriptive statistics establish a baseline of the status of school libraries.

2] Inferential statistics determine significant differences in access among school libraries in urban, rural, and suburban district types.

3] Qualitative data describes the input of school librarians on barriers and enablers of students' access to school library resources and services.

4] Recommendations and long-range plans written by the Special Commission on School Library Services to address the Legislature's charge.

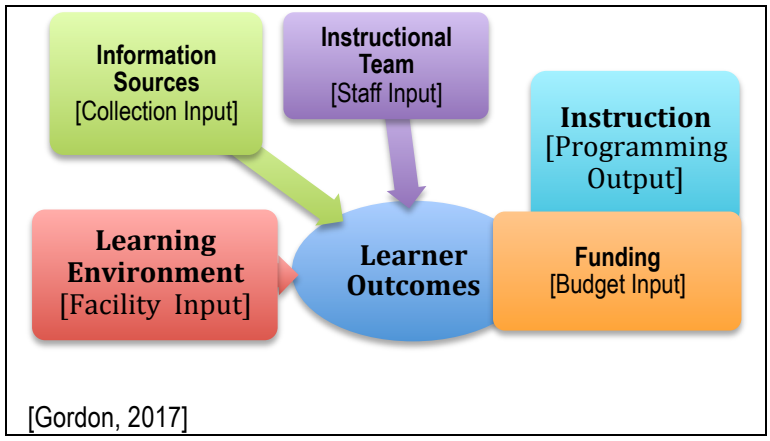
Equity is defined for the purpose of this study, as fair access. " … the interpretation of "fairness" [is] equal access and opportunity. Correspondingly, access to channels of communication and sources of information that is made available on even terms to all – a level playing field - is derived from the concept of fairness where everyone is entitled to the same level of access and can avail themselves if they so choose." [Kranich, 2001]

Measures of access, generated from measures of current status of school library resources and services, represent the extent to which resources and services are adequately or inadequately

operationalized to reach all members the Commonwealth's school communities. The study defines school community as students, faculty, administrators, and parents. The measures of access collected in this study inform the School Library Commission's recommendations and long-range plans for the delivery and implementation of essential and effective school library programs that ensure a 21st century education for all children of the Commonwealth.

Conceptual framework for the research. The conceptual framework of this study guides the analysis and interpretation of the data. *The Essential School Library* [fig. 1] is a learner-centric framework in which resources and services are operationalized [Gordon, 2017]. This model situates school librarians as teachers and professional developers who facilitate the use of library resources and services by the school community. Learning outcomes are central to every dimension of the library's infrastructure. The model accommodates a dynamic digital learning environment that requires the expertise of a teaching librarian who helps students, educators, and parents to navigate complex information and technology systems and to apply effective teaching methods that prepare youth to live and work in the digital age. This interpretation of the school library's mission generates a new lexicon for *The Essential School Library*.

Fig. 1: A New Lexicon for the Essential School Library



A *library facility* is a physical as well as virtual *learning environment.* The school library supports inquiry learning and competencies in the use of information and technology that develop reading and thinking skills, including digital literacy [e.g., digital ethics, safety, security, rights and responsibilities] and digital citizenship.

In this context, the learning environment supports student content creation through maker-spaces and virtual collaborative tools such as *Scratch,* a coding language, and *Google Hang-outs*. Learners connect with personal interests, create and share coded stories and animations, and "geek-out" as they gain competencies in media, visual, digital, critical, cultural, and multimedia literacies, guided by an information specialist who facilitates learning through small and large group instruction and personalized learning in collaboration with classroom teachers.

The *library collection* includes print and analog materials as well as equipment and licensing to include digital *information sources* that support school curricula and state standards. In 21st century libraries school librarians are curators of the collection as they select, create, purchase, and organize multimedia materials relevant to school curriculum and students' personal interests for easy retrieval and use. School librarians develop collections that support the

educational missions of their schools, including school curricula and state standards, and the particular needs and interests of their school communities.

Staffing includes professionals, para-professionals, and volunteers who comprise an *instructional team* that provides help, at the level appropriate to their expertise, to library users. This approach ensures the delivery of personalized learning at the point of need, particularly for teaching digital citizenship in everyday contexts. School librarians provide training and support for their instructional team to embrace new and emerging technologies, information sources, and teaching strategies. Classroom teachers are considered collaborative team partners who work with school librarians to teach through information and inquiry and to provide learners with the help they need to succeed. The expansion of the school librarian's professional development role to all members of the school community is seminal to promoting a culture of curiosity and confidence in using 21st century information and tools.

Allocated school library budgets are only part of the larger picture of *funding*. School librarians view *fund development* as a way to secure the resources they need to build the capacity of the school library to attain and sustain its vision and mission to educate children for the 21st century. Securement of resources depends on healthy and equitable allocated budget as well as external funding sources, including low cost, subsidized, and free resources that supplement fixed budgets as well as grants, awards, and donations. Most importantly, school librarians work to build influence on local, state, and national levels as they advocate for the resources needed to deliver information and services [Hartzell, 1994].

Such a conceptual framework focuses interpretation of the data through a learner-centric lens. The data inform recommendations and long-range planning designed to have equitable impact for all students.

Research questions. This study poses three questions.

1. What is the status of school libraries in the Commonwealth of Massachusetts with regard to access to staffing, the library facility, information resources, information technology, funding, and instruction and help?

Staffing includes the number of full-time or part-time licensed school librarians; the ratio of students per licensed school librarians; and support staff working in the school library program. The library facility includes: The number of hours that school libraries are open each week for student and faculty use; and the number of hours each week school librarians provide direct, library-related instructions to students. T

The collection includes the size and age of the collection in each school library and the extent to which electronic and digital material are available for students. Technology includes the number of available computers in school libraries and the extent to which electronic and digital materials are available for remote student access. Instruction includes formal teaching as well as personalized support for students and professional development for teachers.

Funding sources, including low cost, subsidized resources provided by vendors, the state, the communications industry, and the private sector. These data are analyzed for access to determine equity.

2. What are the barriers and enablers that school librarians encounter when they deliver library resources and instruction/help to their school communities?

3. How can school library programs can be further developed to ensure that the programs reflect changing technology?

The Special Commission on School Library Services worked with the Massachusetts Department of Elementary and Secondary Education [DESE], and the Center for International Scholarship in School Libraries [CISSL] at Rutgers University to design and conduct a study of the status of school libraries in Massachusetts.

Implementation of the study. The Special Commission on School Library Services engaged the help of two researchers, Dr. Carol Gordon, Ed. D and Dr. Robin Cicchetti, Ed. D to provide pro bono consultation and research support. Dr. Gordon, retired professor of education and library/information science, holds certification granted by the Institutional Review Board [IRB] of Rutgers The State University of New Jersey to conduct research with human subjects. Dr. Cicchetti is a practicing school librarian at Concord-Carlisle Regional High School. The curriculum vitae of the researchers can be found in Appendix B. Dr. Ross Todd, Director of the Center for International Scholarship in School Libraries [CISSL] at Rutgers University, sponsored the research application for Institutional Review Board approval of this study to ensure it met federal regulations. Dr. Todd also provided a doctoral student, Xiaofeng Li, a CISSL scholar, who used SPSS [Statistical Package for the Social Sciences] software to analyze quantifiable data.

The former Massachusetts Commissioner of Elementary and Secondary Education, Mitchell D. Chester, provided a letter of support for the IRB application [Appendix C] that documented the role of the Massachusetts Department of Elementary and Secondary Education [DESE] in reviewing and administering the survey using Survey Gizmo, informing school districts, coordinating the electronic distribution of the study, and generating Excel spreadsheets with the data from survey responses. In addition the DESE provided a liaison to serve on the Commission.

In the formative period input was sought from the Massachusetts School Library Association membership through a letter to the MSLA Board, inviting the individual submission of ideas, and through participation of two MSLA members on the Special Commission on School Library Services. The charge of the Legislature provided guidance for the development of the research goals and questions and the development of the survey instrument. The School Library Commission played a strong, central role in developing and administering the survey and creating recommendations from the findings. Meetings at the State House provided opportunities for sharing ideas on all aspects of the research.

The Commissioner of Elementary and Secondary Education sent an announcement of the study to school principals on March 30, 2015 [Appendix D]. The Commissioner included a description of the study in his weekly newsletter of April 1, 2015. Participants in the study received a letter of consent from Dr. Ross J. Todd, professor at Rutgers University, to participate in confidential data collection [Appendix E]. Participants were informed that participation in the study was voluntary and that they agree they could withdraw at any time during without penalty. They were advised they could choose not to answer any questions with which they were uncomfortable. Survey respondents were assigned a random code number and informed that their names would appear only on a list of subjects, and would not be linked to the code numbers that were assigned to them. Participants understood that the research team and the Institutional Review Board at Rutgers University would be the only parties that would be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional event, only group results would be stated. All study data will be kept for at least three years in a secure repository at Rutgers University.

Survey instrument and collection process. The survey instrument was designed to collect numerical and verbal data, using both categorical and open-ended questions. In order to develop a comprehensive and strong picture of school libraries in Massachusetts the data collection required a high level of participation by school librarians. The guarantee of confidentiality and treatment of responses were strategies used to encourage participation. No names or identifying characteristics would be identified in any reporting or documentation. Considerable support was pledged by school librarians in Massachusetts based on input collected by the Commission. In planning this approach to data collection it was considered essential that a high level of participation be reached in order for the data to be useful for planning, decision making, and continuous improvement by all stakeholders and to be viewed as a study with a strong level of external validity, or generalizability from sample to population.

The survey instrument [Appendix F] contains questions on the following: Part 1: Access to Qualified School Library Staff; Part 2: Part 3: Access to Instruction and Help; Part 4: Access to Information Technology; Part 5: Access to Funding; Part 6: Access to Information Resources; Part 7: Equitable Access to the School Library Program.

Data collection took place through an online survey instrument. The survey software used was *Survey Gizmo,* a standard, secure survey instrument development tool made available through the DESE, which uses this software for their surveys. *Survey Gizmo* can support large data sets and its flexibility allowed us to create a custom-designed survey with in-depth questions, bulk user registration, structures for data export analysis and cross-analysis, and graphical report options. DESE staff assured us that the data collection instrument and web-based process was stable, secure, and effective. In addition, DESE staff developed a downloadable version of the survey instrument for data analysis by the researchers.

The survey instrument underwent pilot testing by a team of 16 school librarians at Westborough High School on September 12, 2015. The school librarians who participated came from across the state and represented schools and students from pre-K to postgraduate years. Pilot test participants completed the survey for timing purposes and engaged in a rigorous analysis and feedback process to further refine the survey instrument. The pilot testing resulted in modifications to survey wording to enhance clarity and refinement of questions to ensure consistency of responses by survey participants. From the pilot study feedback it was estimated that the survey would take 30-35 minutes to complete. During the development and pilot testing period potential risks were discussed, particularly the lack of participation and inflation of input in order to present a positive picture of school libraries. The assurance of confidentiality and setting up a network of MSLA professionals to work with school districts to build participation were key mechanisms to reduce these risks.

The sample. In addition to pilot testing Dr. Gordon worked with Rutgers University to complete the necessary documentation for ethics clearance provided by the Institutional Review Board at Rutgers University. This approval was given through the Rutgers Office of Research and Sponsored Programs in August, 2015.

The study also received support from the Massachusetts Department of Elementary and Secondary Education, through the presiding Commissioner, Mitchell D. Chester, in a formal statement to school superintendents and principals notifying them of his support and encouraging them to engage school librarians in the data collection process. The School Library Commission enlisted all its members to contact their constituent groups to encourage school librarians to participate. Information about the study was provided repeatedly through the

Massachusetts School Library Association [MSLA] listserv and social media accounts. Phone calls were made by MSLA members to encourage colleagues to complete the survey.

Efforts were also taken to promote the survey by the Massachusetts Library Association [MLA] and the Massachusetts Teachers' Association [MTA]. In the absence of a school librarian, school administrators were encouraged to fill out the survey or delegate the task to an appropriate surrogate who had knowledge and/or experience with the school library. Prior to launching the survey extensive notification protocols took place with the help of the MSLA through list-servs, emails, and print announcements requesting participation in the study. In the initial rollout of the survey instrument participants were given one month to complete the survey.

On April 7, 2016 the Commissioner of Education sent a link to the online survey directly to principals in 351 towns and cities in Massachusetts and data collection commenced. The survey was open for four weeks with an intended closing date of April 30, 2016. However, the time was extended for two weeks and the survey was closed on May 14, 2016.

We believe that we have used a process that supports a representative sample because the sample source includes the whole population of schools in Massachusetts. Data collection procedures actively sought to reach the whole population without imposition of selection bias. The researchers minimized non-response bias through an active process of telephone, email, and person-to-person callbacks as permitted under the IRB ethics agreement. Following the close of data collection the data file were examined, cleaned, and prepared for conversion into SPAA [*Statistical Package for the Social Sciences*] to enable statistical analysis and qualitative analysis. The number of usable surveys was 521. A preliminary broad summary of data was presented to the School Library Commission on December 13, 2016.

At the close of data collection responses from 722 schools were received. It is recognized that the size of a sample is not a guarantee of its ability to accurately represent a target population. It is acknowledged that non-respondents tend to differ from respondents so their absence in the final sample makes it difficult to generalize the results to the overall target

School Types

Fig. 2. School Types

Public	94.6%
Private	3.1%
Public Charter	1.9%
N/A	.4%
Total	**100%**
n= 521	

A profile of respondents [fig. 2] shows that almost 95% work in public schools. Private and public charter schools were invited to participate but the data collected from those respondents are sparse.

Fig 3: District Types

Suburban	63.9%
Urban	24.8%
Rural	10.9%
N/A	.4%
Total	**100%**
	n= 521

Respondents self-selected the type of district in which their school libraries were located. The types of districts used for comparing school libraries with regard to the socioeconomic status of the communities-at-large are designated suburban, urban, and rural. 63.9% of respondents reported that they work in school libraries in suburban districts; 24.8% are in urban areas; and 10.9% are in rural schools [fig. 3].

The absence of current data and statistics on the status of school libraries in the Commonwealth of Massachusetts makes it difficult to establish whether the sample of respondents to the survey is sufficiently large enough to be a representative sample. The standard for samples size is usually set at 22% of the population. The researchers have constructed an argument that 521 respondents constitute a viable and representative sample for the population of school libraries in Massachusetts.

The most recent documentation found on the site of the Massachusetts Board of Library Commissioners [http://mblc.state.ma.us/advisory/statistics/school/] was the *Massachusetts School Library Media Center Report* [2007], which contained the results of a survey conducted in 2007. The number of school libraries responding was 531, which is 43% of the **1,226 school** libraries in operation during that year. We know that there have been school library closings, so that the number of school libraries today must be less than 1,226. We can establish that a valid sample size is 269.7 school libraries of 1,226 school libraries IF we were doing this study in 2007. We also know that our population size of school libraries is not less than 722 since each response represented a unique school library. [In this case, 722 respondents would constitute a sample size of 100%.] If we assume there are only 722 libraries and calculate 22% of that population, we have a sample size of 73.9%.

The response rate to our survey was 722 school libraries, so we know that at least that number of libraries still exist because each responding school library submitted only one survey. After the data were cleaned to eliminate incomplete surveys the sample was reduced to 521 school libraries. We can now conclude that the range of the number of school libraries is more than 521 and less than 1,226.

When we calculate the percentage of the number of school library respondents [521] using 1,226 as the population of school libraries, we determine that the sample is 42% of that population. In fact, since we know there have been school library closings since 2007, the sample size, when calculated on less than 1,226, would be even larger. This tells us that a sample size of 521 not only meets the minimum for a valid sample; it is almost twice the required size.

We can claim that the size of our sample is somewhere between 23.5% and 73.9% based on our knowledge that our school library population size is between 722 libraries and 1,226. This establishes the external validity of the study so that we can generalize our statistical findings

from sample to population. It is important to school library research that our study meets this "gold standard" for empirical research.

Based on the survey data and the population size of 1,226 and a standard confidence level of 95%, the margin of error is calculated to be 3.2%. In other words, if we repeat the survey 100 times we would expect the answer to any question to vary 3.2% in 95 out of 100 times.

Statistically this means that our sample in the study does not differ from the true population by more than 3.2%. This tells us that the sample has a strong level of representativeness of the population.

Fig. 4 shows that the Massachusetts DESE reported 1,854 schools for the year the school library survey was administered for our study.

Fig. 4: Operating Schools, 2015-16 School Year

We know that at least 722 of these schools have school librarians or paraprofessionals who reported as of October 1, 2015. However we have no data on the number of school librarians or other library staff there are for 1,132 schools that did not respond to our survey.

Source: Massachusetts Department of Elementary and Secondary Education Data

Operating Schools: 2015-16 School Year*

Operating School Districts	407
Charter Schools	
Commonwealth	71
Horace Mann	10
Commonwealth Virtual School	2
Educational Collaboratives	26

Type of Public School	
Elementary	1,143
Middle/Junior High	315
Secondary	396
Total	1,854

The integrity of the research depends on whether the sample is representative of the population size of each district type. We can determine whether the number of school library respondents from urban, rural, and suburban districts is proportionate to the population size of each of those district types. Explanation how these statistics were determined is found below in fig. 5.

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The integrity of the research depends on whether the sample is representative of the population size of each district type. We can determine whether the number of school library respondents from urban, rural, and suburban districts is proportionate to the population size of each of those district types. Explanation how these statistics were determined is found below in fig 5.

Fig. 5: Comparison of Population and Sample Sizes of District Types

	1	2	3	4	5	6
District Types	**Population Size**	**Source/Criteria**	**Population %**	**Sample Size**	**Sample %**	**Population to Sample Differences**
Rural	525,640	Defined by 2010 US census	**8.0%**	57	**10.9%**	**2.9%**
Suburban	4,313,124	Defined as no more than 85,000	**65.9%**	333	**63.9%**	**2.0%**
Urban	1,708,865	Calculated by subtracting rural and suburban from total US census population	**26.1%**	129	**24.8%**	**1.3%**
Not Applicable	0	Survey	**0**	2	**.4%**	**.4%**
Total population	6,547,629	Defined by 2010 US census	**100%**	521	**100%**	**6.6%**

Columns 1 and 2: Population Size and Source Criteria

- The total population of Massachusetts is 6,547,629 as reported by the 2010 census
- The rural population is 525,640, as reported by 2010 US census;
- The suburban population was determined by adding populations of towns with no more than 85,000, resulting in an suburban population of 4,313,124;
- The urban population was determined by subtracting the suburban and rural populations from the population of Massachusetts. The result was an urban population of 1,708,865;
- "Not Applicable" represents the survey respondents who self-selected this response.

Column 3: Population Percentage

- Percentage of population that lives in each district calculated by dividing the actual population of each district type by the total population of Massachusetts.

Column 4: Sample Size

- The actual, self-reported number of respondents to the survey that work in school libraries in each district type;
  Column 5: Sample Percentage
- Percentage of sample in each district type was calculated by dividing the actual number of school librarians reporting in the survey by the total sample size of 521.

Column 6: Difference between Population Percentages and Sample Percentages

- Calculated by subtracting percentage of population [Columns 3] of each district and percentage of sample [Column 5] for each district type.

Calculations in fig. 5 show variation between population and sample percentages for each district type [Column 6] is no more than 2.9%. Based on these calculations we can conclude that the percentage of school librarians reporting in the survey for each district type compared with the percentage of the population of each district type does not vary more than 2.9%.

Section 3. Data Analysis and Findings

This section addresses Research Question One: What is the status of school libraries in the Commonwealth of Massachusetts with regard to access to: Staffing; library facility; information resources; information technology; funding; and instruction and help.

A. Access to Library Staff

School Library Staffing Positions

Fig. 6: Licensed and Non-Licensed School Librarian Positions

Licensed School Librarian	
School Librarian [Professional license]	63.5%
School Librarian [Initial license]	16.9%
Sub-Total Licensed	**80.4%**
Non-licensed Staff	
School Library Paraprofessional	11.7%
School Administrator	1.0%
Sub-Total Non-Licensed	**12.7%**
Other [...]*	**6.9%**
Total	**100%**
	n= 521

Respondents self-selected the response that best described their school library staffing. Fig. 6 shows that 80.4% of respondents are licensed school librarians holding professional [63.5%] or initial [16.9%] licenses with a ratio of about seven professional licenses to every one initial license.

Non-licensed staff performing professional tasks consists of school library paraprofessionals, or aides [11.7%] and school administrators [1%] for a total of 12.7% non-licensed school library staff.

The respondents' comments to this question showed that the "Other" category [6.5%] includes: Preliminary license [3]; Library Aide [2]; Library Assistant [2]; License in progress [2]; Public Librarian [1]; Parent volunteer [1]; Retired volunteer [1]. Three respondents reported that they held a license for Instructional Technology and one was a "Technology Specialist."

*Respondents chose to add alternative designations instead of choosing school librarian, paraprofessionals, or school administrators.

A Pearson Chi-square test was conducted to explore the relationship among urban and rural compared with the number of professional and non-professional school librarians in suburban schools. Results showed that there is not a significant difference in the number of professionals in urban, suburban, and rural schools [fig. 7].

Fig. 7: Comparison of School Librarians' Certification by District Types

Test	Results	Finding
Pearson's CHI-SQUARE	χ^2 (2)=0.995, p=0.608.	There were no statistically significant differences in number of professionally licensed school librarians among urban, rural, and suburban school libraries,
n= 521		

This finding determines that regardless of district type school libraries in urban, rural, and suburban districts have a similar distribution of professionally licensed and non-licensed personnel. This means that about 20 percent, or one in five school libraries in rural, urban, and suburban libraries do not have professionally licensed school librarians. As a result, students and faculty who are served by these libraries have diminished access to school library resources and services such as readers' advisory, collection curation, and instruction in information, media literacy, and digital literacies.

Ratio of Students to Library Staff

Fig. 8 shows the number of library staff [Column 1] that reported the number of students they serve [Column 2].

Fig. 8: Ratio of Students to Library Staff

No. of Library Staff	No. of Students
1	500
1	600
1	856
1	1100
1	1300
1	1400
1	1600
1	1700
1	1900
n=9	

The trend is that there is one school librarian per school regardless of the number of students. However, there were only nine respondents to this question. This is too small a sample to generalize to the population. Only nine respondents answered this question presumably because they did not know the answer or did not have the data to calculate a response.

