RSL research group

How Libraries Transform Schools by Contributing to Student Success: Evidence Linking South Carolina School Libraries and PASS & HSAP Results

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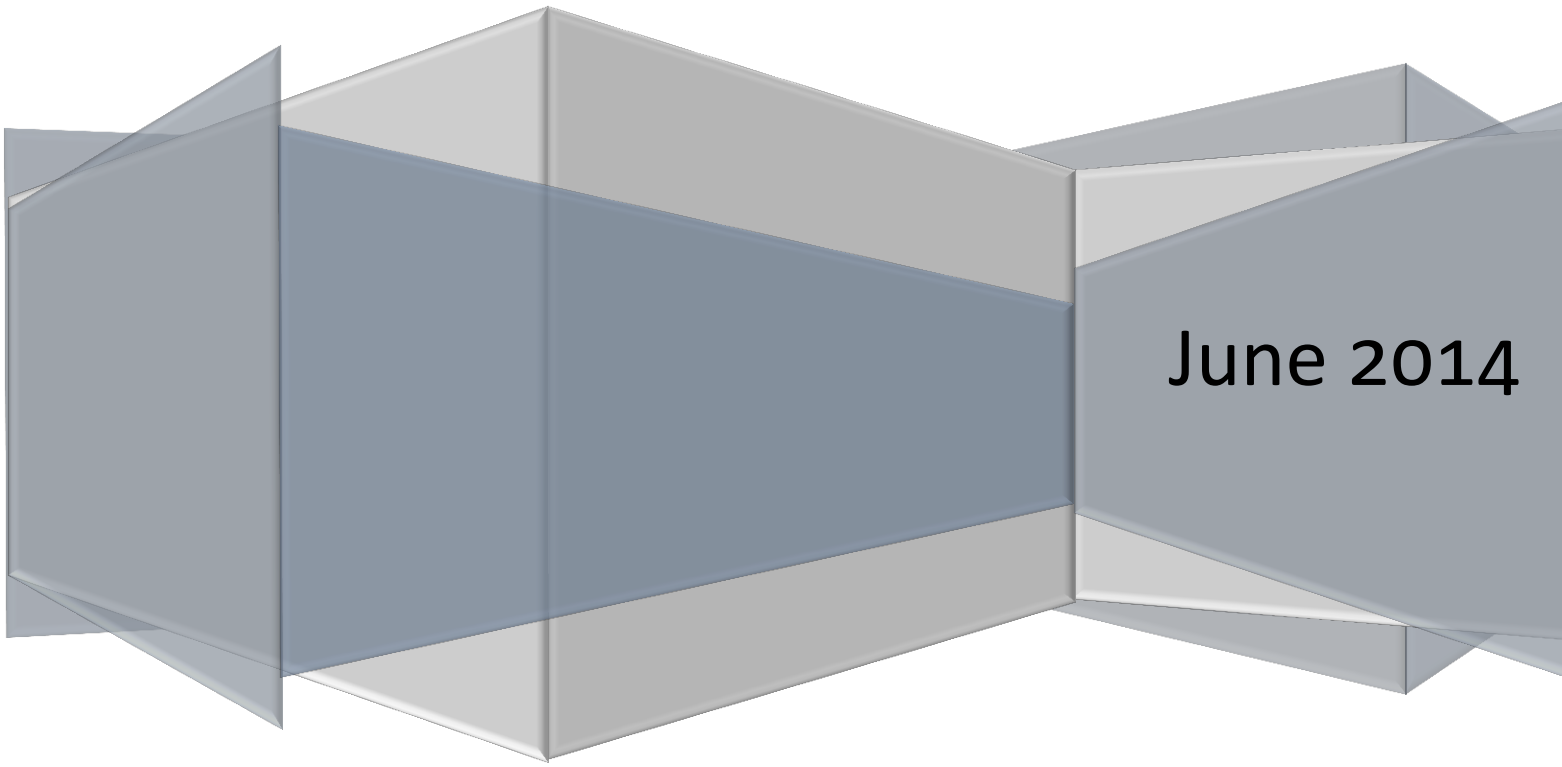

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Introduction

In late 2013, the South Carolina Association of School Librarians commissioned a study of the impact of school libraries and librarians in their state. The purpose of this study was to assess the extent to which school libraries transform schools by contributing to student success.

Since 2000, 24 similar studies have been conducted in 19 states as well as the Canadian province of Ontario. The U.S. states include: Alaska, California, Colorado (4 studies), Florida, Idaho, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, Missouri, New Mexico, New York, North Carolina, Oregon, Pennsylvania (2 studies), Texas, and Wisconsin (2 studies).

For these individual studies, visit the Library Research Service's School Library Impact Studies page at http://www.lrs.org/data-tools/school-libraries/impact-studies/.

For a comprehensive analysis and overview of most of these studies, visit Mansfield University School Library and Instructional Technology Program's School Library Impact Studies Project website at http://sl-it.mansfield.edu/current-students/school-library-impact-studies-project.cfm.

The first phase of this study, which is the focus of this first report, is an analysis of available data drawn from SCASL's 2013 South Carolina School Library Survey and test results from the state's Palmetto Assessment of State Standards (PASS) for elementary and middle school students and the state's High School Assessment Program (HSAP) for high school students.

Usable responses from 787 schools to the South Carolina School Library Survey provided data on:

- Numbers of librarians and library assistants
- Library expenditures, both total and per student
- Hours per week librarians spend teaching information literacy (combining reported data on collaborative planning, collaborative teaching, and independent teaching)
- Circulation of library resources, both total and per student
- Size of library print and e-book collections
- Numbers of computers available to students in libraries as well as elsewhere in schools
- Average number of group visits to libraries per week

PASS and HSAP data indicated percentages of students not meeting and exceeding specific standards:

- For PASS Writing, there were overall results and separate results for two subsidiary standards, Content and Organization. Percentages of students showing weaknesses and showing strengths in Writing were used.
- For PASS English Language arts (ELA), there were overall results and separate results for three subsidiary standards, Literary Text, Informational Text, and Research. Percentages of students not meeting these standards and having exemplary results on them were used. (Note: In addition to representing students not meeting the standards, the first results are the residual of the combination of students meeting standards and having exemplary results.)

Available HSAP data covered overall results for ELA, but not Writing. Two perspectives on HSAP results were provided: percentages of students meeting and not meeting these standards, and percentages of students achieving proficient or better results and achieving less than proficient results.

Test results were analyzed for all students and separately for male and female students, Hispanic and Black students, disabled students, limited English students, and subsidized and paid meals students (i.e., poorer students). For the grade level analyses, grades 3, 4, and 5 were considered elementary, and grades 6, 7, and 8 were considered middle.

In each step of the analysis, test results for schools with more and less of some library resource or service were compared with each other (examples: schools with and without at least 1 full-time librarian and a full-or part-time assistant; schools with circulation per student of 36 or more and less than 36).

These comparisons were subjected to a statistical test, the t test for independent samples, to determine if an observed difference was statistically significant—that is, there were fewer than 5 chances in 100 that the difference might have occurred by chance alone (in statistical notation, $p < .05$). Only statistically significant differences are included in this Phase I report.

The findings of these analyses are presented in charts, many of which have non-zero baselines—not to obscure often small differences, but to emphasize the consistent direction of the associations in the expected direction.

PASS Writing & English Language Arts (ELA) Results

Elementary and middle school students are assessed on both Writing and English Language Arts (ELA), among other subjects, with the Palmetto Assessment of State Standards (PASS). Student performance on each of these standards is classified into 3 groups: for Writing, showing weaknesses, needing additional services, and showing strengths; and for ELA, not met, met, and exemplary. This analysis focused on the bottom and top groups in each of these sets: showing weaknesses and showing strengths for Writing, and not met and exemplary for ELA.

Data about school libraries came from the 2013 South Carolina School Library Survey, in which school libraries were asked to report about their staffing, expenditures, collections, technology, and usage.

