How Pennsylvania School Libraries Pay Off: Investments in Student Achievement and Academic Standards

By

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About the Project

This research was a component of a 2011 National Leadership grant project funded by the U. S. Institute of Museum and Library Services (IMLS). The project partners were the Health Sciences Library Consortium (HSLC) represented by Exec. Director, Joseph Scorza, the Pennsylvania School Librarians Association (PSLA) represented by Debra E. Kachel, and the Education Law Center (ELC) of Pennsylvania, represented by Sandra Zelno and Brett Schaeffer. Dr. Keith Curry Lance and Bill Schwarz of the RSL Research Group, Louisville, Colorado, with assistance from Dr. Mary K. Biagini, Associate Professor and Director, School Library Certification Program in the School of Information Sciences at the University of Pittsburgh, analyzed data and conducted the research. All findings and related qualitative surveys of school administrators, teachers, and librarians can be found at the project website: http://paschoollibraryproject.org.

Executive Summary

About the Study

Using 2011 data from a Pennsylvania State Board of Education school library survey and test score data from the Pennsylvania Department of Education, this study explored:

1. Relationships between selected school library infrastructure components and Pennsylvania System of School Assessment (PSSA) Reading and Writing test scores of students

2. Perceptions of administrators, teachers, and librarians about libraries and librarians and the relationships between those perceptions, academic standards, and PSSA scores

3. Estimated statewide costs of school library infrastructure components found to have a positive association with academic standards and student achievement

This study builds on two decades of research about the impact of school libraries and librarians which is summarized by Mansfield University's School Library Impact Studies Project found at: http://library.mansfield.edu/impact.asp. This new Pennsylvania study, funded by the federal Institute of Museum and Library Services (IMLS) was conducted in three phases.

Phase 1: School Libraries and PSSA Scores

On October 5, 2010, the Pennsylvania House of Representatives unanimously adopted a resolution requesting that the State Board of Education conduct a survey of school libraries in Pennsylvania. The survey was implemented in Spring 2011 and the data were analyzed. Of 500 school districts, 389 districts (78%) participated in the survey, and, of the 2,970 schools in those districts, 2,180 schools (73%) responded. Of 141 charter schools, 22 (16%) responded, and of 14 Comprehensive Career and Technical Centers (CTCs), two (14%) responded. Nearly two-thirds of responding schools are elementary schools. More than 15% of the schools represent middle-school grades and 16% represent high schools.

The Data & Its Analysis

Data drawn from the Pennsylvania library survey by the RSL Research Group (contractor for this IMLS-funded study) include:

- Two measures of library staffing: whether or not the school has a certified librarian working 35 hours per week or more, and one meeting the additional condition of having at least 20 hours per week of library support staff

- One indicator of library spending: whether or not the school spends $11 or more per student per year

- Three measures of digital resources: the number of library computers less than five years old, any access to databases, and any access to e-books

- Three measures of library collections: whether or not the school has 12,000 or more book volumes, 150 or more video titles, and any audio titles

- Three measures of library access: whether or not the school offers flexibly scheduled access to the school library, has 21 or more group library visits per week, and is open beyond the regular school day (i.e., before and/or after school hours).

These data from the Pennsylvania survey were then merged with 2010 – 11 PSSA Reading and Writing scores, and the results analyzed. (Reading scores are for grades 3 through 8 and grade 11, and Writing scores, for grades 5, 8, and 11.) PSSA scores for students at schools with more and less, or any and none, of the above-mentioned library resources were compared.

The nature of the data available for this study makes it a stronger one than its 2000 predecessor and a "first" in two respects:

- For the first time in Pennsylvania, this study examines directly the differences in both PSSA Reading and Writing scores for students in schools with and without specific levels of selected library resources.

- For the first time in any state, this school library impact study examines test scores for specific cohorts (or sub-groups) of students, including students who are Economically Disadvantaged, students who are Black, students who are Hispanic, and students with Individualized Education Programs (i.e., students with disabilities). Findings about these students provide evidence that librarians and libraries can play substantial roles in helping to close achievement gaps for such students.

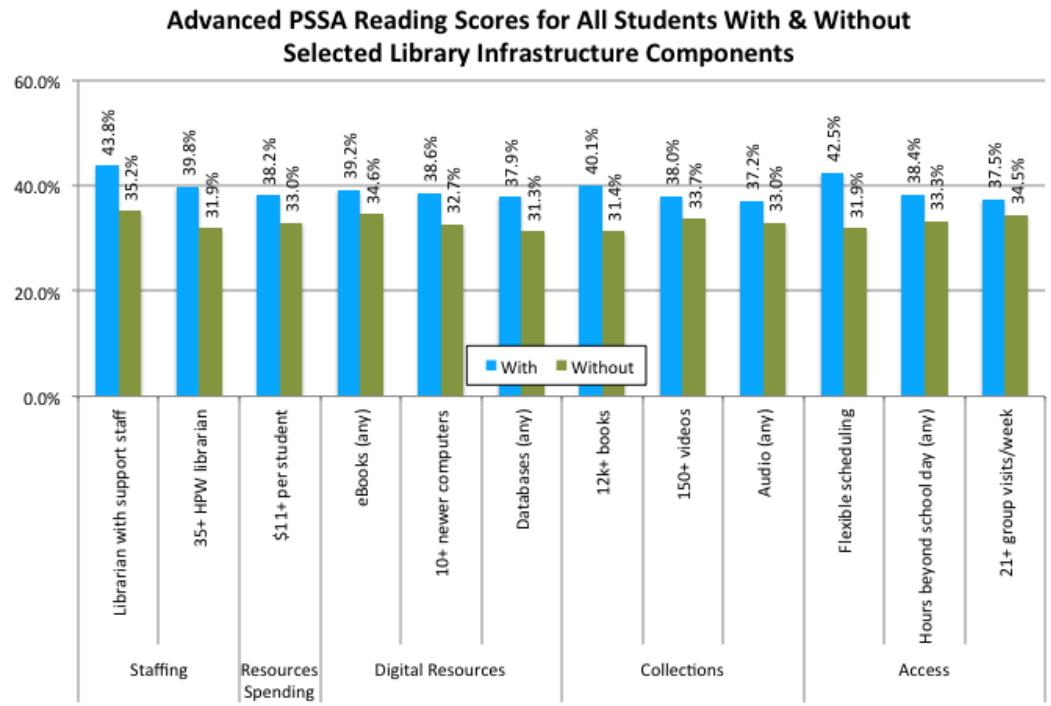
Key Findings

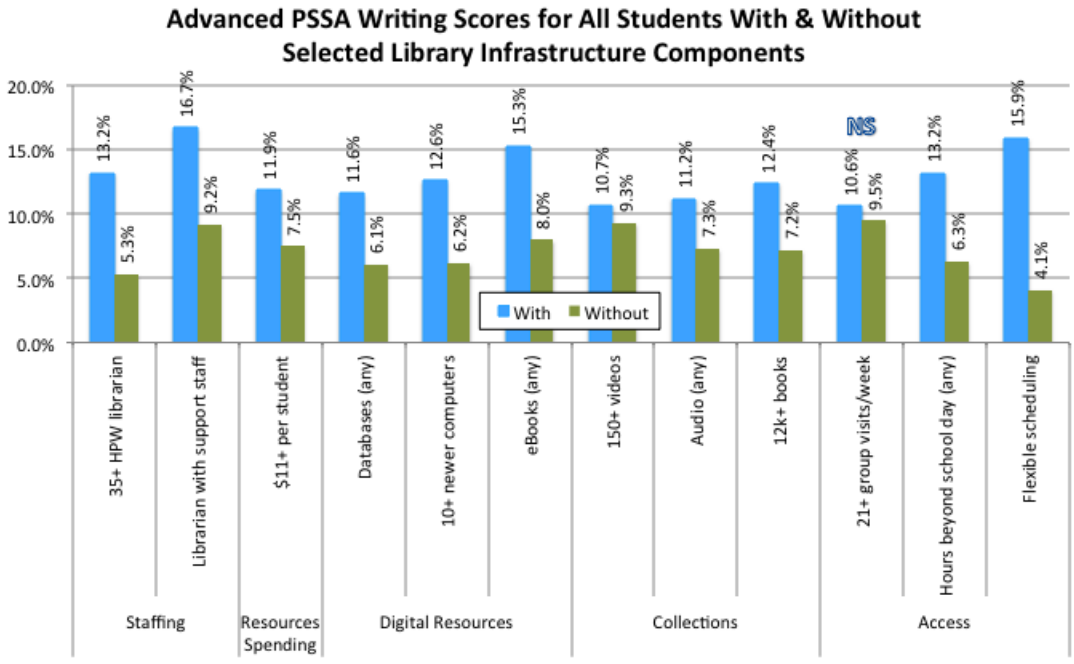
When students with and without access to various library resources are compared, the following statistically significant relationships are revealed:

- Consistently, for all 12 library measures, students with access to these resources—a better-staffed, funded, equipped, and stocked, and more accessible school library—are more likely to score Advanced and less likely to score Below Basic on the PSSA Reading and Writing tests.

- A general finding of this phase is that the impact of school library programs is more pronounced proportionally for Writing than Reading scores. From the perspective of 21st Century Learner standards, this is not surprising. A 21st Century Learner must be a producer as well as a consumer of information. For Writing, students with access to libraries that have more of all of these resources are, in most cases, two to five times more likely to score Advanced than students without well-resourced libraries.

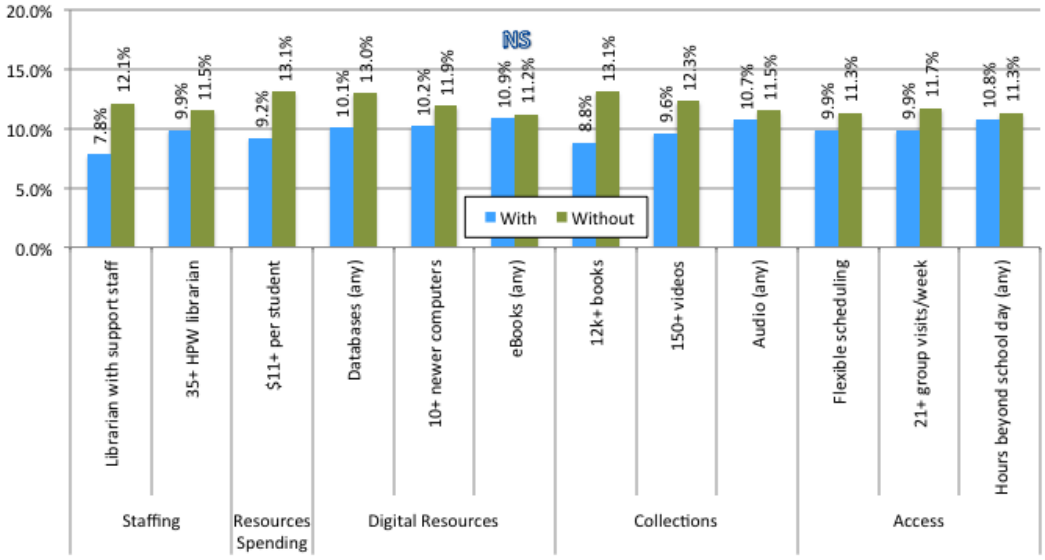
- Generally, these patterns were found for All students as well as students who are Economically Disadvantaged, Black, and Hispanic and who have Individualized Education Programs (IEPs). In other words, these findings cannot be explained away by such socio-economic or demographic factors. (Detailed findings for these student cohorts are included in the full report.) Indeed, quite often, the PSSA results associated with stronger library programs are better for these students than for students generally. The relationship between test scores and quality school library programs, therefore, is not an incidental statistical artifact of more prosperous communities or families.





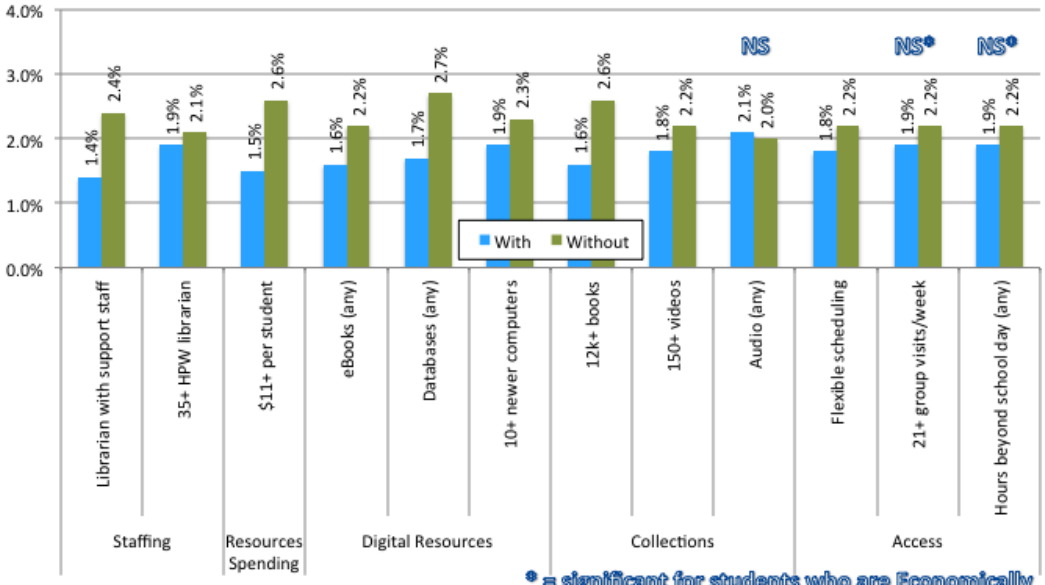
NS = not significant for All students, but significant for students at each grade level

Below Basic PSSA Reading Scores for All Students With & Without Selected Library Infrastructure Components



NS = not significant for All students, but significant for students who are Hispanic and who have IEPs

Below Basic PSSA Writing Scores for All Students With & Without Selected Library Infrastructure Components



NS = not significant for All students

* = significant for students who are Economically Disadvantaged ("Poor") and who are Black

How Much of a Difference?

How much of a difference can stronger school library programs make? This phase of the study is based on a snapshot of data about schools with stronger and weaker library programs, not an examination of the consequences of changes in library programs over time. Still, the findings indicate the kinds of differences that might be made by improving school library programs:

- On average, almost nine percent (8.6%) more students score Advanced in Reading where students have a full-time, certified librarian with support staff than where there they have a full-time, certified librarian alone. Further, almost eight percent (7.9%) more students score Advanced in Reading where students have a full-time, certified librarian than where they do not (i.e., anything from a part-time librarian to none at all).

- On average, the percentage of students scoring Advanced in Writing is two and a half times higher for schools with vs. schools without a full-time, certified librarian (13.2% vs. 5.3%). Similarly, the average percentage of students scoring Advanced in Writing is almost twice as high for schools with a full-time, certified librarian with support staff vs. those with a full-time certified librarian alone (16.7% vs. 9.2%).

These findings suggest that stronger library programs—especially those that are staffed appropriately—can contribute to the success of all students and can make an impressive difference for students with the greatest needs.

The findings of the first phase of this study are detailed in Chapters 2 through 6.

Phase 2: School Libraries, Academic Standards and PSSA Scores

This is the first statewide school library impact study to examine real-world data about the contributions of librarians and libraries to teaching two important sets of academic standards: the American Association of School Librarians' *Standards for the 21st Century Learner* (2007) and the Common Core State Standards Initiative's *Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects* (2010). The latter document was adopted by the Pennsylvania Department of Education in 2010. In the absence of standardized assessment instruments for these two sets of standards, this study draws on the perceptions of educators themselves and verifies those perceptions by correlating them with PSSA Reading and Writing scores.

In March and April 2012, as part of this study, surveys of three educator groups were designed and administered online, and useable responses were received from 295 administrators, 950 teachers, and 597 librarians.

The Data & Its Analysis

When surveyed, educators were asked to address key library practices and activities as well as the roles played by librarians.

Administrators were asked how much they value library access being scheduled flexibly, teachers and librarians collaborating on instruction, librarians providing in-service professional development to their teachers, librarians and principals meeting regularly, librarians being appointed to school committees, and collaboration with librarians being addressed in teacher evaluations. They were asked to respond to these practices on the following scale: "essential", "highly desirable", "desirable", "unnecessary" or "don't know/need more information". They were also asked to identify which of a dozen roles they believe librarians should play.

Teachers and librarians were asked to report how often they engage in the following activities: classes or other groups of students visit the library on a flexible schedule, teachers accompany students to the library, teachers invite the librarian to their classrooms, teachers collaborate with their librarian on design and delivery of instruction, and the librarian helps teachers learn new information-seeking skills. They were asked to report the frequency of these activities on the following scale: "at least weekly", "at least monthly", "at least once a semester", "at least annually", or "rarely/never". Teachers were also asked to identify which of a dozen roles they experience their librarians playing. Librarians were asked to anticipate the librarian roles their administrator and teacher colleagues would select.

All three educator groups were asked to assess the instructional role of their library programs in teaching two sets of academic standards: *Standards for the 21st Century Learner* (American Association of School Librarians, 2007) and *Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects* (issued by the Common Core State Standards Initiative and adopted by the Pennsylvania Department of Education in 2010). In the absence of rigorous assessment tools for these two sets of standards, educators were asked to provide these assessments on a standard "excellent", "good", "fair", or "poor" scale.

These data were analyzed by cross-tabulating assessments of the library program's role in teaching 21st Century Learner standards ("excellent" vs. less than excellent) with the following:

- How much administrators value key library practices ("essential" vs. less than essential)
- How often teachers and librarians report engaging in related activities ("at least weekly" vs. less often, or "at least monthly" vs. less often)
- Whether or not administrators consider desirable, teachers perceive, and librarians expect their principals and teachers to perceive librarians in each of several roles

A similar analysis is reported for librarians' self-assessments of their role in teaching PA/Common Core standards related to English Language Arts, Reading and Writing in History/Social Studies, Science and Technical Subjects, and—longer-term—College and Career Readiness.

Finally, comparisons of these qualitative assessments to PSSA Reading and Writing scores validate that they are not the wishful thinking of educators.

The Findings

Generally, when educators value library practices as essential and report engaging in related activities more frequently, they are more likely to assess the library's role in teaching 21st Century Learner standards as excellent.

- All three groups of educators associate flexible scheduling of library access and instructional collaboration between teachers and librarians with library excellence in teaching all four 21st Century Learner standards. Where such teaching is assessed as excellent, administrators are more likely to value flexible scheduling and teacher-librarian collaboration as essential and teachers and librarians are more likely to report them occurring at least weekly.
- Notably, for administrators and teachers, majorities—usually substantial ones—who support these practices and are engaged in related activities also assess the teaching of 21st Century Learner standards by library programs as excellent. Librarians, in assessing themselves, tend to be more modest. Still, their self-assessments are more likely to be excellent if they engage in these library activities more rather than less frequently.

- For all three groups of educators, three librarian roles are associated with library programs whose teaching of all four 21st Century Learner standards they assess as excellent: In-service professional development provider, school leader, and technology instructor.

- For all three educator groups, five additional librarian roles are associated with library programs whose teaching of one or more standards they assess as excellent: co-teacher, reading motivator, teacher, instructional resources manager, and instructional support.

- Without exception, students are more likely to score Advanced on PSSA Reading and Writing tests where all three educator groups assess as "excellent" the library program's role in teaching of all four 21st Century Learner standards.

- Consistently, students are less likely to score Below Basic on PSSA Reading and Writing tests where the three educator groups assess as excellent library program teaching of Inquiry-Based Learning.

- Notably, the positive association of excellent library program teaching of all four 21st Century Learner standards with Advanced Writing scores is dramatically higher than with Advanced Reading scores. Conversely, this proportionally greater association is echoed by librarians, specifically in regard to inquiry based learning. Students are dramatically less likely to score Below Basic in Writing where their librarians believe they are receiving excellent teaching of Inquiry-Based Learning.

What Kind of a Difference?

The second phase of this study offers substantial evidence of the unique contributions of library programs and librarians to what and how well Pennsylvania students learn. What students learn is how to learn more effectively, both now and in the future. According to the three groups of educators surveyed, libraries and librarians make a difference by teaching students learning skills that will serve them well throughout their lives.

Notably, this study finds that students who master these skills are more likely to also master basic learning codified in the new Common Core state standards being implemented in Pennsylvania and elsewhere. These relationships are especially strong for Common Core standards for English Language Arts and Reading and Writing for History and Social Studies. Indeed, when librarians report more frequent engagement in key library activities, they tend to self-assess as "excellent" their teaching of these Common Core standards—particularly taking the longer view toward College and Career Readiness.

Notably, educators' perceptions of the impact of library programs are confirmed by their relationships to PSSA Reading and Writing scores. Those scores tend to be better

- Where educators assess as "excellent" library contributions to teaching 21st Century Learner standards and

- Where librarians self-assess as "excellent" their contributions to teaching PA/Common Core standards.

The findings of the second phase of this study are documented in more detail in chapters 7 through 10.

Phase 3: Estimated Costs of Selected Statewide School Library Infrastructure Components

Responding to this project's surveys, administrators, teachers, and librarians report how highly they value proposed components of a statewide school library infrastructure based on their beliefs about their potential positive impact on student learning and academic achievement. (The response scale in the surveys was: essential, highly desirable,

desirable, not desirable.) In this analysis, the focus is on "essential" and "highly desirable" responses, which are deemed to indicate very strong support from educator groups for particular components.

Three infrastructure components for which the three educator groups indicate strong endorsements include: a full-time, certified librarian in every school; professional development for 21st century collaboration between librarians and teachers; and a state e-resources collection.

- Overwhelming majorities—ranging from four out of five to nine out of 10 administrators, and nine out of 10 to virtually all teachers and librarians—endorsed these three infrastructure components: librarian staffing, professional development, and e-resources.

- Nine out of 10 administrators and virtually all teachers and librarians strongly support having a full-time, qualified librarian in every school.

- The hypothetical base cost of having a full-time certified librarian in every Pennsylvania public school is estimated at $128.9 million for 2012-13. Based on 2010-11 data, the hypothetical cost of a librarian in every school is the equivalent of about half of one percent of current (i.e., operating) expenditures for the state's public schools.

- Based on 2010-11 figures (the latest available), the hypothetical base cost of having a full-time certified librarian in every public school in the state can be estimated at about one half of one percent of total school expenditures.

Hypothetical Base Cost of a Full-Time Certified Librarian in Every Pennsylvania School, 2010-11 to 2012-13

	2010-11	2011-12	2012-13
Average starting teacher salary	$40,043	$40.738	$41,569
Number of public schools	3,125	3,102	3,102 (estimated)
Hypothetical base cost of a full-time certified librarian in every school	$125,135,375	$126,369,276	$128,947,038

- Four out of five administrators and nine out of 10 teachers and librarians strongly support offering professional development for 21st century collaboration for librarians and teachers as well as having a state-negotiated and acquired collection of electronic/digital resources (e.g., databases, eBooks) to support a 21st Century Skills curriculum.
- At its peak (2005-06), the POWER Library database program cost the state $1.772 million annually. In 2011-12, the state invested only 630,000 in such databases. Thus, returning to peak database funding levels would require an additional $1.142 million annually.
- The costs of statewide databases have always been well under one dollar per student—now, only 36 cents per student. Returning to peak funding of almost one dollar per student would be a dramatic economy of scale, as state and vendor estimates of the per-school cost of current databases alone exceed $70 per student.

POWER Library Database Contracts, 2005-06 to 2011-12 Gap

POWER Library contracts, 2005-06	$1,772,001
Number of databases, 2005-06	37
Enrollment, October 2005	1,830,684
Cost per student. 2005-06	$0.97
POWER Library contracts, 2011-12	$630,000
Number of databases, 2011-12	13
Enrollment, October 2011	1,765,327
Cost per student, 2011-12	$0.36
POWER Library difference, 2005-06 to 2011-12	$1,142,001
Enrollment, October 2011	1,765,327
Hypothetical additional cost per student, 2011-12	$0.65

Estimated Annual Cost of
21st Century Professional Development for Librarians

Average statewide daily cost of a substitute teacher, 2011-12	$86.00
Recommended number of annual days of professional development for librarians	2
Number of schools, 2011-12	3,102
Estimated annual cost of 21st century professional development for librarians	$533,544

Detailed rationales for these cost estimates, including data sources, are reported in Chapter 11. (Believe it or not, that chapter number is a coincidence. We leave it to the reader to interpret.)

In addition to the above-mentioned components, most administrators, teachers, and librarians also value other school library infrastructure components for improving student learning and academic achievement, though to varying degrees: the state's School Library Advisor, and intermediate unit and district library coordinators; a 21st century skills curriculum for which librarians would be responsible; and pre-service, induction, and continuing education focused on 21st century skills for administrators, teachers, and librarians. Costs of these infrastructure components are not estimated, as they implicitly assume a level of consistency in librarian staffing statewide that does not yet exist. This makes it difficult to impossible to make realistic estimates.

Chapter 1: Introduction

This study was commissioned by a partnership of organizations including the Pennsylvania School Librarians Association, the Education Law Center of Pennsylvania, and the Health Sciences Library Consortium. Contracted partners in the research include the University of Pittsburgh School of Information Sciences and the RSL Research Group based in Louisville, Colorado. The project was funded by a 2011-2012 National Leadership Grant for Research from the Institute of Museum and Library Services (IMLS).

The study has three phases:

1. The first phase examines the relationships between available data on library staffing, spending, digital resources, collections, and library access and Pennsylvania System of School Assessment (PSSA) Reading and Writing scores.

2. The second phase involved surveying three educator groups—administrators, teachers, and librarians—about library practices and activities, librarian roles, assessments of library program teaching of 21st Century Learner and PA/Common Core standards, and assessments of the need for specific components of a statewide school library infrastructure. Based on that data, it examines the extent to which standards assessments are related to library practices valued by administrators and activities reported by teachers and librarians. In turn, it examines the relationships between standards assessments and PSSA Reading and Writing scores.

3. The third phase drew on these research findings and utilized additional available data to estimate the statewide costs of selected components of a statewide school library infrastructure.

Previous Research

Specific research about the role of administrators and teachers in school library impact on student performance is sparse.

Past studies suggest that lack of common vision among education professionals about the role of the school library and librarian means that they cannot always work together effectively to ensure the library program contributes fully to the education of students.

Teachers' attitudes toward the school library and the librarian influence their use of the library and willingness to collaborate with the librarian. These attitudes often reflect the general instructional culture of the school. Greater teacher-librarian collaboration has been linked to higher student achievement and evidence suggests that schools with a strongly cooperative instructional culture have teachers willing to include the librarian in more collaborative efforts.

Administrators set the tone for collaboration and cooperation in a school. But research suggests that they do not receive adequate training about how to maximize the contributions of their school libraries by encouraging a cooperative atmosphere, allocating adequate resources, setting schedules to facilitate collaboration between teachers and librarians, and offering staff development and training to support a collaborative atmosphere.

For a comprehensive review of this literature, consult the Indiana study report—**How Students, Teachers, and Principals Benefit from Strong School Libraries** (Lance, Rodney, and Russell, 2007. Its full report is available online at: http://www.ilfonline.org/units/aime-indiana-study-information/).

This 2007 Indiana study was also the first to include surveys of administrators, teachers, and librarians about school libraries and librarians and their impact on the teaching of information literacy skills. A subsequent study--**Idaho School Library Impact Study - 2009: How Idaho Librarians, Teachers, and**

Administrators Collaborate for Student Success—surveyed those three educator groups about school libraries and librarians and their impact on the teaching of Information, Communication, and Technology (ICT) literacy skills. Its full report is available online at: http://libraries.idaho.gov/doc/idaho-school-library-impact-study-2009. This study, in turn, updates that study by incorporating the full spectrum of 21st Century Learner standards.

For meta-analyses of past school library impact studies, the authors recommend two sources:

- **School Library Impact Studies Project**, a micro website of the School Library and Information Technologies program of Mansfield University—available online at: http://library.mansfield.edu/impact.asp.

- **Haves, Halves, and Have-Nots: School Libraries and Student Achievement in California**, a recent University of North Texas doctoral dissertation (Achterman, 2008—available online at: http://digital.library.unt.edu/data/etd/2008_3/meta-dc-9800.tkl).

The present study most nearly resembles the above-mentioned Indiana and Idaho studies.

PSSA Reading & Writing Scores

Academic achievement of students is represented in this study by 2010-11 Reading and Writing scores from the Pennsylvania System of School Assessment (PSSA). PSSA test results for grades 3 through 11 were obtained from the Pennsylvania Department of Education website at: http://www.portal.state.pa.us/portal/server.pt/community/school_assessments/7442.

Notably, Writing is tested only in grades 5, 8, and 11.

Throughout the first two phases of this study, the analysis focused on the percentage of students scoring Advanced and the percentage of students scoring Below Basic.

In the first phase, separate results are provided for selected student cohort, including All students, and the following subgroups, or as referred to in this report "cohorts" for which there were sufficient data for analysis: students who are Economically Disadvantaged (referenced as "Poor" in charts throughout this report), students who are Black, students who are Hispanic, and students with –Individualized Education Programs (IEPs—i.e., students with disabilities). For that phase, separate results are also provided by school level, with grades 3, 4, and 5 representing elementary schools; grades 6, 7, and 8 representing middle schools; and grade 11 representing high schools. As the PSSA files report separate cases for each school for every student cohort and grade, library survey data were replicated and matched to all reported cases, thereby increasing the number of cases available for analysis beyond the number of schools responding to the library survey.

In the second phase, for which administrators, teachers, and librarians responded to surveys, PSSA Reading and Writing scores for grades 5, 8, and 11 are utilized. As responses from the three educator groups are analyzed separately, survey responses and test scores are duplicated only when there is more than one administrator, teacher, or librarian responding from a particular school, or when a school includes two or all three grade levels. District-level administrators are included in the analysis of library and librarian variables related to 21st Century Learner and PA/Common Core standards assessments; but not in the analysis of the relationships between standards assessments and PSSA scores, as they cannot be identified with a specific school's scores.

School Library Study

On October 5, 2010, the Pennsylvania House of Representatives unanimously adopted House Resolution 987, encouraging the State Board of Education to survey school libraries in Pennsylvania. The Board developed a survey instrument in consultation with the Pennsylvania Department of Education and the Pennsylvania School Librarians Association. All school districts, charter schools and career and technical centers were asked to complete the survey electronically via SurveyMonkey. In July 2011, the State Board of Education contracted with the University of Pittsburgh to compile and clean-up the data, tabulate and analyze the results, and draft potential recommendations. The resulting report entitled the Pennsylvania School Library Study is available at http://www.portal.state.pa.us/portal/server.pt/community/research_reports_and_studies/19722/school_library_study/941391.

Of 500 school districts, 389 districts (78%) participated in the survey, and, of the 2,970 schools in those districts, 2,180 schools (73%) responded. Of 141 charter schools, 22 (16%) responded, and of 14 Comprehensive Career and Technical Centers (CTCs), two (14%) responded.

Nearly two-thirds of responding schools are elementary schools. More than 15% of the schools represent middle-school grades and 16% represent high schools.

While the University of Pittsburgh contractors contributed substantially to the clean-up of the data, additional clean-up was completed by the RSL Research Group contractors.

Data from the library survey included in this study includes:

- Two measures of library staffing: whether or not the school has a librarian working 35 hours per week or more, and one meeting the additional condition of having at least 20 hours per week of library support staff.
- One indicator of library spending: whether or not the school spends $11 per student or more.
- Three measures of digital resources: whether or not the school offers 10 or more and 40 or more library computers less than five years old, any access to databases, and any access to e-books.
- Three measures of library collections: whether or not the school has 12,000 or more book volumes, 150 video titles, and any audio titles.
- Three measures of library access: whether or not the school offers flexibly scheduled access to the school library, 21 or more group library visits per week, and any library hours beyond the regular school day (i.e., before and/or after school hours).

Surveys of Librarians, Teachers, & Administrators

The project asked individual librarians from Pennsylvania schools to volunteer themselves, and to nominate their principals and up to two (2) other administrators, and up to five (5) teachers with whom they collaborate for participation in surveys during Spring 2012. Seven hundred forty-seven (747) librarians responded to that invitation, nominating themselves, their principals and other administrators, and one or more teachers.

Survey Content

Librarians who volunteered and educator colleagues they nominated were invited to participate in separate surveys of administrators, teachers, and librarians, as appropriate.

Administrators were asked to indicate:

- How much they value selected library practices
- The desired roles of librarians at their schools or in their districts
- How well they believe their library programs teach 21st Century Learner and PA/Common Core standards
- How highly they value specific components of a statewide school library infrastructure.

Teachers were asked to report:

- How often they participate in selected library activities
- The perceived roles of librarians at their schools or in their districts
- How well they believe their library programs teach 21st Century Learner and PA/Common Core standards
- How highly they value specific components of a statewide school library infrastructure.

Librarians were asked to report:

- How often they participate in selected library activities
- In what roles they believe their principals and teachers perceive them
- How well they believe their library programs teach 21st Century Learner and PA/Common Core standards
- How highly they value specific components of a statewide school library infrastructure.

Academic Standards

This study addresses two sets of academic standards, 21st Century Learner and PA/Common Core. While the former addresses specifically the current, broad conception of information literacy skills for which school librarians accept primary responsibility, the latter references the growing national consensus among the states about academic standards in a wide range of areas. In surveys, administrators, teachers, and librarians were asked to assess—and in the case of librarians, self-assess—the quality of their library programs' teaching of these standards. In the absence of rigorous assessment tools for both sets of standards, these educators were asked to assess—on the common "excellent, good, fair, poor" scale—such teaching based on the impressions gathered from their own experiences.

21st Century Learner

In 2007, the American Association of School Librarians promulgated **Standards for the 21st Century Learner**. This document is available online at: http://www.ala.org/aasl/sites/ala.org.aasl/files/content/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf. Table 1 identifies the language in that AASL document with the shorter label utilized in this study to represent it more succinctly.

American Association of School Librarians
Standards for the 21st Century Learner

PA Study Label	21st Century Learner Standard
Inquiry-based learning	Inquire, think critically, and gain knowledge.
Informed decision-making	Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
Knowledge sharing	Share knowledge and participate ethically and productively as members of our democratic society.
Pursuing personal growth	Pursue personal and aesthetic growth.

PA/Common Core Standards

Pennsylvania participates in the Common Core State Standards Initiative. In 2010, the Initiative promulgated **Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects**. This document is available online at: http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf.

On July 1, 2010, the State Board of Education adopted the above document. The regulations providing for these new academic content standards took effect upon their publication in the October 16, 2010 edition of the *Pennsylvania Bulletin*. The transition to Common Core began during the 2010-11 school year (i.e., the focal year of the present study), with full implementation required by July 1, 2013.

Throughout the remainder of this report, these standards are referenced as PA/Common Core standards.

The PA/Common Core standards addressed in this study encompass English Language Arts as well as Literacy (i.e., Reading and Writing) in History and Social Studies, and Science and Technical Subjects. Cutting across these areas, the standards also embody a long-term goal for College and Career Readiness.

Statistical Analysis

Each of this study's two major phases of research relied on particular techniques of statistical analysis.

Phase 1: School Library Study Data and PSSA Scores

Comparison-of-means analysis was utilized to measure differences in test performance between schools with more and less of selected school library infrastructure components related to staffing, resources spending, digital resources, library collections, and library access. School libraries were assigned to these comparison groups based on a common standard (e.g., a full-time certified librarian), the average for a particular component (e.g., 12,000 book volumes), or the presence or absence of a component (e.g., databases, e-books). Then, the percentage of students with Advanced scores was averaged for each group, and the difference was subjected to a statistical test (the t test) to determine if that difference is statistically significant (i.e., non-random). A similar analysis was conducted with Below Basic scores.

In previous school library impact studies, other statistical procedures—such as partial correlation and regression—were necessary to take into account various other school and community factors that might explain away the impact of libraries and librarians on test scores. In this case, such procedures were unnecessary, because separate PSSA scores were available for specific cohorts of students, including students who are Economically Disadvantaged, students who are Black, students who are Hispanic, and students with Individualized Education Programs (IEPs). By analyzing these test score data separately, this study took into account these socio-economic, racial/ethnic, and disability factors.

Phase 2: Educators, Academic Standards, and PSSA Scores

Three statistical procedures were utilized to analyze data from the three educator surveys.

First, simple frequencies—numbers and percentages of cases giving each possible response—were determined for each question.

Second, responses to each question were cross-tabulated with selected potential predictors of the answer to the question. For example, administrators' self-assessments of library program teaching of 21st Century Learner standards are cross-tabulated with their answers to questions about how much they value collaboration between librarian and classroom teachers. Pearson's chi-square was calculated for each of these cross-tabulation tables to determine if there is a statistically significant difference between the response from one group and another (e.g., administrators who valued collaboration between librarians and teachers in designing and delivering instruction as essential versus those who valued it as less than essential).

A third type of analysis was employed to get a sense of how much difference can be made in students' PSSA scores by how administrators and teachers interact with and are perceived by their libraries and librarians, and how librarians interact with and believe they are perceived by their educator colleagues. Comparison-of-means analysis was utilized to measure differences in test performance between schools where members of these three groups expressed different perceptions. Based on those perceptions of libraries and librarians, participating schools were divided into two groups. (Example: Schools where administrators expressed the belief that librarian-teacher collaboration is essential versus schools where administrators reported considering such collaboration highly desirable, desirable, or even unnecessary.) Then, the percentage of students with Advanced scores was averaged for each group, and the difference was subjected to a statistical test (the t test) to determine if that difference is statistically significant (i.e., non-random).

For cross-tabulation and comparison-of-means analyses, the usual standards of statistical significance were utilized. In cross-tabulation tables, significance levels are reported in footnotes. In comparison-of-means tables, a single asterisk indicates that a finding is significant at the .05 level, while two asterisks indicate significance at the .01 level. Simply put, these "p" figures indicate that there are fewer than five and one chances, respectively, out of 100 that different findings would have resulted from a different sample.

Generally, for the sake of brevity and clarity, only consistent and statistically significant findings are reported. No findings are omitted because they were statistically or substantively negative. In fact, surprising and contradictory findings are acknowledged.

In the body of this report, statistical findings are reported graphically. Detailed statistical tables for the above-mentioned types of analyses are published in several appendices that are available from the Pennsylvania School Librarians Association (http://psla.org/index.php/contact-us, contact: Deb Kachel).

Presentation of Findings

The next five chapters of this report document the first phase of research, examining the relationships between PSSA Reading and Writing scores and available data on:

- School library staffing
- Resources spending
- Digital resources
- Collections
- Library access

The following three chapters document the second phase of research based on surveys of three educator groups: administrators, teachers, and librarians. The first two chapters in this section examine the two sets of standards:

- *Standards for the 21st Century Learner*
- PA/Common Core Standards.

For each set of standards, educators' assessments of the library program's teaching of each standard are examined in relation to educators' perceptions of the value of key library practices, the frequency of key library activities, and the desired or perceived roles of librarians.

The third chapter in this section examines the association with PSSA Reading and Writing scores of educators' assessments of library program teaching of 21st Century Learner and PA/Common Core Standards.

The penultimate chapter of the report documents the third phase of research, providing estimates of the costs of key components of a statewide school library infrastructure.

The final chapter summarizes the findings of all three phases of research and references other project activities, such as the series of statewide focus groups of key school library stakeholders.

Chapter 2. Pennsylvania School Library Staffing & PSSA Scores

The relationship between available data on school library staffing and Pennsylvania System of School Assessment (PSSA) Reading and Writing scores is examined in this chapter. Data from the *Pennsylvania School Library Study* regarding certified school librarians, library support staff, and hours of library access were analyzed with PSSA Reading and Writing scores for each responding school. These scores were chosen for analysis because of their strong relevance to 21st Century Learner and Pennsylvania (PA)/Common Core standards.

To avoid repetition in this and succeeding chapters, see Chapter 1 for detailed methodological information, including details about the variety of PSSA score data employed in this phase of the study, its source, and an explanation of associated terminology as well as a description of comparison-of-means analysis (t test) and its statistical significance.

At the end of the chapter, its findings are discussed in relation to the Guidelines for Pennsylvania School Library Programs, a 2011 document of the Office of Commonwealth Libraries in the Pennsylvania Department of Education.

Throughout the chapter, the findings are illustrated by quotes offered by respondents to the project's surveys.

Library Staffing Components

Two staffing analyses were conducted, using different benchmarks.

First, mean PSSA Reading and Writing scores were compared for students with and without a full-time certified librarian. Full-time status is defined as at least 35 hours per week (a minimal indicator of full-time status).

Second, for students with a full-time certified librarian only, mean scores were compared for those with and without library support staff at least 20 hours per week (the approximate median among responding libraries for such staffing). The hours per week figures used in these analyses were based on prevailing realities in Pennsylvania. Thirty-five hours per week is a minimal indicator of full-time status, and 20 hours per week is the approximate median for library support staff.

For each of these analyses, findings are reported for:

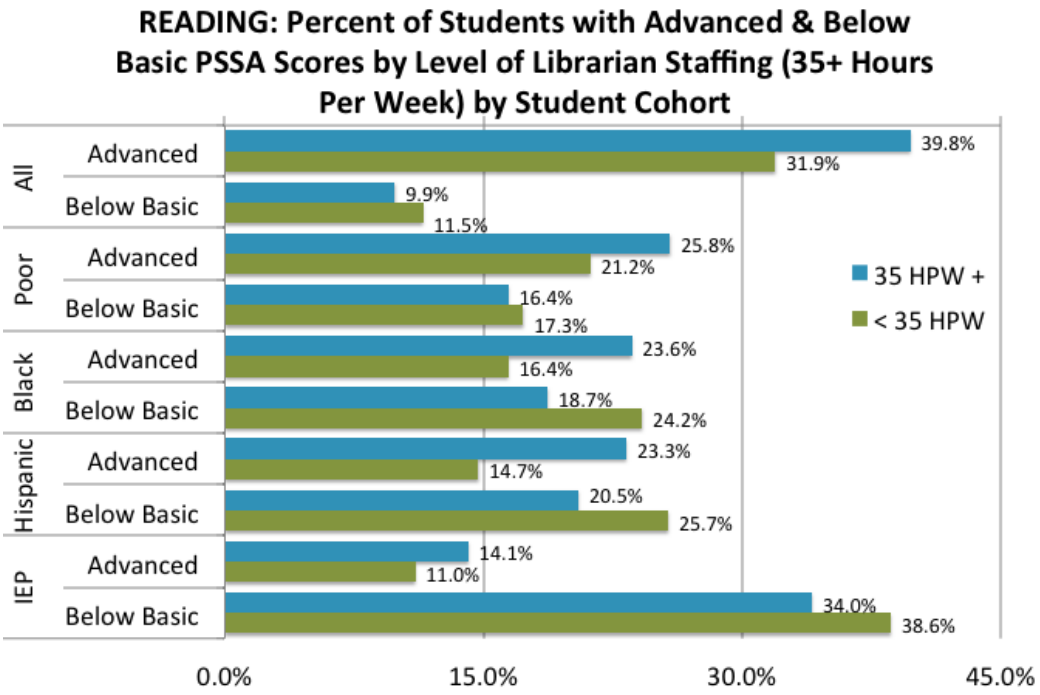
- All students
- Students who are economically disadvantaged (i.e., poor), Black, Hispanic, and have Individualized Education Programs (IEPs—i.e., special education students)
- Students at elementary, middle, and high school levels.

PSSA Reading Scores by Student Cohort by Librarian Staffing

Librarian staffing levels are associated with better PSSA Reading scores for all students as well as major cohorts of students at both ends of the achievement spectrum (i.e., Advanced and Below Basic scores).

- Consistently, Reading scores are better for students who have a full-time certified librarian than those who do not. With a full-time librarian, students are more likely to score Advanced and less likely to score Below Basic.
- This is true of all students, regardless of their socio-economic, racial/ethnic, and disability status.

- Indeed, students who are Economically Disadvantaged (i.e., Poor), Black, Hispanic, and have IEPs (i.e., students with disabilities) benefit proportionally more than students generally.



Note: Charts in this chapter compare the PSSA scores of students with and without key indicators of school library staffing—here, schools with and without a certified librarian for at least 35 hours per week (i.e., full-time) and later, for schools with a full-time certified librarian, those with and without at least 20 hours per week of library support staff. Example: schools with a full-time certified librarian average 39.8% of all students scoring Advanced in Reading, while schools without such a librarian average only 31.9% of students scoring Advanced.

Our librarians have transformed our library to make it an inviting and exciting place for students to learn using all available media resources. They go above and beyond each day to support curriculum and student learning as well as develop a love for reading
- Elementary School administrator

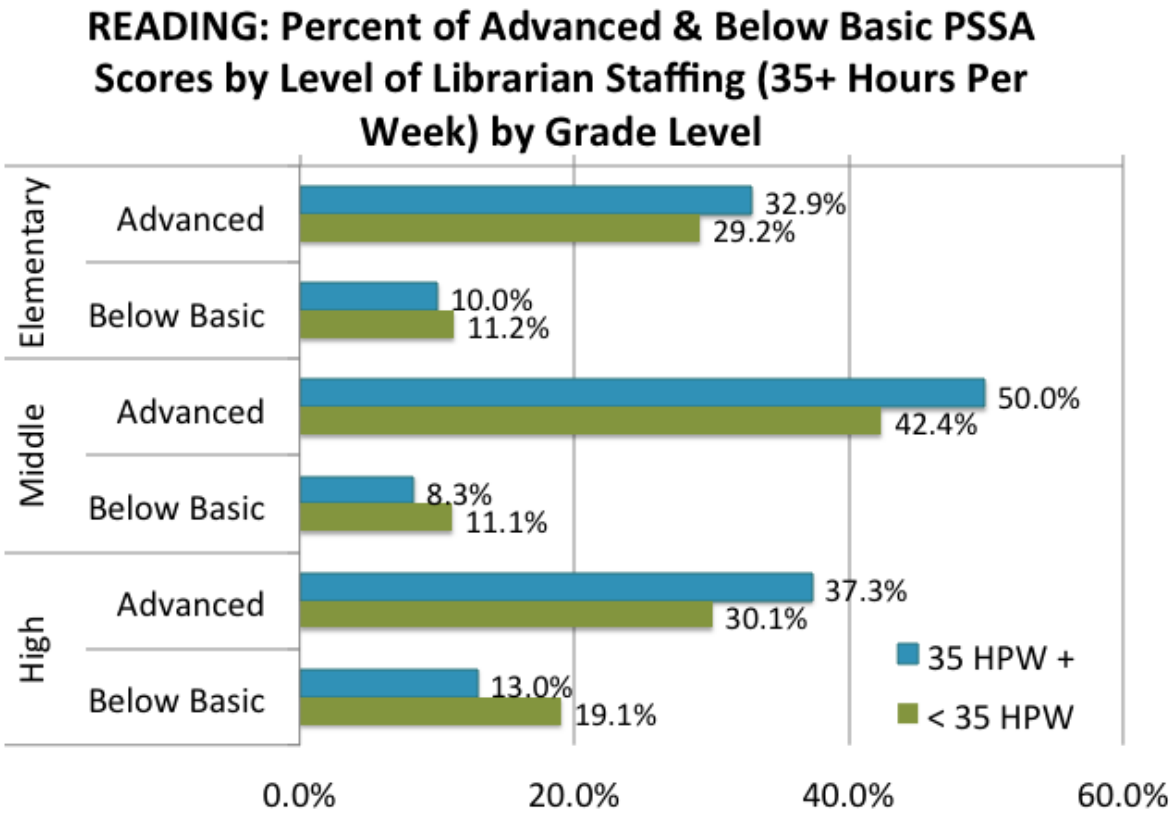
I know that I can always count on our librarian to help me with finding up to date resources for use with my students. She has also been instrumental in securing texts not offered in our library. She aids special needs students when they are doing classwork or homework in the library. She is an essential member of the teaching staff here
- High School teacher

Our librarian is a key resource to help students find appropriate, high-interest reading that will engage them. We could not experience the success we have without her.
- High School administrator

PSSA Reading Scores by Grade Level by Librarian Staffing

Librarian staffing levels are also associated with better PSSA Reading scores, regardless of grade level, and at both ends of the achievement spectrum (i.e., Advanced and Below Basic scores).

- Consistently, Reading scores at all three grade levels are better for students who have full-time certified librarians.
- The proportional difference in Advanced Reading scores associated with a full-time librarian grows from elementary to middle to high school level.
- For schools with full-time librarians, below basic scores not only improve, but improve more from elementary to middle to high school level.



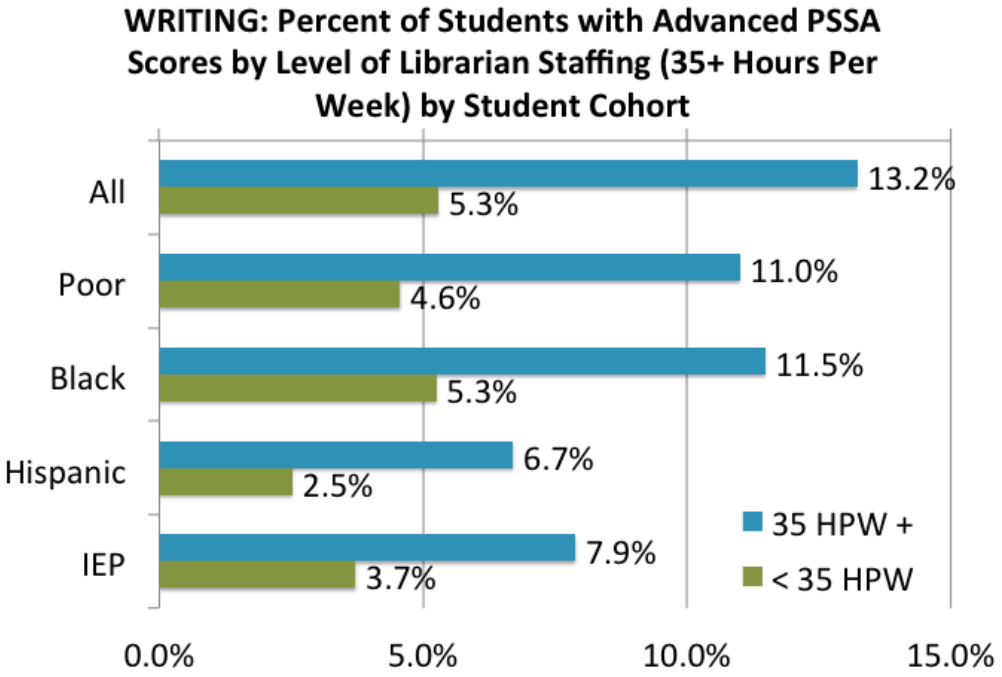
I believe having a knowledgeable and qualified librarian in our school has contributed greatly to success of our students in all grade levels. Our librarian is the ultimate professional. She is a great resource for the teacher and the students. Our building would not be the same without her and her expertise.
- Elementary School teacher

Our librarian knows the curriculum for each of the subjects within each grade level, which is no easy task. She is familiar with the state standards and eligible content for the PSSA. She is also a Certified Reading Specialist; therefore she often works with students identified as struggling readers.
- Elementary School teacher

PSSA Writing Scores by Student Cohort by Librarian Staffing

As for Reading, the presence of a full-time certified librarian is associated with more Advanced PSSA Writing scores for all students as well as major cohorts of students.

- The impact of librarians on Writing scores is stronger than on Reading scores. The differential impact of librarians on PSSA Writing relative to Reading suggests that Writing rather than Reading scores may be a better indicator of a student's mastery of 21st Century Learner and PA/Common Core standards.
- For all students, those with full-time librarians are almost three times as likely to have Advanced scores as students without full-time librarians.
- Consistently, students who are poor and minority, and have IEPs, but who have full-time librarians, are at least twice as likely to have Advanced Writing scores as their counterparts without full-time librarians. These findings suggest that staffing libraries with certified librarians could contribute to closing achievement gaps.



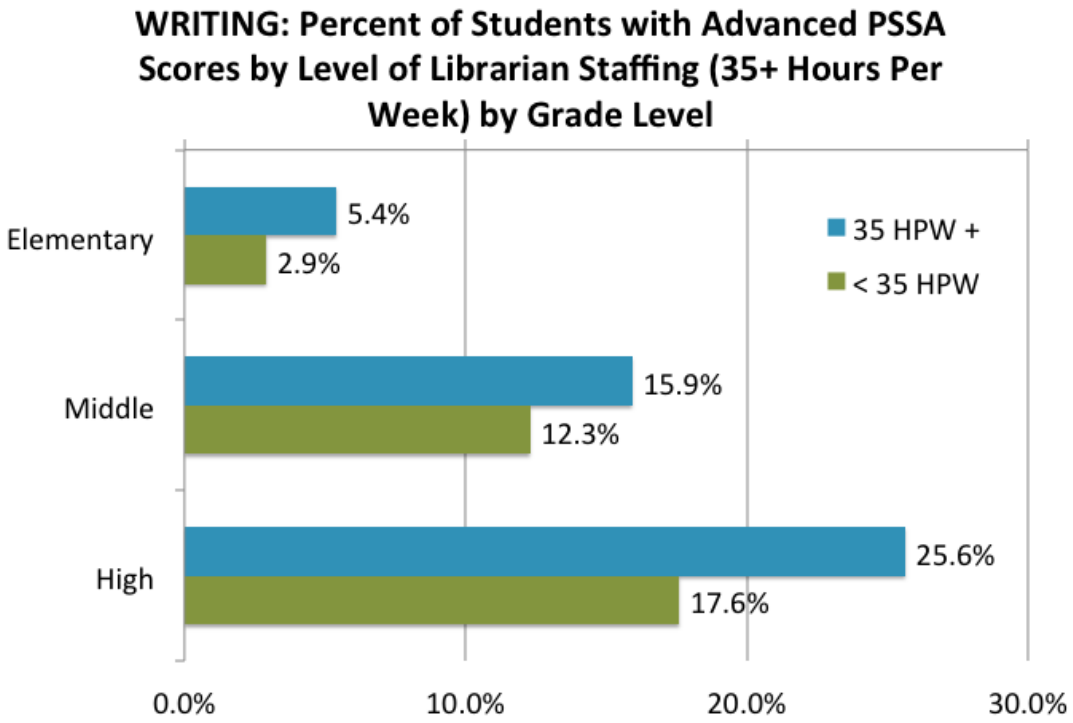
I believe that having a school librarian is essential to the overall success of all students. In my past eleven years of teaching, I have collaborated with many librarians. … Without the help of the librarian, I would not be able to provide the resources that my students need to write an acceptable paper. … Having a school library, with a full-time certified librarian, is imperative to the overall education of our students.
- Middle School teacher

I teach emotional support/learning support. During Read Across America Week, our librarian had a contest that encouraged students to write. Based on Dr. Seuss books, she provided two writing prompts and gave all students the opportunity to submit a writing sample ... I required all of my students to pick one of the prompts to write about and then took them to [the librarian]. This got them writing and a few were proud that their work was [put] on display. [Our librarian] is very encouraging to students.
- Middle school teacher

PSSA Writing Scores by Grade Level by Librarian Staffing

The presence of a full-time certified librarian is also associated with more Advanced PSSA Writing scores, regardless of grade level.

- Consistently, Writing scores at all three grade levels are better for students who have full-time certified librarians.
- As percentages of Advanced Writing scores grow from elementary to middle to high school level, the difference in Advanced scores associated with full-time certified librarians grows from 2% to 4% to 8%.



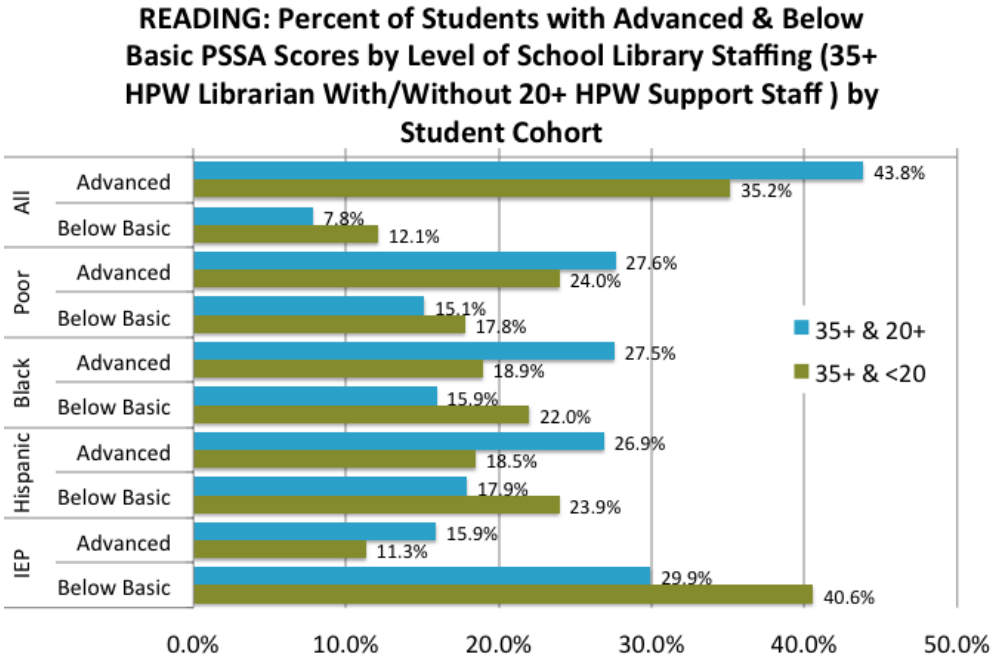
One of the most recent successes I had in one of my small reading groups is a direct result from the help of our school librarian. She frequently used technology to enhance her instruction. The school librarian showed me how to implement blogging in my classroom. Students were more engaged and were not as reluctant to write in response to their reading. Blogging especially motivated one of my students who rarely wanted to share his responses with others. Students could easily respond to others without the fear of "speaking in front of the class." The students loved the activity. She has been an invaluable resource to our school.
- Middle School teacher

Our library is one of the reasons I enjoy teaching as much as I do. [Our librarian] is really something special. We collaborate on a daily basis and I feel we compliment each other quite well. Whether she is helping with research or creative writing, she works magic. She motivates the students and her non-threatening, comforting style makes her so accessible. She has certainly taken the work I do in my classroom and elevated it to a new level, teaching my students to publish and share their talents. Work that used to be just "turned in" is now a celebration of sharing. Our library is a joyous place to be.
- High School teacher

PSSA Reading Scores by Student Cohort by Library Staffing Level

The presence of at least half-time library support staff in addition to a full-time certified librarian is associated with better PSSA Reading scores for all students as well as major cohorts of students at both ends of the achievement spectrum (i.e., Advanced and Below Basic scores).

- Consistently, across all student cohorts, those with libraries staffed by a full-time certified librarian with at least half-time support staff are more likely to have Advanced Reading scores and less likely to have Below Basic ones than those with a librarian without support staff.
- A student's socio-economic status does not explain away this difference.
- Generally, these differences in Reading scores are greater for students who are minority and have IEPs than for all students. This finding underscores the potential impact of a fully-staffed school library (i.e., a full-time certified librarian with support staff) in addressing achievement gaps for some groups of students.



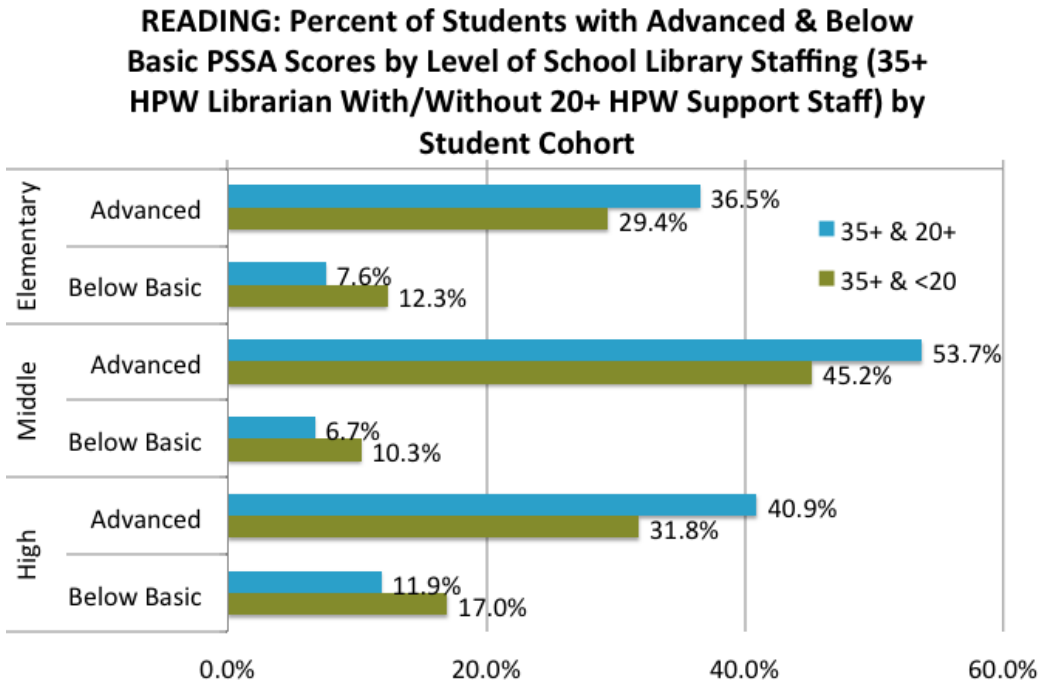
The library and our trained library staff is an essential tool in delivering the curriculum. It is essentially a laboratory where students can "test out" their reading, writing and research skills. Most importantly, our library staff provides a supportive environment where students are developing lifelong learning skills and a love for reading.
- Middle School teacher

I do not know where to begin in trying to explain how valuable our school librarian … has been to my students and me. [She] has helped me every year teach the Freshman Research Project. She spends two days in my classroom teaching bibliography, and the research process. Then the class spends a day or two in the library gathering information. She and her aides help the students narrow their search criteria, and locate resources. Frequently throughout the project students will go to the library for assistance. … In the age of the Internet, people have forgotten how important libraries and librarians are.
- High School teacher

PSSA Reading Scores by Grade Level by School Library Staffing

The presence of at least half-time library support staff in addition to a full-time certified librarian is also associated with better PSSA Reading scores, regardless of grade level, and at both ends of the achievement spectrum (i.e., Advanced and Below Basic scores).

- Consistently, across grade levels, students whose librarians have at least half-time support staff are more likely to have Advanced Reading scores and less likely to have Below Basic ones than students whose librarians lack such support.
- For Advanced scores, the differences between grade levels associated with librarians having at least half-time support staff are 8% to 9%.
- For Below Basic scores, the differences are 3% to 5%.



The library staff coordinates school wide activities throughout the year to motivate children to read and to integrate reading into their daily routine. Three of the many school wide events include Read Across America Week, Pennsylvania Readers Choice Nominations and Voting, and the Summer Reading Program Certificates and Awards.
- Elementary School teacher

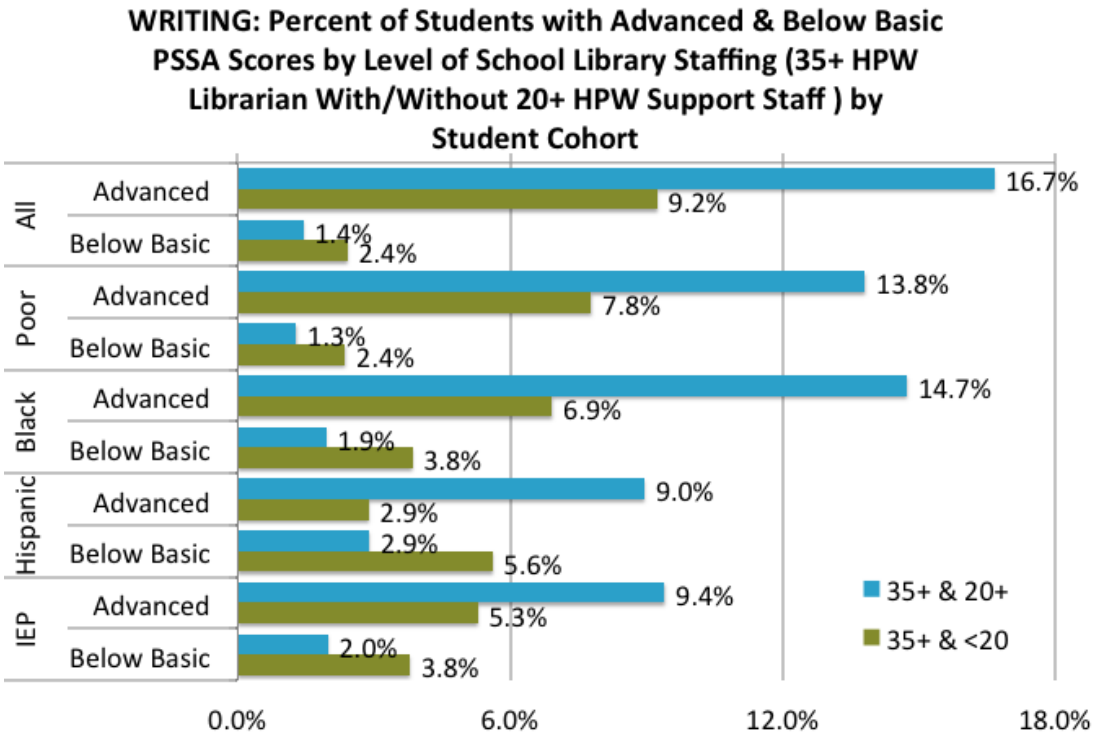
There should never, in my opinion, be just a library aide as the librarian. We need these highly trained experts to help students read. They are essential!
- Elementary School teacher

PSSA Writing Scores by Student Cohort by Library Staffing Level

The presence of library support staff in addition to a full-time certified librarian is also associated with better PSSA Writing scores for all students as well as major cohorts of students at both ends of the achievement spectrum (i.e., Advanced and Below Basic scores).

- Generally and across student cohorts, students whose librarians have at least 20 hours per week of support staff are twice as likely to have Advanced Writing scores and half as likely to have Below Basic scores as students whose librarians lack such support staff.

- Students who are Hispanic and whose full-time librarians have support staff are three times as likely to earn Advanced Writing scores as their counterparts whose full-time librarians lack such support staff.



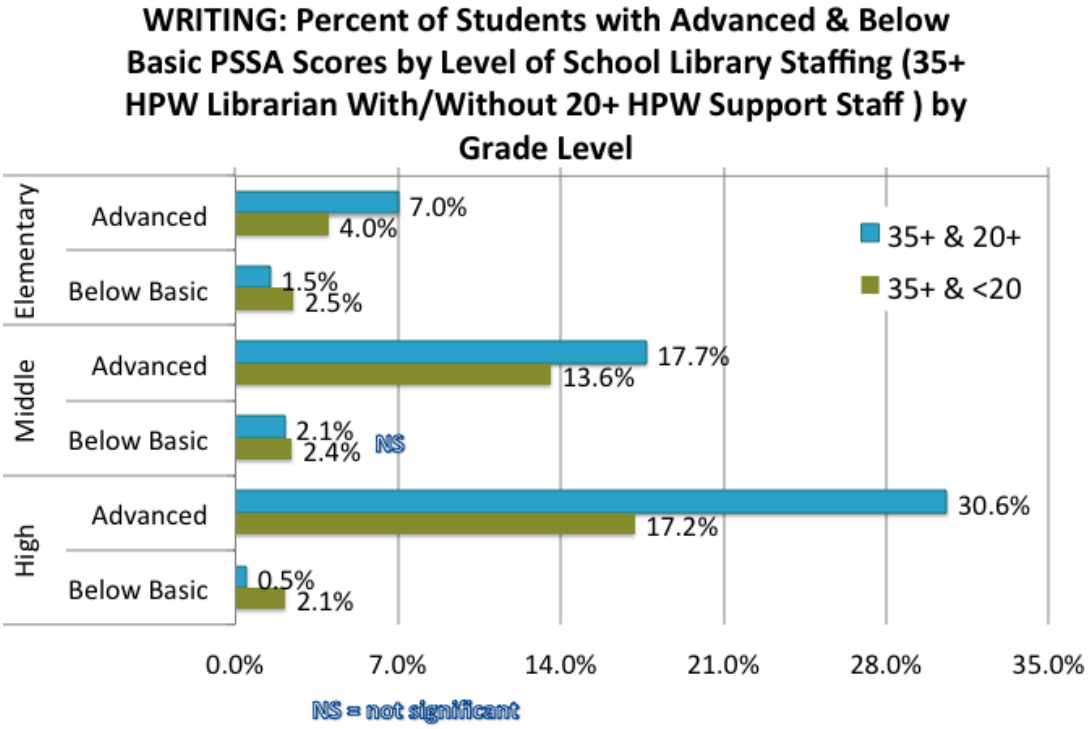
At [this] High School, our library staff is one of our greatest resources. The librarian is extremely knowledgeable and helpful when students are conducting research. He knows what databases students could and should use and usually has knowledge of topics they are interested in. .... The library paraprofessional is also extremely knowledgeable and helpful when locating sources, materials, and other information in general. Our school would be at a great loss without them!
- High School teacher

At my school the full time librarian has taken on the role of facilitator of the ninth grade history term paper and has coordinated the creation of an instructional packet for the term paper for the ninth grade history teachers and students. She also provides help with the topic selection, thesis statement creation, and gathering of resources for the term paper. She has helped ease the ninth grade history teachers into the process of creating and grading a term paper at the honors and gifted/high potential levels.
- High School teacher

PSSA Writing Scores by Grade Level by School Library Staffing

The presence of at least half-time library support staff in addition to a full-time certified librarian is also associated with better PSSA Writing scores, regardless of grade level, and at both ends of the achievement spectrum (i.e., Advanced and Below Basic scores).