Total FTE Support Staff

Respondents selected the response that indicated the total number of Full-time Equivalent [FTE] support staff employed in all of the school libraries in which they work, excluding themselves. For example if they had one support staff in one building who was half-time [-.05 FTE] and an additional support staff in another building who was full-time [-1.0 FTE] they reported a total of 1.5 FTE.

Fig. 9: Total FTE Support Staff

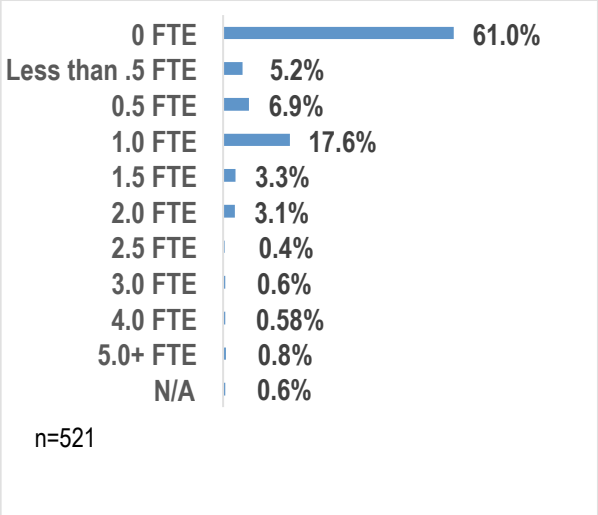


Fig. 9 shows that 61% of school libraries have no full-time equivalent support staff. The largest number of full time support employees who work in the school library is 1.0 [one full-time equivalent] staff member in only 17.6% of school libraries.

Fig. 10: Comparison of FTE Support Staff by District Types

Test	Result	Finding
Pearson's CHI-SQUARE	χ^2 (4) =3.40, p=0.494.	Urban and rural school libraries do not have significantly fewer FTE support staff than suburban school libraries.

Fig. 10 displays the results of a Chi-square analysis that determined urban and rural libraries do not have significantly fewer FTE support staff than suburban school libraries. There were no significant differences in the number of FTE support staff among urban, rural, and suburban libraries. This explains why school librarians report that they often perform non-professional tasks, such as checking out or shelving books, monitoring student attendance, or physically processing and preparing books for shelving and circulation. The lack of a significant difference among district types indicates that regardless of their district type school librarians face challenges in compensating for lack adequate support staff as they perform non-professional job functions at the expense of performing their instructional and professional development services for students and faculty, including curricular planning, development, and collaboration as well as collection development.

Length of Current Positions

Fig. 11 shows that 70.2% of respondents are in their current positions for less than a year to 10 years. In this group there are twice as many librarians with five years or less. This indicates a disproportionate number of school librarians are beginning their careers or are new to their schools.

Fig. 11: School Librarians' Length in Current Position

0-5 years	**Early Career [0-10]**	**70.2%**
6-10 years		47%8%
		22%4%
11-15 years	**Mid-Career [11-20]**	**24.8%**
16-20 years		15%0%
		9%8%
21-25 years	**Late Career [21-31]**	**4.6%**
26-30 years		2.5%
31+ years		1.2%
		.9%
NA		**.4%**

Only 24.8% of school librarians are mid-career, yet mid-career employees tend to be productive and innovative workers who sustain a high level of expertise as well as a high level of commitment and involvement in their jobs. [Hall, 2002] The high rate of retirement in recent years accounts for less than 4.6% of late career school librarians who have been in their current position for 21 to 31+ years. Retirees also account for the high number of early career librarians. The preponderance of early career librarians, indicates a workforce in need of extensive training and mentoring.

School Librarians Returning

Fig. 12: School Librarians Returning

Yes	84.3%
No	8.8%
Unsure	6.3%
Not Applicable	.6%
Total	**100%**
n= 521	

84.3% of respondents indicated they were returning to their current school library positions for the 2016-2017. [fig. 12]. A total of 15.9%. or 78 school librarians are either unsure or not returning. Respondents who were not returning or who were unsure totaled 15.15%, or 79 respondents. They selected the response that best reflected the primary reason they would not be returning to their current positions.

Fig. 13: Reasons for School Librarians Not Returning

Retiring	21.2%	**Retiring**	
		Sub-Total	**21.2%**
Uncertain fiscal climate in district threatens job stability	21.2%	**Job insecurity**	
School library position eliminated	12.9%		
		Sub-Total	**34%**
		Career-related	
Career change	7.1%		
Accepted another job	5.9%		
Resume education	1.2%		
		Sub-Total	**14.2%**
Other. Please specify	30.6%	**Other**	
		Sub-Total	**30.3%**
n= 521			

Fig. 13 displays reasons given by respondents who are not returning to their positions for the next school year.

Of the 78 school librarians not returning, 34% identified job insecurity, i.e., the uncertain fiscal climate and the elimination of their jobs. In addition, 14.2%% of school librarians who are not returning identified career-related reasons. This instability in the workforce disrupts the cumulative process of building strong school libraries staffed by experienced school librarians.

Comments written by respondents [30.6%] referred to the uncertainty of their library positions.

"Graduating with MLS and certification, [my] school does not have budget for licensed librarian so I am looking for a position elsewhere."

"I have not been given a contract to sign yet." [2]

"Recently licensed as school librarian, waiting on posting for school library position for FY16-17"

"Contract is not being renewed by administrator." [2]

"If there is an open position in district I will be returning."

"Unsure about position availability."

"Unsure of position due to it changes yearly."

"I am a first year teacher and a realist."

These comments indicate that the budgeting process and/or insufficient funding to sustain current levels of employment from one year to job insecurity for early career school librarians. Comments were collected in April-May of the school year, indicating that staffing decisions are still pending during those spring months.

B. Access to the School Library

Access to the physical school library by members of the school community was determined by: The library schedule; hours the library was opened and closed before and after school hours and during lunchtime; types of services offered outside of school hours; weekly access in hours; and reasons for lack of access to library space and services.

Library Schedule
Respondents selected one answer that best described their libraries' schedules. If they were answering for more than one school, they used the lowest grade level in the school where they worked most often.

It is usually the case that elementary grades are on a fixed schedule and high schools are on flexible scheduling. Middle schools offer one or the other, or modified fixed schedules. How classes are scheduled to visit the library determines how the librarian can shape educational experiences for students and collaborate with teachers. A fixed schedule allows for stand-alone lessons, i.e., information and media literacy skills are taught in an isolated manner, rather than integrated with academic content. Fixed schedules, typically in elementary grades, result in classes visiting the library one day a week for part of all of the school year. Classroom teachers do not accompany their students in the library since fixed scheduling is driven by a contractual obligation that teachers have daily preparation time. This eliminates the possibility of collaboration between librarian and classroom teachers to engage students in sustained information and inquiry based learning. Instead, the librarian teaches basic skills out of context, losing opportunities for students to apply information and technology skills to their content area learning. In addition, advanced skills, such as evaluating sources and creating artifacts or digital objects that represent their new academic knowledge are not usually addressed in elementary and middle school libraries that run on fixed schedules.

Flexible scheduling invites teachers to schedule time in the library for as many consecutive lessons as needed to engage their students in sustained inquiry and project-based learning as they work on class assignments or pursue their own research and reading interests. Flexible scheduling is arranged by the librarian in collaboration with teachers, while fixed scheduling takes place every day in most libraries. Open access is unscheduled time. It offers time and space in the library for individual students to use the library during school hours by obtaining a pass from their study hall or classroom teachers or by going to the library during lunchtime and before and after school.

Fig. 14 shows 29.8% of respondents have a fixed schedule. 12.1% have a modified fixed which students visit the library one time per week, for the most part. 24% of respondents reported that their library schedules are flexible with some open access. Librarians who provide open access are more likely to work in library environments that have flexible rather than fixed. A total of 25% of respondents reported some form of open access. 16.3% provide access anytime during the school day, including lunchtime and before and after school. 5.2% provide open access anytime during the school day and 3.5% provide access during extended hours before and after school [fig. 14].

Fig. 14: School Library Schedules

Fixed schedule [Classes visit library on weekly schedule]	**29.8%**	
Modified fixed schedule [Some classes visit library outside of regularly scheduled classes]	**12.1 %**	
	Sub-Total	**41.9%**

Flexible schedule with open access [Classes scheduled during school hours]	**24.0 %** **Sub-Total**	 **24.0%**
Open access [anytime during school day, lunchtime, before & after school] **Open access** [anytime during school day, including lunchtime] **Open access** [including extended hours before and after school hours]	**16.3%** **5.2%** **3.5%** **Sub-Total**	 **25.0%**
	Sub-Total	**8.5%**

Some librarians [8.5%] who chose "Other" described how their libraries are scheduled.

"Classes can be scheduled at any time during the day. If there is room, or no classes are scheduled, students are allowed to visit the library during study hall with a pass."

"Flexible schedule for class scheduling and free access any time during the school day."

Several respondents described variations of fixed scheduling modified to include flexible scheduling and open access. Some respondents said that classes were on a fixed schedule but that the library was open access during lunch and/or before and after school, or when classes are not scheduled [3]. Some reported that elementary grades are on a fixed schedule and older students/middle school students have open access, which includes flexible scheduling of classes There were interesting variations or adaptations of fixed schedules to allow for flexible scheduling/open access, such as:

- Fixed schedule for alternating weeks only to provide open access;
- Fixed schedule half of the year for K-2 grades and grades 3-5 co-taught;
- Librarian works as a specialist teacher [i.e., art, health], and students are assigned to the library for a trimester;
- One day a week the library is open for returns and check-outs. Two days a week I teach four classes and have one open period for extra class time as needed. Two days a week the library is closed;
- The library aide has a fixed schedule but the librarian spends most of her time co-teaching in the classrooms;
- Fixed schedule is rotated five times a year.

Clearly, educators see the value of flexible scheduling, yet the majority of elementary and middle school students in fixed-schedule programs have a more difficult time working on projects that apply taught skills to meaningful problem-solving and inquiry.

An ANOVA test was applied to determine whether significantly fewer urban and rural school libraries have a flexible schedule than suburban school libraries [fig. 15]. The hypothesis was supported.

Fig. 15: Comparison of Flexible Schedules by District Types

Test	Results	Finding
Pearson's CHI-SQUARE	$\chi 2$ (4) =3.96, p = .41	There were no significant differences in flexible scheduling among urban, rural, and suburban school libraries.
n=521		

This finding indicates that there are no significant differences among school libraries with flexible schedules with respect to district type. Since 41.9% of school libraries have fixed scheduling almost half of students across district types may not benefit from sustained instructional time that develops reading comprehension, critical thinking and information technology skills. Given that these types of scheduling are a function of traditional school schedules, school districts across the Commonwealth struggle with the issue of time on task. Especially on the elementary level fixed scheduling is used as a way of meeting contractual obligations for teachers to have a preparation period during the school day.

Fig. 16. Weekly Access to Library

50+ hours	**2.5%**		
46-50 hours	4.8%		
41-45 hours	16.3%		
36-40 hours	32.1%	**Sub-Total**	**53.2%**
35-31 hours	23.2%		
26-30 hours	7.7%		
21-25 hours	4.0%	**Sub-Total**	**34.9%**
16-20 hours	2.5%		
5-15 hours	4.2%		
0-4 hours	**1.9%**	**Sub-Total**	**8.6%**
N/A	**3.3%**		

Respondents reported the number of hours students and faculty had access to the library on a weekly basis. [fig.16]

The range of hours of access on a weekly basis [fig. 16] ranges from more than 50 hours [2.5%] to less than 5 hours [1.9%]. These variations are tied to size of student population and grade levels. More than half of the libraries [53.2%] are open 36 to 50 hours per week. About one-third [34.9%] are open 21 to 31 hours per week. When combined, these two sets of data show that 88.1% of school libraries are open 21 to 50 hours per week.

An ANOVA test was conducted to determine whether there is a relationship between the number of hours per week urban, rural, and suburban school libraries are open [fig. 17]. Results showed there was no significant difference between the number of days urban and rural school libraries are open compared with suburban school libraries.

Fig. 17: Comparison of Hours Per Week School Libraries are Open During School Hours

Test	Results	Finding
ANOVA	Urban (M=32.85, SD=11.77) Rural (M=34.68, SD= 10.25) Suburban school libraries (M= 35.47, SD=8.59), Welch's F (2, 126.19) = 2.67, p=.07	No significant difference of hours library is open per week urban, rural and suburban school districts
n= 521		

There were no significant differences among district types of school libraries in the number of hours per week school libraries were open during the school day.

Access to Library Before School Hours

Fig. 18: Access to Library Before and After School Hours

Before school service hours/ faculty	**63.2%**
Before school service hours/ students	**57.0%**
After school service hours/faculty	**61.6%**
After school service hours/students	**55.9%**
Before school extra curricular activities/ students	**10.8%**
After school extra curricular activities for students	**29.4%**
Weekend service hours	**2.7%**
Other. Please specify	**13.1%**

Respondents provided the number of hours per week their school libraries were open before school hours. Fig. 18 shows there is slightly more access to school libraries for faculty compared with students. About two-thirds of school libraries [63.2%] are open for faculty before school and 57% are open for students before school. Similarly 61.6% of libraries offer access for faculty after school and 55% do so for students.

Students have additional access for extra curricular activities held in the library before school [10.8%] and after school [29.4%]. Librarians offer access to the library for extra curricular activities three times more often after than before school hours, with over 40% of librarians providing a venue for before and after school libraries offer weekend service hours. [fig.18]

Respondents [13.1%] specified other ways they extend library hours in their libraries.

- "The library is opened after school because I stay and I do it without pay."

- "Because I stay late to get administrative work done, I end up providing services to students and to staff. It's not required, but somewhat expected."

- "I stay late 2-4 days a week and provide services as [the need] arises, but the library is not required to be open. However, I cannot get all my instructional work done if I don't stay late."

- "I also support student research by email seven days a week."

- "I try to stay available through technology on the evenings and weekends to provide support."

- "I answer any questions emailed to me anytime."

School librarians explained why they offer before and after school hours:

- "Students do not have 'free periods' in their schedules so their access is limited to before and after school hours, and whether or not their teachers bring/send them to the library."

- "The library is open to classes all the time but to individual students only half the time.

Types of Library Services Outside of School Hours

Respondents selected library services they offered outside of regular school hours such as book circulation, printing, readers' advisory, research support, technical support, and access to resources. Fig. 19 shows the types of library services offered outside of school hours, including before and after school and on weekends. These services are categorized as teaching and non-teaching services and school activities. Teaching services include personalized help, in the library and electronically, for students, professional development for faculty, and classes for parents. School activities include programs and meetings.

Fig. 19: Library Services Outside of School Hours

Librarian's teaching activities	24/7 email support for students and staff research, questions, extra help 24/7 access to resources and support through library website Tutoring students; Homework help Checking out books, readers' advisory Evening study hall Develop and write curriculum Professional development workshops, training for teachers Classes for parents Requests from community Technology support
Librarian's non-teaching activities	Cataloging Administrative tasks Collection development

Access to the Library during Lunchtime

Access to the library during lunchtime, as well as before and after school, is at the discretion of the librarian, as indicated by these comments from respondents:

Respondents offered several comments for this survey question.

"I enable student access by coming in early and opening the library. I also gave up my lunch so that the students may come into the library during their lunch times."

"I don't take lunch. I eat at my desk so I don't close the library. Students know they can come …"—"Students who do not have any free periods [study halls] in their schedule do not have access to the library during the school day except during their lunch period or if their teacher books in time in the library. Students also come to the library before and after school, but our hours are limited. We are always kicking students out when we close.

Library Closings During School Hours

Fig. 20: Library Closings During School Hours

0-1 days	0-1 days	**20.5 %**
2-10 days	2-3 days	11.7%
	4-5 days	14.4%
	6-8 days	11.7%
	9-10 days	7.7%
	Sub-Total 2-10 days	**45.5%**
11—21 days	11-13 days	7.3%
	14-17 days	19.4%
	18-21 days	5.0%
	Sub-Total 11-21 days	**31.7%**
More than 22 days	More than 22 days	**11.9%**
N/A	N/A	**2.3%**
n=521		

Respondents provided the number of days during the past school year that libraries were closed for any reason [fig. 20] to students and faculty. Library closings during the school day diminish instructional time as well as other library services such as reference and readers' advisory. 20.5% of respondents reported they were closed 0–1 day a year. 45% said they were closed 2-10 days per year and 31.7% were closed 11-21 days per year. 11.9% were closed more than 22 days per year.

Statistical analysis compared the number of days school libraries were closed across district types [Fig. 21]. Results showed that urban and rural school libraries are closed significantly more days per year than school libraries in suburban districts. We also learned that there is no significant difference between the days closed when urban and rural school library closings are statistically compared.

Fig. 21: Comparison of Days Per Year School Libraries are Closed Across School District Types

Test	Results	Findings
ANOVA	ONE WAY ANOVA F (2, 504) = 3.75, p = .02.	Results showed there was a significant difference between the number of days urban and rural school libraries were closed compared with suburban schools.
TUKEY POST HOC TEST	Urban (M=10.09, SD = 8.31) Suburban (M=8.11, SD = 7.44), p = .039	Urban schools have significantly less access to their school libraries than suburban school libraries.
TUKEY POST HOC TEST	Rural M = 7.3, SD = 7.73) Suburban school libraries (M=8.11, SD = 7.44), p = .755	Rural school libraries were closed significantly more days per year than suburban school libraries
TUKEY POST HOC TEST	Urban (M=10.09, SD = 8.31) Rural (M = 7.3, SD = 7.73), p = .067	A Tukey Post Hoc test showed there were no significant differences between rural school libraries and urban school libraries
n=521		

Reasons for Lack of Access to Library Space and Services

Respondents selected the reasons why regular library services or library space were not available to all students and faculty during any given school day in the academic year.

Fig. 22: Reasons for Lack of Access

Note: Respondents supplied multiple reasons	
Testing	**63.7%**
Special Events	**44.2%**
Professional Development	**41.7%**
Faculty Meetings	**29.4%**
Lack of Staff	**22.1%**
Lunchtime	**21.7%**
Study Hall/Other assigned activities	**11.7%**
Other. Please specify	**18.6%**
n=521	

Fig. 22 shows that over 63.7% of respondents cited standardized testing as the most common reason for library closings during school time. This finding suggests that schools in urban and rural school libraries either test or prepare for state tests more often. It is possible that the library is the venue for "practice testing." 18.6% of respondents provided other reasons for school library closings such as: Book sales; school photos; fire safety instruction; dental screening; classroom misplacement; speech instruction and tutoring; parent meetings and technology classes; Homework Club; Technology Center; Honor Society tutoring; school meetings; and community meetings. Some of these are equity issues,

including school schedules, teacher contracts and lesson preparation time, length of school day and other time on task issues that affect student learning.

Lack of staff [22.1%] is the most cited reason for library closings in the comments respondents provided for this question. Several librarians shared their perspectives:

- "There are no substitute personnel when the librarian is absent" [6 comments];
- "Teaching a class [4 comments], or on duty or building assignment outside the library, such as supervising recess, lunch, or covering other teachers' classes;"
- Some school librarians, particularly elementary school librarians, are assigned to more than one school building, resulting in the closing of their other library or libraries; [this is not a quote}
- "The library is often used for various reasons not related to its mission and this discourages teachers from planning to use the library for class-related activities."

Several respondents noted in their comments that the school community has 24/7 access to the library catalog, the number of cataloged print library resources, email support such as Ask-a-librarian, and technology support.

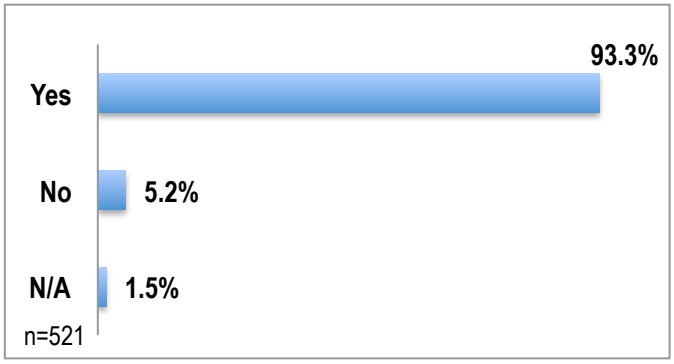
It is clear that the school library supports cultural and social functions that enrich school life, such as school meetings and events, community meetings and events, academic and recreational workshops, and training during school hours. However, these events infringe on the major responsibility of school librarians to support students, teachers, and administrators to use information and technology in their work.

C. Access to Information Resources

Access to information services by the school community was determined by the number of school librarians who responded to survey questions about their automated circulation systems, electronic access to the library catalog, the number of catalogued print materials in their collections, the number of added materials in a given year, e-book subscriptions, alternative reading materials, non-standard library materials, interlibrary loan materials and operations, analog audio-visual media, and digital video media. Data collected was for the 2014-2015 school year.

Automated Circulation Systems

Fig. 23: Automated Circulation Systems



Respondents indicated that 93.3% [fig. 23] of their libraries had automated circulation systems that facilitate checking out library materials in the library and can provide 24-7 remote access to the cataloged collection to students and their families for additional cost.

Fig. 24: Comparison of School Libraries with Automated Circulation Systems

Test	Results	Findings
Pearson's CHI SQUARE	$\chi 2$ (2) = 1.76, p = .42	There were no significant differences with regard to school libraries having automated circulation systems among urban, rural, and suburban school libraries
	n=521	

Fig. 24 displays the results of a Chi-square analysis that found no significant difference among urban, rural, and suburban school libraries with regard to automated circulation systems.

Electronic, Remote Access to Library Catalog

Respondents indicated whether their students, faculty, administrators, and parents can access the school library catalog remotely. Remote, electronic access to the library catalog enhances the effectiveness of school libraries for their school communities by increasing access. Students and their families, as well as faculty and school administrators, have 24/7 access to cataloged library resources if they have internet access at home they can search the library catalog. They can find electronic materials and download or print them at home. When the circulation and cataloging systems are automated students can identify library materials suitable to their information needs, interests, and abilities at their points of need.