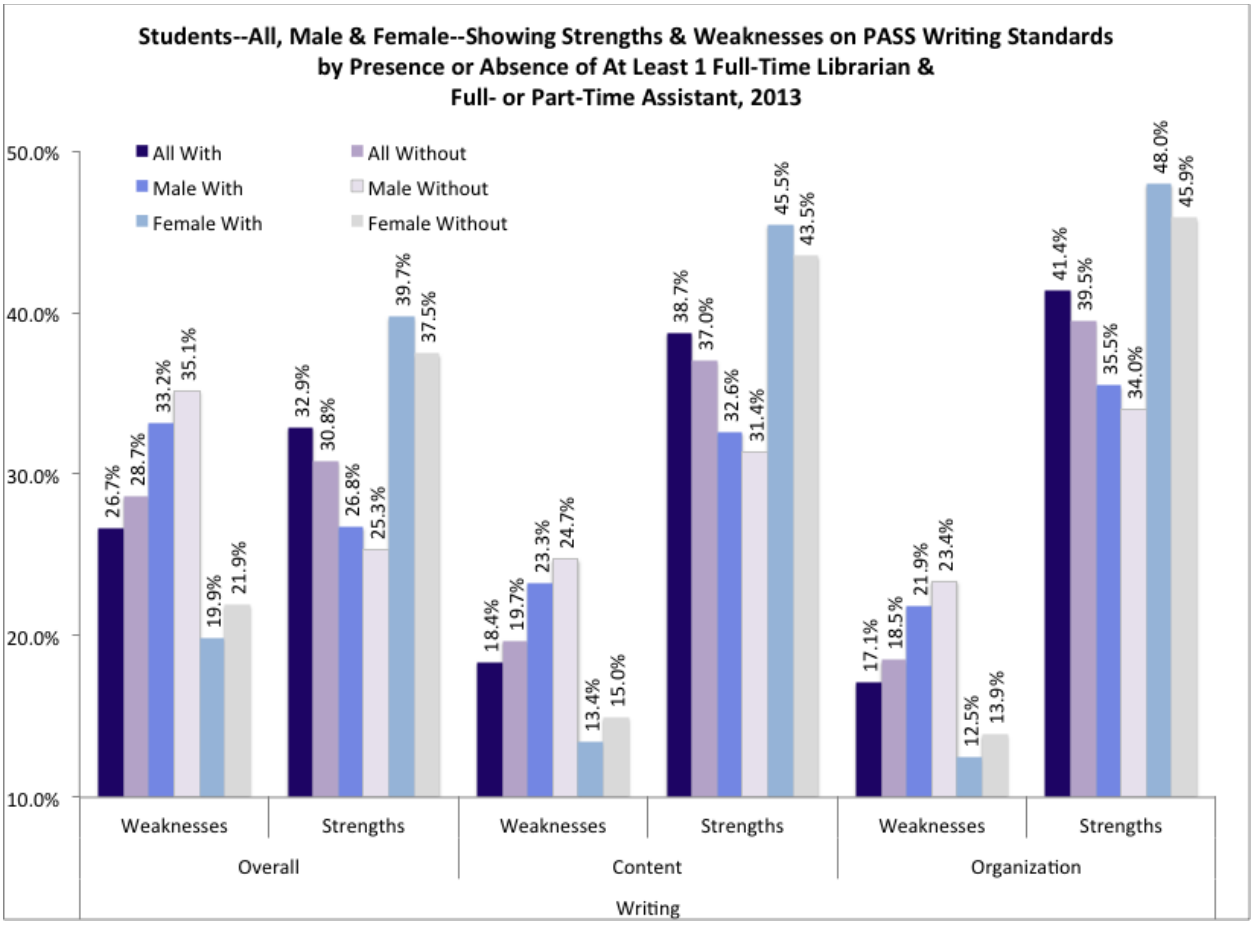
Library Staffing

(At Least 1 Full-Time Librarian & Full- or Part-Time Assistant)

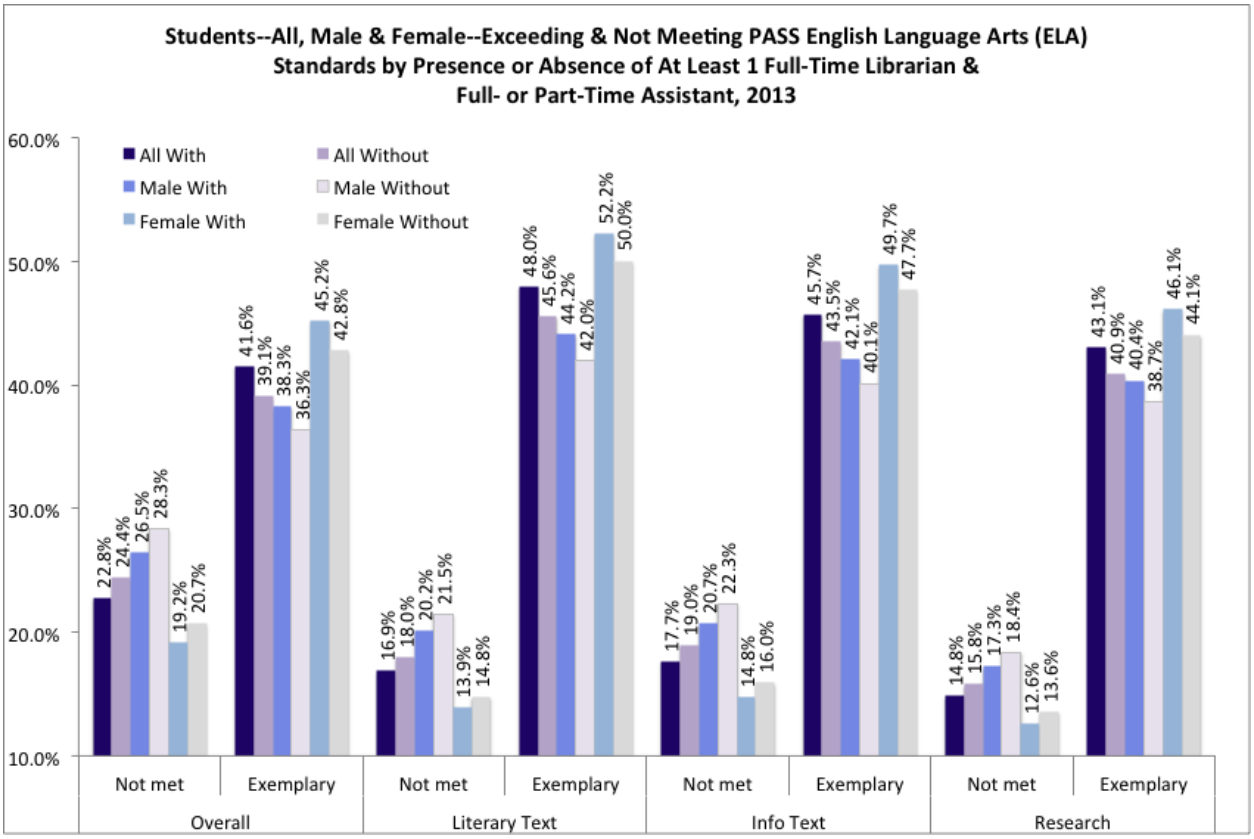
There is considerable evidence from studies in more than a dozen states that having a strong school library program requires at least 1 full-time librarian and a full- or part-time assistant. School librarians play—or can play—a key, interdisciplinary, instructional role, particularly in teaching students to be

better consumers and producers of information. Playing this role, however, requires support for more routine activities related to keeping the library's doors open and its collections, technology, and other equipment in good working order. Now, test results for the PASS Writing and English Language Arts (ELA) standards contribute to the evidence of the value of this minimal library staffing configuration in South Carolina.

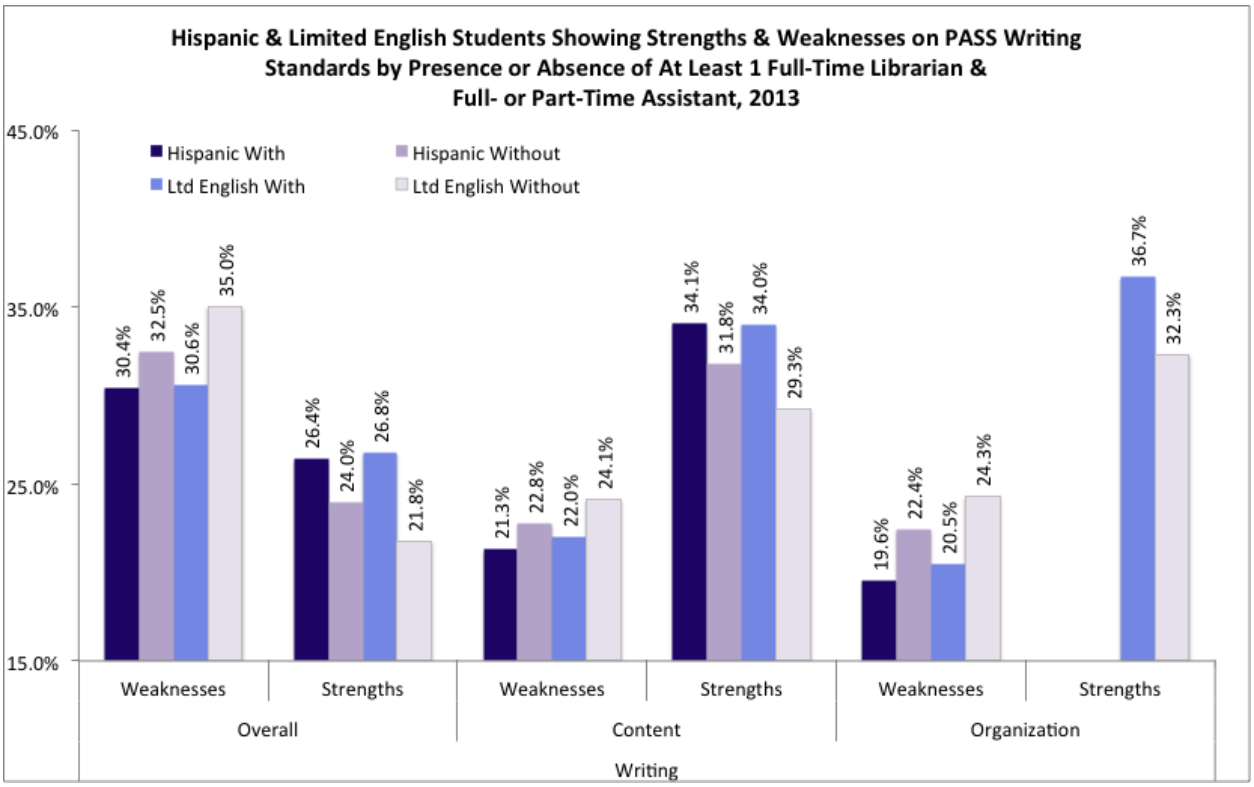
All students, both male and female, were more likely to show strengths and less likely to show weaknesses on PASS Writing standards—overall and on Content and Organization—if their school libraries were staffed by at least one full-time librarian and at least one full- or part-time assistant than if their libraries were staffed otherwise.

