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
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

[A]fter our 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.
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

**READING: Percent of Students with Advanced & Below Basic PSSA Scores by Size of Video Collection by Student Cohort**

<table>
<thead>
<tr>
<th>Student Cohort</th>
<th>150+ video</th>
<th>&lt; 150 video</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Advanced: 9.6%</td>
<td>Below Basic: 12.3%</td>
</tr>
<tr>
<td>Poor</td>
<td>Advanced: 16.1%</td>
<td>Below Basic: 17.8%</td>
</tr>
<tr>
<td>Black</td>
<td>Advanced: 23.0%</td>
<td>Below Basic: 23.0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Advanced: 21.6%</td>
<td>Below Basic: 20.8%</td>
</tr>
<tr>
<td>IEP</td>
<td>Advanced: 14.3%</td>
<td>Below Basic: 11.5%</td>
</tr>
</tbody>
</table>

*IEP = not significant*
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
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

<table>
<thead>
<tr>
<th></th>
<th>Advanced</th>
<th>Below Basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>10.7%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Poor</td>
<td>17.0%</td>
<td>17.0%</td>
</tr>
<tr>
<td>Hispanic Black</td>
<td>18.7%</td>
<td>21.5%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>23.8%</td>
<td>21.5%</td>
</tr>
<tr>
<td>IEP</td>
<td>11.1%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

NS = not significant

With audio
Without audio

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

<table>
<thead>
<tr>
<th></th>
<th>Advanced</th>
<th>Below Basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>2.1%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Poor</td>
<td>2.1%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Hispanic Black</td>
<td>3.0%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3.5%</td>
<td>4.1%</td>
</tr>
<tr>
<td>IEP</td>
<td>2.6%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

NS = not significant

With audio
Without audio
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

Our 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