Fig. 25: Electronic, Remote Access to School Library Catalog

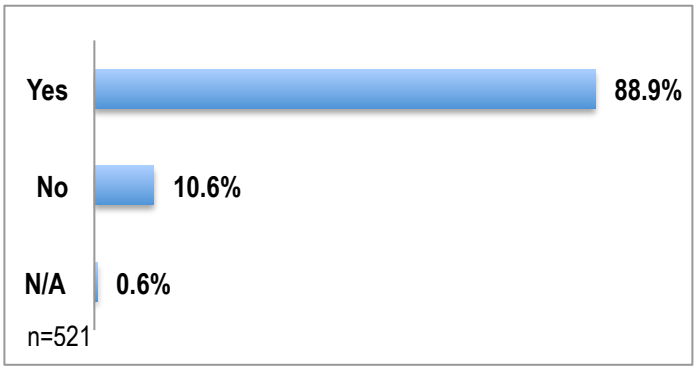


Fig. 25 shows 88.9% of respondents reported their school communities have electronic access to the library catalog.

Fig. 26 shows the results of a Chi-square analysis to determine whether significantly fewer urban and rural school libraries have electronic, remote access to their library catalogs than suburban school libraries.

Fig. 26: Comparison of Electronic, Remote Access to Library Catalogues by District Types

Test	Results	Findings
Pearson's CHI SQUARE	$\chi 2$ (1) =25.79, p<.001.	Significantly fewer urban school libraries have access to the library catalogue than suburban school libraries
	$\chi 2$ (1) =5.39, p=.02.	Significantly fewer rural school libraries have access to the library catalogue than suburban school libraries
	$\chi 2$ (1) = 1.372, p = .242.	No significant difference was found in electronic remote access to the library catalogue between urban and rural school libraries
n=521		

These findings show that despite the high percentage of school libraries with remote and electronic access to their library catalogues, fewer urban and rural school libraries have remote access to their library catalogs than suburban school libraries. This means that among the school community [i.e., students, parents, teachers, school administrators] there are inequities of access to library materials. Most suburban school library users can access the library catalog and library resources 24/7 while most urban and rural library users cannot. In addition, access is already restricted by statistically significant numbers of days urban libraries are closed compared with suburban school libraries.

Cataloged Print Materials

Respondents reported the approximate number of print materials [i.e., all print items that are cataloged and considered part of the library collection] during the 2014-2015 school year. If respondents served in multiple schools they provided data based on the single largest school in which they worked.

In the digital age it is difficult to ascertain what constitutes an adequate library collection and how to calculate the size of the collection. While school librarians develop and manage hybrid print/digital collections there are few metrics beyond usage statistics to count books or journals/magazines in e-book, e-reference, and e-journal collections to which libraries subscribe. Quantitative standards formerly set by professional library associations are difficult to apply to digital collections. In addition, digitized text shifts the focus from the number of items on library shelves to technological infrastructure [i.e., internet access, bandwidth, and hardware/devices]. This issue raises questions about the capacity of school libraries to provide access that is in large part determined by adequate funding provided on the local level as well as how funding is allocated for technology infrastructure. For example, in many cases funding for technology infrastructure is allocated through IT rather than library departments and grants, which can vary among districts. Traditional per capita allocation determined by a school's population size may not be a critical factor in funding electronic infrastructure and e-resources. However print collections are still sensitive to student population size. In addition, access to e-resources affects the nature and size of the print collection, especially for non-fiction, reference and periodical materials. The size and age of the library's print collection, is no longer a reliable measure of access to up-to-date, authoritative sources. However, under-funded school libraries will have smaller, and

probably older print collections. Also, the age of the collection may no longer be responsive to curriculum, especially in Dewey categories such as science and social studies.

Fig. 27: Cataloged Print Materials

30,000+	1.9%	**More than 30,000**	**1.9%**
25,001-30,000	1.7%	**20,001-30,000**	
20,001-25,000	4.4%	**Sub-Total**	**6.1%**
15,001-20,000	12.6%	**10,001-20,000**	
10,001-15,000	34.5%	**Sub-Total**	**47.1%**
9001-10,000	12.4%	**5,001-10.000**	
8001-9000	5.7%		
7001-8000	4.6%		
6001-7000	3.8%		
5001-6000	4.4%	**Sub-Total**	**30.9%**
4001-5000	2.8%	**1001-5000**	
3001-4000	2.3%		
2001-3000	1.3%		
1001-2000	3.2%	**Sub-Total**	**9.6%**
Less then 1,000	2.3%	**Less than 1,000**	**2.3%**
Not Applicable	2.1	**Sub-Total**	**2.1%**
n=521			

Fig. 27 provides a description of the size of cataloged print collections. The range of collection size is 1.9% of school libraries with more than 30,000 print materials to 2.3% with less than 1,000 books. 47.1% of school libraries have 10,001 to 20,000 books and almost one-third [30.9% of libraries] report between 5,001 and 10,000 books. Combining these numbers we can determine that 78% of school libraries have cataloged print collections that range from 5,000 to 20,000 items. Calibrating this range to student population could generate a formula for determining the ideal size of a catalogued print collection for any given school IF the potential for equity of e-resources in every school was realized.

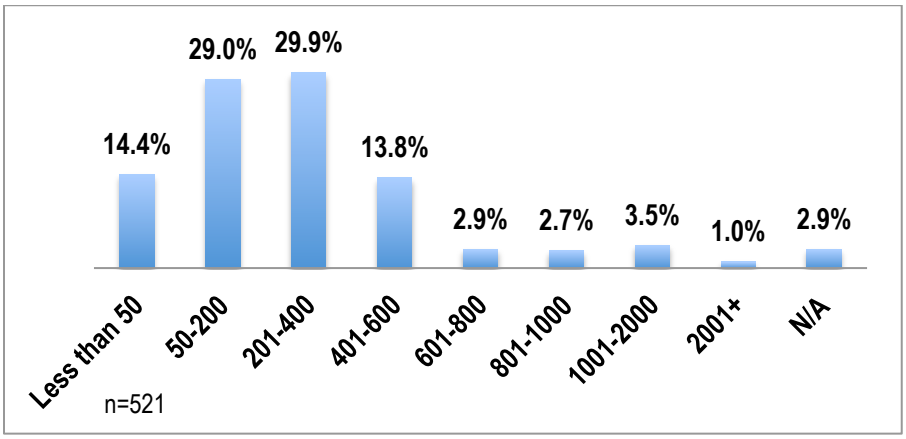
Fig. 28: Comparison of Print Collections by District Types

Test	Results	Findings
ANOVA		
	Urban (M= 11678.77, SD = 8004.38) Rural (M= 10357.63, SD = 6479.17) Suburban M = 11813.38, SD = 5231.89) F(2, 125.93) = 1.27, p=.29.	No significant difference was found in the number of cataloged print materials among urban rural and suburban school libraries,
	n=521	

A statistical analysis of the size of print collections across district types [fig. 28] shows no significant difference in the number of cataloged print materials in urban, rural, and suburban districts. It is likely that suburban school libraries are decreasing their print collections as they acquire e-books, e-reference materials, and e-journals.

Added Materials

Fig. 29: Added Print Materials to School Library Collections



Respondents reported approximately how many print library materials were added to their collections during the 2014-2015 school year. Since the purchase of added materials is seminal to the sustainability and viability of a library collection, it is an important statistic. The number of added print materials indicates the capacity of the school library to maintain and update their collections, replace lost books, and offer a wide range of reading levels and reading preferences. Fig. 29 shows that an uneven distribution of added materials to the library collections. 14.4% added less than 50 books within one year. 58.9% added between 50 and 400 books. 23.9% added 401-2001+ books. Only 10.1% added 601 to 2001+. While this may seem to be a low rate of replacement, it is likely that school librarians are spending less of their allocated budgets on print materials in order to build their digital library collections.

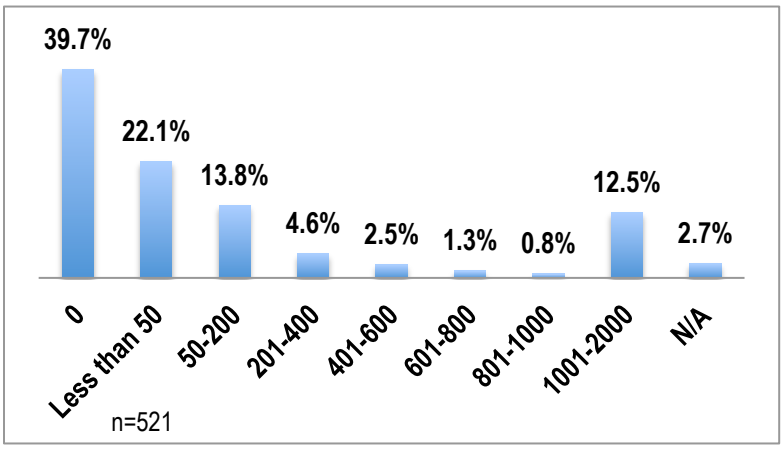
Fig. 30: Comparison of School Libraries' Added Materials by District Types

Fig. 30 shows no significant difference in the number of print materials added to collections across district types. It is possible that school libraries with larger budgets are buying fewer print materials because they are spending funds on electronic resources. Given that 73.3% of school libraries [fig. 29] add less than 400 books annually, the finding indicates a low acquisition rate across school libraries regardless of district type.

Test	Results	Results
ANOVA	Urban (M=289.65, SD = 376.17) Rural (M=293.40, SD = 268.82) Suburban (M = 313.13, SD = 312.68)	No significant difference was found in the number of print materials added to the collections among urban, rural and suburban school libraries.
Welsh	F (2, 496) = 0.27, p = .76.	
	n=521	

Availability of E-Books

Fig. 31: Access to E-Books



Respondents approximated the number of e-books available in their libraries through subscriptions. Fig. 31 shows that 39.7% of school libraries do not subscribe to e-books. 61.8% of school librarians reported that they have added zero to 50 e-books to their collections.

The adoption of E-books in school libraries, and in libraries in general, has been slow for several reasons, including cost, information technology requirements, the propensity and need of younger children and struggling readers for print books, and the need for readers to engage in sustained reading in print, which improves comprehension [Wigfield & Guthrie, 1997]. Research shows that people engage in sustained and deep reading in print environments but prefer to skim and scan digital text [Rowlands, et al., 2008].

Fig. 32 shows no significant differences in e-book subscriptions across district types.
This statistic indicates that the trend of slow e-book adoption goes across district types, but probably for different reasons.

Fig. 32: Comparison of School Libraries' Availability to E-Books by District Types

Test	Results	Findings
ANOVA	Urban (M=272.76, SD = 576.51) Rural (M=262.18, SD = 518.76) Suburban (M = 287.19, SD = 563.82)	There were no significant differences in e-book subscriptions in the collections among urban rural and suburban school libraries, as determined by one-way ANOVA,
Welsh	F(2, 502) = 0.063, p = .94	
n=521		

Alternative Reading Materials

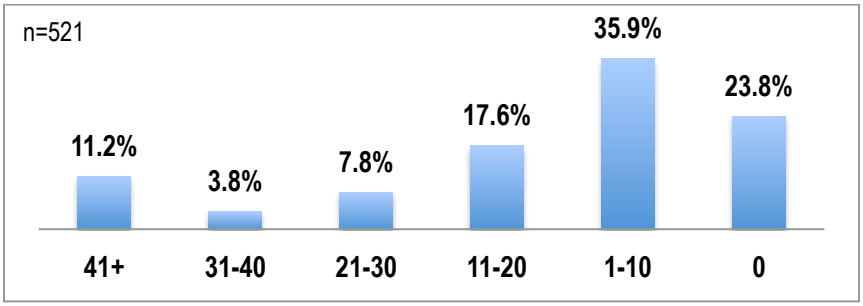
Respondents provided the total number of alternative reading materials in their school libraries. Alternative reading materials consist of print materials other than traditional books, such as newspapers, graphic novels, comic books, magazines and non-print text formats such as websites and video games. A meta-analysis of reading research [Krashen, 2014] shows that free voluntary reading, results in reading improvement at the same rate or at a higher rate than direct, remedial instruction. For

these reasons it is critical for reluctant and struggling readers to have access to alternative reading materials.

Fig. 33 shows that 23.8% of school libraries have no alternative reading materials. 35.9% have only 1-10 alternative materials while 11.2% have 41 or more alternative reading materials

Fig. 33: Alternative Reading Materials

The number of alternative reading materials on average is low [fig. 32], regardless of district type [fig. 33]. Respondents commented that they offer learning tools, such as audiobooks, resources for dyslexic readers, and other non-standard materials to help struggling and reluctant readers.



A comparison of the number of alternative reading materials across district types [fig. 34] shows that urban school libraries have significantly fewer alternative reading materials than rural or suburban school libraries. This is an important finding since access to alternative reading materials in schools validates reading preferences of struggling readers, which in turn increases their self-efficacy, or belief that they can read, and their motivation to read [Gordon & Lu, 2008].

Fig. 34: Comparison of Alternative Reading Materials by District Types

Test	Results	Findings
ANOVA F	F (2, 513) = 3.70, p = .025.	There was a statistically significant difference between urban and rural districts with regard to the number of alternative reading materials
TUKEY POST HOC	Urban (M= 10.39, SD = 14.73) Rural (M=16.54, SD = 15.03), F F (2, 513) = 3.70, p = 0.03.3.	A Tukey Post Hoc test shows urban school libraries have significantly fewer alternative reading materials in the collection than rural libraries
TUKEY POST HOC	Urban (M= 10.39, SD = 14.73) Suburban (M = 13.16, SD = 14.54), p = .164	A Tukey Post Hoc test shows there were no significant differences in the number of alternative reading materials in the collections between urban school libraries and suburban school libraries
TUKEY POST HOC	Rural M=16.54, SD = 15.03) Suburban (M = 13.16, SD = 14.54), p = .242	A Tukey Post Hoc test shows there were no significant differences in the number of alternative reading materials in the collections between rural school libraries and suburban school libraries

Non-standard Materials

School libraries often include hands-on materials across K-12 grades. These materials encourage students to use the school library to learn informally, engage in games with their peers, experiment with digital tools, use authentic tools and equipment, and express their learning in creative ways.

Fig. 35: Non-Standard Library Materials

Respondents provided information about non-standard materials, including the type and approximate numbers that are part of their library collections. Fig. 35 displays the wide variety of non-standard materials purchased by school librarians that support hands-on learning. These materials are categorized as: Engineering tools for production or building digital objects; mathematical tools; games; science instruments; toys; visual aids; audio aids; and adaptive aids.

Types of Tools	Analog/Non-digital	Digital
Engineering: Production and Building Tools	Microphones Puppets Lincoln logs Legos Magna-tiles KEVA Blocks/planks KNEX basic kit Mega Bloks Lego Wedos Picasso tiles Roominate	Digital camera Voice recorder Flip cam Lego Robotics Makerspace Web cam Chrome Books 3D printer Sparki robot 3Ozobot Google Cardboard Virtual Reality Spheros Robotics Makerspace 3D pen
Mathematics: Manipulatives	Legos Geo-boards	
Games	Board games [e.g., chess, Banana grams] Pairs in Pears Puzzles	Video games Wii consoles
Science Instruments	Telescopes	
Toys	Hot wheels track kit Tinker toys Knex	
Visual aids	Family Literacy	Nooks

	kits	KindleFire Go Readers
Audio aids	Voice recorder Playaways	
Adaptive aids	Braille books	
n=521		

Interlibrary Library Loan

Respondents indicated whether they offered or participated in interlibrary loan, a resource-sharing strategy whereby the school community can borrow book titles from other school libraries. This practice has the potential to compensate for inequities among school library collections. Electronic management of interlibrary loan processes is critical to maximizing its potential. Fig. 36 shows that over two-thirds [67.9%] of school libraries do not participate in interlibrary loan.

Fig. 36: Interlibrary Loan

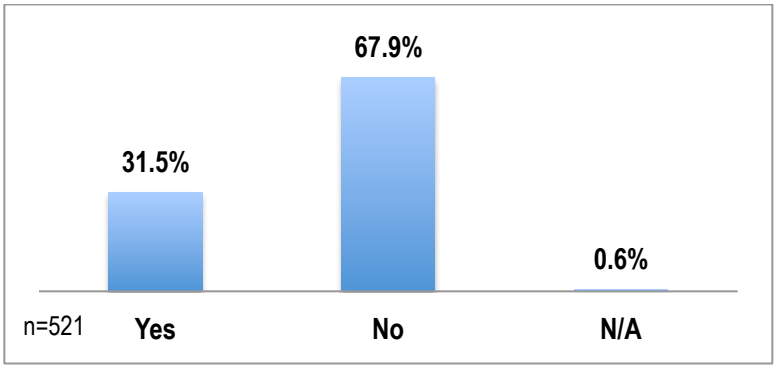


Fig. 37: Comparison of Interlibrary Loan by District Types

Fjg. 37 shows no significant differences in the use of interlibrary loan in urban, rural, and suburban libraries.

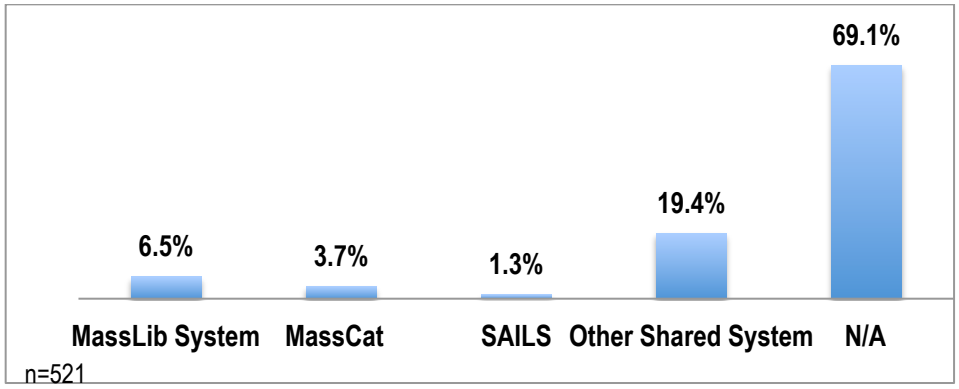
Test	**Results**	**Findings**
Pearson's CHI SQUARE	$\chi 2$ (2) =1.50, p = .47	There were no significant differences in interlibrary loan among urban, rural, and suburban school libraries,
n=521		

Given the poor participation rate [31.5%] of school libraries in interlibrary loan [fig. 36] this statistic indicates that school libraries, regardless of district type, are underusing interlibrary loan services that could increase the quantity and diversity of library materials for their school communities at no cost.

Interlibrary Loan Operations

Fig. 38: Interlibrary Loan Operations

Respondents indicated the means by which their interlibrary loan systems operated. Fig. 38 shows that 69.1% of school libraries do not use interlibrary loan operations

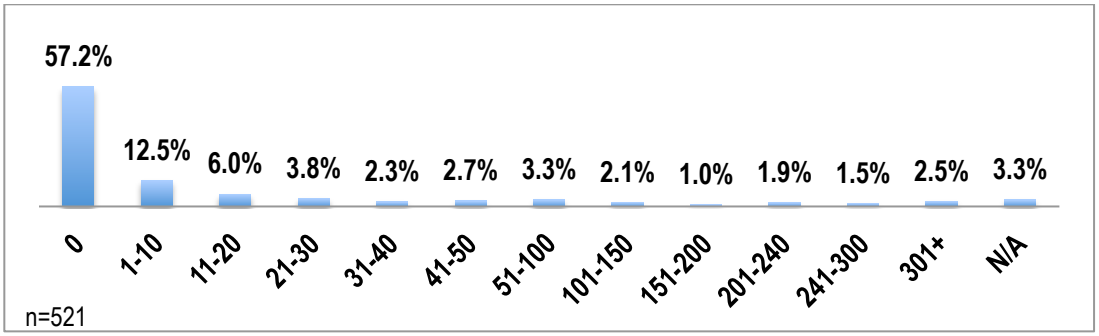


This could mean non-participating school libraries do not meet requirements, such as a licensed school librarian, to join these systems, or they do not have the information technology or the staffing to take advantage of them. More research is needed to understand the low participation rate of school libraries in interlibrary loan service.

Interlibrary Loan Materials

Respondents provided the approximate number of materials that their libraries obtained through interlibrary loan during 2014-2015. Interlibrary loan practices involve the exchange of library materials physically and/or electronically. Fig. 39 shows that over half [57.2%] of school libraries do not borrow any interlibrary loan materials.

Fig. 39: Interlibrary Loan Materials

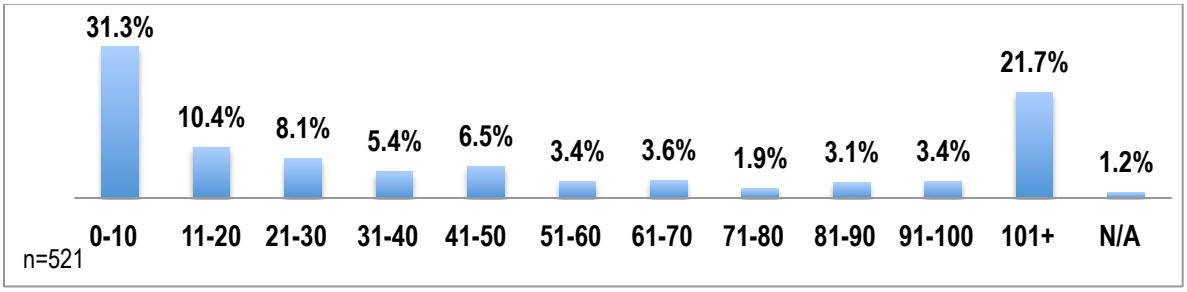


DVDs in Library Collections

Respondents provided the approximate number of DVDs in their library collections in 2014-2015. Fig. 40 shows that 31.3% of school libraries have zero to 10 DVDs. This may be an indication that school librarians are weeding their DVD collections because they have video streaming. 21.7% of libraries have 101 or more DVDs. This may indicate that some libraries are retaining DVDs because they do not have

information technology capacity for streaming and/or for adequate equipment for access to streaming media

Fig. 40: DVDs in School Library Collections



A statistical comparison of DVD collection size by district types [fig. 41] shows no difference in the size of DVD collections across district types.