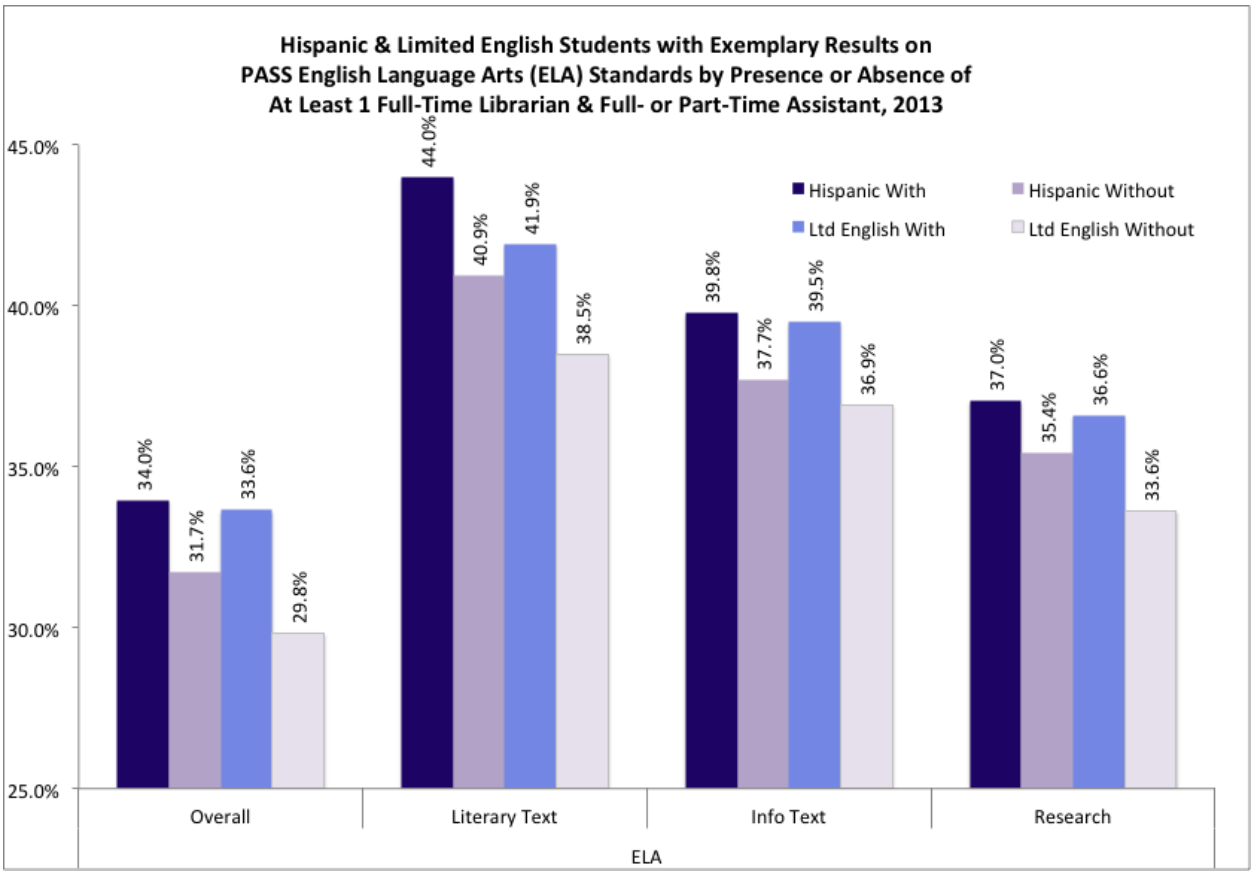


This threshold of library staffing was similarly associated with all students, regardless of gender, having exemplary PASS English Language Arts (ELA) results and being less likely not to meet ELA standards.

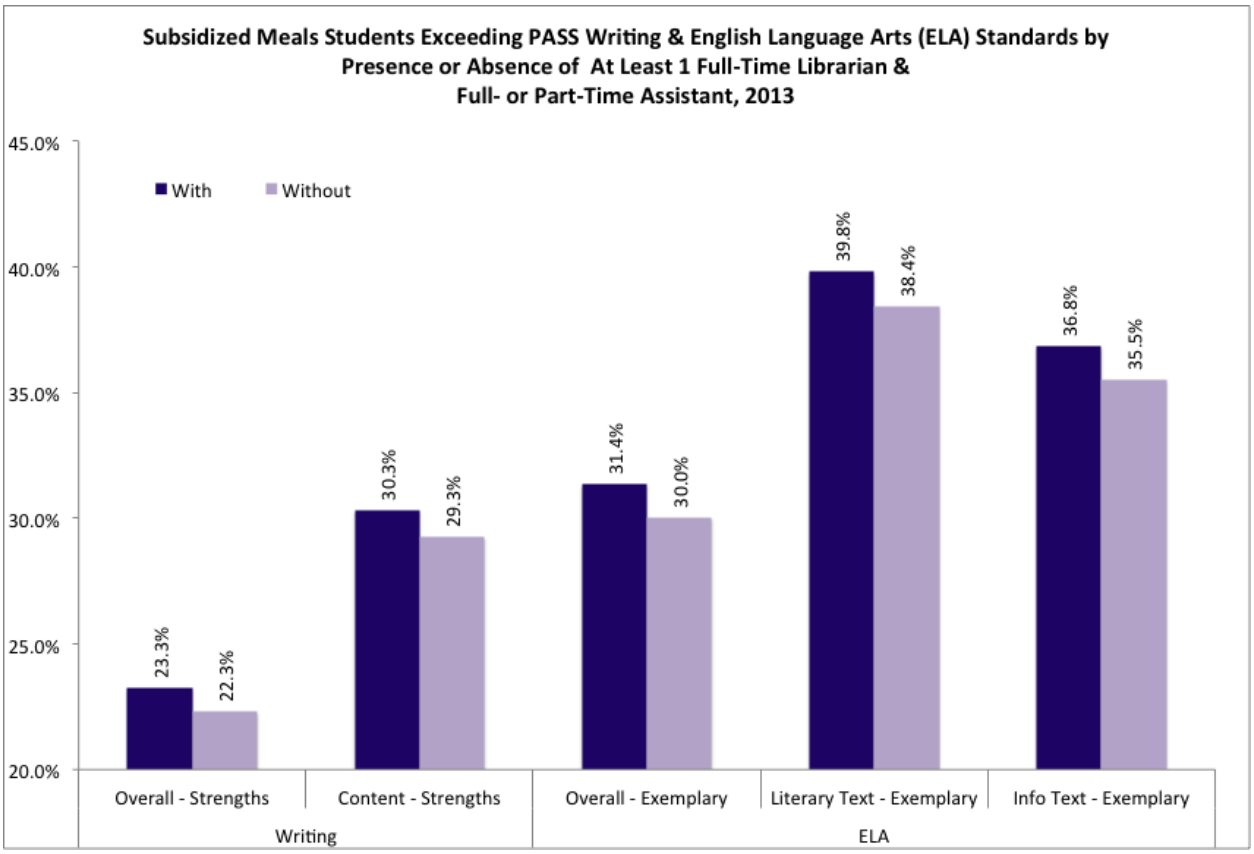


Generally, for both Hispanic students and those with limited English proficiency, such library staffing was also more likely to be associated with strengths and less likely to be associated with weaknesses in Writing. (The lone exception: for Organization results, the association with library staffing was not statistically significant.) Students in both of these groups were also more likely to have exemplary ELA results, if their libraries were well-staffed.


Hispanic & Limited English Students Showing Strengths & Weaknesses on PASS Writing Standards by Presence or Absence of At Least 1 Full-Time Librarian & Full- or Part-Time Assistant, 2013
45.0%
35.0%
25.0%
15.0%
Hispanic With
Hispanic Without
Ltd English With
Ltd English Without
30.4%
32.5%
30.6%
35.0%
26.4%
24.0%
26.8%
21.8%
21.3%
22.8%
22.0%
24.1%
34.1%
31.8%
34.0%
29.3%
19.6%
22.4%
20.5%
24.3%
36.7%
32.3%
Weaknesses
Strengths
Weaknesses
Strengths
Weaknesses
Strengths
Overall
Content
Organization
Writing


Hispanic & Limited English Students with Exemplary Results on PASS English Language Arts (ELA) Standards by Presence or Absence of At Least 1 Full-Time Librarian & Full- or Part-Time Assistant, 2013
45.0%
40.0%
35.0%
30.0%
25.0%
Hispanic With
Hispanic Without
Ltd English With
Ltd English Without
34.0%
31.7%
33.6%
29.8%
44.0%
40.9%
41.9%
38.5%
39.8%
37.7%
39.5%
36.9%
37.0%
35.4%
36.6%
33.6%
Overall
Literary Text
Info Text
Research
ELA

For poorer students (those eligible for subsidized meals), the library staffing threshold was associated with more students showing overall strengths in meeting Writing standards, especially those concerned with Content, and more students having exemplary overall results on ELA standards, and especially those concerned with Literary Text and Informational Text.