- Consistently, across grade levels, students whose libraries have a full-time librarian with at least 20 hours per week of support staff are more likely to have Advanced Writing scores than those with a librarian without such support.
- At elementary and high school levels, students whose librarians have support staff are almost twice as likely to have Advanced Writing scores as those who librarians lack support staff.
- At elementary level, library support staff "haves" are half as likely as "have-nots" to score Below Basic in Writing.
- At high school level, the percentage of Below Basic Writing scores approaches zero for support staff "haves."



I work with our school's librarians on a regular basis. … They sit down with me to plan out the [research] process so that the essential questions are addressed, big ideas are a focus, and student learning takes place. I would not be able to complete a detailed research paper with the students without the assistance from the library. The students write detailed papers that are full of research because of the lessons provided by the library. The librarians show them how to use databases and books to find what they need to support their thesis statements. I know students at the college level who are still not able to do this. The library teaches them skills that they will need in college and beyond. Researching in a library in essential in college, but there is no instruction provided at that level. In order to prepare them for higher education, lessons in the library are crucial for their success.
- High School teacher

Summary

Whether or not students have a full-time certified librarian or whether or not their librarian has at least half-time support staff, there is consistent evidence that library staffing is associated with better PSSA Reading and Writing results. Notably, the proportional differences in Writing scores between students with better and more poorly staffed libraries are substantially greater than the proportional differences in Reading scores.

- Library staff are an investment that benefits all students, both high- and low-achievers. Full-time librarians with support staff are associated with better Reading and Writing scores—more students scoring Advanced and fewer scoring Below Basic.

- Students perform better when their schools have full-time librarians, and when those librarians have support staff.

- For several student groups that tend to experience achievement gaps, Reading and Writing results are markedly better when those students have the benefit of a librarian with support staff. These differences are not explained away by socio-economic, racial/ethnic, or disability status.

In **Guidelines for Pennsylvania School Library Programs**, minimum and exemplary staffing levels are specified for different levels of building enrollment.

For certified librarians, these guidelines call for a minimum of 1.0 full-time equivalent (FTE) librarian for all schools with enrollments up to 1,000, and 1.5 for larger schools. The exemplary level for FTE librarian staffing is 1.0 for schools with enrollments fewer than 500, 1.5 for schools with enrollments of 500 to 1,000, and 2.0 (plus another 0.5 librarian for each additional 500 students) for larger schools.

For library support staff, the guidelines call for 1.0 FTE of support staff for schools with enrollments under 500, 1.5 for schools with enrollments between 500 and 1,000, and 2.0 for larger schools. The exemplary level for FTE library support staffing is 1.5 for schools with enrollments fewer than 500, 2.0 for schools with enrollments between 500 and 1000, and 2.5 (with another 0.5 for each additional 500 students) for larger schools.

The findings of this analysis strongly support all school libraries having at least 1.0 FTE certified librarian. These findings also support the idea that library support staff—in addition to certified librarians—contribute further still to student learning and academic achievement.

When students have access to well-staffed school libraries—ones with full-time certified librarians with support staff—they are more likely to succeed in school than their counterparts who lack such libraries.

Chapter 3. PA School Library Spending & PSSA Scores

The relationship between available data on school library spending and Pennsylvania System of School Assessment (PSSA) Reading and Writing scores is examined in this chapter. Data from Section Seven of the *Pennsylvania School Library Study* regarding funding from all sources for school library resources for 2010-2011 was correlated with PSSA Reading and Writing scores.

Library resources are defined in the *Pennsylvania School Library Study* survey as all materials that students and teachers have access to for learning that are either housed in or licensed by the school library. This includes library books, audio-visual materials, magazines, electronic databases (other than Power Library databases that are provided by the state) and other resources. For students to become 21st century learners, they must have access to the widest possible variety of information resources, and become capable users of them to acquire new knowledge and create new knowledge.

The criterion used in the comparisons of means in this chapter is $11 or more versus less than $11 annually per student, because this value was closest to the sample median or average.

To avoid repetition in this and succeeding chapters, see Chapter 1 for detailed methodological information, including details about the variety of PSSA score data employed in this phase of the study, its source, and an explanation of associated terminology as well as a description of comparison-of-means analysis (t test) and its statistical significance.

At the end of the chapter, these findings are discussed in relation to the *Guidelines for Pennsylvania School Library Programs*, a 2011 document of the Office of Commonwealth Libraries in the Pennsylvania Department of Education.

Throughout the chapter, the findings are illustrated by quotes offered by respondents to the project's surveys.

Library Resources Spending

The benchmark for this analysis, $11 per student, falls closest to the median for all respondents to the *Pennsylvania School Library Study* survey—54% of respondents report a spending range of $11 or more per student, leaving 46% who report spending less than $11 per student.

Distribution of Library Resources Spending Per Student

Spending Range	Percent	Cumulative
0	2.9%	2.9%
$1-10	43.2%	46.1%
$11-15	21.3%	67.4%
$16-20	15.3%	82.7%
$21-25	7.8%	90.5%
$26-30	3.8%	94.3%
$31-35	1.5%	95.8%
$36-40	1.4%	97.2%
$41-45	0.7%	97.9%
$46-50	0.7%	98.6%
$51+	1.4%	100.0%
Total	100.0%	

As for the staffing analyses, findings are reported for:

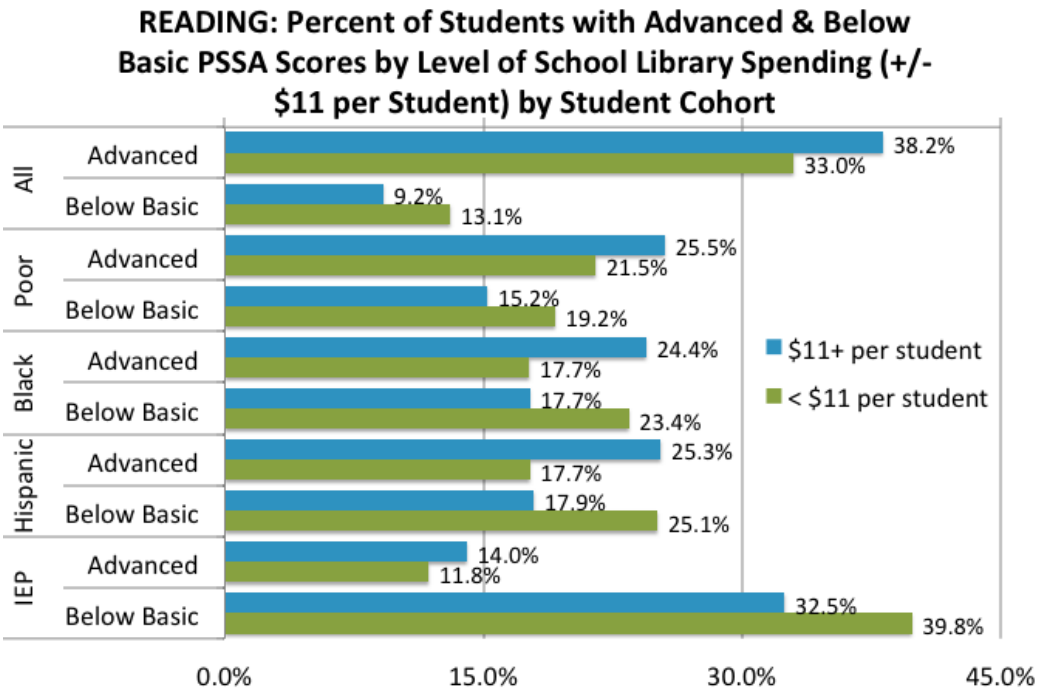
- All students
- Students who are economically disadvantaged (i.e., poor), Black, Hispanic, and have Individualized Education Program (IEPs)
- Students at elementary, middle, and high school levels.

PSSA Reading Scores by Student Cohort by Library Resources Spending

Library resources spending levels are associated with better PSSA Reading scores for all students as well as specific cohorts of students at both ends of the achievement spectrum.

- Consistently, Advanced Reading scores are higher and Below Basic Reading scores lower for students who have better-funded school library programs ($11 per student or more per year) than for those who do not.
- This trend applies to all students, regardless of their socio-economic, racial/ethnic, and disability status.
- Indeed, generally, students who are economically disadvantaged (i.e., poor), Black, Hispanic, and have Individualized Education Program (IEPs—i.e., students who are disabled) benefit proportionally more than students generally.

> I chaired the library curriculum committee to rewrite the library curriculum so it is aligned with the 21st Century [Learner] Standards. … I feel I have shown the administrators that the libraries are essential to student success. Our budgets have been supported, and our programs, to date, have not been cut.
> - Elementary School librarian



Note: Charts in this chapter compare the PSSA scores of students with and without a key indicator of school library resources spending—whether or not a school spends $11 or more per student on library resources. ($11-20 per student was the median response to the School Library Study survey. Example: schools that spend more per student average 38.2% of all students scoring Advanced in Reading, while schools spending less average 33.0% of students scoring Advanced.

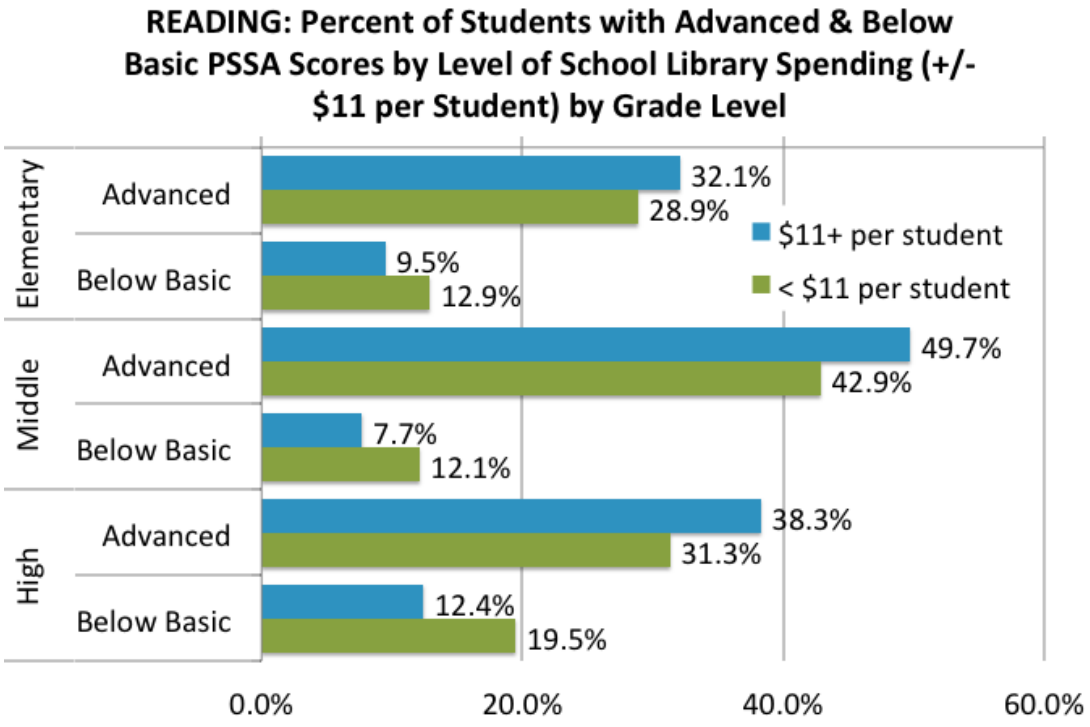
PSSA Reading Scores by Grade Level by Library Resources Spending

Levels of spending on library resources are also associated with better PSSA Reading scores, regardless of grade level, and at both ends of the achievement spectrum.

- Consistently, Reading scores at all grade levels are better for students who have better-funded libraries (i.e., $11 per student or more per year) than those who do not.
- The difference in Advanced Reading scores associated with library resources spending grows from elementary to secondary level (3% to 7%).
- The difference in Below Basic Reading scores associated with library resources spending grows from elementary and middle to high school level (4% to 7%).

> In [this] School District [our] budget is ample enough to support the library resources needed to support the school's curriculum and to promote independent reading for our students. … Without the administrative support for [spending on library] resources we would not be able run our thriving, collaborative school library program ...
> - High School librarian

My last principal relied very heavily on Access PA services thru me to obtain material that he needed to complete his doctorate. We borrowed a lot of material from [a] Penn State library. After that he was a staunch supporter of our library and provided as much funding as he could.
-Middle School librarian

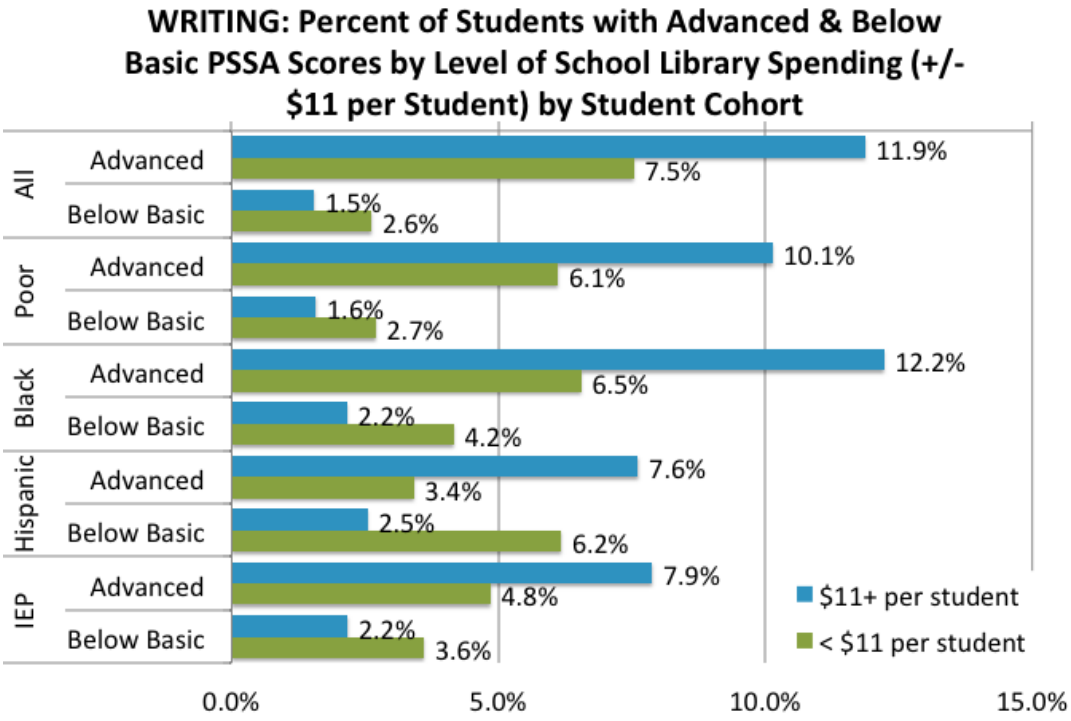


PSSA Writing Scores by Student Cohort by Library Resources Spending

Higher spending on library resources is associated with better PSSA Writing scores—both more students scoring Advanced and fewer scoring Below Basic—for all students as well as major cohorts of students.

- The proportional impact of library resources spending on Writing scores is greater than on Reading scores.
- For all students, those with better-funded libraries ($11 per student or more per year) are more likely to have Advanced Writing scores as those with poorer libraries.
- Students who are Hispanic and have better-funded libraries are twice as likely to have Advanced Writing scores and about half as likely to have below basic scores as their counterparts without better-funded libraries.

I … make sure we have the specific resources [needed] for research and pleasure reading ... The success of our student body is dependent on the support I get from my administration and school board. A sufficient budget for print and electronic resources [is] critical.
- High School librarian



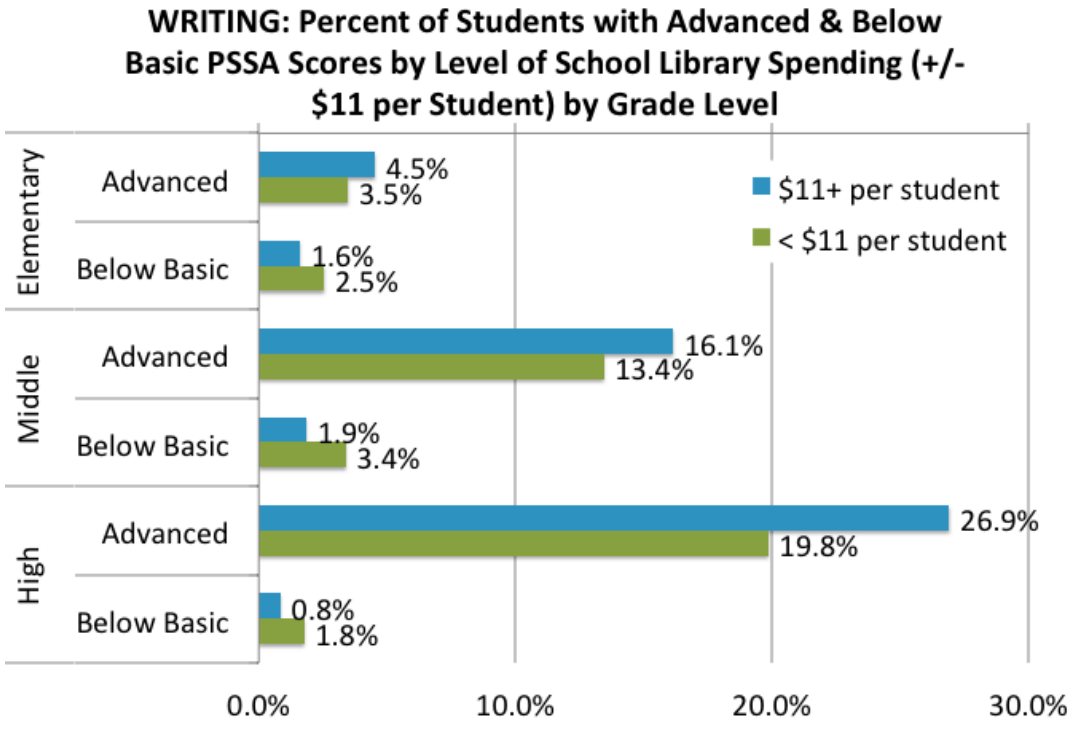
PSSA Writing Scores by Grade Level by Library Spending

Consistently, average Writing scores at all grade levels are better for students with better-funded libraries than those with less well-funded libraries.

- Libraries that spend $11 or more annually per student tend to have better PSSA Writing scores—both more students scoring Advanced and fewer scoring Below Basic—than for less well-funded libraries.
- As percentages of Advanced Writing scores grow from elementary to middle to high school level, the difference in Advanced scores associated with library funding grows from 1% to almost 3% to more than 7%.

Through my [graduate program], I learned how to advocate within the learning community as well as the local community and [with] legislators. I hosted a legislator meeting in the library and advocated for library funding. I would not have had the confidence to do so without the skills I learned in course work.
-High School librarian

This year teachers have supported the library program by participating in a modeling incentive to encourage the students to read. We have posted signs outside our rooms with our name, the book title and author of the book we are reading. We change the title and author with each new book we read. Coupled with this, I spent a large portion of my … budget on new reading materials … Hopefully, funding for school libraries will not be reduced or terminated as this would handicap our efforts in guiding our students to be lifelong learners.
- High School librarian



Summary

Per-student spending on library resources is associated with better PSSA Reading and Writing results. The proportional differences in Advanced Writing scores between students with better and less well-funded libraries are substantially greater than the proportional differences in Reading scores.

- Library resources spending is an investment that benefits all students, both high- and low-achievers. It is associated with better Reading and Writing scores—higher Advanced and lower Below Basic.

- Spending on library resources helps to close achievement gaps. These differences are not explained away by socio-economic, racial/ethnic, and disability factors.

In the ***Guidelines for Pennsylvania School Library Programs***, per-student library funding levels are specified for different grade levels. Per-student library resources funding of $41 for elementary schools, $45 for middle schools, and $50 for high schools is stipulated. The guidelines further identify minimum, standard, and exemplary levels of per-student funding specifically for books and serials, audiovisuals, and electronic resources. While the *Pennsylvania School Library Survey*, which provides available data for this project, does not provide such detail, it does report overall per-student library funding in several ranges. The range that includes the median for school libraries that responded to the survey begins with $11 per student, so that cut-point is used in this analysis.

The findings of this analysis support the idea that student learning and academic achievement are associated with stronger library funding, despite the fact that few Pennsylvania school libraries approach the per-student figures in the state's guidelines.

When students are served by better-funded school libraries, they are more likely to succeed in school than their counterparts who lack such libraries.

Chapter 4. Pennsylvania School Library Digital Resources & PSSA Scores

This chapter examines the relationship between available data on school library digital resources and Pennsylvania System of School Assessment (PSSA) Reading and Writing scores. Data from the Pennsylvania School Library Survey—including the library's number of computers less than five years old with Internet connectivity (hereafter, "newer computers") and whether or not the school provides access to databases and eBooks—were analyzed with PSSA Reading and Writing scores.

To avoid repetition in this and succeeding chapters, see Chapter 1 for detailed methodological information, including details about the variety of PSSA score data employed in this phase of the study, its source, and an explanation of associated terminology as well as a description of comparison-of-means analysis (t test) and its statistical significance.

At the end of the chapter,-findings are discussed in relation to the *Guidelines for Pennsylvania School Library Programs*, a 2011 document of the Office of Commonwealth Libraries in the Pennsylvania Department of Education.

Throughout the chapter, the findings are illustrated by quotes offered by respondents to the project's surveys.

Digital Library Resources

Separate analyses were conducted for newer computers (i.e., those less than five years old) as well as database and eBook availability.

For newer computers, different cut-points are used for elementary and middle schools versus high schools. For elementary and middle schools, libraries with 10 or more newer computers are compared with those with fewer than 10 newer computers. For high schools, libraries with 40 or more newer computers are compared with those with fewer than 40 newer computers. These cut-points were chosen based on the distribution of responses to this question by grade level and its association with PSSA scores. (For high schools, the threshold of 10 or more newer computers was simply too low. Across all grade levels, over a third of responding schools reported fewer than 10 newer computers. Notably, however, almost half that proportion of responding high schools reported 40 or more newer computers. The 40+ threshold also put the high school analysis as in-sync as possible with state guidelines.)

The analyses concerned with databases and eBooks are any-to-none comparisons for several reasons: the rapidly changing nature of library collections, the fact that Pennsylvania's POWER Library databases provide all school libraries with a core database collection, and the fact that school libraries are only beginning to embrace eBooks. Another factor may be that many libraries have declining or no budgets and cannot afford them. Notably, in the survey, respondents were asked to report databases and eBooks available to their students beyond the POWER Library databases and eBooks. More than a quarter of respondents reported that their libraries had no databases beyond the POWER Library, and more than three-quarters, no eBooks.

As for the staffing and spending analyses, findings are reported for:

- All students
- Students who are Economically Disadvantaged (i.e., "Poor" in charts), Black, Hispanic, and have Individualized Education-Programs (IEPs—i.e., students with disabilities)
- Students at elementary, middle, and high school levels.

In a program like ours, where our media center has a full time aide, I am able to move around the building as I'm needed. I can go to the classrooms along with a mobile laptop cart to help the students find and evaluate resources online and through our subscription databases. Making sure the students know how to access resources 24 hours a day is a goal I have this year. With Internet access, our students can connect to the information they need at any time of the day or night, not just when school is in session.
- High School librarian

PSSA Reading & Writing Scores by Student Cohort by Access to Newer Computers

Access to newer computers is associated with better PSSA Reading and Writing scores—both more Advanced and fewer Below Basic—for all students as well as major cohorts of students at both ends of the achievement spectrum.

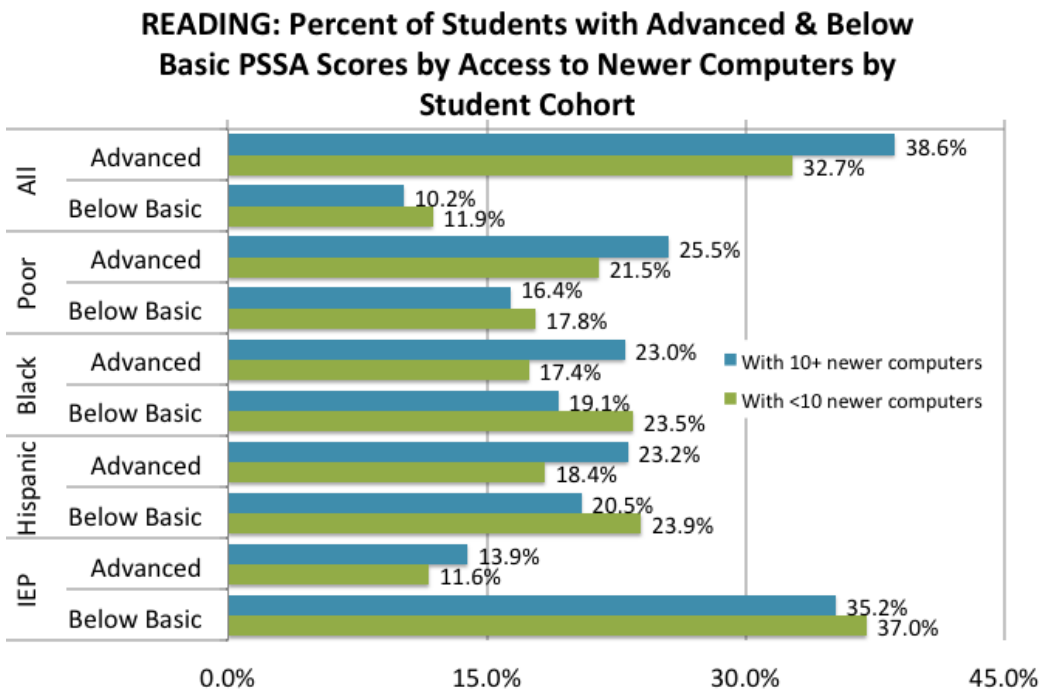
- Consistently, all students as well as those who are economically disadvantaged (i.e., poor), Black, and Hispanic, and those with Individualized Educational Plans (IEPs) average higher Advanced and lower Below Basic scores if their libraries have 10 or more computers less than five years old.

- Advanced Writing scores are about twice as likely for all students and for students who are poor, Black, and Hispanic, if their libraries have (versus do not have) more, newer computers.

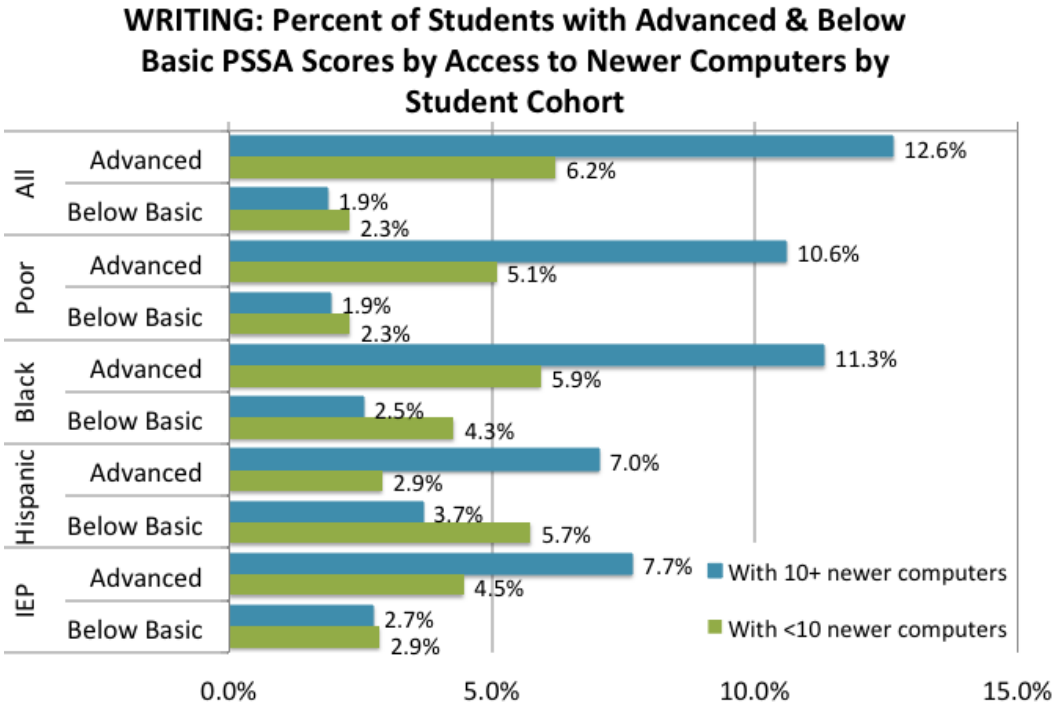
- Students who are Black and Hispanic, but have access to more newer computers, are much less likely to have Below Basic Writing scores than their counterparts with less newer-computer access.

My school librarian has offered invaluable co-teaching experience in regards to the language arts research process. … Students have had access to library … computers - which are not available in the classroom. With her help, students have gained valuable knowledge that I know will travel with them through their … schooling as the research papers continue to get more and more difficult.
- Middle School teacher

As a Social Studies teacher, my department views our librarian as a co-teacher. … He has worked with my Global Scholars students to create presentations on global topics using the latest technology so that the presentation can be viewed and discussed with students worldwide
- High School teacher



Note: Charts in this chapter compare the PSSA scores of students with and without key indicators of digital resources—whether or not a school has 10 or more computers that are less than five years old and later, with and without access to databases and eBooks (beyond POWER Library databases and eBooks). The minimum number of newer computers—10 or more—was the median response to the School Library Study survey. Example: schools with more newer computers average 38.6% of all students scoring Advanced in Reading, while schools with fewer such computers average 32.7% of students scoring Advanced.



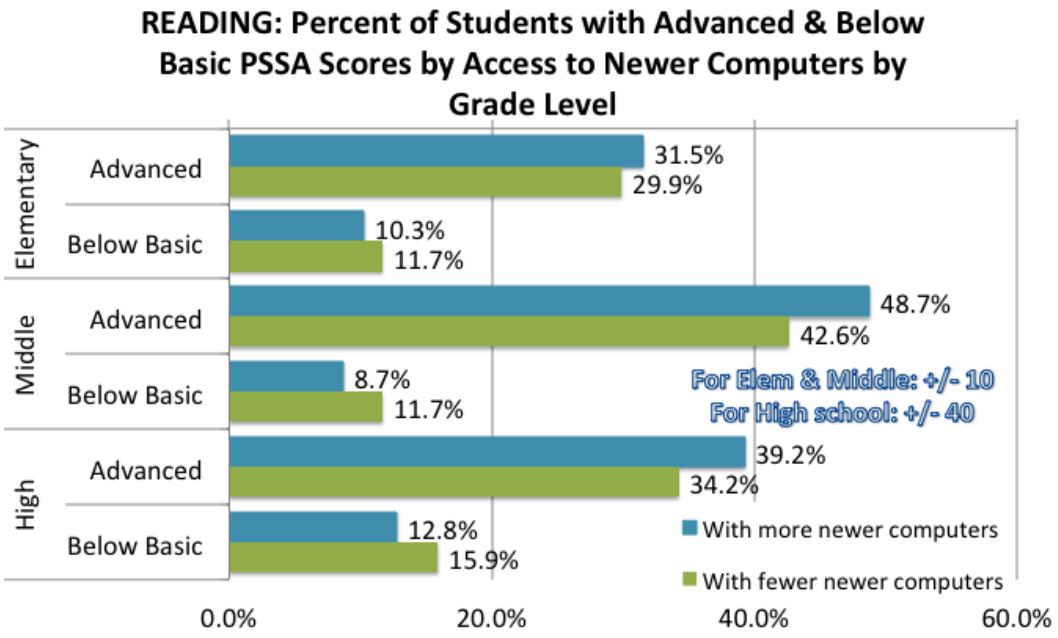
PSSA Reading & Writing Scores by Grade Level by Access to Newer Computers

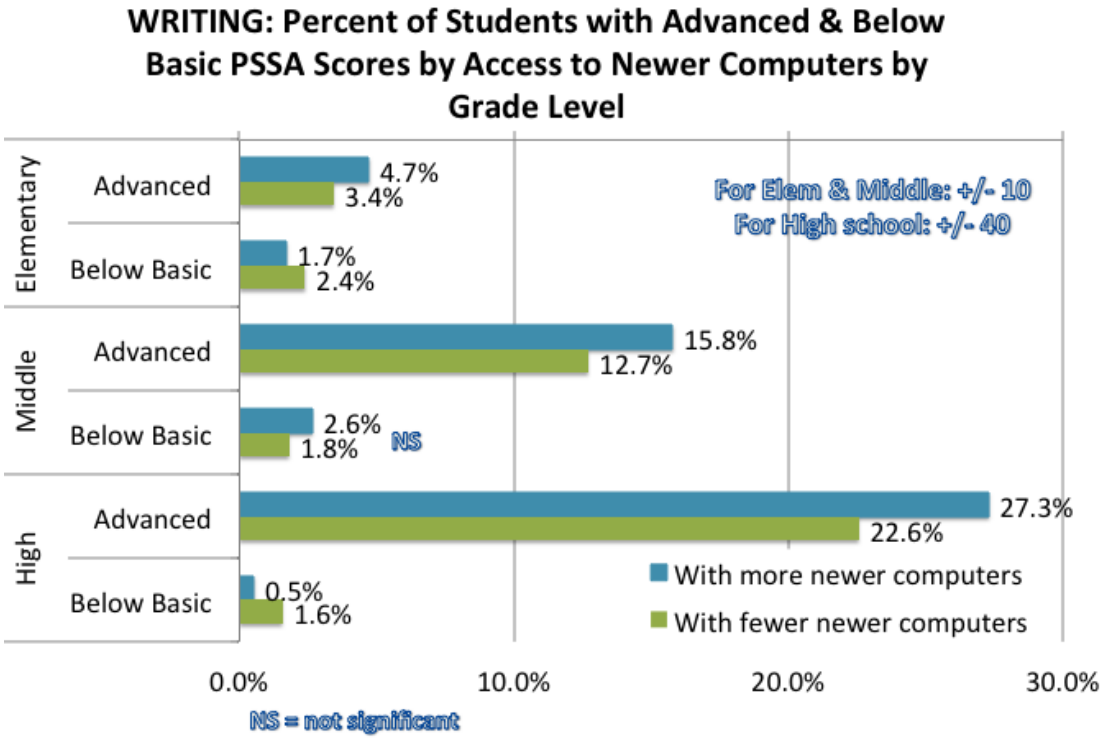
Student access to more, newer computers is also associated with better PSSA Reading and Writing scores, regardless of grade level, and at both ends of the achievement spectrum. (For elementary and middle schools, the cut-point is 10 computers less than five years old; for high schools, 40.)

- At all grade levels, students whose libraries had more newer computers average higher Advanced and lower Below Basic Reading and Writing scores than students with fewer newer computers.
- On both Reading and Writing, middle and high school students benefited from computer access more than elementary students.

> Our librarian is an integral part of my success as an educator. She sends out a monthly newsletter with all the new computer programs and sources available to us and directions on how to use them. Additionally, when I bring my students to the library to conduct research, she is readily available to both the students and myself to help with the research process [and] technology support … to help the students achievement success.
> - High School teacher

> Instructional technology is an essential component to school districts in the 21st century as we prepare our students for success in the globalized 21st century, and [our] library is definitely equipped with the most essential tools ...
> - High School teacher





POWER Library Databases

Funded with federal Library and Services and Technology Act (LSTA) funds, the POWER Library Project is a service provided to Pennsylvania's public libraries, school libraries, and the State Library. The POWER Library provides access to thousands of full text periodical articles, newspapers, a major encyclopedia, plus photographs, pictures, charts, maps, and reference materials for people of all ages. It is administered by Commonwealth Libraries, Pennsylvania Department of Education. The suite of databases and eBooks currently includes:

- ABI/INFORM Trade/Industry
- Access PA Contemp. Authors
- AP Images
- Auto Repair Reference Center
- Consumer Health Complete
- Career Library
- Ebooks on EBSCOhost
- GreenFILE
- InfoTrac Newsstand
- LISTA
- OmniFile Mega & Select
- Readers' Guide Select
- Science Full Text Select
- SIRS Discoverer
- Teacher Reference Center

PSSA Reading & Writing Scores by Student Cohort by Database Availability

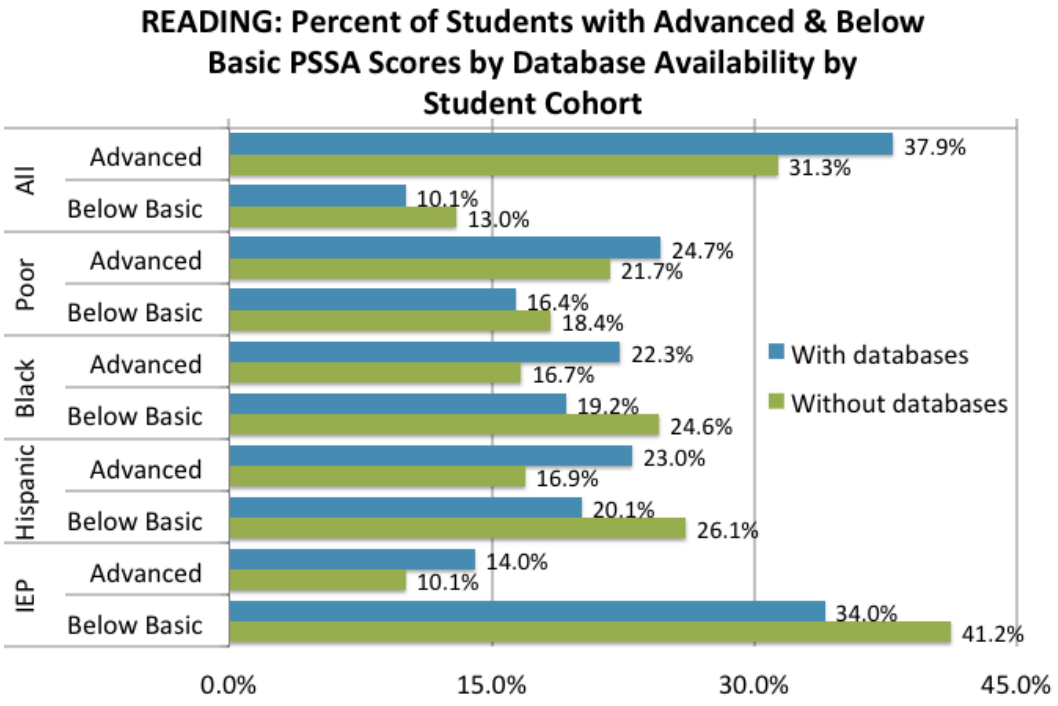
The state's POWER Library databases provide a solid foundation of access to quality online information for all Pennsylvania schools. In addition, many schools subscribe to additional databases chosen to meet their own specific curricular needs. Additional access to such databases is associated with better PSSA Reading and Writing scores for all students as well as major cohorts of students at both ends of the achievement spectrum.

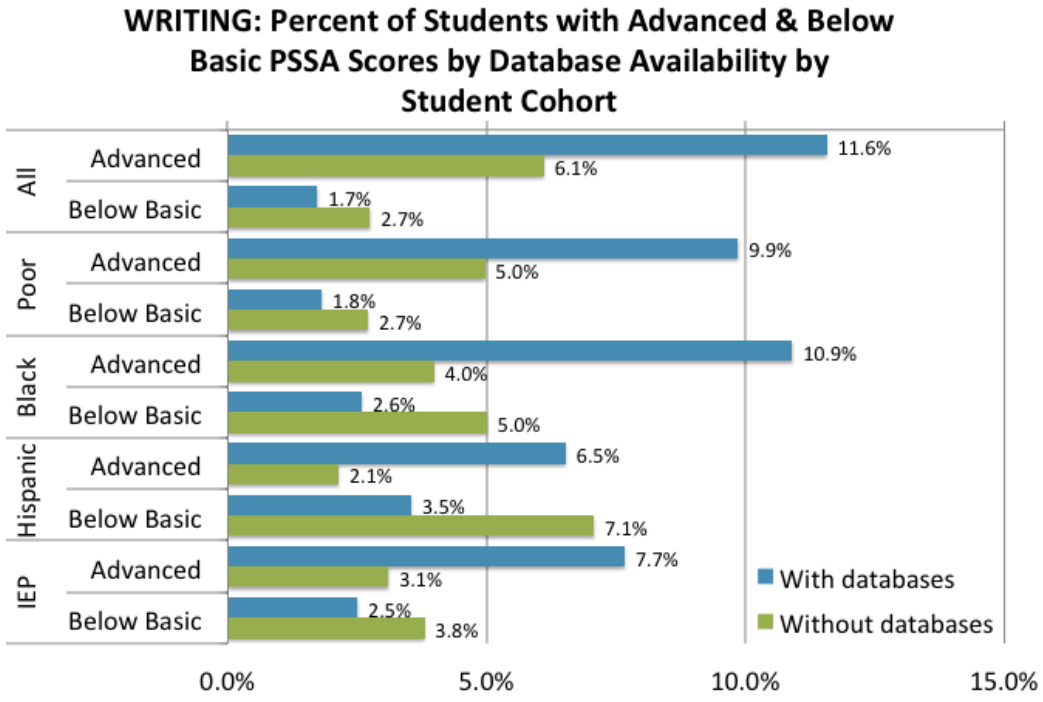
- Students at schools with database access (i.e., access to databases beyond the POWER Library) average higher Advanced and lower Below Basic scores than their counterparts at schools without database access.
- Generally, the benefits associated with database access are proportionally greater for students who are poor, Black, Hispanic, and disabled.
- At schools with database access, the incidence of Advanced Writing scores is twice as high or more than at schools without database access.

In addition to assisting students with 21st century skills, our librarian has assisted faculty in implementing technology into the curriculum. I frequently access Discovery Education and other databases.
- Middle School teacher

Our librarian is doing the best she can with the resources she has. The loss of subscription databases in Power Library is sorely missed.
- High School teacher

I feel it's absolutely necessary for librarians to have the funding to improve electronic resources (databases, etc.) for our students. They are technological beings, and they'll be faced with technology in a way that no generation before them has encountered. As a result, our librarians need the tools necessary to teach them productive uses of technology, and our limits and successes as teachers of these skills are ultimately decided by the tools our librarians can provide to us. In other words, their resources become our instructional successes.
- High School teacher





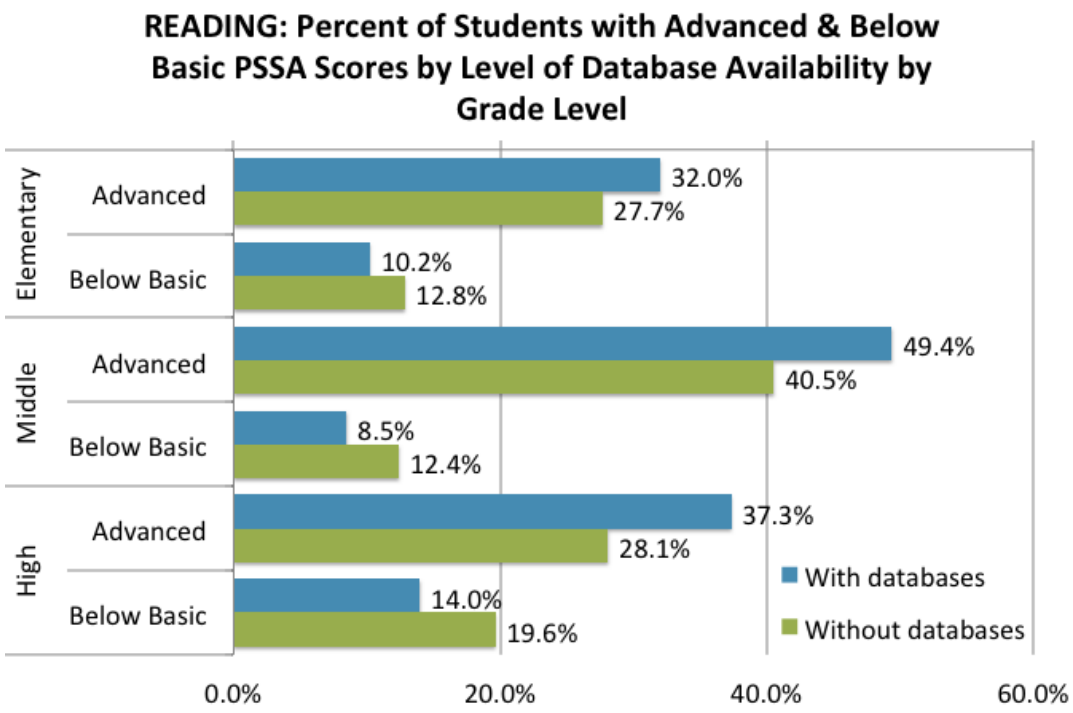
PSSA Reading & Writing Scores by Grade Level by Database Availability

Like the computers on which many students access them, the availability of locally licensed, web-based databases via school libraries is associated with better PSSA Reading and Writing scores, regardless of grade level, and at both ends of the achievement spectrum.

- At all grade levels, students at schools with database access are more likely to score Advanced and less likely to score Below Basic on Reading and Writing than students without database access.
- From elementary to secondary level, differences associated with database access indicate that its positive impact is cumulative.

She taught me the entire Big6 research process while teaching the students and showed me new ways to find information. She works tirelessly to get subscriptions for online databases and to teach the students in our 4-5-6 building the proper way to locate and apply information. She recently taught my fifth graders how to evaluate web sites we were using for a project about Mars. It was an excellent lesson that I then expanded upon in the classroom.
- Elementary School teacher

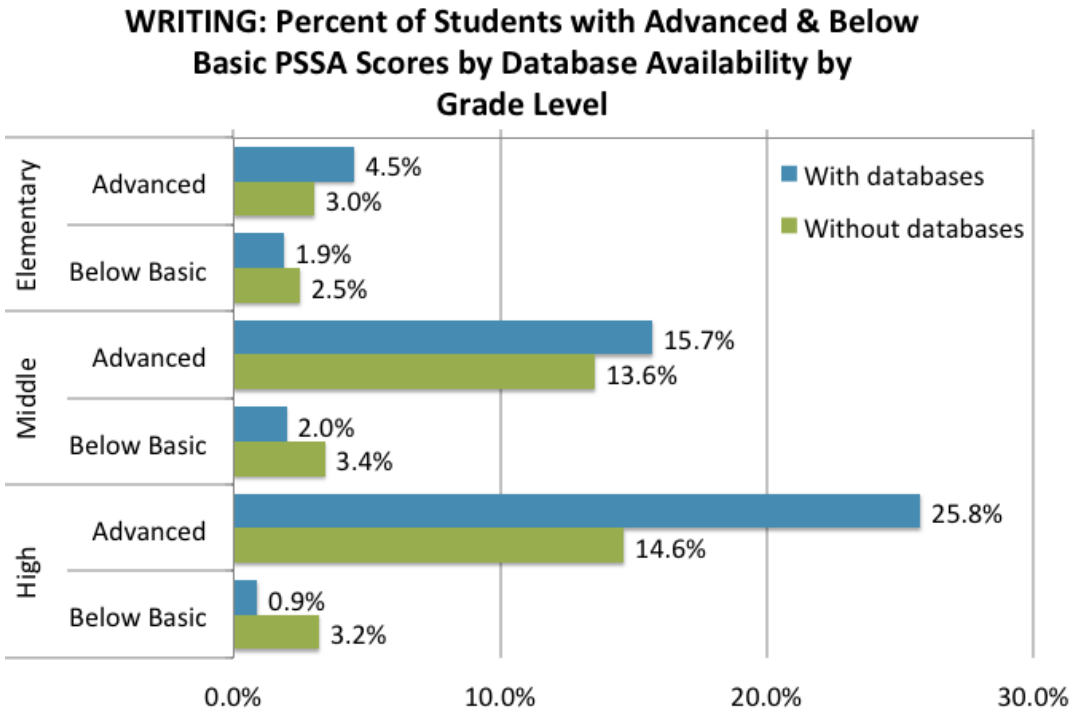
Teachers were not aware of the in-depth material located in several of our databases. My principal asked me to do a presentation to the faculty about databases during an in-service. It was nice to hear the positive feedback from the staff and for the Principal to make the databases a priority.
- Middle School librarian



I am the high school librarian, but I also teach a 9-week research writing class to 8th grade students. The main goal of this course is for students to conduct research in print and electronic sources, take notes, and turn their notes into a 4-page types formal paper in MLA format. ... I teach my students how to use the electronic databases, World Book online, and our electronic catalog.
- Junior/Senior High School librarian

Our school librarian … has proven to be an invaluable resource for students in my debate elective. [She] provides them not only with an introduction to databases full of pertinent information (including Opposing Viewpoints), but she also guides the students in determining and defending source credibility for actual debates. My students are better debaters because of her instruction and support.
- High School teacher

… I am proud of the program we have built here ... My High School teachers use the library extensively. A research unit, which requires library research, is written into the English curriculum at each grade level. Using the print collection and our databases, our students are able to access information to complete classroom assignments.
- High School librarian



I love when my former students email, call, or see me and tell me know much my instruction has helped them to succeed in their college classes. They know which databases to use and how to organize information, and often, are teaching other students in their classes. I know that my students are prepared to deal with the world of information that is hurled at them, usually at light speed.
- High School librarian

[Our librarian] helped instruct, not only my students, but also [me,] how to increase the depth and breath of research using sources beyond the walls of our library: databases, RSS feeds, blogs, etc. I … could not have found the time to develop all of the lessons needed to expose my students to all of this information.
- High School teacher

PSSA Reading & Writing Scores by Student Cohort by eBook Availability

Doubtless, the library landscape is being altered more radically than ever by the e-content revolution stemming from the widespread adoption in the past few years of tablet computers, eBook readers, and eBooks themselves. School libraries in particular are among the slowest adopters of these trends. As noted earlier, fewer than a third of responding school libraries reported having any eBooks. Still, there are early adopters among Pennsylvania school libraries, and those school libraries appear to be seeing some results from being on the cutting edge where eBooks are concerned.

The availability of eBooks via school libraries is associated with better PSSA scores—more Advanced scores in Reading and, generally, more Advanced and fewer Below Basic scores in Writing.

- Consistently, all students as well as students who are economically disadvantaged (i.e., poor), Black, and Hispanic, and have Individualized Education Programs (IEPs) are more likely to score Advanced on Reading and Writing if their schools have eBook access.

- The impact of eBook availability on Below Basic scores is more mixed. For Reading, differences are significant only for students who are Hispanic and have IEPs. For Writing, however, the difference for students who have IEPs is the only one found not significant.

Ebooks on EBSCOHost

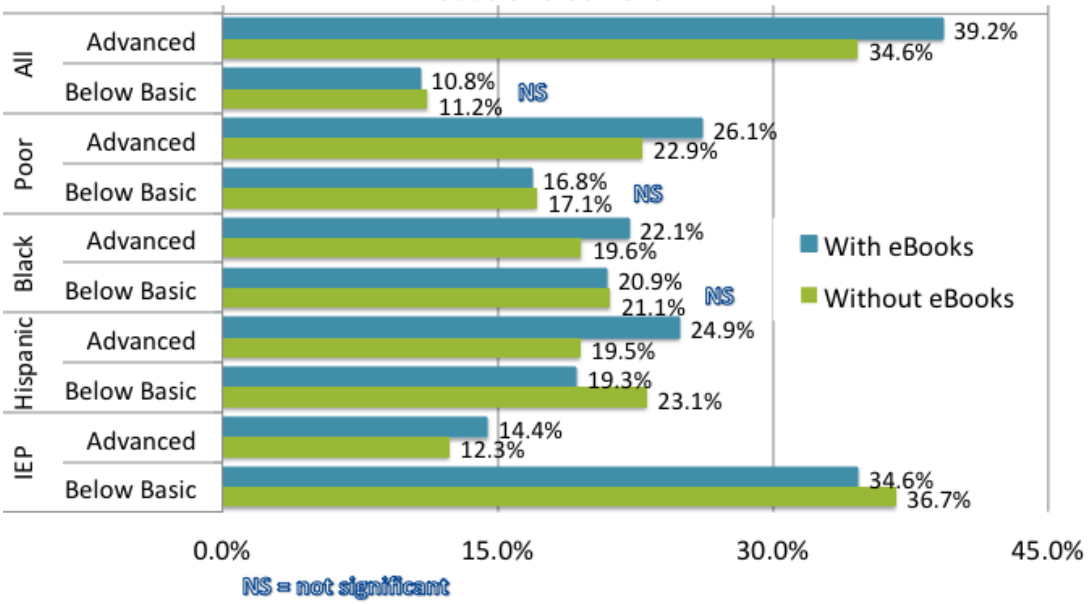
Part of Access PA POWER Library database collection since 2005 (formerly NetLibrary)

- Arts & humanities
- Business & economics
- How-to & general education
- Medical
- Personal growth
- Science & technology
- Social & cultural issues
- Social sciences
- Vocational education

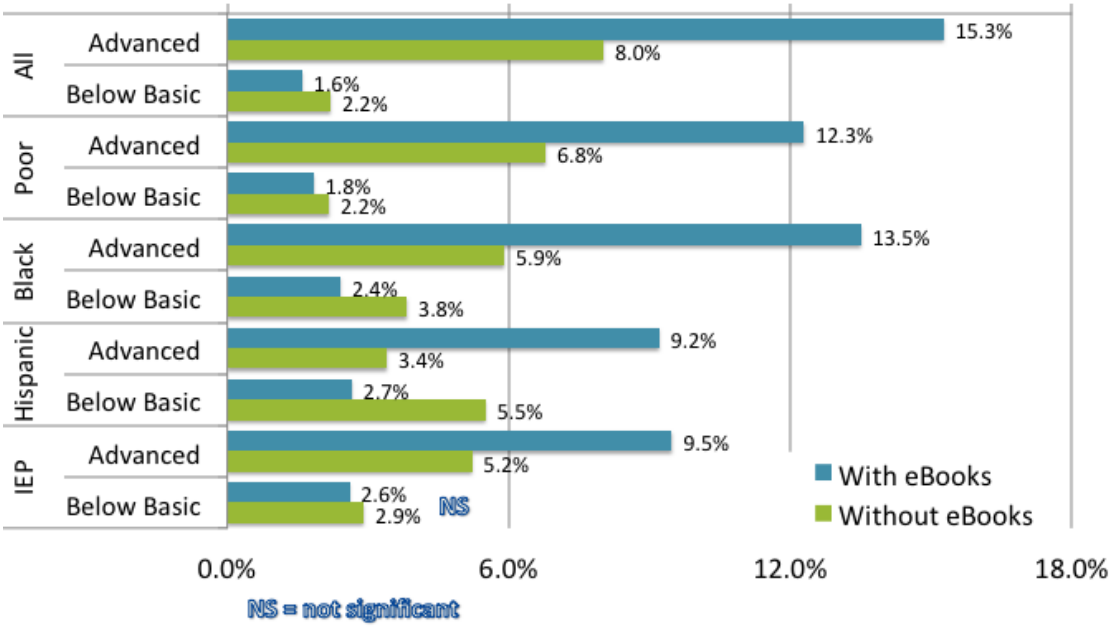
Melissa Engel-Unruh, Chambersburg (PA) Area Senior High School librarian observes that eReaders—received by students as holiday gifts—spurred new interest in her library. She invited a local branch librarian to talk with an AP Spanish class about eBooks. Every student got a library card—previously, more than half had never had one. Her response: "Shocker! I think some of them are going to investigate borrowing an eBook."
- *School Libraries Grapple with Surge in eReaders*, **The Digital Shift**, August 7, 2012 (available at: http://www.thedigitalshift.com/2012/01/ebooks/more-ereaders-brings-greater-demand-for-ebooks/)

Recently, my first grade class started a unit on Nonfiction Reading and Writing. The librarian was able to share a list of eBooks from many sources.
- Elementary School teacher

READING: Percent of Students with Advanced & Below Basic PSSA Scores by eBook Availability by Student Cohort



WRITING: Percent of Students with Advanced & Below Basic PSSA Scores by Ebook Availability by Student Cohort

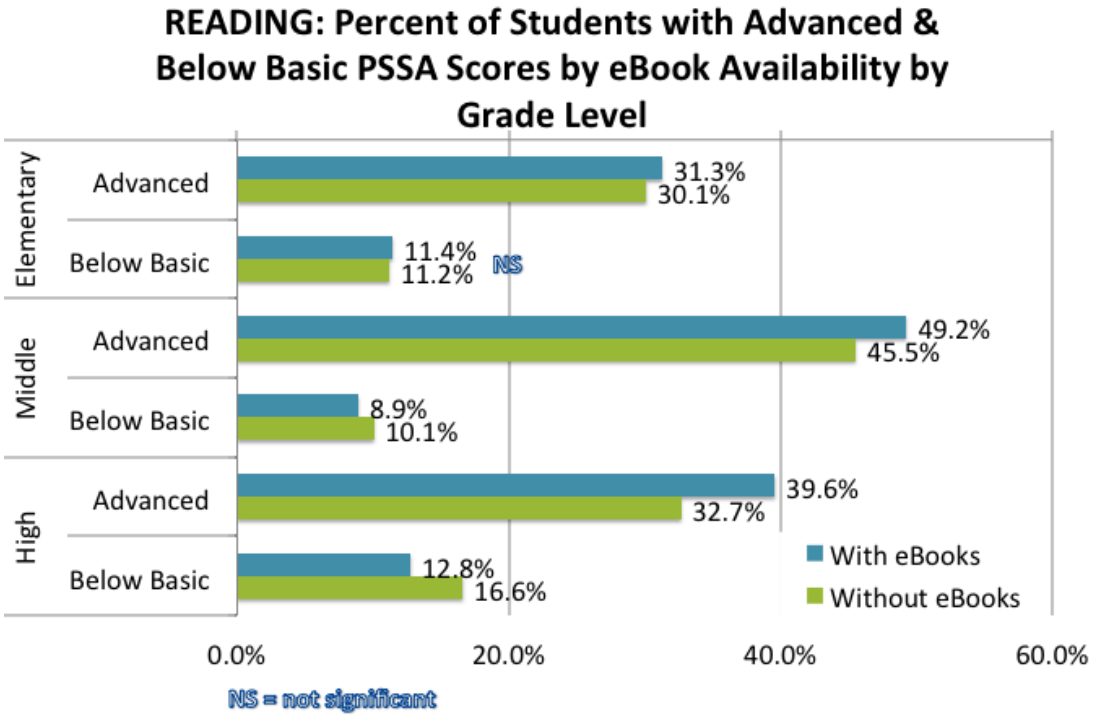


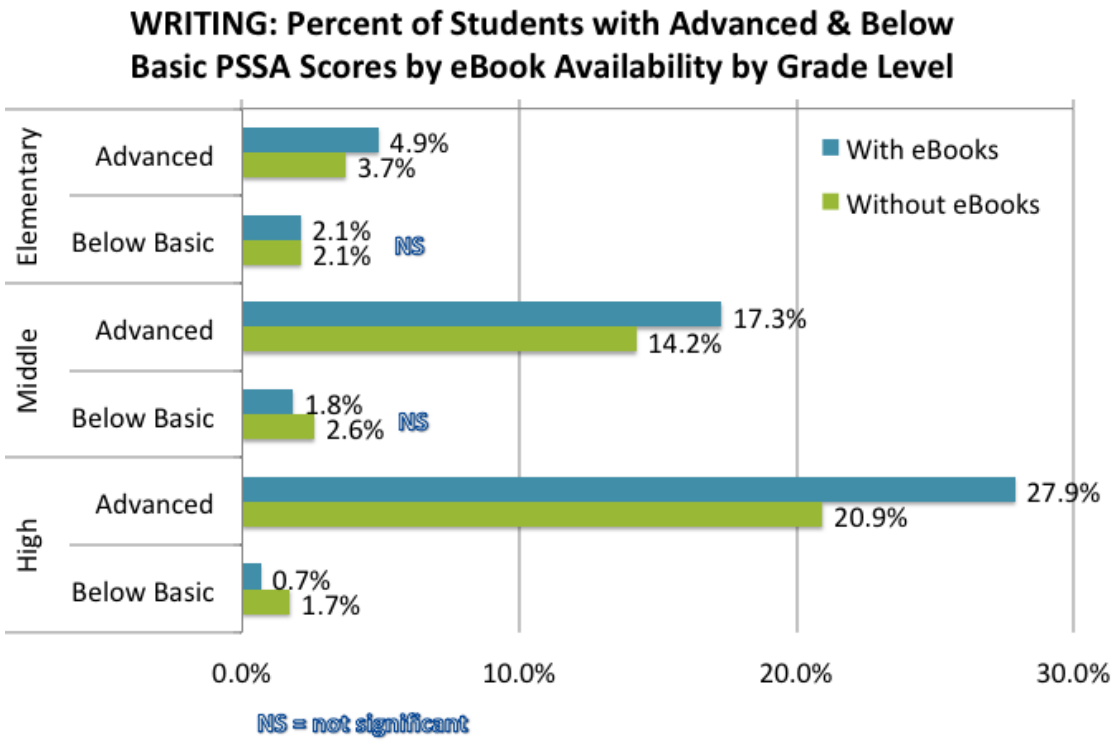
PSSA Reading & Writing Scores by Grade Level by eBook Availability

The availability of eBooks via school libraries is associated with better PSSA Reading and Writing scores, though regarding Below Basic scores in both Reading and Writing with some noteworthy variations by grade level.

- Consistently, across grade levels, students at schools with eBooks average higher Advanced scores on Reading and Writing than students at schools without eBooks.
- This difference in Advanced Reading scores grows from level to level (3.0% to 4.1% to 12.8%).
- Below Basic differences on PSSA scores associated with eBook access are mixed. Reading score differences are significant at middle and high school levels, but the Writing score difference is significant only at high school level.

> I have been working with the school librarian to incorporate more technology in the teaching of reading. We have developed [an eReader] club. The students go to the library one time per week and read on the [eReaders]. In order to keep students focused on the reading we have the students complete a reading strategy each week. These have included how to select books of interest, sentence starters, personal connections, etc. ... The students have commented that they are becoming stronger readers, their comprehension is improving, and they feel they are bringing new comprehension skills to other content area classes.
> - High School teacher





Summary

Students in today's schools face the most complex information environment in history: there are more formats (e.g., from paper texts to eBooks, from DVDs to databases) and more devices (e.g., desktop computers, laptops, tablets, eBook readers, smartphones) than ever. And their numbers continue to grow at a seemingly ever-increasing rate. Today's students and tomorrow's workers will have no choice but to keep up with technological changes and how they affect their access to information.

The evidence presented in this chapter supports the belief that 21st century school libraries must offer access to digital resources, especially up-to-date computers, databases, and eBooks. These measures of digital access especially are associated with better PSSA Reading and Writing results.

- Newer computers give students access to digital resources requiring greater capacity and speed of access. Where school libraries provide more such computers, more students score Advanced and fewer Below Basic on both Reading and Writing.

- Digital resources—databases and eBooks—are investments that benefit all students as well as specific cohorts. Both types of digital resources are associated with higher Advanced Reading and Writing scores.

- While the impact of digital resources on Below Basic scores is less generalizable, students are often less likely to score poorly on Reading and Writing if they have access to databases and eBooks.

In **Guidelines for Pennsylvania School Library Programs**, recommended numbers are provided for computers available for student use. Minimally, 35 computers are recommended. At the Standard level, 45 computers are recommended. To be considered exemplary, a library is expected to have computers for two-thirds of its seating capacity. Notably, these recommendations do not address the age of the computers. There are no numerical targets for either databases or eBooks; but, both are identified as "standard" electronic resources that should be in every school library in the state.

The findings of this analysis support the idea that student learning and academic achievement are associated with greater access to digital resources, despite the fact that minorities of Pennsylvania school libraries—particularly at elementary and middle school levels—meet, or even approach meeting, the state's guidelines.

When students have more access to digital resources via their school libraries, they are more likely to succeed in school than their counterparts who lack such access.

> As our school district embraced 21st Century initiatives, including 1:1 access to laptops for secondary students, I have begun to develop the necessary building blocks for students and teachers to effectively use the resources available to them. Now I help to manage not only a physical facility but an online space with the school library webpages--where they can explore 24/7. Not only have I included databases and traditional sources of information for research but also social media, including blogs about books, movies, and other media
> - Elementary School librarian

> [Our librarian] is not rattled by the changing face of information and the ways in which we access it and works to teach the teachers about new resources … that they can utilize to better instruct students.
> - High School teacher

> [T]he District was able to increase student reading achievement by [providing] well -equipped, technologically-advanced school library media centers ... The District was able to increase the number of … sites available for student and parent use and with advanced technology it permitted the union catalog of all materials …, on-line searching, database accessibility, collaboration possibilities and presentation alternatives.
> - High School administrator

Chapter 5. PA School Library Collections & PSSA Scores

The chapter examines the relationship between available data on school library collections and Pennsylvania System of School Assessment (PSSA) Reading and Writing scores. Data from the Pennsylvania School Library Survey regarding the sizes of the school library's book and video materials collections and accessibility to its audio materials were analyzed with PSSA Reading and Writing scores.

To avoid repetition in this and succeeding chapters, see Chapter 1 for detailed methodological information, including details about the variety of PSSA score data employed in this phase of the study, its source, and an explanation of associated terminology as well as a description of comparison-of-means analysis (t test) and its statistical significance.

At the end of the chapter, its findings are discussed in relation to the *Guidelines for Pennsylvania School Library Programs*, a 2011 document of the Office of Commonwealth Libraries, Pennsylvania Department of Education.

Library Collections

Separate analyses were conducted for three major physical formats: books, videos (e.g., DVDs), and audio materials (e.g., audiobooks).

In analyzing sizes of traditional library collection formats—books, videos, and audio resources—a "cut-point" was determined to compare libraries with a certain size collection to those with less than the selected quantity. For books, the cut-point between the two comparison groups is 12,000 volumes, the approximate median for responding libraries. For video formats, on the same rationale, the cut-point is 150 titles. Because so many school libraries reported no audio materials, that analysis compared libraries with any audio materials to those with none.

These analyses were guided by these statistical norms, because the dramatic shifts underway between traditional print and audio-visual formats, on the one hand, and online and streaming formats, on the other, makes it difficult to say with certainty how much a certain format a school library "should" have. One thing is clear, however, in many of the comments received during this study from administrators, teachers, and librarians: newer formats rarely supplant older ones entirely. Print books and other physical formats are still a valuable part of any school library collection, despite the growing popularity of eBooks, online databases, and emerging streaming media.