Fig. 41: Comparison of DVD Collections by District Types

Test	Results	Results
ANOVA	Urban (M= 41.63, SD=39.23) Rural (M=51.13, SD=41.36) Suburban (M=45.40, SD=40.44) F(2, 510) = 1.12, p=.32	No significant difference in size of library DVD collections was found among rural and suburban school libraries,

This finding suggests that well-funded libraries with budgets large enough to purchase larger analog collections in the past are replacing their DVD collection with video streaming while poorly funded libraries are maintaining these collections as a more affordable option, especially if their information technology infrastructure does not support video streaming.

Videocassettes in School Library Collections

Respondents provided the approximate number of videocassettes in their collections. Fig. 42 shows that more than half of school libraries [51.6%] have zero to ten videocassettes and 16.1% have 100 or more. This resembles findings for DVDs in school library collections.

Fig. 42: Videocassettes in School Library Collection

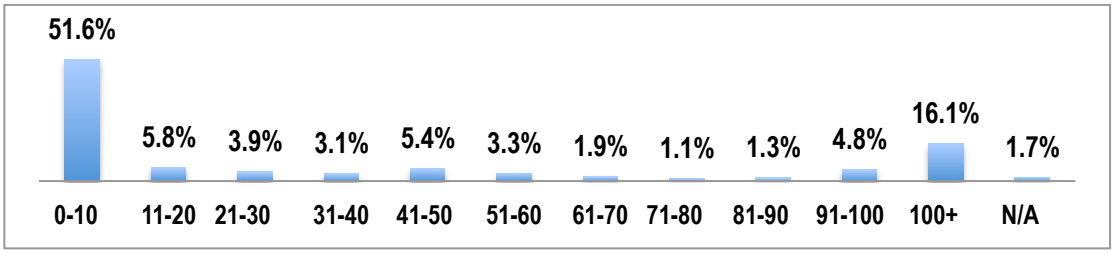


Fig. 43 shows there were no significant differences in videocassette holdings among district types.

Fig. 43: Comparison of Videocassette Collections by District Types

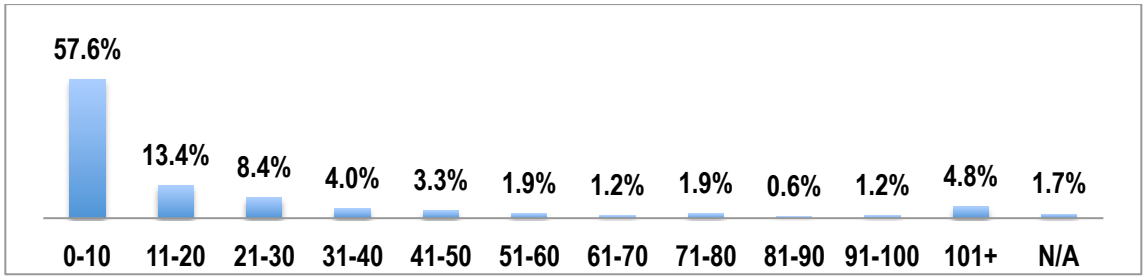
Test	Results	Findings
ANOVA	Urban (M= 29.41, SD = 36.82) Rural (M = 35.18, SD = 37.97) Suburban (M = 35.34, SD = 40.68) F (2, 507) = 1.068, p =,345	There were no significant differences in videocassette holdings among urban, rural and suburban school libraries,
n=521		

School libraries with heavy videocassette holdings may indicate lack of capacity for video-streaming which is replacing videocassette and DVD media. Is it possible that the lack of significance difference between suburban school libraries and urban/rural school libraries can be explained by the capacity of school libraries, or lack of it, to adapt develop the technological infrastructure to support video-streaming.

CDs in School Library Collections

Respondents provided the approximate number of CDs in their library collections. Fig. 44 shows that 57.6 % of school libraries have zero to ten CDs while the rest of school libraries have larger CD holdings.

Fig. 44: CDs in Library Collections



Audiocassettes in School Library Collections

Respondents provided approximate numbers of audiocassettes in their library collections. The trend in older technologies continues with audiocassette holdings in school library collections. Fig. 45 shows that almost three-quarters [73.5%] of school libraries have zero to ten audiocassettes while small numbers of libraries have larger collections.

Fig. 45: Audiocassettes in School Library Collections

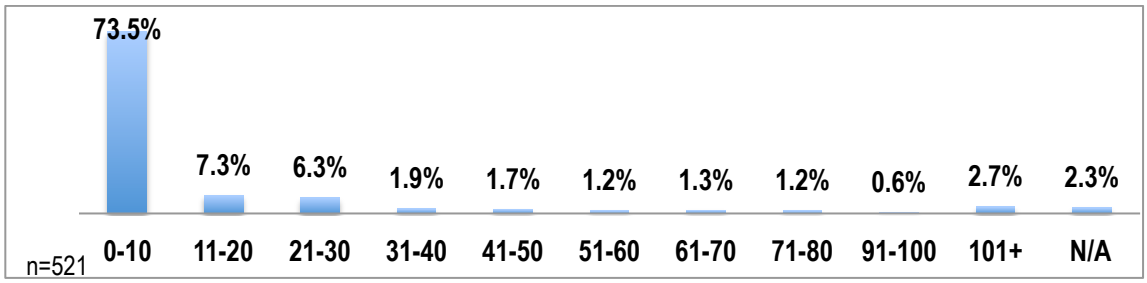


Fig. 46 shows there were no significant differences in audiocassette holdings across district types.

Fig. 46: Comparison of Audiocassette Collections by District Types

Test	Results	Findings
ANOVA	Urban (M= 13.60, SD = 22.18) Rural (M = 17.46, SD = 25.90) Suburban (M = 13.37, SD = 20.48) F (2, 504) = 0.875, p = .418	There were no significant differences in audiocassette holdings among urban, and suburban school libraries.

n=521

This trend indicates video streaming is a critical technology to the access of an increasing number of information resources dependent on bandwidth and technological infrastructure. This raises the question of the status of video streaming in school libraries.

Fig. 47: Analog Audio-Visual Materials in School Library Collections

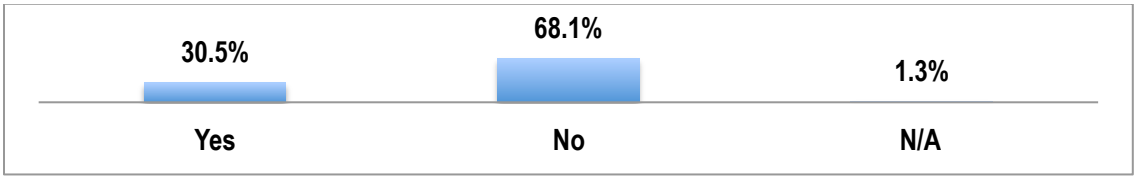
Analog AV Materials	No. of Items	Percentage of Libraries reporting Items
DVDs	0-10	31.3%
Videocassettes	0-10	51.6%
CDs	0-10	57.6%
Audiocassettes	0-10	73.5%

Digital Video Streaming Services

Respondents indicated whether or not they had access to a paid subscription video streaming service for digital videos and other resources. Fig. 48 shows that almost one-third of school libraries [30.5%] have digital video streaming while a little more than two-thirds [68.1%] do not. Is it probable that 68.1% of school librarians who report that they do not have digital video streaming rely on outdated analog

modes of audio-visual materials such as CDs, DVDs, audiocassettes and videocassettes as primary sources for non-print resources.

Fig. 48: Digital Video Streaming Services



It is not surprising that rural school libraries have significantly less access to video streaming [fig. 49]. This is a critical inequity since technological infrastructure, namely adequate bandwidth, is a pre-requisite for providing video streaming access.

Fig. 49: Comparison of Video Streaming by District Types

Test	Results	Findings
Pearson's CHI-SQUARE	Urban/Suburban $\chi 2$ (1) = 1.95, p = .162	There were no significant differences in access to a paid subscription video streaming service between urban school libraries and suburban school libraries,
	Rural/Suburban $\chi 2$ (1) =7.96, p = .005.	Significantly fewer rural school libraries have access to video streaming than suburban school libraries,
	Urban/Rural $\chi 2$ (1) =3.09, p = .079	There were no significant differences in access to a paid subscription video streaming service between urban school libraries and rural school libraries.

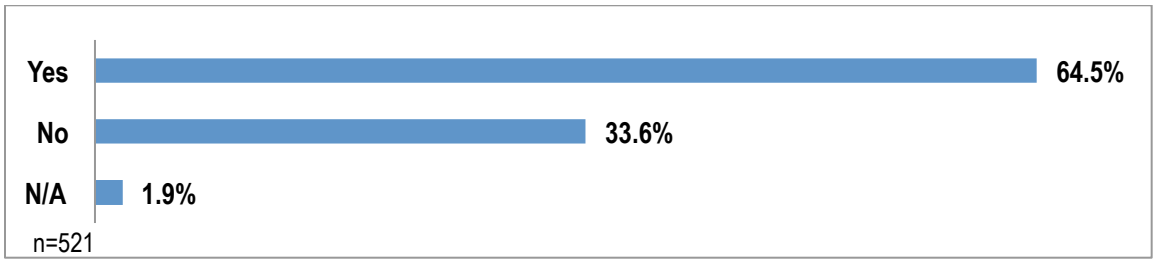
D. Access to Information Technology

Access to Information Technology [IT] includes bandwidth capacity, access to the internet, computers connected to the internet, computer access for students, one-child one-computer policy, access to technology through the library, equipment accessed by patrons, types of information technology, adaptive technology, library or technology director, technology hardware responsibility in and outside of the library, and response time for technology support. The measures of IT capacity in this section that enables the use of technology to bring equity to all other dimensions of school library resources and services. A certified school librarian is an asset that enables the judicious, maximum use of digital technology to develop and support access to print and electronic resources in the school library collection, staffing and school library help and instruction, and funding from federal grants and programs, and private foundations. These findings will indicate the needs that are not yet met and IT solutions to meet those needs in a cost-effective, equitable manner.

Capacity of Bandwidth to Support Instruction

Respondents indicated whether their schools had bandwidth that adequately supports the current demands of technology, instruction, and curriculum requirements. Almost two-thirds [64.5%] of school librarians report that bandwidth is adequate to support instruction in their libraries [fig. 50]. One-third [33.6%] of librarians report they do not. As streaming video replaces analog audio-visual equipment it is imperative that schools are furnished with enough bandwidth to take full advantage of the investment schools are making in digital devices and software. On school district, county, and state levels a planned and coordinated approach to working with the communication industry and providers is essential to maintaining state-of-the-art technology.

Fig. 50: Capacity of Bandwidth to Support Instruction



Chi-square analysis shows a statistically significant relationship between type of district and adequate bandwidth to support current demands of technology, curriculum requirements, and instruction [fig. 51].

Fig.51: Comparison of Bandwidth by District Types

Test	Results	Findings
Pearson's CHI-SQUARE	$\chi 2$ (2) =7.48, p = .02.	Significant associations were found between district types and bandwidth.
	Urban/Suburban $\chi 2$ (1) =7.41, p = .006.	Significantly fewer urban school libraries have adequate bandwidth than suburban school libraries,
	Rural/Suburban $\chi 2$ (1) =0.10, p = .75.	No significant difference between rural school libraries and suburban school libraries
	Urban/Rural $\chi 2$ (1) =2.06, p = .152.	No significant difference between urban school libraries and rural school libraries
n=521		

Access to the Internet

Respondents provided the percentage of students who can access the internet at any one time, given their current bandwidth. Fig. 52 shows 59.7% of respondents reported that 81-100% of their students could access the internet at any one time. 25.6% [15% + 10.6%] said that 41-81% of their students could do so.

Respondents reported the percentage of students with internet access in their schools. 59.7% of respondents said that 81 to 100% of students have internet access and 1.1% said that no students have access. Between that range it seems that access for almost 40% of students is poor. 25.6% [15 + 10.6%] of librarians said that 41-80% of students had access. 7.9% [3.3 + 4.6%] said that 1-40% of students had access.

Fig. 52: Student Access to the Internet

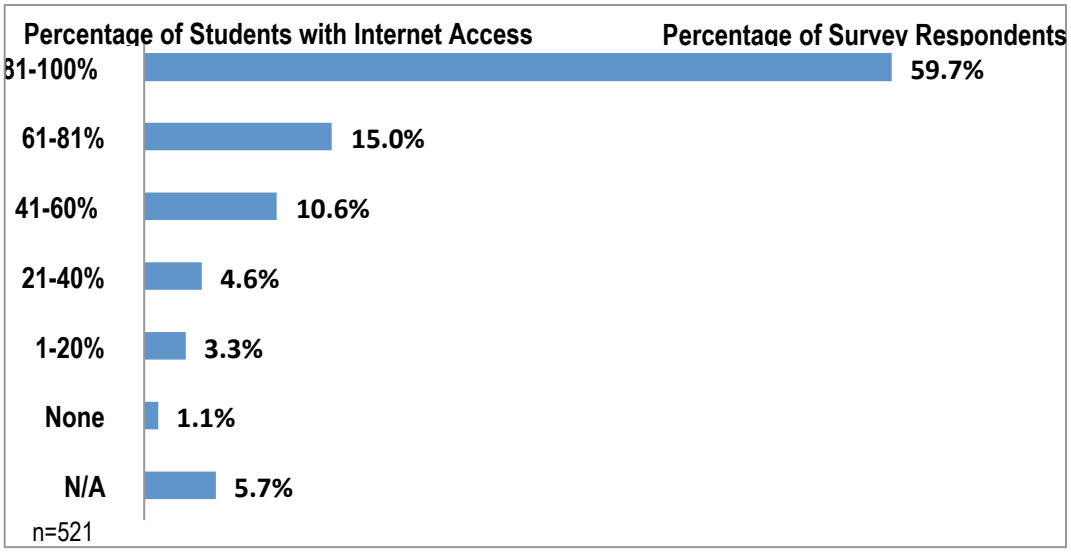


Fig. 53: Comparison of Internet Access by District Types

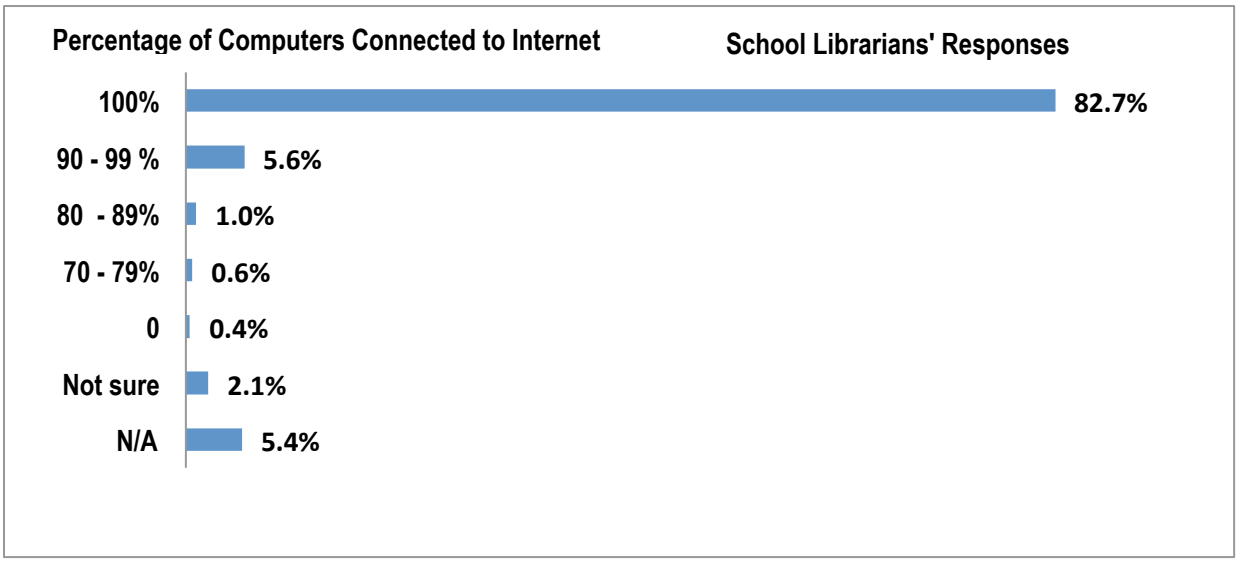
Test	Results	Findings
Pearson's CHI-SQUARE	Urban/Suburban $\chi 2$ (1) =5.60, p = .02.	Significantly fewer urban school libraries have simultaneous access to the internet than suburban school libraries.
	Rural/Urban $\chi 2$ (1) =0.61, p = .44.	No significant difference was found between rural and urban.
	Rural/Suburban $\chi 2$ (1) =0.54, p = .47.	No significant difference was found between rural and suburban.
n=521		

A statistical comparison of simultaneous internet access across district types [fig. 53] shows that significantly fewer urban and rural school libraries have internet access compared with suburban school libraries.

Computers Connected to Internet

Respondents provided the percentage of computers in their districts that were connected to the internet [Fig. 54]. 82.7% of respondents reported that 100% of computers in their districts were connected to the internet.

Fig. 54: Computers Connected to Internet



This measures computers connected to the internet district-wide. This metric is different from access to the internet for students, which is a measure of meaningful use of computers in the school library. In other words, from the school librarian's perspective a high percentage of computers connected to the internet is not the equivalent to student access to those computers in the school library [fig. 54].

Computer Access for Students

Fig. 55 shows data collected on the number of computers available for student use in their libraries, including desktops, laptops, and tablets.

Figure 55: Computer Access for Students

No. of Computers			
41+ computers	24.2%		
		Sub-total	**24.2%**
36-40	5.4%%	**5.4%**	
31-35	6.3%%	**6.3%**	
		Sub-total	**11.7%**
26-30	12.1%		
21-25	12.3%		
21-30	20.2%	**Sub-total**	**44.6**

Almost one-quarter [24.2%] of school librarians reported that there were 41 or more computers available for students use [fig. 55].

44.6% reported 26-30 computers for students in the library.

3.1% reported that there are no computers in the school library for student use.

It is clear that there is wide disparity among schools for student access to computers in the library.

5-10	14.2%		
1-2	2.5%		
		Sub-total	**16.7%**
0	3.1%		
		Sub-total	**3.1%**
n=521			

Librarians' comments indicated that these numbers included Chrome-books, i-pads, laptops and in many cases, desktops.

This survey item underscores the importance of access as a measure of meeting the needs of individual students.

One-Child, One-Computer Policy

Respondents indicated whether or not their schools have a one-computer-one child policy. Fig. 56 shows 72.4% of respondents said their schools do not have a one-child-one-computer policy and 10.4% are actively planning to implement it. 16.3% of respondents report that they do have the policy.

Fig. 56: One-Child, One- Computer Policy

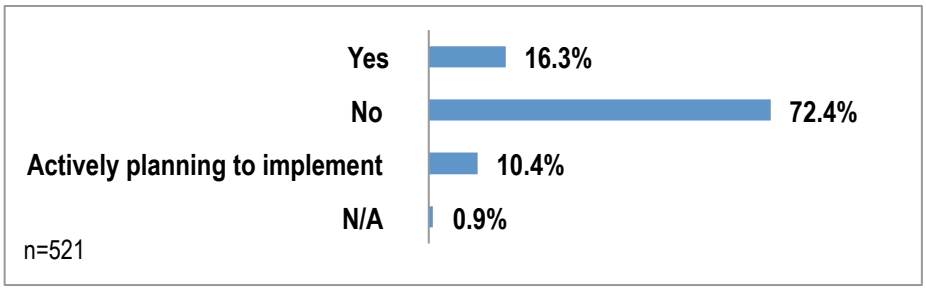


Figure 57 displays results of a Chi-square calculation that shows there is not a strong relationship between district types and a one-child, on-computer policy.

Fig. 57. Comparison of One-Child,-One-Computer Policy by District Types

Test	Results	Findings
Pearson's CHI-SQUARE	Urban/Suburban $\chi 2$ (2) =2.73, p = .26	No significant difference between urban and suburban
	Rural/Suburban $\chi 2$ (1) =0.54, p = .47.	No significant difference was found between rural and suburban.
n=521		

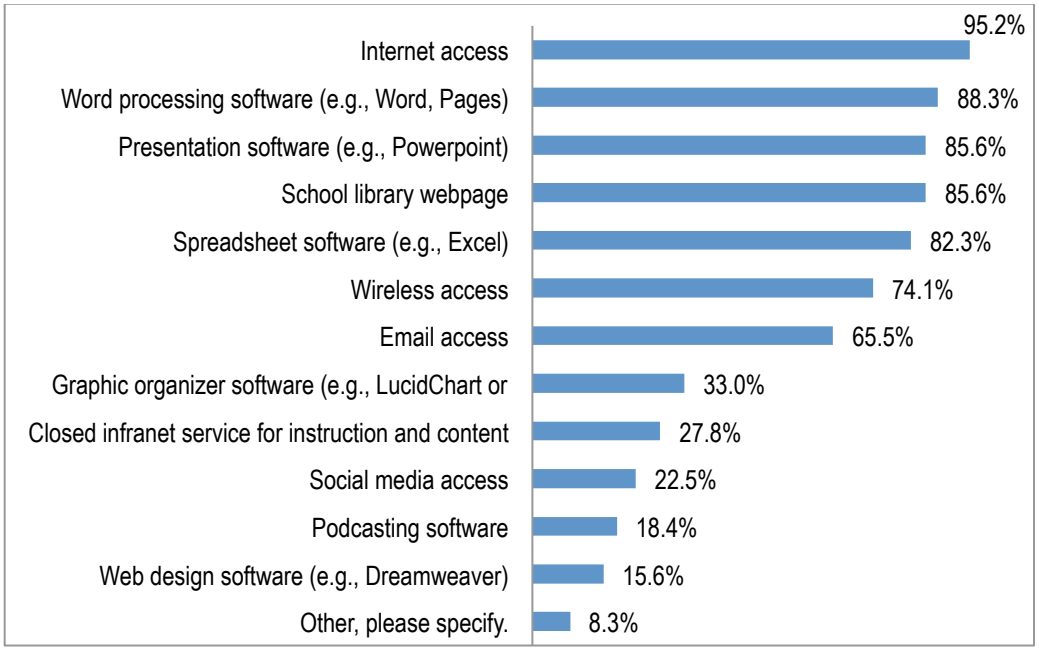
Since 72.4% reported no policy exists in their schools this result indicates the absence of a policy across district types.