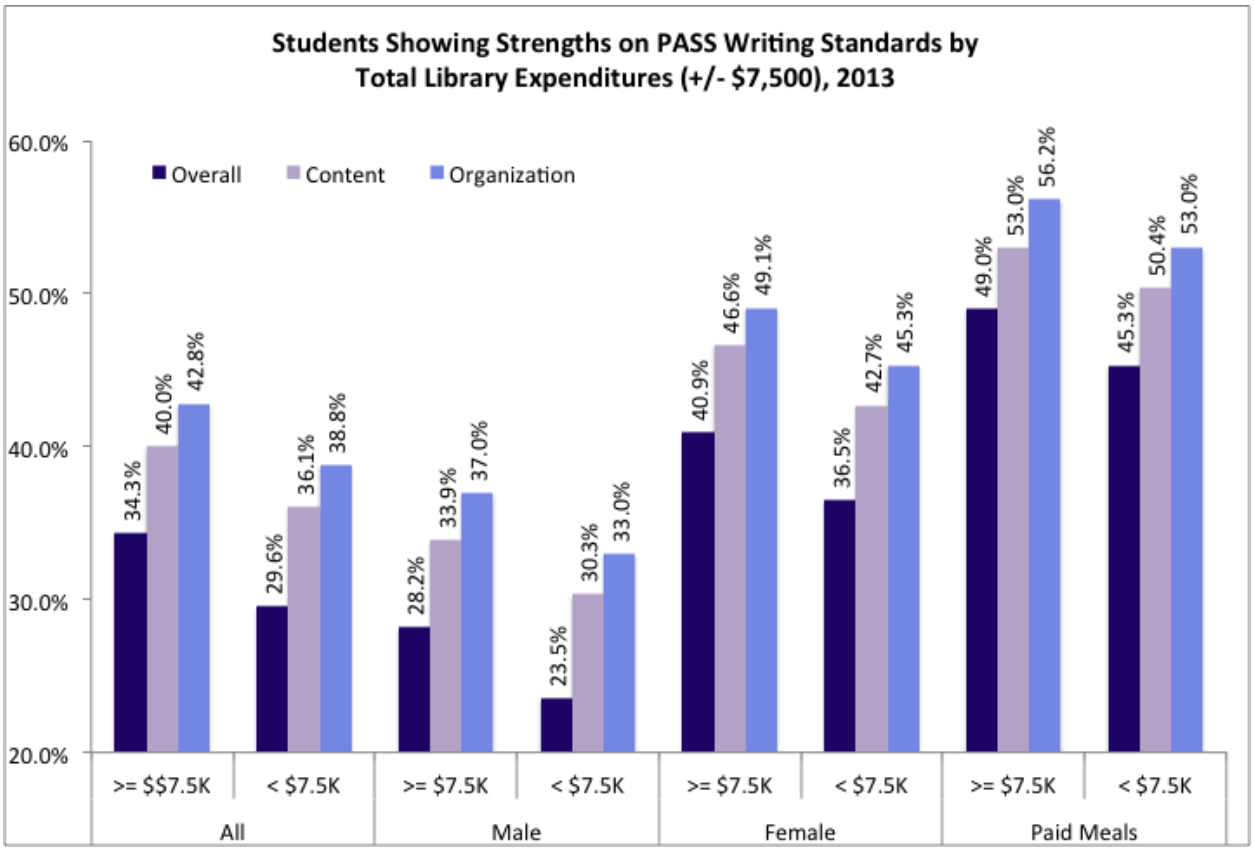
While the differences between the compared groups were not large, the evidence that student performance on PASS Writing and ELA standards is associated with library staffing is consistent across student groups, particularly gender, ethnicity, and socio-economic differences.

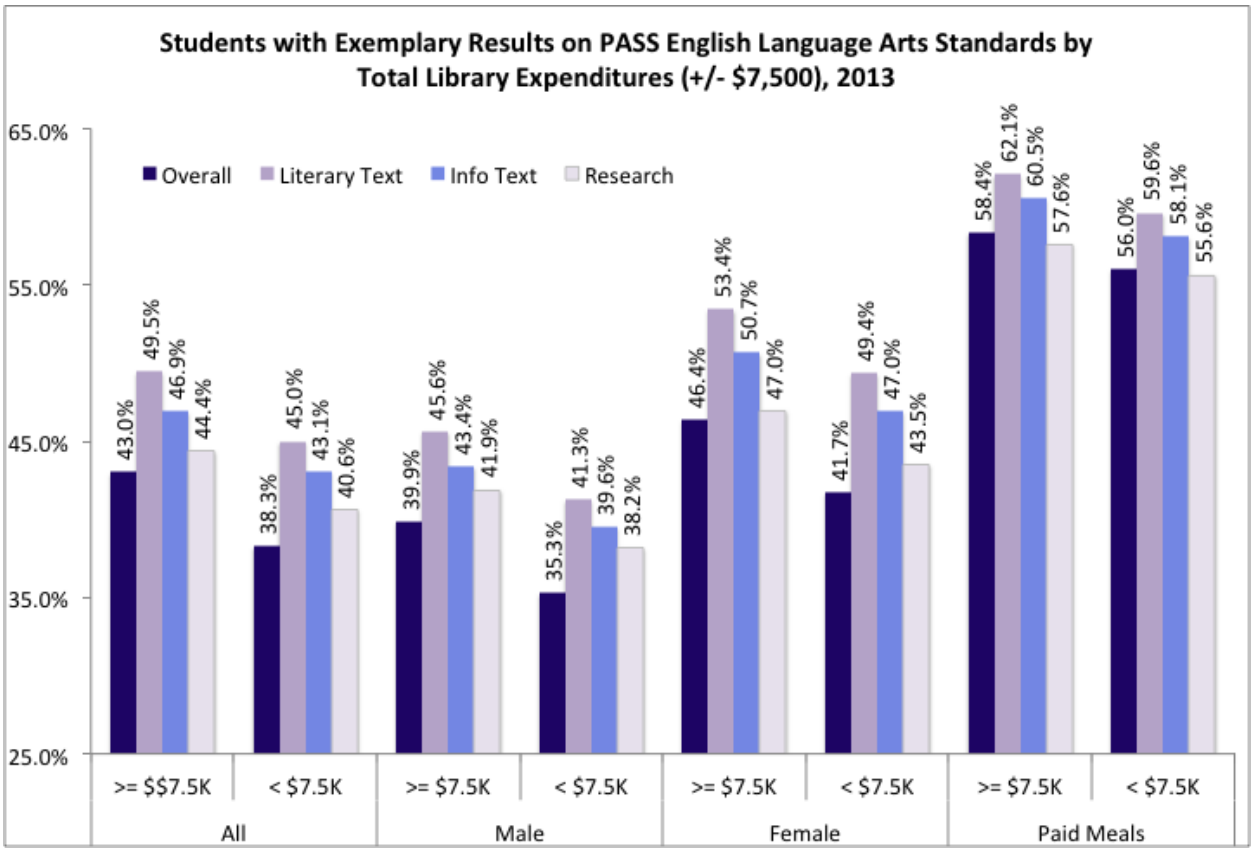
Library Expenditures

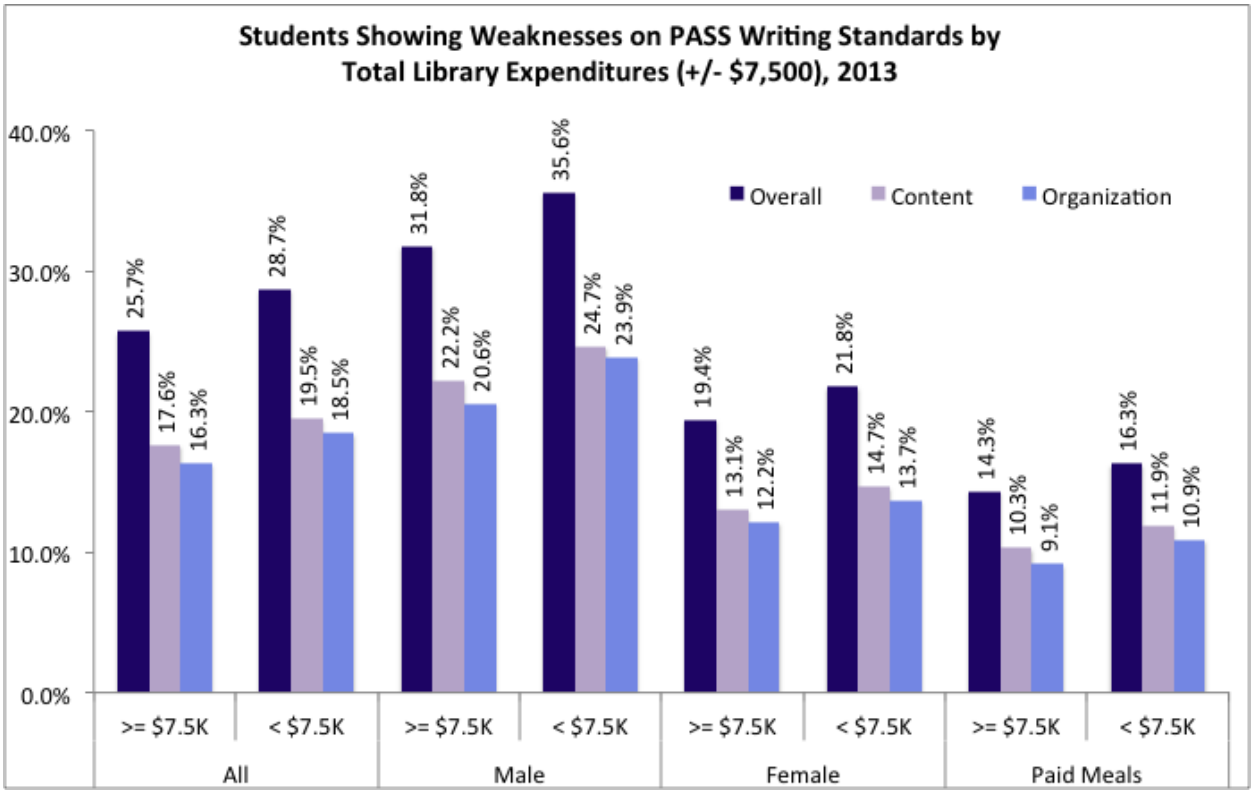
Higher spending on school library programs has been linked with better achievement test results in more than a dozen states. Now, there is South Carolina evidence of this relationship indicated by PASS Writing and English Language Arts (ELA) test results. Among schools that responded to the South Carolina School Library Survey and for which PASS results were available, the median for total library expenditures was approximately $7,500. On a per-student basis, library spending was $13.33.