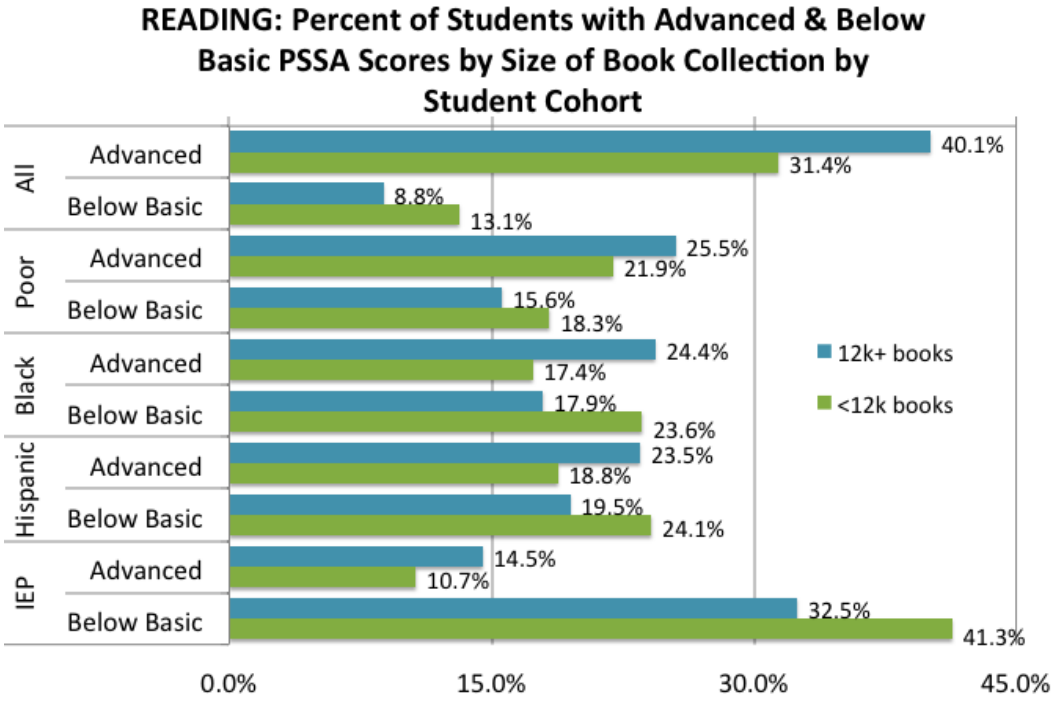
In the same way that staffing and spending analyses were conducted, findings are reported for:

- All students
- Students who are economically disadvantaged (i.e., poor), Black, Hispanic, and have Individualized Education Programs (IEPs—i.e., those with disabilities)
- Students at elementary, middle, and high school levels.

PSSA Reading & Writing Scores by Student Cohort by Book Collection Size

Larger book collections (more than 12,000 volumes) are associated with better PSSA Reading and Writing scores—both more Advanced and fewer Below Basic—for all students, as well as most of the PSSA-tested cohorts of students at both ends of the achievement spectrum (i.e., Advanced and Below Basic).

- Consistently, all students and all studied cohorts at schools with larger book collections are more likely to earn Advanced and less likely to earn Below Basic scores than their counterparts at schools with smaller book collections.
- For Writing scores, the positive impact of book collection size is dramatically stronger than for Reading scores.
- For students who are Black and Hispanic, access to more books more than doubles their chances of Advanced Writing scores and cuts their risk of Below Basic Writing scores in half.



Note: Throughout this chapter, this and following charts report average Advanced and Below Basic PSSA scores for students with and without access to library collections of a certain size. These charts include Advanced and Below Basic score averages for all students as well as for students who are Economically Disadvantaged (i.e., "Poor"), who are Black, who are Hispanic, and who have Individualized Education Programs (IEPs). Example: Of all students, 40.1% of those with access to larger book collections (i.e., 12,000 volumes or more) score Advanced, while only 31.4% of those with access to smaller book collections (i.e., fewer than 12,000 volumes) score Advanced.

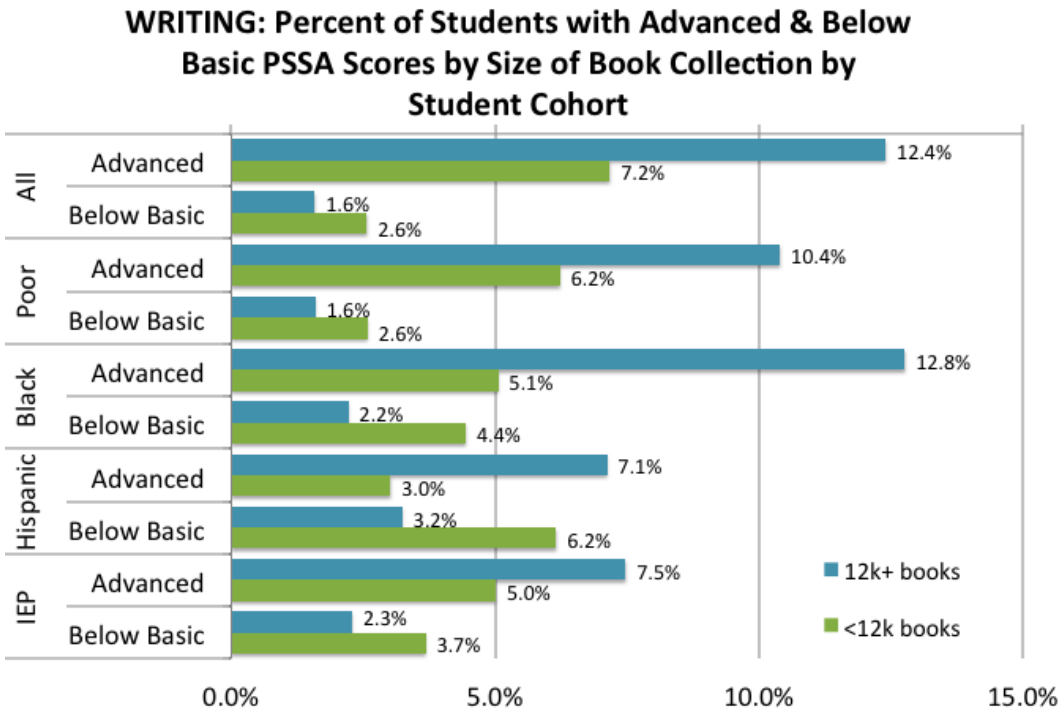
Recently, I worked with the librarian on researching the elements of the Periodic Table. … Having done this project in the past, the librarian had supplemented our school's reference section in the library over the years with an entire new collection of books containing endless information on the groups of the Periodic Table and the individual elements that make them up. Because of these new resources, students could now complete everything needed for this project the "old fashioned way" and not have to simply rely on Google to find the answer for them. … I found it to be extremely beneficial and taught a hidden curriculum to these students who have become so dependent on technology to solve problems and find answers for them.
- Middle School teacher

Our library is a place that absolutely invites teachers and students alike to read, explore, enjoy and be excited about all the wonders that books offer!
- Middle School teacher

I went to our school librarian a few years ago just to ask her to keep an eye out for books I might use for a Unit on Animals for my First Grade Classroom. Not only did she hand me a print out of all the books I might use, but she also taught me how to access the reference section that she had set up …
- Elementary School teacher

In my fourth grade classroom, I often teach units that require a large selection of text. Most recently I taught a poetry unit where my students were immersed in many different kinds of poetry. The kids were taught how to read poetry and use strategies to comprehend what they mean. I borrowed about 75 poetry books from the library. Without my school library, I would not have been able to complete this unit.
- Elementary School teacher

It is wonderful working with our librarian. She does a great workshop at the beginning of the year introducing new middle schoolers to the library ... Several times per year, she will pull carts of books for us on given topics. She is amazing with publicizing new books and encouraging students to check them out.
- Middle School teacher



PSSA Reading & Writing Scores by Grade Level by Book Collection Size

Larger book collections are also associated with better PSSA Reading and Writing scores, regardless of grade level, and at both ends of the achievement spectrum.

- Consistently, at all grade levels, students at schools with larger book collections (12,000 volumes or more) are more likely to earn Advanced and less likely to earn Below Basic scores than their counterparts at schools with smaller book collections.
- The positive impact of larger book collections grows with grade level.
- For Reading, the difference between the percentages of Advanced scores for schools with larger book collections (12,000 volumes or more) and schools with smaller book collections (fewer than 12,000 volumes) grows from 7% to 9% from elementary to middle school. The Below Basic difference grows from 4% to 7% from middle to high school.
- For Writing, by high school, students with access to smaller book collections (less than 12,000 volumes) are almost four times as likely to earn Below Basic scores as their counterparts with larger book collections.

My biology and general science classes use the library frequently. Our school librarian works with students on finding and citing reliable sources, utilizing higher-level databases, and finding ways to get them interested in reading. For our genetics unit, we collaborate with the library to research a genetic disorder. Our librarian has accumulated many books about specific genetic disorders over the years.
- High School teacher

My school librarian has helped my first graders do their first animal research paper. When I first started doing this project several years ago, she had to find books on three different reading levels. Since then, she has acquired more books that my students love. When we start the project, we go to the library so the students can select their own books for the project.
- Elementary School teacher

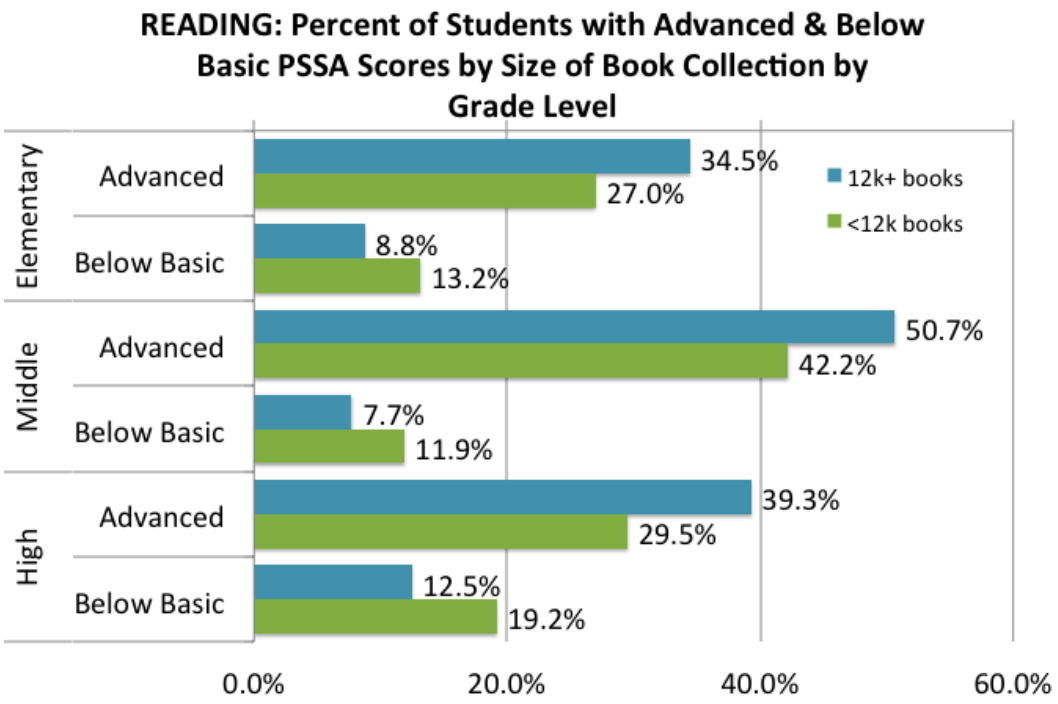
[After o]ur high school librarian…, arrived, our previously half-empty library flourished. She packed the shelves with kid-friendly books … She is attuned to our research project topics from 9th through 12th grade, and she stocks the library with books … necessary for our kids to access relevant information.
- High School teacher

Our librarian is an essential element to the process of learning. She is a great support in obtaining and gathering text of all sorts to enhance the reading and writing workshop model. She understands the need to have a variety of books for modeling. The use of mentor text is essential to teaching, all levels of students, what good reading and writing is all about. Students learn so much from great authors, and the librarian is the key link between the teacher and those authors.
- Middle School teacher

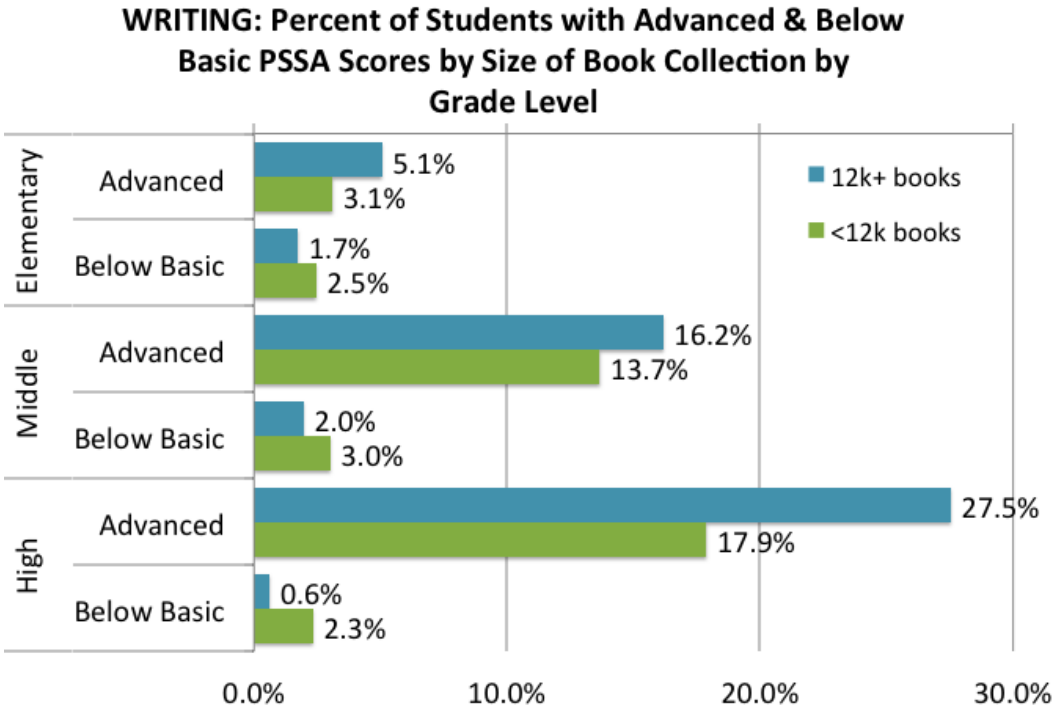
Our librarian is essential to impacting the general atmosphere and to helping students and staff meet curriculum goals. ... She stays up-to-date on available resources--both electronic and traditional--and continually expands her collection of both reference books and primary source literature.
- High School teacher

Our libraries are an essential part of the equation to successful students. There are students who do not have access to books and research information at home. We need libraries to help us provide appropriate, enjoyable reading material to these students. Libraries provide a "free" way for students of all ages to access information and also practice reading for pleasure. Even students who have reading material … at home can be supported in a positive way by libraries. These students can discover new kinds of books (both non-fiction and fiction) to read for enjoyment and also to support their current areas of study
- Elementary School teacher

We are so very fortunate to have such a valuable team member in our librarian. She works so hard to bring the library alongside of both teachers and students in our school. Her procurement of new books is based, in part, on her knowledge of our needs in the classroom and of our unit topics.
- Elementary School teacher



Note: Throughout this chapter, this and following charts report average Advanced and Below Basic PSSA scores for students with and without access to library collections of a certain size. These charts include Advanced and Below Basic score averages by grade level. Example: Of elementary students, 34.5% of those with access to larger book collections (i.e., 12,000 volumes or more) score Advanced, while only 27.0% of those with access to smaller book collections (i.e., fewer than 12,000 volumes) score Advanced.



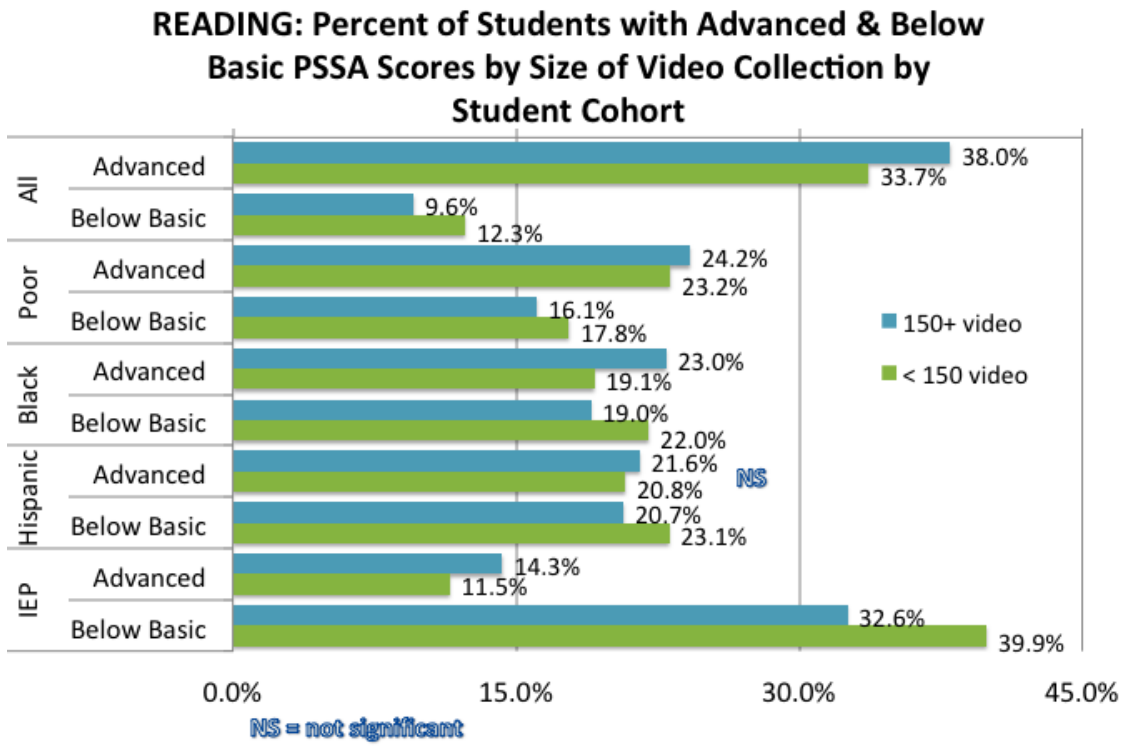
PSSA Reading & Writing Scores by Student Cohort by Video Collection Size

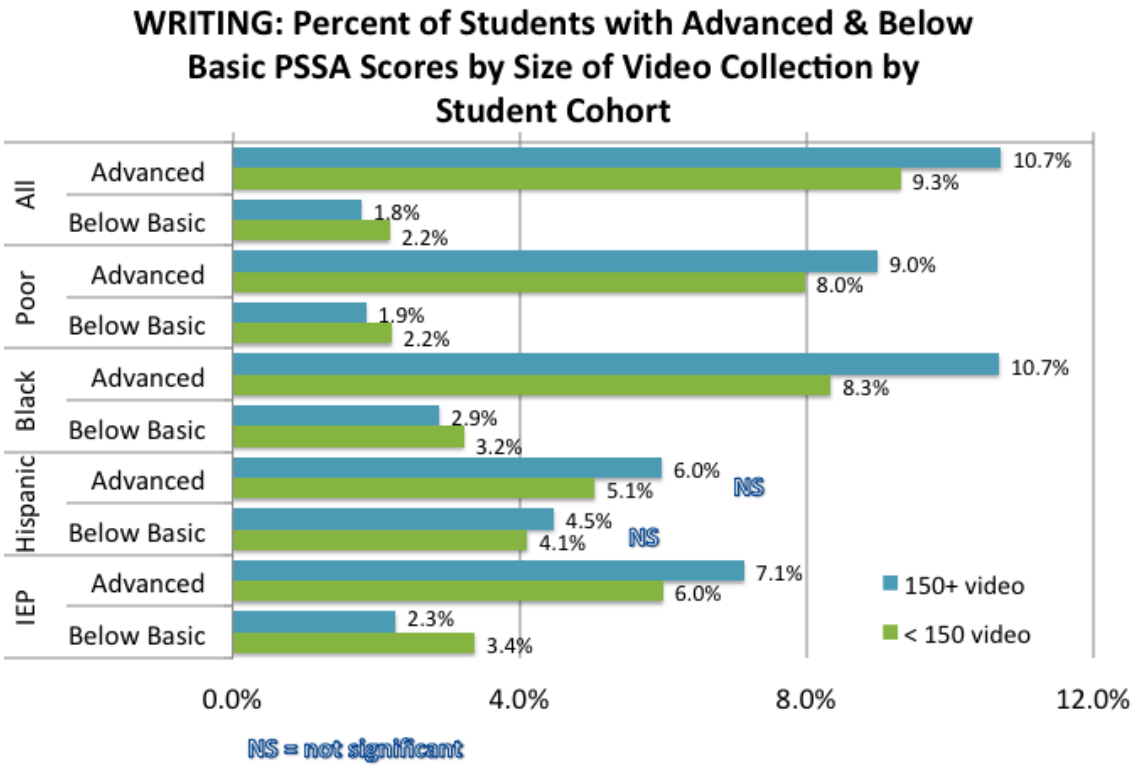
Video materials (e.g., DVDs) are an important part of any school library collection. In an increasingly multi-media world, information presented in video format can enhance what any student reads in print or online, and it can aid students who struggle with reading.

- For all students and students who are poor, Black, and disabled, those at schools with larger video collections (150 or more) are more likely to earn Advanced and less likely to earn Below Basic scores than their counterparts at schools with smaller video collections.
- Curiously, test score differences associated with video collection size are not significant for Hispanic students.

> Our librarian is extremely helpful. I can ask her to help me at any time. … She always finds books, videos, etc. that are of great use in the classroom.
> - Elementary School teacher

> Our Librarian … is always willing to help and facilitate teachers in using the available technology in our district. She has become a vital resource to find … videos [useful in the classroom].
> - Middle School teacher



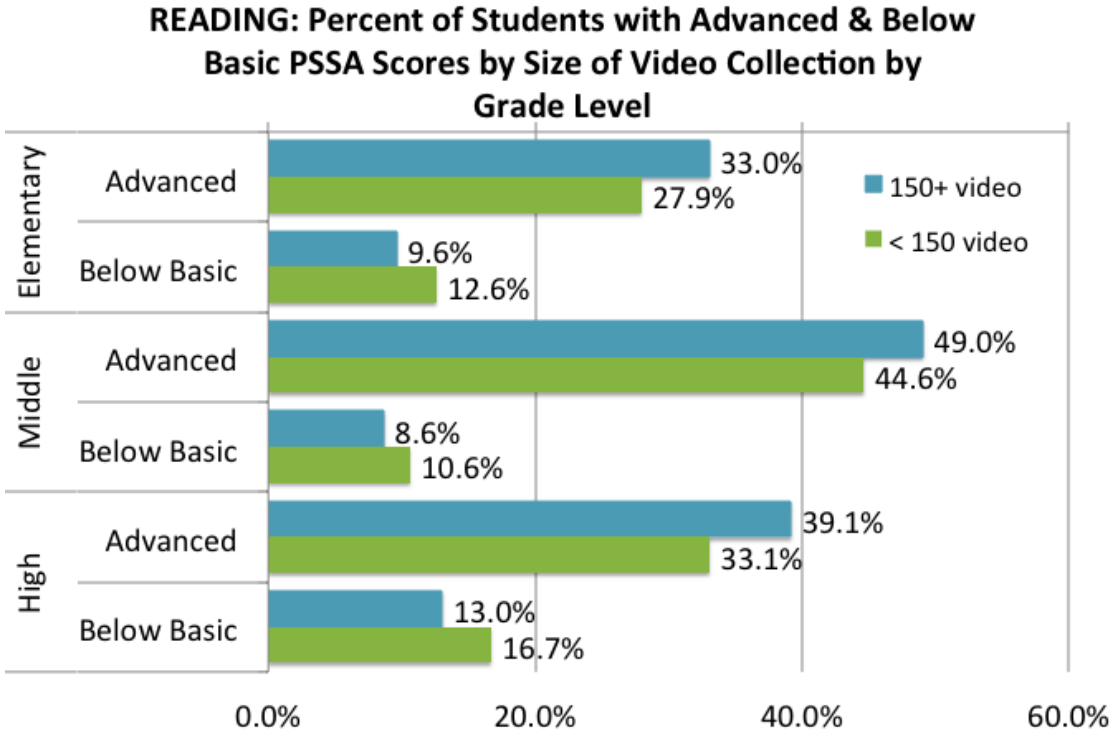


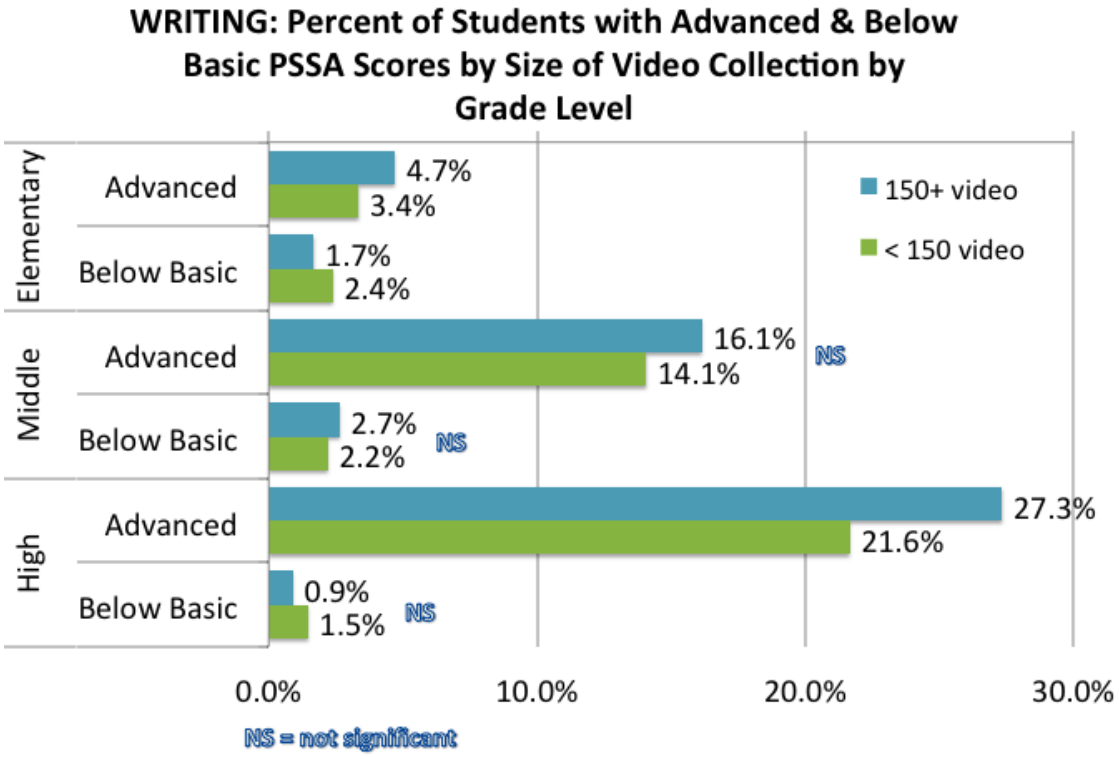
PSSA Reading & Writing Scores by Grade Level by Video Collection Size

Larger video collections (150 or more) are associated with better PSSA Reading scores, regardless of grade level, and at both ends of the achievement spectrum (i.e., Advanced and Below Basic). Their association with better PSSA Writing scores, however, is more mixed.

- Consistently, at all grade levels, students at schools with larger video collections are more likely to earn Advanced and less likely to earn Below Basic scores in Reading than their counterparts at schools with smaller video collections.
- The impact of video collection size on Writing scores is substantial at all grade levels, but only significant for Advanced and Below Basic scores at elementary level and Below Basic scores at high school level.

> My students are becoming engaged in our library, using both the book resources and online materials. They are investigating science and social studies topics … They must search for … videos [among other formats] that encompass their topics.
> - Elementary School librarian


READING: Percent of Students with Advanced & Below Basic PSSA Scores by Size of Video Collection by Grade Level
Elementary
Middle
High
Advanced
Below Basic
33.0%
27.9%
9.6%
12.6%
49.0%
44.6%
8.6%
10.6%
39.1%
33.1%
13.0%
16.7%
150+ video
< 150 video
0.0%
20.0%
40.0%
60.0%


WRITING: Percent of Students with Advanced & Below Basic PSSA Scores by Size of Video Collection by Grade Level
Elementary
Middle
High
Advanced
Below Basic
4.7%
3.4%
1.7%
2.4%
16.1%
14.1%
NS
2.7%
2.2%
NS
27.3%
21.6%
0.9%
1.5%
NS
150+ video
< 150 video
0.0%
10.0%
20.0%
30.0%
NS = not significant

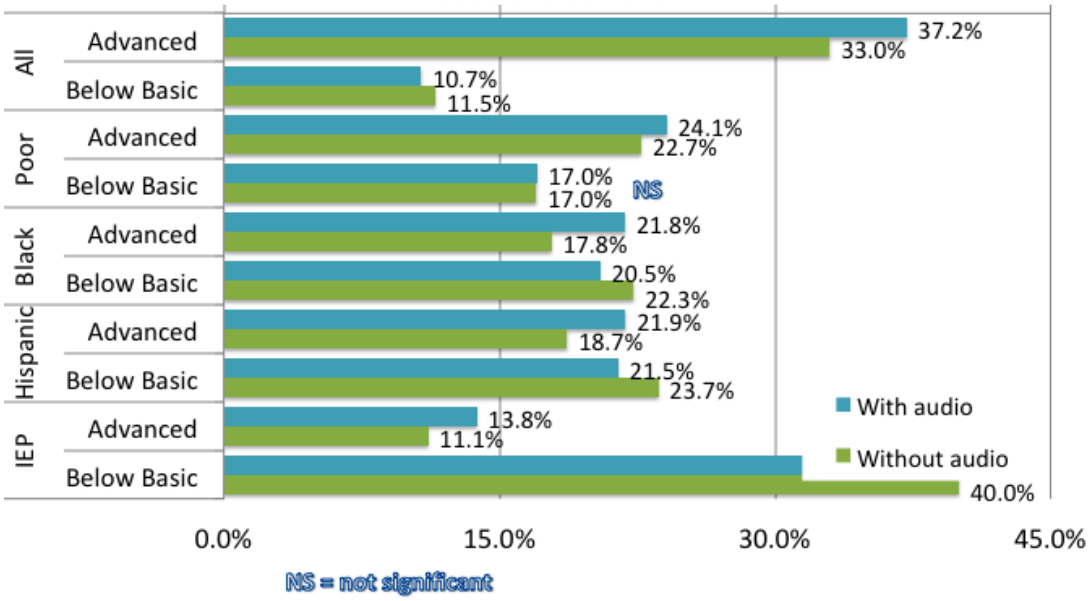
PSSA Reading & Writing Scores by Student Cohort by Audio Materials Access

Audio materials can also be an important part of a school library collection. Like videos, audio materials (e.g., audiobooks) can enrich the traditional reading experience for any student as well as offer support to students who have difficulty reading. Notably, however, access to audio collections is only associated with Writing scores on the upper end of the achievement spectrum.

- All students and all studied cohorts at schools with audio collections are more likely to earn Advanced Reading scores than those at schools without audio collections.
- For all students and students who are Black, students who are Hispanic, and students with IEPs, those with access to audio collections are less likely to earn Below Basic Reading scores than those without access to audio collections.
- Students who are economically disadvantaged (i.e., poor), Black, and Hispanic, and who have Individualized Education Programs (IEPs) with audio access are more likely to earn Advanced Writing scores than their counterparts without such access.
- Audio access has no significant association with Below Basic Writing scores.

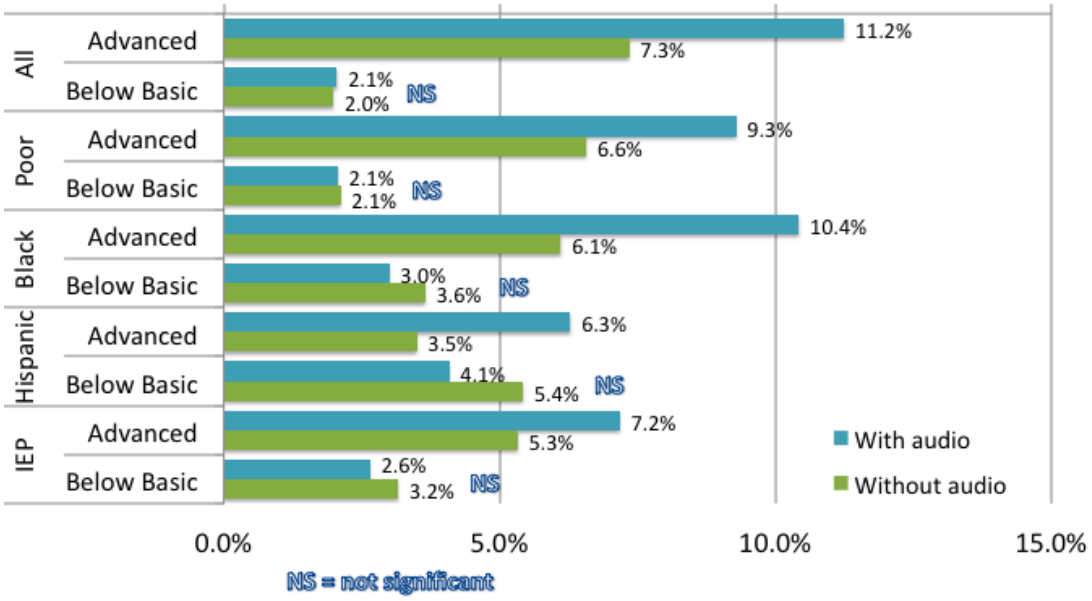
I spend a great deal of time listening to audiobooks. When discussing books with students I often found myself telling them that I had listened to this book or that book. The students began asking how they could listen as well, and I began an mp3 lending program. Using inexpensive mp3 players I am able to download books and check them out to the students through the library circulation system. This has afforded students who may not be strong readers to read the hot books, like the Lightning Thief and the Wimpy Kid books. The mp3 player program also allowed students with reading difficulties to hear some Reading Olympics, PA Young Readers Choice and Battle of the Books choices. I teach students and their parents how to download books themselves using the public library system. - Elementary School librarian

READING: Percent of Students with Advanced & Below Basic PSSA Scores by Access to Audio Materials by Student Cohort



NS = not significant

WRITING: Percent of Students with Advanced & Below Basic PSSA Scores by Access to Audio Materials by Student Cohort



NS = not significant

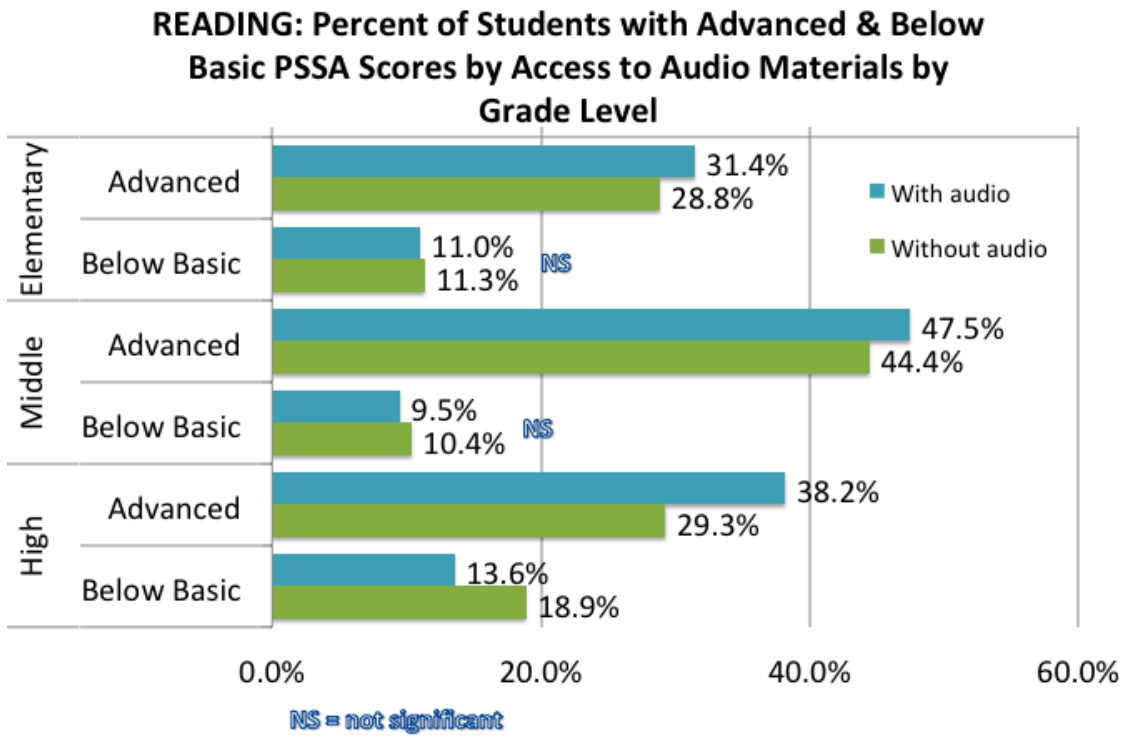
PSSA Reading & Writing Scores by Grade Level by Audio Materials Access

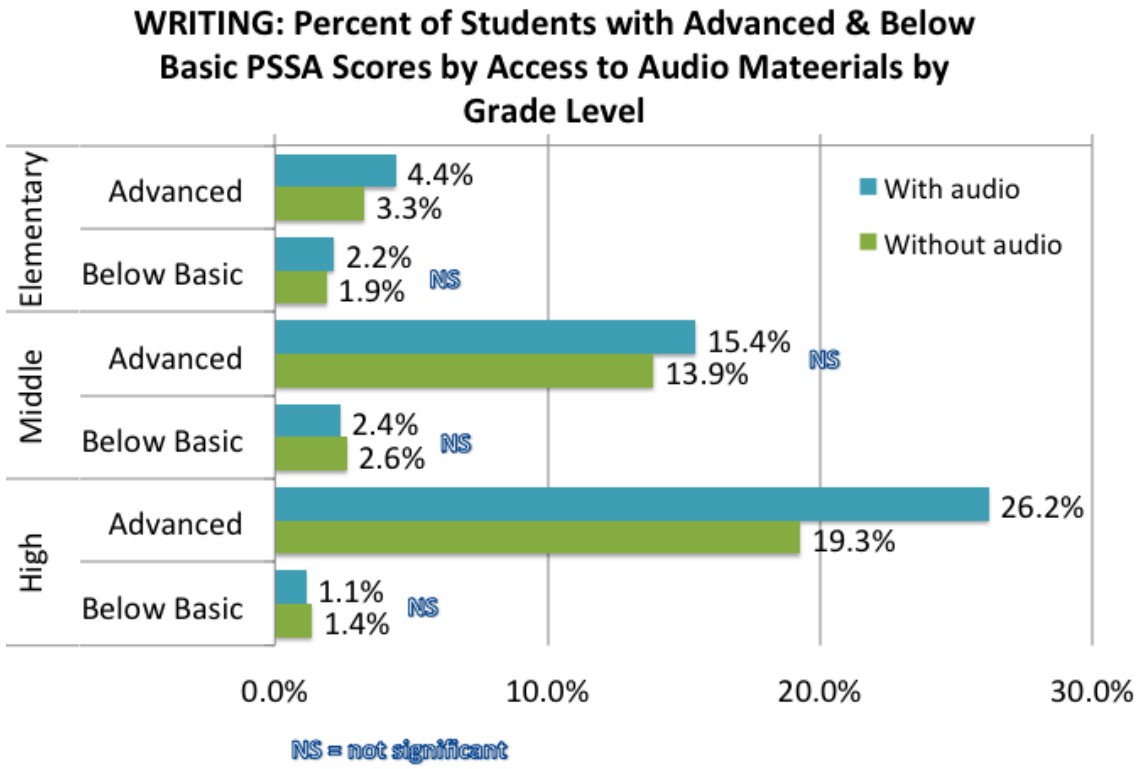
Beyond relationships to more Advanced Reading scores at all grade levels, findings about the association of audio materials access with PSSA scores by grade level are mixed.

- Consistently, at all grade levels, students with access to audio collections are more likely to earn Advanced Reading scores.
- For Writing, the same is true, with one exception: the Advanced score difference for middle school students is not significant.
- For Reading, the only significant difference in students scoring Below Basic is at high school level.
- Audio collection access is not associated with differences in Below Basic Writing scores at any level.

These findings suggest that, while audio materials access may enhance the reading experiences of students who score Advanced in Reading, such access alone offers no significant help to elementary and middle school students scoring Below Basic in Reading and only negligible, though significant, help to high school students struggling in Reading.

The library staff compiles baskets of books and AV resources each month, and distributes them to each grade level team to support the science, social studies, mathematics, and communication arts curriculum.
- Elementary School teacher





Summary

Despite the explosion of information and technology in recent generations, traditional formats (i.e., books, videos, and audio materials) still have a place in the 21st century school library.

The evidence presented in this chapter supports the belief that school libraries should continue to offer access to physical formats, despite the growing popularity of online and streaming formats. Notably, however, while access to book collections is associated with better Reading and Writing results at both ends of the achievement spectrum, the association of access to video and audio collections with PSSA scores is limited primarily to more students with Advanced Reading results.

- Students tend to perform better on Reading and Writing where school libraries provide more access to book, video, and audio collections.
- Larger book collections (over 12,000 volumes) improve the chances of students earning Advanced scores and reduce the risk of them earning Below Basic scores on both the PSSA Reading and Writing tests.
- From one grade level to another, the gap in PSSA Reading and Writing scores between students with access to larger and smaller book collections grows, while for video collections, the gap in scores between students with access to larger and smaller collections remains consistent.
- All students are more likely to earn Advanced scores in Reading, if they have access to audio collections. Generally, however, audio materials access has little or no association with Below Basic scores in Reading.

In *Guidelines for Pennsylvania School Library Programs*, numerical targets are provided only for books, and only in terms of "currently useful volumes per student." Among other things, "currently useful" books are deemed to be those that are chosen and retained based on collection analysis, curriculum mapping, teacher and student interviews,

and other strategies pursued to ensure a current and relevant collection that meets the needs of students and the curriculum. "Minimum," "Standard," and "Exemplary" levels are specified, and higher figures are specified for elementary schools than for middle/junior high and high schools. For elementary schools, these target figures range from 20 such volumes at the "Minimum" level to 30 at the "Exemplary" level. For other schools, these figures range from 15 such volumes at the "Minimum" level to 25 at the "Exemplary" level.

The findings of this analysis support the general idea that student learning and academic achievement are associated with greater access to library materials in physical formats (i.e. books as well as videos and audio materials).

When students have more access to books and other physical formats in their school libraries, they are more likely to succeed in school than their counterparts who lack such access.

> Our students are, for the most part, highly motivated to read and enjoy library classes. Our teachers utilize the library collection to support their curriculum. I attribute these things to a well developed library collection. Highly trained librarians are what is required to keep the collection current and supportive to the curriculum as well as to select books that appeal to students.
> - Elementary School librarian

> [O]ur current librarian inherited a program that had gone through many years of decline due to inadequate staff and lack of relevancy. She was brought onboard with a simple directive - make the library a vibrant, important part of the fiber of our school. She has been tremendously successful in this charge. The collection has been heavily weeded and updated … and now includes books and reference materials sought out by teachers and students.
> - High School administrator

Chapter 6. Pennsylvania School Library Access & PSSA Scores

This chapter examines the relationship between available data on school library access and Pennsylvania System of School Assessment (PSSA) Reading and Writing scores. Data from the Pennsylvania State Board of Education's *Pennsylvania School Library Study* regarding the type of scheduling used in the school library; the number of class or smaller-group visits to the library per typical week; and the average number of hours per week the school library is open beyond the student school day were analyzed with PSSA Reading and Writing scores.

To avoid repetition in this and other chapters, see Chapter 1 for detailed methodological information, including details about the variety of PSSA score data employed in this phase of the study, its source, and an explanation of associated terminology as well as a description of comparison-of-means analysis (t test) and its statistical significance.

At the end of the chapter, its findings are discussed in relation to the *Guidelines for Pennsylvania School Library Programs*, a 2011 document of the Office of Commonwealth Libraries, Pennsylvania Department of Education.

Library Access

Separate analyses were conducted for three measures of library access: availability of flexible scheduling of the library, the number of group visits per typical week, and the number of hours per week the library is open beyond the school day.

Flexible scheduling refers to whether classes and students visit the library on a fixed schedule (i.e., scheduled like any other class—for example, Monday from 9 to 10 a.m.) or when warranted by instructional needs. Times that are flexibly scheduled are initiated by the librarian and the teacher based on a curricular, resource-based lesson or unit that is usually designed, taught, and assessed collaboratively by both professionals. In the survey, respondents were asked to report if their libraries are scheduled flexibly all the time, some of the time, or not at all. In this chapter, those who responded all or some of the time (45.5% of library survey respondents) were compared to those who indicated their libraries did not have any flexibly-scheduled time (54.5%).

Group visits to school libraries happen for a variety of reasons. Sometimes, a whole class visits the library—sometimes with their teacher and sometimes without. Other times, especially when students are older, smaller groups of students who are collaborating on an assignment visit the library. While some group visits are for the purpose of instructional delivery by the librarian, a teacher, or both, at other times, group visits are for the purpose of individual or group research or study. In this chapter, students whose school libraries report 21 or more group visits per week (48.8% of library survey respondents) are compared with those reporting fewer than 21 group visits per week (50.2%).

To some extent, the degree to which a school library is a vital force in its building may be indicated by when it is available to students. Schools that place a high priority on instruction and instructional support as well as support services to disadvantaged and struggling students often have their libraries open before the school day begins and/or after it ends. An open library gives many students a place to go where they can have access to resources and activities that effectively extend their school day. In this chapter, students whose schools report having libraries that are open at any time before and/or after the school day (50.2% of library survey respondents) are compared with those whose libraries are open only during the school day (49.8%).

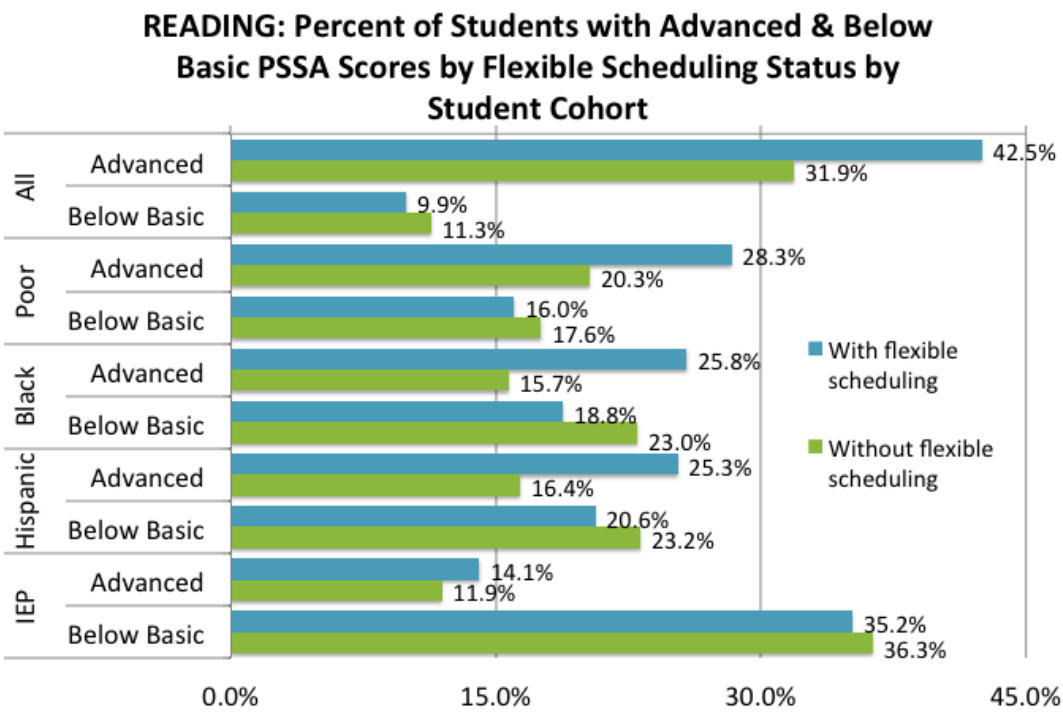
Using the same analytical strategy as for staffing and spending, findings are reported for:

- All students
- Students who are economically disadvantaged (i.e., "Poor"), Black, Hispanic, and have Individualized Education Programs (IEPs—i.e., those with disabilities)—hereafter "cohorts
- Students at elementary, middle, and high school levels.

PSSA Reading & Writing Scores by Student Cohort by Flexible Scheduling

Availability of flexibly scheduled access to school libraries is associated with better PSSA Reading and Writing scores—both more Advanced and fewer Below Basic—for all students as well as major cohorts at both ends of the achievement spectrum.

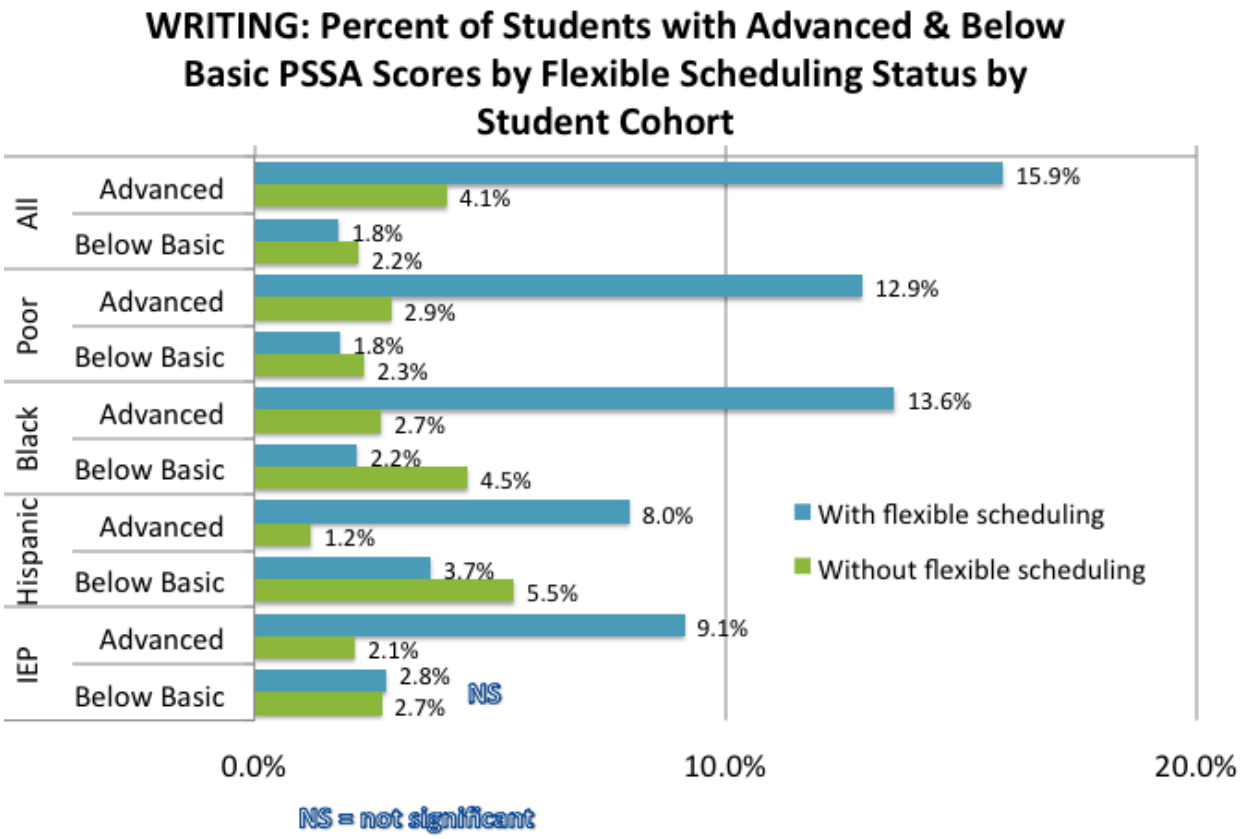
- Consistently, students with flexibly scheduled access to their school libraries are more likely to earn Advanced and less likely to earn Below Basic scores in Reading and Writing.
- For all students as well as students who are Poor, who are Black, and who are Hispanic, the Advanced Reading score difference between students with and without flexibly scheduled access to their libraries is around 10%.
- The association between flexible scheduling and Writing is more pronounced. All students and those who are Black and disabled are about four times more likely to earn Advanced Writing scores with flexible scheduling. Students who are Hispanic are almost seven times more likely to earn Advanced scores with flexible scheduling.
- The lone exception to these results is for Below Basic Writing scores of students with Individualized Education Programs (IEPs), for whom there was no significant difference associated with flexible scheduling. Notably, however, these students are still more likely to earn Advanced Writing scores if access to their libraries is scheduled in accordance with instructional needs rather than a fixed schedule.



Note: Throughout this chapter, this and following charts report average Advanced and Below Basic PSSA scores for students with and without certain kinds of access to their school libraries (i.e., flexible scheduling, group visits per week, library hours beyond the school day). These charts include Advanced and Below Basic score averages for all students as well as for students who are Economically Disadvantaged (i.e., "Poor"), who are Black, who are Hispanic, and who have Individualized Education Programs (IEPs). Example: Of all students, 42.5% of those with flexibly scheduled library access score Advanced, while only 31.9% of those without such access score Advanced.

Our library offers the best of both worlds. A small portion of the schedule operates on a fixed schedule to instruct students in scheduled library classes that provide specific skills. The majority of the schedule is open for teachers to collaborate with the librarian for literacy or integrated content lessons
- Elementary School administrator

The library staff continuously collaborates with teachers in designing lessons to integrate technology into daily lessons within the regular education classroom, and is flexible in scheduling computer lab times for co-teaching.
- Elementary School teacher



PSSA Reading & Writing Scores by Grade Level by Flexible Scheduling

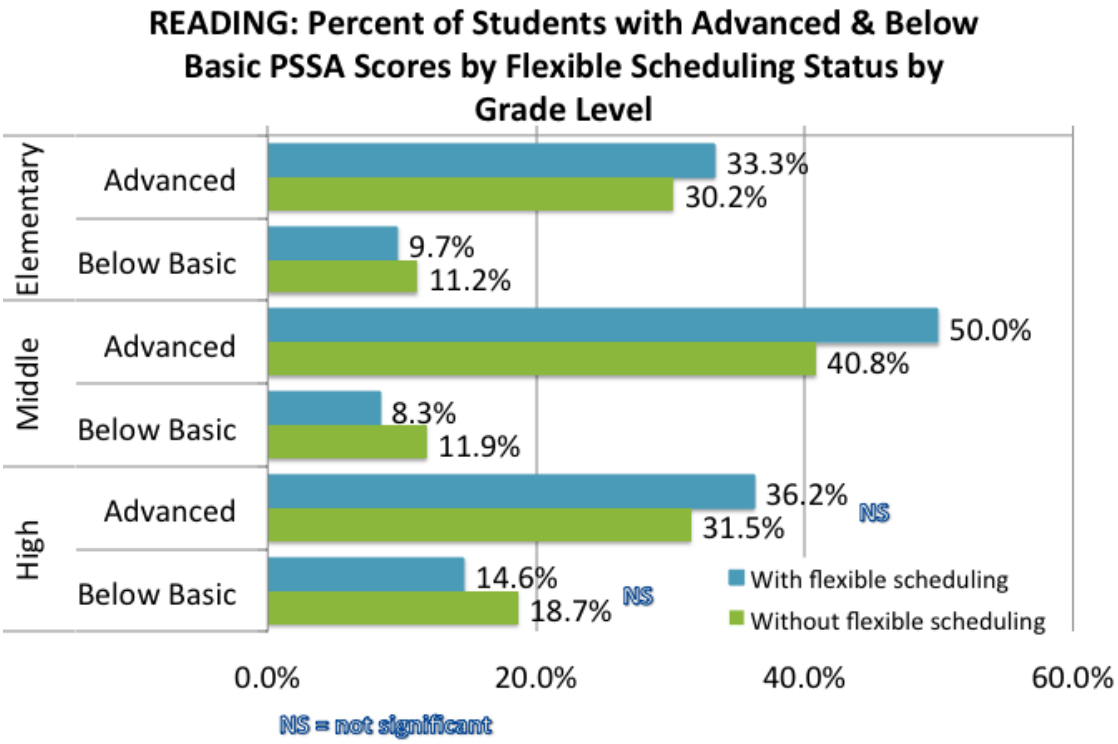
The results of the Pennsylvania School Library Study survey indicate that flexible scheduling of library access is far from common: 54.5% of responding schools reported library access on an exclusively fixed schedule. Generally, flexible scheduling is less common at the elementary level and more common at the high school level. This most likely explains the mixed results associated with PSSA scores and flexible scheduling at different grade levels.

- With flexibly scheduled library access, students at all grade levels are more likely to earn Advanced and less likely to earn Below Basic Reading scores. Differences in Advanced and Below Basic Reading scores associated with flexible scheduling at the high school level, while pronounced, were not significant.

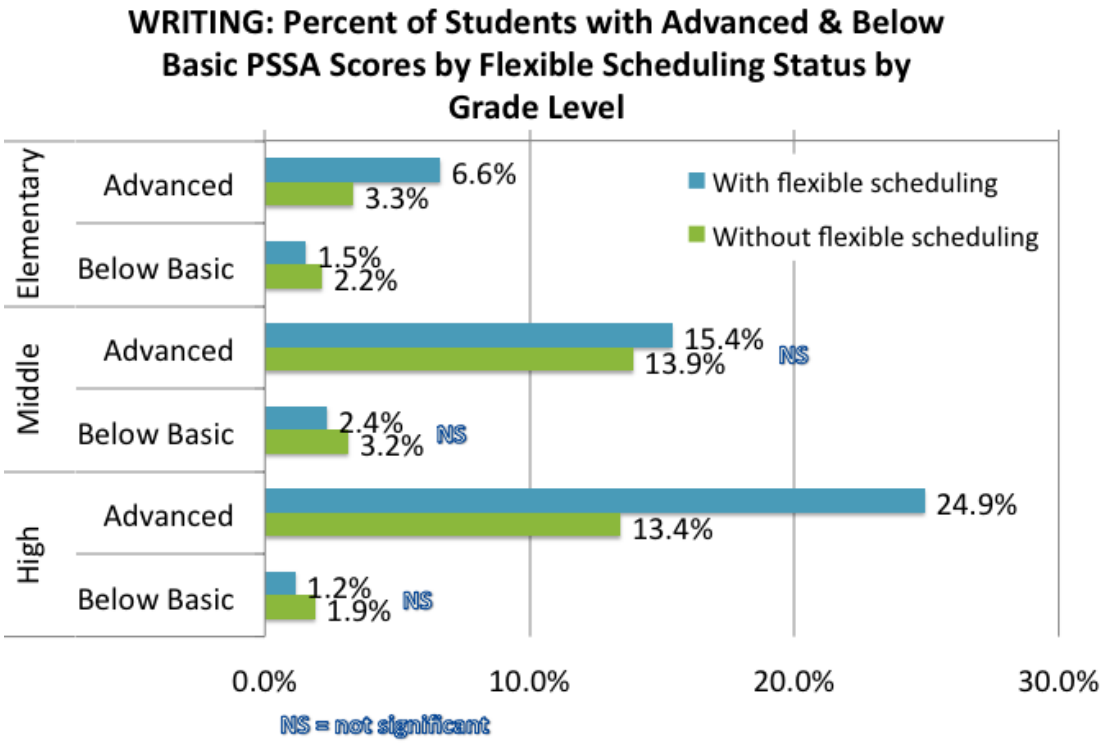
- Both elementary and high school students are twice as likely to earn Advanced Writing scores when they have flexibly scheduled library access. Writing differences, both Advanced and Below Basic, associated with flexible scheduling are in directions consistent with elementary and high school findings, but are not significant for middle schools. Similarly, Below Basic Writing differences associated with flexible scheduling at the high school level are in directions consistent with Advanced Writing differences, though enough closer to not be significant (i.e., the smaller Below Basic differences might not be reproduced with a different sample of schools).

The library staff continuously collaborates with teachers in designing lessons to integrate technology into daily lessons within the regular education classroom, and is flexible in scheduling computer lab times for co-teaching.
- Elementary School teacher

[M]y co-teacher and I schedule our entire course around library availability. Our librarian is integral to our course. She knows everything that we teach, and our students look to her as a third teacher in our combined classroom.
- High School teacher



Note: Throughout this chapter, this and following charts report average Advanced and Below Basic PSSA scores for students with and without certain kinds of library access. These charts include Advanced and Below Basic score averages by grade level. Example: Of elementary students, 33.3% of those with flexibly scheduled library access score Advanced, while only 30.2% of those without such access score Advanced.



I am the librarian in a K-5. About three years ago, my district moved to a fixed/flexible schedule and it has created an environment where I am able to integrate important information literacy skills into the classroom curriculum with the students. I have the opportunity to co-teach integrated curriculum with teachers.
- Elementary School librarian

Our program, which operates under a flexible schedule, … maximizes our human and material resources. In the 2010-11 school year we co-taught 1,456 classes with our content teachers. Those classes included research projects, integrated 21st century skills, common core ELA standards into course content, and facilitative visits to promote and foster independent reading.
- High School librarian

Our second grade teacher was doing a non-fiction animal report. We were discussing the reports, and I suggested she use [a specific database]. I demonstrated it to her, and said the children could print out the information on their animal. First she said, ""Are we allowed to do that?"" Then she said the computer lab was always in use when she had available time. I had an open 30-minute time slot in my schedule and invited her to bring her class. I instructed the children on how to locate their animal and print the report. She said, ""I have a new respect for what you do.""
- Elementary School librarian

When I took over the library 2 years ago, it was representative of libraries from a day gone by. … Rather than throw up my hands in disgust, I saw my situation as an opportunity to transform the library into a productive and thriving 21st century environment. Despite major budget cuts, the library has seen marked improvements, including …a more open design plan [and] a flexible schedule for student access.
- High School librarian

PSSA Reading & Writing Scores by Student Cohort by Group Visits

The need for whole classes of students as well as smaller groups of students to visit school libraries is probably greater than ever. *The Standards for the 21st Century Learner* as well as PA/Common Core standards place a high value on students learning to collaborate in gathering and analyzing information and creating and sharing new knowledge. It is little surprise, therefore, that all students seem to perform better on the PSSA Reading tests—more scoring Advanced and fewer scoring Below Basic—when they make more weekly visits to their libraries. Interestingly, however, when these results are examined for particular student cohorts, the findings are mixed.

- Better Advanced Reading scores are associated with frequency of group library visits for all cohorts, though for students who are Black and who are Hispanic, differences are not significant.

- While Advanced Writing scores are predictably more likely for students who make more rather than fewer group library visits, the differences are not significant (i.e., might not be reproduced with another sample).

- For students who make more group library visits, Below Basic scores are fewer for all cohorts for both Reading and Writing than for students who make fewer such visits, though for Writing—in marked contrast to Reading--the only significant differences are for students who are poor and who are Black. This finding suggests that group library visits may be a useful strategy for closing the Writing achievement gap for students who are poor and who are Black.

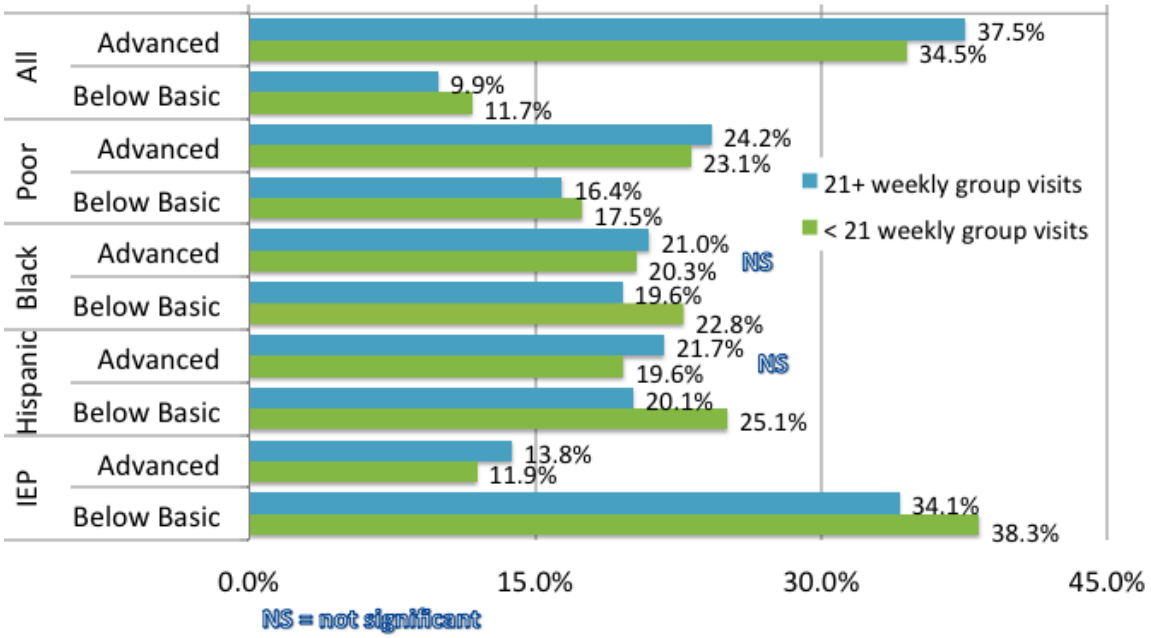
One possible explanation for these mixed findings may be the fact that, as technology advances, enabling school library programs to become more diffused or networked throughout their schools—reaching into every classroom, lab, and office—the need for physical visits to the library space by groups of students may be reduced. Increased collaboration between classroom teachers and librarians—especially when it involved teachers inviting librarians to co-teach in their classrooms—may also lead to circumstances in which physical visits to the library are less frequent than they might have been otherwise. However, virtual visits via the library's website may be on the increase.

> I worked with my librarian to develop 2 research projects for my kindergarten students. The research projects are conducted in the library over 7-8 scheduled lessons lasting 45 minutes each. … We are promoting and encouraging 21st century skill building through the research process.
> - Elementary School teacher

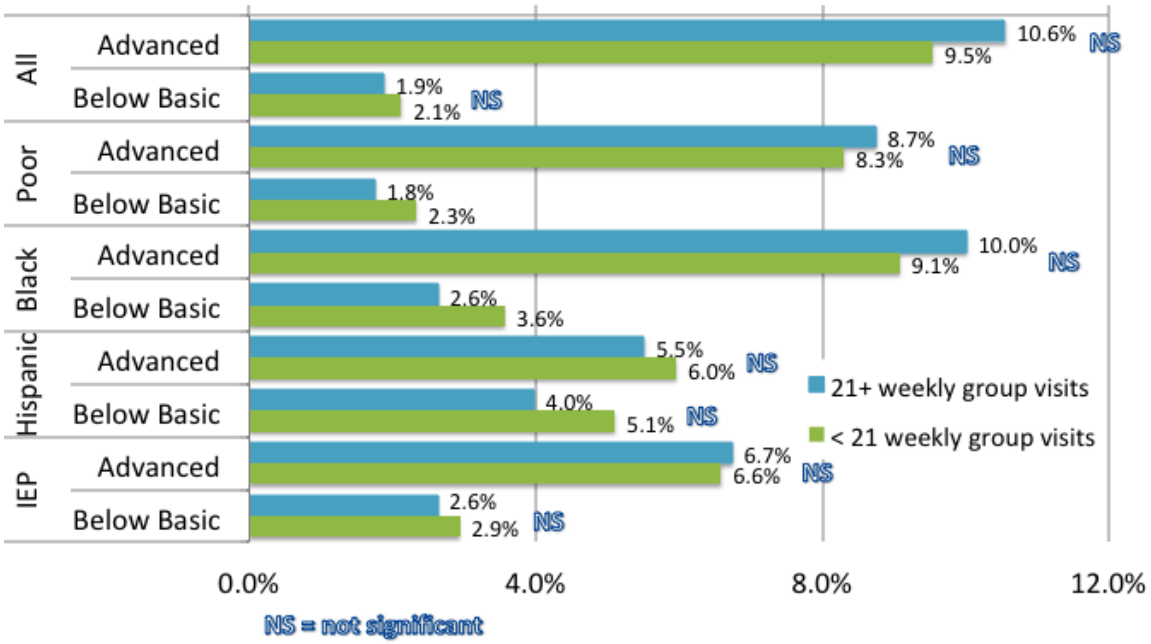
> After discussing curriculum units in Social Studies, the librarian and I spent time outlining and planning a project about Native Americans. I took my students to the library ... We worked together on expectations, gathering information, cooperative learning, presentation, and evaluation. It was a rewarding experience for all. In fact, we enjoyed it so much, we decided to do a similar project on insects.
> - Middle School teacher

> Developing and adapting projects is one of the best parts about being a teacher. Because I teach English my students are frequently in the library completing research and studying a variety of topics.
> - High School teacher

READING: Percent of Students with Advanced & Below Basic PSSA Scores by Frequency of Group Library Visits by Student Cohort



WRITING: Percent of Students with Advanced & Below Basic PSSA Scores by Frequency of Group Library Visits by Student Cohort



PSSA Reading & Writing Scores by Grade Level by Group Visits

In contrast to the analysis of student cohorts, the analysis by grade level indicates a stronger association between group library visits and PSSA Reading and Writing scores. At all grade levels, students who visit their school libraries in groups more frequently tend to out-perform those who make such library visits less often, especially at the Advanced level.