[Although with present budget allocations and procedures this is not a feasible option.] However, to establish equity of computer access it is not unreasonable to consider designing a cost-effective program such as the provision of Chromebooks to select segments of the student population who qualify for free lunch, for example.

Access to Information Technology through the Library

Respondents indicated the types of information technology available through their school libraries. Fig. 58 shows that 95.2% of school libraries have internet access.

Fig. 58. Access to Information Technology through the School Library



Most school libraries also have application software, such as Word, PowerPoint, and Excel. Almost three-quarters of libraries have wireless access [74.1%] and 65.5% have email access. However one-third of school libraries or less have access to software for students for production of digital aids or objects, such as graphic organizer software [33%] for student note taking; closed internet service [27.8%] to safely display student work or instructional materials within the confines of the school community [27.8%]; social media [22.5%]; podcasting software [18.4%] for student production of digital audio; and web design software [15.6%]. These statistics also indicate that 33% or less of school libraries have access to internet tools that support: Student note-taking [graphic organizer software]; intranet service for instruction/content [27.8%]; social media [22.5%]; podcasting [18.4%]; web design software [15.5%]; and digital tools other than the aforementioned [8.3%].

Fig. 59 shows that significantly fewer urban school libraries have access to information technology compared with suburban school libraries.

Fig. 59: Comparison of Access to the Information Technology by District Types

Test	Results	Results
Pearson's CHI-SQUARE	Urban/Suburban $\chi 2$ (1) = 5.60, p = .018.	Significantly fewer urban school libraries have access to information technology than suburban school libraries,

	Rural/Suburban $\chi 2$ (1) =0.54, p = .462.	There were no significant differences in access to information technology between rural school libraries and suburban school libraries,
	Urban/Rural $\chi 2$ (1) =0.61, p = .43	There were no significant differences in access to information technology between urban school libraries and rural school libraries,
n=521		

Equipment Accessed by Patrons

Respondents indicated the types of equipment and information technology available for patrons in their libraries. Fig. 60 shows that school librarians reported a diverse list of analog and digital equipment accessed by students and faculty. There is a persistent reliance on analog devices [Televisions, 35.1%; overhead projectors, 51.4%; VCR players, 31.9%] that seem to outnumber digital production devices [Visualizer/document camera, 39.25%; digital camera, 38%; video production/iMovie, 25.9%]. 83.9% of school librarians spend funds on desktop computers and 49.4% purchase laptops, printers [80.6%], scanners [45.1%] and photocopiers [46.1%]. Only 44.3% respondents reported mobile devices and state-of-the-art equipment [9.4%] such as Chrome Books as purchasing priorities.

A small percentage of librarians said they purchased adaptive and special needs technologies, although general comments in the survey indicate that this is a growing area of demand. The purchase of these types of equipment could be coordinated with the expenditure of IT funding to offer borrowing privileges to students with limited computer access.

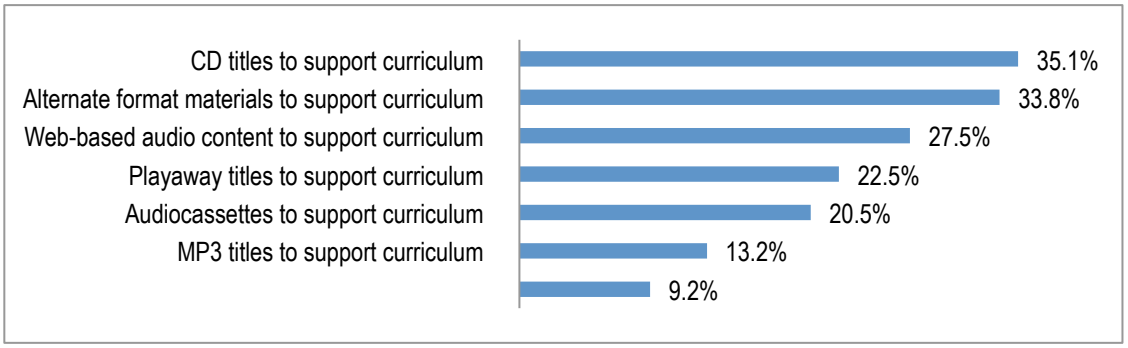
Figure 60: Equipment Accessed by Patrons

Computers	Desktop computers	83.9%
	Laptop computers	49.9%
Mobile devices	i-Pads	44.3%
Analog equipment	Overhead projector	51.4%
	Television	35.1%
Reproduction equipment	Scanner	45.1%
	Photocopier	46.1%
	Printer, 3D printer	80.6%
Players	DVD Player	49.1%
	VCR Player	31.9%
	i-Pod, MP3 player	12.1%
	LCD panel	8.4%
Presentation equipment	Interactive whiteboard	46.4%
Production equipment	Visualizer; document camera	39.25
	Digital camera	38.0%
	Video camera	31.9%
	Laminator [non-digital]	29.9%
	Video production [e.g. iMovie]	25.7%

	Electronic book device [e.g., Kindle]	24.6%
Adaptive technologies	Special needs equipment	5.8%
Other	Chromebooks; Clicker response systems; Green-screen studio; Alpha-mart NEOs; Apple TV; laser cutter; TV studio; VR-Google cardboard; voice recorder; boom-boxes; charging station; large screen MAC; school shared equipment.	9.4%
n-521		

Fig. 61 shows that most schools do not have information technologies to accommodate students with special needs.

Fig. 61: Adaptive Technologies



Respondents elaborated on the need for adaptive technologies to provide for students with disabilities. One observed,

- *"We do not have appropriate materials and technology for English Language Learners and Special Education learners."*

Another respondent suggested that students with special needs would benefit from, "A scanner [to] translate and read aloud and from a school-wide license to *Learning Ally* which provides learning tools to help struggling readers achieve success in the classroom and audio books and resources to help dyslexic children to read."

One respondent observed,

- *"We have an ADA accessible space near the front of the school, which means many of our adaptive programming is housed in the library. We're proud to be easily accessed by this growing population in our school. [More extended] hours before and after school could allow more students to access the library outside the hours of the school day. For many students the library is the only consistent source of internet access they have, so longer hours would allow students to use the library's resources for longer periods of time."*

Fig. 62 shows the diversity of other kinds of internet tools that school libraries provide.

Types of Information Technology

Fig. 62: Types of Information Technology

Resources and Information	Internet access; intranet service; wireless access; school library website; Google apps for education Chromebooks; Commonwealth E-book Collection; Launchpad
Presentation software	Word processing; spreadsheet software [Excel]; Powerpoint; iTunes; Dreamweaver; Photoshop; Moodle
Production tools	Web design software; podcasting software; Adobe creative suite; Adobe illustrator; audio/video editing; Google Sketchup; Scratch; Garage Band; iMovie; VoiceThread
Communication tools	Email; social media
Research organizers	Graphic organizers; EasyBib; Noodletools; Google classroom

School librarians' comments underlined the inequities in access to digital equipment and software across schools in the Commonwealth.

"I was able to provide all of these in my previous position as librarian in grades 6 through 8. Now I only have a few computers to provide Lexis reading to third graders. [We have] Wifi in the library, but [we] are using only the school's Chromebook."

School librarians noted that they have licenses to products like Word; there does not seem to be reference to district-wide or state-wide provision of licensing for software, such as electronic resources.

One school librarian observed,

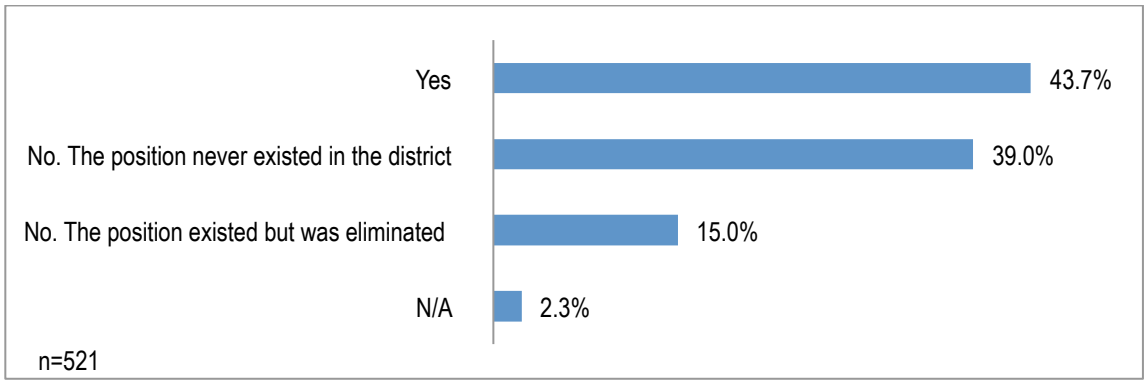
"*We are a bring-your-own-device school and provide MS Word suite to students. We also have a remote desktop through Citrix, which provides student and faculty access to curriculum-related software. We also have a license for MS Word where students can download three sets to put on whichever devices they want. We have Illustrator on some desktop computers in the library because it doesn't work well with Citrix. So, all of the services you are asking about in this section are available to students and the library from the tech dept."*

These comments indicate that the sharp division of labor and funding between school libraries and information technology departments creates an artificial dichotomy between software provision/information skills and provision of hardware/ technical support may not be the most efficient and cost-effective staffing model for delivering state-of-the-art educational technology.

Library or Technology Director

Respondents indicated whether their school districts have a Library Director or Technology Director who oversees, supports, and evaluates the district's school libraries. Fig. 63 shows that 43.7% of school libraries have a Library or Technology Director. In 39% of school districts this position never existed; in 15% the position was eliminated. This is a surprising finding since the position of Technology Director is a line item on the DESE budget, yet over half of school libraries do not have, or have never had a Technology Director. This finding also indicates the marginalization of information/library and technology services on district and local levels at a time when collaboration and consolidation is needed to deliver resources and services in a cost-effective manner.

Fig. 63: Library or Technology Director



There is a long history of the relationship between school library and IT departments. It has been characterized at times as contentious when in fact, close coordination of planning curriculum and instruction, purchasing hardware and software, and collaborative use of staff would result in more cost-effective, learner-centered programming. This potential can only be realized through a partnership between library and technology directors who share their expertise to maximize the potential of information and technology to all students.

Fig. 64 shows that significantly fewer urban and rural schools have library or technology directors than suburban schools.

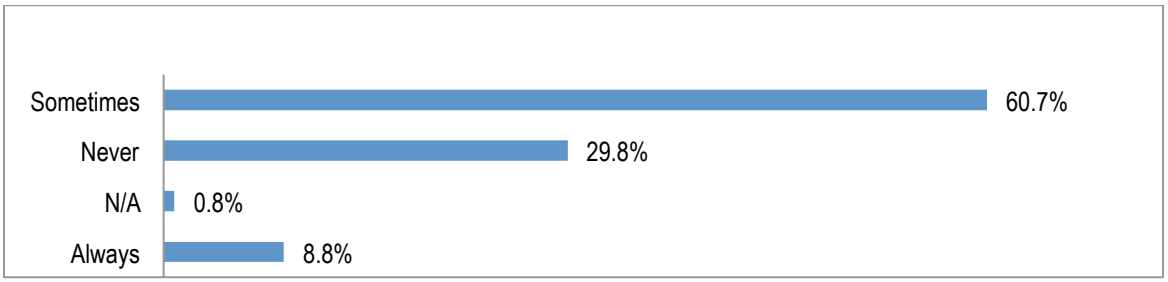
Fig. 64: Comparison of Library or Technology Director by District Types

Test	Result	Findings
Pearson's CHI-SQUARE	$\chi 2$ (1) =15.37, p<.001.	Significantly fewer urban school libraries have a library director or technology director who oversees the district school libraries than suburban school libraries, school libraries.
Pearson's CHI-SQUARE	$\chi 2$ (1) =18.96, p<.001.	Significantly fewer rural school libraries have a library director or technology director who oversees the district school libraries than suburban school libraries,
n=521		

Technology Hardware Responsibility

Respondents indicated whether or not they were responsible for technology hardware support within the school library. Fig. 65 shows that 60.7% of school librarians sometimes have responsibility for technology hardware in their schools while almost one-third [29.8%] never have this responsibility. Only 8.8% of school librarians always perform these functions. This finding re-enforces the need to coordinate and standardize the delivery of library, information and technology services to re-design library and information technology staffing and services to maximize specialized expertise and to increase access to these services by school communities.

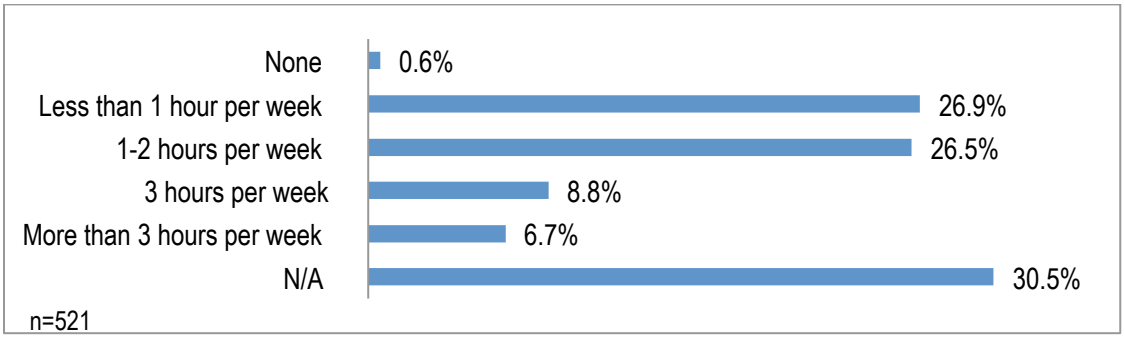
Fig. 65: School Library Technology Hardware Responsibility



Time Spent on Technology Support in Library

Respondents estimated the average amount of time per week that they spent on technology hardware support within their school libraries. Fig. 66 shows that a small percentage of school libraries [.6%] spend no time on technology support in their libraries while 26.9% spend less than an hour a week doing so. 35.3% [26.5% + 8.8%] spend one to three hours per week and only 6.7% spend more than three hours on tech support. It is evident that, with the exception of 30.5% of school librarians [who consider that the question does not apply to them] question, about two-thirds of librarians are integrating technological job functions into their everyday work. They are developing considerable expertise in maintaining and troubleshooting to maintain an increasingly sophisticated digitized library system that is interactive and integral to complex networked environments.

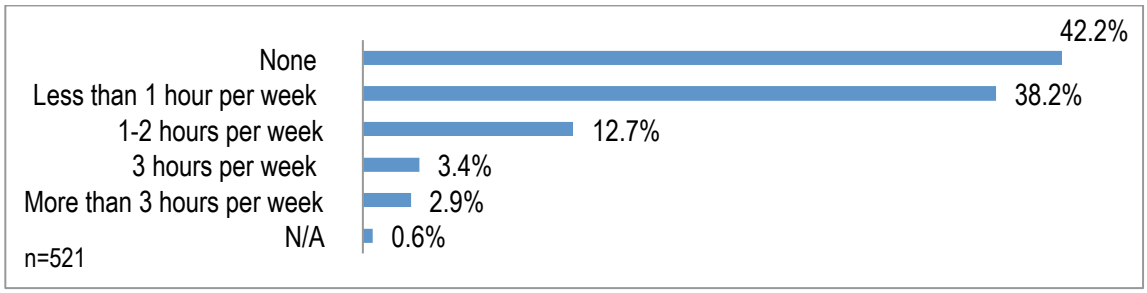
Fig. 66: Time Spent on Technology Support in the School Library



Time Spent on Technology Support Outside the School Library

Respondents estimated the average amount of time per week they spent on technology support outside of their school libraries. Fig. 67 shows that 42.2% of school librarians spend no time on technology support outside of the library while 38.2% spend less than one hour per week doing so. This trend needs further study to determine whether the support school librarians provide is related to their instructional role, i.e., instructing students and providing training and professional development for teachers or whether it is superficial maintenance and troubleshooting that could be done by precocious and capable student technicians.

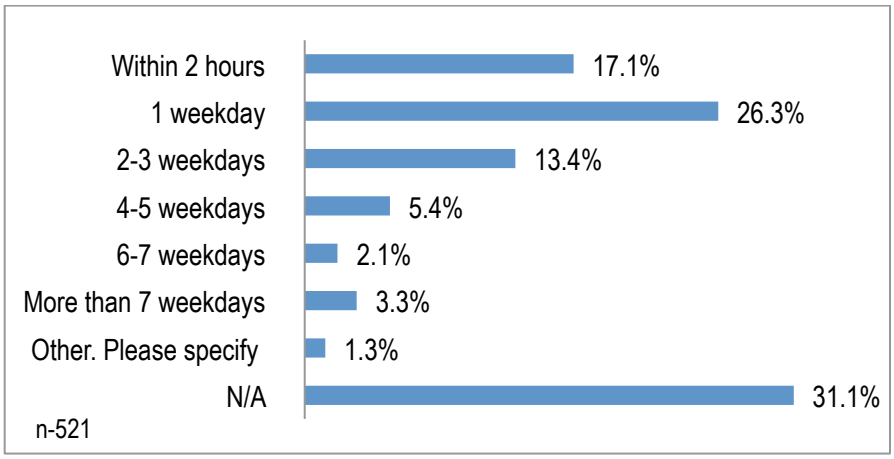
Fig.67: Time Spent on Technology Support Outside of Library



Response Time for Technical Support

Respondents reported the average response time for technology support to resolve issues or problems in their school libraries. Fig. 68 shows response time for technical support that school librarians experience in their libraries. Only 17.1% report that a response time of two hours or less. The largest number of libraries [26.3%] report response time of one weekday. Only 3.3% report a response time of six to seven weekdays. The largest number of responses [31.1] is "not applicable" which could mean that school librarians provide their own support, or that they have little need of support.

Fig. 68: Response Time for Technical Support



These findings underscore the potential of a partnership between school library and information technology programs.

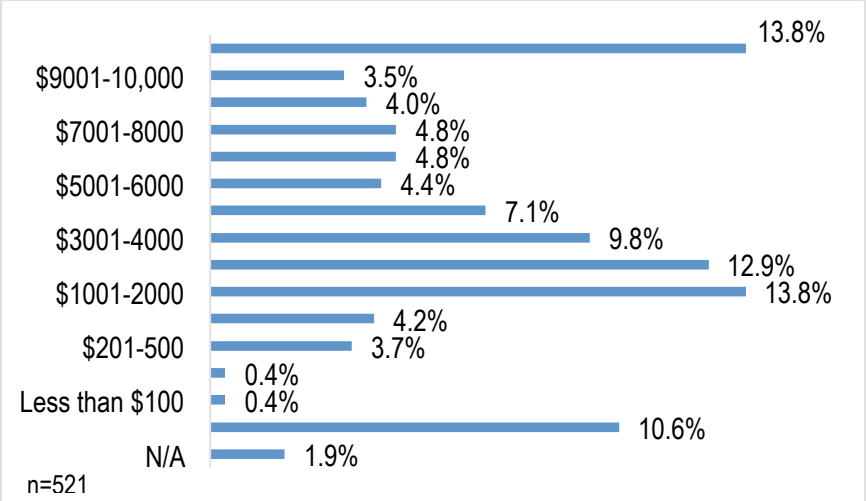
E. Access to Funding and Subsidized Resources

Access to free, subsidized, electronic state-funded resources such as e-books, electronic journals and magazines, and e-reference materials such as electronic encyclopedias, are critical as information moves from print to digital formats. This access is dependent upon technological infrastructure and networking, sufficient electronic equipment and devices, as well as professional librarians who provide instructional support to students and professional support to educators.

Total Library Budget Allocation

Fig. 69 shows that there is little consistency in the allocation of funding for school libraries, which is building-based and at the discretion of the principal. 10.6% of libraries receive no allocated funds for their program while 13.8% receive over $10,000. In fact 57.5% of school libraries in Massachusetts receive less than $10,000. This means that after modest expenditure on books, periodicals, library supplies, these libraries do not have the funding for automated library circulation and cataloging, information technology software and hardware, subscription databases beyond what is cost free, and information technology costs. There is an evident explanation for the inconsistency in budgetary allocations for school libraries across the Commonwealth. The budget dollars that are for the line item "Media/Technology and Libraries" is at the discretion of the districts. There is no way of knowing how districts allocate those dollars.

Fig. 69: Total Library Budget Allocation



In figure 69 only 13.8% of respondents reported a budget over $10,000 and 10.6% reported no funding. The largest sector of libraries reported funding between $1,001 and $2,000 [13.8%], $2,001 and $3,000 [12.9%], $3,001 and $4,000 [9.8%], and $5,001 to $6,000 [7.1%]. Considering that the average cost of a circulating print book, including processing is $25.00, the average cost of a print reference book is $100, annual print periodical subscriptions average $25, and annual subscriptions to electronic databases range from $500 to $5,000, these budgets are not adequate to meet the needs of students and faculty for even the smallest student and staff populations.

An important factor in considering the adequacy of library budgets is the uneven processes across districts for allocating funding for electronic hardware and in some cases, digital software, and even technological infrastructure. In some cases some or all of these critical elements are allocated to information technology budgets. This is one of several reasons why coordination and even consolidation of library and technology programs is needed on local school and district levels to ensure equity of access to information and technology within these districts.

Supplementary sources of funding in the form of grants, subsidies from the community, Parent Teacher organizations, and corporate donations of in-kind support are sensitive to the capacity of school districts to solicit and attract funding sources. Underfunded school districts with underfunded schools in underserved neighborhoods are usually not able to secure these kinds of discretionary funding, exacerbating an information and technology divide across district types. The concept of "funding development," whereby strategies for long-term sustainability for school library planning and development are tied to budget allocation, strategic planning, and state standards/school curricula is sorely needed in the budgetary process for school libraries across school districts. In addition, local funding is increasingly inadequate as the cost of educating youth is rising. Respondents reported the total 2014-2015 total school year budget allocations from district and/or building funds for school library materials, excluding their schools' technology budgets.