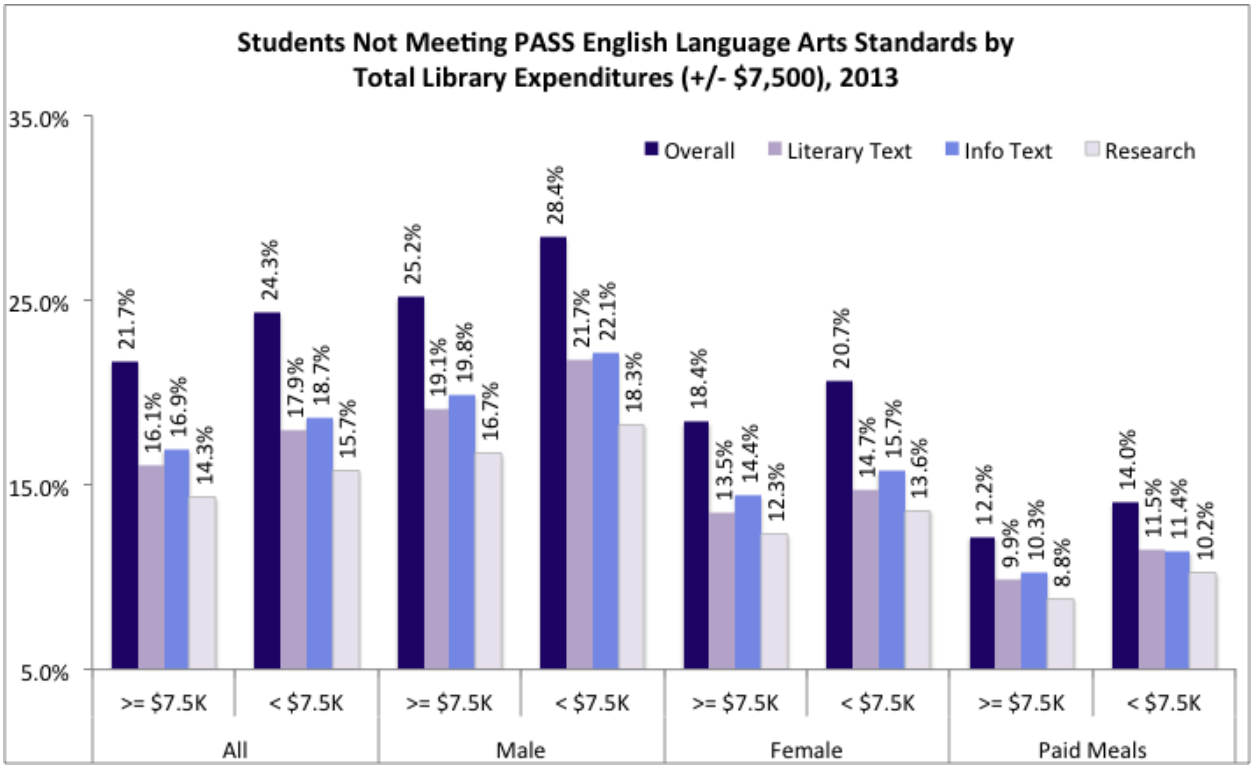
Total Expenditures

For all students, female and male students, and students eligible for paid meals, higher total library spending was associated with more students showing strengths and fewer showing weaknesses on the PASS Writing standards—overall and on Content and Organization. Higher spending on libraries was also associated with more students having exemplary results on PASS English Language Arts (ELA) standards—overall and on Literary Text, Informational Text, and Research—and fewer students not meeting those standards.

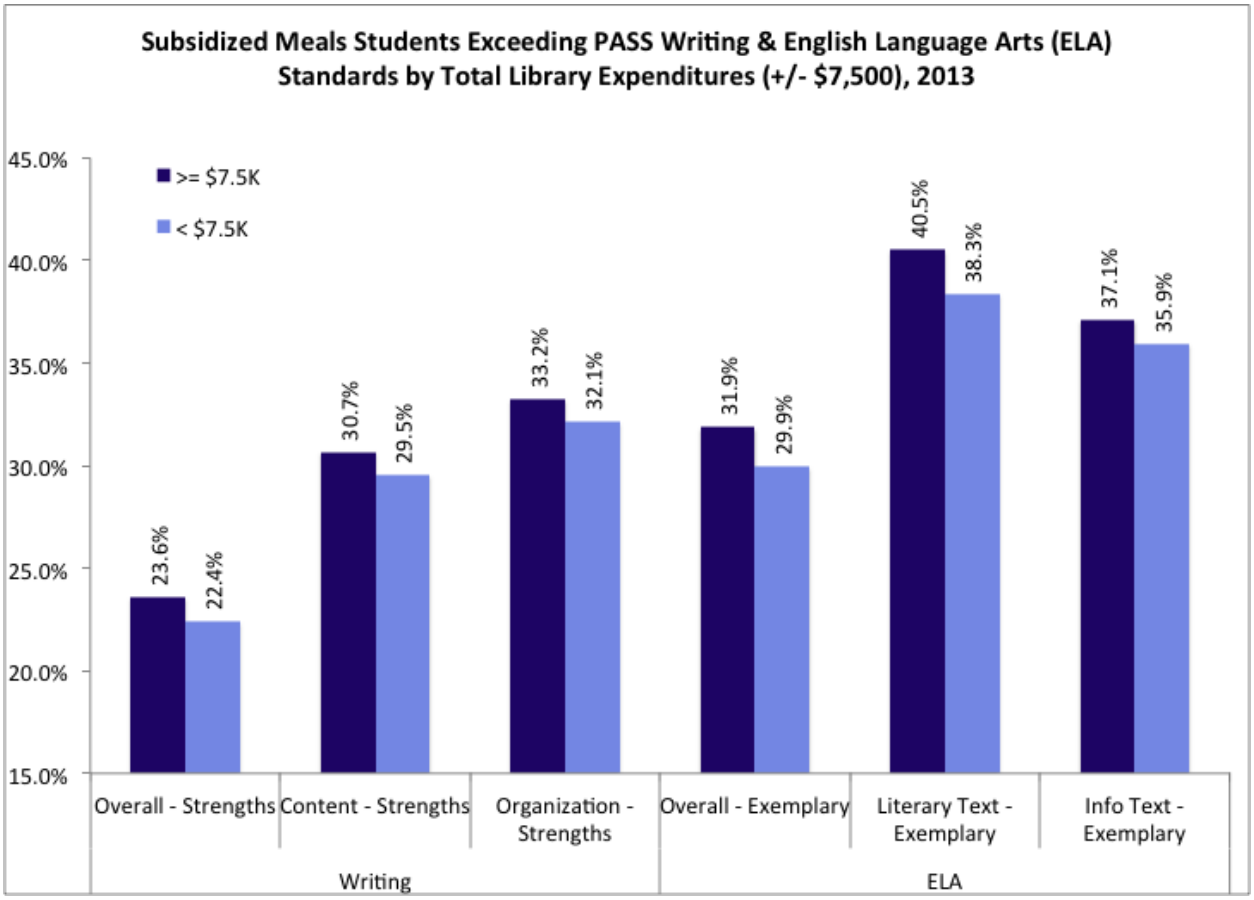



Students with Exemplary Results on PASS English Language Arts Standards by Total Library Expenditures (+/- $7,500), 2013
65.0%
55.0%
45.0%
35.0%
25.0%
Overall
Literary Text
Info Text
Research
43.0%
49.5%
46.9%
44.4%
38.3%
45.0%
43.1%
40.6%
39.9%
45.6%
43.4%
41.9%
35.3%
41.3%
39.6%
38.2%
46.4%
53.4%
50.7%
47.0%
41.7%
49.4%
47.0%
43.5%
58.4%
62.1%
60.5%
57.6%
56.0%
59.6%
58.1%
55.6%
>= $$7.5K
< $7.5K
>= $7.5K
< $7.5K
>= $7.5K
< $7.5K
>= $7.5K
< $7.5K
All
Male
Female
Paid Meals


Students Showing Weaknesses on PASS Writing Standards by Total Library Expenditures (+/- $7,500), 2013
40.0%
30.0%
20.0%
10.0%
0.0%
Overall
Content
Organization
25.7%
17.6%
16.3%
28.7%
19.5%
18.5%
31.8%
22.2%
20.6%
35.6%
24.7%
23.9%
19.4%
13.1%
12.2%
21.8%
14.7%
13.7%
14.3%
10.3%
9.1%
16.3%
11.9%
10.9%
>= $7.5K
< $7.5K
>= $7.5K
< $7.5K
>= $7.5K
< $7.5K
>= $7.5K
< $7.5K
All
Male
Female
Paid Meals