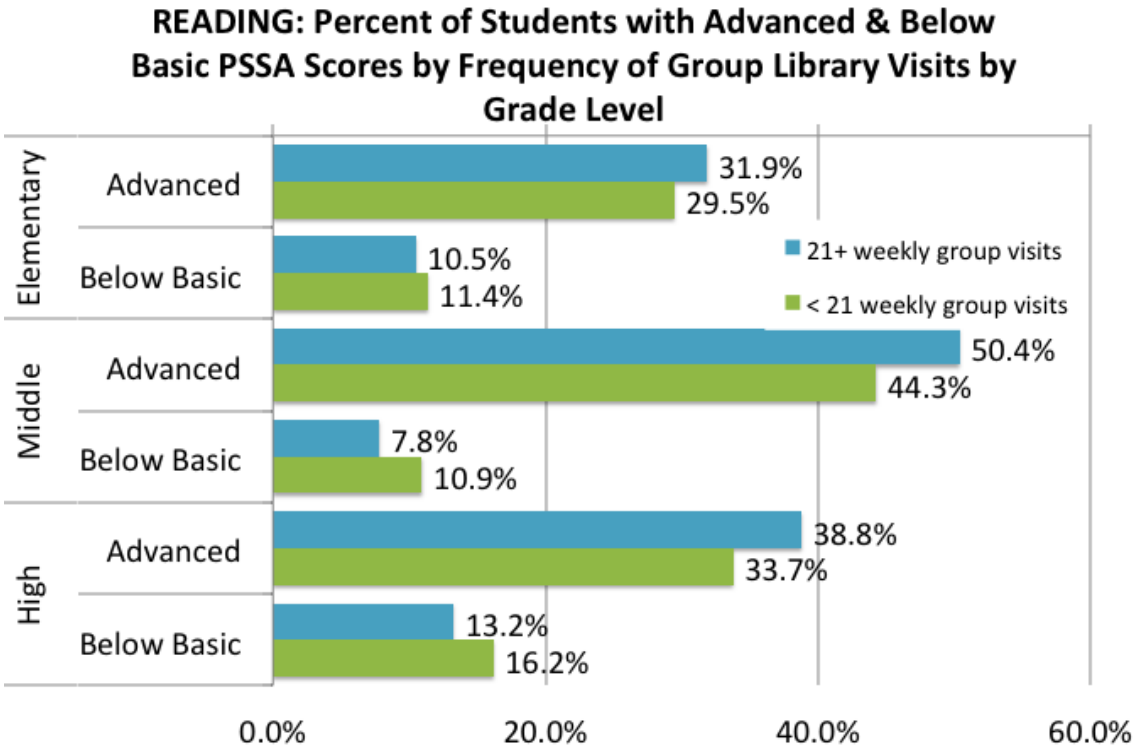
- Consistently, students at all grade levels are likelier to earn Advanced Reading scores and less likely to earn Below Basic scores, if they visit their school libraries more frequently in groups than if they visit less frequently.

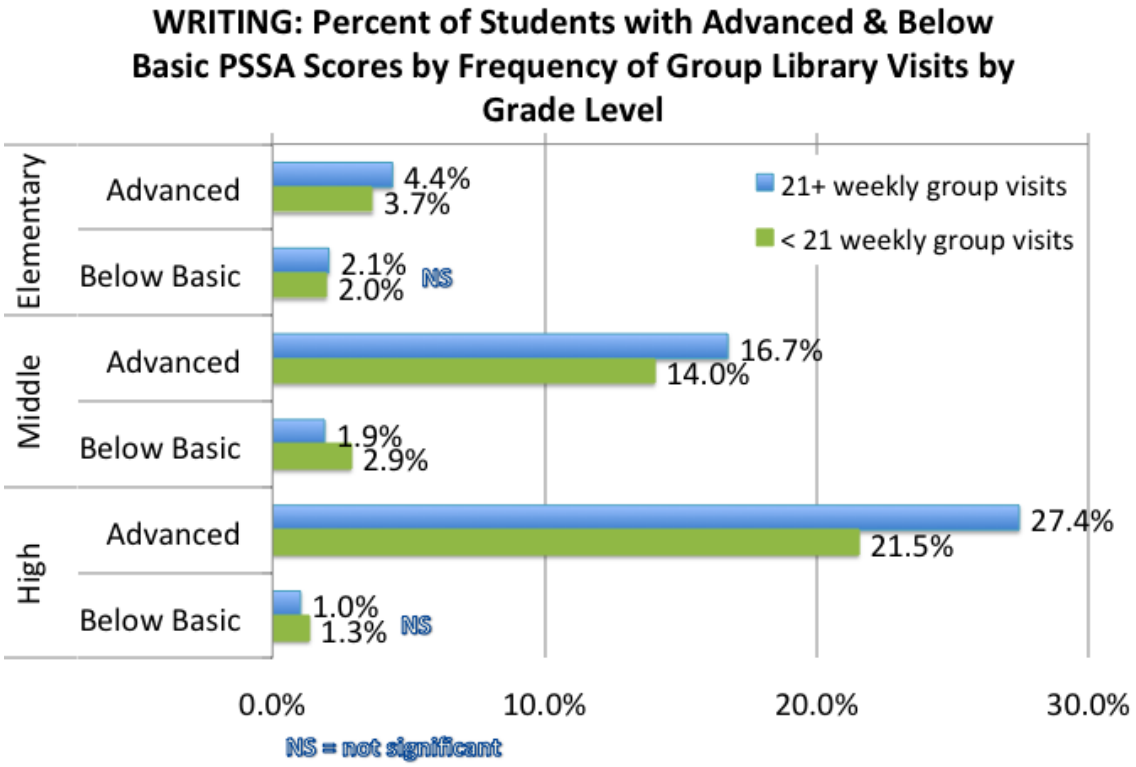
- Advanced Writing scores are also likelier when students make more group visits to their school libraries.

> Not only do [my librarian and I] work together to plan lessons, we also teach together or take turns teaching certain lessons. Our students benefit greatly from having us both in the library to help them with their research and the creation of their projects.
> - Middle School teacher

> My 8th grade Gifted seminar must create a 20 minute (minimum) PowerPoint presentation … on a topic that has two sides or a question to be answered. It is not a "tell everything needed to know" type of project. The library becomes my classroom during the initial research phase of this project.
> - Middle School teacher

> I schedule my classes in the library on a regular basis. I interact with our school librarians weekly. ... I would find it difficult to do my job as a social studies teacher without them and the resources that they acquire, evaluate, and maintain. The best teaching and learning that I experience as a teacher happens in the library!
> - High School teacher


READING: Percent of Students with Advanced & Below Basic PSSA Scores by Frequency of Group Library Visits by Grade Level
Elementary
Advanced
31.9%
29.5%
Below Basic
10.5%
11.4%
Middle
Advanced
50.4%
44.3%
Below Basic
7.8%
10.9%
High
Advanced
38.8%
33.7%
Below Basic
13.2%
16.2%
21+ weekly group visits
< 21 weekly group visits
0.0%
20.0%
40.0%
60.0%


WRITING: Percent of Students with Advanced & Below Basic PSSA Scores by Frequency of Group Library Visits by Grade Level
Elementary
Advanced
4.4%
3.7%
Below Basic
2.1%
2.0%
NS
Middle
Advanced
16.7%
14.0%
Below Basic
1.9%
2.9%
High
Advanced
27.4%
21.5%
Below Basic
1.0%
1.3%
NS
21+ weekly group visits
< 21 weekly group visits
0.0%
10.0%
20.0%
30.0%
NS = not significant

PSSA Reading & Writing Scores by Student Cohort by Hours Open Beyond School Day

Availability of flexibly scheduled library access and numbers of group visits to libraries per typical week reflect primarily on the working relationships between teachers and librarians. The number of hours a school library may be open beyond the school day—that is, either before and/or after school—is an indicator of the extent to which the library operates independently as an extension of classroom instruction and the extent to which it offers support to students who may need it most. The evidence from this analysis of test scores by student cohort suggests that the extra time and attention students receive in the library can make a difference that helps them to excel, especially at writing.

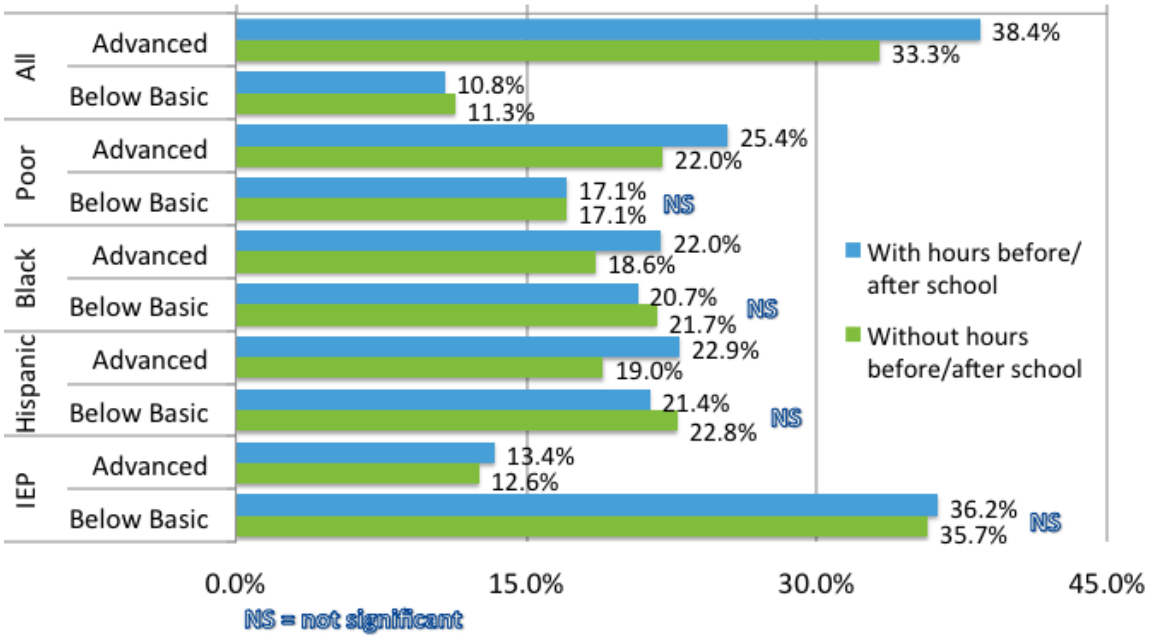
- More students earn Advanced Reading and Writing scores where libraries are open before and/or after school.
- All students and cohorts are at least twice as likely to earn Advanced Writing scores if their libraries are open beyond the school day.
- Students who are Hispanic are three times as likely to earn Advanced Writing scores under such conditions.
- Students who are Economically Disadvantaged (i.e., "Poor") and who are Black are less likely to score Below Basic on Writing, but for all students and students who are Hispanic and have IEPs, Below Basic Reading differences associated with hours the library is open beyond the school day are not significant (i.e., might not be reproduced with a different sample).

Our librarian is well respected in our school, by faculty and students alike. She promotes reading for pleasure, and often gets students excited about newly acquired novels she has purchased for the library. She is very accommodating whenever I schedule my classes in the library. She jumps right in with helping students with their computer/technology needs (formatting, citing, inserting pictures, etc.). She teaches lessons on plagiarism and citations and using information ethically.
- Middle School teacher

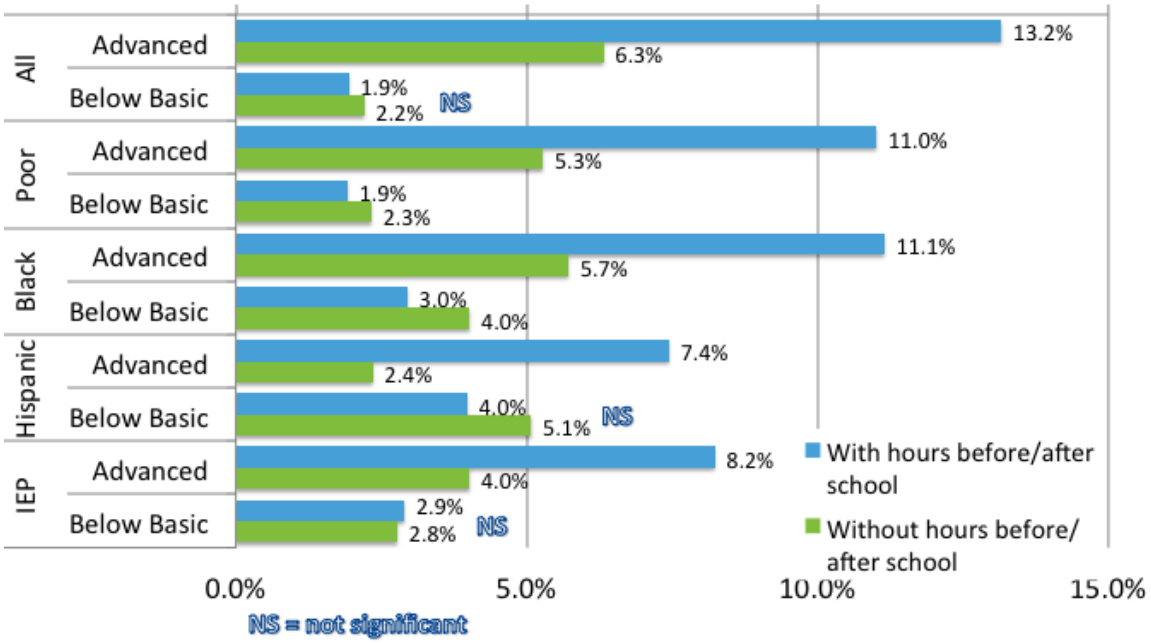
The library is a haven where students and teachers can go to collaborate, work, [and] study... It is one the nuclei of a school building.
- High School teacher

Through creative scheduling, [our librarian] and her assistant insure the library is open for 30 minutes before school and at least an hour after school to provide students a place to do their work. These students are not passively monitored; our library staff actively engages with our student learners to offer support, coaching, instruction, and anything else they need to succeed.
- High School administrator

READING: Percent of Students with Advanced & Below Basic PSSA Scores by Hours Beyond School Day by Student Cohort



WRITING: Percent of Students with Advanced & Below Basic PSSA Scores by Hours Beyond School Day by Student Cohort



PSSA Reading & Writing Scores by Grade Level by Hours Open Beyond School Day

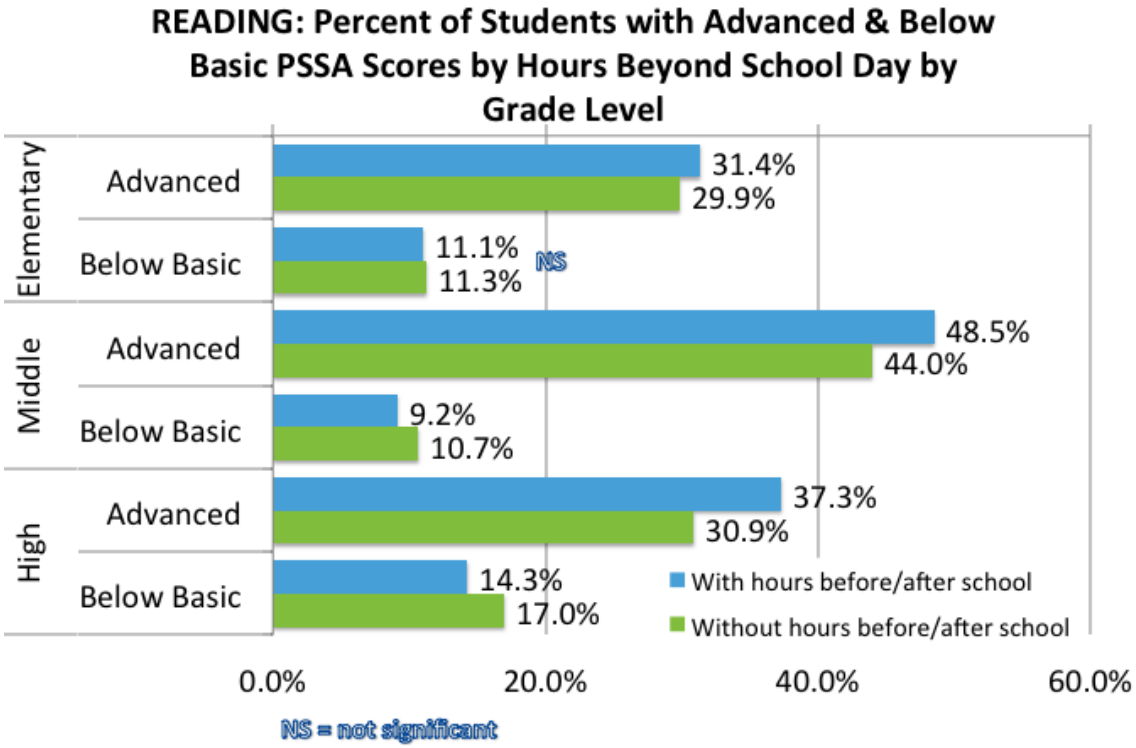
By grade level, the association of PSSA scores with availability of library hours beyond the school day provides further evidence of the value of extended library access for many students. Indeed, from elementary to high school levels, having library hours beyond the school day is associated with consistent improvements in both Advanced and Below Basic Reading and Writing scores.

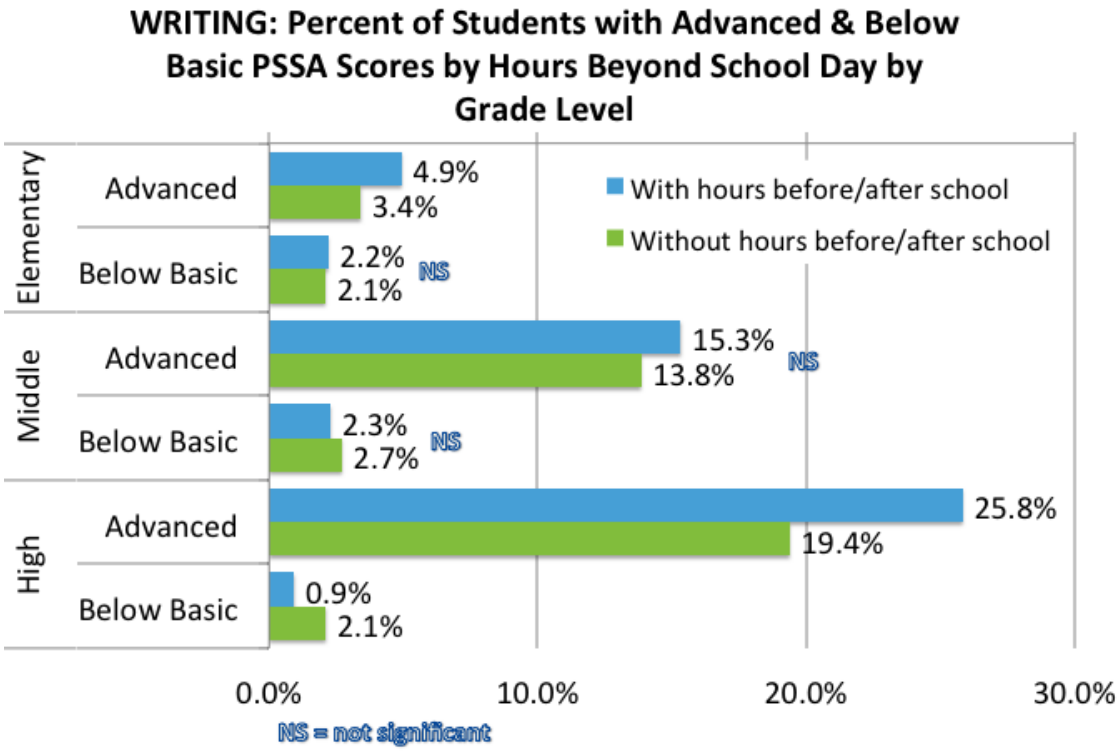
- Students at all grade levels are more likely to earn Advanced Reading scores where libraries are open beyond the school day. These differences in Advanced scores associated with whether or not the library is open beyond the school day grow steadily from level to level.
- Middle and high school students are less likely to earn Below Basic Reading scores where libraries are open beyond the school day.
- Elementary and high school students are more likely to earn Advanced Writing scores where libraries are open beyond the school day.
- High school students are less than half as likely to score Below Basic on Writing where libraries are open longer hours.

Our school librarian is invaluable. Not only is she teaching all grade levels and all district wide library concepts, she is also available to our staff for advice on topics and accessing pertinent information for various topics. Our librarian is constantly learning the most up to date technology tools and teaching the staff how to incorporate these into our daily lessons. She offers before and after school training in these new technological advances and even provides one on one for teachers and staff.
- Elementary School teacher

At our school, he library has become the center of learning at all levels. … Students have access to the library before, during and after school, which makes the library a social as well as learning hub.
- Middle School librarian

The library in our school is at the center of the building, and at the center of the instruction as well. The library is used in myriad ways to promote reading, research, 21st Century Skills, and a love of knowledge. Whether being used for book browsing, reading, magazine time, or research lessons, the library is always busy. Our library is also available 24/7 through access to our library catalog and website on the school webpage. Various online subscription databases provide information for students in every subject area. … The library is also open after school to provide a place for reading and study support for all students.
- Middle School librarian


READING: Percent of Students with Advanced & Below Basic PSSA Scores by Hours Beyond School Day by Grade Level
Elementary
Middle
High
Advanced
Below Basic
31.4%
29.9%
11.1%
11.3%
NS
48.5%
44.0%
9.2%
10.7%
37.3%
30.9%
14.3%
17.0%
With hours before/after school
Without hours before/after school
0.0%
20.0%
40.0%
60.0%
NS = not significant


WRITING: Percent of Students with Advanced & Below Basic PSSA Scores by Hours Beyond School Day by Grade Level
Elementary
Middle
High
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Below Basic
4.9%
3.4%
2.2%
2.1%
NS
15.3%
13.8%
NS
2.3%
2.7%
NS
25.8%
19.4%
0.9%
2.1%
With hours before/after school
Without hours before/after school
0.0%
10.0%
20.0%
30.0%
NS = not significant

[Our library staff] have taught numerous in-service classes and workshops before and after school to educate staff about new software, programs, and resources
- Elementary School teacher

[Our librarian] takes the time to make sure that each and every student has access to the library and understands the workings of a library. She makes a schedule that is good for the students even if it is not good for her.
- Middle School teacher

Our high school librarian is the person in our school who provides a "home base" for our kids. Students truly enjoy going to the library and choose to do so before and after school as well as during their lunches. … We are also blessed to have a librarian who takes an active interest in what is going on in every classroom. She truly wants to know what is happening so she can align her library with our needs.
- High School teacher

[Our librarian] adds additional support to those students who have missed class by allowing them to come to the library during lunch or after school to work on projects and is especially helpful to those that were absent when a lesson was taught in the library. I am assured knowing she will provide as much assistance as is necessary for their success.
- High School teacher

Summary

- Students tend to perform better on both PSSA Reading and Writing tests when they have:
    - Flexibly scheduled access to school libraries
    - More frequent opportunities to visit their school libraries in groups
    - Access to their school libraries beyond the school day

While ***Guidelines for Pennsylvania School Library Programs*** does not promulgate any numerical targets related to the access issues addressed in this chapter—flexible scheduling of library access, group visits to libraries, and library hours open beyond the school day—it does describe ideal library facilities in terms that are entirely consistent with these ideas as well as a collaborative, inquiry based approach to learning.

The findings of this analysis support the general idea that student learning and academic achievement are associated with better access to library facilities, both for project-based curricular work assigned by a teacher and/or a librarian, as well as for self-directed study and extra-curricular learning.

When students have readier access to their school libraries—access to library staff and resources when they are instructionally relevant, when students are called upon to collaborate with each other, and when students need their learning strengthened by the library beyond the school day—they are more likely to succeed in school than their counterparts who lack such access.

Our district offers flexible scheduling in the libraries of all schools, including elementary. The best lessons that occur in my library are those where the teacher is a truly collaborative partner. We plan together, decide which parts of the lesson each of us will teach (or co-teach), plan for some type of formal or informal assessment, and schedule enough time to allow the students to learn and utilize their 21st century research skills. They also schedule time in the library regularly so that students become familiar and comfortable with using and enjoying the materials. The most library-savvy students I work with are allowed to come to the library often for both class work and to check out materials. These are the students who know how to find things and will search out materials for research and pleasure.
- Elementary School librarian

Since being hired in 2010, I've made great effort to shift the focus of the library as a storage facility for resources, and more as an active classroom. I've developed projects focusing on two different branches: research skills and reading promotion. I try to give equal effort to both. Because of my flexible schedule, I have been able to implement grade-level projects that ensure that the instruction is the same for all students. While the information skills are the same, I am able to co-plan with teachers to keep the projects geared toward their own lesson content and style.
- Junior High School librarian

Our high school recently re-wrote the ELA curriculum. As one could imagine, it's been quite a bear to implement in its first year. When thinking about beginning the new research unit with my students, I didn't know where to begin. When I find myself troubled or needing professional guidance, I always run to my librarian. She's extremely knowledgeable and willing to take the time to plan with me. We sat down together to for a few days to work through the lesson essential questions, deciding how we would tackle every aspect of the unit. We developed the project together, the schedule, the activities—everything! We were co-planning and eventually, we co-taught the entire unit in the library. We were even able to incorporate a fabulous library curriculum unit about collaboration into what we were doing for the research unit. I was extremely pleased with our final product. The students learned so much about how to be good researchers, be better readers, and ultimately, how to work in a world where collaboration is key.
- High School teacher

[Our library] is a wonderful center or hub of our school, and is usually filled to capacity with students at almost all available times [including] before and after school.
- High School teacher

The library is in the center of the school, literally and figuratively. During the school day all three computer labs are often booked. After school, when the library is open from 3 to 9 pm one day per week, it looks like a mob scene on some days, with hundreds of students busy at work.
- High School administrator

Chapter 7. Educator Survey Responses

This chapter introduces the second phase of the project's research by reviewing responses from three separate surveys of administrators, teachers, and librarians. Some background data about respondents were collected, along with their perspectives on library practices and activities, the role of the librarian, how well the school librarian helps students achieve academic standards, and their assessments of the value of several proposed components of a statewide school library infrastructure. Two sets of standards were used in the questions: the *Standards for the 21st Century Learner*, the national information literacy standards established by the American Association of School Librarians (http://www.ala.org/aasl/guidelinesandstandards/learningstandards/standards), and the PA/Common Core Standards (http://www.pdesas.org/Standard/CommonCore). Respondents were also asked to provide their assessments of the value of several proposed components of a statewide school library infrastructure. Copies of the three survey instruments are appended to this report.

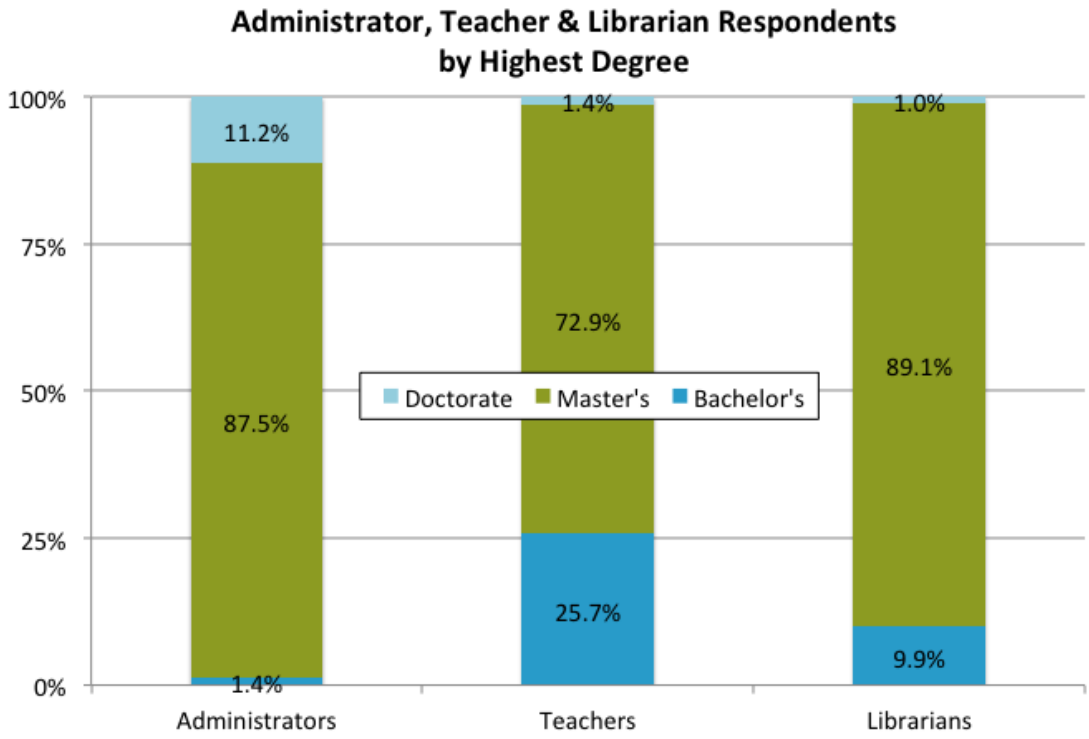
Survey Respondents

Librarians were solicited online and through several Pennsylvania listservs to complete a survey designed to both collect data about them, and to request them to identify principals, other administrators, and teachers they knew who might respond to surveys designed for them. Administrators and teachers were then requested by the researchers, both by email and online, to complete those surveys. Usable responses ultimately were received from 597 librarians, 295 administrators, and 950 teachers. Clearly these cases were not selected randomly, so their representativeness of the populations of librarians, teachers, and administrators in Pennsylvania public schools cannot be precisely known.

To understand a little about respondents to the educator surveys, administrators, teachers, and librarians were asked about their highest educational attainment, the year in which that degree was earned, and the years in which they began their careers as teachers, administrators, and/or librarians.

Education

The prevailing educational credential for all educator groups was a master's degree. Administrators were far more likely to have doctorates than teachers or librarians. Teachers were more likely than librarians and far more likely than their administrators to have earned no degree higher than a bachelor's.



Experience

Whatever level the degree may have been, on average, administrators and teachers completed their highest degrees in 2000. The typical librarian completed her or his degree in 1997, three years earlier.

The common question asked regarding years of experience was in what year the respondent, regardless of educator group, was first employed as a K-12 teacher. As one would expect most administrators to have more experience, it is not surprising that year for them was 1991. On average, librarians began their K-12 careers in 1993, just two years later than their administrator colleagues, but four years earlier than their teacher colleagues.

Years of K-12 Experience by Educator Group

Year	Admini-strators	Teachers	Librarians
Highest degree year	2000	2000	1997
Year 1st employed as:			
K-12 administrator	2003		
K-12 teacher	1991	1997	1993
School librarian			1998

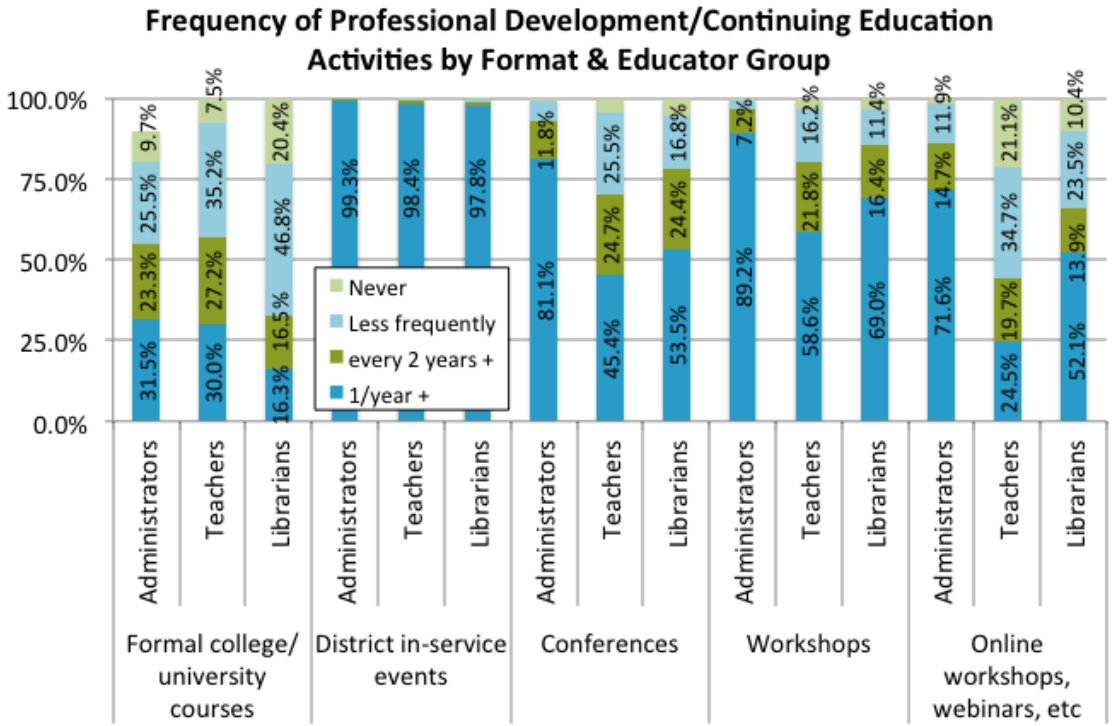
Professional Development/Continuing Education Participation

All educator groups were asked to report how often they participate in different types of professional development/continuing education activities, including:

- Formal college/university courses
- District in-service events
- Conferences
- Workshops
- Online workshops, webinars, etc.

Virtually all respondents in the three educator groups reported participating in in-service events at least once a year—doubtless, because such participation is required to maintain one's certification as any type of professional educator. The second most frequently reported type of professional development/continuing education was workshops, particularly for administrators and librarians. The third most frequently reported type was attending conferences. Close to half of all groups attend at least one conference a year.

Fourth came online events, where the greatest differences among these formats for the three educator groups appear, with administrators dominating. Last for all three groups was participation in formal college/university courses, with librarians participating least in this setting.



Administrators, teachers, and librarians were asked to report their perceptions and experiences related to several topics:

- How essential or desirable administrators consider key library practices
- How often teachers and librarians experience key library activities
- How well educators in all three groups assess the efforts of library programs to teach 21st Century Learner and Pennsylvania/Common Core standards
- How essential or desirable administrators consider selected proposed elements of a statewide school library infrastructure

Library Practices & Activities

Administrators were asked to indicate, regardless of actual practice, how important they believe it is for each of the following to happen in their schools or districts:

- Scheduling access to the school library on the basis of instructional needs rather than on a regular or required fixed schedule (i.e., flexible scheduling)
- School librarians and classroom teachers designing and teaching instructional units together
- School librarians providing in-service professional development to faculty
- School librarians being appointed to school committees (e.g., technology, curriculum, standards, other advisory groups)
- School librarians and principals meeting regularly
- Principals addressing teacher collaboration with librarians in annual evaluations of teachers

The response scale was essential, highly desirable, desirable, unnecessary, or don't know or need more information.

Teachers and librarians were asked to report the frequency of their experiences with each of the following activities:

- Classes and/or students (individually or in groups) using the library as needed and not on a regular or required fixed schedule
- Teachers accompanying and remaining with their students in the library
- Teachers inviting the librarian to teach or co-teach in the classroom
- Librarian and teachers collaborating on the design and delivery of units of instruction
- Librarian helping teacher learn new information-seeking skills (whether one-to-one or in groups, formally or informally)

The response scale was at least weekly, at least monthly, at least once per semester, at least annually, and rarely or never.

Value & Frequency

The quality of school library programs is defined very largely by how much administrators value key library practices as well as how often teachers and librarians report engaging in key library activities related to some of those practices.

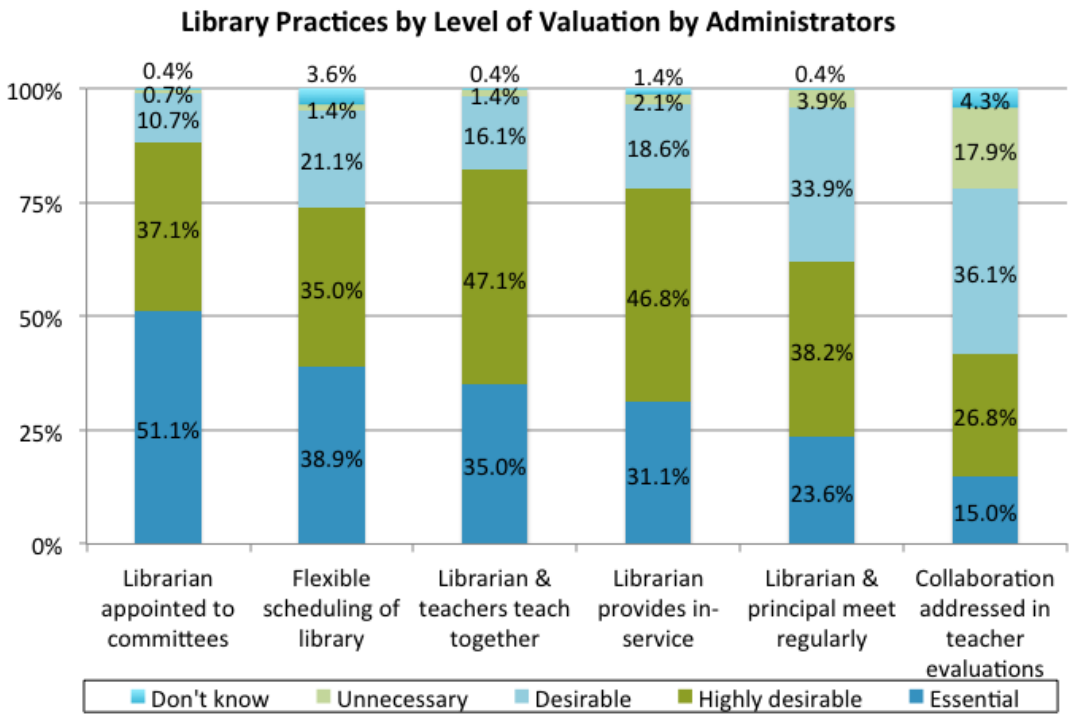
Administrators

Key library practices in descending order for administrators are:

- Librarian serving on school committees
- Librarian and teachers collaborating on design and delivery of units of instruction
- Classes and students visiting the library on a flexible schedule
- Librarian providing in-service professional development opportunities to faculty
- Librarian and principal meeting regularly
- Teacher collaboration with librarian being assessed in teacher evaluations

Library Practices Valued as Essential or Highly Desirable by Administrators

	Cumulative Frequency			Don't know/ more info
Practice	Essential	Highly desirable	Desirable	
Flexible scheduling	2/5	**3/4**	95/100	< 4/100
Librarian & teacher instruct together	1/3	**4/5**	98/100	< 0.5/100
Librarian provides in-service	1/3	**3/4**	96/100	<1.5/100
Librarian on committees	1/2	**9/10**	99/100	< 0.5/100
Librarian & principal meet	1/4	**3/5**	96/100	< 0.5/100
Collaboration assessed in teacher evaluations	1/7	2/5	**3/4**	< 5/100



Teachers & Librarians

When library activities are ranked by the frequency with which teachers and librarians report them, there is a remarkable degree of agreement between the two groups. Both rank as the top three:

- Classes and students visiting the library on a flexible schedule
- Teachers accompanying and remaining with students in the library
- Librarian helping teachers learn new information-seeking skills

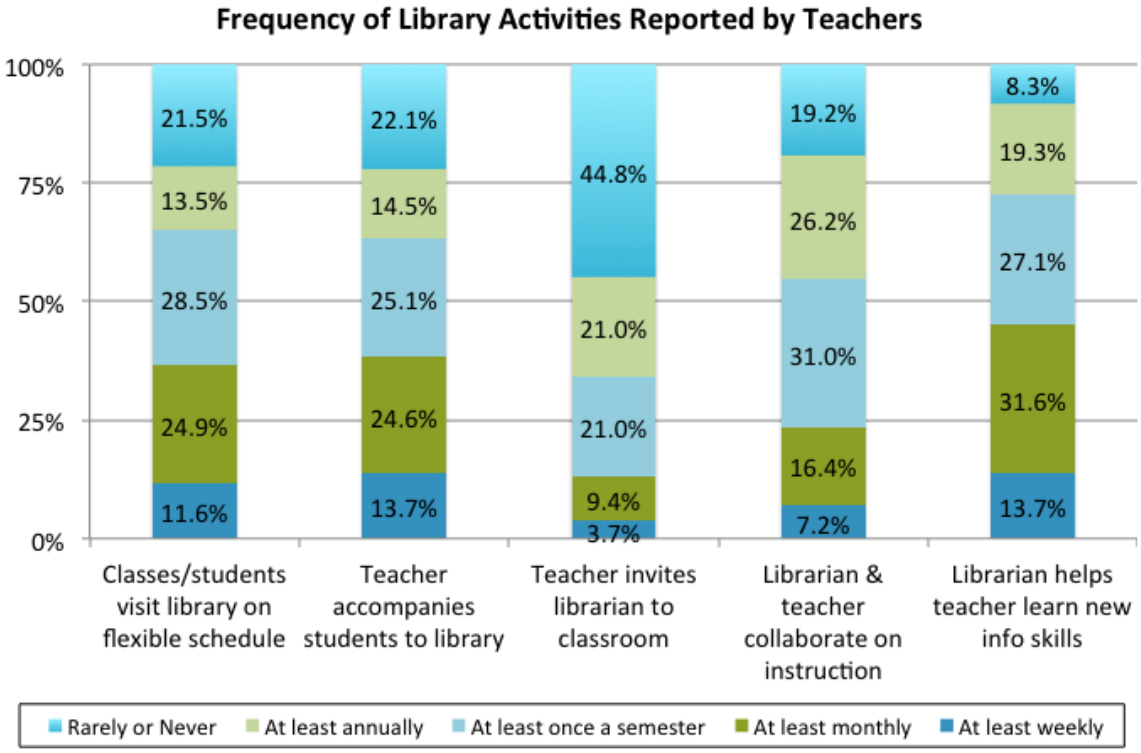
The only difference between the two groups in these top-three rankings is that, for teachers, receiving the librarian's help to learn new information skills ranks first.

Both teachers and librarians also agree that the least frequent library activities they experience are:

- Librarian and teachers collaborating on the design and delivery of units of instruction
- Teachers inviting the librarian to the classroom.

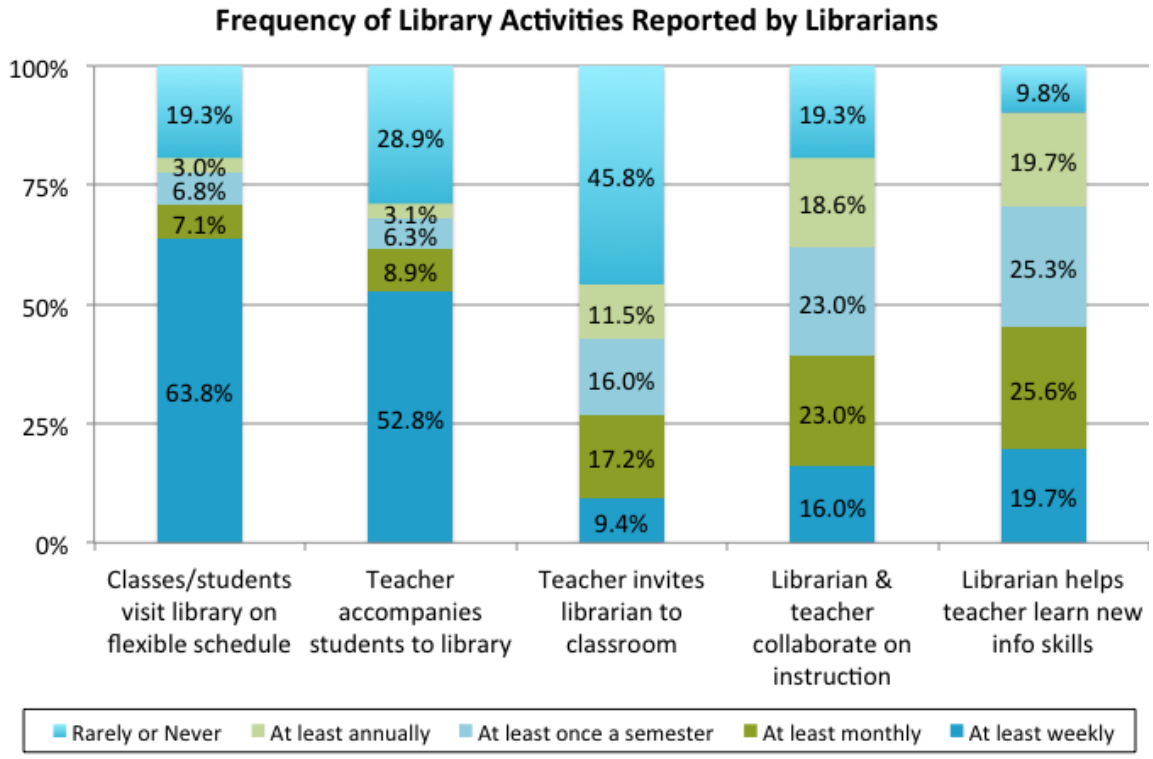
Frequency of Library Activities Reported by Teachers

Activity	Cumulative Frequency				
	At least weekly	At least monthly	At least once a semester	At least annually	Rarely/ Never
Classes/students visit library on flexible schedule	1/9	1/3	**2/3**	4/5	1/5
Teacher accompanies students to library	1/7	1/3	**2/3**	4/5	1.5
Teacher invites librarian to classroom	1/27	1/8	1/3	**1/2**	1/2
Librarian & teacher collaborate on instruction	1/14	1/4	**1/2**	**4/5**	1/5
Librarian helps teacher learn new skills	1/7	**1/2**	**3/4**	9/10	1/10



Frequency of Library Activities Reported by Librarians

Activity	Cumulative Frequency				
	At least weekly	At least monthly	At least once a semester	At least annually	Rarely/ Never
Classes/students visit library on flexible schedule	**2/3**	7/10	3/4	4/5	1/5
Teacher accompanies students to library	1/2	**3/5**	2/3	7/10	3/10
Teacher invites librarian to classroom	1/10	1/4	2/5	**1/2 +**	**< 1/2**
Librarian & teacher collaborate on instruction	1/6	2/5	**3/5**	4/5	1/5
Librarian helps teacher learn new skills	1/5	1/2	**7/10**	9/10	1/10



Librarian Roles

Administrators were asked what roles they desire their librarians to play. Teachers were asked what roles they perceive their librarians to be playing, and librarian themselves were asked in what roles they believe their principals and teachers perceive them. Despite these varied perspectives, however, there is a remarkable degree of consensus across the three educator groups. All three groups include the following roles in their top seven:

- Co-teacher
- In-service provider
- Instructional resources manager
- Reading motivator
- School leader
- Teacher
- Technology instructor

The consensus between administrators and teachers on the one hand, and librarians on the other, is also striking:

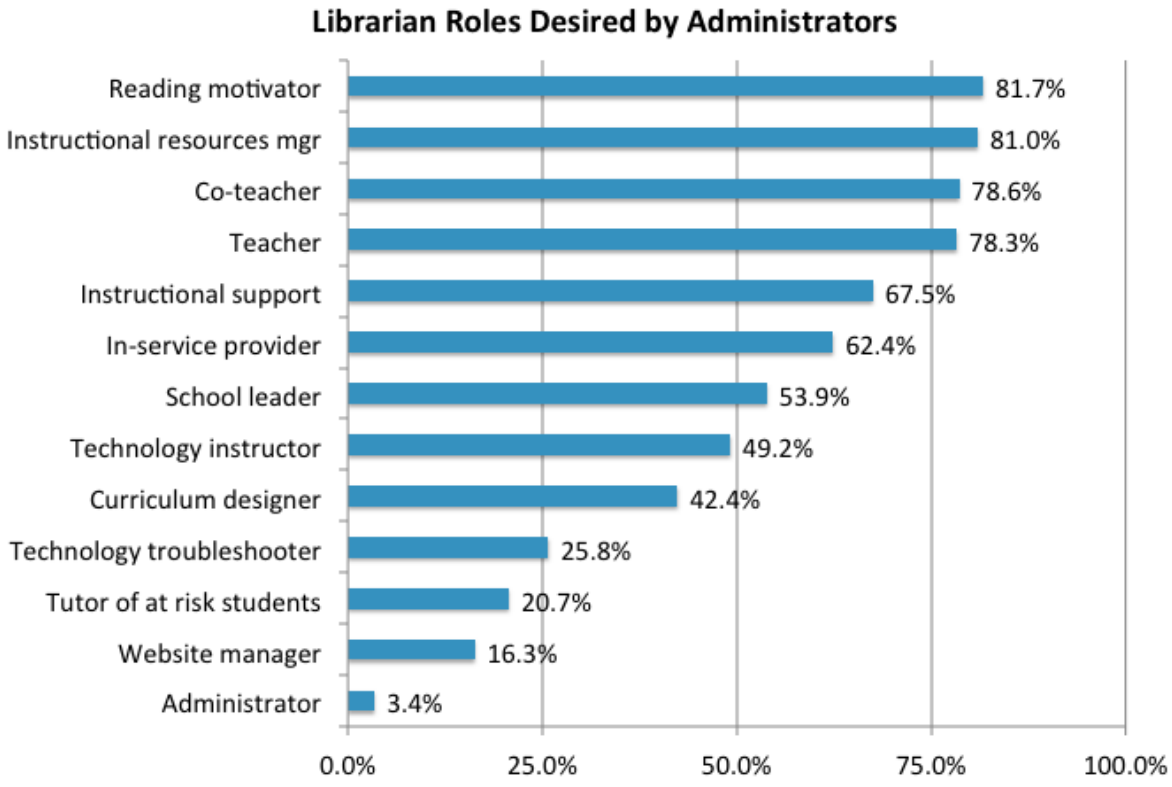
- For administrators, the top three librarian roles are reading motivator, instructional resources manager, and co-teacher, followed closely by teacher. Librarians believe their principals perceive them as teacher, reading motivator, and instructional resources manager.

- For teachers, the top three librarian roles are instructional resources manager, teacher, and reading motivator. Librarians believe their teachers perceive them as reading motivator, teacher, and instructional resources manager.

The three educator groups also tend to agree about roles librarians are less likely to play. All three groups ranked three librarian roles the lowest: administrator, tutor of at risk students, and website manager.

Librarian Roles Desired by Administrators

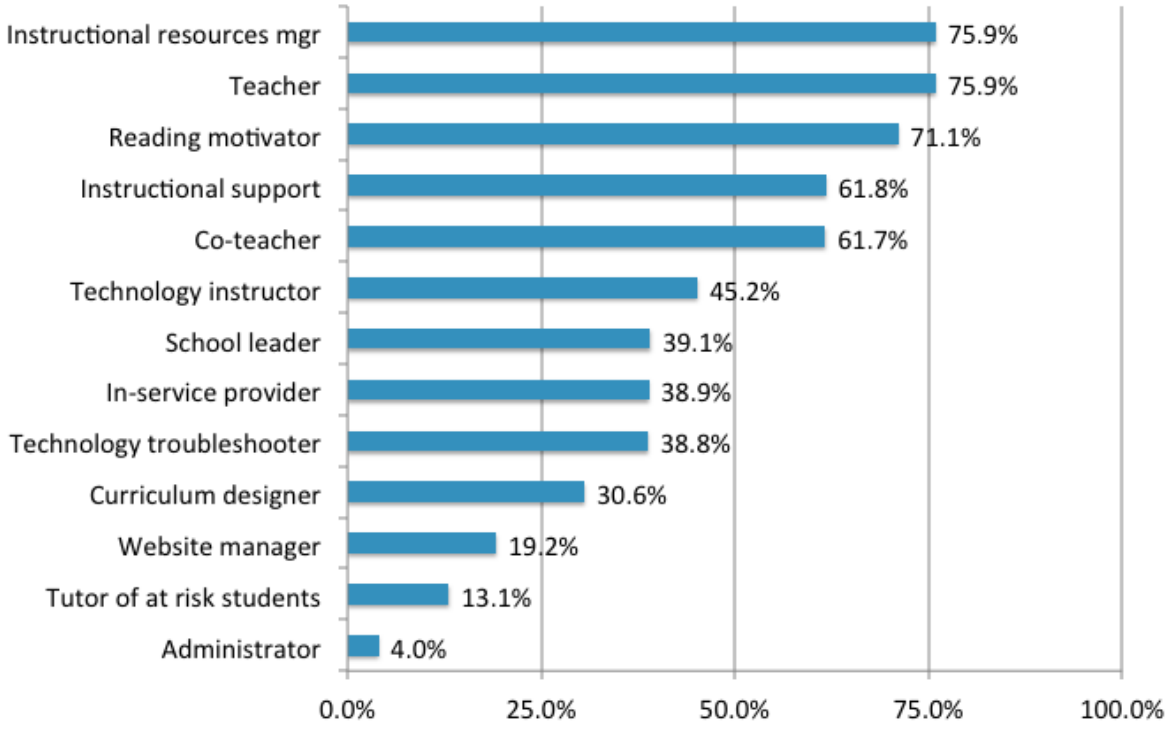
Proportion of administrators	Desired librarian role
4/5	• Reading motivator • Instructional resources manager • Co-teacher • Teacher
2/3	• Instructional support • In-service provider
1/2	• School leader • Technology instructor
2/5	• Curriculum designer
Least popular	• Technology troubleshooter • Tutor of at risk students • Website manager • Administrator



Librarian Roles Reported by Teachers

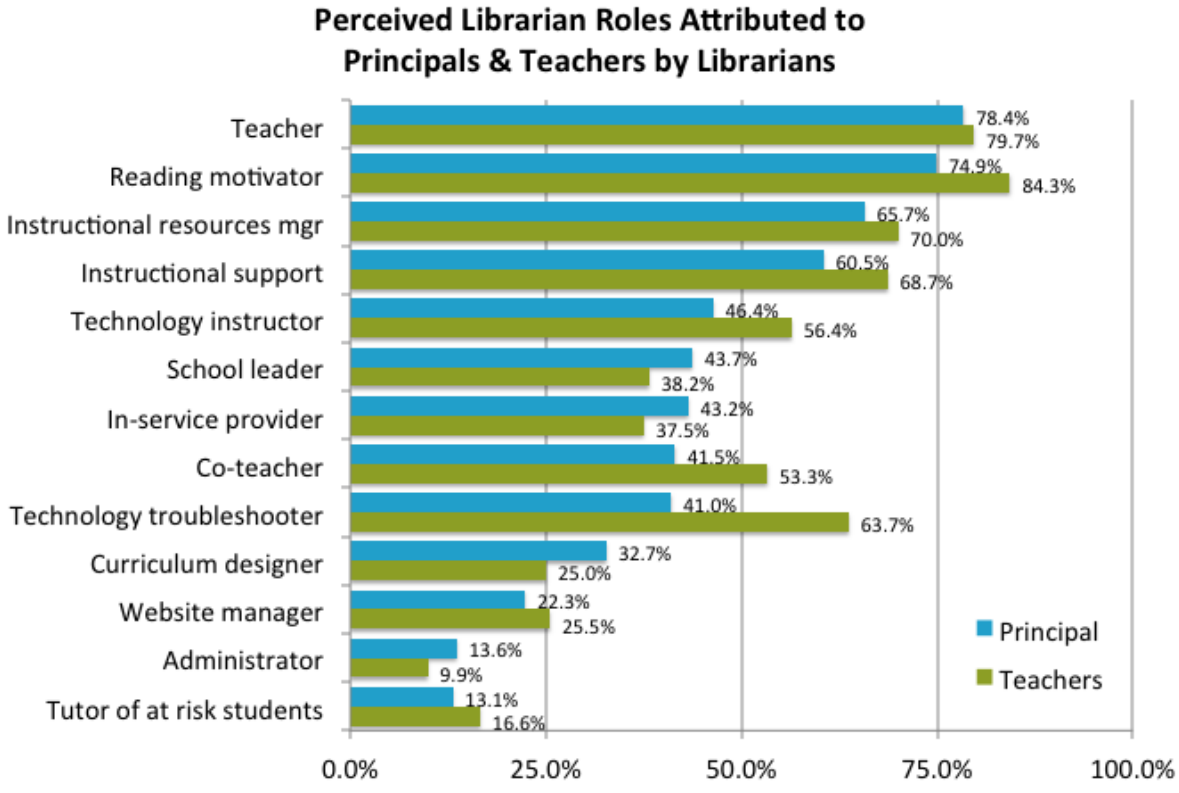
Proportion of teachers	Librarian role
7/10	• Reading motivator
3/4	• Instructional resources manager • Teacher
3/5	• Instructional support • Co-teacher
< 1/2	• Technology instructor
2/5	• School leader • In-service provider • Technology troubleshooter
3/10	• Curriculum designer
1/5	• Website manager

Librarian Roles Perceived by Teachers



Librarian Roles Attributed to Principal & Teachers by Librarian

Role	Proportion attributing to principal	Proportion attributing to teachers
Teacher	4/5	4/5
Reading motivator	3/4	4/5 +
Instructional resources manager	2/3	7/10
Instructional support	3/5	2/3 +
Technology instructor	< 1/2	1/2 +
School leader *	2/5 +	1/3 +
Technology troubleshooter	2/5	< 2/3
Co-teacher	2/5	1/2 +
* Only role attributed to principals more than teachers		



Assessment of Library Program Teaching of 21st Century Learner Standards

With predictable modesty, librarians decline to brag too much about their teaching of 21st Century Learner standards, as defined by the American Association of School Librarians. Administrators and teachers offer far more generous assessments of how well library programs teach these standards than librarians do.

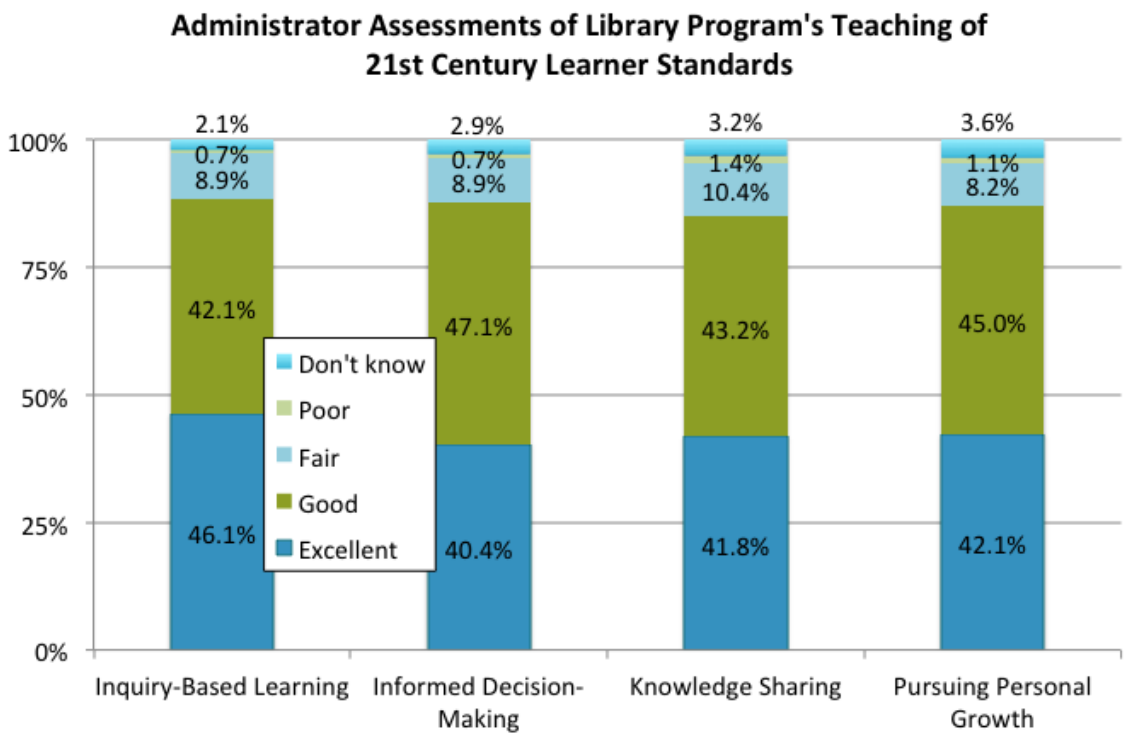
- Depending on the standard, nearly half of administrators and teachers assess their library program's teaching of 21st Century Learner standards as "excellent".
- Librarians are far less likely to assess their teaching of these standards as "excellent".
- Consequently, assessments of 21st Century Learner standards teaching as "good" are most prevalent among librarians, followed by administrators and lastly teachers.

As one would expect, librarians are the least likely to plead ignorance – to select "don't know" - about their own performance. Administrators were about half again as likely to plead ignorance, and teachers were most likely to do so.

The response scale was "excellent", "good", "fair", "poor", or "don't know or not applicable".

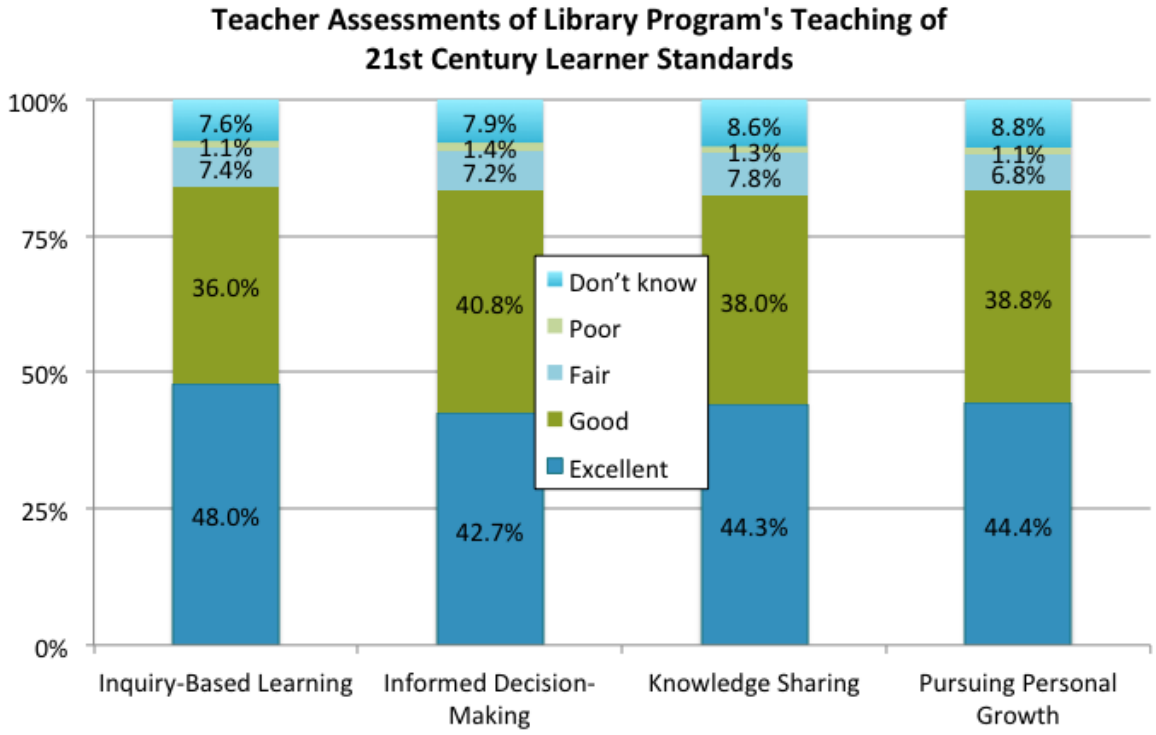
Administrator Assessments of Library Program Teaching of 21st Century Learner Standards

Proportion of administrators	Assessment of Library Program Teaching of 21st Century Learner Standards
9/10	Excellent or good
2/5 to 1/2	Excellent



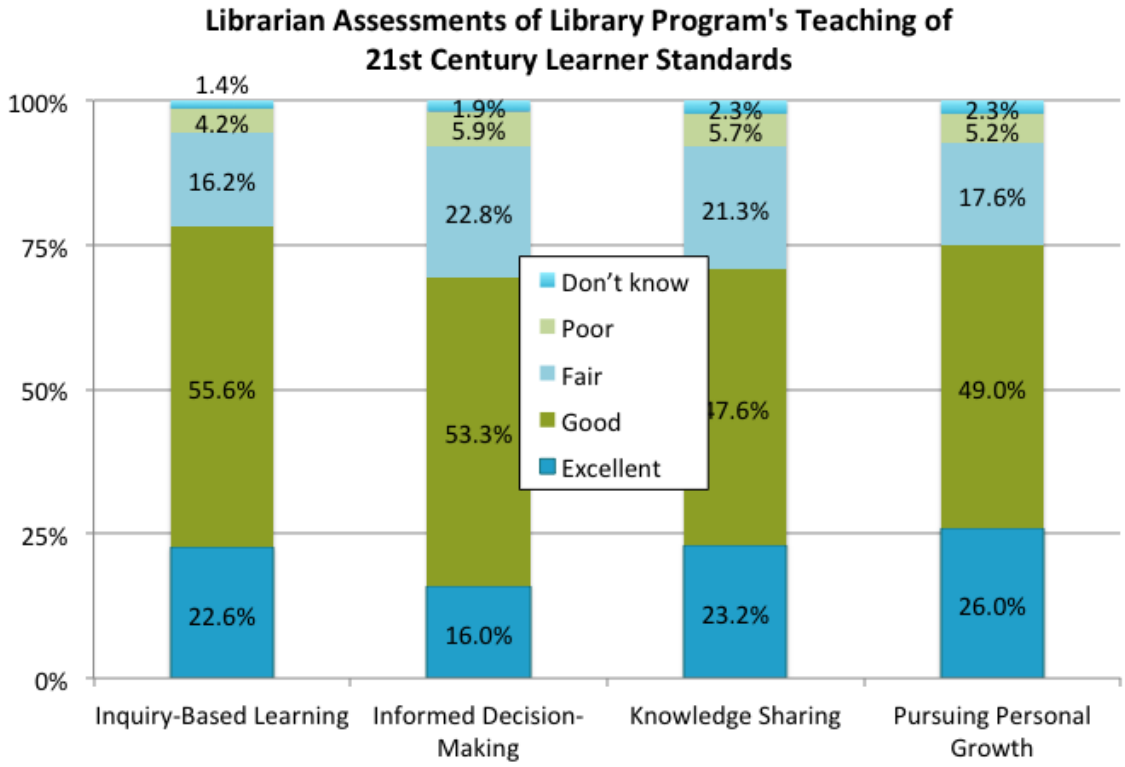
Teacher Assessments of Library Program's Teaching of 21st Century Learner Standards

Proportion of teachers/assessment	21st Century Learner Standard
4/5 excellent or good	• All
Almost 1/2 excellent	• Inquiry-based learning
More than 2/5 excellent	• Informed decision-making • Knowledge sharing • Pursuing personal growth



Librarian Assessments of Library Program's Teaching of 21st Century Learner Standards

Standard	Excellent	Excellent / Good
Inquiry-based learning	< 1/4	3/4 +
Informed decision-making	1/6 +	7/10
Knowledge sharing	< 1/4	3/4
Pursuing personal growth	1/4 +	3/4



Assessment of Library Program's Teaching of PA/Common Core Standards

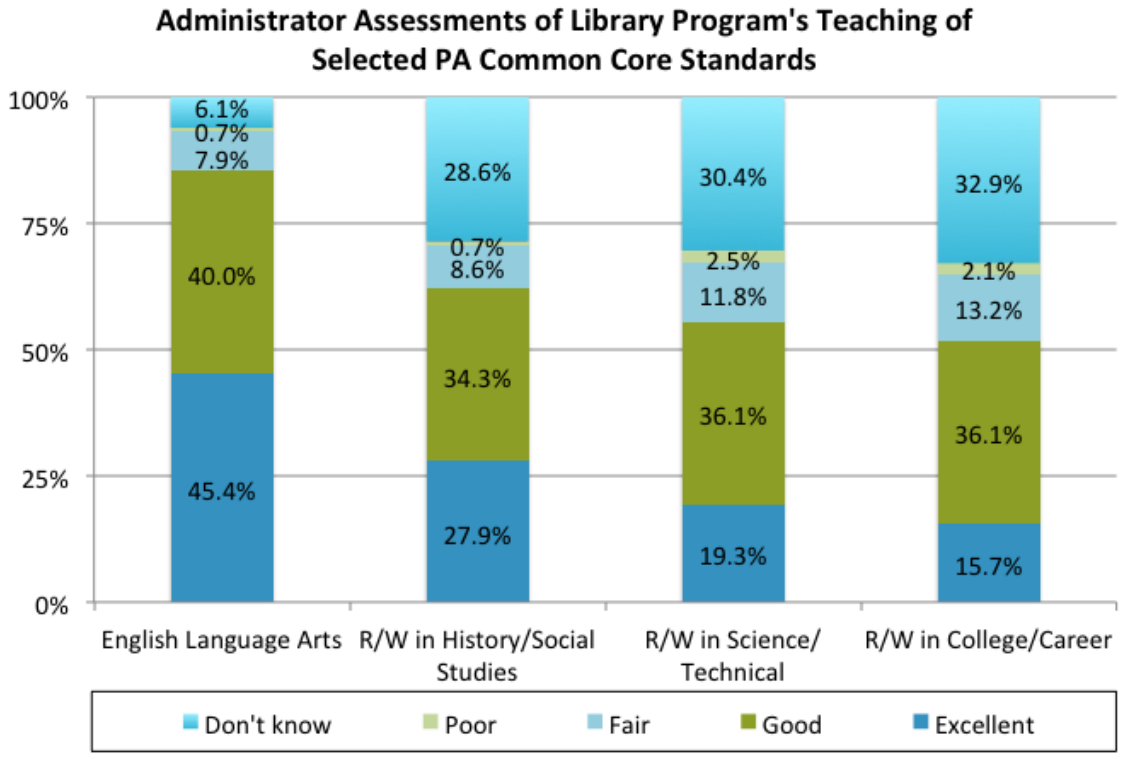
Just as for 21st Century Learner standards, librarians are modest about their teaching of the Pennsylvania/Common Core standards. Administrators and teachers offer far more generous assessments of how well library programs teach these standards than librarians do.