There was a great deal of disparity in the librarians' open-ended responses to this question about funding. Many saw themselves in the highest category, indicating that they had the funding to meet all their needs. It should be noted that Boston's strategic plan aims to install school libraries in all the city's schools.

A respondent who is in the 10.6% of librarians with no budget wrote:

"We don't have a budget for our library. Our library was closed two years ago and was re-opened this year. All of the books and materials I have bought this year I have used my own money [to purchase]. Also, I opened a book club account with Scholastic and I have been selling books to our teachers and students and all the points I'll get from these sales I have been using to get new books for our library."

Fig. 70 shows a comparison of allocated funding for school libraries. A one-way Anova test showed statistically significant differences in budgetary allocations among district types. This finding was supported by a post hoc test that showed urban school libraries have lower budgets than suburban libraries. However, comparison of rural with suburban funding showed no significant differences, indicating, with fig. 69 as evidence, that rural and suburban district types have budgetary allocations that are not significantly different.

Fig. 70: Comparison of Budgetary Allocations by District Types

Test	Results	Findings
One way ANOVA's Welch F	(2, 137.40) = 11.63, p <.001.	There was a statistically significant difference among urban, suburban, and rural libraries with regard to budgetary allocations
GAMES-	Urban (M=3359.91, SD=	Urban school libraries have significantly lower budgetary

HOWELL POST HOC GAMES- HOWELL POST HOC	4277.35) Suburban (M = 5617.47, SD = 4818.14), p <.001. Rural (M = 4810.99, SD = 5037.51) Suburban (M = 5617.47, SD = 4818.14), p = .508.	allocations than suburban libraries There was no significant difference in budgetary allocations between rural school libraries and suburban school libraries
GAMES HOWELL POST HOC	Urban (M=3359.91, SD= 4277.35) Rural (M = 4810.99, SD = 5037.51), p = .153 n=521	There was no significant difference in budgetary allocations between urban school libraries and rural school libraries

Given the budgetary trends across school libraries [fig. 70], a finding of no significant difference between rural and suburban and rural and urban libraries indicates consistently low budgetary allocations regardless of district type, with only 13.8% receiving budgets of $10,000 or more. It is clear that a healthier, more equitable funding scheme is critical to enable school libraries to deliver resources and services equitably, particularly to children for whom school is the only portal to the 21st century. It is also clear that given the mission and opportunity of school libraries to develop digital literacy in the context of academic learning, school libraries should be included in technology funds and grants.

Library Materials Purchased with Allocated Budget

Respondents selected the items that they purchased with allocated, budgeted library funds in 2014-2015 [fig. 71].

Fig. 71: Library Materials Purchased with Allocated Budget

Note: Respondents provided multiple responses.

Library collection, Resources	Trade and library books,	**84.8%**
	E-books	**44.9%**
	Periodicals	**56.6%**
	Newspapers	**19.9%**
	Subscription databases	**40.7%**
	AV hardware	**7.9%%**
	AV software	**7.3%**
	Computer hardware	**7.1%**
	Computer software	**9.6%**
Library supplies	Supplies	**78.5%**
	Furnishings	**28.0%**
Classroom materials	Textbooks	**1.7%%**
	Programmed reading	**3.1%**
	Reading incentives	**20.2%**

Fig. 71 shows that school 84.8% of school librarians use their funding for trade and library books and 78.5% for supplies to process and circulate the books, even though almost 45% of librarians use their funding for e-books to some degree. Similarly, funding for periodicals [56.6%] and newspapers [19.9%] as well as subscription databases, which contain electronic periodicals [40.7%] indicates that school librarians are maintaining their print and digital collections. Similarly, librarians purchase analog devices and software as well as their digital counterparts. In addition, some of these expenditures, such as library furnishings and shelving, are capital rather than operating expenditures.

Other	**11.7%**
n=521	

In addition to the items listed in the chart above, 11.7% of respondents noted that they used their allocated budgets to purchase: Library supplies, e.g., processing and circulation supplies; audio books; DVDs; subscription streaming video, e.g., *Facts on File*; *Destiny* or *Alexandria* [library circulation/cataloging program]; library equipment [e.g., book carts]; instructional supplies [e.g., ink cartridges; laminate]; instructional materials [e.g., lib-guides and *EasyBib*; and maker-space kit supplies, e.g., clay; string games; origami; *Legos*; calligraphy].

Respondents wrote that they are using their allocated library budgets, at the expense of their library programs, to purchase instructional materials that should be purchased by school departments [e,g., Fountas & Pinnell leveled book collections] and technology hardware [computers; networking supplies].

Respondents are paying for their attendance at professional conferences and for assessment instruments such as *SAILS* [*Student Assessment of Information and Library Skills*], a $4,000 assessment program that measures student progress in attaining critical 21st century skills.

Several respondents do not receive an allocated budget and do not know how much funding they receive, if any. Some librarians report, "There has been no allocated budget for 2+ years."
One respondent noted, "Due to the lack of a formal budget, I use whatever donations I receive [most come from spare funds of my own] for donation purposes to run the program." This kind of inconsistency in funding plays havoc with library collections that are systematically and deliberately built and maintained to meet the needs of the school community they serve. In other words, a stuff and starve approach leaves gaps in resources and services, making it difficult for the school library to support school curriculum and teaching.

One respondent noted, *"I am forced to use old books from my garage to allow student access. In my old position I worked to have 100% internet and one-to-one devices for all students. There are now only two remaining librarians in the city at the high school."*

There does not seem to be a consistent, universal way of funding and budgeting school libraries across the Commonwealth. Some schools use building based budgeting; some depend on district allocations; and others have no provision for funding from city/town, district, or school funding agencies.

Cost of Electronic Collections/Databases

Respondents reported how much they spend on electronic collections for their libraries [fig. 72]. Access to electronic collections is important for several reasons. These databases aggregate information sources such as newspapers, journals and magazines, reference books such as general encyclopedias and specialized references in the humanities and sciences. They provide a larger, more diverse, and affordable collection than is possible in print media. E-collections also overcome obstacles of physical availability since they accommodate multiple users as long as the technological infrastructure is in place to deliver electronic resources.

It is important for college and career bound students to know about the existence of these databases, which are found in public, academic, and special libraries such as corporate libraries. It is important for them to know how to effectively search these databases, which differ from internet search engines. In addition, these databases contain sources that are selected for their authority, accuracy, and currency to provide scholarly, unbiased, and factually correct information. In many cases electronic collections are tailored to school curricula and state standards. In some cases learning aids are embedded in digital text to meet the needs of struggling readers and special needs students. Electronic collections facilitate the teaching of information literacy in the digital age in the context of independent inquiry as students learn to use information by developing critical skills of information searching, finding, selection, and evaluation. Since the information in these databases is not restricted to a physical library but can be accessed electronically through the school library's website on a 24-7 basis, electronic collections are a key ingredient to maximizing universal access to information.

Fig. 72: Cost of Electronic Collections/Databases

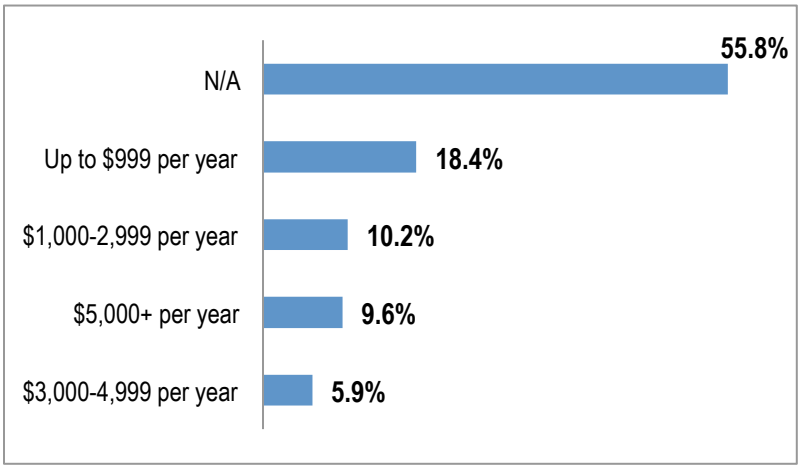


Fig. 72 shows more than half of school librarians responded that the cost of electronic collections was not applicable to them.

This finding raises the question, why school libraries aren't building their digital collections? It may be the case that Information Technology pays database fees, or that libraries are subscribed to state-funded subscriptions to electronic databases. On the other hand, some respondents may not have the electronic infrastructure to make adequate use of the databases.

Fig. 73: State-Funded Electronic Content Collections

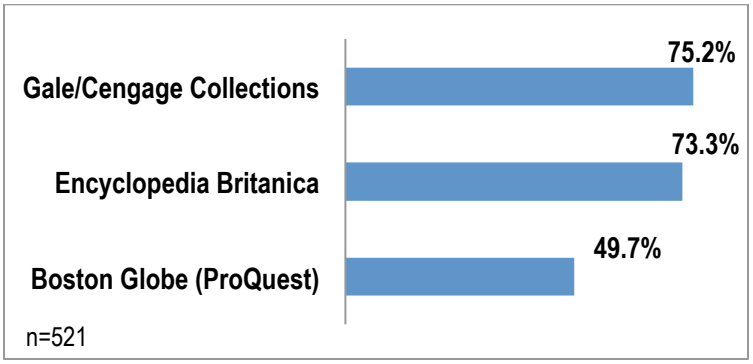


Fig. 73 shows which databases half of respondents who subscribe to electronic databases [fig. 71] choose for their libraries. About 75.2% of these respondents subscribe to Gale Cengage. 73.3% subscribe to *Encyclopedia Britannica* sources and almost half [49.7%] subscribe to the *Boston Globe* in the *Pro Quest* database.

Respondents indicated state-funded electronic content collections are freely available to schools that meet specific criteria. For example the Massachusetts Board of Library Commissioners provides electronic databases and e-books to school libraries that have licensed school librarians. The Massachusetts Library System manages access to these state-funded sources to qualifying school libraries.

Respondents were enthusiastic about having no-charge access to electronic content in subscription databases which are state-supported. They wrote,

"Keep supplying great databases."

"Access to databases such as ABC-CLIO, Proquest, EBSCO would be the most effective ways to deliver the same content throughout all schools in the Commonwealth at reduced or no cost [for school libraries.]"

When respondents were asked, "How can school libraries provide resources in an equitable manner that is cost-effective?" they typically wrote:

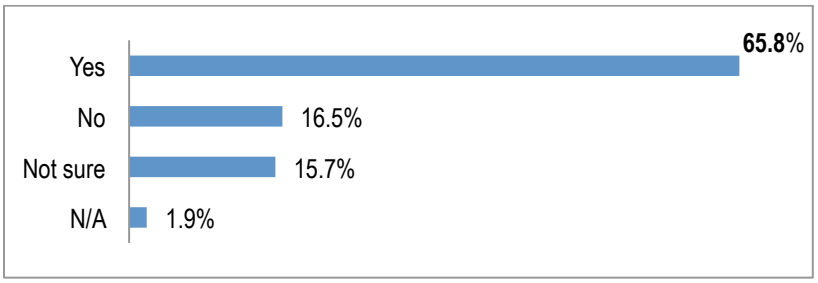
"Good question! The state-funded databases are an excellent start."

Through electronic access to articles in journals, newspapers, and reference books quality learning materials can be equitably available as long as ALL schools have the technological infrastructure and bandwidth to have access to these databases.

Use of State-funded Electronic Resources in Curriculum

Respondents indicated whether or not state funded electronic resources are used in their schools' curricula on a regular basis. 65.8% of respondents reported that the state-funded electronic resources are used in their school's curriculum on a regular basis [fig. 74].

Fig. 74: Use of State-funded Electronic Resources in Curriculum



Only 16.5% of respondents said the electronic resources were not used in the curriculum. However, the "Not sure" response of 15.7% of respondents indicates that either the librarians are not using these resources in their libraries and/or they are not sure whether teachers are using these resources in their teaching. For those respondents who have linked the electronic resources on their webpages, for example, it is possible that teachers and students are accessing these resources in the classroom and/or at home. It should be noted that Fig. 75 reports a total of 32.2% responded "No" and "Not sure" that electronic resources were used in the school's curriculum while 65.8% report that they do electronic

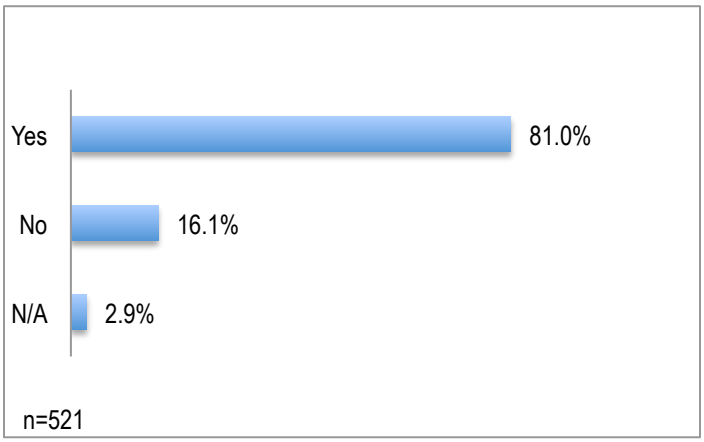
resources are used to support curriculum. These responses reflect a missed opportunity to realize the potential of electronic resources for equitable access in schools.

Fig. 75 compares the use of state-funded electronic resources by district types.

Fig. 75: Comparison of State-Funded Electronic Resources by District Types

Test	Results	Findings
Pearson's CHI-SQUARE	Rural/Suburban $\chi 2$ (1) =5.33, p = .02	Significantly fewer rural libraries regularly use state-funded electronic resources in the curriculum than suburban libraries. Given that there is no statistically significant difference in budgetary allocations for rural and suburban districts [fig. 70], this finding can be explained by a lack of information technology to use electronic resources in teaching school curricula.
	Urban/Suburban $\chi 2$ (1) =3.17, p = .08	There is no significant difference between urban and suburban libraries' use of state-funded electronic resources in the curriculum.
	Urban/Rural $\chi 2$ (1) =.76, p = .38	There is no significant difference in the use of state-funded electronic resources in the curriculum between urban school libraries and rural school libraries.
		Since average use state-funded electronic resources is 65.8% across districts [fig. 74] it is evident that use of state-funded databases in the curriculum could be improved across district types.
	n=521	

Fig. 76: Massachusetts Library System Membership



Respondents indicated whether or not their school libraries belong to the Massachusetts Library System. Fig. 76 shows responses to the question, "Does your school library belong to the Massachusetts Library System? 81% of respondents reported that their school libraries have membership in MLS, which gives them access to subsidized databases. If they have a strategic plan these libraries can also apply for federally funded grants through the Massachusetts Board of Library Commissioners.

A respondent wrote, *"I think the Massachusetts Library System and Massachusetts School Library Association do a wonderful job of providing resources and support to libraries and patrons."*

It should be noted that only school libraries the employ librarians with professional school library licenses are eligible to receive support for state-funded electronic databases.

Fig. 77 shows the results of statistical analysis of membership in the Massachusetts Library System by district types.

Fig. 77: Comparison of Membership in Massachusetts Library System by District Types

Test	Results	Findings
Pearson's CHI SQUARE	Rural/Urban $\chi 2$ (1) =0.78, p = .38	There were no significant differences in memberships in the MA Library System between rural school libraries and urban school libraries,
	Urban/Suburban $\chi 2$ (1) =1.68, p = .20	There were no significant differences in memberships in the MA Library System between urban school libraries and suburban school libraries.
	Suburban/Rural $\chi 2$ (1) =4.15, p = .04	Suburban school libraries have significantly more memberships in the MA Library System than rural libraries,
	n=521	

Participation in Commonwealth E-Book Collection

Respondents indicated whether or not their school libraries participated in the Commonwealth E-Book Collections. The website that is a portal to the collections states:

"The Commonwealth eBook Collections program was created to better serve, educate, and inform the patrons of Massachusetts Libraries who use this catalog to search for eBooks and more from our

partners, *BiblioLabs*, *EBL*, and other key vendors. Patrons can search for a book, check it out and download these materials to their devices. The Massachusetts Library System provides the Commonwealth eBook Collections program in partnership with the Massachusetts Board of Library Commissioners and local libraries. The federal Institute of Museum and Library Services provides funding." [http://info.clamsnet.org/comm-ebook-coll/].

71% of respondents reported that they did not participate in the Commonwealth e-Book Collection [fig. 78].

Fig. 78: Participation in Commonwealth E-Book Collection

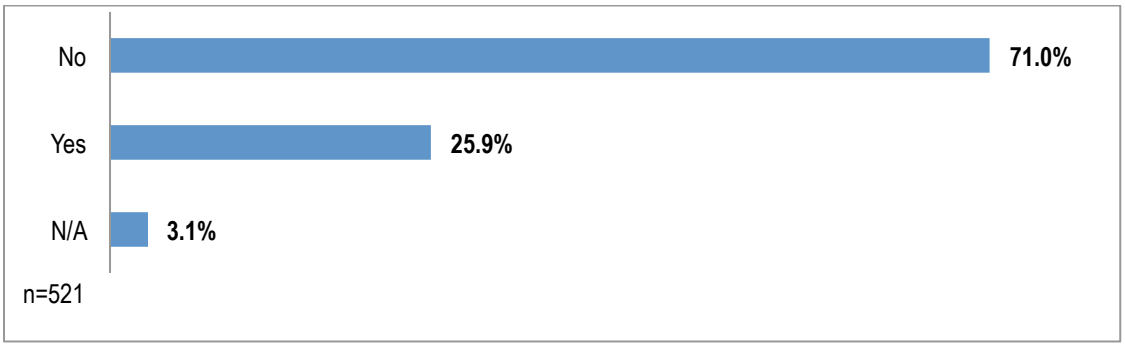


Fig. 79: Comparison of Participation in the Commonwealth E-Book Collection by District Types

Test	Results	Findings
Pearson's CHI-SQUARE	Rural/Suburban $\chi 2$ (1) =4.57, p = .03	Significantly more rural school libraries participate in the Commonwealth e-book collection than suburban school libraries,
	Urban/Rural $\chi 2$ (1) =9.62, p = .002	Significantly fewer urban school libraries participate in the Commonwealth e-book collection than rural librarians,
	Urban/Suburban $\chi 2$ (1) =2.95, p = .09	There were no significant differences in participation in the Commonwealth e-book collection between urban and suburban school libraries,
	n=521	

Fig. 79 shows that significantly more rural school libraries participate in this service but significantly fewer urban and suburban school libraries participate. The low participation rates in subsidized electronic resources exacerbates the digital divide when, in fact, 100 percent participation could eliminate the inequitable access to electronic resources. Barriers include lack of adequate professional school library staffing, lack of professional development for school librarians and teachers, and inadequate technology infrastructure to support the use of electronic resources in under-funded schools and districts.

Locally Funded Electronic Collections

Respondents indicated how many locally funded electronic collections and databases their school

libraries provide. These are collections paid for from the local school budget, not the Massachusetts Library System. Locally funded electronic collections and databases are purchased with allocated school library budgets or other funding sources administered by the principal. Fig. 80 shows that 45.7% of respondents purchase no electronic collections with their library budgets. 36.3% purchase one to four electronic collections. This is a missed opportunity to level the playing field for students since these collections could be accessed through the school library website.

Fig. 80: Locally-funded Electronic Collections

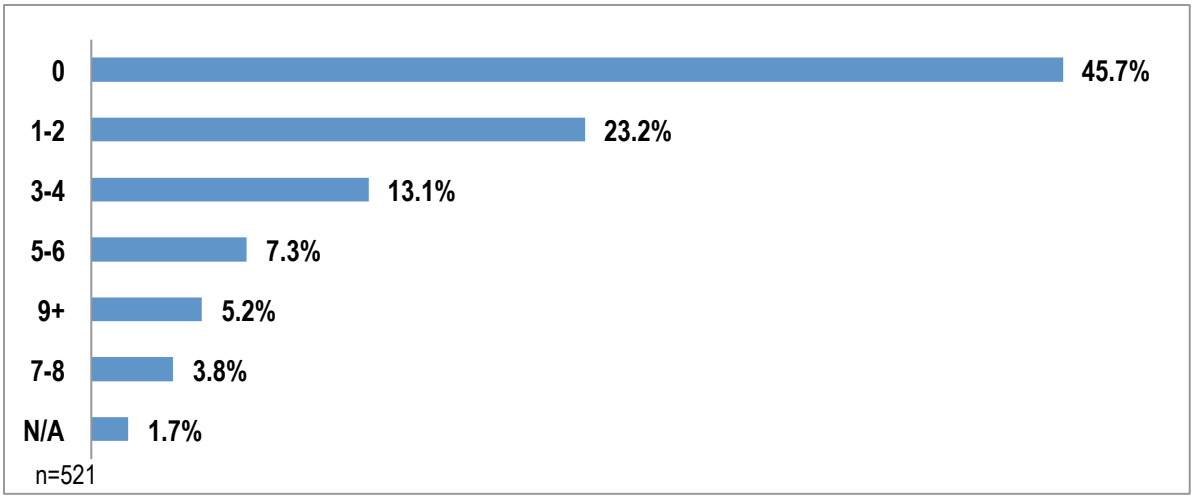


Fig. 81: Compares the purchase of locally funded electronic collections by district types.

Fig. 81. Comparison of Locally Funded Electronic Collections by District Types

Test	Results	Findings
ANOVA	Urban (M = 1.86, SD = 2.84), Rural (M = 1.57, SD = 2.56) Suburban (M = 2.15, SD = 2.67) F (2, 507) = 1.40, p = .25	There were no significant differences in purchasing of electronic collections with local funds locally among urban, rural and suburban school libraries. This indicates that across district types it is generally the case that 45.7% of school libraries do use local funding to purchase electronic collections [fig.81].
n=521		

Other Funding Sources

Fig. 82 shows other sources of funding for school libraries outside of budgetary allocations and subsidized resources.