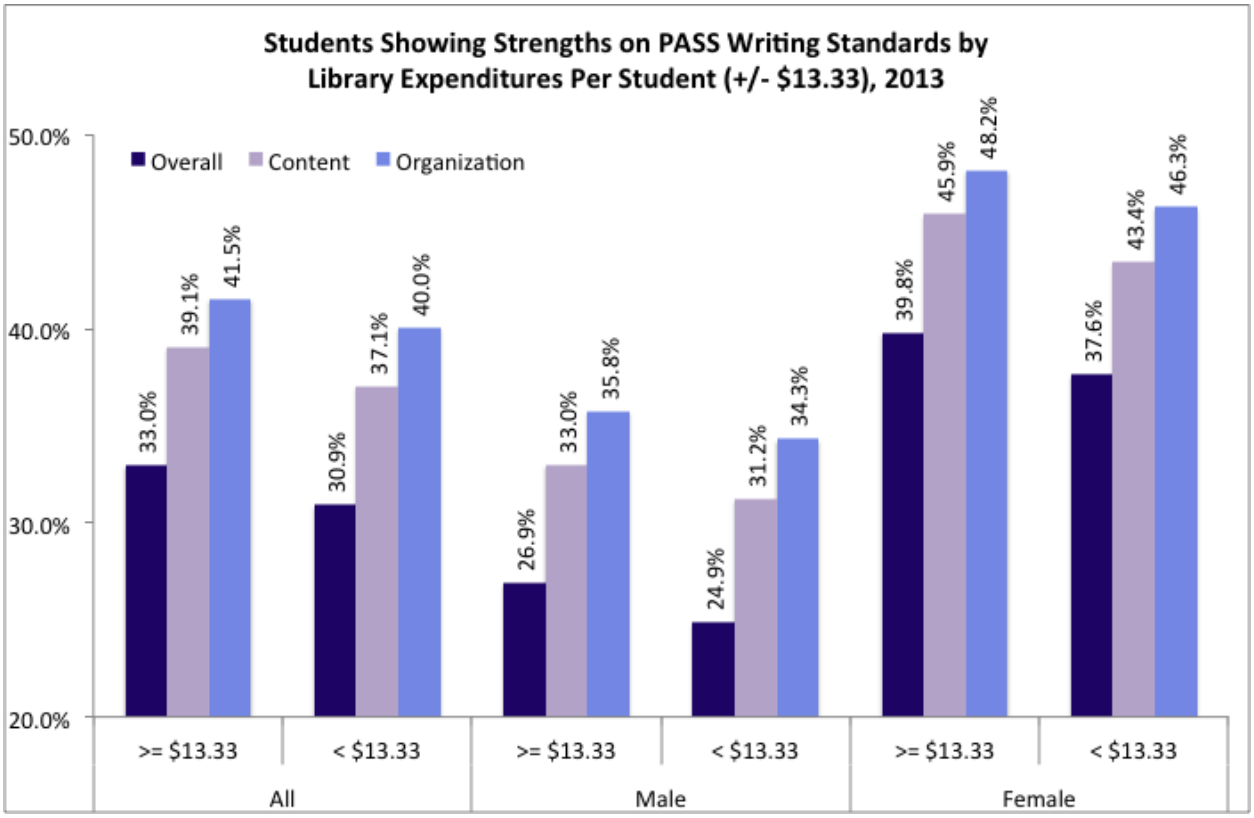
For the poorest students—those eligible for paid meals—higher library spending was also associated with more showing strengths on Writing and more having exemplary ELA results.

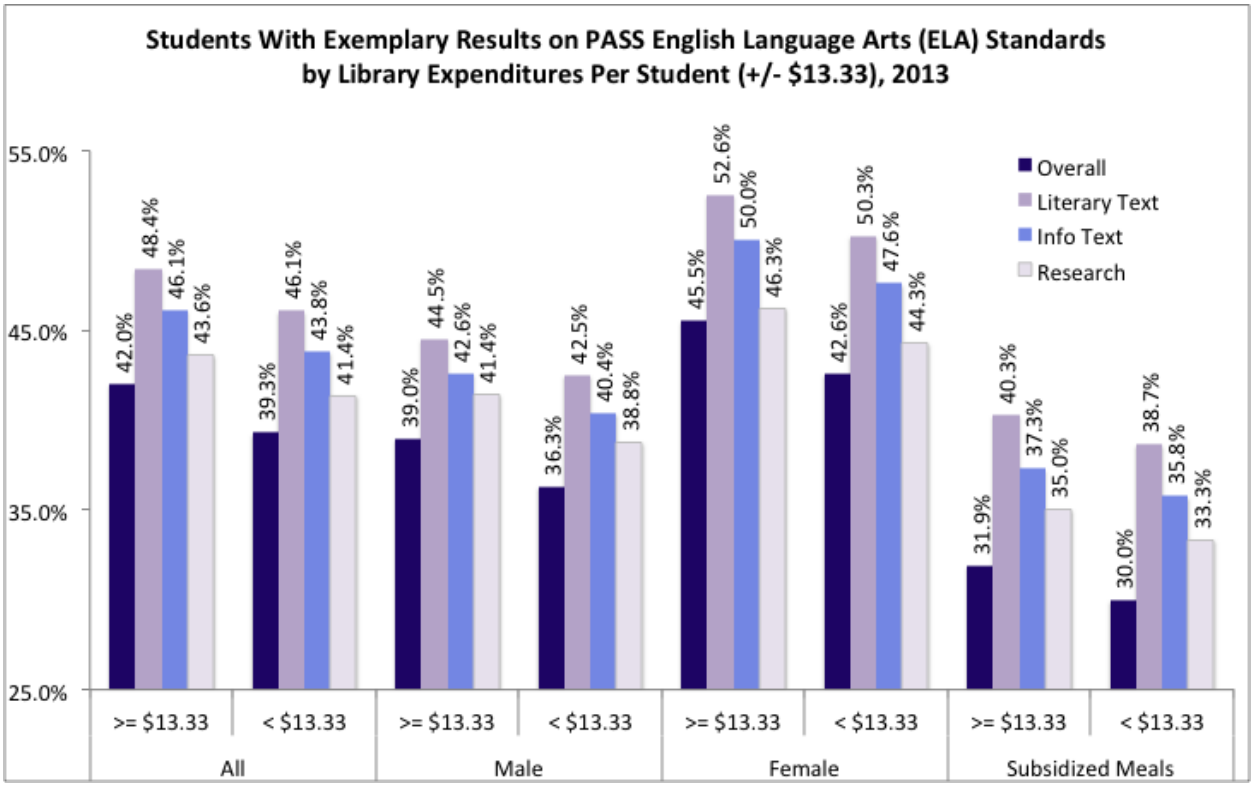


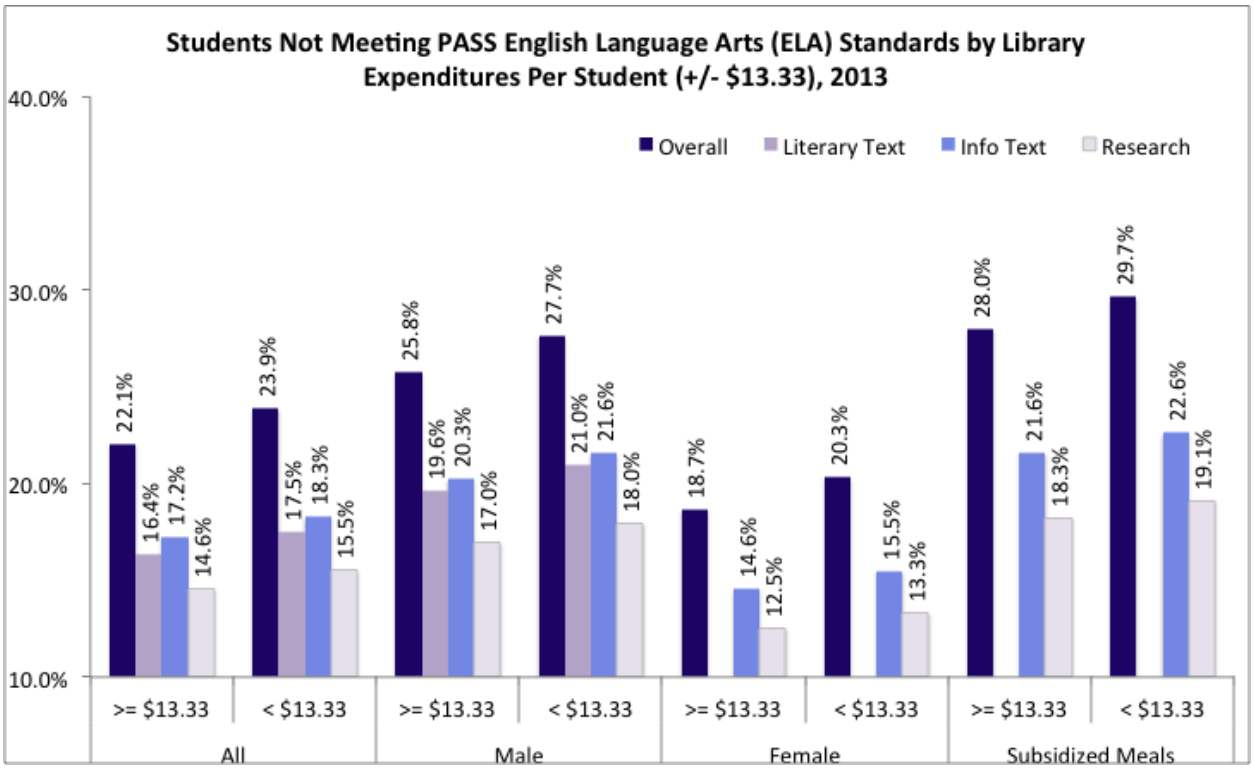
Library Expenditures Per Student

Library expenditures per student was associated with exemplary performance in all measures of both PASS Writing and ELA standards. This was true for all students, both male and female. A similar pattern of exemplary ELA results was evident for students eligible for subsidized meals.