- All educator groups are most confident about how well library programs teach English Language Arts, with administrators and teachers rating it more highly than do librarians.
- All three groups are far less confident about how well library programs teach the other three standards—Reading and Writing in History and Social Sciences, Science and Technical Subjects, and College and Career Readiness. Administrators and teachers again rate the librarian's teaching to these three standards more highly than do librarians. Librarians rate their teaching to the History and Social Sciences and College and Career Readiness Standards even lower.

Because the proposed Common Core standards in Pennsylvania are relatively new and the Literacy in History/Social Studies Standards and the Literacy in Science and Technical Subjects Standards are only articulated for grades 6-12, many in all three groups pled ignorance about how well library programs teach to the four standards about which they were asked. Depending on the standard, up to a third of administrators and up to half of teachers and librarians just said they don't know.

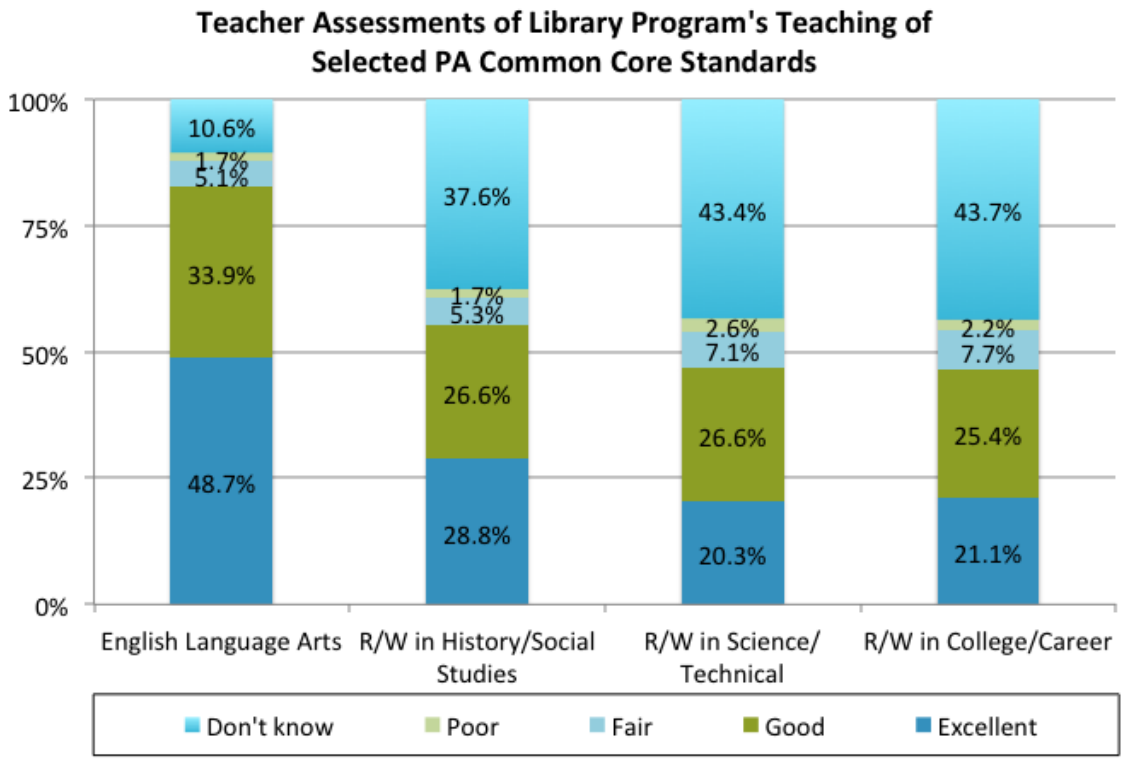
Administrators on Library Program Teaching of PA/Common Core Standards

Excellent assessments	Excellent/good assessments
• Almost 1/2: English language arts • Over 1/4: Reading/Writing in history/social sciences	• 9/10: English language arts • 3/5: Reading/Writing in history/social sciences • > 1/2: Reading/Writing in science/technical subjects • & college/career readiness



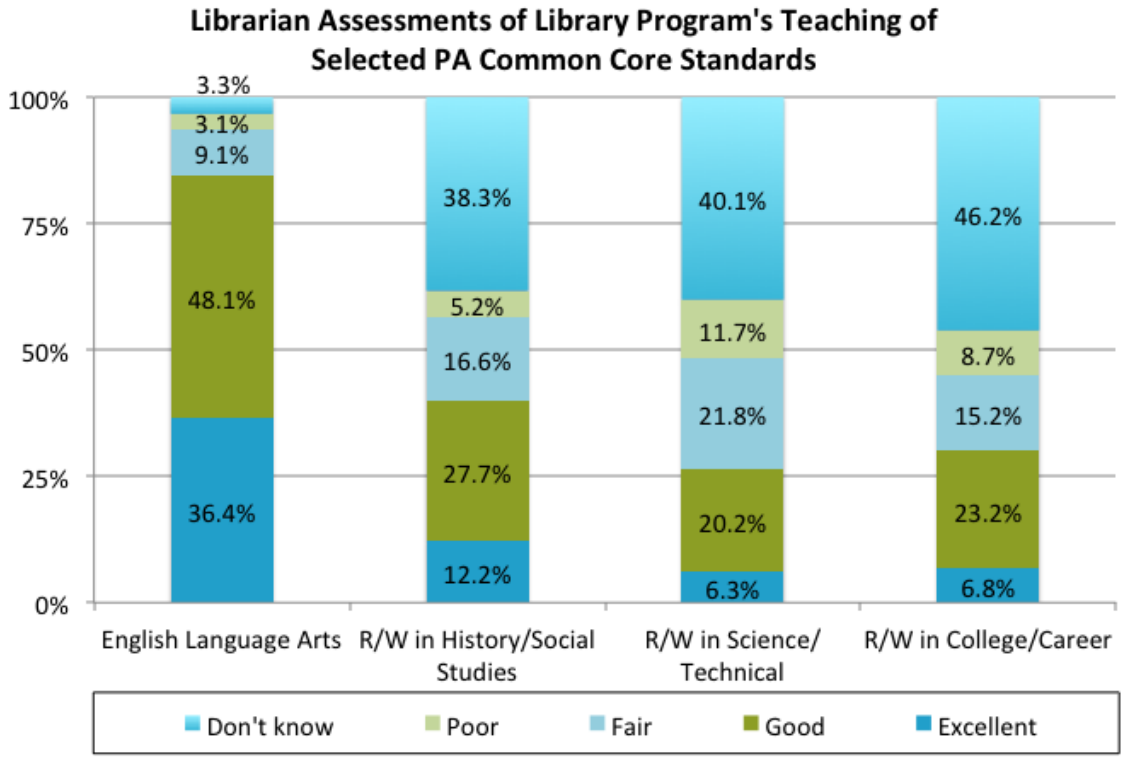
Teacher Assessments of Library Program's Teaching of PA/Common Core Standards

Proportion of teachers/assessment	PA/Common Core Standard
4/5 excellent or good < 1/2 excellent	English language arts
> 1/2 excellent or good > 1/4 excellent	R/W in history/social sciences
< 1/2 excellent or good 1/5 excellent	R/W in science/technical subjects
< 1/2 excellent or good > 1/5 excellent	R/W in college/career readiness



Librarian Assessments of Library Program's Teaching of PA/Common Core Standards

Standard	Excellent	Excellent / Good	Don't Know
English language arts	**1/3 +**	**4/5 +**	1/30
Reading/Writing in • History/social sciences	1/8	**< 2/3**	**2/5**
• Science/technical subjects	1/16	**3/5**	**2/5**
• College/career readiness	1/15	1/2 +	**< 1/2**



School Library Infrastructure

In January 2012, a focus group of school library leaders was convened for the purpose of identifying potential components of a statewide school library infrastructure. That group recommended the following 10 components:

- Certified librarian (with school librarian certification) in every school
- Library coordinator (with school librarian certification) in every district
- Library coordinator (with school librarian certification) in every intermediate unit
- School Library Advisor (with school librarian certification) at Commonwealth Libraries, the state library agency in the Department of Education
- State-mandated and assessed 21st Century Skills curriculum for which librarians are responsible
- State-negotiated and acquired collection of electronic/digital resources to support a 21st Century Skills curriculum (e.g., databases, e-books)
- Pre-service, induction, and continuing education about librarian's role in teaching 21st Century Skills for prospective librarians
- Pre-service, induction, and continuing education about librarian's role in teaching 21st Century Skills for prospective teachers
- Pre-service, induction, and continuing education about librarian's role in teaching 21st Century Skills for prospective administrators
- Professional development supporting collaborative teaching of 21st Century Skills for librarians and teachers

All educator groups—administrators, teachers, and librarians—were asked to indicate the desirability of each component, based on their beliefs about the potential positive impact on student learning and academic achievement. The response scale was essential, highly desirable, desirable, not desirable, and don't know. Essential and highly desirable responses are taken as evidence of strong support for a component.

By far, the component garnering the greatest support is a certified librarian in every school.

- Virtually all librarians, nine out of ten teachers, and two out of three administrators rated it as essential.
- If those considering it highly desirable are also included, this component has the support of virtually all librarians and teachers and most administrators.

A majority of all three groups deems essential or highly desirable three additional components:

- 21st Century Skills education for prospective librarians
- professional development for 21st Century collaboration between librarians and teachers
- a state e-resources collection (e.g., databases, e-books)

At least two out of three members of all three groups deem essential or highly desirable three other components:

- 21st Century Skills education for prospective teachers
- 21st Century Skills education for prospective administrators

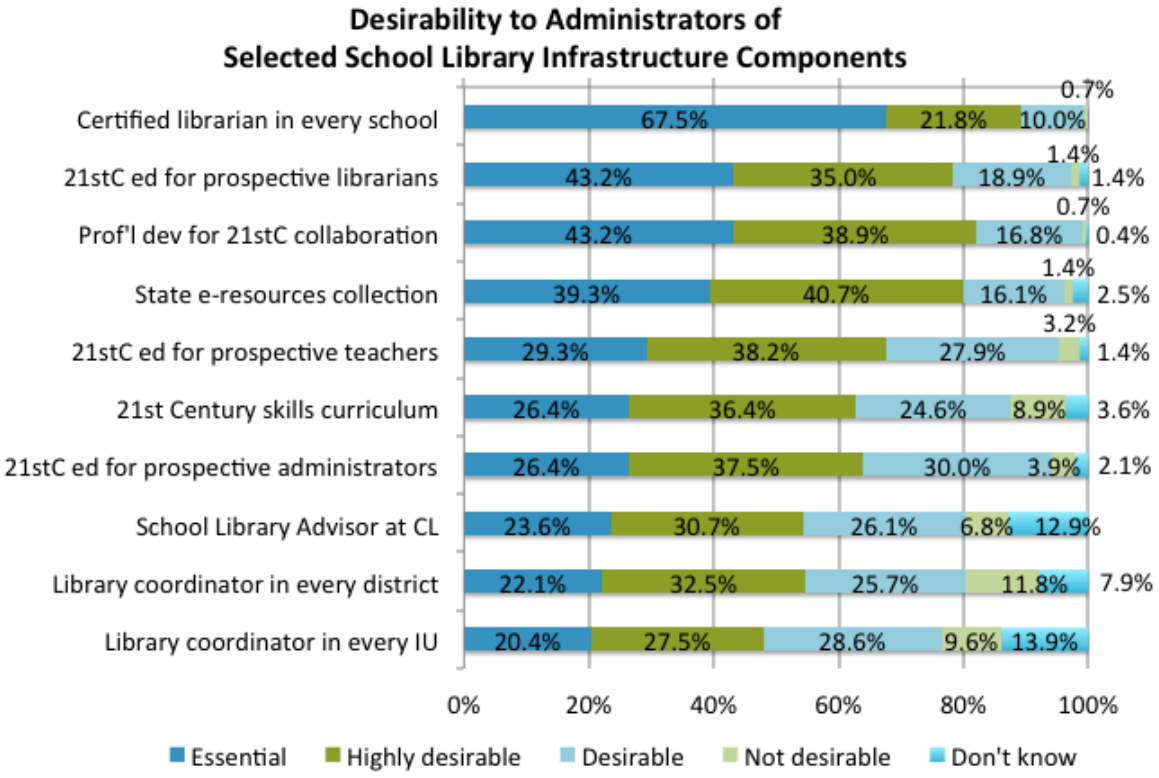
- a state-mandated 21st Century Skills curriculum for which librarians are responsible

The idea of a state-mandated and assessed 21st Century Skills curriculum received middling support from administrators, but a majority of teachers and librarians ranked it third from the bottom of the list of potential infrastructure components.

Having a library coordinator with a school librarian certification in every intermediate unit received the least support from all three educator groups. Less than half of administrators, but more than half of teachers and librarians considered this component essential or highly desirable.

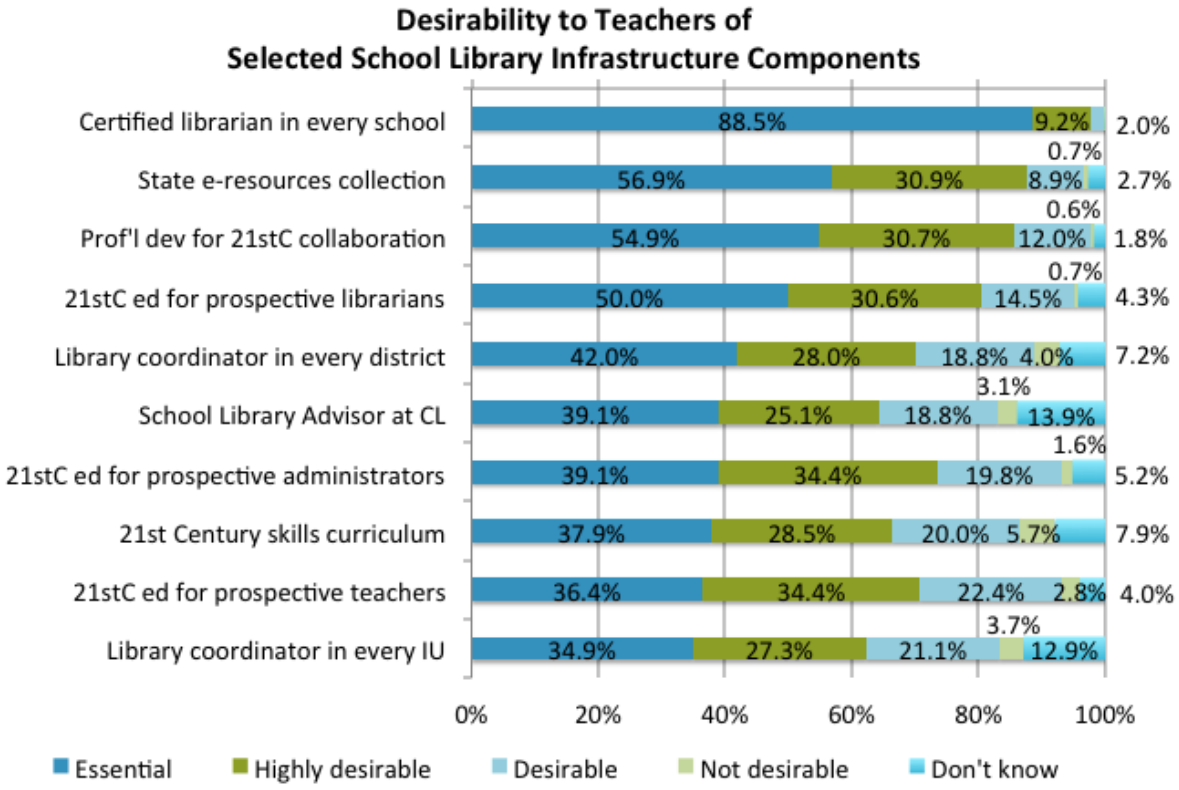
Administrators on School Library Infrastructure

Infrastructure component	Essential	Essential/ Highly Desirable
• Full-time certified librarian in every school	2/3	9/10
• Prof'l development for 21st Century collaboration • State e-resources collection • 21st Century education for prospective librarians	2/5	4/5
• 21st Century education for prospective teachers • 21st Century education for prospective administrators	> 1/4	2/3
• 21st Century skills curriculum	1/4	3/5
• School Library Advisor at Commonwealth Libraries		> 1/2
• Library coordinator in every district	1/5	> 1/2
• Library coordinator in every intermediate unit		< 1/2



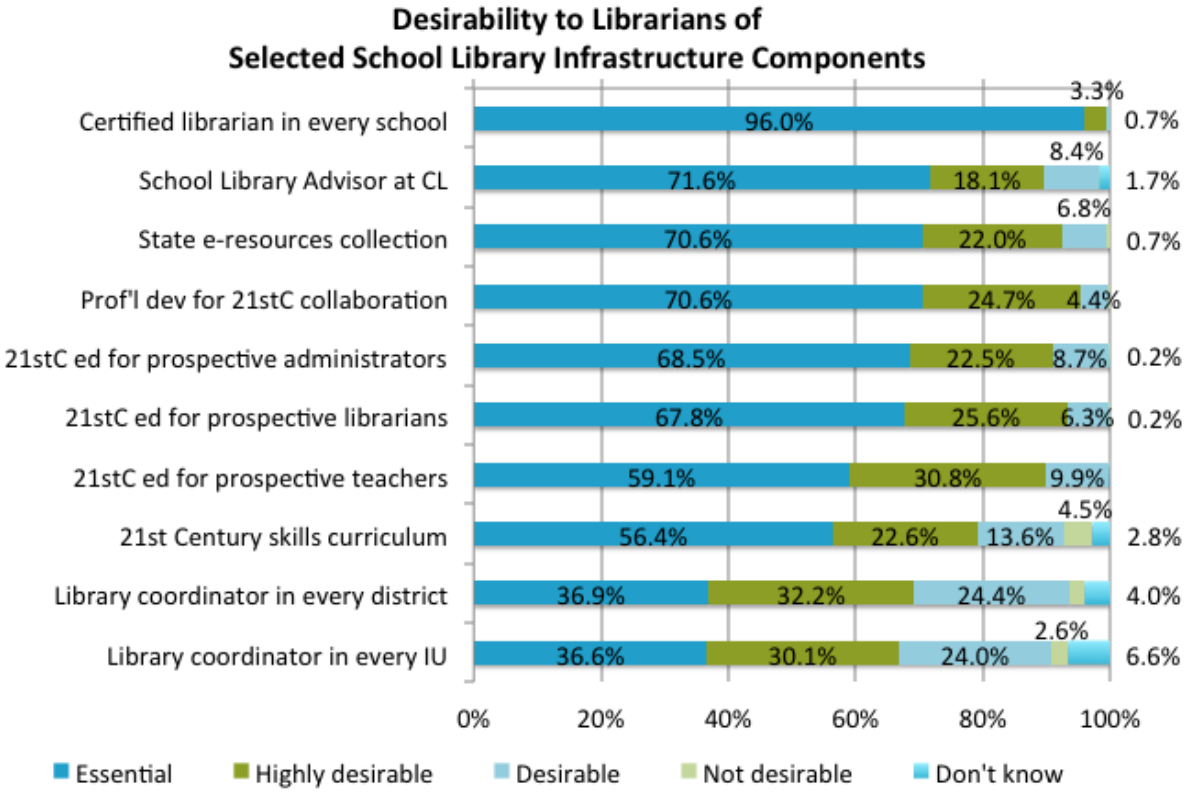
Teachers on School Library Infrastructure Components

School Library Infrastructure Component	Essential	Essential/ Highly Desirable
• Full-time certified librarian in every school	9/10	Almost all
• State e-resources collection	3/5	9/10
• 21st Century education for prospective librarians	1/2	4/5
• Library coordinator in every district • 21st Century education for prospective teachers • 21st Century education for prospective administrators	2/5	2/3
• Library coordinator in every intermediate unit • School Library Advisor at Commonwealth Libraries • 21st Century skills curriculum	1/3 to 2/5	3/5 to 2/3



Librarians on School Library Infrastructure Components

School Library Infrastructure Component	Essential	Essential/ Highly Desirable
• Full-time certified librarian in every school	96/100	99/100
• Prof'l development for 21st Century collaboration	7/10	95/100
• 21st Century education for prospective librarians	2/3 +	93/100
• State e-resource collection • School Library Advisor at Commonwealth Libraries	7/10	9/10+
• 21st Century education for prospective administrators	2/3 +	< 9/10
• 21st Century education for prospective teachers	3/5	



Summary

This chapter introduces the second phase of the project's research by reviewing responses from three separate surveys of administrators, teachers, and librarians. Respondents were asked to provide some information about themselves and their perspectives on library practices and activities, librarian role perceptions, and their teaching to 21st Century Learner and PA/Common Core Standards. They were also asked to provide their assessments of the value of several proposed components of a statewide school library infrastructure.

Brief statements present the basic statistical results deduced from analysis of these three surveys in all these areas, including these findings:

- About 70% to 90% of respondents to all three surveys have Master's degrees.
- About 11% of administrators also have doctorates.
- Virtually all respondents participate at least annually in district in-service events.
- The most highly valued library practice by administrators is having librarians serve on committees.

- Administrators and teachers both rate instructional resources manager as one of their top two perceptions of the librarian's role.

- Librarians think administrators and teachers perceive the librarian's role primarily as teacher or reading motivator.

- On the teaching of 21st Century Learner and PA/Common Core Standards, all three groups rated teaching English language arts most highly.

- The most highly valued proposed component of a statewide school library infrastructure for all three groups was a certified librarian in every school library.

- Administrators and teachers offer far more generous assessments of how well library programs teach these standards than librarians do.

Subsequent chapters will describe in greater detail how these survey data were used to analyze the relationships of key library practices and librarian role perceptions with educators' own assessments of how well their library programs teach 21st Century Learner and PA/Common Core Standards.

Chapter 8. Standards for the 21st Century Learner

In 2007, the American Association of School Librarians (AASL) promulgated its Standards for the 21st Century Learner. Underlying these standards are several common beliefs about why school libraries and librarians are essential to students gaining the learning skills they will need throughout their lives.

- Reading—not just to comprehend, but to develop new understandings—is a foundational, lifelong learning skill.
- Learning requires inquiry—not just the skills required to be lifelong learners, but the inclination to apply them in an increasingly complex world of information.
- Learning, whether face-to-face or via technology, is an inherently social activity that requires exploring information representing diverse perspectives, working collaboratively with others, and using that information, especially via social networking tools, ethically.
- Information and information technology are changing and expanding at such a pace that students must learn the skills they will need in the future to keep pace with change.
- Because of inequalities in society and among schools, it is essential that school libraries and librarians provide access, not just to information and technology, but to an environment in which students can learn and practice 21st century learning skills.

Inquiry-Based Learning

The first AASL standard is to "inquire, think critically, and gain knowledge." For purposes of this study, this standard is referenced as "Inquiry-Based Learning." Mastering this standard requires developing critical thinking skills, such as:

- Determining the relevance of information to the subject of inquiry
- Evaluating the accuracy, validity, and appropriateness of information sources
- Identifying different levels of ideas as well as misleading, contradictory, and erroneous information

Informed Decision-Making

The second AASL standard is to "draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge." For purposes of this study, this standard is referenced as "Informed Decision-Making." Mastering this standard requires being perceptive and flexible when:

- Analyzing and organizing information
- Exchanging ideas with others
- Making decisions and solving problems
- Creating new products—particularly through writing—to express what one has learned

Knowledge Sharing

The third AASL standard is to "share knowledge and participate ethically and productively as members of our democratic society." Mastering this standard requires learning ethical and productive approaches to:

- Sharing and reflecting on one's learning
- Communicating effectively, both orally and in writing
- Using technology to make new knowledge accessible to others

Pursuing Personal Growth

The fourth and final AASL standard is to "pursue personal and aesthetic growth." Mastering this standard requires developing the initiative, curiosity, and open-mindedness needed to inspire:

- Being a self-motivated consumer of information in a variety of formats, whether for pleasure or lifelong learning
- Linking what one learns to both previous knowledge and experience as well as one's own immediate interests
- Using social networks and other digital tools to contribute to the learning of others

The three educator groups—administrators, teachers, and librarians—were asked to assess how well their library programs teach each of these standards. They were also asked about key library practices or activities and about librarian roles in their schools.

Throughout this chapter, the findings are illustrated by quotes offered by respondents to the project's surveys.

Library Practices & Activities

Administrators were asked how much they value key library practices, most associated with academic achievement and student learning in numerous studies. (See Chapter 1.) Their responses ranged from "essential," "highly desirable," "desirable," to "not desirable," or "don't know." Teachers and librarians were asked how frequently they participated in selected activities related to those practices. Administrators were asked about their values, rather than actual practices, on the assumption that their beliefs about school libraries and librarians—apart from actual policies and practices—exert a powerful impact on the culture of the school. Teachers and librarians were asked about the frequency of activities on the assumption that they are in the best position to know what is actually happening and how that might be affecting the learning environment. All three groups were asked to rank the instructional impact of the school library in teaching the 21st Century Standards based on the following choices- "excellent", "good," "fair," "poor," or "don't know/not applicable."

Administrators were asked how much they value the following practices:

- Flexibly scheduled library access
- Librarians and teachers co-teaching units of instruction
- Librarians providing in-service professional development opportunities
- Librarians being appointed to school committees
- Librarians meeting regularly with their principals
- Librarian-teacher collaboration being addressed in teacher evaluations.

Administrators on Library Practices

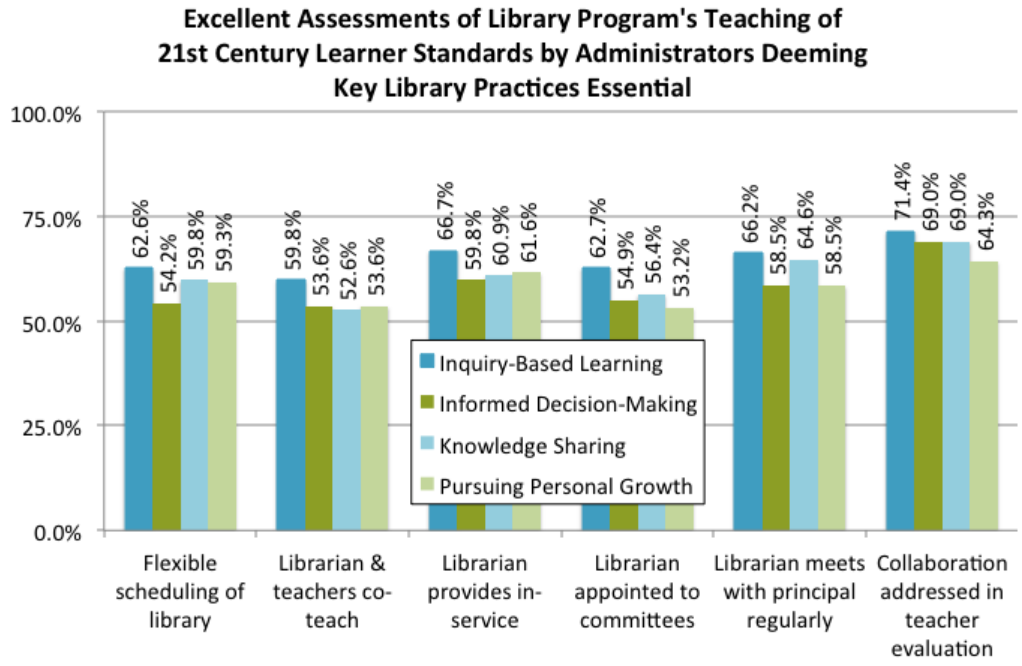
Across the four Standards for 21st Century Learners, several trends are clear in the responses from administrators:

- Clear majorities of administrators who consider key library practices "essential" also assess the library program's instructional role in teaching of 21st Century Learner standards as "excellent." This trend is consistent with at least the past two decades of research about the impact of school libraries and librarians.

- While administrators indicated least enthusiasm for addressing librarian-teacher collaboration in teacher evaluation, that practice is associated with the highest assessments of library teaching of 21st Century Learner standards, according to this study. This trend suggests that, as with testing, when collaboration with the librarian is something upon which teachers are evaluated individually, it is more likely to happen and to be done well.

- Consistently, essential library practices are more strongly related to Inquiry-Based Learning than any other 21st Century Learner standard. This trend is consistent with the growing body of research about the role of inquiry in learning, especially via library programs.

(Our) librarian has tremendously helped continue technology integration and support even after CFF [Classrooms for the Future] funds went away. She is seen as a lead teacher with online learning, Blackboard, H.E.A.T., Web 2.0, Research and Writing, as well as serves on the technology committee and graduation project committee. The administration and librarian have worked closely to implement, organize and manage an "in-house" technology training program called "Tech Flex". It is a professional learning community within the school and is at no cost to the district. It is a great way to continue supporting teaching and learning in the 21st century.
- A High School Vice or Assistant Principal



Note: This and following charts focus on assessments of the library program's instructional role in 21st Century Learner standards from educators who deem selected library practices as "essential" or who report engaging in selected library activities more frequently. Example: Of administrators who deem it essential that access to their libraries be scheduled flexibly, 62.6% assess their library program's contribution to teaching Inquiry-Based Learning as "excellent".

Teachers on Library Activities

Across all four 21st Century Learner standards, teachers who report more frequent engagement in key library activities are more likely to assess the instructional role of the school library program as "excellent."

From the perspective of teachers, the frequency of library activities associated with "excellent" assessments of the instructional role of the school library program in teaching 21st Century Learner standards varies from one activity to another.

At least weekly activities linked with "excellent" teacher assessments of library teaching are:

- Classes/students visit library on a flexible schedule (though, for Knowledge Sharing, this link is not statistically significant)
- Librarian and teachers collaborate on instruction
- Librarian helps teachers learn new information-seeking skills

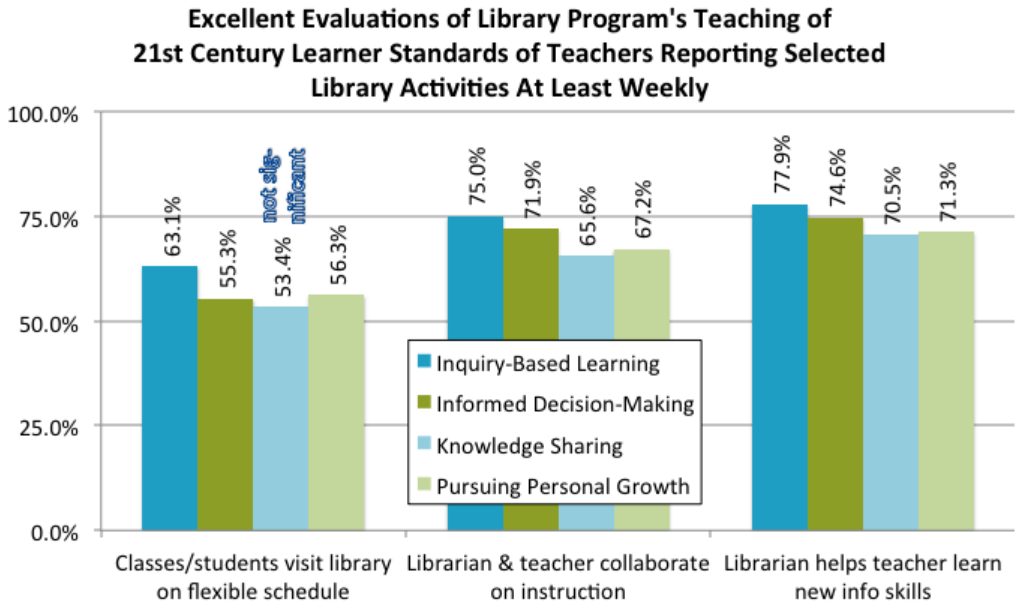
At least monthly activities linked with "excellent" teacher assessments of library teaching are:

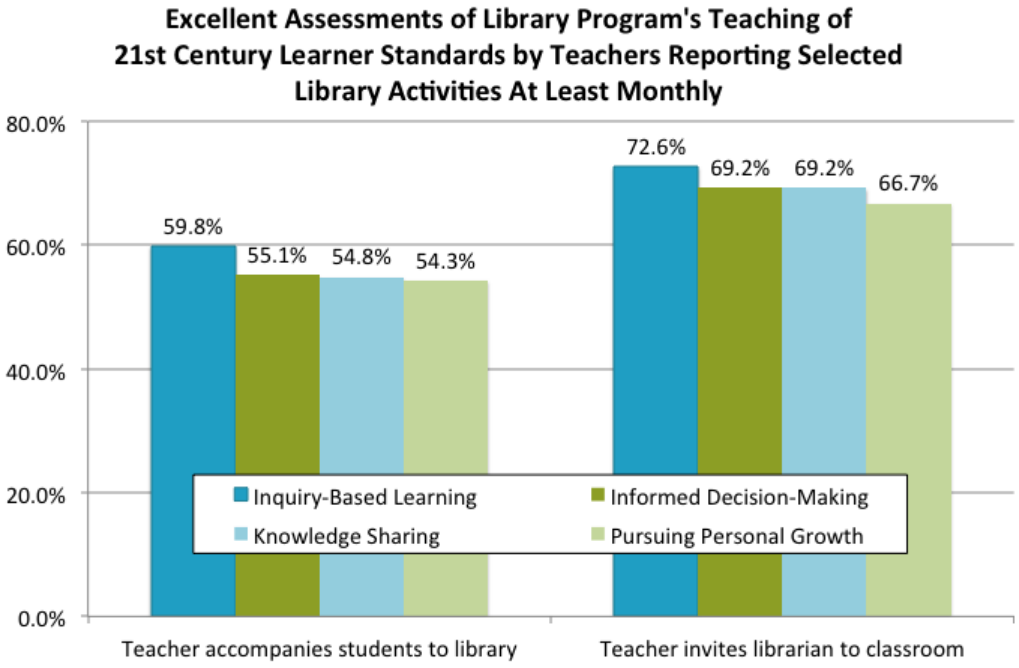
- Teacher accompanies and remains with the students in the library
- Teacher invites the librarian to teach or co-teach in the classroom

Similarly to administrators, among teachers, the link between more frequent library activities and "excellent" assessments of library teaching is consistently strongest for Inquiry-Based Learning when compared to the other three 21st Century Learner standards.

> My librarian and I have maximized the learning for all of my students. We plan and meet regularly to provide a team approach to teaching common core and 21st century skills to my entire 5th grade classroom. Through library resources, her expertise in research and current best practices, and my commitment to technology, we have seen incredible growth in information literacy and higher order thinking skills. Library is not seen as a special class, but rather an area to apply to all aspects of the curriculum. It is a truly rewarding experience for not only my students, but for me as well.
> - Intermediate School teacher

> My department views our librarian as a co-teacher. We work with him to develop curriculum [and] 21st century skills. Our teachers co-teach with (him) to deliver the curriculum. He was instrumental in helping our Global Civics students understand how to analyze documents, evaluate the validity of sources, recognize varying perspectives on political, economic and social issues and write an informed essay based on findings. He has worked with my global scholars students to create presentations on global topics using the latest technology so that the presentation can be viewed and discussed with students worldwide.
> - High School teacher





Working closely with the library staff has transformed my classroom environment and curriculum. Collaborative co-planning with the library staff provides clear understandings between us and provides an opportunity to co-teach the lessons. The library staff embeds 21st century skills into my curriculum, ensuring that the Common Core Standards are being met. I return to collaborate in the library for all of my research and multimedia projects, and not just the research paper, because the quality of the lessons far surpasses the kind of lessons that I can provide myself… My biggest success while working with a librarian

is receiving the 2010 ISTE SIGMS Technology Innovation Award, which highlights successful collaboration between a school librarian and classroom teacher.
- High School teacher

Librarians on Library Activities

Generally, librarians are less likely than administrators and teachers to self-assess the library program's—i.e., their own--teaching of 21st Century Learner standards as excellent.

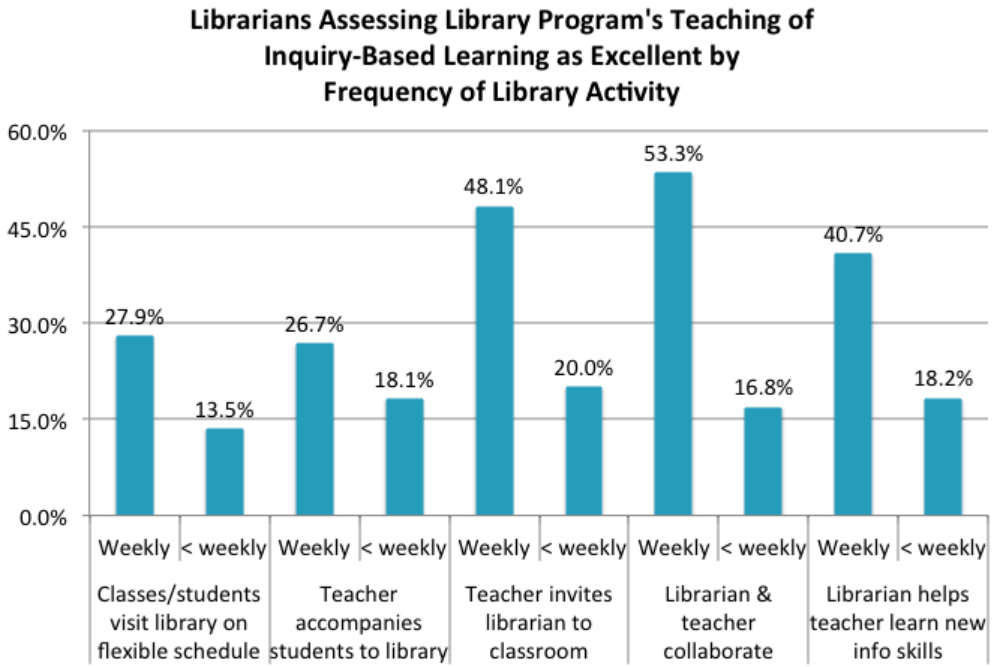
Still—across the four standards and the five activities—librarians who report engaging in key activities at least weekly are dramatically more likely to self-assess their teaching of 21st Century Learner standards as excellent than their peers who report engaging in those activities less than weekly.

The three library activities most strongly associated with "excellent" self-assessments all concern the processes of collaborating with teachers on the design and delivery of instruction.

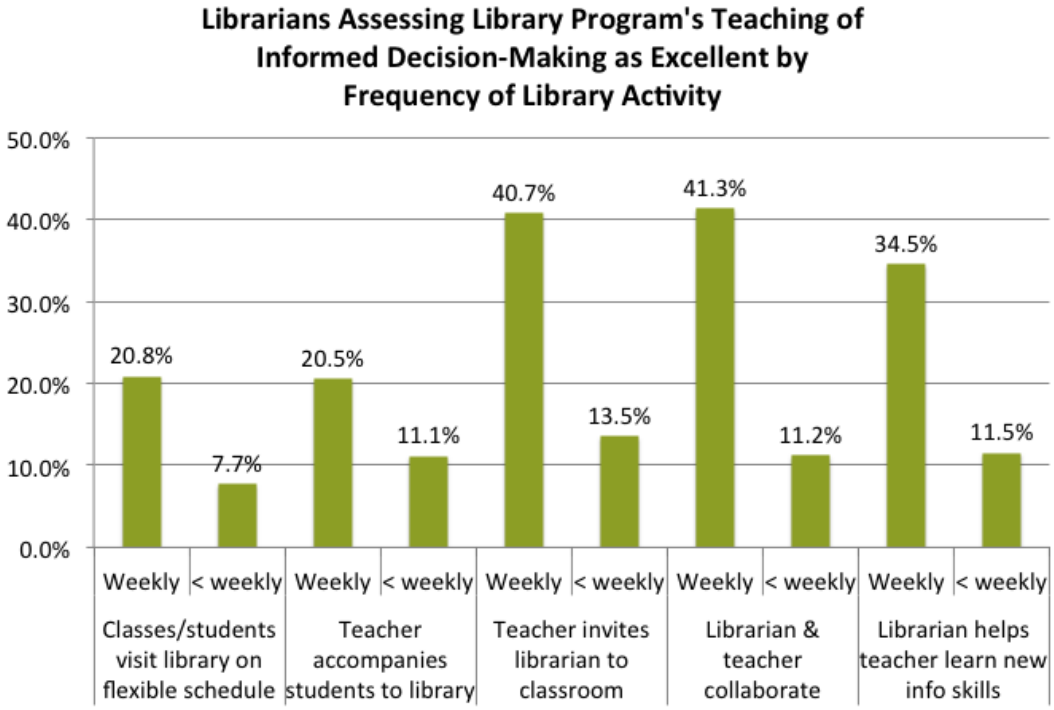
- At least weekly instructional collaboration between librarian and teacher consistently demonstrates the strongest relationship with "excellent" teaching self-assessments by librarians.

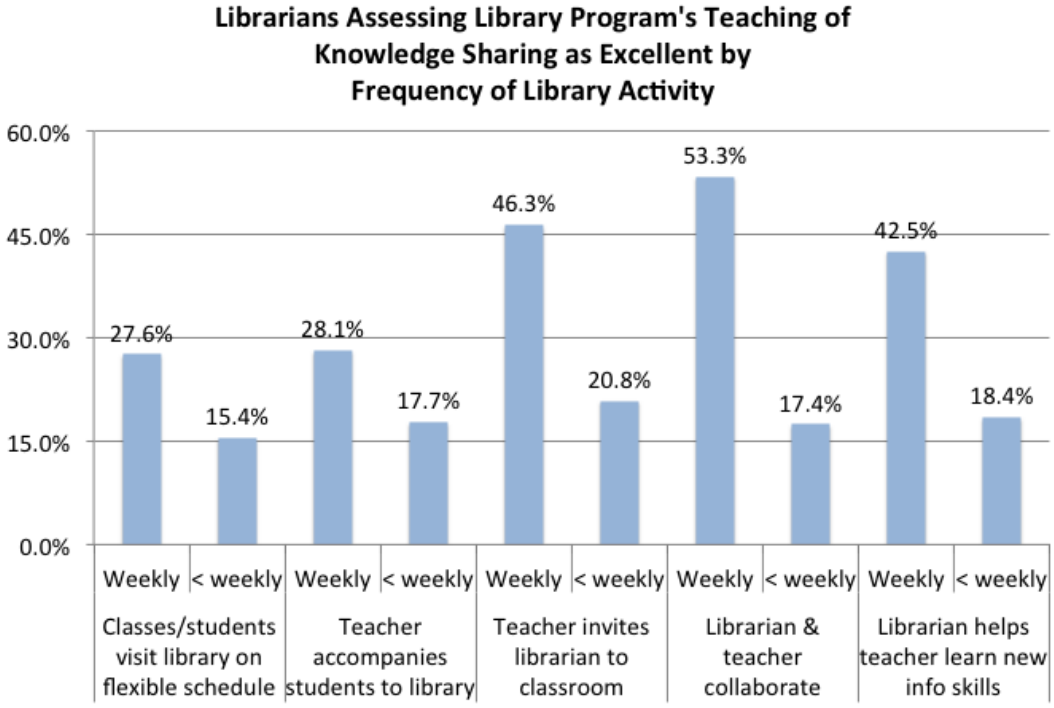
- The next strongest relationships involve teachers inviting their librarian into their classrooms and the librarian helping teachers learn new information skills, both also on at least a weekly basis.

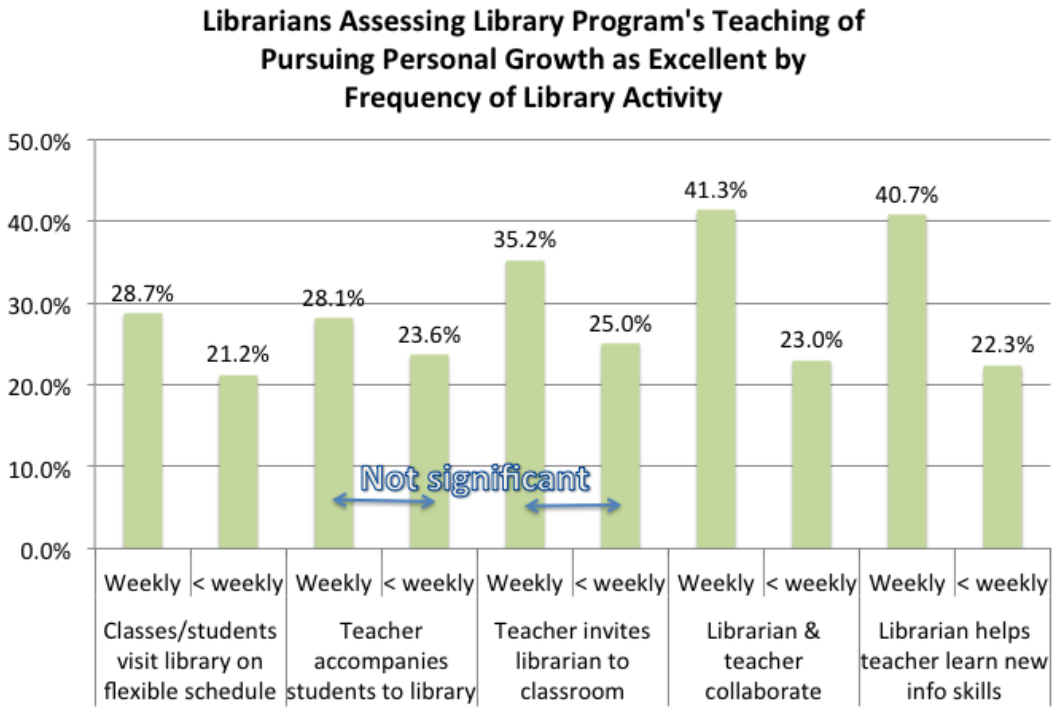
Notably, the only 21st Century Learner standard for which there are any non-significant differences based on frequency of library activities reported by librarians is Pursuing Personal Growth. In that instance, though there are consistent differences in "excellent" teaching self-assessments based on how frequently librarians report teachers accompanying their students to the library and inviting the librarian into the classroom, those differences are not statistically significant.



Note: This and following charts compare 21st Century Learner teaching assessments of librarians who report engaging in selected library activities at least weekly and those who report engaging in those activities less than weekly. Example: Of librarians who report classes or students visiting their libraries on a flexible schedule "at least weekly", 27.9% assess their role in teaching Inquiry-Based Learning as "excellent". By contrast, of librarians who report engaging in that activity less than weekly, only 13.5% assess the library program's role in teaching that standard as "excellent".







Our district offers flexible scheduling in the libraries of all schools, including elementary. The best lessons that occur in my library are those where the teacher is a truly collaborative partner. We plan together, decide which parts of the lesson each of us will teach (or co-teach), plan for some type of formal or informal assessment, and schedule enough time to allow the students to learn and utilize their 21st Century research skills. They also schedule time in the library regularly so that students become familiar and comfortable with using and enjoying the materials. The most library-savvy students I work with are allowed to come to the library often for both class work and to check out materials. These are the students who know how to find things and will search out materials for research and pleasure.
- Elementary School Librarian

Many of the successes in the high school library are seen on an individual basis. Examples include helping a student find that one book that they really want, steering a student who claims they don't like to read to a book that captures their imagination, assisting a student in finding and understanding an information resource for a school project, or helping them learn a new tool for research or presentation…Understanding how to find, use, understand, manage, and present information will be key to the success of our students in the future. Working with teachers to integrate these skills into the content area curriculum projects is something we work on constantly. By doing this, we hope to give our students the skills and thought processes to be critical and thoughtful consumers of information in the future.
- High School Librarian

Administrators, Teachers & Librarians on Library Practices & Activities

The three educator groups—administrators, teachers, and librarians—express considerable consensus about how 21st century school library programs work best.

- When administrators value flexible scheduling of library access and teachers and librarians report it happening more frequently, members of all three groups are more likely to believe library programs do an excellent job of teaching 21st Century Learner standards.

- When administrators value collaboration between librarians and teachers and those educator groups report working together more frequently (i.e., co-teaching as well as working together generally in both library and classroom), they also tend to believe the instructional role of the school library program in teaching standards is "excellent."

- When administrators value librarians being providers of in-service professional development to teachers in their schools and when teachers and librarians report librarians providing this kind of leadership more frequently, assessments of the instructional role of the school library program in teaching standards are most likely to be "excellent."

Librarian Roles

All three groups of educators were asked about the roles librarians play or should play in their schools. Administrators, as key leaders, were asked what roles they desire that librarians play. Teachers were asked what roles their librarians actually play. And librarians were asked in what roles they believe their principals and teachers perceive them.

Administrators on Desired Librarian Roles

- Majorities of administrators who rate library program teaching as "excellent" for all four Standards for the 21st Century Learner express the desire that their librarians play four roles:

    - In-service provider
    - School leader
    - Technology instructor
    - Curriculum designer

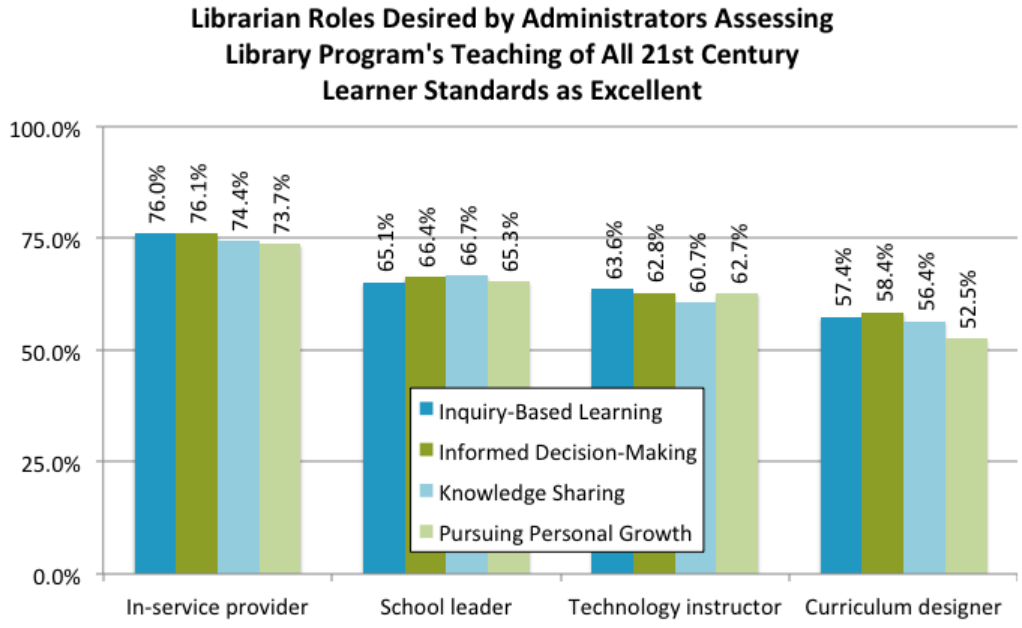
- The in-service provider role is most popular with administrators who believe their library programs do an excellent job of teaching 21st Century Learner Standards.

- Library excellence in teaching these standards is also associated by strong majorities of administrators with the desirability that librarians serve as school leaders and technology instructors, and—to a slightly lesser degree—curriculum designers.

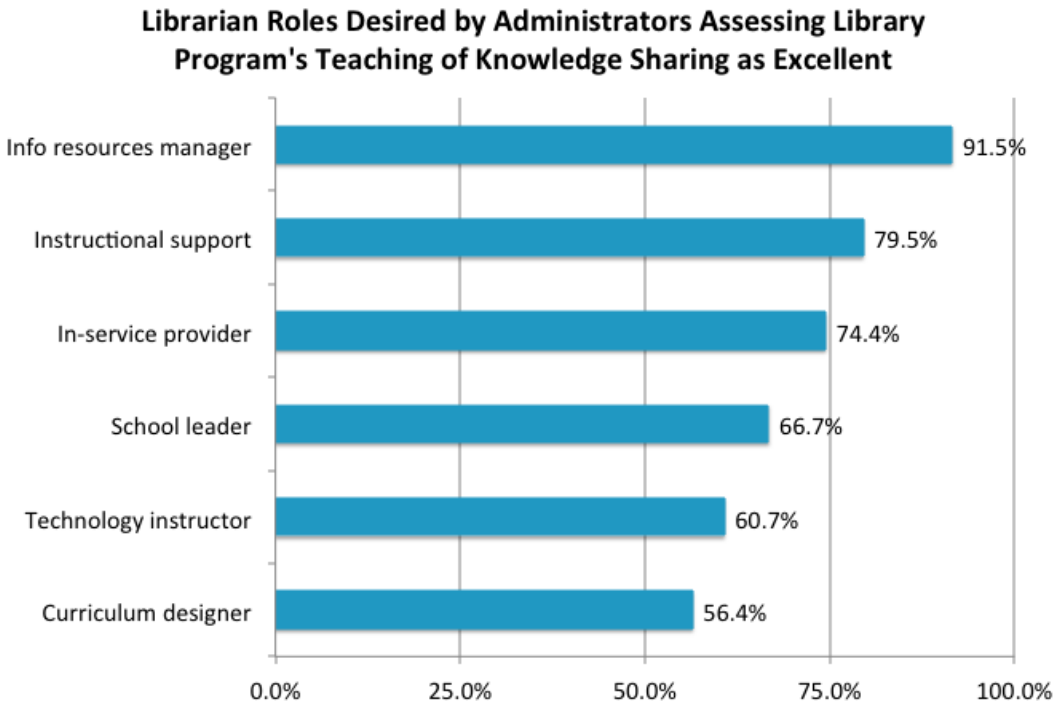
- For the Knowledge Sharing standard, overwhelming majorities of administrators endorse the roles of information resources manager and instructional support, while for Pursing Personal Growth standard, a strong majority of administrators endorse the instructional support role.

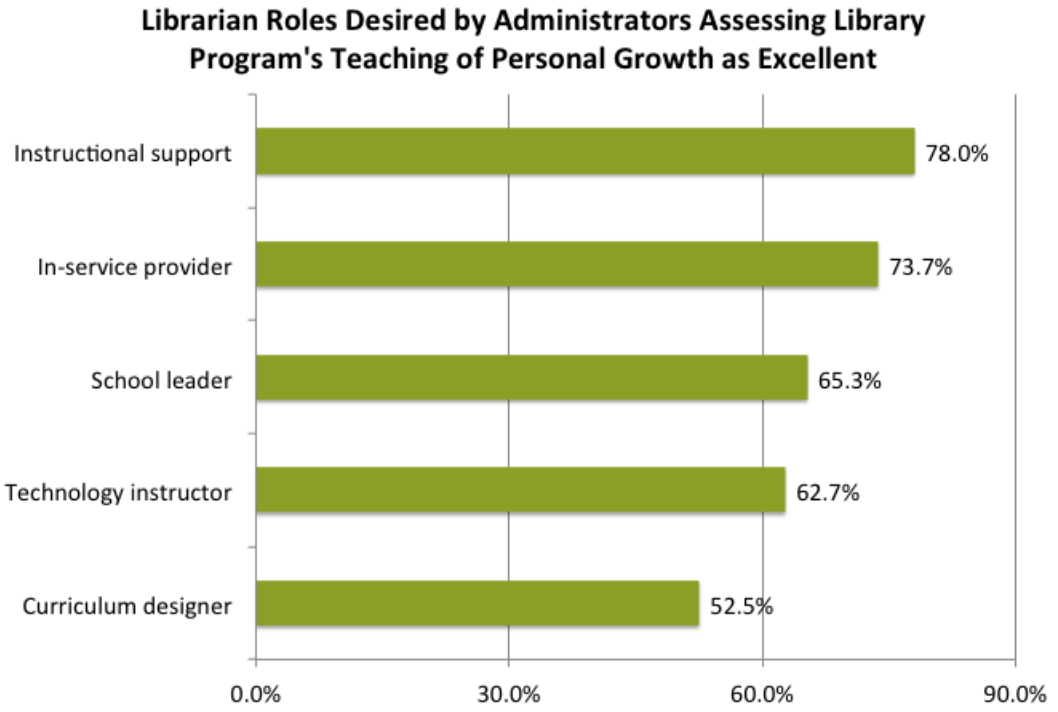
Our school librarian is an educational leader. She routinely collaborates with classroom teachers to integrate 21st century skills across the curriculum. She promotes reading and literacy through a variety of programs including summer reading, Read Across America Week, and a variety of school-based activities that are fun and engaging for students and staff.
- An Elementary School Principal

Our librarian makes every effort to support and help teachers integrate their teaching across the curriculum utilizing the expertise of our librarian. It is an effective and necessary element to provide this opportunity to students for 21st century learning. I can't imagine teachers not having the expertise of a certified librarian to provide assistance and guidance, especially with the element of research.
- An Elementary School Principal



Note: Throughout this section, the focus is on educators who assess the library program's role in teaching 21st Century Learner standards as "excellent". This and following charts for the three educator groups report the percentage of respondents from that group who find desirable a certain librarian role. Example: Of administrators who assess the library program's role in teaching Inquiry-Based Learning as "excellent", 76.0% identify in-service provider as a desirable role for a librarian.





The frequency with which administrators associate excellent library teaching of all 21st Century Learner Standards with four roles—in-service provider, school leader, technology instructor, and curriculum designer—suggests that administrators who experience strong library programs and highly effective librarians understand the cross-cutting nature of the librarian's most influential roles, and the extent to

which they affect all teachers and students, the entire curriculum, and how well technology is integrated with curriculum and instruction.

The desirability of the librarian as an instructional resources manager to almost all administrators who assess library teaching as "excellent" for Knowledge Sharing suggests a recognition of the librarian's role as a facilitator of teaching that standard.

Similarly, administrators who assess library teaching as "excellent" for both Knowledge Sharing and Pursuing Personal Growth seem to acknowledge that the librarian encourages these activities by helping to ensure that teachers know of, and have access to, resources that undergird instruction, whether it is delivered by the teacher, the librarian, or both.

Teachers on Perceived Librarian Roles

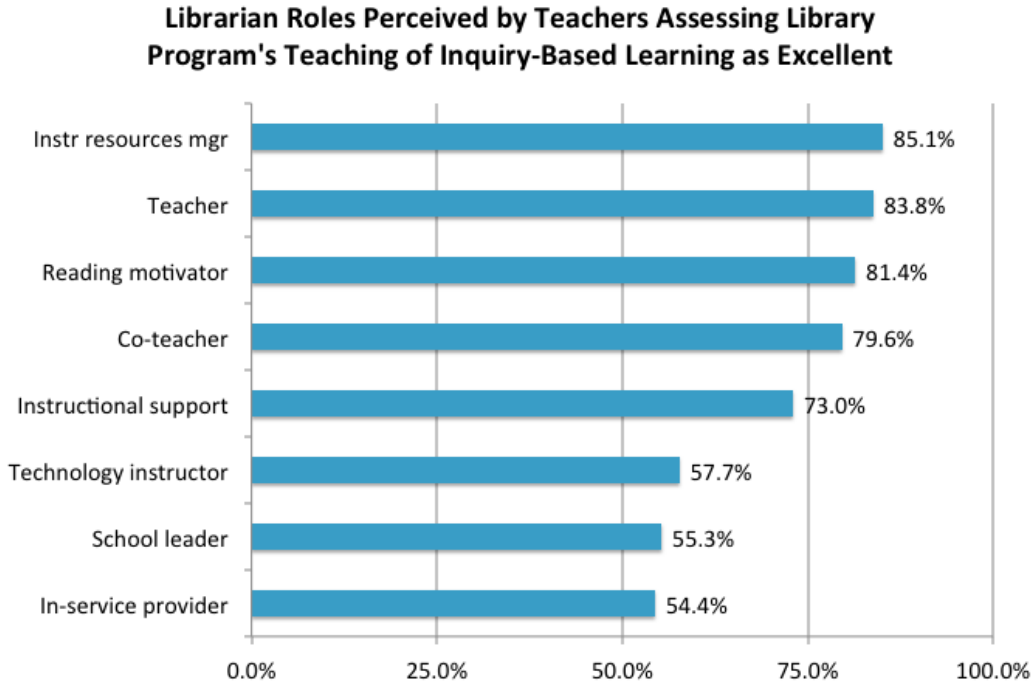
Of teachers assessing the instructional role of the school library program in teaching 21st Century Learner Standards as "excellent," majorities perceive librarians in an even wider array of roles. The frequency with which they identify each perceived role produces the same rank order, regardless of standard.

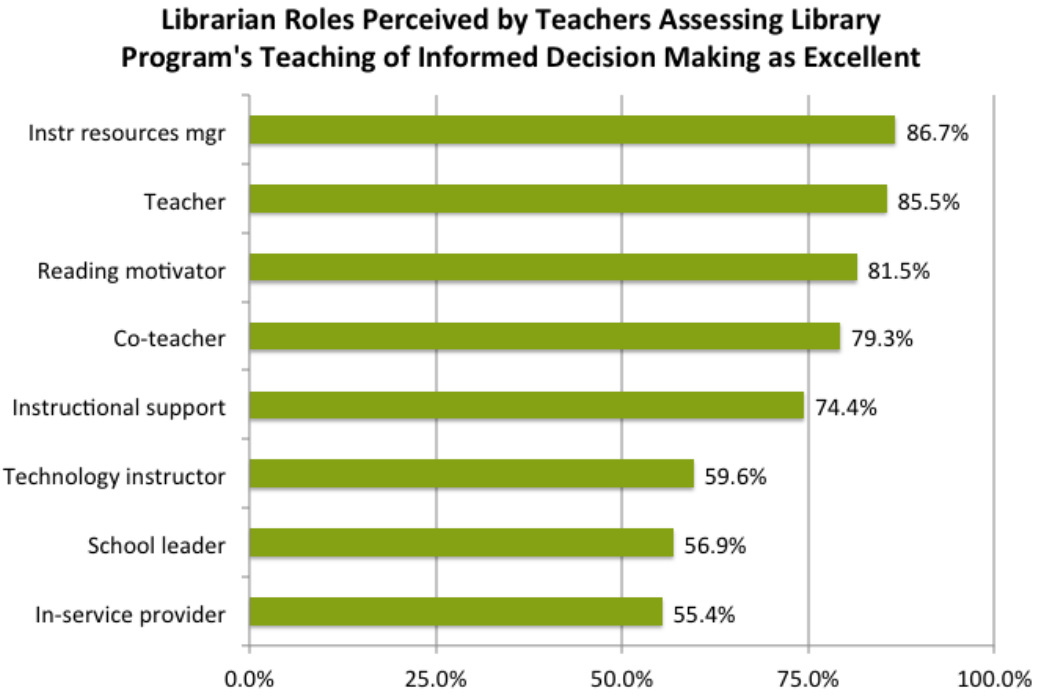
- Very large majorities of these teachers perceive their librarian as:
  - Instructional resources manager
  - Teacher
  - Reading motivator
  - Co-teacher
  - Instructional support

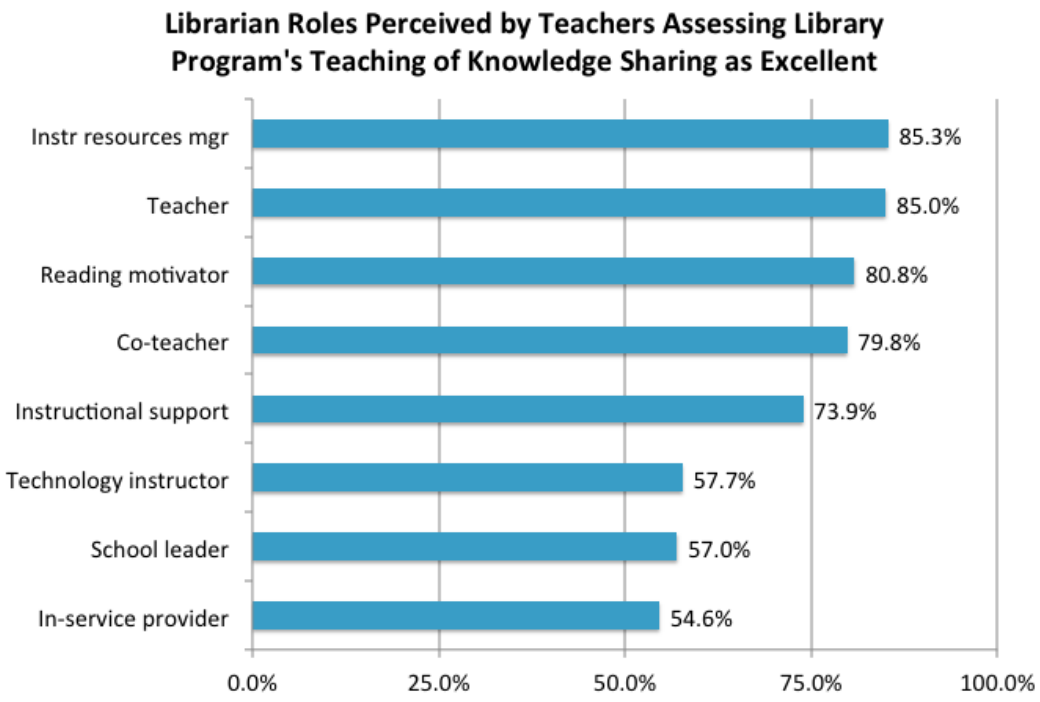
- Smaller majorities of these teachers perceive their librarian as:
  - Technology instructor
  - School leader
  - In-service provider

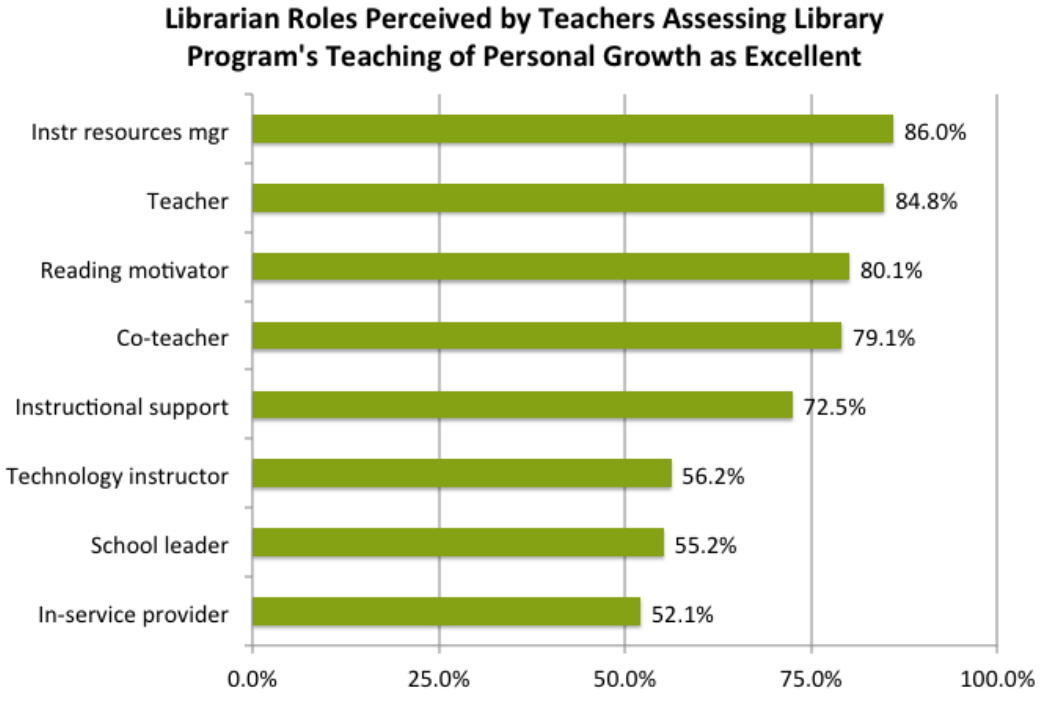
The five most popular roles suggest that these teachers are most keenly aware of the impact of roles that affect both themselves and their students (teacher, co-teacher), roles that primarily affect their own teaching effectiveness (instructional resources manager, instructional support), and roles that primarily affect their students, especially the most needy ones (reading motivator).