Fig. 82: Other Funding Sources for School Libraries

Subsidized sources	State-funded databases, Commonwealth E-Book, Massachusetts Library System, Interlibrary loan	**57.4%**
Donations	Endowments, Student clubs, Trustee awards, Friends of the school	**56.1%**
Book Fairs	Scholastic, Barnes & Noble	**46.6%**
Grants	American Library Association, Foundation grants [e.g., MacArthur Foundation], Education grants	**36.9%**
Other fund-raising events	Bake sales	**11.7%**
Other Sources	Librarian's out of pocket donations, Other budgets [e.g., shared technology replacements line item; City/District operational budgets;]	**11.7%**

57.4% of respondents use state-funded sources and 56.1% rely on donations Almost half of libraries [46.6] supplement their funding through book fairs. Only 36.9% of respondents depend on grants. Bake sales [11.7%] and other fundraising events, and librarians' personal funds and other budgets such as Information Technology are reported by 11.7% of respondents.

Respondents identified other sources in written responses including subsidized sources, such as state-funded databases and the technology budget, particularly from shared technology replacement line items. The most frequently mentioned source of funding was Parent Teacher Organizations. Other fund raising agents included: Students' Social Justice Club; endowments; and Trustee awards.

Several respondents noted that they spend their own money, e.g., "I spend a lot of my own money on things for the library;" "My yearly contributions;" and "Out of my own pocket."
A school librarian explains her funding methods:

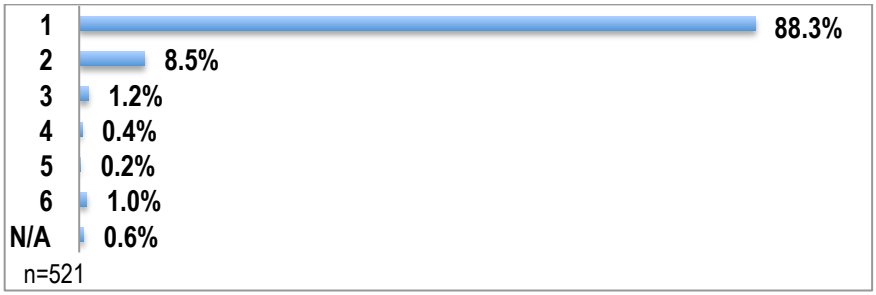
"We don't have a budget for our library. Our library was closed for two years and was re-opened this year. I've used my own money [for] all the books and materials I have bought this year. Also, I opened a Book Club account with Scholastic and I've been selling books to our teachers and students and all the points I get from these sales I've been using to get new books for our library."

F. Access to Library Instruction and Help

Number of Schools that Deliver Instruction

Respondents reported the number of schools for which they provided instructional services in their current position. Access to the school librarian and staff is the most critical element in the school library's contribution to 21st century education. There are several factors that determine this accessibility. The number of schools that school librarians serve affects the time allotted to teaching and personalized support for students. 88.3% of respondents report that they deliver instruction to one school [fig. 83]. Less than 10% provide instruction to two schools. One percent or less of school librarians deliver instruction to more than two schools.

Fig. 83: Number of Schools that Deliver Instruction

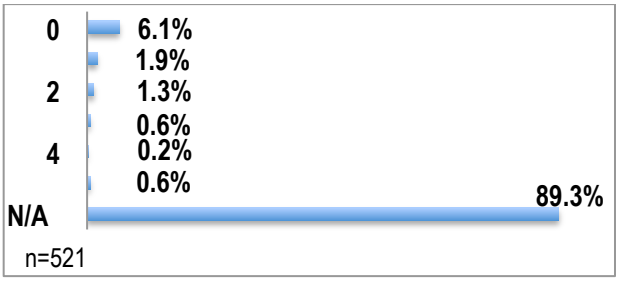


As the increasingly important role that information education plays in preparing young people to participate in the complex economic and political systems of our country, the teaching role of the school librarian becomes more complex and more time-consuming. In addition, school librarians are evolving as "teachers-of-teachers" [Gordon, Todd & Lu, 2011] to meet the demands of digital technology and its impact on teaching and learning. Using the findings of this study, the role of the school librarian can be updated to determine a feasible ratio of school librarians to students and faculty. Strategic teaching through technology can play a critical role in making this possible.

Staff Managed by Multi-School Librarians

Respondents who were assigned to more than one school indicated the total number of librarians and paraprofessionals they manage. School librarians assigned to more than one school manage from zero to more than six staff [fig. 84]. 6.1% of respondents have no staff and a total of 4.6 respondents have one to four staff. Additional staff includes paraprofessionals, volunteer students, and parents.

Fig. 84: Number of Staff Managed by Multi-School Librarians



Regardless of the size of the school, it is unrealistic to expect that one-fourth or one-third of a school library position can adequately meet the needs of the school communities who do not have access to a full-time school librarian. This is a complex position that fills the requirements of the digital age for educators to be engaged in continuous learning about the technology and resources. The school librarian provides this interaction every day that he or she interacts with staff. While one librarian can not adequately instruct and support student learning, it is his or her work with faculty, aides, school administrators, and parents that extends expertise specific to 21st century teaching and learning that makes a dedicated school librarian in every school building a cost-effective way to sustain information and technology based education.

School Levels Taught by School Librarians

Respondents selected the levels of the schooling where they serve as librarians. Fig. 85 shows that almost half [44.2%] of respondents work on the elementary level, yet they teach classes on a fixed schedule almost every hour of the school day. Since a fixed schedule does not easily support collaborative teaching, lessons in information and technology use are isolated from academic content. Middle [32.3%] and high school [36.7%] librarians have more collaborative opportunities when they operate on flexible schedules.

Fig. 85: School Levels Taught by School Librarians

Grade Level[s] Taught

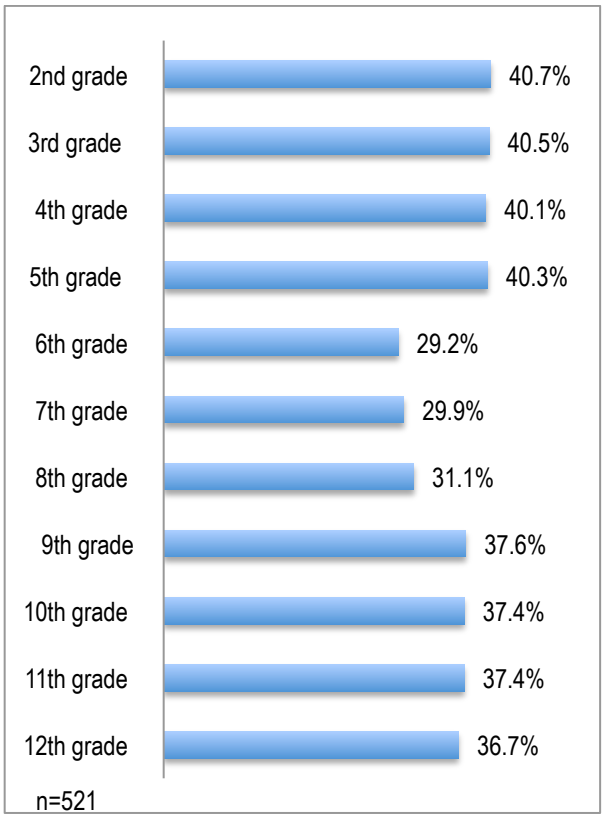
Respondents indicated all grade levels for which they provide instruction. It is evident that young children in pre-kindergarten, kindergarten, and first grade do not receive reading readiness instruction from school librarians [fig. 86].

Grades two through five receive more instruction time than other grades but, as noted in other parts of this report, their instruction is not integrated with academic content, nor does the librarians teach collaboratively with classroom teachers.

Middle school students receive the least amount of instructional time, including support for reading comprehension improvement and digital literacy development.

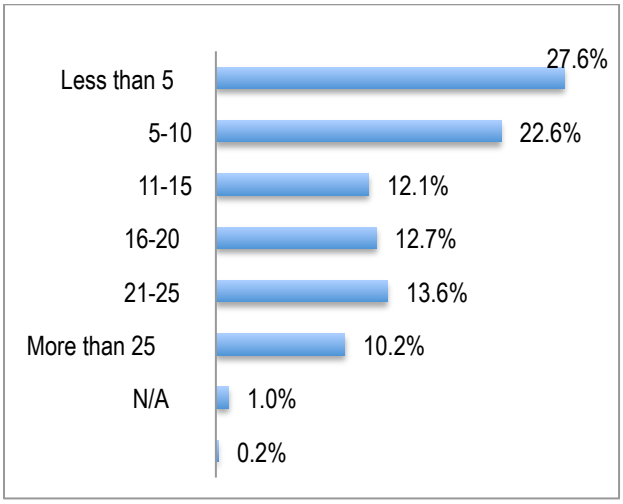
About one-third school librarians reported that every high school grade level receives instruction from the school librarian.

Fig. 86: Grade Levels[s] Taught



Classes Taught Weekly

Fig. 87: Classes Taught Weekly



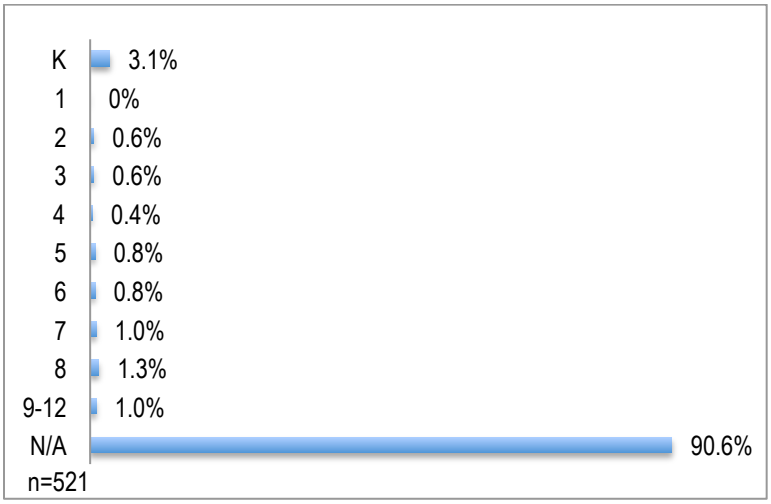
Respondents reported the number of classes that they taught weekly. Fig. 87 shows that 27.6% of respondents teach less than five classes weekly; 22.6% teach five to ten classes weekly; 12.1% teach 11 to 15 classes; and 12.7% teach 16 to 20 classes. The portion of respondents who teach 21 to 25 [13.6%] and more than 25 classes [10.2%] are most likely to be school librarians in elementary schools.

It should be noted that while all librarians spend a considerable amount of time teaching, school librarians who teach elementary grades and middle school grades on fixed schedules do teach all students in their schools, albeit just one day a week. On the other hand, school librarians in middle schools on flexible schedules or in high school will not be able to deliver face-to-face instruction to all students in their schools

Grade Levels Least Taught

Respondents who are assigned to more than one school provided the grade level with which they spent the least amount of time. Fig. 88 shows that school librarians reported low numbers of grade levels least taught, with 90.6% reporting that the question is not applicable to their instruction. It should be noted that while all librarians spend a considerable amount of time teaching, school librarians who teach elementary grades and middle school grades on fixed schedules do teach all students in their schools, albeit just one day a week.

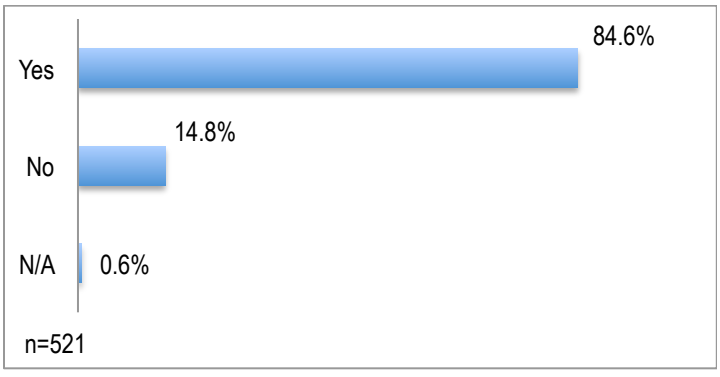
Fig. 88: Grade Levels Least Taught



On the other hand, school librarians in middle schools on flexible schedules or in high school will not be able to deliver face-to-face instruction to all students in their schools.

Instructional Support on Library Websites

Fig. 89: Does Your Library Have a Website?

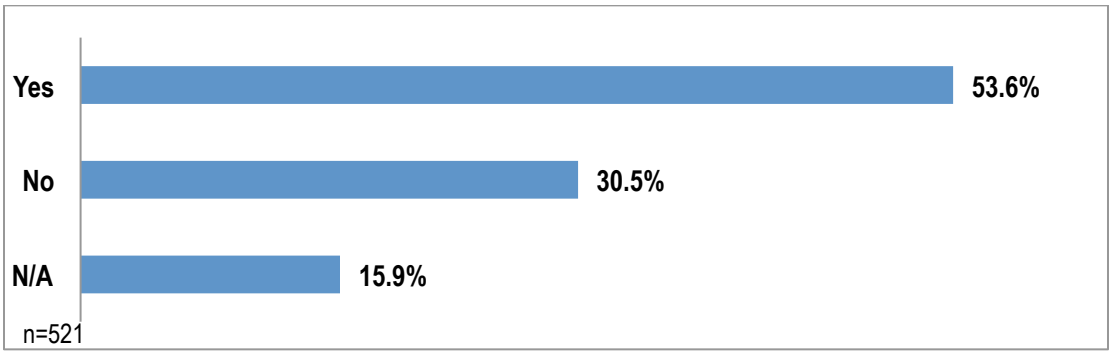


Respondents indicated whether or not their school libraries have a library website that is a portal to 24/7 access to resources and help from the school librarian. Fig. 89 shows that 84.6% of respondents said their libraries had websites while 14.8% said they did not.

Figure 90: Comparison of School Libraries with Websites by District Types

Test	Results	Findings
Pearson's CHI-SQUARE	Urban/Suburban $\chi 2$ (1) =27.89, p <.001	There was no significant difference between rural and suburban school libraries with regard to instructional support/tutorials on their library websites.
	Rural/Suburban $\chi 2$ (1) =7.72, p = .005	There was no significant difference between urban and rural school libraries with regard to instructional support/tutorials on their library websites.
	Urban/Rural $\chi 2$ (1) =.97, p = .325	
n=521		

Fig. 91: Instructional Support on Library Websites

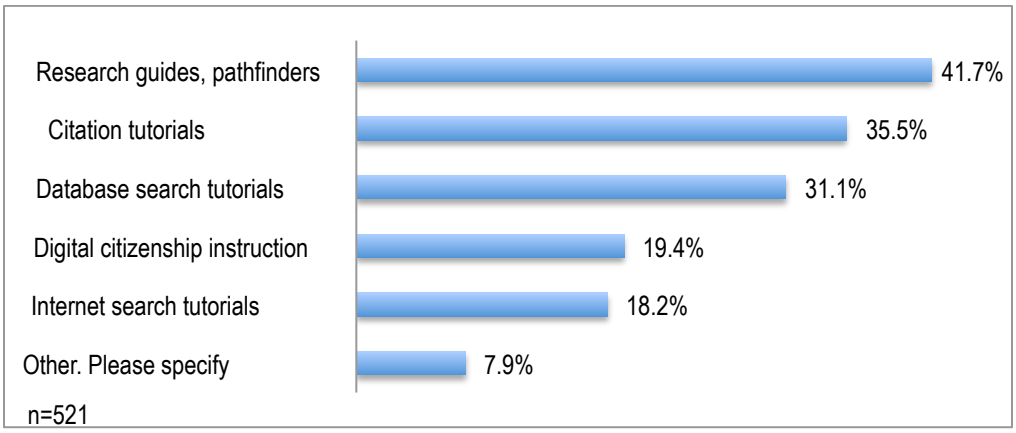


Respondents who provide and maintain school library websites indicated whether or not those sites contained instructional support and/or tutorials about information searching and use. Fig. 91 shows that 53.6% of respondents offer instructional support on their library websites and 30.5% do not, with 15.9% reporting "not applicable."

Types of Instructional Support on Library Websites

In Fig. 92 respondents indicated the kinds of support they provide on their libraries' websites.

Fig. 92: Types of Instructional Support on Library Websites



Almost half [41.7%] of respondents with websites for their libraries provide research guides and pathfinders to support student information searching and retrieval. 35.5% provide tutorials on citation. 31.1% provide tutorials for database searching and internet searching [18.2%]. 19.4% provide instruction in digital citizenship [e.g., internet safety, responsible use of information].

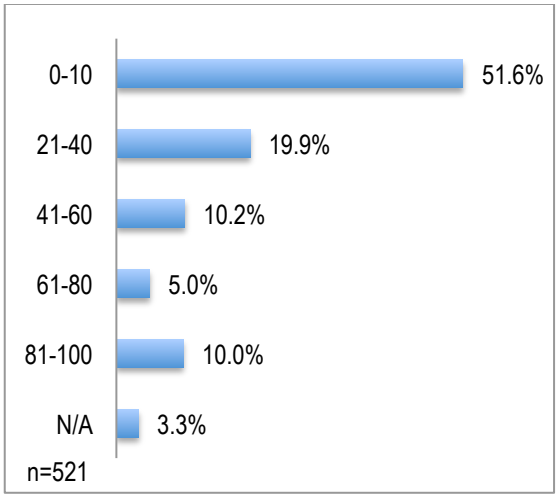
Fig. 93 shows the comparison of school libraries with websites that contain instructional support with regard to district types.

Figure 93: Comparison of School Libraries with Instruction on their Websites by District Types

Test	Results	Findings
Pearson's CHI-SQUARE	Urban/Suburban $\chi 2$ (1) =6.57, p =.010	Significantly fewer urban school libraries have instructional support/tutorials for information use on their library websites than suburban school libraries,
	Rural/Suburban $\chi 2$ (1) =2.66, p =.103	There was no significant difference in containing instructional support/tutorials for information uses on their library websites between rural and suburban school libraries,
	Urban/Rural $\chi 2$ (1) =0.064, p =.800	There was no significant difference in containing instructional support/tutorials for information uses on their library websites between urban and rural school libraries,

Title I Students

Fig.94: Title I Students



Respondents approximated the percentage of students in their schools who meet the low-income criteria for Title I services. Fig. 94 shows that 51.6 respondents have zero to ten Title I students; 19.9% have 21 to 40; 10.2% have 41 to 60; only 5% have 61 to 80; and 10% have 81 to 100. While these numbers vary greatly, there are schools that enough Title I students that warrant specialized programming that would provide small group and individual instruction in information literacy, readers' advisory for the purpose of reading improvement, digital literacy, and inquiry learning support

Ranking of School Librarians' Roles

How do school librarians view their role? Respondents provided responses that prioritize their job functions, with one being the most important and six being the least important [fig. 95]. More than one third [36.2%] of respondents see themselves as School Leaders. This finding reflects updated graduate programs that emphasize the leadership role of the school librarian.

Fig. 95: School Librarian Job Functions

Ranking of Roles	Roles of School Librarians	Percentage of Librarians
1	School Leader	36.2%
2	Teacher	29.7%
3	Program Administrator	26.9%
3	Instructional Partner	26.9%
4	Information Specialist	26.5%
5	Resource Provider	26.0%

Library Instruction Ranked by Type

How do school librarians rank the types of instruction they provide? Respondents ranked types of instruction that take place in the school library with Teacher being the most important and 10 being the least important. Fig. 96 shows how school librarians ranked the importance of the types of instruction that take place in the school library. A ranking of one was the most important and ten the least important. When ranking, the respondents could assign any number, one through ten, once.

Fig. 96: Library Instruction Ranked by Type

Respondents ranked Teacher [29.7%] as their second most important role, again reflecting the direction that best practice and research have taken. Program Administrator and Instructional Partner were both ranked third by 26.9 of respondents. The teaching role has also been the subject of most school library research. 26.5% of respondents ranked Information Specialist as fourth and 26.1% ranked Resource Provider as fifth. Rankings four and five are interesting since, until recently, school librarians have viewed their primary role as Resource Provider and/or Information Specialist.

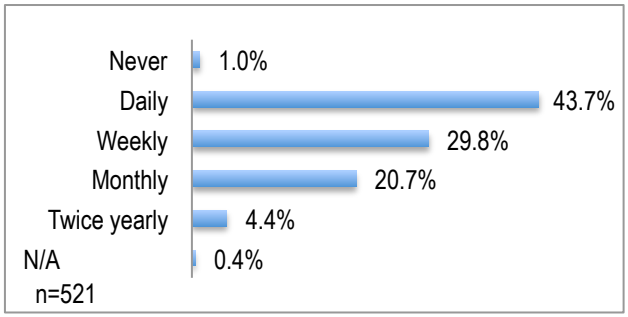
Types of Instruction	Examples of Instruction	Ranking
Collaborative Teaching	Working with teachers and curriculum, team approaches to planning, implementing,evaluating	**1**
Information skills	Basic and advanced searching, evaluation of sources	**1**
Reading improvement for print literacy	Using print strategies to improve comprehension, leveling books, broadening reading interests	**1**
Reading motivation for print literacy	Reading incentive programs, book displays, book talks, readers' advisory	**1**
Inquiry learning skills	Use of Information within a learning task	**2**
Critical thinking skills	Application, analysis of information, creation of new knowledge	**3**
Digital Citizenship	Ethical and responsible use of information, internet safety, attribution of sources	**4**
Technology skills	Computer literacy, network and navigation in web environments	**5**
Reading improvement for digital literacy	Techniques for improving comprehension, evaluating sources	**6**
Library skills	Use of library, rules, regulations, library services	**7**

Four types of instruction were given the highest ranking of one: Collaborative teaching; Information skills; Reading improvement for print literacy; and Reading motivation for print literacy. Inquiry skills and Critical thinking skills were rated 3 and 4. Digital citizenship and Technology skills were rated 4 and 5. Reading improvement for Digital Literacy was ranked 6 and Library Skills were rated last. These ranking reflect the latest research in school librarianship and the consensus of the school library profession's definition of best practice.

Non-Instructional Activities of School Librarians

School librarians, to varying degrees, perform non-instructional activities in their libraries. Respondents selected the options that best describe how often they engage in these non-instructional activities, such as conducting inventory, ordering books, supplies and materials, updating patron records, and printing overdue notes [fig. 97].

Fig. 97: Non-Instructional Activities of School Librarians



Almost half [43.7%] of respondents perform non-instructional activities on a daily basis while 29.8% do so weekly and 20,7% monthly. In other words, even in the best scenario where librarians have help, they still spend about half of their time-sharing non-instructional tasks with staff or volunteer help.