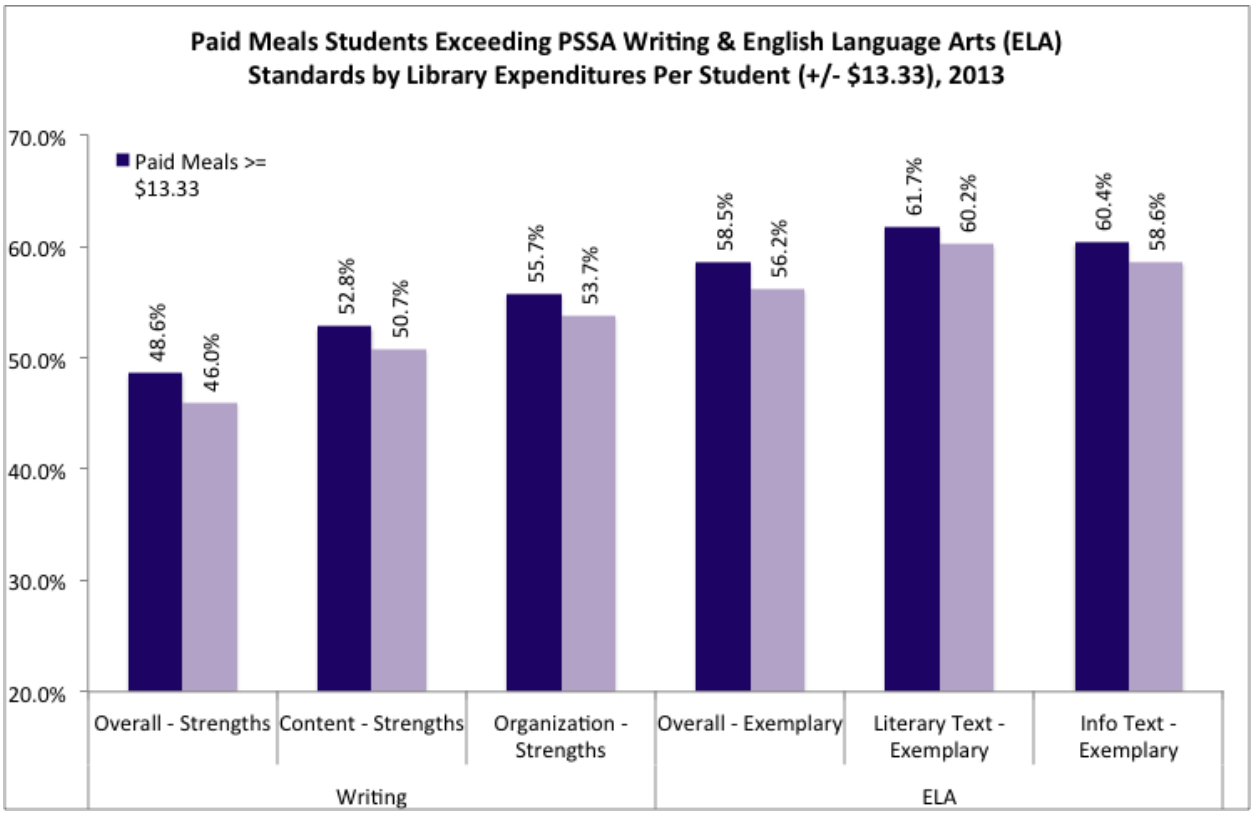
Higher library spending per student was generally associated with fewer students not meeting ELA standards. This was true for all students, both genders, and for all students eligible for subsidized meals. However, for Literary Text standards, the only significant differences associated with per-student spending were found for all students and for male students.


Students Showing Strengths on PASS Writing Standards by Library Expenditures Per Student (+/- $13.33), 2013
50.0%
40.0%
30.0%
20.0%
Overall
Content
Organization
33.0%
39.1%
41.5%
30.9%
37.1%
40.0%
26.9%
33.0%
35.8%
24.9%
31.2%
34.3%
39.8%
45.9%
48.2%
37.6%
43.4%
46.3%
>= $13.33
< $13.33
>= $13.33
< $13.33
>= $13.33
< $13.33
All
Male
Female


Students With Exemplary Results on PASS English Language Arts (ELA) Standards by Library Expenditures Per Student (+/- $13.33), 2013
55.0%
45.0%
35.0%
25.0%
Overall
Literary Text
Info Text
Research
42.0% 48.4% 46.1% 43.6%
39.3% 46.1% 43.8% 41.4%
39.0% 44.5% 42.6% 41.4%
36.3% 42.5% 40.4% 38.8%
45.5% 52.6% 50.0% 46.3%
42.6% 50.3% 47.6% 44.3%
31.9% 40.3% 37.3% 35.0%
30.0% 38.7% 35.8% 33.3%
>= $13.33
< $13.33
All
Male
Female
Subsidized Meals


Students Not Meeting PASS English Language Arts (ELA) Standards by Library Expenditures Per Student (+/- $13.33), 2013
40.0%
30.0%
20.0%
10.0%
Overall
Literary Text
Info Text
Research
22.1% 16.4% 17.2% 14.6%
23.9% 17.5% 18.3% 15.5%
25.8% 19.6% 20.3% 17.0%
27.7% 21.0% 21.6% 18.0%
18.7% 14.6% 12.5%
20.3% 15.5% 13.3%
28.0% 21.6% 18.3%
29.7% 22.6% 19.1%
>= $13.33
< $13.33
All
Male
Female
Subsidized Meals

For students eligible for paid meals, higher per-student library spending was associated with more students showing strengths on Writing standards—overall, Content, and Organization—and more students having exemplary results on ELA standards—overall, Literary Text, and Informational Text.



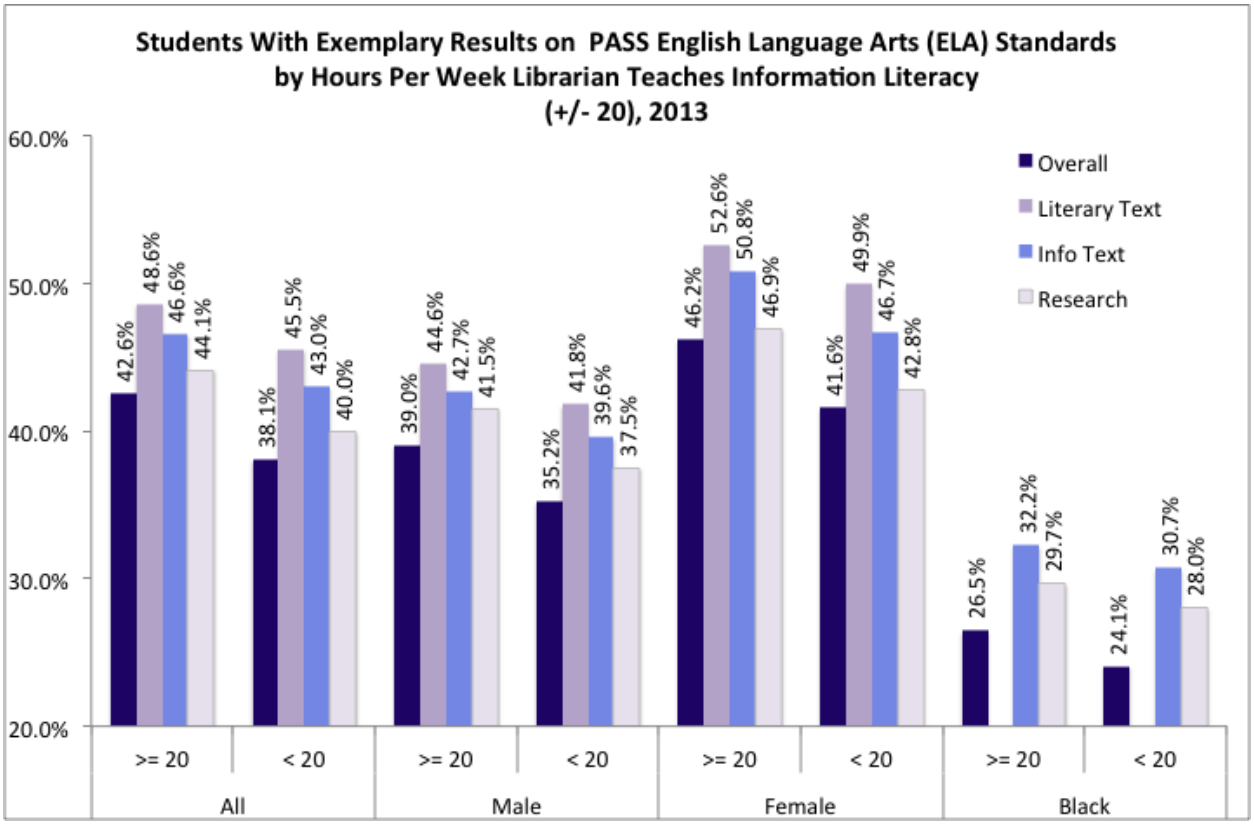
Generally, while comparison group differences tended to be small, the links between student performance on PASS Writing and ELA standards and higher library spending, both total and per-student—were consistent for both genders and across socio-economic differences.

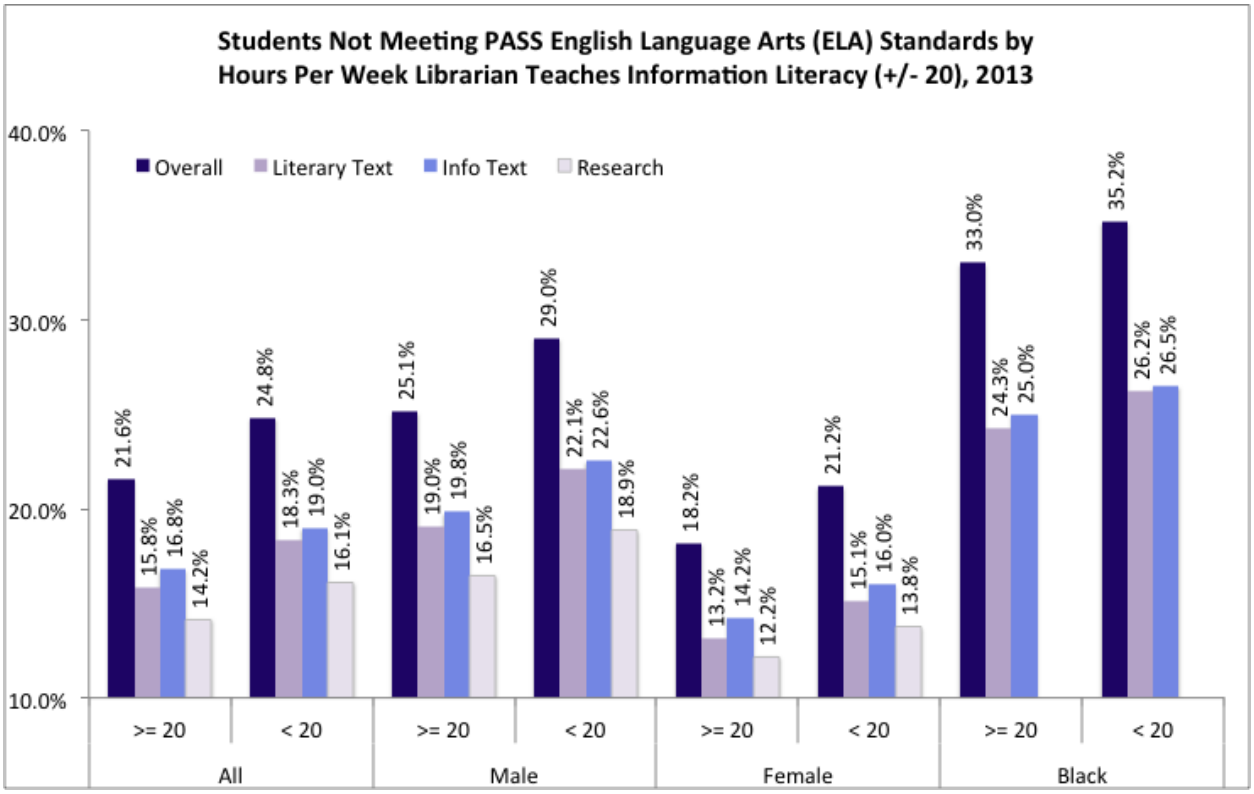
Hours Per Week Librarian Teaches Information Literacy