Though smaller majorities of these teachers endorse the other three of the four roles desired by administrators (technology instructor, school leader, in-service provider), this does constitute some acknowledgement from teachers who have experienced more effective 21st century school library programs that the librarian plays a larger leadership role in the school—one that extends beyond the librarian's more immediate impact on instruction of students. The librarian is also a teacher of teachers.


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of Inquiry-Based Learning as Excellent
Instr resources mgr
Teacher
Reading motivator
Co-teacher
Instructional support
Technology instructor
School leader
In-service provider
85.1%
83.8%
81.4%
79.6%
73.0%
57.7%
55.3%
54.4%
0.0%
25.0%
50.0%
75.0%
100.0%


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of Informed Decision Making as Excellent
Instr resources mgr
Teacher
Reading motivator
Co-teacher
Instructional support
Technology instructor
School leader
In-service provider
86.7%
85.5%
81.5%
79.3%
74.4%
59.6%
56.9%
55.4%
0.0%
25.0%
50.0%
75.0%
100.0%


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of Knowledge Sharing as Excellent
Instr resources mgr
Teacher
Reading motivator
Co-teacher
Instructional support
Technology instructor
School leader
In-service provider
85.3%
85.0%
80.8%
79.8%
73.9%
57.7%
57.0%
54.6%
0.0%
25.0%
50.0%
75.0%
100.0%


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of Personal Growth as Excellent
Instr resources mgr
Teacher
Reading motivator
Co-teacher
Instructional support
Technology instructor
School leader
In-service provider
86.0%
84.8%
80.1%
79.1%
72.5%
56.2%
55.2%
52.1%
0.0%
25.0%
50.0%
75.0%
100.0%

I teach reading, and I wanted to change up the independent novel reading unit that I have done in the past to incorporate more of the 21st century skills. (So) I called our librarian and within a ten-minute conversation, (she) had talked me through setting up blogs for my students so they can post not only their reactions and thoughts but also respond to those of their classmates…. she has also helped me to select some of the best new literature for literature circles in the tenth grade classrooms, and is the "go-to" source for finding literature that will appeal to our students… the impact that she has had on our school cannot be truly conveyed. She has revitalized the library and fostered a genuine love of reading among both our students and our faculty -- including the faculty book club (which she started).
- High School teacher

Librarians on Librarian Roles Attributed to Principals & Teachers

When asked to report how they believe their principals and teachers perceive them, librarians who self-assess their teaching of 21st Century Learner Standards as "excellent" agree with their administrators and teacher colleagues about different roles.

For all four 21st Century Learner standards, excellent teaching self-assessments are most consistently linked with beliefs that principals and teachers perceive them as:

- In-service provider
- Instructional resources manager
- Instructional support
- Reading motivator
- School leader
- Teacher
- Technology instructor

When these librarians' responses are compared to those of corresponding administrators and teachers, however, it is apparent that librarians agree with administrators about some roles and with teachers about other roles.

- Teachers and librarians who assess library teaching of 21st Century Learner Standards as "excellent" are more likely to agree about the roles more immediately associated with instruction: instructional resource manager, instructional support, reading motivator, and teacher.

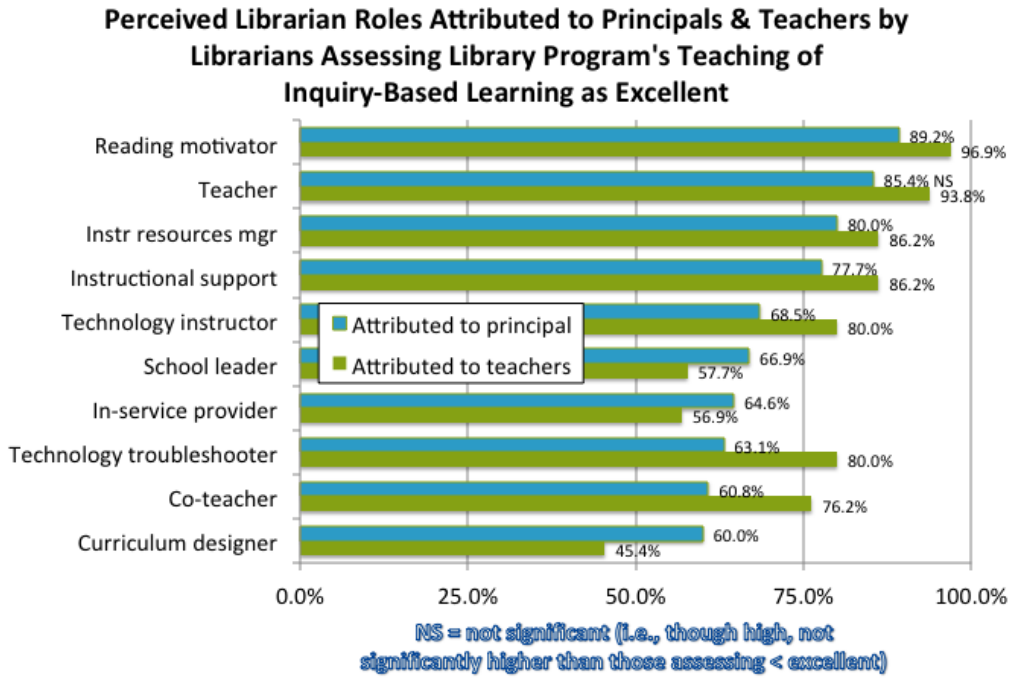
- Administrators and librarians who assess such library teaching as "excellent" are more likely to agree about the larger roles played by the librarian: in-service provider, school leader, and technology instructor.

Generally, librarians who self-assess their 21st Century Learner standards teaching as "excellent" are slightly more likely to attribute most librarian roles to teachers than administrators, but there are notable exceptions:

- Compared to other roles, these librarians are far more likely to attribute two roles to teachers than principals: co-teacher and technology troubleshooter. Perhaps this discrepancy points to what these librarians perceive as a reality gap between principals and teachers. Principals might be expected to value these roles; but teachers are the ones their librarian colleagues can be sure will value them highly, as they might have the strongest and most frequent impact on the teacher's own work experience. Indeed, when responses from administrators and teachers making similar assessments were examined, that tended to be true.

- Conversely, these librarians expect that their administrators are more inclined to see them in certain roles than their teacher colleagues. Those roles are school leader, in-service provider, and curriculum designer. Again, when responses from other educators making similar assessments were examined, that was found to be true.

Notably, isolated role results for librarians proved not to be statistically significant (NS in the following charts), but this is most likely because of the aforementioned fact that librarians were the least likely of the three groups to assess library teaching of 21st Century Learner Standards as "excellent." These rare failures to achieve statistical significance can most likely be trace to the small numbers of librarians self-assessing their teaching as "excellent."

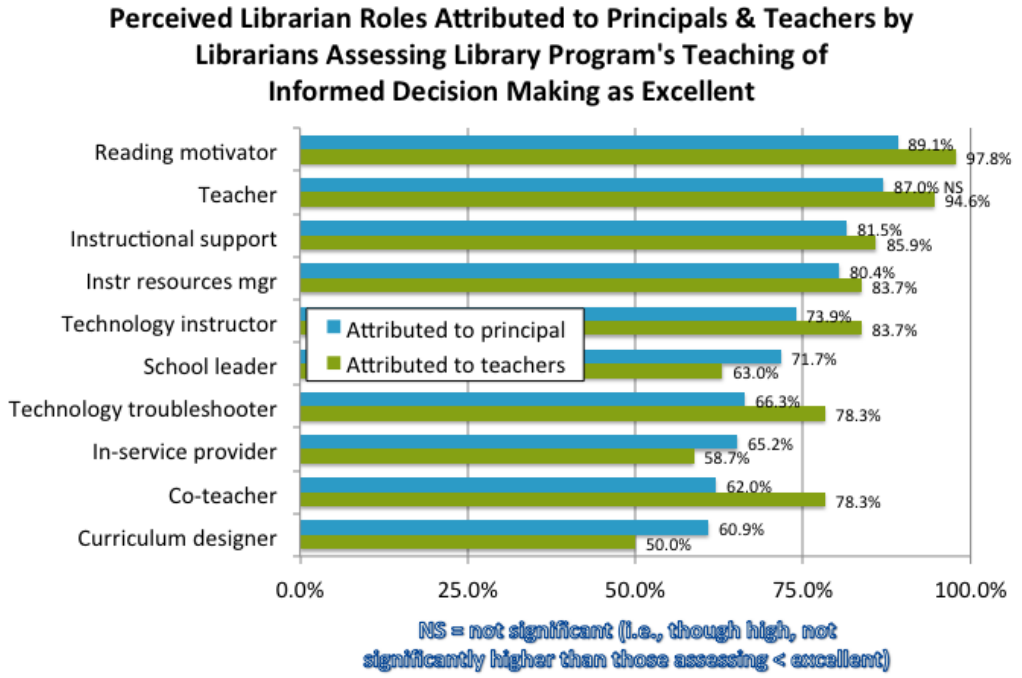


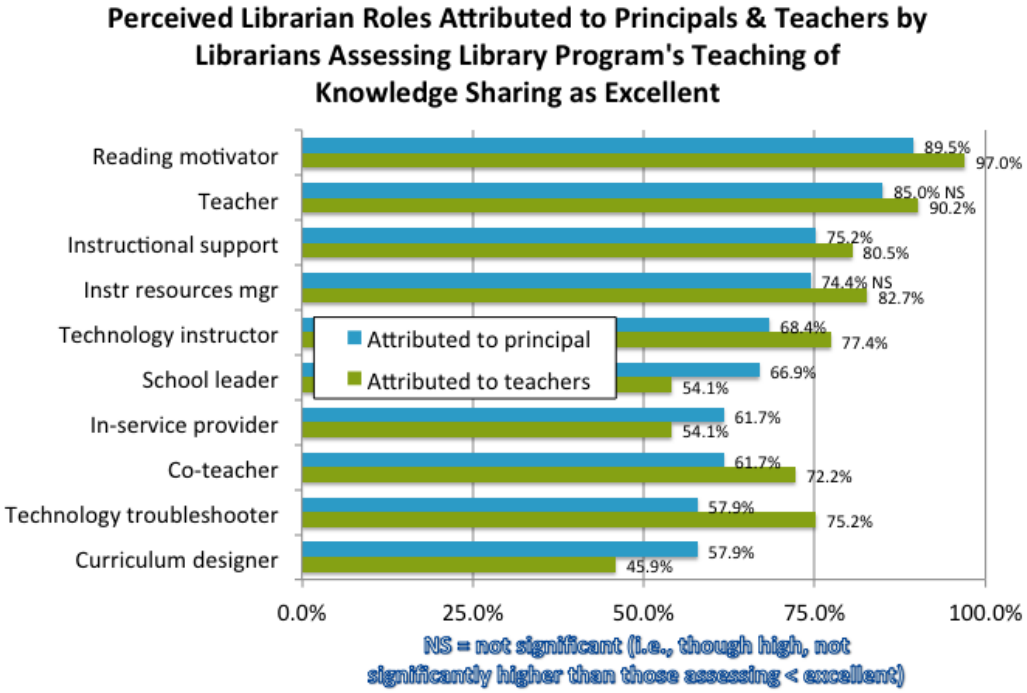
A successful library program reaches out on all levels. You know it works when classroom teachers are excited about using a new database that you helped to purchase and implement, … when a classroom of students actually applaud when learning how to easily locate information for a project, and … when a struggling reader is returning a book, and with face aglow says, "This is the BEST book ever!"
- Elementary School Librarian

I am the librarian, so choosing just one story of success is very difficult. Every time a student who "does not like to read" finds a book of interest on my shelves, with or without my help, it is success. Every time I can work with a teacher to provide the best pool of resources for a project and students are therefore able to present a project that exceeds the standard, it is success. Every time I can show a teacher an easier way to do something with some technology we work with every day, it is success. Each encounter with a student that results in increased … literacy, self-awareness or dedication to a goal is success.
- Middle High School Librarian

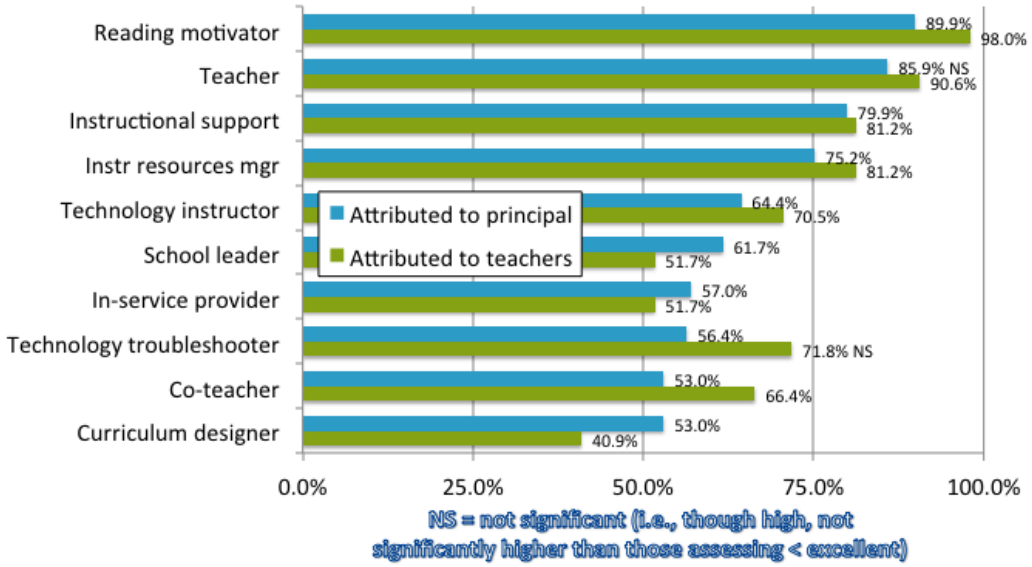
As a Library Media Specialist, I believe that I encourage life-long learning by providing a wide variety of information sources and by instructing both students and faculty in effective information seeking strategies.

By providing these tools and instructions, I hope to help produce independent learners who have a thirst for knowledge and the skills necessary in obtaining answers and solving problems throughout their lives… We have entered an age of an information revolution… Whereas the 20th century librarian was a master of information, the 21st century librarian is a digital path leader and an instructor of transliteracy: that is, the ability to be literate across multiple media.
- High School Librarian





Perceived Librarian Roles Attributed to Principals & Teachers by Librarians Assessing Library Program's Teaching of Personal Growth as Excellent



Administrators, Teachers & Librarians on Librarian Roles

Generally, educators who assess the library program's instructional role in teaching 21st Century Learner standards as "excellent" in their schools tend also to be the ones who associate librarians with key school leadership roles. For administrators, this especially includes roles that affect the larger school environment—school leader, technology instructor, and in-service provider. For teachers and librarians, favored roles have the most direct effects on the teaching and learning experiences—co-teacher, instructional resources manager, instructional support, and teacher.

Summary

The analysis presented in this chapter documents the strong associations between how well educators—administrators, teachers, and librarians—believe their library programs teach 21st Century Learner Standards, on the one hand, and, on the other:

- the library practices administrators value
- the library activities teachers and librarians report engaging in most frequently
- librarian roles desired by administrators, perceived by teachers, and expected from principals and teachers by librarians.

The following chapter presents a parallel analysis, exploring the relationships between these three sets of factors and educators' assessments of the library program's instructional role in teaching PA/Common Core Standards.

Chapter 9. PA/Common Core Standards

The Common Core State Standards Initiative has been underway since 2009[1], and the Pennsylvania State Board of Education adopted the Common Core standards for English Language Arts, including literacy (i.e., Reading and Writing) in History/Social Studies and Science and Technical Subjects and an over-arching concern for College and Career Readiness. Implementation of those standards began during the 2010-11 school year; but they will not be fully implemented until July 2013.[2]

English Language Arts

English Language Arts standards address reading and writing, speaking and listening, and language. At both elementary (grades 1 to 5) and secondary levels (Grades 6 to 12), these standards include mastery of literature and informational texts as well as foundational skills.

Reading and Writing in History/Social Studies and Science & Technical Subjects

For the secondary level (grades 6 to 12), there are also Reading and Writing standards for two specific content areas: History/Social Studies and Science and Technical Subjects. These standards include mastering, in those specific contexts, such matters as: discipline-specific language (i.e., words, phrases, and symbols); visual information (i.e., charts, maps, photographs, video); types of research methodologies, findings, and modes of presentation (e.g., exploration, description, analysis); and venues for communication (e.g., reviewed articles, websites, multimedia distribution).

Reading and Writing in College & Career Readiness

While English Language Arts is the librarian's strongest general area of concern in PA/Common Core standards, and literacy in History/Social Studies and Science and Technical Subjects are particular contexts in which to master such language skills, College and Career Readiness is a general concern in the standards that cuts across these three other areas. Generally, while the specific PA/Common Core standards for English Language Arts and Reading and Writing in specific subject areas identify milestones at each grade level and individual grade, there are also corresponding "anchor" standards which describe ultimate expectations of students in the longer-term perspective of College and Career Readiness.

The three educator groups—administrators, teachers, and librarians—were asked to assess how well their library programs teach each of these standards. They were also asked about key library practices or activities and about librarian roles in their schools.

Throughout this chapter, the findings are illustrated by quotes offered by respondents to the project's surveys.

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[1] National Governors Association, *Fifty-One States and Territories Join Common Core State Standards Initiative* [press release], September 1, 2009, accessed at: http://www.nga.org/cms/home/news-room/news-releases/page_2009/col2-content/main-content-list/title_fifty-one-states-and-territories-join-common-core-state-standards-initiative.html.

[2] Pennsylvania Department of Education, Common Core State Standards, accessed at: http://www.portal.state.pa.us/portal/server.pt/community/current_initiatives/19720/common_core_state_standards/792440, September 18, 2012.

Library Practices & Activities

Administrators were asked how much they value key library practices associated with academic achievement and student learning. Teachers and librarians were asked how frequently they participated in selected activities related to those practices. Administrators were asked about their values, rather than actual practices, on the assumption that their beliefs about school libraries and librarians—apart from actual policies and practices—exert a powerful impact on the culture of the school. For administrators, response options included: "essential", "highly desirable", "desirable", "not desirable", and "don't know/need more information". Teachers and librarians were asked about the frequency of activities on the assumption that they are in the best position to know what is actually happening and how that might be affecting the learning environment. For teachers and librarians, response options included: "at least weekly", "at least monthly", "at least once per semester", "at least annually", and "rarely/never".

Administrators on Library Practices

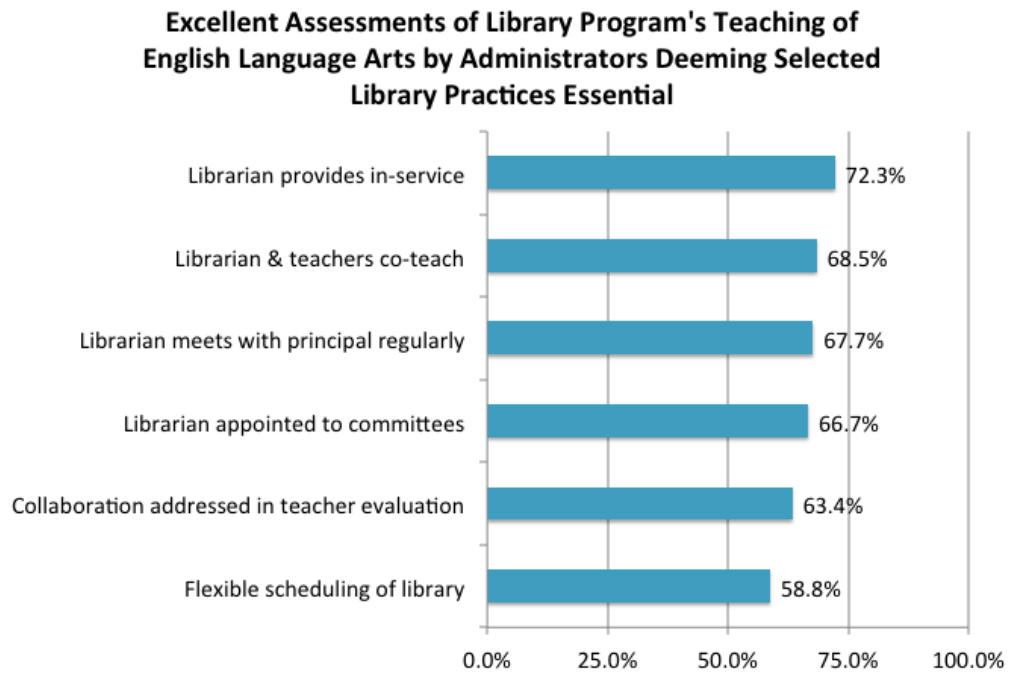
When asked how much they value key library practices, strong majorities of administrators assess six practices as "essential" for achieving English Language Arts standards:

- Librarian provides in-service
- Librarian meet w/principal
- Librarian appointed to committees
- Librarian & teacher co-teach
- Flexible scheduling
- Librarian-teacher collaboration addressed in teacher evaluation

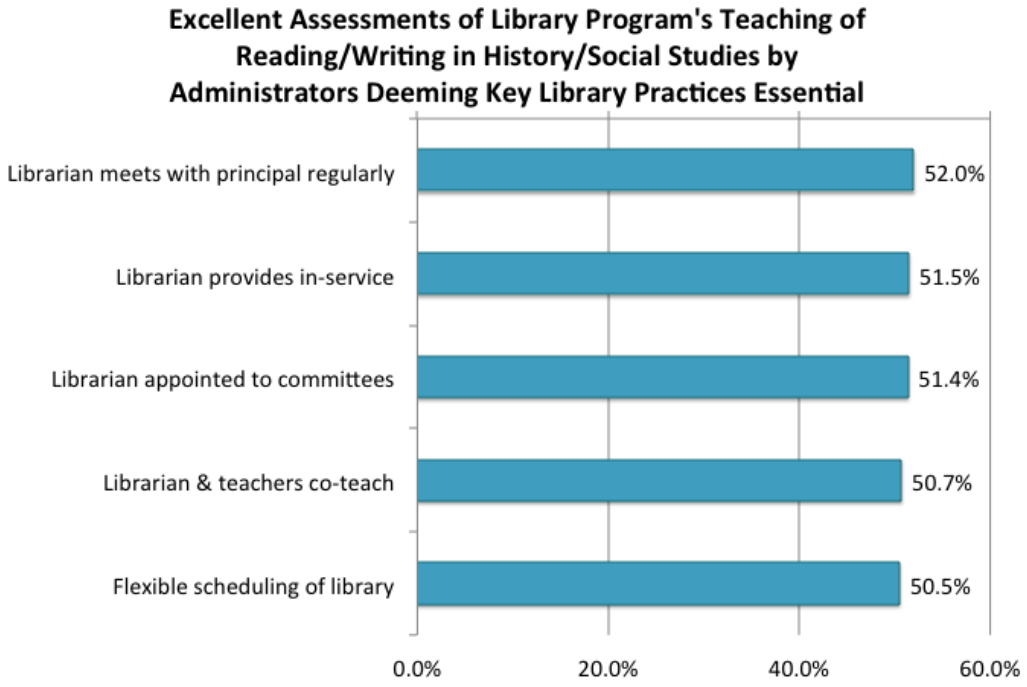
Majorities of these administrators also identify the first five of those practices as "essential" for achieving Reading/Writing in History/Social Studies standards.

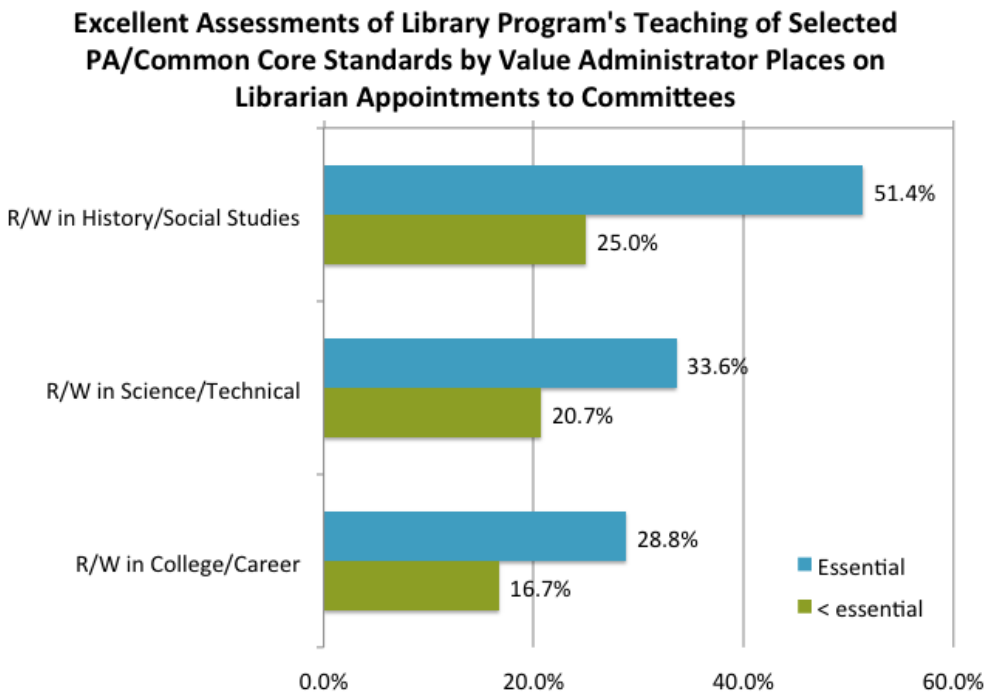
In addition, administrators who value appointing librarians to school committees as "essential" are also far more likely to assess the instructional role of the school library program as "excellent" for teaching Reading and Writing in Science and Technical Subjects and College and Career Readiness.

> Our librarian, along with other district librarians, presented the Big 6 research model to the district's English Language Arts curriculum committee. With their assistance and guidance, this research model has been adopted by the district as our official research model for the elementary and secondary level. The elementary level will incorporate the Super 3 research model (based on the Big 6). In our Intermediate High School, we utilize the librarian as a teacher/facilitator for the staff and students. Our librarian works closely with all content teachers so that a research project or paper can be incorporated into any area. The belief is that information literacy and reading strategies are not for the English Language Arts classroom only. I have personally observed many teachers who have incorporated various reading strategies presented on professional development days into their lessons. I know our librarian is making an impact when science and social studies teachers (are) utilizing what they have learned from a seminar our librarian has conducted.
> - An Intermediate High School Vice or Assistant Principal



Note: This and following charts focus on assessments of the library program's instructional role in PA/Common Core standards from administrators who deem selected library practices as "essential". Example: Of administrators who deem it essential that their librarian provides in-service opportunities to teachers, 72.3% assess their library program's contribution to teaching English Language Arts as "excellent".





Note: This chart compares assessments of administrators who deem appointing librarians to committees "essential" and less than essential (i.e., "highly desirable", "desirable", "not desirable", and "don't know/need more information". Example: Of administrators who deem appointing librarians to committees "essential", 51.4% assess the library program's role in teaching Reading/Writing in History/Social Studies as "excellent". By contrast, of administrators who deem librarians on committees as less than essential, only 25.0% assess the library program's role in teaching that standard as "excellent".

Teachers on Library Activities

Across the four PA/Common Core standards, teachers who report more frequent engagement in key library activities are consistently more likely to assess the library program's teaching as "excellent."

From the perspective of teachers, as with 21st Century Learner standards, the frequency of library activities associated with excellent assessments of the library program's teaching of PA/Common Core standards varies from one activity to another.

At least weekly activities associated with "excellent" teacher assessments of the library's instructional role in teaching PA/Common Core standards are:

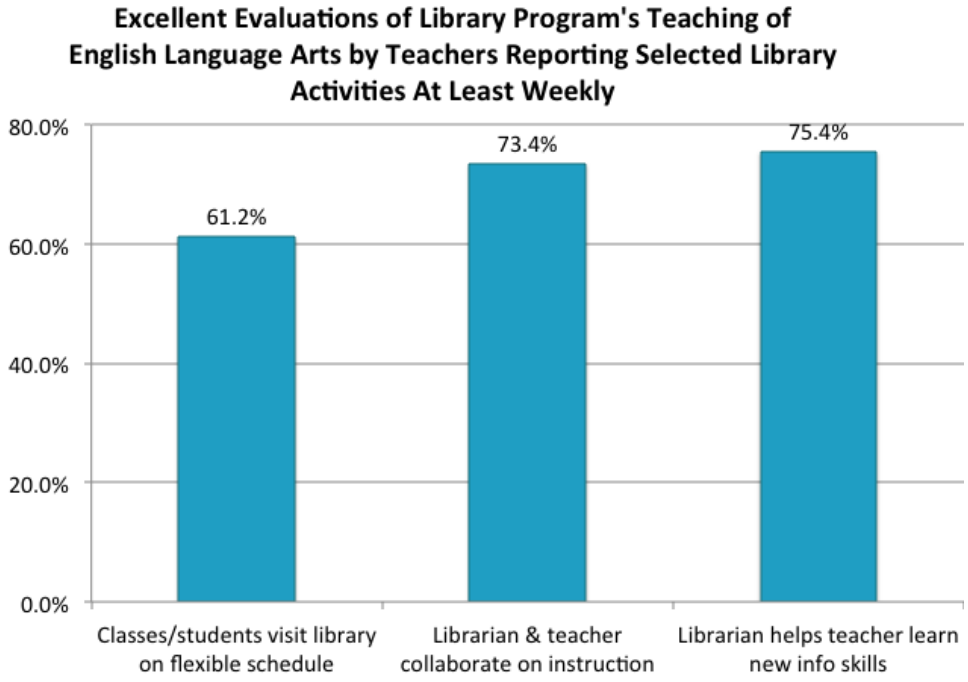
- Classes/students visit library on flexible schedule
- Librarian and teacher collaborate on instruction
- Librarian helps teacher learn new information-seeking skills

At least monthly activities associated with "excellent" teacher assessments of the library's instructional role in teaching PA/Common Core standards are:

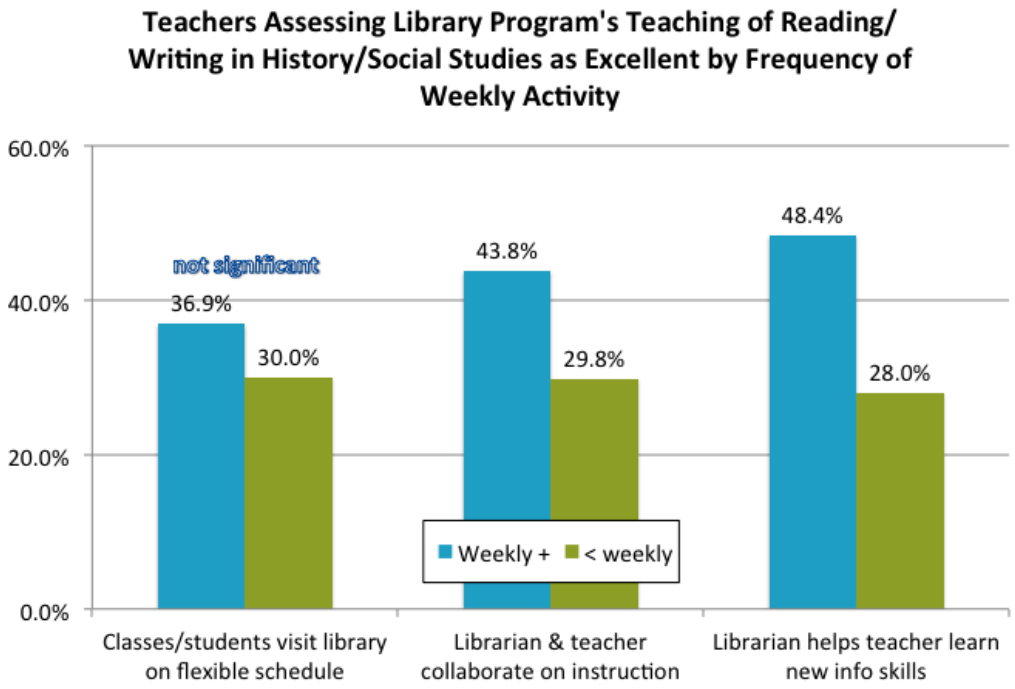
- Teacher accompanies students to library and remains with them
- Teacher invites librarian to classroom

Our school librarian is the most dedicated person in the building, and probably the most creative and intelligent, too… I constantly work with her to co-teach classes, to find ideas and resources for projects, and to be provided with technology support ... She works tirelessly to get subscriptions for online databases and to teach the students in our 4-5-6 building the proper way to locate and apply information. She recently taught my fifth graders how to evaluate web sites we were using for a project about Mars. It was an excellent lesson that I then expanded upon in the classroom. As the budget continues to be cut, she looks for sources for more books and more information while being the librarian for a student body of 1015 students and about 100 staff members ... in our building the library is really the center of the school, and most learning flows through the library.
- Elementary School teacher

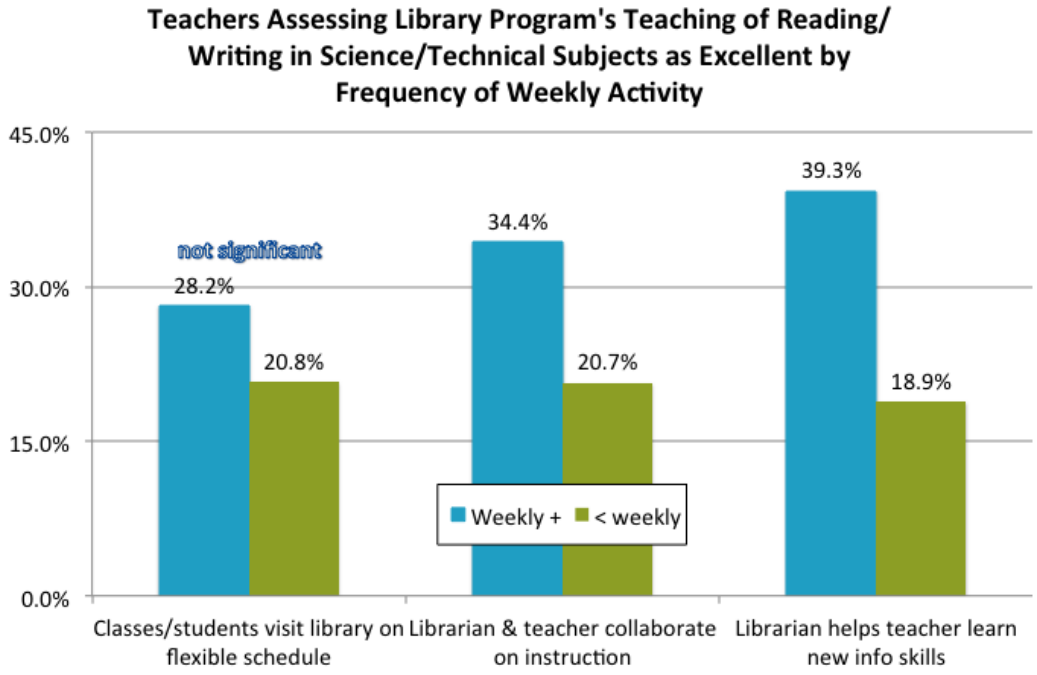
Our librarian … monthly sends out a newsletter with all the new computer programs and sources available to us, and directions on how to use them. Additionally, when I bring my students to the library to conduct research, she is readily available to both the students and myself to help with the research process, technology support, and other essential tidbits of information to help the students achieve success…. at least twice a year, (we) co-teach lessons where I will provide the content knowledge for the assignment and she will teach the research piece. We plan together each year for these classes and there are always new pieces added to update the information the students are receiving.
- High School teacher

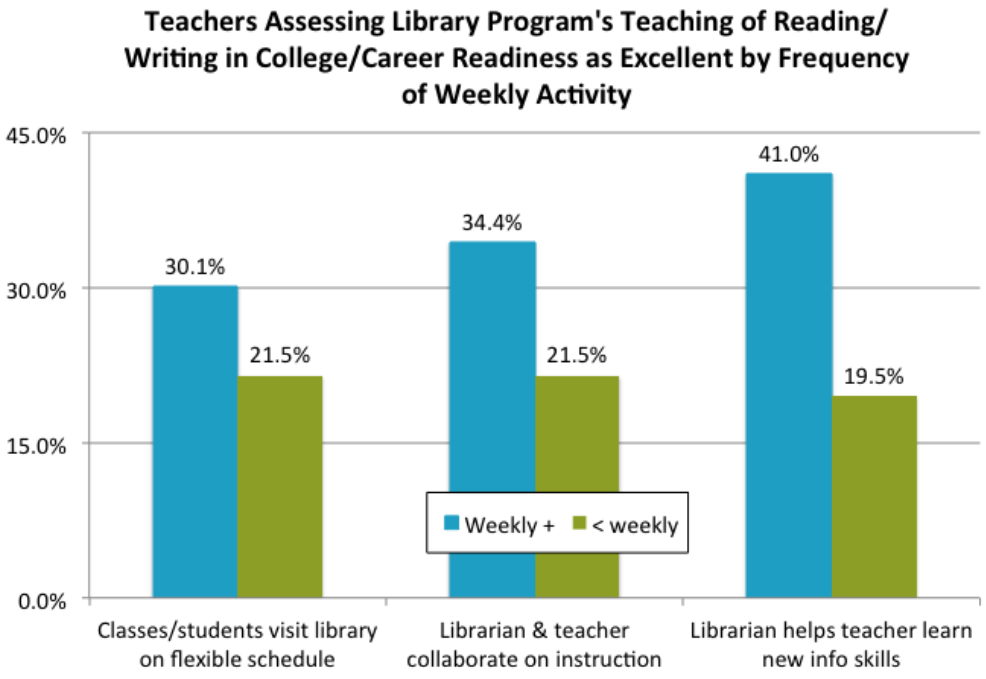


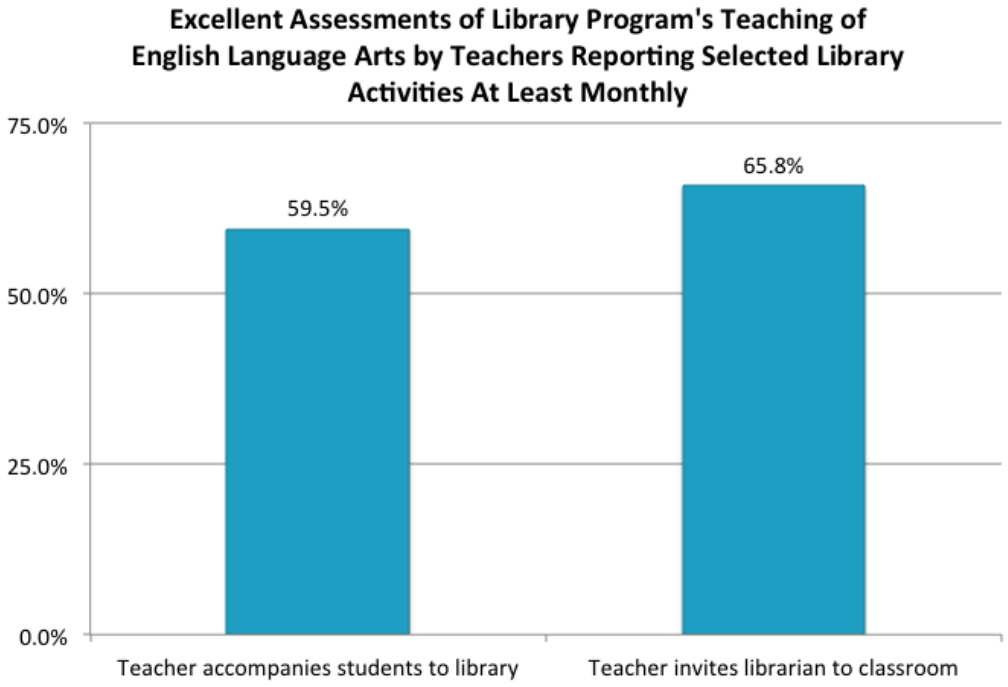
Note: This chart focuses on teachers who report engaging in selected library activities at least weekly and how their assessments of library program "excellence" in teaching English Language Arts vary, depending on their engagement in those activities. Example: Of teachers who report that their classes or students visit the library on a flexible schedule "at least weekly", 61.2% assess their library program's instructional role in teaching English Language Arts as "excellent".



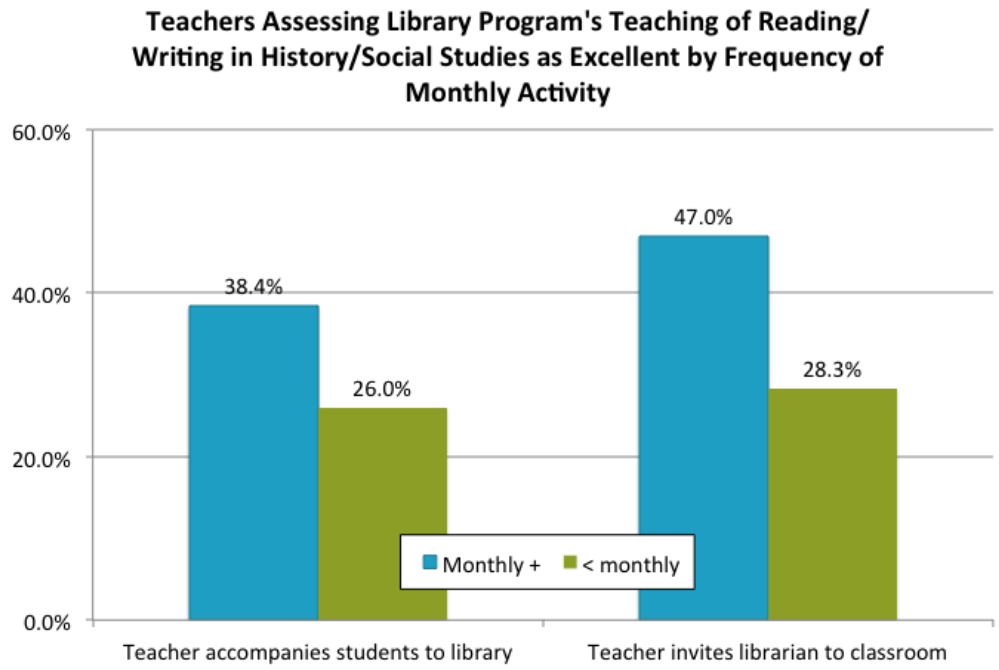
Note: This chart compares assessments of teachers who report engaging in selected library activities at least weekly and those who report engaging in those activities less than weekly. Example: Of teachers who report collaborating with their librarians on instruction "at least weekly", 43.8% assess the library program's role in teaching Reading/Writing in History/Social Studies as "excellent". By contrast, of teachers who report engaging in that activity less than weekly, only 29.8% assess the library program's role in teaching that standard as "excellent".



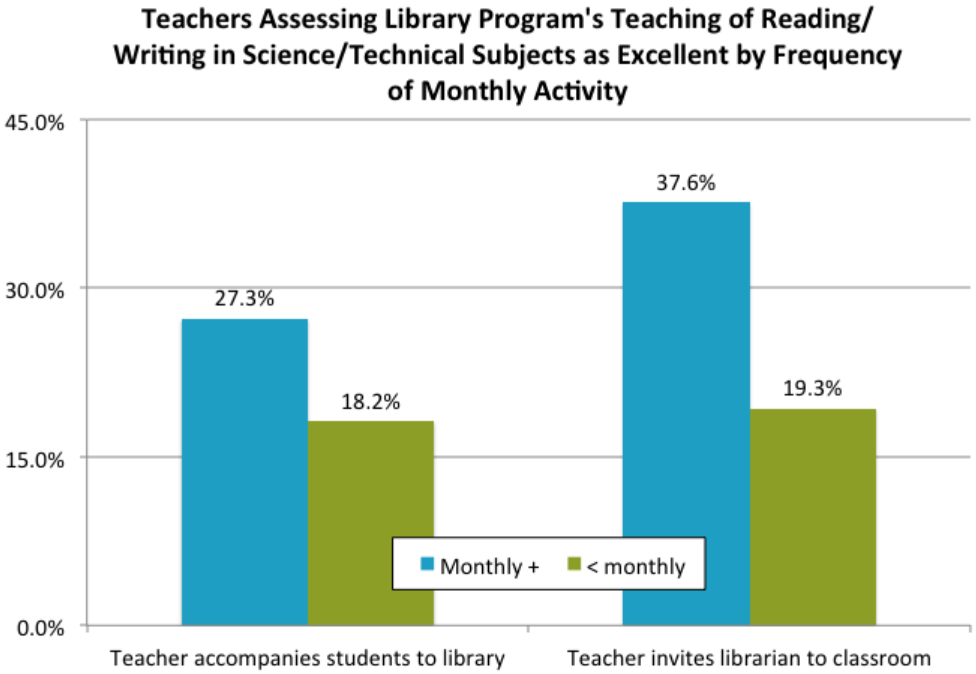


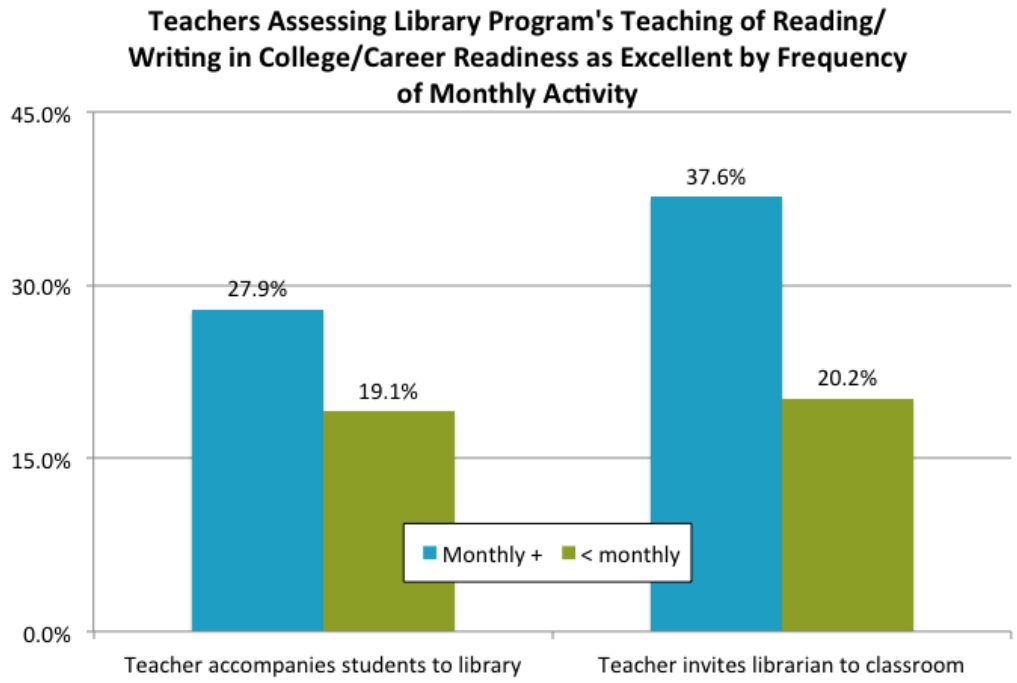


Note: This chart reports "excellent" assessments of teachers who report engaging in selected library activities at least monthly. Example: Of teachers who report teachers accompanying their students to the library "at least monthly", 59.5% assess the library program's role in teaching English Language Arts as "excellent".



Note: This chart compares assessments of teachers who report engaging in selected library activities at least monthly and those who report engaging in those activities less than monthly. Example: Of teachers who report collaborating with their librarians on instruction "at least weekly" or "at least monthly", 38.4% assess the library program's role in teaching Reading/Writing in History/Social Studies as "excellent". By contrast, of teachers who report engaging in that activity less than monthly, only 26.0% assess the library program's role in teaching that standard as "excellent".





Librarians on Library Activities

Generally, as with 21st Century Learner standards, librarians are less likely than administrators and teachers to self-assess their own librarians as "excellent" in teaching PA/Common Core standards.

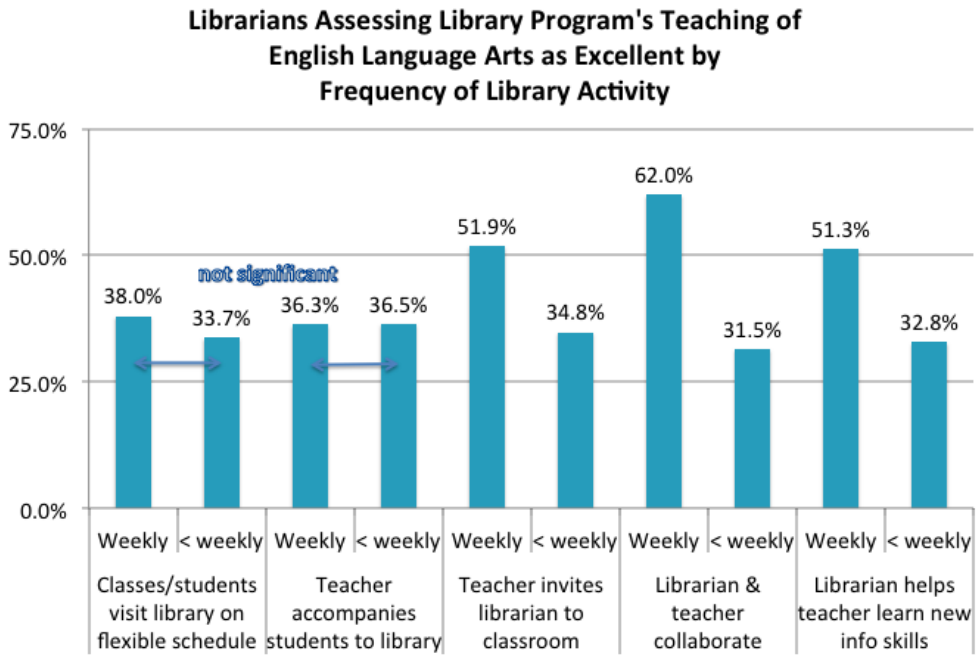
Still—across the four standards and the five activities—librarians who report engaging in key activities at least weekly are dramatically more likely to self-assess their teaching of PA/Common Core standards as "excellent" than their peers who report engaging in those activities less than weekly.

As with 21st Century Learner standards, the three library activities most strongly associated with "excellent" self-assessments on PA/Common Core standards concern the processes of collaborating with teachers on the design and delivery of instruction.

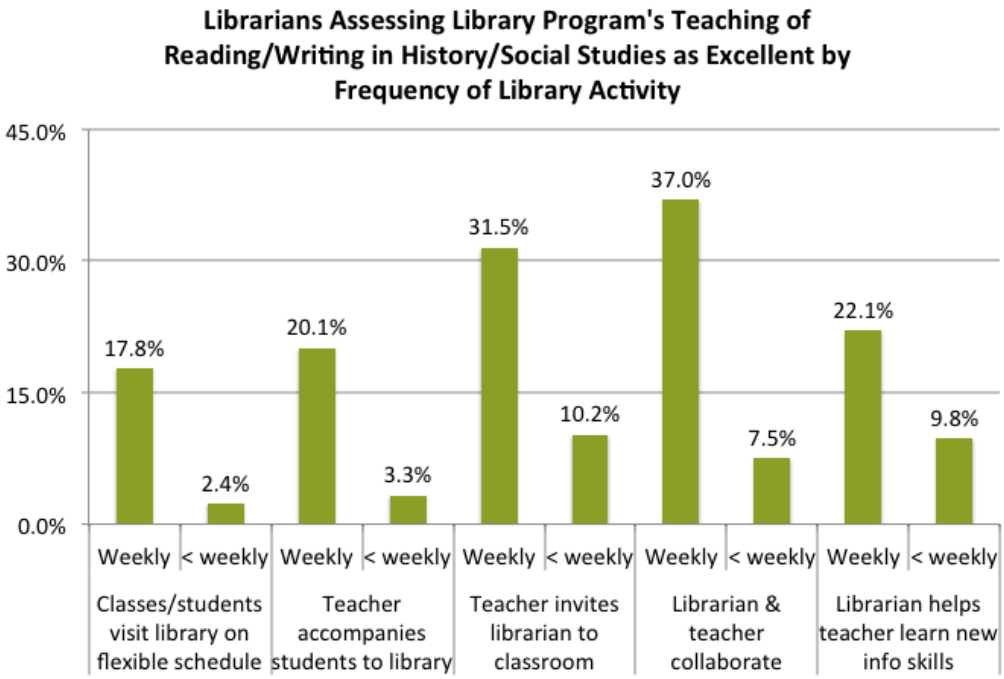
- At least weekly instructional collaboration between librarian and teacher consistently demonstrates the strongest relationship with "excellent" teaching self-assessments by librarians.
- The next strongest relationships involve teachers inviting their librarian into their classrooms and the librarian helping teachers learn new information skills, both also on at least a weekly basis.

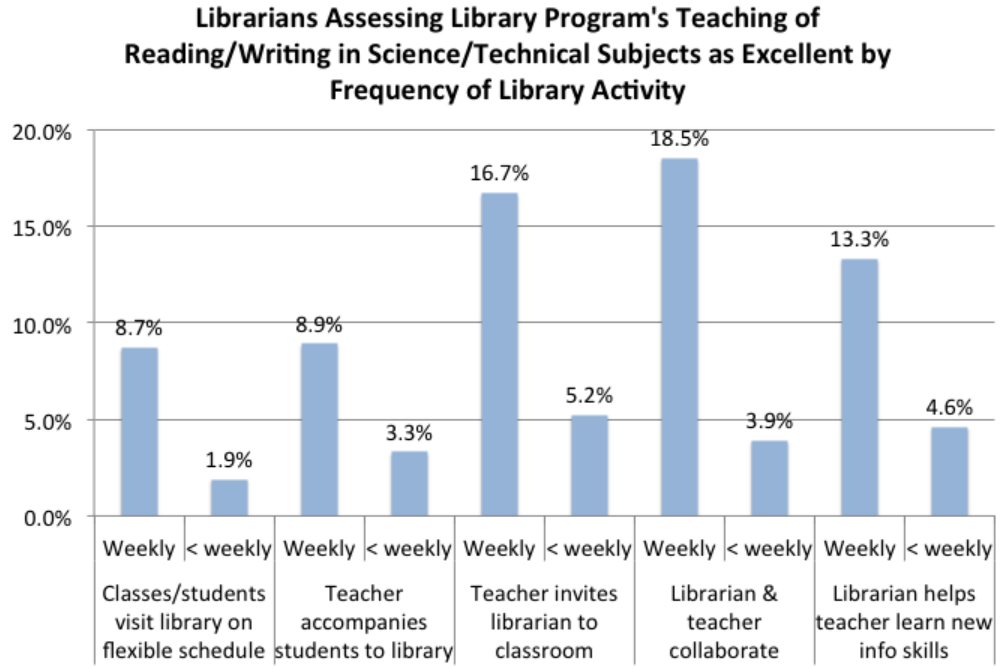
After 17 years as a classroom teacher, I finally realized my longtime goal of becoming a teacher librarian. I always used to envy those people who said they loved to go to work each day, but I am now one of those people!! .... While I feel each day, in some way, is a small success for me in this profession, I am probably most proud of the creation of the Library's website due to its far reaching affects. By adding links to databases, student book recommendations, teacher resources, online textbooks, research projects, and many others; students, staff, and parents are all connected by this resource. Little by little, more and more staff members are buying into what I can do to make their school day easier and more successful. I love the teacher part of teacher librarian and how wonderful it is each day to be a combination of both!
- Middle School Librarian

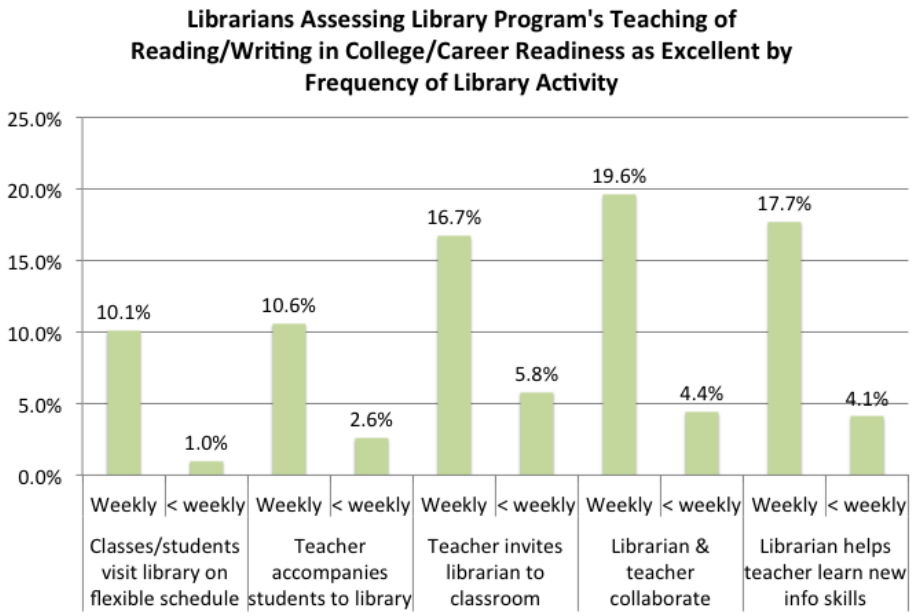
With the pressure placed upon 'teaching to the test,' teachers … are consumed with teaching content that will be evaluated on standardized testing. Librarian to the rescue! I have searched our state standards to identify areas where I could be of assistance to content area teachers, and have volunteered some teaching help or grading assistance when it comes to projects that require information literacy skills. Case in point: our 8th grade language arts teachers were studying the medieval period of history with regards to language development. I was able to provide access to webpages I developed (LibGuides), actual instruction to students in both large groups and on an individual basis, and assistance in evaluating the portion of their projects that dealt with citing sources. My efforts did not go unnoticed. Now other teachers have approached me for similar help. It just took one good working relationship and project to set the tone for the school that I could be of valuable assistance while giving the teacher some breathing room in a project. - Middle School Librarian



Note: This and following charts compare PA/Common Core teaching assessments of librarians who report engaging in selected library activities at least weekly and those who report engaging in those activities less than weekly. Example: Of librarians who report collaborating with teachers on instruction "at least weekly", 51.9% assess their role in teaching English Language Arts as "excellent". By contrast, of teachers who report engaging in that activity less than weekly, only 34.8% assess the library program's role in teaching that standard as "excellent".


Librarians Assessing Library Program's Teaching of Reading/Writing in History/Social Studies as Excellent by Frequency of Library Activity
45.0%
30.0%
15.0%
0.0%
17.8%
2.4%
20.1%
3.3%
31.5%
10.2%
37.0%
7.5%
22.1%
9.8%
Weekly
< weekly
Classes/students visit library on flexible schedule
Teacher accompanies students to library
Teacher invites librarian to classroom
Librarian & teacher collaborate
Librarian helps teacher learn new info skills


Librarians Assessing Library Program's Teaching of Reading/Writing in Science/Technical Subjects as Excellent by Frequency of Library Activity
20.0%
15.0%
10.0%
5.0%
0.0%
8.7%
1.9%
8.9%
3.3%
16.7%
5.2%
18.5%
3.9%
13.3%
4.6%
Weekly
< weekly
Classes/students visit library on flexible schedule
Teacher accompanies students to library
Teacher invites librarian to classroom
Librarian & teacher collaborate
Librarian helps teacher learn new info skills



Administrators, Teachers & Librarians on Library Practices & Activities

The three educator groups—administrators, teachers, and librarians—express considerable consensus about how school library programs strengthen teaching of PA/Common Core standards. Generally, "excellent" assessments of the librarian's teaching of English Language Arts and Reading/Writing in History/Social Studies are more likely when the three educator groups associate them with key library practices and activities. Also, administrators tend to concur with the other two educator groups about the association of "excellent" standards teaching by librarians and librarians serving on key school committees. For teachers and librarians, "excellent" assessments of library teaching of all four PA/Common Core standards are more likely when they report more frequent library activities.

- When administrators value flexible scheduling of library access and teachers and librarians report it happening more frequently, members of all three groups are more likely to believe library programs do an excellent job of teaching PA/Common Core standards—especially English Language Arts and Reading/Writing in History/Social Studies.

- When administrators value collaboration between librarians and teachers and those educator groups report working together more frequently (i.e., co-teaching as well as working together generally in both library and classroom), they also tend to believe the library's instructional program does an "excellent" job in teaching PA/Common Core Standards

- When administrators value librarians as providers of in-service professional development for teachers in their schools and when teachers and librarians report librarians providing this kind of leadership more frequently, assessments of the library program' role in teaching standards are most likely to be "excellent."

Librarian Roles

All three groups of educators were asked about the roles librarians play or should play in their schools. Administrators, as key leaders, were asked what roles they desire that librarians play. Teachers were asked what roles their librarians actually play. And librarians were asked in what roles they believe their principals and teachers perceive them.

Administrators on Desired Librarian Roles

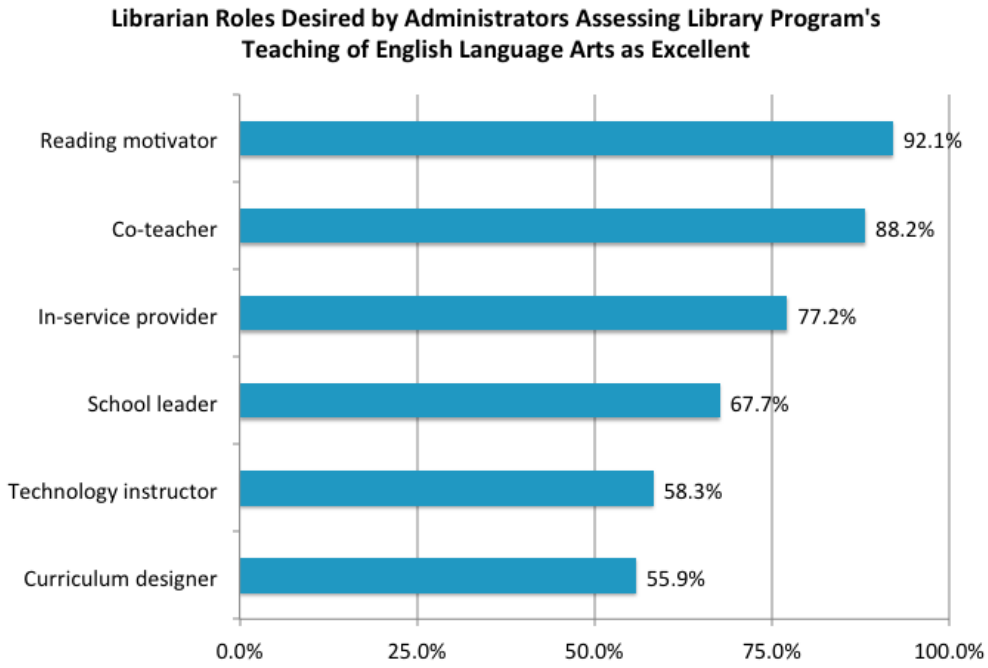
- Librarian roles desired by administrators are associated with only two of the four PA/Common Core standards: English Language Arts and Reading/Writing in History/Social Studies. Most likely, given the survey results, similar associations do not exist for Reading/Writing in Science/Technical Subjects and College/Career Readiness because respondents were more likely to decline to assess library teaching of those two standards that are less obviously associated with library programs. The fact that standards for Reading/Writing in Science/Technical Subjects are limited to secondary level (grades 6 to 12) may also be a factor.

- Majorities of administrators assessing English Language Arts teaching by the library program as "excellent" identify six librarian roles as desirable:
  - Reading motivator
  - Co-teacher
  - In-service provider
  - School leader
  - Technology instructor
  - Curriculum designer

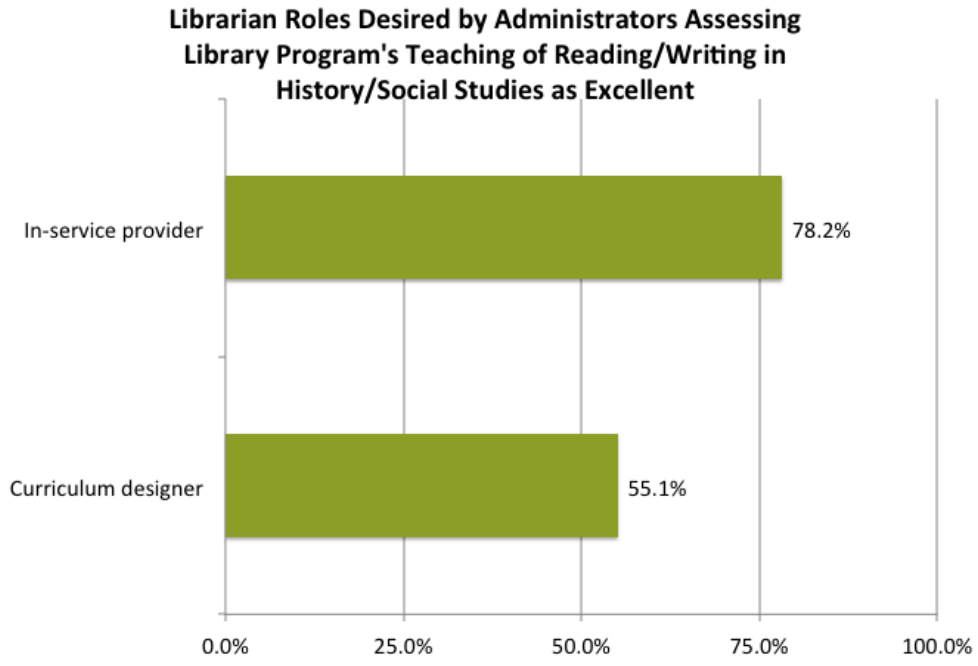
- Majorities of administrators assessing the librarian's teaching of Reading/Writing in History/Social Studies as "excellent" identify two librarian roles as desirable: in-service provider and curriculum designer.