Assignment of Non-Instructional Tasks

Respondents reported who handles the majority of non-instructional tasks inside the library.

Fig. 98: Assignment of Non-Instructional Tasks

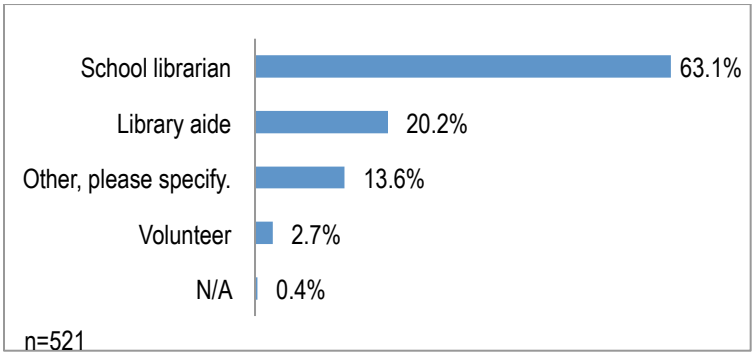
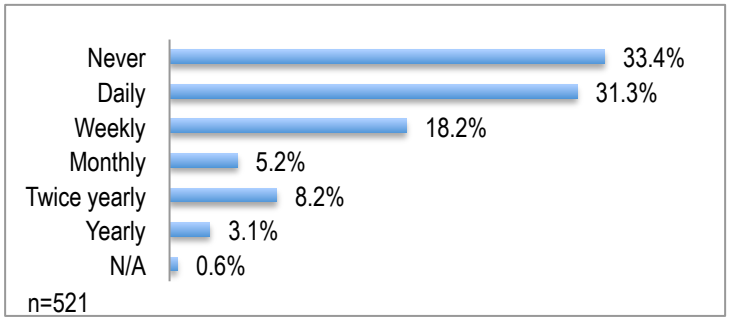


Fig. 98 shows that school librarians perform more than half [63.1%] of non-instructional tasks in the library. 20.2% reported that their aides perform these tasks and 13.6% rely on others, e.g., parent and student volunteers.

Respondents reported the duties they are assigned by the school's administration outside the library.

Fig. 99: Assigned Duties



Only 33.4% of respondents report they never have assigned duties, such as bus, cafeteria, or study hall duties, outside of the library [fig. 99]. Almost the same number report they have these duties on a daily basis. 18.2% are assigned duties outside the Assigned Duties library on a weekly basis; 5.2% perform these duties monthly.

These assigned duties are unrelated to the professional work agenda of school librarians and affect their professional performance. In many instances school libraries are closed when librarians perform these duties. Respondents expressed their concerns.

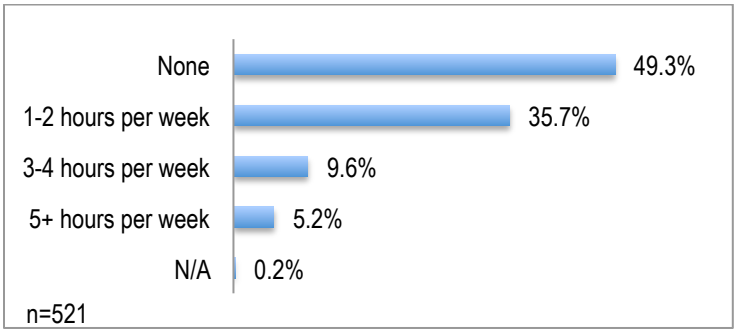
"No support staff, lack of administrative support, and lack of respect for the role of the librarians results in teachers ignoring or insufficiently trying to teach library subjects."

"When librarians are required to supervise study halls [in the library] rather than provide open access to the library, teachers are reluctant to use the library for collaborative instruction because study hall students can be disruptive."

"The mandate to include RTI on a weekly basis results in a re-assignment of duties because classroom teachers have been relieved of all duties. All study halls, currently numbering 25, have been assigned to the librarian. This policy is not in the best interest of study hall students, undermines the library program … in effect re-purposing the role of the school librarian. [This] unfairly impacts the ability of the school librarian to work collaboratively with others."

Time Spent on Extra-Curricular Activities

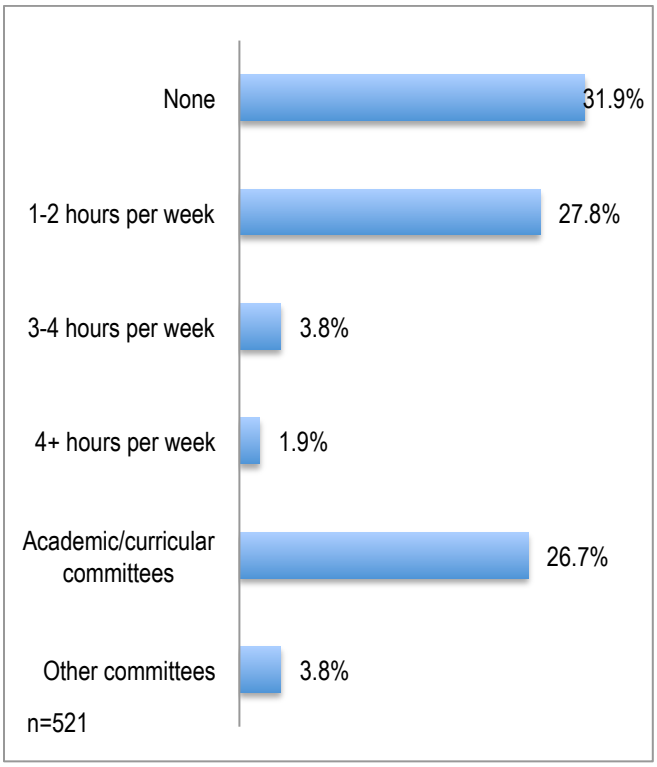
Fig. 100: Weekly Time Spent on Extra-Curricular Activities



Respondents reported approximately how many hours per week they spent, if any, supervising student extra curricular activities [fig. 100]. Almost half [49.3%] do not spend any time on these activities while about one-third [35.7%] spend one to two hours per week.

Time Spent on Faculty Committees

Fig. 101: Time Spent on Faculty Committees



Respondents approximated how many hours per week they served on faculty academic and curricular committees [fig. 101]. Over 31% of librarians do not spend time on faculty committees, while over 33% spend one to four or more hours per week on committee work. Over one-quarter of those committees are academic or curricular, such as Supervision and Evaluation Committee; Teaching and Learning Committee; Literacy Committee; Technology Committee; Senior Internship Advisory; Reader Leader; Instructional Leadership Committee; Elementary Steering Committees for Science, Social Studies; School Library Activities Committee; Health Committee; Reading Incentive Committee; Specialist Cluster Committee.

School librarians reported their participation in nonacademic or curriculum committees as well. These include:

Political/Professional roles such as Union President; Union representative; Teacher Union; Faculty Leadership Council; MTA Executive Board; Massachusetts School Library Association Executive Board; New England School Library Association Executive Board; Education Collaborative [EDCO]: K-12 Librarians monthly meeting; Professional Development Committee.

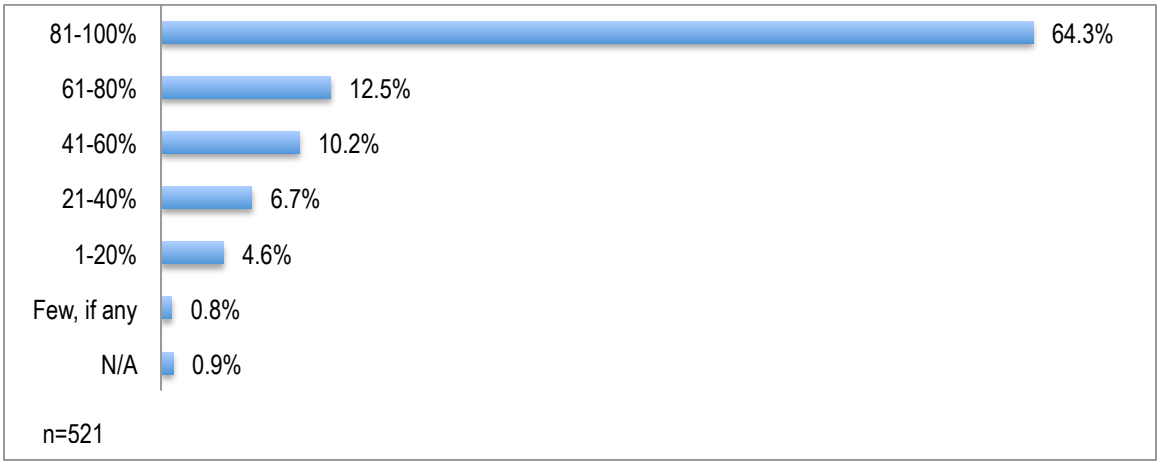
Administrative committees such as Search Committee; Advisory Committee for New Administrator; Stipend Task Force; High Schools That Work Evaluation Committee; School Committee; School Improvement Planning Committee.

Student support committees such as: School Council; Student mentor program; Scholarship Committee; School Advisory Council; School Council School Spirit Committee; Health Youth Coalition; REB Youth Council; Instructional Leadership Team; Mentor of Library PLCs; School Yearbook; PBIS Leadership Team; Student Handbook Committee; Student Council.

Consistent Student Access to the School Library and its Instructional Program

Respondents reported the percentage of students in their schools who have regular and consistent access to the school library and its instructional services [fig. 102]. Only 64.3% of respondents reported that 81 to 100% of students have regular and consistent access to school library programs [fig. 101]. Almost one-third claim that students have less-consistent access.

Fig. 102: Students with Regular and Consistent Access to School Library Programs and Services



G. Barriers and Enablers to Equitable Access

This section addresses Research Question 2: What are the barriers and enablers school librarians face to deliver library resources and instruction/help to their school communities, i.e., students, teachers, and administrators? Respondents supplied extended written answers that are categorized and summarized in this section. Respondents provided extended, qualitative answers that were analyzed using content analysis methods for verbal data.

What are the barriers to equitable access? The dominant theme to barriers to access focused on categories relating to time. Sub-themes were awareness and funding. Fig. 103 outlines the school librarians' responses organized in these three categories.

Fig. 103: Barriers to Student Access to the Library Program

Respondents were asked "Please describe the barriers to providing access to the library program for all students."

Theme	Needs expressed by librarians in response to this question
Flexible schedule	A flexible schedule was most favorably valued because lessons were generally planned collaboratively and resulted in content infused with specific skills. The challenge was that the librarian did not always have sufficient time to meet all requests because of schedule conflicts, and that not all teachers utilized the librarian for collaborative planning. This resulted in not all students experiencing equitable access to instruction.
Fixed schedule	Greater equity in seeing all students, but undermined by classes not being tied to "in-class" curriculum. Greater isolation and lack of collaborative opportunities for the librarian.
Lack of time in student schedules	Many participants noted that students had fully scheduled days with no free blocks, eliminating access to the library during the day. This led to lower levels of pleasure reading book circulation as well as limited use of

	the library as a resource for support.
Testing (diverse, including mandated)	Participants reported library closures due to PAARC, MCAS, SAT, ACT, and other tests. A subset of this erosion of time was use of the library for staff RTI meetings and tutoring for students as part of RTI. One respondent shared that the school library was closed for 6 weeks for testing.
Duties (substitute coverage, teacher prep time, study hall)*	Many participants reported that they were scheduled to provide prep time for classroom teachers, which prevented grade-level collaboration and prevented the possibility of providing flexibly scheduled access to the school library. Participants shared being directed to close the library to provide substitute coverage when necessary. Also reported use of the library as the location for directed studies, prohibiting classes in the library, and preventing the librarian to visit classes for instruction, and preventing opportunities for collaborative planning.
Covering multiple school-sites*	A number of participants cover more than one school building, which required the library to close when the librarian was off site. This also undermined opportunities for collaborative teaching and planning. The schedule in these cases undermined the ability of the librarian to provide services to all students.
Limited access before/after school*	A number of participants responded that they provided before/after school access uncompensated.
Limited time for collaborative planning*	Collaborative planning and teaching was severely limited in all these categories with the exception of flexibly scheduled classes.
Support staff	Support staff are necessary to free the librarian from secretarial tasks and book checkout in order to engage in lesson planning, collaborative planning with teachers, curriculum meetings, collection development, and coverage designed to extend access to the school library before/during/after school for all students and faculty. Access to the school library provides access to technology and diverse collection resources, instructional support, and a safe environment for work.

Respondents identified their needs with regard to the dominant themes that emerged from the data in fig. 104.

Fig. 104: Needs Identified by Respondents

Theme	Needs expressed by respondents in response to this question
Content v. skills-based curriculum	Many respondents acknowledged that general education teachers are under enormous pressure to cover content-based curriculum. This pressure negatively impacted interest in collaborating on lessons designed to integrate skills-based curriculum and informational literacy skills. Participants reflected this in statements that expressed their feelings of not being "valued."
Perception of library skills-based curriculum as an "extra"	Expressed as teachers not having time to collaboratively plan lessons.
General lack of appreciation expressed about many (but not all) administrators who did not "value" the library or library instructional curriculum	Reflected in statements of administrative disinterest, low priority of the library in budgeting for staff, support staff for extended hours, budgeting for collection development, and in scheduling the librarians' time and library for non-library and non-instructional tasks.
Lack of engagement with specific subsets of students	METCO populations identified by 2 participants as not being regular users of the school library, and the need for specific outreach. English as a Second Language and Special Education students identified as requiring extra outreach and collection development due to language barriers and schedule barriers due to specialized services.
Value placed on the role of instructional technology specialist over the school librarian	Great value placed on instruction of platforms (Google, Scratch, etc.) and maintenance of computer carts and laptops in 1:1 schools over information/digital/citizenship literacies.
Value of free access to pleasure reading	Participants reported a decrease in book talks and free reading assignments due to increased curriculum pressure, especially in ELA. Pleasure reading not noted as a priority in the schools of these participants.

Respondents indicated barriers related to lack of funding [fig. 105].

Fig. 105: Barriers Due to Lack of Funding

Theme	Needs expressed by librarians in response to this question
Outdated technology	A commonly cited barrier.
No or diminished funds for collection development	A commonly cited barrier.
No line item in the budget	Funding at the annual discretion of principal cited as a barrier to regular and ongoing collection development.

The most common barriers to school library programs are rooted in limitations imposed by scheduling constrictions, exacerbated by lack of library support staff. Further barriers are found in the tension between content-based curriculum delivery and the numerous demands for testing and RTI that erode the librarians time as well as use of the library facility. Finally, funding for updated technology, adequate staffing, and regular ongoing collection development, constitute the other barrier domains. Insight can be found from the responses of participants who reported that they were not experiencing any significant barriers to providing access to the school library for their students.

School librarians described how the school libraries are, or could be enabled to provide equitable access to the library program for all students [fig. 106]. Among this cohort of positive responses were statements that reflected positive relationships with their school administrators, resulting in a positive school culture for student access to the library. School administrators were identified as being the source of enabling positive conditions for school libraries in the domains of funding, scheduling, collaboration/instruction.

Fig. 106: School Administrators as Enablers of Access
Respondents were asked "Please describe what in your school enables or could enable the provision of equitable access to the library program for all students?"

Theme	Needs expressed by librarians in response to this question
Vision	Statements of inclusion of librarian in creating transformational school change, requiring librarian participation in curriculum development, viewing librarian as a leader within the school
Funding	Maintaining stable budget line items for collection development
Staffing (Subset of funding)	Staffing - increasing librarian hours to full time, funding hours for library assistant position Hours - provided funding for library assistants for before/after school

	coverage
Schedule	Prioritizes access through scheduling decisions such as flexible access to students through the school day, not using the library to schedule directed studies, shielding the library from excessive use as a testing center
Collaboration/ Instruction	Expressed value in teachers collaborating with general education teachers and providing time during the school day for collaborative planning Increased awareness of the value of the information literacy curriculum resulting in increased collaboration and utilization of library resources

A respondent wrote,

"A supportive and visionary school principal who values inquiry-based learning and recognizes the positive impact of a vibrant school library curriculum and program is the single biggest enabler of equitable access. With the vision comes the funding."

Specific statements of gratitude cast light on what is working well in schools, and improving equitable access for all students:

- Adequate book budget;
- Adequate budget for diverse resources;
- Administrative support (via funding) for extending access before/during/after school;
- Supportive Director of Technology;
- Funding of professional development for the school librarian;
- Family access to the school library collection for families with younger, pre-school children;
- Many statements of gratitude for the state-supported databases as an enabler of equity.

School administrators were reported by participants as the primary enablers of equitable access to the school library program (instruction, resources, access to the library). Via vision of what a strong school library can add to a school (collaboration/instruction), support for adequate school library budgets (collection development, diverse resources for students and faculty), the value of access to the school library by increasing staffing (before/during/after school), it is school administrators who are the most influential enablers.

A full-time, licensed school librarian in each school was central to meeting the goals of equitable access to the school library as a center for curriculum focused on print and digital literacies, digital citizenship, student support, rich and diverse collection resources, and instruction. A licensed school librarian and at least one support staff position was seen as important in achieving this goal. Barriers to staff funding emerged as an area of advocacy focused on raising administrative awareness of the benefits for students of having a well-funded school library. Additionally, funding for rich and diverse library collections for instruction and independent reading and inquiry, as well as library facilities that include robust wifi and student access to technology, were identified as important areas. Barriers to adequate funding include lack of

book budgets, funds for databases, and lack of funding for technology infrastructure and computing devices for students. In this area, gratitude was expressed for the databases provided at no cost with state support provided by the Massachusetts Library System and the Massachusetts Board of Library Commissioners. One response queried the possibility of establishing state consortium funding for additional databases, to increase equitable access for all students.

The enablers for school librarians were identified by survey respondents via open response replies to a question about how school libraries can deliver equitable access and instruction to all students with regard to developing information and digital literacies.

There was great consistency in the domains of responses from the participants. Fig. 107 summarizes the needs expressed by librarians in response to this question.

Fig.107: Equitable Access to the School Library

Theme	Needs expressed by librarians in response to this question
Full-time licensed school librarian in each school	Access rich and diverse print collections Access to curriculum Inquiry-based learning Collaboratively planned and enriched lessons developed with core instruction teachers to develop critical thinking skills, technology skills, digital literacy skills, independent reading Access to Massachusetts Library System state-funded databases Access to technology

Unfortunately this question evoked comments from respondents who experienced permanent or temporary closure of their libraries. One of these respondents wrote:

"I had a very successful flexible schedule at a middle school. They cut my position and forced me into a third grade classroom. The library I used to work in has no staff now. The school I am currently in and all elementary libraries in my district are staffed by paraprofessionals."

Fig. 108 displays data extracted from the question about how school libraries can deliver equitable access and instruction to all students focused on funding.

Fig. 108: Equitable Access to Funding/Budgets

Theme	Needs expressed by librarians in response to this question	Supporting survey data
Funding/ Budgets	Develop curriculum Funding for support staff allows the school librarian to engage in curriculum development and collaboration that support school-wide instructional goals for student achievement. Collection development Provide state approved budget guidelines to develop rich, diverse, and equitable collections for students that include materials for ELL and students with special needs.	Urban districts report significantly lower budget allocations than suburban districts. Significantly fewer alternative reading materials are available in urban libraries than rural libraries. Significantly fewer rural and urban schools participate in the Commonwealth eBook Collection than suburban.

Section 4. Recommendations and Long Range Plan: How can School Libraries be Further Developed to Ensure and Reflect Changing Technology?

Recommendations and Long Range Plan

The Special Commission on School Library Services makes the following recommendations and long-range plan for improving access to school libraries and school librarians, print and electronic information resources, information technology, instruction and help, and funding. In this time when many get their news via social media, it is vitally important to provide children with discerning information literacy skills, including information, technology, and multimodal literacy that enable critical thinking and evidence-based practices that develop an informed and responsible citizenry. The Recommendations derive from the data through empirical research, *The Massachusetts Study: Equity and Access for Students in the Commonwealth.*

The Logic Model presents five major recommendations, or goals, and the actions, or objectives that constitute a three-year strategic plan. The actions describe how the recommendations can be implemented [Column 1]. Column 2 identifies staff responsible for implementing the plan. Column 3 identifies the year, from Year 1 to Year 3, when each of the actions is implemented. The last column in the Logic Model identifies data and findings from the school library study that support the recommendations and actions of the long-range plan. Figures referenced in this column of the Logic Model reference the figures in this research report. A Timeline at the end of the Logic Model indexes all the actions by Year 1, 2, and 3.

The actions in the Logic Model derive from the strongest findings from the school library study that were identified as trends during data analysis. The researchers identified the following data sets, i.e., the school library and staff, information resources, information technology, instruction and help, and funding. There is a synergy among these dimensions that illustrate the interdependency of the recommendations that the Commission have chosen to recommend to the Legislature.

1.0. Improve Access to School Libraries and School Librarians - Library services are dependent upon school librarians trained to be teachers of students and teachers-of-teachers.

2.0. Improve Access to Information Resources in School Libraries
Information Resources are highly dependent on digital **Information Technology** that facilitates access. Without adequate infrastructure and devices students cannot access the information and support they need to develop digital literacy, ethics, and safety.

3.0. Improve Access to Information Technology in School Libraries
Professional Development for the licensed school librarians emerged as a strong trend in the data. It is critical that licensed librarians are hired to manage the Commonwealth's school libraries. Since the library and information science field is dynamic, school librarians need continuing and high quality professional development to deliver high quality, relevant

instruction and help to students and ongoing, just-enough-just-in-time training for teachers and administrators.

4.0. Improve Access to Instruction and Help in School Libraries - Adequate staffing is critical to improving instructional services, including support for emerging and developing literacies, including information and technological literacies and the literacies foundations to science, history, math, and Language Arts. These literacies are foundational to the collaborative relationship between school librarians and classroom teachers.

5.0. Improve Access to Funding for School Libraries
Funding cuts across all the dimensions of school librarianship. For this reason, item five in the Logic Model, **Access to Funding: Guidelines for Budget Allocation and Expenditure to Support Recommendations** connect explicate the connections among funding and the implementation of the actions across the other four dimensions of the school library study.