> A research initiative at our three middle schools is a model of the librarian as teacher. Our three librarians decided upon a topic for our 7th grade students. [The topic] serves as a vehicle through which to teach sound research skills. Putting the librarian at the center of the Common Core skills delineated as Integration of Knowledge ensures that classroom teachers and students alike have a shared understanding of the strategies and goals of valid research…… With the closing of many of our county libraries, many of which were in walking distance for students, it is critical to have certified librarians in each school. I've watched very personal relationships grow between our librarians and the kids they serve. And when they quietly say to a child, "I think this book is for you," they have done real and permanent good.
> - An English and Library District Coordinator

> Our school librarian provides essential instruction in reading, research skills, and technology. On a daily basis she works with students to not only understand, but to experience how technology can assist them with daily functions in various careers, how to use technology to tell their own stories and the stories of other people. … Each month students read various books by specific authors and provide written responses … regarding the books they have read and the authors being studied. Our librarian has written the authors and received feedback regarding the Writing process [to be] shared with the students.
> - An Elementary School Principal



Note: Throughout this section, the focus is on educators who assess the library program's role in teaching PA/Common Core standards as "excellent". This and following charts for the three educator groups report the percentage of respondents from the group who assess the library program's role in teaching a particular standard as "excellent" and selected a certain librarian role. Example: Of administrators who assess the library program's role in teaching English Language Arts as "excellent", 92.1% identify reading motivator as a desirable role for a librarian.



Administrators associate "excellent" school librarian teaching of English Language Arts Standards with six roles—reading motivator, co-teacher, in-service provider, school leader, technology instructor, and

curriculum designer. These relationships suggests that administrators who experience strong library programs and highly effective librarians understand the foundational nature of these librarian roles, and the extent to which they affect all teachers and students, the entire curriculum, and how well technology is integrated with curriculum and instruction.

The desirability to administrators of a librarian being an in-service provider and a curriculum designer and the association of these roles with excellence in teaching Reading and Writing in the context of History and Social Sciences further underscores the value of librarians in key leadership roles which impact all classrooms in a school.

Teachers on Perceived Librarian Roles

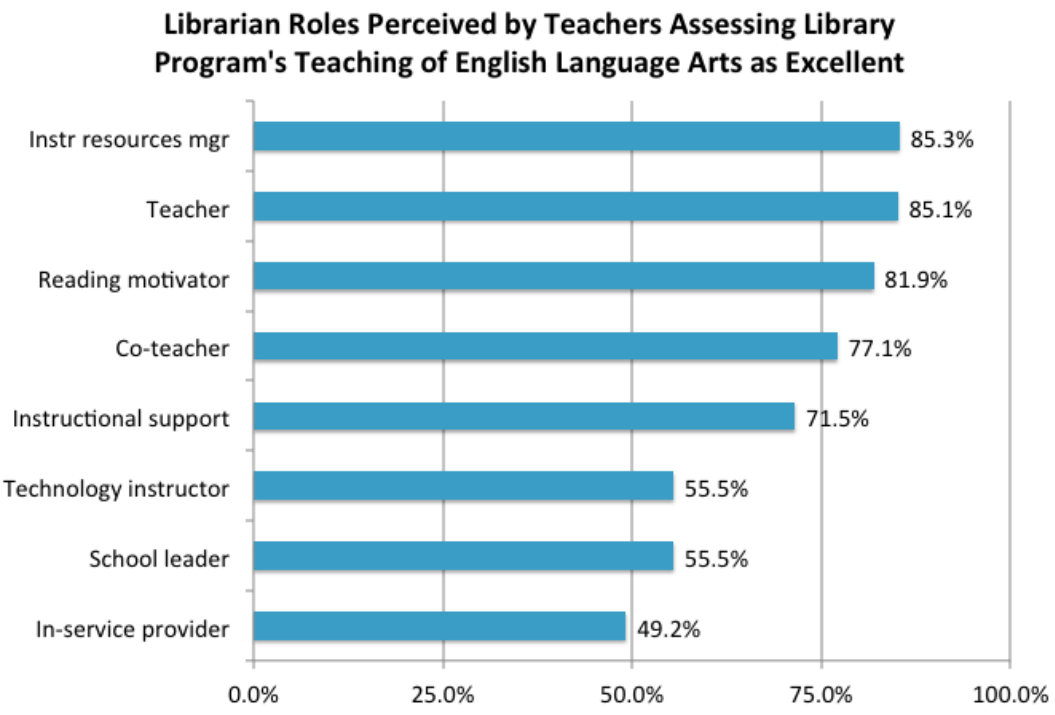
As with 21st Century Learner standards, strong majorities of teachers associate school librarian "excellence" in teaching PA/Common Core standards with five perceived librarian roles:

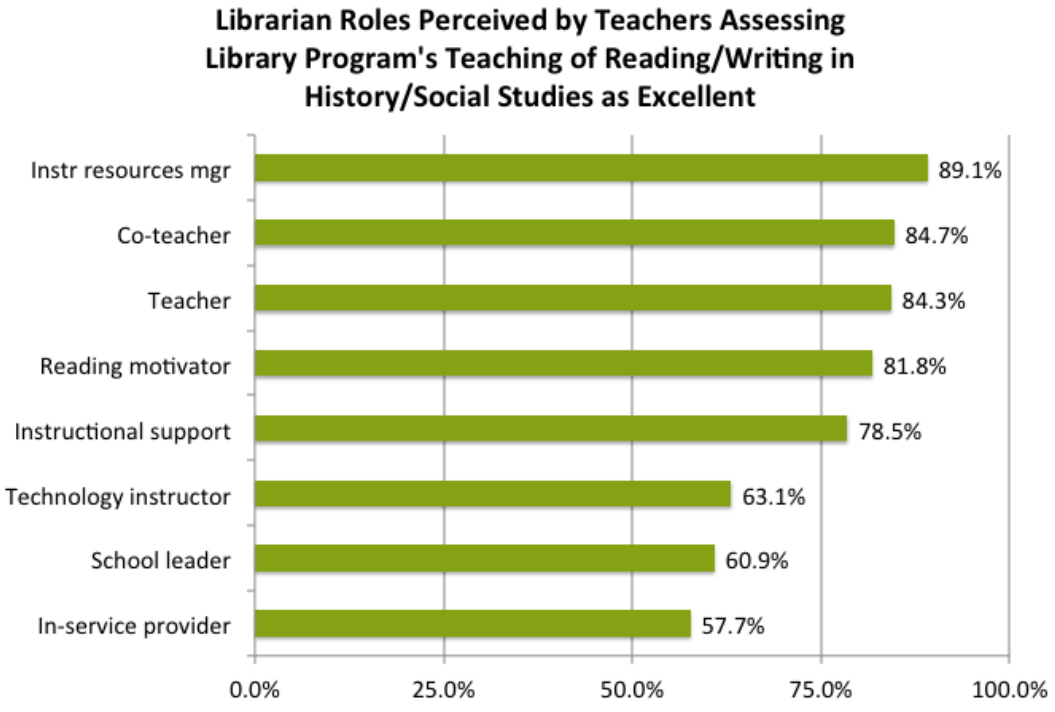
- Co-teacher
- Instructional resources manager
- Instructional support
- Reading motivator
- Teacher

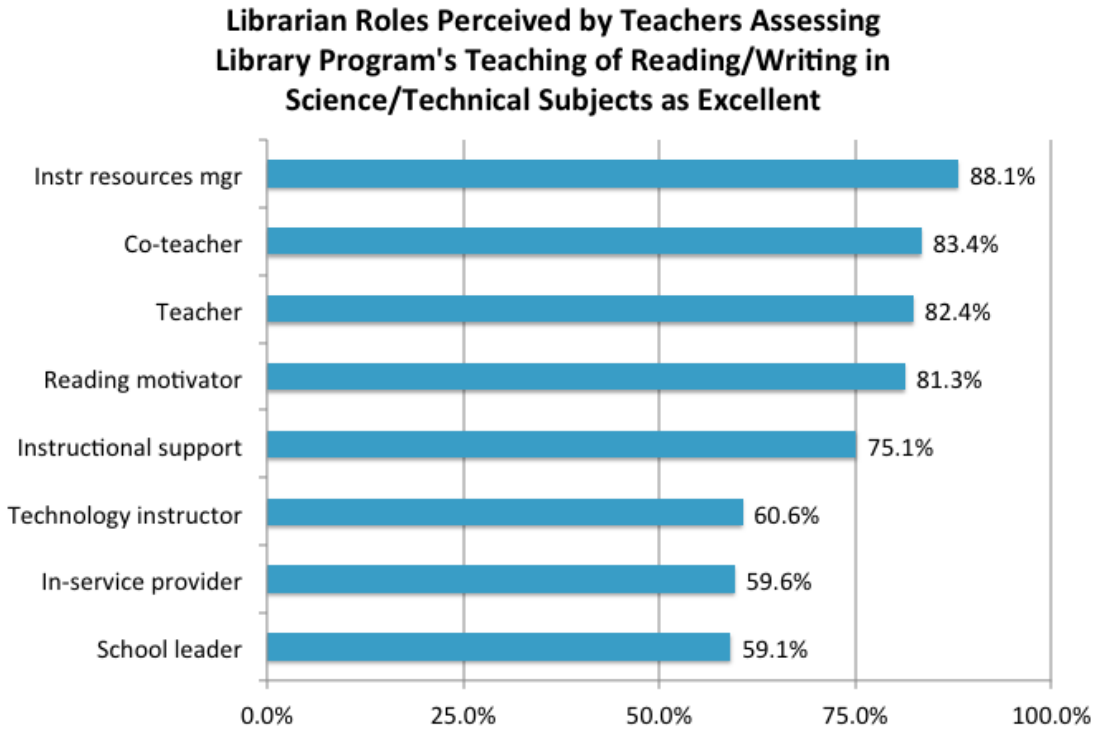
> School librarians are essential to the development of a good school library. … There is so much information to manage, only a specialist can provide the expertise that is needed, and continue to keep the information fresh and accurate. A school without a librarian is like a kitchen without a chef.…Without the librarian, it might just be a room full of books.
> - Elementary School teacher

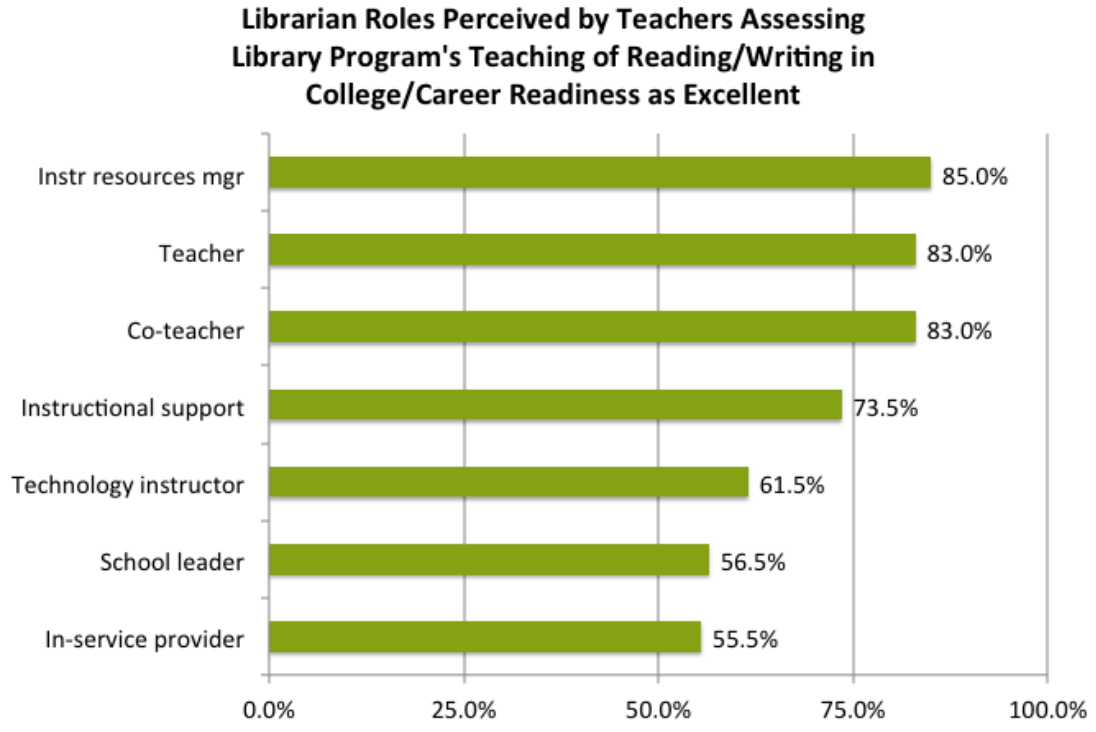
> I have numerous examples of successful collaborative instruction that has had a direct impact on student learning. Our librarian knows the curriculum for each of the subjects within each grade level, which is no easy task. She is familiar with the state standards and eligible content for the PSSA….Our Social Studies curriculum is project based - there are no textbooks for the students or teachers to use….Our librarian is considered an instructional leader in the school.
> - Elementary School teacher

> Our librarian … promotes reading for pleasure, and often gets students excited about newly-acquired novels she has purchased for the library. She is very accommodating whenever I schedule my classes in the library. She jumps right in with helping students and their computer/technology needs (formatting, citing, inserting pictures, etc.) She teaches lessons on plagiarism and citations and using information ethically. We have DEAR time in our school weekly (Drop Everything And Read), and our librarian helps students choose books that fit their interests and ability.
> - Middle School teacher


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of English Language Arts as Excellent
Instr resources mgr
Teacher
Reading motivator
Co-teacher
Instructional support
Technology instructor
School leader
In-service provider
85.3%
85.1%
81.9%
77.1%
71.5%
55.5%
55.5%
49.2%
0.0%
25.0%
50.0%
75.0%
100.0%


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of Reading/Writing in History/Social Studies as Excellent
Instr resources mgr
Co-teacher
Teacher
Reading motivator
Instructional support
Technology instructor
School leader
In-service provider
89.1%
84.7%
84.3%
81.8%
78.5%
63.1%
60.9%
57.7%
0.0%
25.0%
50.0%
75.0%
100.0%


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of Reading/Writing in Science/Technical Subjects as Excellent
Instr resources mgr
Co-teacher
Teacher
Reading motivator
Instructional support
Technology instructor
In-service provider
School leader
88.1%
83.4%
82.4%
81.3%
75.1%
60.6%
59.6%
59.1%
0.0%
25.0%
50.0%
75.0%
100.0%


Librarian Roles Perceived by Teachers Assessing Library Program's Teaching of Reading/Writing in College/Career Readiness as Excellent
Instr resources mgr
Teacher
Co-teacher
Instructional support
Technology instructor
School leader
In-service provider
85.0%
83.0%
83.0%
73.5%
61.5%
56.5%
55.5%
0.0%
25.0%
50.0%
75.0%
100.0%

Librarians on Librarian Roles Attributed to Principals & Teachers

When asked to report how they believe their principals and teachers perceive them, librarians who self-assess their teaching of PA/Common Core standards as "excellent" agree with each of these educator groups about different roles.

Where librarians have self-assessed their instruction as "excellent" in teaching all four PA/Common Core standards, librarians consistently believe that principals & teachers perceive them as:

- In-service provider
- Instructional resources manager
- Instructional support
- Reading motivator
- School leader
- Teacher
- Technology instructor

For principals and administrators themselves, these associations between librarian roles apply only to English Language Arts and Reading/Writing in History/Social Studies. Teachers and librarians, on the other hand, are in substantial agreement about librarian roles for all four standards.

As for 21st Century Learner standards, librarians who self-assess their PA/Common Core standards teaching as "excellent" are slightly more likely to attribute most librarian roles to teachers than to administrators, with the same noteworthy exceptions:

- Librarians believe that teachers, more so than principals, see them as co-teachers and technology troubleshooters. Perhaps this discrepancy points to what these librarians perceive as a reality gap between principals and teachers. Principals might be expected to value these roles; but teachers are the ones their librarian colleagues can be sure will value them highly, as they might have the strongest and most frequent impact on the teacher's own work experience. Indeed, when responses from administrators and teachers making similar assessments were examined, that tended to be true.

- Conversely, these librarians expect that their administrators are more inclined to see them in certain roles than their teacher colleagues. Those roles are school leader, in-service provider, and curriculum designer. Again, when responses from other educators making similar assessments were examined, that was found to be true.

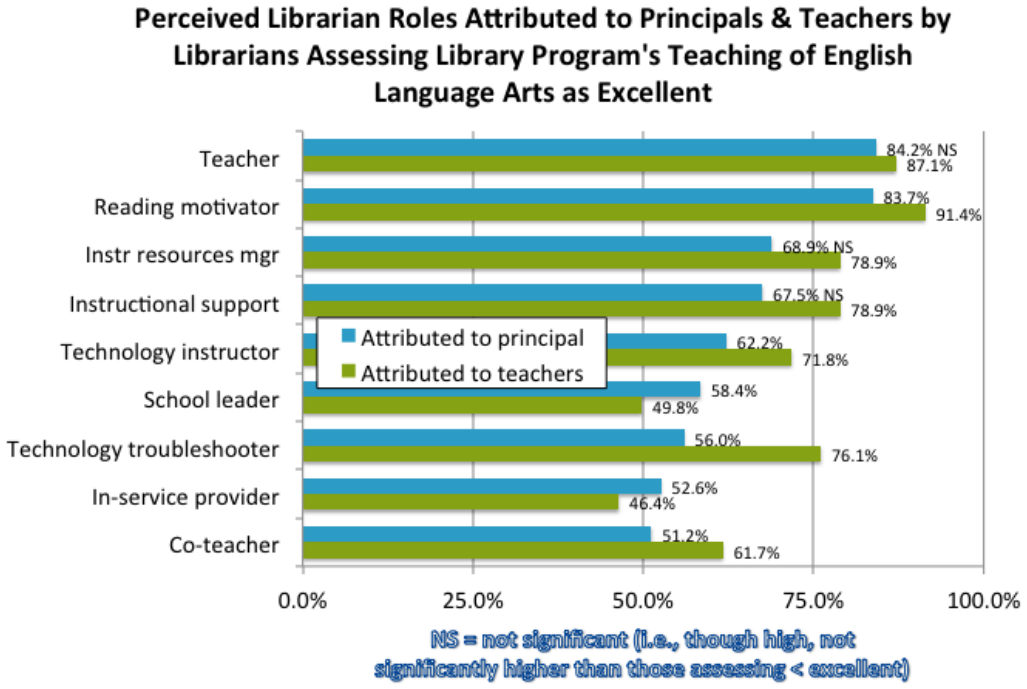
Also, as with the other set of standards, isolated role results for librarians prove not to be statistically significant (NS, appearing after the percentage, in the following charts), but this is most likely because of the aforementioned fact that librarians are the least likely of the three groups to assess library teaching of PA/Common Core standards as "excellent." These rare failures to achieve statistical significance can most likely be traced to the small numbers of librarians self-assessing their teaching as "excellent." In the case of this set of standards, this situation is further complicated by relatively high "don't know/need more information" responses about the more specific standards—likely due to the fact that some of the standards apply only to secondary grades.

- For all four PA/Common Core standards, librarian assessments of teaching excellence related most consistently to beliefs that principal and teachers perceive them as:

- Instructional resource managers
- Instructional support
- School leaders

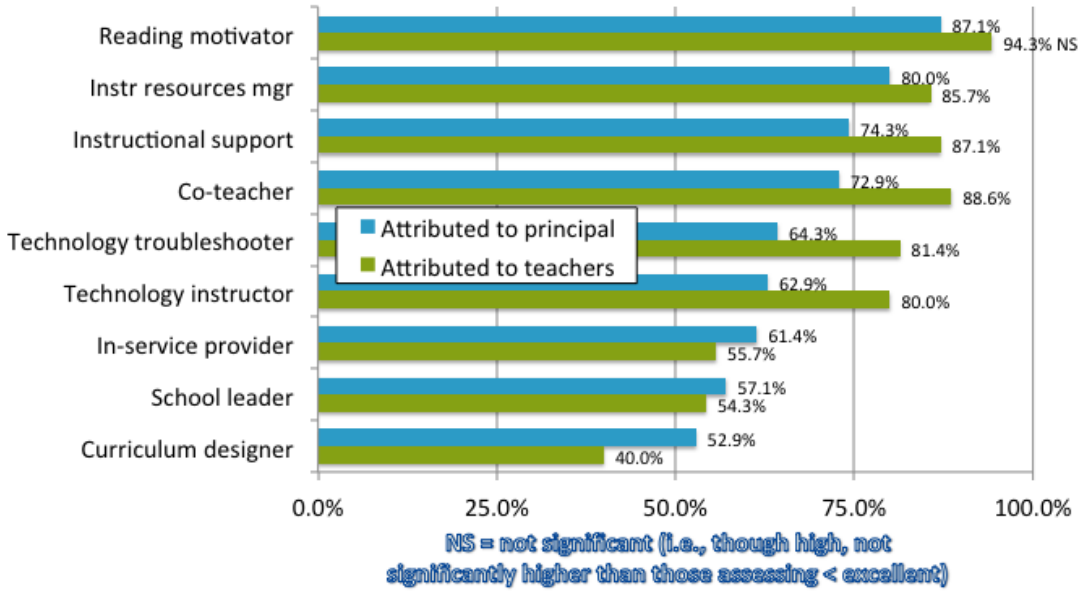
- Librarians' beliefs that they are perceived as **teachers** are related to English Language Arts teaching, while beliefs that they are perceived as **co-teachers** are related to other Common Core standards.

I have spent (much) effort trying to convince our teachers and administrators that we need to broaden the options we offer our students in their required reading. The existing list of "approved" titles is old and stale when it should be a continuously evolving resource. This year, on my recommendation, one of our Special Education teachers introduced *The Hunger Games* by Suzanne Collins to her students as a required read. These students had previously been resistant to Reading but, in this case, the response was excellent! Students from this class would ask NOT to be distracted by their classmates so that they could focus on the book. The teacher in the class received an e-mail from a "reluctant reader" in which he confessed that he knew he wasn't supposed to read ahead but he couldn't help himself--he had to find out "what happened to Peeta." This would not have occurred if students had been forced to read the "moldy oldies" to which they do not relate. I'm planning to use this example to encourage my administrators (again!) to allow updates to our district's "approved" book list. This is just one small example of the efforts of librarians everywhere to foster a love of reading!
- Middle School Librarian

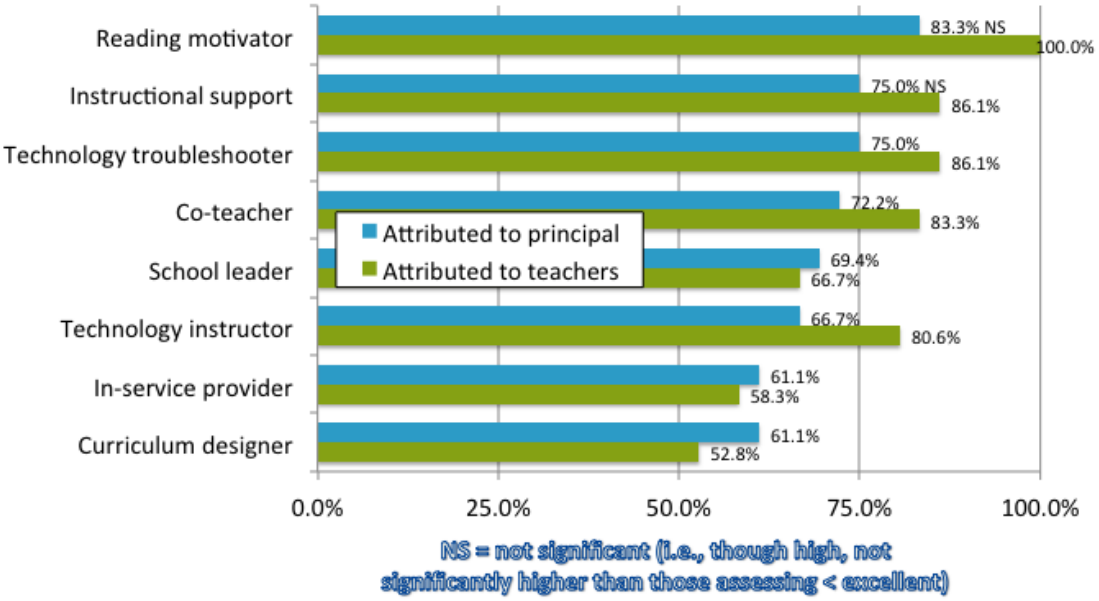


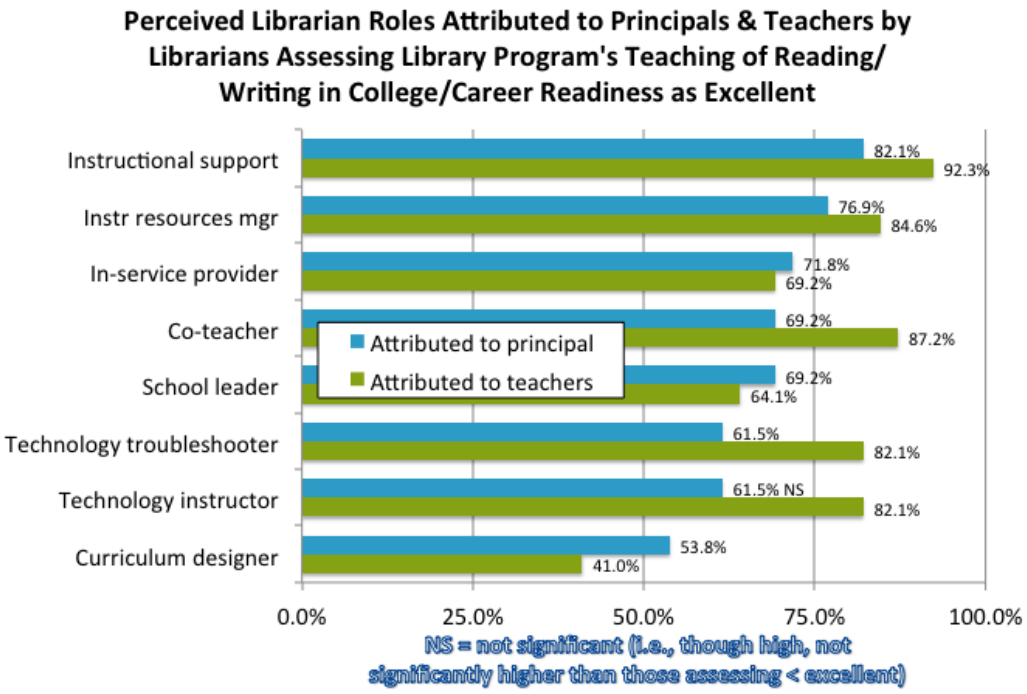
Note: In this and following charts, the focus is on librarians who assess their teaching of a standard as "excellent" and which roles they believe their principals and teachers will identify with librarian. "NS" after a percentage indicates that it is not associated with a significant difference from librarians assessing standards teaching as less than excellent ("good", "fair", or "poor"). Example: Of librarians who assess their teaching of English Language Arts as "excellent", 83.7% believe teachers identify them as reading motivators, while 91.4% believe principals identify them in that role.

Perceived Librarian Roles Attributed to Principals & Teachers by Librarians Assessing Library Program's Teaching of Reading/ Writing in History/Social Studies as Excellent



Perceived Librarian Roles Attributed to Principals & Teachers by Librarians Assessing Library Program's Teaching of Reading/ Writing in Science/Technical Subjects as Excellent





Educators on 21st Century Learner & PA/Common Core Standards

School librarians believe there are very strong connections between *Standards for the 21st Century Learner* and the Pennsylvania/Common Core standards. Indeed, the organization that promulgated the 21st Century Learner standards, the American Association of School Librarians, also provides a *Crosswalk of the Common Core Standards and the Standards for the 21st Century Learner*. This document is available online at: http://www.ala.org/aasl/guidelinesandstandards/commoncorecrosswalk/.

This study took place early in Pennsylvania's adoption and implementation of the Common Core standards. In addition, the 21st Century Learner standards are less familiar to administrators and teachers. Consequently, the assessments of the library program's teaching of these standards by the three educator groups are necessarily impressionistic. Still, these impressions from the perspectives of the three educator groups are quite valuable as indicators of the extent to which they share a consensus about the connections between the two sets of standards.

Educator assessments of the library program's instructional role in teaching of 21st Century Learner & PA/Common Core standards are strongly related to each other. If educators believe library programs excel at teaching PA/Common Core standards—English Language Arts and Reading and Writing in History/Social Studies, Science and Technical Subjects, and College and Career Readiness—they tend also to believe that school librarians excel at teaching each of the 21st Century Learner standards—inquiry-based learning, informed decision-making, knowledge sharing, and pursuing personal growth.

- Across administrator, teacher, and librarian survey respondents, those who assess as "excellent" their school librarian's teaching of each PA/Common Core standard also tend to assess as "excellent" the library program's instructional role in teaching each 21st Century Learner standard.

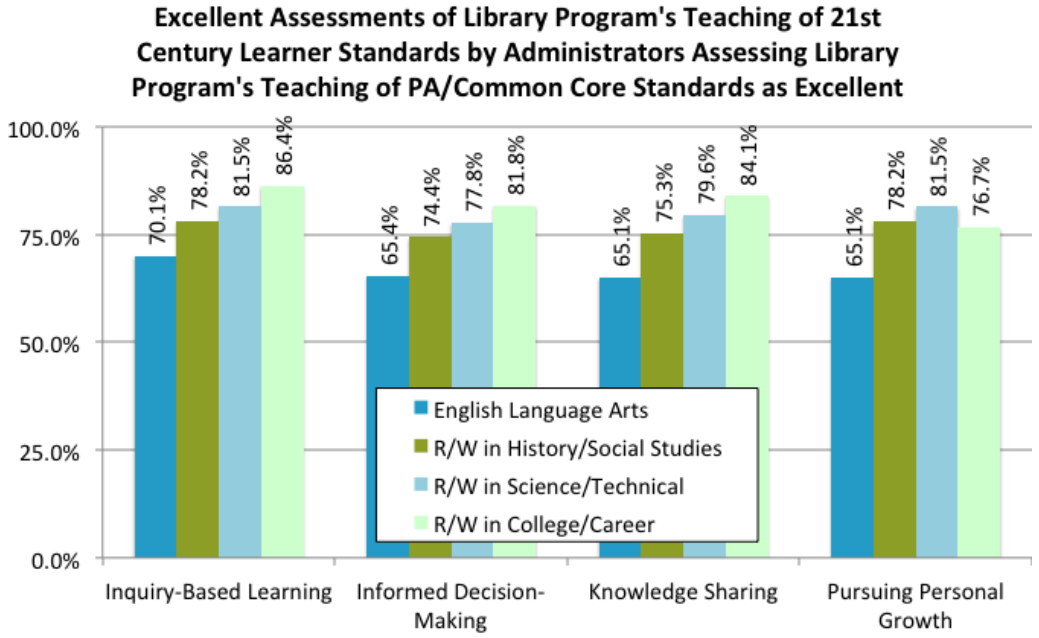
- For administrators and teachers, strong majorities of those who assess their library program's instructional role as "excellent" for Common Core standards also assess as "excellent" the library program's role in teaching 21st Century Learner standards.

- Librarians, as noted earlier, are more modest in their self-assessments on both sets of standards. Strong majorities of librarians who self-assess their teaching of PA/Common Core standards as "excellent" also self-assess themselves as "excellent" on three of the four 21st Century Learner standards. Only large minorities of librarians who assess their teaching of English Language Arts as "excellent" also assess their teaching of three of the four 21st Century Learner standards as "excellent." By contrast, of librarians who assess their teaching of English Language Arts as "less than excellent", only single-digit percentages self-assess their teaching of this standard as "excellent".

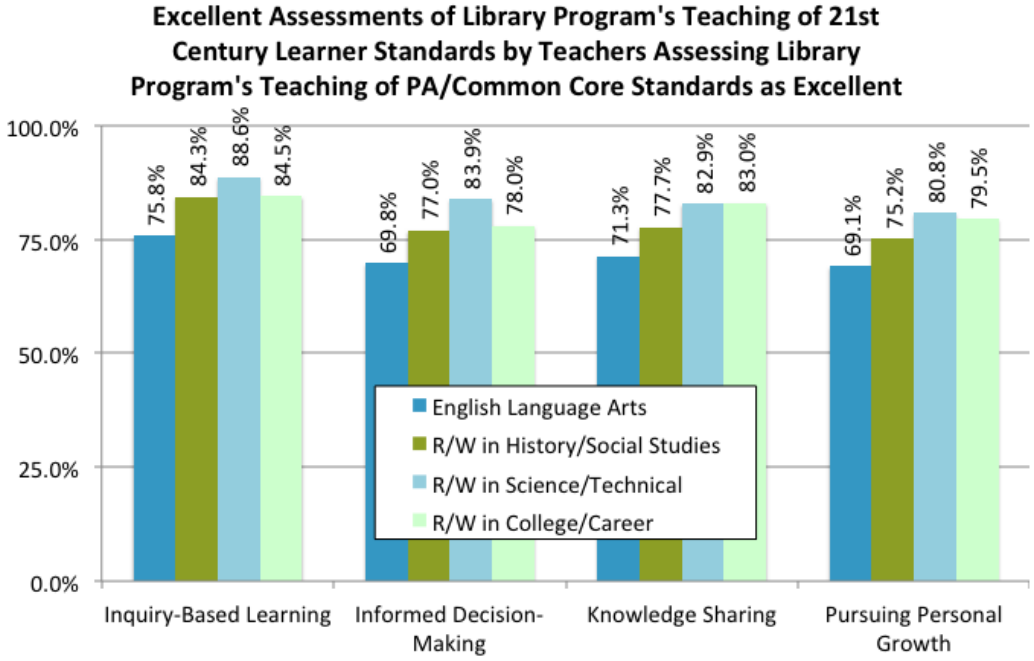
Thus, despite the relative modesty of librarians, the three educator groups express consensus that the connections between 21st Century Learner standards and PA/Common Core standards are strong ones.

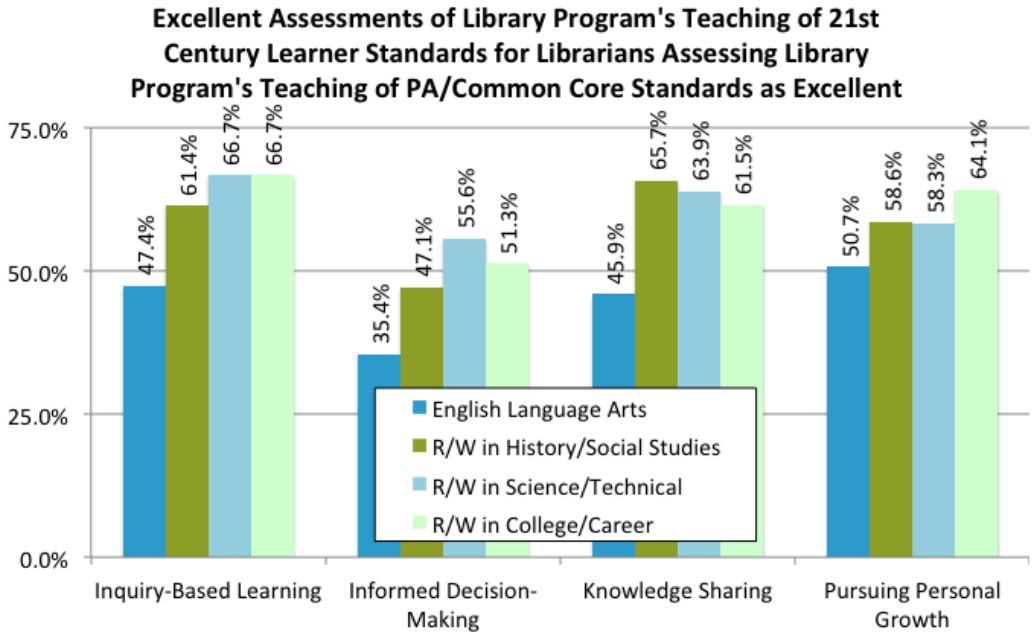
> …I have maintained a close instructional connection with (our) librarians. I rely on the expertise of their extensive Reading, resourcing, and research knowledge to coordinate the curricula I've been responsible to teach. Collaboratively, we've provided what core/standards have been needed not only in the Language/Communicative Arts areas, but also in content areas...specifically science and/or social studies…. the librarian is a resource that is essential for the 21st Century instruction of our students… It is essential that our public schools continue to have effective librarians in each school to ensure that our students will succeed with the demands of the 21st century.
> - Intermediate School teacher

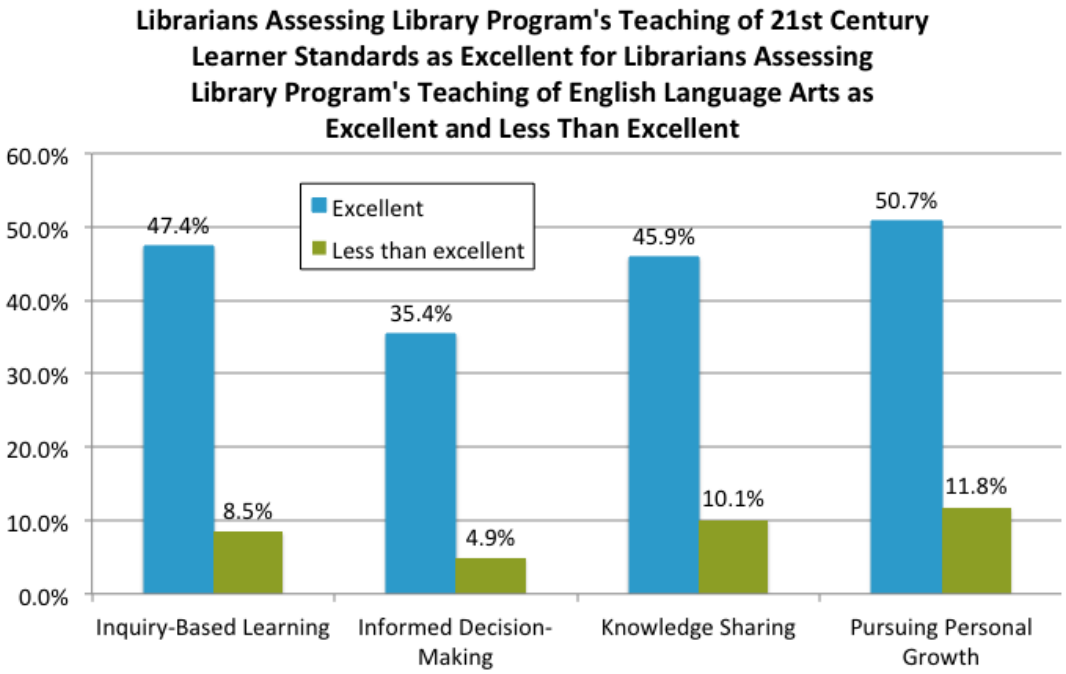
> Working closely with the library staff has transformed my classroom environment and curriculum. Collaborative co-planning with the library staff provides clear understandings between us and provides an opportunity to co-teach the lessons. The library staff embeds 21st century skills into my curriculum, ensuring that the Common Core Standards are being met. I return to collaborate in the library for all of my research and multimedia projects, and not just the research paper, because the quality of the lessons far surpasses the kind of lessons that I can provide myself… My biggest success while working with a librarian is receiving the 2010 ISTE SIGMS Technology Innovation Award, which highlights successful collaboration between a school librarian and classroom teacher.
> - High School teacher



Note: In this and following charts, the focus is on respondents from an educator group who assess the library program's instructional role in teaching selected PA/Common Core standards as "excellent". For each PA/Common Core standard, the chart reports the percentage of respondents who also assessed the library's role in teaching a 21st Century Learner standard as "excellent". Example: Of administrators who assessed the library's role in teaching English Language Arts as "excellent", 70.1% assessed the library's role in teaching inquiry-based learning as "excellent".







Note: This chart illustrates what a dramatic connection librarian respondents perceive between how well they teach English Language Arts and how well they address each of the 21st Century Learner standards. Example: Of librarians who assess their teaching of English Language Arts as "excellent", 47.4% assess their teaching of inquiry-based learning as "excellent". By contrast, of librarians who assess their teaching of English Language Arts as less than excellent ("good", "fair", or "poor"), only 8.5% assess their teaching of inquiry-based learning as "excellent".

Summary

The findings of the surveys of administrators, teachers, and librarians are clear and very consistent. When these three groups of educators believe in the value of key library practices and frequently experience activities associated with those practices, they are likely to assess the library program's instructional role as "excellent" in the teaching of both 21st Century Learner and PA/Common Core standards. The same is true when educators identify librarians with key roles relating to school leadership and instruction. And, not surprisingly, as these close relationships suggest, assessments of the instructional program of the school library by all three educator groups suggest that the two sets of standards are strongly related to each other.

As these assessment data are self-reported and based on perceptions, not hard data, how seriously should they be taken? Perhaps all three groups of educators are telling the researchers what they want to hear. That is unlikely though, or all survey respondents would have given answers indicating that they believe the "right" things about library practices and activities and librarian roles, and that is not what happened.

Ultimately then, how can one know how seriously to take these qualitative data about the library's, and the librarian's, contribution to teaching these two important sets of standards? The next chapter answers this question by looking at the Pennsylvania System of School Assessment (PSSA) Reading and Writing test results of the schools of the librarians, teachers, and administrators who provided the qualitative data reported in this chapter. Will the test scores validate their opinions? Read the next chapter.

Chapter 10. Standards for the 21st Century Learner, PA/Common Core Standards & PSSA Scores

The Pennsylvania System of School Assessment (PSSA) measures how well students have achieved in Reading and Writing (as well as Mathematics and Science) according to the state's standards. Reading and Writing scores are used in this analysis as they are closely associated with the work of school librarians traditionally and with both the Pennsylvania (PA)/Common Core standards and the 21st Century Learner standards of the American Association of School Librarians (AASL).

The following analyses of 2011 PSSA Reading and Writing scores focus on both ends of the academic achievement spectrum: the percentage of students scoring Advanced and the percentage scoring Below Basic. The questions addressed in this chapter concern the relationship of Advanced and Below Basic PSSA test scores to the perceived assessments by teachers, librarians and administrators about their school library's program of instruction to address both the 21st Century Learner and PA/Common Core Standards.

- Are students whose library programs are assessed as doing an "excellent" job of teaching 21st Century Learner and PA/Common Core standards more likely to score Advanced?

- And, are they also less likely to score Below Basic?

To the extent that the answers to these questions are positive, assessments by the three educator groups of the instructional program of their school libraries to address these standards are confirmed.

The analysis of how educators assess the library program's role in teaching PA/Common Core standards and its relationship to PSSA Reading and Writing scores yielded significant results only for the assessments from librarians. As reported in the previous chapter, educators in all three groups are less likely to offer assessments of library program teaching of PA/Common Core standards than 21st Century Learner standards. Among educators of all three types offering assessments, however, their assessments of school library programs in teaching 21st Century Learner and PA/Common Core Standards (i.e., apart from their relationships with PSSA scores) are strongly related to one another. Nevertheless, of the three educator groups, librarians must have the most accurate perceptions of their contributions to teaching English language arts and Reading/Writing in History/Social Studies standards, as their self-assessments of teaching those two PA/Common Core standards are the only ones that consistently relate directly to PSSA Reading and Writing scores. The historical involvement of librarians in those areas likely explains these findings.

21st Century Learner Standards

Across the three educator groups, there is consistent evidence that three of the four 21st Century Learner Standards—Inquiry-Based Learning, Informed Decision-Making, and Knowledge Sharing—by library programs is associated with higher Advanced PSSA scores in both Reading and Writing. Further, for administrators and librarians, Inquiry-Based Learning is singled out as a key standard exerting a positive influence on both Advanced and Below Basic scores. Intriguingly, teachers alone credit this kind of influence to all four 21st Century Learner standards. Possibly, these findings are consequences of the fact that respondents to the teacher survey were most numerous (approaching 1,000), thereby improving the chances of finding statistically significant results for this group.

Administrators

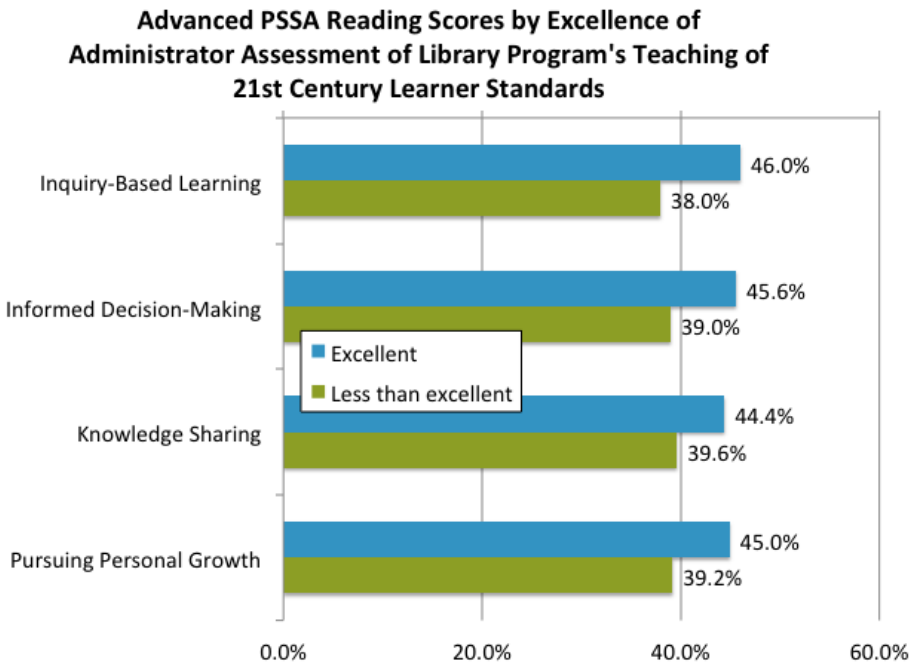
Administrator assessments of the library program's role in teaching of 21st Century Learner standards are associated with PSSA Reading and Writing scores in several noteworthy ways. While administrator assessments are associated with Advanced scores for all four 21st Century Learner standards, their assessments of library teaching of Inquiry-Based Learning in particular are related to both Advanced and Below Basic scores on Reading and Writing tests:

- More students score Advanced on Reading & Writing when administrators assess as "excellent" (versus less than excellent) the library program's teaching of all four 21st Century Learner standards—Inquiry-Based Learning, Informed Decision-making, Knowledge Sharing, and Pursuing Personal Growth.
- The positive impact of the library program's teaching of 21st Century Learner standards on PSSA scores is more dramatic on Writing than Reading.
- When administrators believe students receive excellent library instruction of Inquiry-Based Learning, students are consistently more likely to score Advanced on both Reading & Writing tests.
- Students in the same circumstances are also less likely to score Below Basic on both Reading & Writing tests.

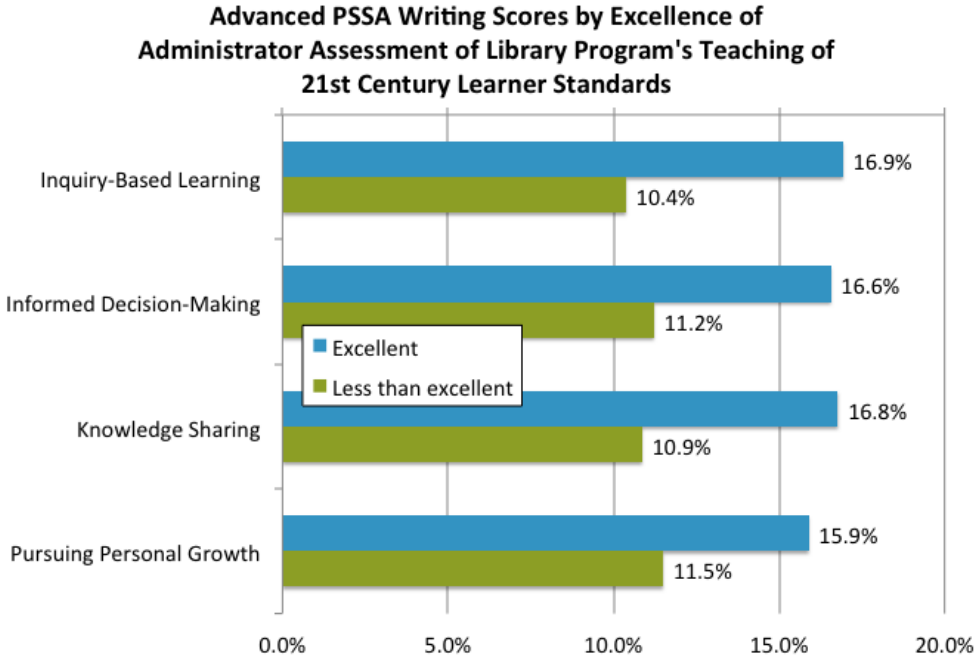
> Implementing reading across the curriculum … in our school became a priority. Our librarian became the facilitator of … initiatives to incorporate information literacy and reading strategies in every area. Our librarian presented on professional development days—reading strategies, pre- and post-reading strategies, use of technology in the classroom, research techniques—all were presentations given on various professional development days. Our librarian also worked with our English teachers to develop a research manual for our ninth- and tenth-grade students. Most recently, our librarian, along with other district librarians, presented the Big 6 research model to the district's English/ Language Arts curriculum committee. With their assistance and guidance, this research model has been adopted by the district as our official research model ...
> - Intermediate High School Administrator

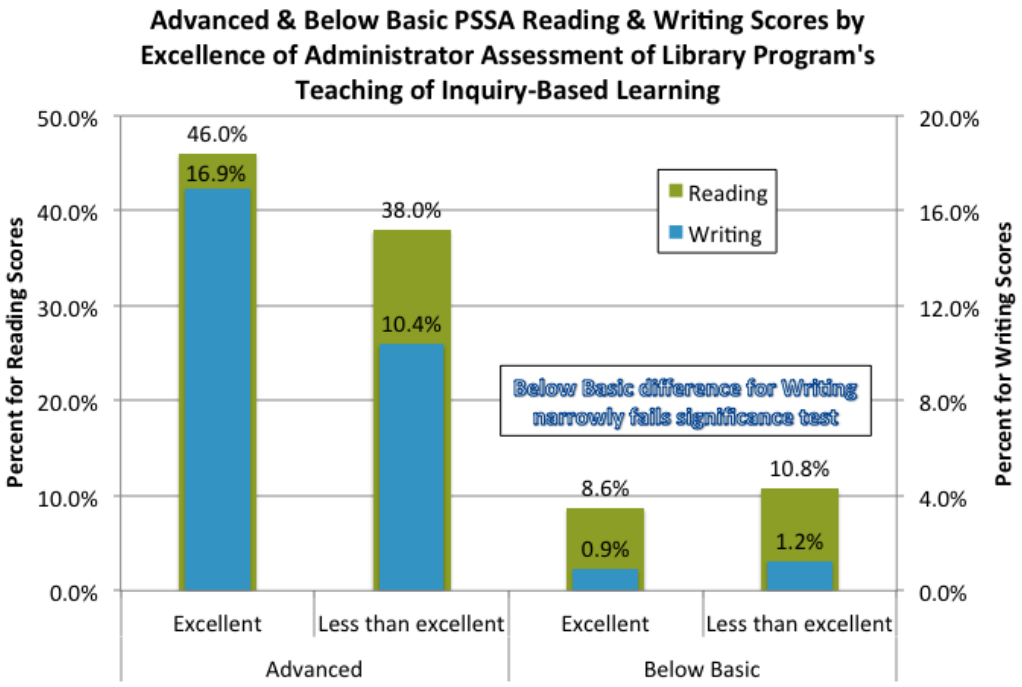
> A year ago our librarian in conjunction with our English Department Head were concerned about promoting reading for fun. The English Department Head … was very concerned that requiring reading was turning off kids to reading for fun. At his request and with the strong support of the librarian, the department heads and administrators discussed and agreed to a plan to have a period of Sustained Silent Reading once a week. … From the first day, it has been very successful. … Our librarian's … enthusiasm and motivation have been a great influence in emphasizing the importance of reading and encouraging it for all staff and students.
> - High School Administrator

> Our high school librarian … received [grant] funding for three libraries within the District. With this money, the District was able to increase student reading achievement by 1) increasing access to up-to-date library materials, 2) providing well-equipped, technologically-advanced school library media centers, and 3) training professionally-certified school library media specialists. … This was a huge impact …
> - High School Administrator



Note: This chart and the following one compare the PSSA scores of schools whose administrators assess as "excellent" and less than excellent ("good", "fair", "poor", or "don't know/need more information") the teaching of 21st Century Learner standards by their library programs. The first chart addresses Reading scores, and the second, Writing scores. Example: Where administrators indicate their libraries do an "excellent" job of teaching Inquiry-Based Learning, schools average 46.0% of students scoring Advanced on PSSA Reading tests. Where they indicate their libraries do less than an excellent job teaching this standard, schools average 38.0% of students scoring Advanced.





Note: This chart focuses on how well administrators believe library programs address the Inquiry-Based Learning standard, and the relationships of those assessments to Advanced and Below Basic scores on both Reading and Writing. Example: Where administrators assess the library program's role in teaching this standard as "excellent", schools average 46.0% of students scoring Advanced on Reading. Where they assess the library's role in teaching this standard as less than excellent, schools average 38.0% of students scoring Advanced.

Teachers

In contrast with administrators, teachers' assessments of the library program's teaching of each of the 21st Century Learner standards are associated with improvements in both Advanced and Below Basic PSSA scores on Reading and Writing tests.

- Teacher assessments indicate that more students score Advanced and fewer Below Basic when teachers assess as "excellent" the library program's teaching of :
  - Inquiry-based Learning
  - Informed Decision Making
  - Knowledge Sharing
  - Pursuing Personal Growth

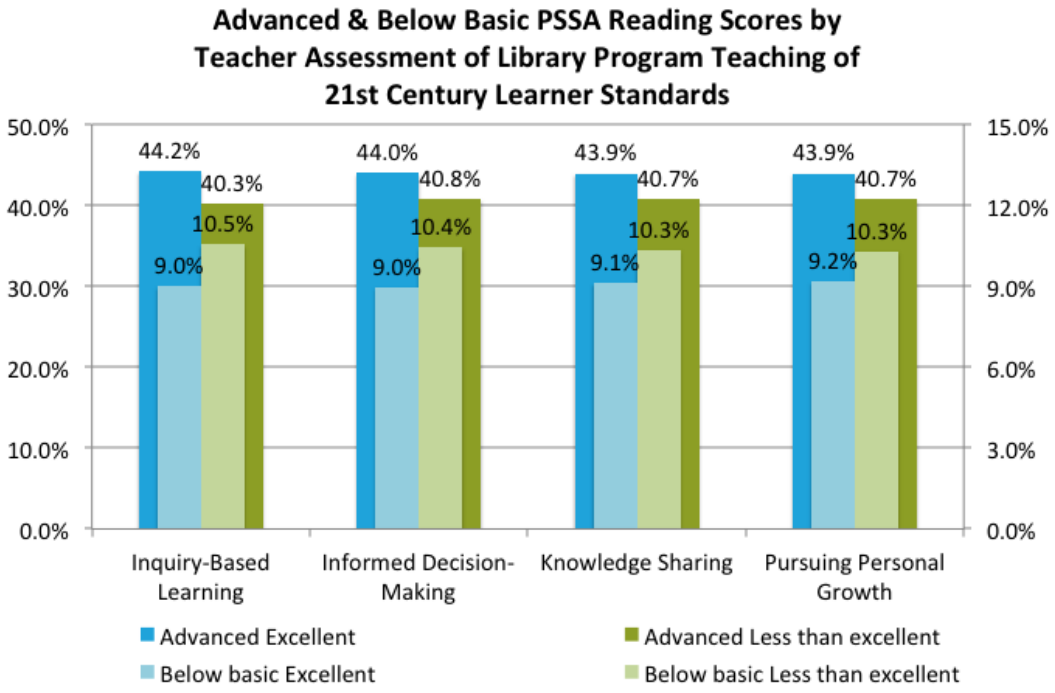
- As for administrators, the impact of excellent library teaching is more dramatic on PSSA Writing than Reading scores.

I have numerous examples of successful collaborative instruction that has had a direct impact on student learning. Our librarian knows the curriculum for each of the subjects within each grade level, which is no easy task. She is familiar with the state standards and eligible content for the PSSA … Our Social Studies curriculum is project based - there are no textbooks for the students or teachers to use … Our librarian is considered an instructional leader in the school.
- Elementary School teacher

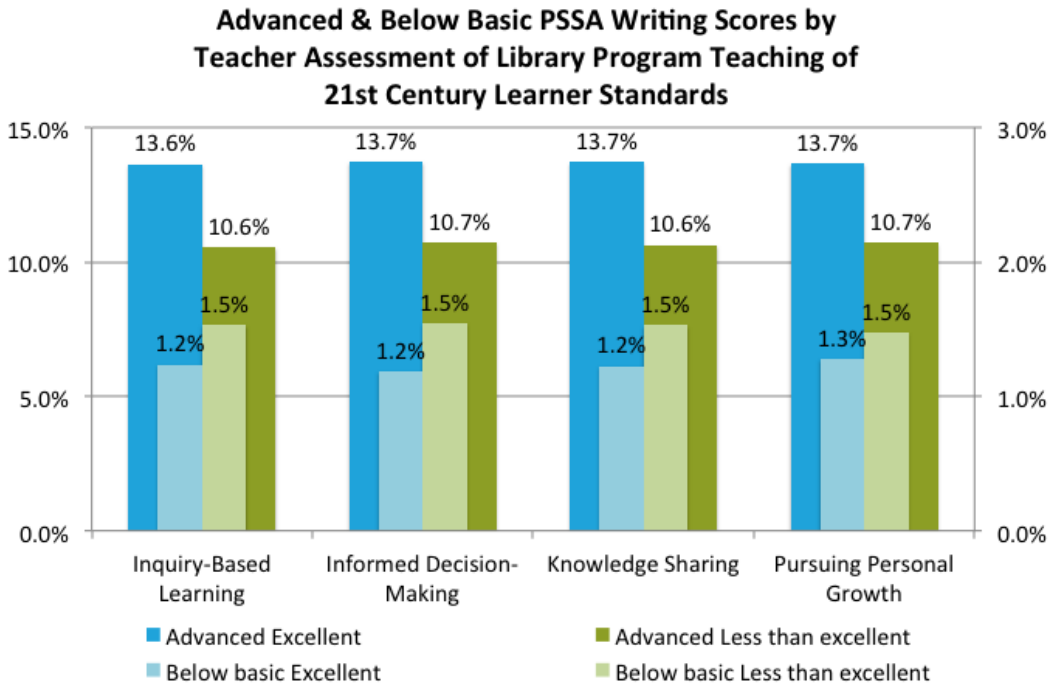
The school librarian and I have collaborated for several years now. [Our co-teaching of the research model] encompasses all of the essential anchors that are required in our Language Arts program. The students are able to read critically, analyze and interpret text, explore the qualities of writing and finally enhance their research skills including: formulating questions or hypothesis to study; presenting information using appropriate media and expressing new understanding about a topic. Being able to collaborate and plan with our librarian has been an invaluable tool. She is constantly looking to collaborate; enhance and develop skills in our students, and to enhance the curriculum … The students we have shared have benefited immensely from their experiences.
- Elementary School teacher

Our school librarian makes herself available to discuss topics I am working on in my classroom and provides materials that help me implement my lessons. She also teaches some of the material that will be covered in the PSSA ... She has a wonderful relationship with the teachers, staff, and students in our building and is an asset to our school.
- Intermediate School teacher

Our school librarian is a godsend … an essential leader in our building. She is asked to wear many hats, and our school would not be successful without her. So many children, faculty and administrators call on our librarian … every day. The children in our school (and I mean almost all) have such a passion for reading. … [O]ur librarian has created this climate in our school and it has affected everyone. … [A] lot of our successes on PSSA … have been influenced positively by our librarian.
- Middle School teacher



Note: This chart and the following one report the relationships between how teachers assess the teaching of all four 21st Century Learner standards and PSSA scores. The first chart focuses on Reading scores; the second, on Writing scores. Example: Where teachers assess library teaching of Inquiry-Based Learning as "excellent", schools average 44.2% of students scoring Advanced on Reading. Where they assess library teaching of this standard as less than excellent, schools average 40.3% of students scoring Advanced.



Librarians

Similarly to administrators, findings about the relationships between librarians' self-assessments of their teaching of 21st Century Learner standards and PSSA Reading and Writing scores are less general than those of teachers, although in different ways than for administrators.

- Students are more likely to earn Advanced Reading scores if their librarians assess as "excellent" their teaching of the three standards most closely associated with PSSA-oriented instruction: Inquiry-Based Learning, Informed Decision-Making, and Knowledge Sharing

- Students are more likely to score Advanced and less likely to score Below Basic in Reading if librarians assess as "excellent" their teaching of Inquiry-Based Learning. As for administrators, this finding about librarians' self-assessments underscores the primary importance of the Inquiry-Based Learning standard.

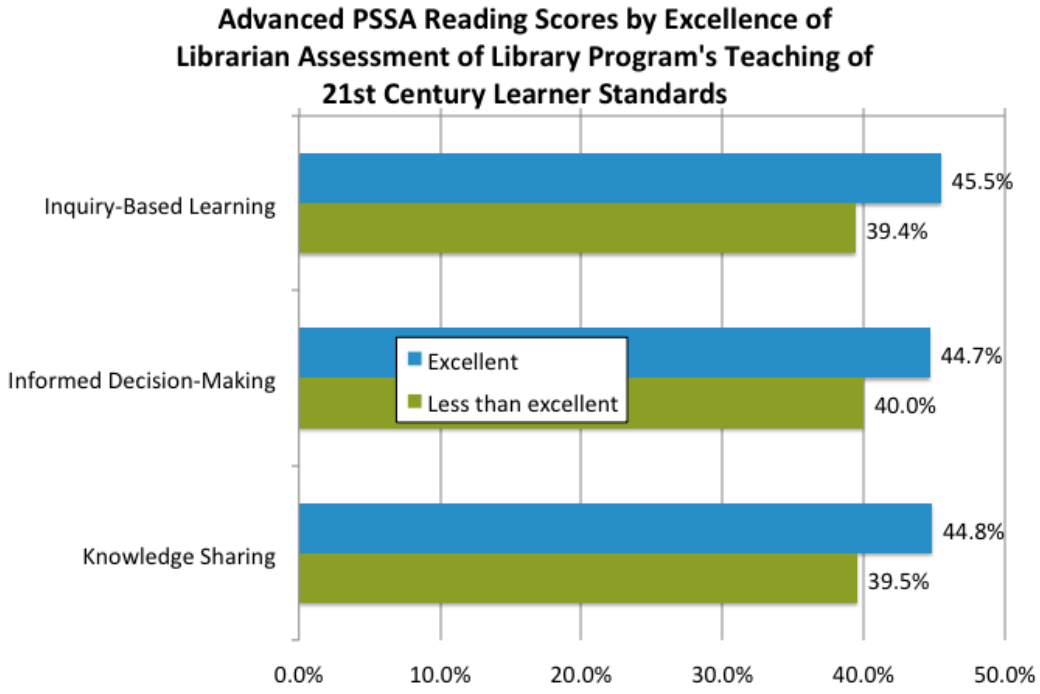
- Students are more likely to score Advanced and less likely to score Below Basic in Writing if librarians assess as "excellent" their teaching of Inquiry-Based Learning and Pursuing Personal Growth. Interestingly, while librarians' self-assessments of their teaching of Pursuing Personal Growth are not related to Reading scores, they are associated with Writing scores. It seems reasonable to speculate that most librarians understand the value of students exploring personal interests to developing Advanced Writing skills—or, at least, to developing beyond Below Basic.

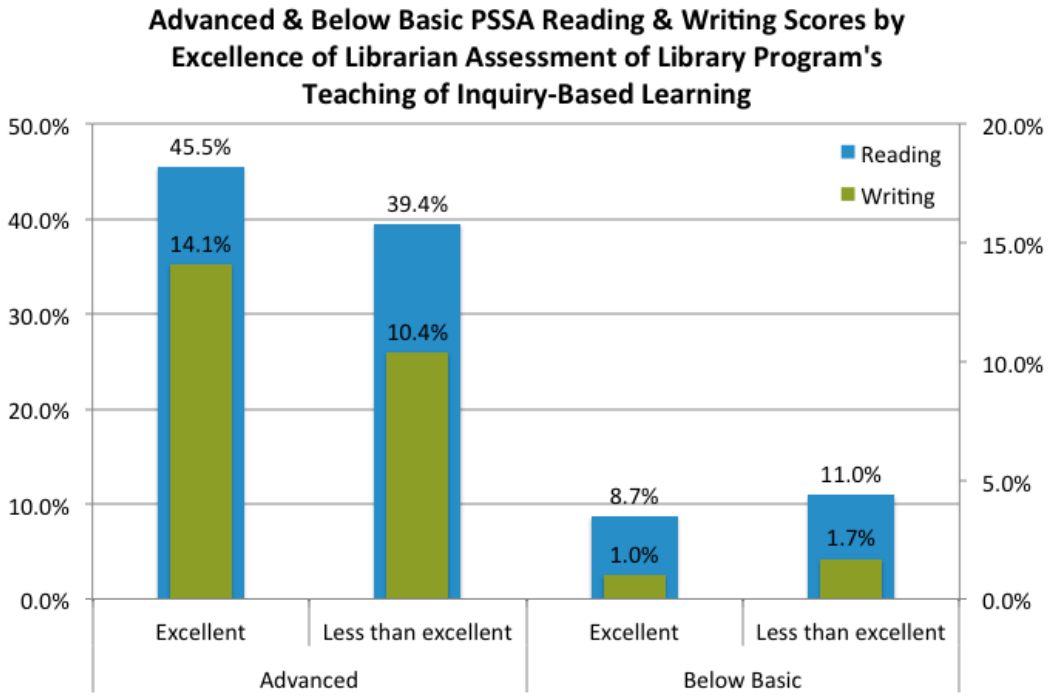
Assessment of (students') library skills is a very important element that is not mentioned in the survey. I strongly feel that if we (librarians) want to be seen as part of the team, then we must evaluate our students on the skills we are expecting them to master. The classroom teacher cannot assess them on these skills for they do not teach them…. (This is) the librarian's responsibility. … our PSSA tests reflect the high amount of use we have in the library. I am booked through the entire year with classes. I teach. The classroom teacher teaches. The students learn what is a fact, how to take notes, how to cite the sources, what makes a good source … Assessment and evaluation by the librarian needs to be done and preached continuously.
- Middle School Librarian

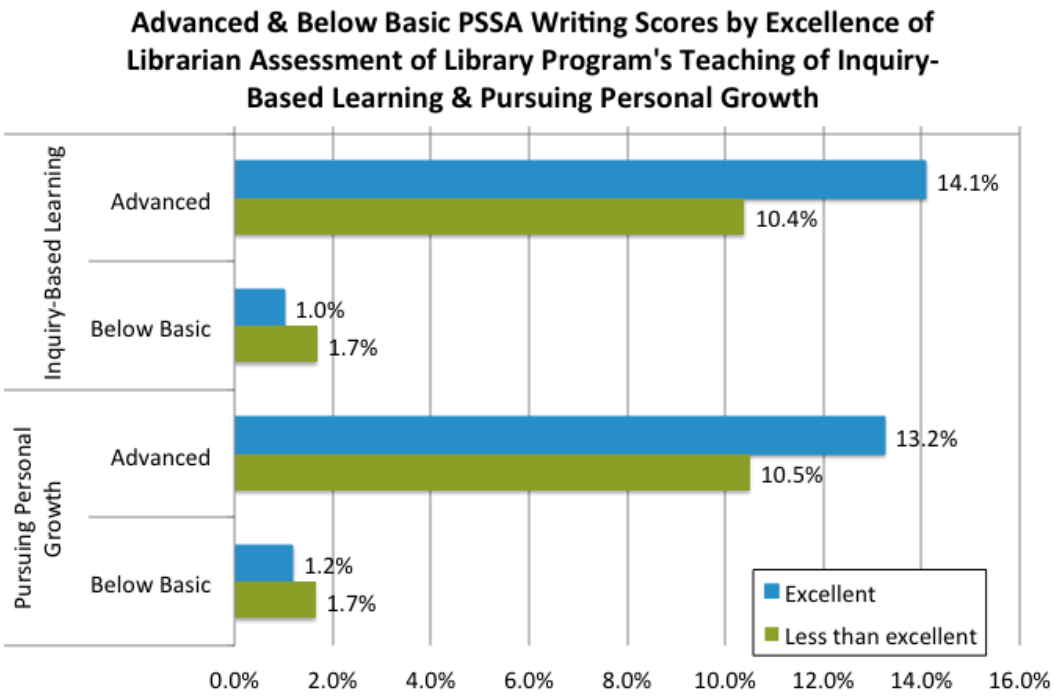
As a librarian, there is nothing more rewarding than to have students approach me and ask "what do you recommend next for me to read, I really loved that last book." I have had parents [tell me] their children loved the books that I recommended. The skill of reading and enjoying reading transcends all 21st Century skills. Without that basic skill, nothing else can be achieved.
- Middle School Librarian

The 21st century learner is learning at a rate that education has trouble keeping up with. Educators need to understand this and create curriculum that is of interest, is relevant to and challenges the students of today. Librarians have the opportunity to be at the forefront of this endeavor and should be willing to lead the charge as we move deeper into the 21st century.
- Middle School Librarian

Teachers often come to me to brainstorm units that they want to modify to see how I would embed 21st century skills into the student learning objectives. We have an open door relationship and my willingness and flexibility in helping them keep them coming back. An additional element that prompts teachers to consult me is that I constantly strive to understand pedagogy and 21st century skills. … I believe we desperately need to build a culture of Library Media Specialists who model educational leadership.
- High School Librarian


Advanced PSSA Reading Scores by Excellence of Librarian Assessment of Library Program's Teaching of 21st Century Learner Standards
Inquiry-Based Learning
Informed Decision-Making
Knowledge Sharing
Excellent
Less than excellent
45.5%
39.4%
44.7%
40.0%
44.8%
39.5%
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%


Advanced & Below Basic PSSA Reading & Writing Scores by Excellence of Librarian Assessment of Library Program's Teaching of Inquiry-Based Learning
Reading
Writing
45.5%
14.1%
39.4%
10.4%
8.7%
1.0%
11.0%
1.7%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Excellent
Less than excellent
Excellent
Less than excellent
Advanced
Below Basic



[During my tenure] I have seen students begin to think of the library as an essential part of their daily lives. I have convinced them that the library is "always open" … Circulation is up, enthusiasm for new books is up, participation in the PA Young Reader's Choice challenge, Reading Olympics and a general excitement about coming to library has increased. This school's PSSA scores are up and we've always met AYP.
- Elementary School Librarian

We do a 7th grade research project after PSSAs in conjunction with the reading teachers to give the kids a taste of the research process. We have had students tell us a few years later how helpful this was to them in high school and beyond.
- Middle School Librarian

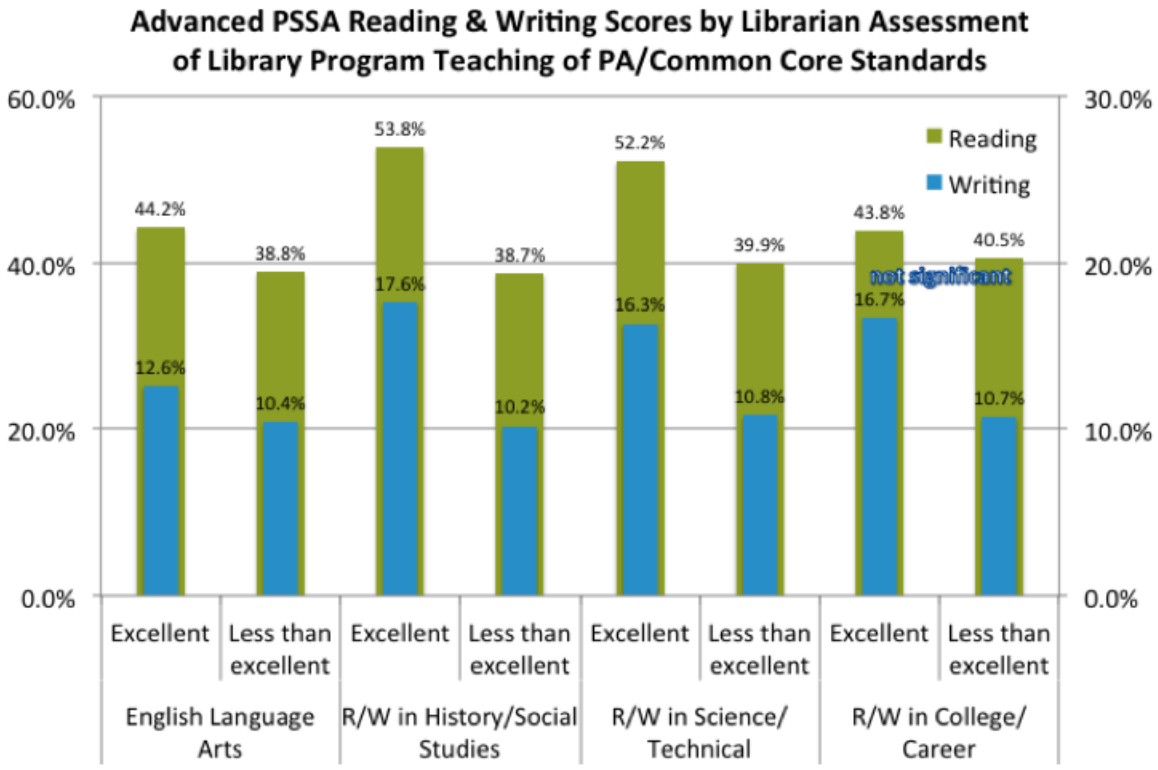
I am proud of the program we have built here ... My High School teachers use the library extensively. A research unit that requires library research is written into the English curriculum at each grade level. Using the print collection and our databases, our students are able to access information to complete classroom assignments. They are taught search strategies and proper MLA documentation. In addition, we have a very large fiction circulation. Our students use the library heavily for their own recreational reading needs. It is very rewarding to see our students reading, sharing and discussing books they obtained from the library!
- High School Librarian

Librarians on PA/Common Core Standards & PSSA Scores

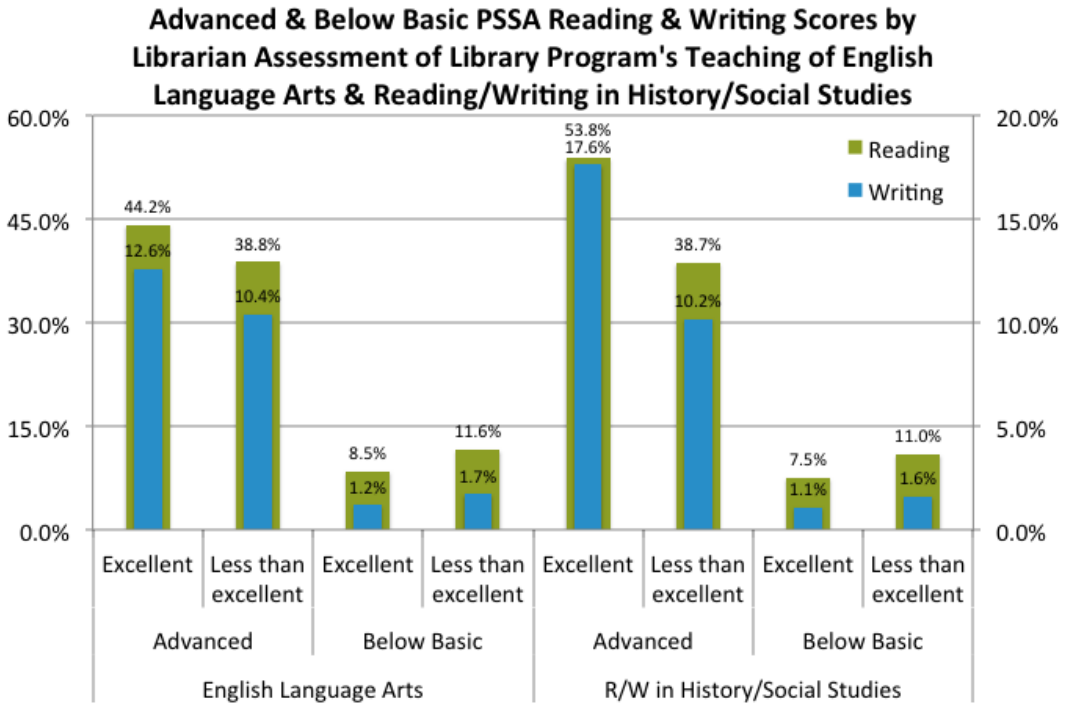
Uniquely among the three educator groups, how librarians self-assess their teaching of the PA/Common Core standards—English Language Arts and Reading/Writing in History/Social Studies, Science/Technical Subjects, and College/Career Readiness--is associated with advanced PSSA Reading and Writing scores.

- Students are more likely to score Advanced on Reading and Writing tests when librarians self-assess as "excellent" their own teaching of these standards. (While the percentage of students with Advanced Reading scores is greater for librarians who rate themselves as "excellent" on teaching Reading and Writing for College/Career Readiness, this difference over peers who rate themselves less than excellent on that standard is not significant, indicating that it might not be replicated with a different sample.)

- For two of the PA/Common Core standards—English Language Arts and Reading/Writing in History/Social Studies—librarians' self-assessments of their teaching of these standards are associated with both Advanced and Below Basic scores on both Reading and Writing tests. Where librarians assess their own teaching of these standards as "excellent", students are more likely to score Advanced and less likely to score Below Basic. These findings indicate that, for those two standards, the teaching efforts of librarians may make a specific contribution to closing achievement gaps between students with the highest and lowest PSSA scores.



Note: This chart reports the relationships between how librarians assess their own teaching of PA/Common Core standards and Advanced PSSA scores only. Example: Where librarians assess their own teaching of English Language Arts as "excellent", schools average 44.2% of students scoring Advanced on Reading. Where they assess library teaching of this standard as less than excellent, schools average 38.8% of students scoring Advanced.



Note: This chart reports the relationships between how teachers assess the teaching of two PA/Common Core standards and Advanced and Below Basic PSSA scores on both Reading and Writing tests. Example: For their teaching of English Language Arts, Advanced Reading scores average 44.2% of students at schools where librarians assess their own teaching as "excellent" and 38.8% where they assess their own teaching as less than excellent. For the same standard, Below Basic Reading scores average 8.5% of students at schools where librarians assess their own teaching as "excellent" and 11.6% of students at schools where they assess their own teaching as less than excellent.

Teachers come to me from all subject areas and collaboratively we design lessons that will engage students and teach them how to find timely, accurate, and useful information. [We address h]ow to interpret information and use it to create new ideas or to create new ways of presenting information … Our social studies teacher requires that students read outside the history book and has actually influenced the Language Arts department to select books that correspond with the social studies/history curriculum based on our collaborative selections on historical fiction and creative nonfiction.
- Middle School Librarian

There was a time when I thought my most important role with students was to help them with research: teaching them to locate and use resources efficiently and responsibly, to be 21st century learners, and so on. After over twenty years as a librarian, though, … I feel most professionally fulfilled when I help a student find a book, particularly a student who is not a regular reader, and he or she comes back to me and says "Hey, I loved that book. Do you have any more I might like?" As an educator, … there is nothing like turning on a student to reading because being a reader is empowering and it does, indeed, change lives.
- Junior/Senior High School Librarian

We are committed to involving students in the National History Day Competition. I work with 3 classroom teachers to carry out the design and teaching of lessons that lead students through the [research and writing] process. … National History Day is a primary way in which I teach information literacy skills.
- High School Librarian

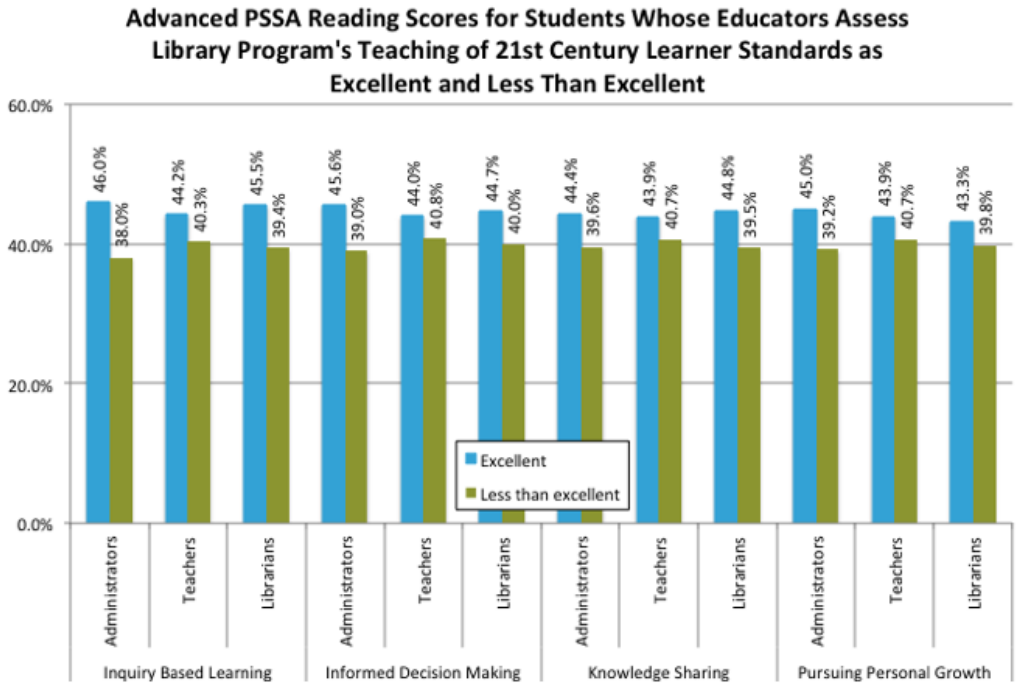
Students and some teachers regularly visit the high school library. Research required by Language Arts teachers frequently requires students to utilize databases and print materials. History teachers sometimes require students to use print materials and/or databases. Other teachers utilize the library for computer use--access to a variety of web based sites, etc.
- High School Librarian

Summary

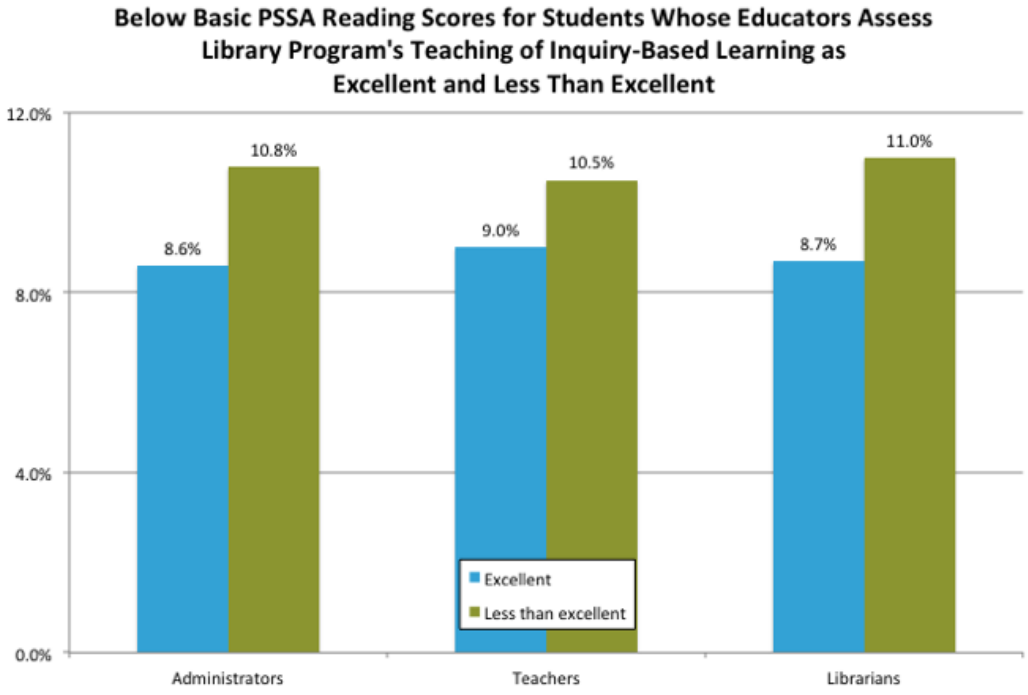
The two previous chapters documented the associations between the value placed on key library practices, the frequency of key library activities, and perceptions of librarian roles, on the one hand, and educators' assessments of the library's instructional program to address 21st Century Learner and PA/Common Core standards. The last chapter documented the close associations between the educators' assessments of how the library program and the school librarian contribute to teaching the two sets of standards.

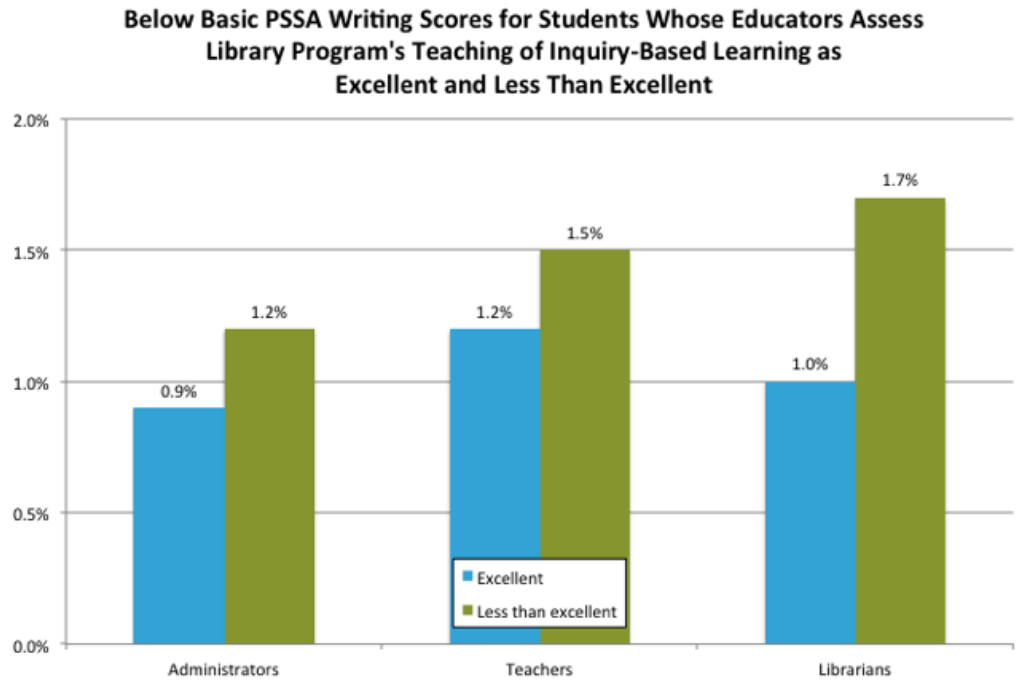
This chapter took the final analytical step of validating those assessments by measuring their associations with PSSA Reading and Writing scores.

With notable consistency, Advanced Reading and Writing scores tend to be earned by students at schools where administrators, teachers, and librarians believe the library program is "excellent" at teaching all four 21st Century Learner standards: Inquiry-Based Learning, Informed Decision-Making, Knowledge Sharing, and Pursuing Personal Growth.



There is further consensus across the three educator groups about Inquiry-Based Learning. "Excellent" assessments of the library program's role in teaching the Inquiry-Based Learning standard are associated with fewer students scoring Below Basic on the PSSA Reading and Writing tests.





In the case of PA/Common Core standards, higher percentages of students score Advanced on both Reading and Writing tests where their librarians assess as "excellent" their own teaching of all of these standards: English Language Arts and Reading/Writing in History/Social Studies, Science/Technical Subjects, and College/Career Readiness. In addition, students are more likely to score Advanced and less likely to score Below Basic on both Reading and Writing tests where their librarians assess as "excellent" their own teaching of two of the PA/Common Core standards: English Language Arts and Reading/Writing in History/Social Studies.

Chapter 11: Estimated Costs of 21st Century School Library Programs

In its first two phases, this study identifies several components of school library infrastructure—both quantitative matters, such as how much staff and "stuff" (i.e., digital resources, traditional collections) a library program has, and qualitative matters, such as what school librarians teach, how they teach it, and how they are perceived by and interact with other educators while teaching it. The impact of these infrastructure components is measured both qualitatively and quantitatively.

First, for infrastructure components for which data are available (i.e., staffing, resources spending, digital resources, collections, and library access), their impact on Reading and Writing results from the Pennsylvania System of School Assessment (PSSA) is measured statistically.

Second, for more qualitative elements on which this study collected data (i.e., what administrators value, activities reported by teachers and librarians, perceptions of librarian roles), their impact on the teaching of academic standards is evaluated based on educators' assessments of the excellence of library program teaching of academic standards. The standards in question include both Standards for the 21st Century Learner promulgated by the American Association of School Librarians (AASL) and Common Core standards developed by the Common Core State Standards Initiative and adopted by the Pennsylvania Department of Education. Then, to validate the perceptions of administrators, teachers, and librarians about the impact of library programs on teaching standards, their assessments of library program teaching are compared with PSSA Reading and Writing scores.

Now, input from administrators, teachers, and librarians provides the basis for determining school library infrastructure components for which to estimate statewide costs.

In this chapter, high-priority infrastructure components are identified along with their estimated statewide costs and the evidence of their efficacy. The remaining infrastructure components and their relationships to the high-priority components are also discussed.

School Library Infrastructure Components

In this study's surveys, administrators, teachers, and librarians were asked to assess the following infrastructure components as essential, highly desirable, desirable, or not desirable based on their beliefs about the component's positive impact on student learning and academic achievement. (They also had the option don't know/need more information.)

- Full-time certified librarian (with school librarian certification) in every school
- Library coordinator (with school librarian certification) in every district
- Library coordinator (with school librarian certification) in every intermediate unit
- School Library Advisor (with school librarian certification) at Commonwealth Libraries, the State Library Agency in the Department of Education
- State-mandated and assessed 21st century skills curriculum for which librarians are responsible
- State-negotiated and acquired collection of electronic/digital resources to support a 21st century skills curriculum (e.g., databases, e-books)
- Pre-service, induction, and continuing education about librarian's role in teaching 21st century skills for prospective librarians

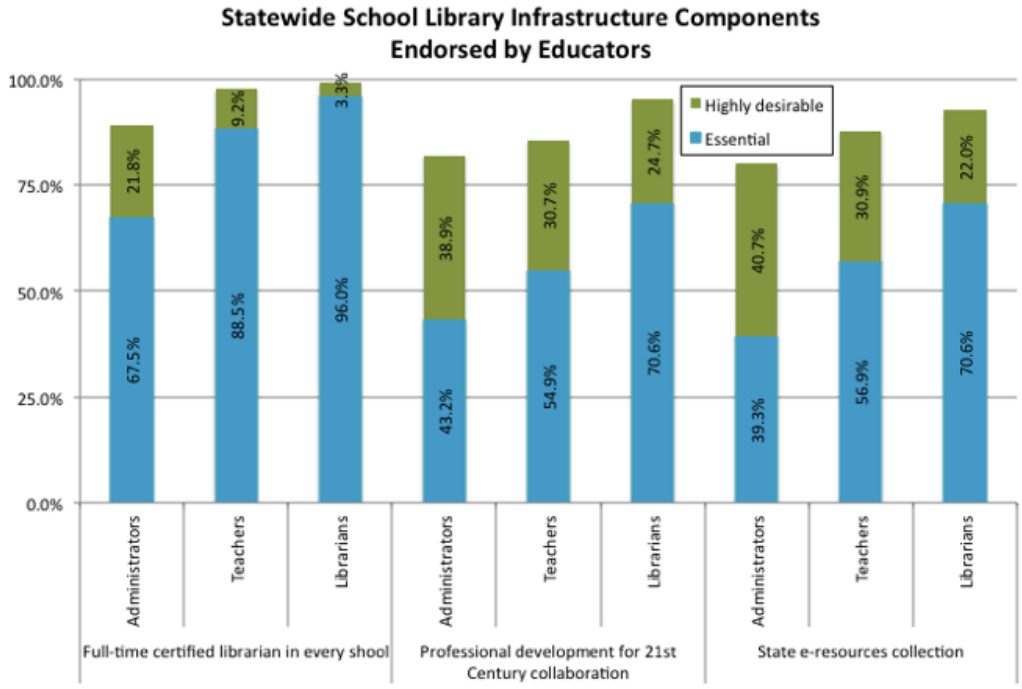
- Pre-service, induction, and continuing education about librarian's role in teaching 21st century skills for prospective teachers
- Pre-service, induction, and continuing education about librarian's role in teaching 21st century skills for prospective administrators
- Professional development supporting collaborative teaching of 21st century skills for librarians and teachers

This list of potential components of a statewide infrastructure for 21st century school library programs was generated by a focus group of school library leaders from throughout the state in January 2012.

High-Priority Infrastructure Components and Their Estimated Statewide Costs

Of the 10 statewide school library infrastructure components about which educators were asked, three are assessed as essential or highly desirable by overwhelming majorities of the three educator groups.

- Nine out of 10 administrators and virtually all teachers and librarians support strongly having a full-time certified librarian in every school.
- Four out of five administrators and nine out of 10 teachers and librarians support strongly having a state-negotiated and acquired collection of electronic/digital resources to support a 21st Century Skills curriculum (e.g., databases, e-books).
- Four out of five administrators, almost nine out of 10 teachers, and almost all librarians support strongly having professional development programs that support collaborative teaching of 21st century skills for librarians and teachers.



Full-Time Certified Librarian in Every School

According to the Pennsylvania Department of Education (PDE), this 2011-12 school year, the state has 2,929 public schools (in 500 school districts), 161 charter schools, and 12 Comprehensive Career and Technical (CCT) schools.[1] According to the Pennsylvania State Education Association (PSEA), the average starting salary for a teacher (librarians are on the same pay scale) is $40,738.[2] Thus, if there was a full-time, certified librarian in every Pennsylvania school, their total salaries can be estimated—conservatively—at $126,369,276. For the 2012-13 school year (about to begin at this writing), the average starting salary for a teacher will be $41,569. At that rate—and assuming the number of schools remains static—the conservative estimate of the cost of a librarian in every school for the upcoming school year is $128,947,038.

Over $126 million for 2011-12. Almost $129 million for 2012-13. Those are daunting figures. But, what do they represent in the larger context of school spending?

The latest fiscal data available from PDE is for 2010-11.[3] According to PDE's data, that year, public schools spent $26,583,618,533—almost $26.6 billion dollars. Conveniently, this is the same year as the legislature-mandated survey of school libraries in Pennsylvania.[4] According to the study report, that year, there were 2,970 schools (in 500 districts), 141 charter schools, and 14 CCT schools. According to PSEA, the average starting salary for a teacher that year was $40,043.[5] Multiplying that salary by the total number of schools—3,125—the conservatively estimated cost of a librarian in every school for 2010-11 would have been $125,134,375.

Hypothetical Base Cost of a Full-Time Certified Librarian in Every Pennsylvania School, 2010-11 to 2012-13

	2010-11	2011-12	2012-13
Average starting teacher salary	$40,043	$40.738	$41,569
Number of public schools	3,125	3,102	3,102
Hypothetical base cost of a full-time certified librarian in every school	$125,135,375	$126,369,276	$128,947,038

[1] Mary Kay Biagini, Professor, University of Pittsburgh, "Figures on Number of Schools", email to Keith Curry Lance, August 31, 2012. Referencing talk with Deb Rodrigues, Educational Statistics Director, Pennsylvania Department of Education.

[2] Michael Crossey, President, Pennsylvania State Education Association, "Entry Level Salary for a Teacher", email to Deb Kachel, forwarded to Keith Curry Lance, August 27, 2012. Reporting average starting salaries for teachers for school years 2009-10 through 2012-13.

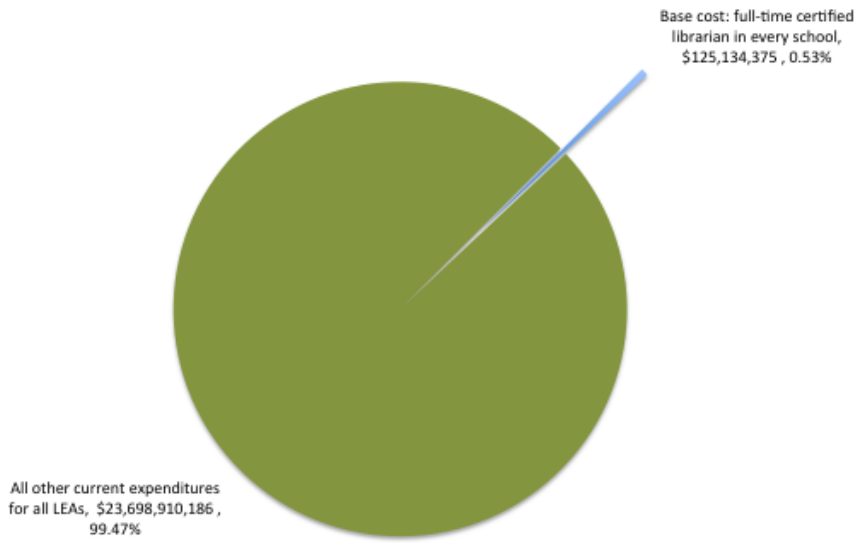
[3] Pennsylvania Department of Education, Summaries of Annual Financial Report Data: Expenditure Data for All LEAs, 2010-11, accessed at: http://www.portal.state.pa.us/portal/server.pt/community/summaries_of_annual_financial_report_data/7673/afr_excel_data_files/509047, October 4, 2012.

[4] **Pennsylvania School Library Study: Findings and Recommendations** (Pennsylvania State Board of Education, September 2011), pp. 9-10, accessed at: http://issuu.com/dkachel/docs/stateboardstudy/1, September 18, 2012.

[5] Crossey e-mail.

That figure and PDE's general fiscal data lend perspective to the surprising modesty of the estimated cost of having a full-time certified librarian in every school. $125,134,375 (starting teacher salary in every school) divided by $23,824,044,561 (current expenditures for all local education agencies, or LEAs) equals 0.47%. In other words, it would cost only about one half of one percent to have a librarian in every school in Pennsylvania.

Hypothetical Base Cost of a Full-Time Certified Librarian in Every School as a Percentage of Current Expenditures for All Local Education Agencies, 2010-11



For the "payoffs" itemized in this report—overall differences in test results, demonstrable potential for closing achievement gaps for specific student cohorts, differences in educator assessments of the role of librarians in teaching academic standards (confirmed by test scores)—it seems a modest price. About 5 cents out of every $10 spent to operate public schools annually.

Education decision makers at state, district, and building levels are encouraged to consider the viability of this investment and the variety of legal and fiscal mechanisms available to them to create mandates and/or incentives for its realization. Any viable path to achieving the goal of a librarian in every school will need to be one created and supported by a critical mass of the state's education decision makers.

State-Negotiated and Acquired Collection of Electronic/Digital Resources to Support 21st Century Skills Curriculum

Since 1998, electronic/digital resources shared by all libraries in Pennsylvania, including school libraries, have been funded, organized, and referenced collectively as the POWER (Pennsylvania Online World of Electronic Resources) Library program. Because electronic/digital rights to these instructional resources are purchased on behalf of school and other libraries by the state, there are substantial savings over what individual schools would have paid for rights to the same database products.

In 2005, Access Pennsylvania peaked at 37 database products, on which Commonwealth Libraries and the Pennsylvania Department of Education spent a total of $1,772,001. In October 2005, PDE reported total public school enrollment of 1,830,684.[6] This means that, for the 2005-06 school year, spending on database resources available to the state's public schools and their students amounted to 97 cents per student.

In a February 2012 Office of Commonwealth Libraries letter to superintendents, Alice Lubrecht, Interim Deputy Secretary of Education and Commissioner for Libraries, reports that the far more meager POWER Library database collection available this year (down from 37 database products in 2005-06[7] to 17 in 2011-12[8]) "would cost approximately $40,000 per school library if schools had to pay the vendor subscription fees."[9] At that rate, to match those database offerings in 2011-12, the state's 3,102 schools would have had to spend $124.08 million in database fees. That is the equivalent of $70.29 per student. (That figure is confirmed—actually, exceeded—by an independent estimate of $72.54 per student provided by a major library database vendor six months later.[10])The same year, the total costs of the statewide POWER Library contracts were $630,000—or half of one percent of the costs that would have been incurred by individual schools.[11]

POWER Library Database Contracts, 2005-06 to 2011-12 Gap

POWER Library contracts, 2005-06	$1,772,001
Number of databases, 2005-06	37
Enrollment, October 2005	1,830,684
Cost per student. 2005-06	$0.97
POWER Library contracts, 2011-12	$630,000
Number of databases, 2011-12	13
Enrollment, October 2011	1,765,327
Cost per student, 2011-12	$0.36
POWER Library difference, 2005-2011	$1,142,001
Enrollment, October 2011	1,765,327
Hypothetical additional cost per student, 2011-12	$0.65

Clearly, these figures indicate that purchasing the rights to databases on a statewide basis versus an individual school basis is an open-and-shut case of economy of scale as well as a guarantee of equal access

[6] Pennsylvania Department of Education, Public School Enrollment Reports: enrollment public school 2005-06.xls, accessed at: http://www.portal.state.pa.us/portal/server.pt/community/enrollment/7407/public_school_enrollment_reports/620541, September 18, 2012.

[7] For an annotated listing of the 37 databases available in 2005, see: Montgomery County Library & Information Network Consortium, POWER Library, Vendor Database Descriptions, last updated December 2005, accessed at: http://www.mclinc.org/PLvendordescr.htm, September 18, 2012.

[8] For an annotated listing of the 17 databases available in 2012, see POWER Library Network, POWER Library Resources (Revised 4/12), accessed at: http://www.powerlibrary.org/Secure/Promo/Resources2011.pdf, September 18, 2012.

[9] Alice Lubrecht, Interim Deputy Secretary of Education and Commissioner for Libraries, Office of Commonwealth Libraries, Pennsylvania Department of Education, February 2012, accessed at: http://www.accesspa.state.pa.us/pdf/schools.pdf, September 18, 2012.

[10] Anonymous, "Costing Out Digital Resources", e-mail to Deb Kachel, Project Director, Supporting the Infrastructure Needs of 21st Century School Library Programs, August 13, 2012.

[11] Joseph C. Scorza, Executive Director, HSLC/Access PA, "POWER Library Database Expenditures: 2008-2012", e-mail to IMLS 2011 Grant listserv, August 30, 2012.

to these instructional resources for all Pennsylvania students, regardless of how rich or poor their community or their school may be.

For 2011-12, POWER Library database contracts covered only 13 databases—fewer than half the number available in 2005-06--and totaled $630,000—35.6%, little more than a third, of the 2005-06 funding level.[12] Certainly, the number and variety of databases available today are greater than in 2005-06. EBooks alone are a new area of electronic/digital content that will soon rival full-text databases of periodical literature and reference works. In any event, whatever specific products such funding might be spent on in the future, just to match the state's 2005-06 spending on electronic/digital resources for school libraries would require an increase over 2011-12 funding of $1.142 million.

Professional Development Supporting Collaborative Teaching of 21st Century Skills for Librarians and Teachers

Most opportunities for librarians and teachers to experience professional development opportunities that support their collaborative teaching of 21st century skills will be in the context of regular in-service days. Most often, these in-service days do not involve any extraordinary costs for schools, because schools usually are not in session on such days. In order to take advantage of in-service days shared by librarians and teachers, it will be necessary for librarians to be excused for two additional days per school year (one per semester) to plan and prepare for librarian-teacher collaboration sessions on those days. Because schools will be in session on those days, substitutes for school librarians will be required to keep school libraries open. According to the Pennsylvania School Board Association, for 2011-12, the average daily rate for substitute teachers statewide was $86.[13] At that 2011-12 rate, the annual cost of two days of substitute coverage for one librarian from each of the state's 3,102 schools can be estimated at $533,544.

Estimated Annual Cost of
21st Century Professional Development for Librarians

Average statewide daily cost of a substitute teacher, 2011-12	$86.00
Recommended number of annual days of professional development for librarians	2
Number of schools, 2011-12	3,102
Estimated annual cost of 21st century professional development for librarians	$533,544

Other Infrastructure Components

Impressive majorities of the three educator groups also support strongly the remaining seven statewide infrastructure components for school library programs. These seven components fall in three major groups:

[12] Scorza e-mail.

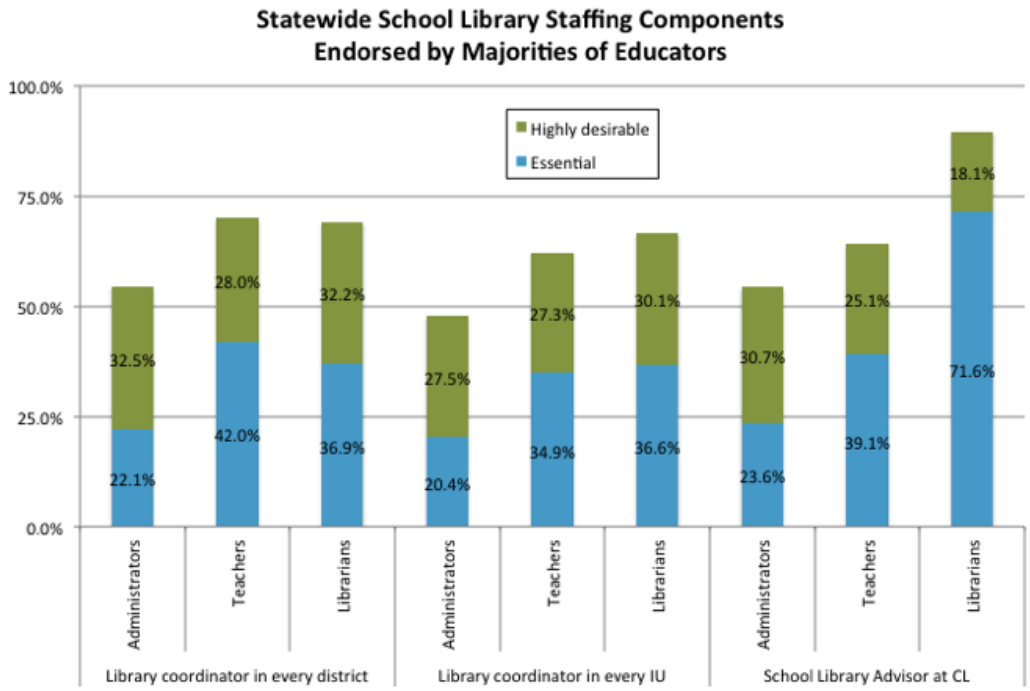
[13] Pennsylvania School Board Association, **School Leader News**, July 20, 2012, p. 3, accessed at http://www.psba.org/issues-advocacy/issues-research/school-salaries/substitute_teacher_salaries-2011-12.pdf, September 18, 2012.

Library Coordination

Coordination of library services at district, intermediate unit, and state levels has considerable support from educators:

- Over half of administrators, seven out of 10 teachers, and almost seven out of 10 librarians support strongly having a library coordinator (with school librarian certification) in every district.
- Almost half of administrators, more than three out of five teachers, and two out of three librarians support strongly having a library coordinator (with school librarian certification) in every intermediate unit.
- Over half of administrators, almost two out of three teachers, and nine out of 10 librarians support strongly having the School Library Advisor (with school librarian certification) at Commonwealth Libraries.

What is especially notable in these findings about library coordination at district, intermediate unit, and state levels is the divergence of opinion between administrators, on the one hand, and, on the other, teachers and librarians. District and intermediate unit coordination of library services has substantially more support from both teachers and librarians than from administrators. This difference suggests a need for greater dialogue with administrators about these functions and their consequences for students—consequences that, apparently, are more immediately apparent to front-line educators than their supervisors.



The other noteworthy finding for this group of infrastructure components concerning coordination of library services is the gap between librarians and others. While majorities of administrators and teachers support strongly the School Library Advisor position at Commonwealth Libraries, nine out of 10 librarians do so. This difference suggests a need for greater communication with both administrators and teachers about the benefits of this position for school library programs at both district and building levels.

21st Century Skills Curriculum

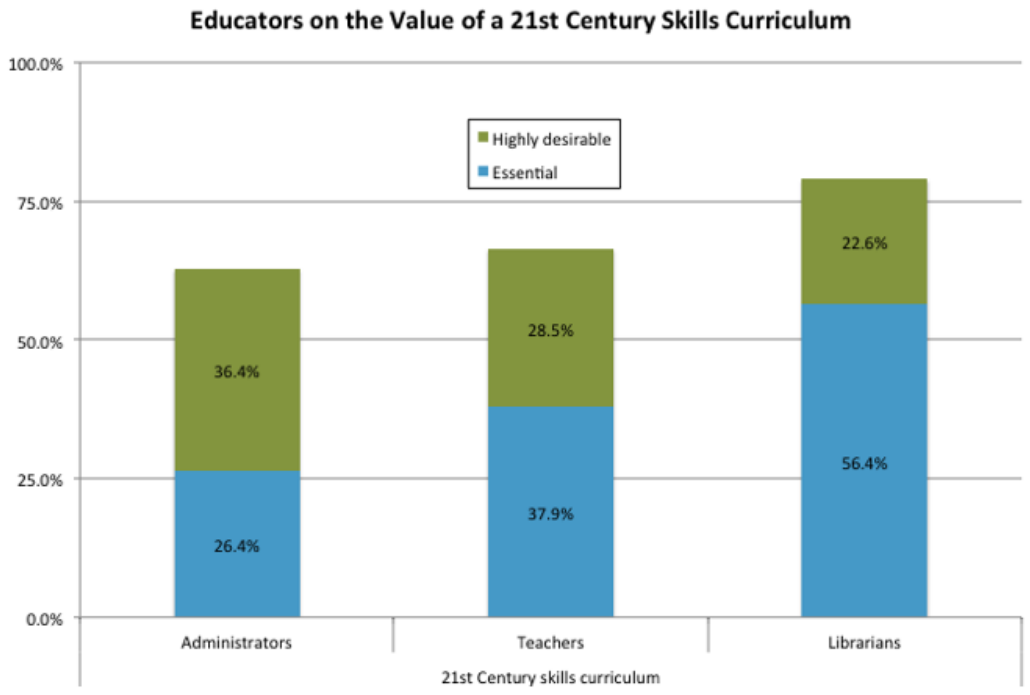
A majority of each educator group expresses support for a state-mandated and assessed 21st Century Skills curriculum for which librarians are responsible. Considering that this idea is just that—only an idea at this time—the levels of support are remarkable.

Such a curriculum is deemed essential or highly desirable by about two-thirds of administrators and teachers and four out of five librarians.

These levels of support are all the more remarkable given the qualifiers attached to the idea of such a curriculum:

- State-mandated
- Assessed
- For which librarians are responsible

State mandates generally and in education in particular are not usually very popular. In this case, however, substantial majorities of the three educator groups consider this largely undeveloped idea either essential or highly desirable. Most likely, the fact that so many agree about the value of such a state-mandated curriculum says something about the perceived value of 21st century skills.



What makes the levels of support for such a curriculum even more impressive is the qualifier that it be assessed. Assessment—especially as manifested by high-stakes state testing—is both time-consuming and controversial. Many feel that there is too much assessment already. If educators themselves feel that they ought to be assessed on something yet more for the sake of their students, that is noteworthy. Notably, however, it was not specified at what level (state, district, building) such assessment should take place.

Perhaps, administrators and teachers did not feel too "threatened" with more assessment thanks to the final qualification—that this curriculum is something for which librarians would be responsible. That being the case, it would be an instrument for evaluating librarians, not teachers or their schools more generally (i.e., making it a personal issue for administrators).

There is, however, an implicit issue with this component. Having a state-mandated and assessed 21st century skills curriculum for which librarians are responsible at least implies that it is something every school would be expected to address. And, if such a curriculum is something for which librarians are responsible, that presupposes one of this study's high-priority infrastructure components—a full-time, certified librarian in every school.

For this reason, while it is impossible to put a price to this component in its present undeveloped state, the strength of educator sentiment for the idea provides an additional argument for the high-priority component, a full-time, certified librarian in every school.

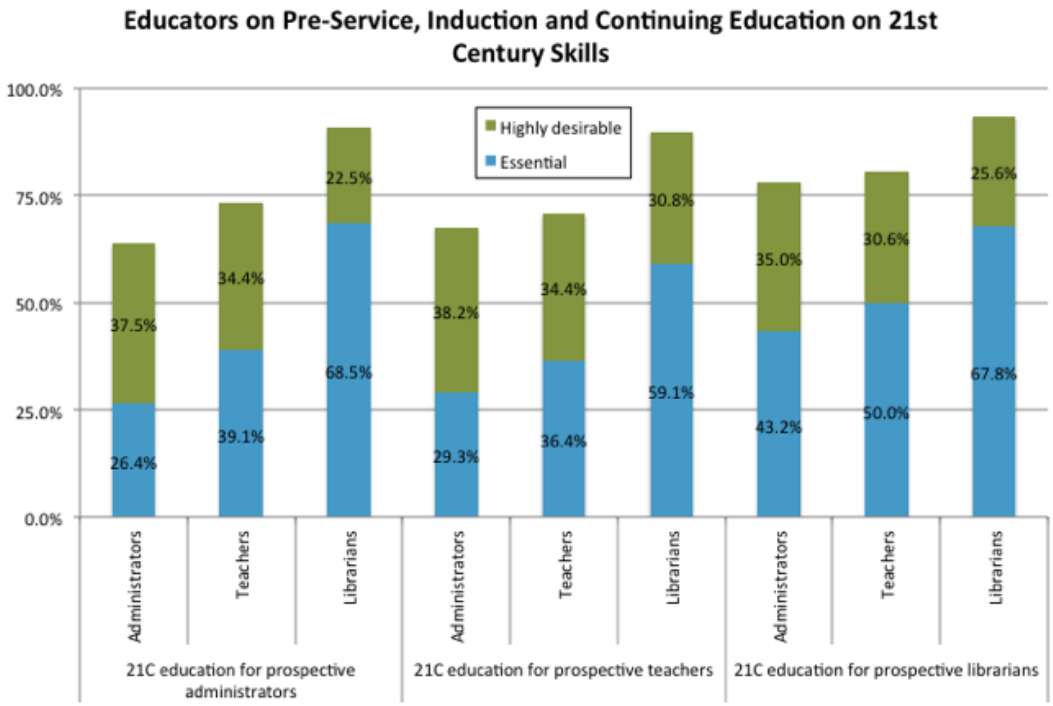
Pre-Service, Induction, and Continuing Education on 21st Century Skills for Educators

The three remaining school library infrastructure components concern the place of 21st century skills in the ongoing professional education of administrators, teachers, and librarians. It is conventional wisdom that the roles of school library programs and school librarians are not understood widely in the education community, especially in public schools. Add the more specific concern of 21st century skills, and this dilemma becomes even more problematic.

- Two out of three administrators, three out of four teachers, and nine out of 10 librarians agree that such 21st century skills education is essential or highly desirable for prospective administrators.

- Similarly, two out of three administrators, seven out of 10 teachers, and nine out of 10 librarians agree that 21st century skills education is essential or highly desirable for prospective teachers.

- Unsurprisingly, the greatest enthusiasm for ongoing 21st century skills education is associated with librarians. Four out of five administrators and teachers and nine out of 10 librarians agree that it is essential or highly desirable that prospective librarians be exposed to these ideas during their professional education, as they are beginning their school careers, and on an ongoing basis thereafter.



Pre-service education on 21st century skills for the three educator groups is an issue for the higher education community to address. To some extent, the cost of developing new programs of study and new courses is a built-in cost for higher education institutions. Doubtless, however, if the state legislature determined that it had a compelling interest in encouraging the development of such programs of study and courses, it could speed the process dramatically by providing funding incentives for academic institutions to undertake such work.

The induction and continuing education aspects of this component dovetail—at least in terms of cost estimation—with one of the high-priority components, professional development supporting collaborative teaching of 21st century skills for librarians and teachers.

Chapter 12: Conclusion

To conclude this report, this chapter summarizes conceptually this multi-phase study's major findings and outlines a recommended action plan based on the original project proposal submitted to the Institute of Museum and Library Services (IMLS).

This project consists of three phases of research:

- A secondary analysis of available data about school libraries and their relationships to Pennsylvania System of School Assessment (PSSA) Reading and Writing scores
- Primary data collection and analysis about the perceptions of school library programs of administrators, teachers, and librarians and the relationships between those perceptions and their assessments of library program teaching of 21st Century Learner and PA/Common Core standards, and, in turn, the relationships between educators' assessments of library program teaching of those two sets of standards and PSSA scores
- A compilation of available data from the Pennsylvania Department of Education and its Office of Commonwealth Libraries to estimate the costs of funding statewide selected components of a 21st century school library infrastructure

Phase 1 Research: Library Survey Data and PSSA Scores

This second Pennsylvania study of the impact of school library programs on student learning and academic achievement (2012) begins by replicating the first impact study of the state's school libraries (2000). Immediately preceding this project, in 2011, the Pennsylvania state legislature requested that the Pennsylvania State Board of Education conduct a statewide survey of school library programs. Among other things, that survey gathered building-level data about:

- Librarian and library support staffing
- Library resources spending
- Digital resources (i.e., computers, databases, eBooks)
- Library collections (i.e., books, video, audio)
- Library access (i.e., flexible scheduling, more group library visits, library hours beyond the school day)

The initial phase of this project combines those data with 2011 PSSA Reading and Writing scores (i.e., percentages of students scoring Advanced and Below Basic). Reading was tested in grades 3 through 8 and 11, and Writing, in grades 5, 8, and 11. Detailed PSSA scores include separate results for All students; students who are Economically Disadvantaged (i.e., Poor), Black, and Hispanic; and for students with Individualized Education Programs (IEPs—i.e., those with disabilities) It should be noted that data on English Language Learners) were insufficient for inclusion in this study. By analyzing the relationships between library program characteristics and PSSA scores for each of these student sub-groups (referred to as "cohorts" in this report), this phase of the study takes into account poverty, race and ethnicity, and disability status. Similarly, these relationships are examined at each grade level: elementary (grades 3 through 5), middle (grades 6 through 8), and high school (grade 11).

The results of the initial phase are quite consistent with the earlier Pennsylvania study as well as almost two dozen similar statewide studies conducted since 2000. Generally, test scores tend to be better (usually, more students score Advanced and fewer score Below Basic in both Reading and Writing) where library programs are:

- Better-staffed (ideally, with a full-time, certified school librarian with support staff)
- Better-funded to purchase local library resources
- Better-equipped technologically (i.e., more locally purchased technology resources beyond those provided by the state)
- Better-stocked with a variety of traditional print and non-print formats
- More accessible to students, individually and in groups, during and beyond the school day

The findings of this first phase of research are remarkably consistent with those of many other school library impact studies conducted across the U.S. and in Ontario, Canada over the past two decades. The following table identifies the other studies with which the findings of this study's first phase are consistent. It is adapted from a 2011 comprehensive review of those studies and their findings, visit the Mansfield University School Library Impact Studies website at: http://library.mansfield.edu/impact.asp.

Previous School Library Impact Studies Reporting Significant Findings About Selected School Library Variables and Their Positive Association With State Academic Achievement Test Scores

Library Variables	State/Province
Library Staffing	
Number of hours of staffing at library	CA1, CA2, CO1, CO2, DE, IA, IL, IN, MA, MI, MN, NC, NM, NJ, OR, PA, TX, WI
Certified school librarian	CA2, DE, IA, ID, MA, MI, MN, MO, NJ, NY, OH, PA, WI
Full-time librarian	AK, CA2, CO3, IA, IN, MA, MI, MN, NJ, OH, ON1, ON2, OR, PA, WI
Support staff	CA2, DE, IA, MA, NJ, OH, ON1, OR, PA, TX, WI
Library Spending	
Library expenditures (total and/or per student, and not limited to library resources spending)	CA1, CA2, CO1, CO2, CO3, DE, IA, IL, IN, MA, MA, MI, MN, NC, NJ, NM, ON2, OR, PA, TX, WI
Digital Resources	
Networked computers in the library for student use (total, not just those less than 5 years old)	AK, CA1, CA2, CO2, DE, IA, IL, IN, MI, MO, NJ, NM, OH, OR, PA, TX, WI
Access to licensed databases	CO3, IA, IL, IN, MA, MI, MO, NM, ON1, OR, TX, WI
Library Collections	
Print volumes (total and/or per student)	CA2, CO1, CO2, DE, IA, IL, IN, MA, MI, NJ, NM, OR, PA, TX, WI
Video collections	CO3, IA, MA, MI, NJ, NM, TX, WI
Audio materials	IA, MA, MI, NJ, NM, TX, WI
Library Access	
Flexible scheduling of library access	CA1, CO2, DE, IA, ID, IL, IN, MI, MO, NJ, OH, ON2, WI
Library visits per week individual as well as group)	CO2, IA, IN, MI, NC, NJ, NM, OR, PA, WI
Library hours open per week (total, not just beyond school day)	AK, CA2, IA, IL, IN, MA, MI, MN, MO, NC, NM, ON1, OR, PA, TX, WI

The major conclusion to be drawn from these findings is that there is overwhelming evidence that students are more likely to succeed academically where they have school library programs that are better staffed, better funded, better equipped, better stocked, and more accessible. Such library programs have the resources required to ensure that their schools provide the information-rich environments necessary to the academic success of their students.

This study does not stop at measuring the impact of "stuff" (i.e., tangible resources); it continues by examining the values, activities, and perceptions of three educator groups (i.e., administrators, teachers, and librarians) and how those aspects of the school culture support library program efforts to strengthen their students—and, indeed, their teachers—academically.

Phase 2 Research: Educator Perceptions, Standards, and PSSA Scores

This study makes a noteworthy contribution to the literature of school library impact studies, because—for the first time—it connects the dots between the teaching and learning associated with library programs, how well they strengthen school efforts to address 21st and PA/Common Core standards, and the ultimate performance benchmarks, state test scores on both Reading and Writing.

With limited exceptions, this study finds that administrators tend to assess library program teaching of *Standards for the 21st Century Learner* (sometimes referred to as 21st Century Learner standards in this report) and PA/Common Core standards as "excellent" when they value key practices of successful library programs.

Key library program practices are:

- Flexible scheduling of library access
- Librarians and teachers collaborating on instruction
- Librarians being in-service providers to their teachers
- Principals appointing librarians to key school committees
- Principals and librarians meeting regularly
- Principals addressing collaboration with the librarian in teacher evaluations

Similarly, this study finds that teachers and librarians tend to assess library program teaching of both sets of standards as "excellent" when they report more frequent engagement in key activities associated with successful library programs.

Key library program activities are:

- Classes and/or smaller groups of students visiting the library on a flexibly scheduled basis (i.e., as dictated by curricular and instructional needs rather than a fixed schedule)
- Teachers accompanying classes to the library
- Teachers inviting librarians to their classrooms
- Librarians and teachers collaborating on instruction
- Librarians helping teachers learn new information skills

21st Century Learner standards include: Inquiry-Based Learning, Informed Decision-Making, Knowledge Sharing, and Pursuing Personal Growth. (Note: These shorthand names for these four standards were created for this study, and do not come from the original standards publication.)

PA/Common Core standards examined in this study include English Language Arts and Reading and Writing for History/Social Studies and Reading and Writing for Science and Technical Subjects. In addition, overall reading and writing for college and career readiness was also examined, cutting across the above subject areas.

Further, this study finds that, generally, PSSA Reading and Writing scores tend to be better (i.e., more students scoring Advanced, fewer scoring Below Basic) where library program teaching of 21st Century Learner and PA/Common Core standards is deemed to be excellent (versus good, fair, or poor) by librarians, teachers, and administrators.

Over the past two decades, more than a dozen and a half studies—including this one—have found associations between the hours librarians report spending on selected activities and state test scores.

School Library Impact Studies Reporting
Significant Findings About Reported Incidence of Selected Librarian Activities and
Their Positive Association With State Academic Achievement Test Scores

Librarian Activity	State/Province
Provides flexibly scheduled access to library	CA1, CO2, DE, IA, ID, IL, IN, MI, MO, NJ, OH, ON2, PA2, WI
Provides in-service to teachers	AK, CA1, CA2, CO2, DE, IA, ID, IN, NJ, NM, OH, OR, PA1, PA2, TX, WI
Collaborates with teachers on instruction	AK, CA1, CA2, CO2, DE, IA, IL, IN, MI, NJ, NM, OH, ON2, OR, PA1, PA2, TX, WI
Meets regularly with principal	CA, CO2, DE, IA, ID, IN, NJ, NM, ON2, OR, PA2, TX, WI
Serves on key school committees	CA, CO2, IA, ID, IN, ON, OR, PA1, PA2, TX, WI

Note: This table is excerpted from, and amends, the School Library Impact Studies Chart on the Mansfield University School Library Impact Studies Project website (link provided above).

In explaining the relationships between educator perceptions of school library programs, on the one hand, and student learning and academic achievement, on the other, this 2012 study confirms and builds upon the findings of earlier studies—specifically, a 2007 Indiana study and a 2010 Idaho study. Since 2007, this study and its two most similar predecessors have found related associations between the extent to which administrators value corresponding library practices, on the one hand, and, on the other, standards assessments (i.e., Information Literacy standards for Indiana and Idaho; 21st Century Learner standards for Pennsylvania) and/or state test scores (i.e., overall in Indiana, reading and language arts in Idaho, reading and writing in Pennsylvania).

With the exception of flexible scheduling in Indiana, where administrators value each of the practices listed below more highly, their students tend to be more successful academically, based on administrator assessments of standards teaching and/or state test scores.

School Library Impact Studies Reporting
Significant Findings About What Administrators Value in Library Programs and
Positive Associations With Standards Assessments And / Or Test Scores

Library Practices Valued by Administrators and Associated with Standards Assessments / Test Scores	Indiana (2007)	Idaho (2010)	Pennsylvania (2012)
Library access scheduled flexibly	X	■	■
Librarian and teachers collaborate on instruction	■	■	■
Librarian provides in-service to teachers	■	■	■
Librarian and principal meet regularly	■	■	■
Principal appoints librarian to key school committees	■	■	■

■ indicates a positive, statistically significant relationship between a practice valued more highly by administrators and standards assessments and/or state test scores
X indicates the absence of a positive, statistically significant relationship

This study and its immediate predecessor in Idaho identify librarian roles selected by both administrators and teachers that are associated with better standards assessments (again, information literacy for Idaho, 21st Century Learner for Pennsylvania) by the same educator groups.

- Better standards assessments by administrators and teachers in both states are associated with three librarian roles: instructional support, school leader, and technology instructor.

- The desirability of librarians playing the role of curriculum designer is associated with better standards assessments by administrators in both states.

- Better standards assessments by teachers in both states are associated with four additional librarian roles: in-service provider, instructional resources manager, reading motivator, and teacher (and/or co-teacher).

School Library Impact Studies Reporting Significant Findings About
Librarian Roles Selected by Administrators and Teachers and
Positive Associations With Standards Assessments

	Idaho (2010)		Pennsylvania (2012)	
Librarian Role	Administrators	Teachers	Administrators	Teachers
Curriculum designer	■		■	
In-service professional development provider		■		■
Instructional resources manager		■	■	■
Instructional support	■	■	■	■
Reading motivator		■		■
School leader	■	■	■	■
Teacher or co-teacher		■		■
Technology instructor	■	■	■	■
Technology troubleshooter	■	■		
Tutor of at-risk students		■		
Website manager		■		

Phase 3 Research: Estimated Costs of Selected Statewide Infrastructure Components of 21st Century School Library Programs

In January 2012, a focus group interview of school library leaders identified 10 potential components of a statewide infrastructure to support 21st century school library programs. Those 10 components are:

- Full-time certified librarian (with school librarian certification) in every school
- Library coordinator (with school librarian certification) in every district
- Library coordinator (with school librarian certification) in every intermediate unit
- School Library Advisor (with school librarian certification) at Commonwealth Libraries, the State Library Agency in the Department of Education
- State-mandated and assessed 21st century skills curriculum for which librarians are responsible
- State-negotiated and acquired collection of electronic/digital resources to support a 21st century skills curriculum (e.g., databases, e-books)
- Pre-service, induction, and continuing education about librarian's role in teaching 21st century skills for prospective librarians
- Pre-service, induction, and continuing education about librarian's role in teaching 21st century skills for prospective teachers
- Pre-service, induction, and continuing education about librarian's role in teaching 21st century skills for prospective administrators
- Professional development supporting collaborative teaching of 21st century skills for librarians and teachers

Overwhelming majorities of administrators, teachers, and librarians identified these three of these components as "essential":

- Full-time certified librarian (with school librarian certification) in every school
- State-negotiated and acquired collection of electronic/digital resources to support a 21st century skills curriculum (e.g., databases, e-books)
- Professional development supporting collaborative teaching of 21st century skills for librarians and teachers

Using data from the Pennsylvania Department of Education, the Pennsylvania State Education Association, the Pennsylvania School Board Association, and HSLC/Access Pennsylvania, estimates of the statewide cost of these three components were made.

- The hypothetical cost of a full-time certified librarian in every school, based on the average starting salary for a teacher, is estimated at $125.1 million for 2010-11, $126.4 million for 2011-12, and $128.9 million for 2012-13. For 2010-11, this cost is the equivalent of about one-half of one percent of the current (i.e., operating) expenditures of Pennsylvania public schools—or about a nickel out of every $10 spent on public education.

- The hypothetical cost of restoring the POWER Library statewide collection of electronic/digital resources to 2005-06 levels is an increase of $1.142 million over 2011-12 spending of $630,000—a total of $1.772 million. The hypothetical $1.142 million increase for 2011-12 would have been an additional 65 cents per student.

- The hypothetical annual cost of 21st century professional development for librarians—two days per year to prepare for sessions with teacher colleagues during regular in-service days—is based on the average statewide daily cost of a substitute teacher for 2011-12, $86, so for that year, it would have been $533,544.

Other potential statewide infrastructure components have strong support from one or two of the three educator groups, but none is supported as strongly by all three groups as those mentioned above. These other components include:

- Library coordination: having a library coordinator in every district and intermediate unit and the School Library Advisor at Commonwealth Libraries, Pennsylvania Department of Education (though notably, the latter position is being restored)

- A 21st century skills curriculum

- Pre-service, induction, and continuing education on 21st century skills for educators

About This Research

This second school library impact study for Pennsylvania is the latest in a long line of studies—almost two dozen since 2000. It makes several noteworthy contributions to that literature:

- For the first time, the impact of library programs on selected student cohorts that tend to experience achievement gaps was examined directly. Where past studies relied upon counts of these students as control variables, this study used state test results for those particular groups of students (i.e., Economically Disadvantaged, Black, Hispanic, and Individualized Education Programs). As a result, the evidence is stronger than ever that library predictors of test scores cannot be explained away by demographic and socio-economic factors.

- This is the first statewide school library impact study to assess the roles of librarians and library programs in teaching 21st Century Learner and Common Core standards, and, in turn, the links between librarians and library programs teaching those standards and state test scores. This study provides the first empirical evidence that librarians actually do teach, and that what they teach both addresses academic standards and impacts students' test scores.

- This is one of only a few studies to document the proportionally larger association of library factors with Writing than Reading scores. In the context of 21st Century Learner standards, this makes sense: successful students must be producers as well as consumers of information and knowledge.

- While librarians' self-assessments of their excellence at teaching the two sets of academic standards are far more modest than the corresponding assessments of their administrators and teachers, they apply to both 21st Century Learner and Common Core standards, and are consistent with state test scores.

- Finally, this study documents empirically for the first time the very close associations between 21st Century Learner and Common Core standards. In particular, the evidence indicates that Inquiry-Based Learning provides students with a strong foundation of learning skills that will serve them well throughout their lives.

Recommended Action Plan, 2012-2014

As originally proposed to IMLS, this project had a three-year timeline. A National Leadership Grant in the Research category funded only the first year of that timeline—the study reported herein. The two additional years of activities, which involve building and mobilizing a statewide community partnership to support 21st century school library programs, were not funded. The following action plan is an update of the one included in the original proposal.

Building a Statewide Community Partnership, 2013

For this project—one that aspires to be a model for research and subsequent action nationwide—activities following the release of the research findings are absolutely critical to the project's ultimate success. For that reason, they require additional funding from a new source and at least two full years following the end of IMLS National Leadership Grant funding.

The first post-grant year should focus on building a statewide community partnership to support the development of 21st century library programs in all Pennsylvania public schools.

In "town hall"-style meetings about 21st century learning, stakeholders should explore and assess 1) their understanding of 21st century skills, 2) their consensus about the infrastructure required for quality school library programs that teach them, and 3) steps each stakeholder group is willing to undertake, either on its own or in partnership with other stakeholders, to mobilize support and maintain the momentum needed to build needed infrastructure for 21st century school library programs throughout the state. These stakeholders should include (but not be limited to):

- School board members and administrators
- Classroom teachers
- Community leaders with a strong interest in public education, including parents of students; advocates for students with special needs; and government, business, and non-profit leaders

Potential participants in these "town hall"-style events should be nominated by the study's advisory board, the boards of the organizations partnering on the project, and members of the year-one professional judgment panels and focus groups. Those who accept the invitation to participate in a "town hall" should receive copies of the reports on this project's school library impact research. At the same time, they should receive copies of several key documents about 21st century skills, including:

- The report on the Pennsylvania State Board of Education's survey of school library programs in the state
- reports on the quantitative and qualitative research conducted as part of this project
- IMLS's *Museums, Libraries, and 21st Century Skills*
- AASL's *Standards for 21st Century Learner*

These "town halls" should be scheduled as soon as possible after the release of the study report, and should be as numerous as funding permits to involve stakeholders in every region of the state. Participants should be asked to read the above-mentioned documents, and encouraged to discuss the implications of the documents for their organizations, before attending these events.

Likely questions to be used to frame the conversation with stakeholders at these events include:

- What does the term "21st century skills" mean to you?
- How should school library programs contribute to teaching 21st century skills?
- What are the major obstacles to school library programs contributing in those ways?
- What kind of infrastructure do school library programs need to overcome those obstacles?
- What can your organization do to help develop a 21st century infrastructure for school library programs?
- What might your organization do in partnership with other organizations to help develop a 21st century infrastructure for school library programs?

A detailed report on the findings of these "town halls" should be completed by the facilitators and available to the project advisory board and the boards of the organizations partnering on this study as soon as possible after the last event.

Mobilizing the Statewide Community Partnership, 2014 (and Beyond)

If the report on this research is not well-received by its sponsoring organizations and stakeholder organizations—if it does not provoke them to decision and action—the study will have been "just another school library impact study." While the quantitative and qualitative analyses with which the project began constitute "purer" research, the "town hall"-style events that follow should shift the perspective of the study's audiences from "pure research" to "applied research." In turn, the mobilization activities that follow should to shift the perspective of the study's community audiences from "applied research" to action.

The goal at this stage is to mobilize a statewide community partnership to support the development of 21st Century library programs in all Pennsylvania public schools.

In 2014 (and beyond), the project advisory board and the boards of the study's sponsoring organizations should seek to engage public officials at state and local levels. They should encourage them to review the research findings and focus group and "town hall" input, hold hearings that involve a wide variety of community stakeholders (e.g., school librarians, classroom teachers, school board members and administrators, community leaders with a strong interest in public education), and develop and pursue their own action plans. It is hoped that such plans will mobilize support for realigning existing resources and acquiring new ones to provide the needed infrastructure for quality school library programs throughout Pennsylvania.