School librarians teach information literacy in a variety of ways. They plan instructional units collaboratively with their classroom teacher colleagues. They sometimes deliver such instruction collaboratively with them. And, at other times, school librarians teach information literacy skills independently from classroom activities. Typically, librarians at schools that responded to the South Carolina School Library Survey and for which PASS results were available report spending about 20 hours per week on these kinds of teaching activities. The top 25 percent spend 25 or more hours per week on teaching activities, while the bottom 25 percent spend less than 10 hours per week on such activities.

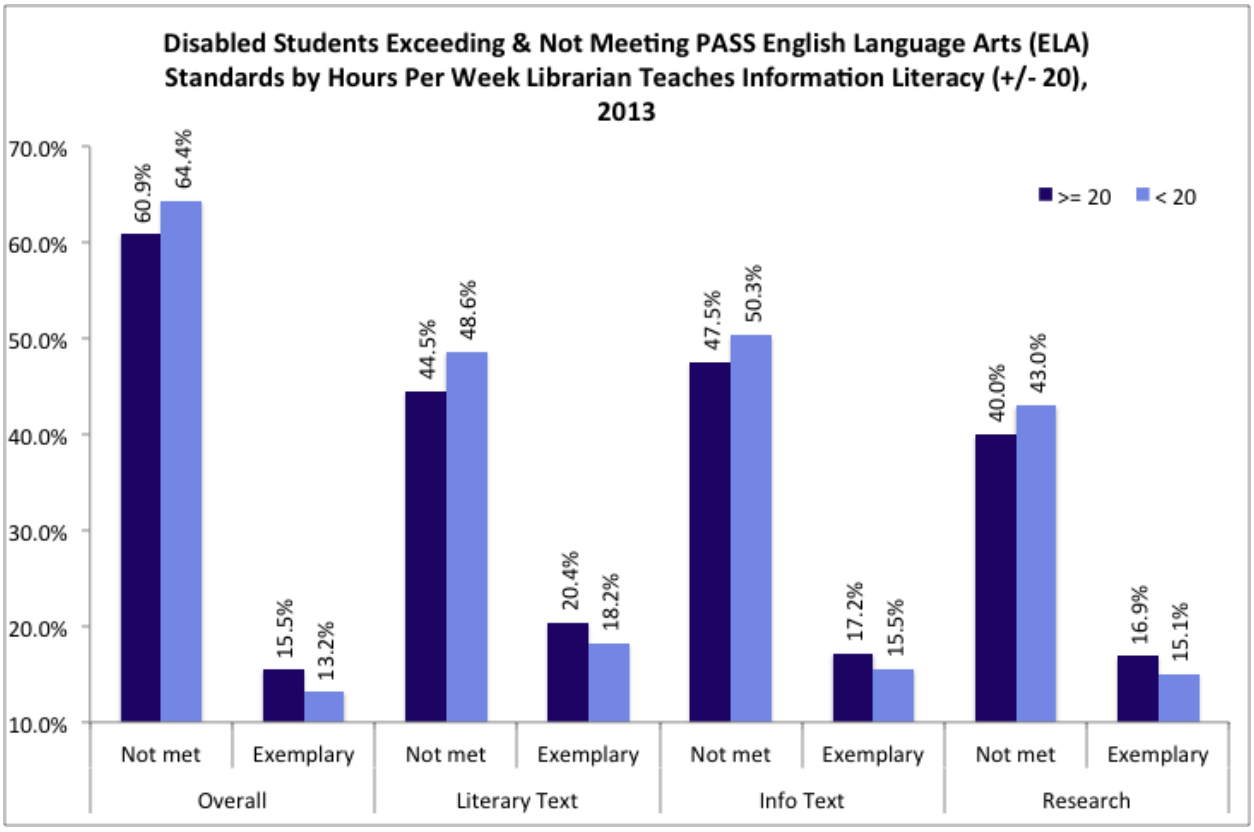
First, let us compare schools where librarians taught for 20 or more hours per week with those where librarians spent less time teaching.

Generally, where librarians spent more time teaching, all students, students of both genders, and Black students were more likely to have exemplary results on PASS English Language Arts (ELA) standards—overall, Literary Text, Informational Text, and Research—and less likely not to meet those standards. (The lone exception was Literary Text, for which there were significant differences only for all students and students of both genders.)

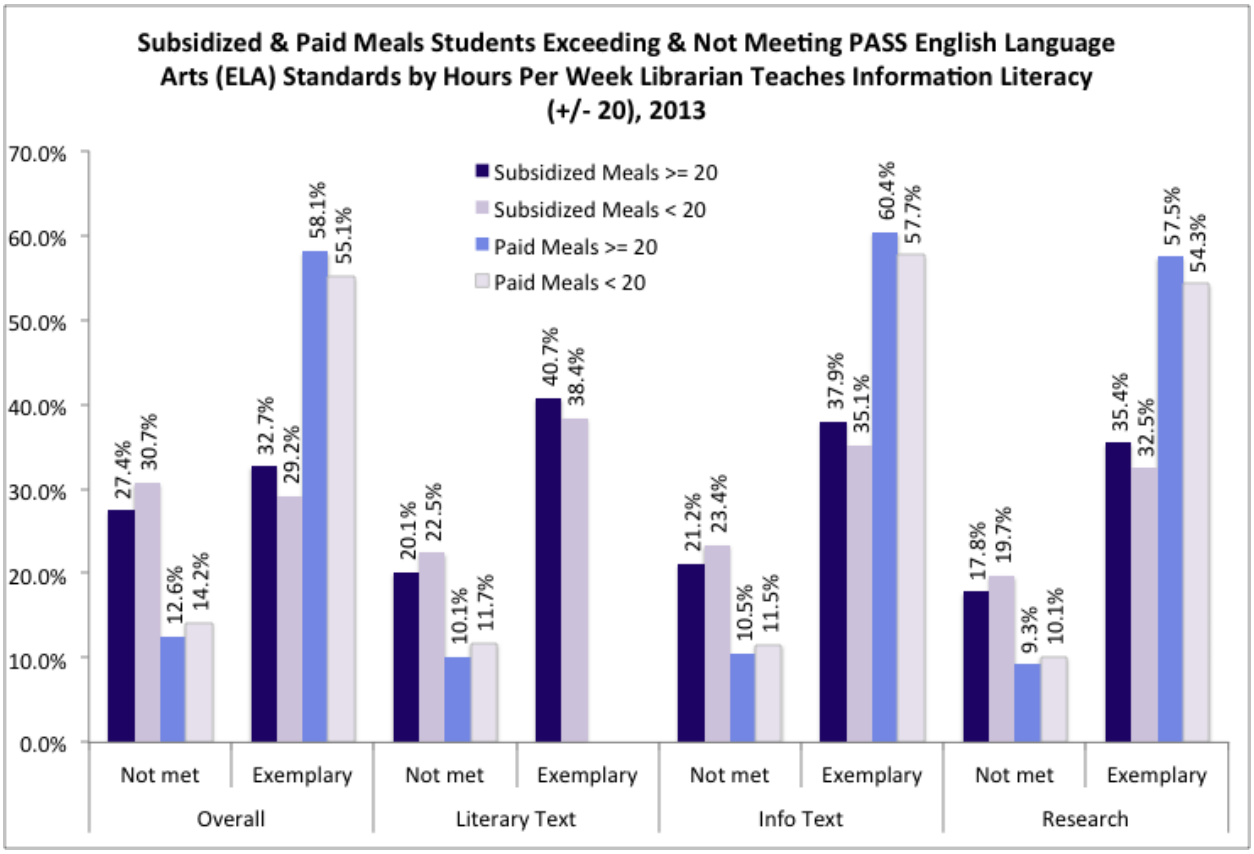



Students Not Meeting PASS English Language Arts (ELA) Standards by Hours Per Week Librarian Teaches Information Literacy (+/- 20), 2013
40.0%
30.0%
20.0%
10.0%
Overall
Literary Text
Info Text
Research
21.6%
15.8%
16.8%
14.2%
24.8%
18.3%
19.0%
16.1%
25.1%
19.0%
19.8%
16.5%
29.0%
22.1%
22.6%
18.9%
18.2%
13.2%
14.2%
12.2%
21.2%
15.1%
16.0%
13.8%
33.0%
24.3%
25.0%
35.2%
26.2%
26.5%
>= 20
< 20
>= 20
< 20
>= 20
< 20
>= 20
< 20
All
Male
Female
Black

There is also evidence that teaching by librarians may be especially valuable for disabled students. Though disabled students were far more likely to fail ELA standards than to have exemplary results on them, they were more likely to have exemplary results and less likely not to meet the standards if their school librarians taught for 20 or more hours per week.

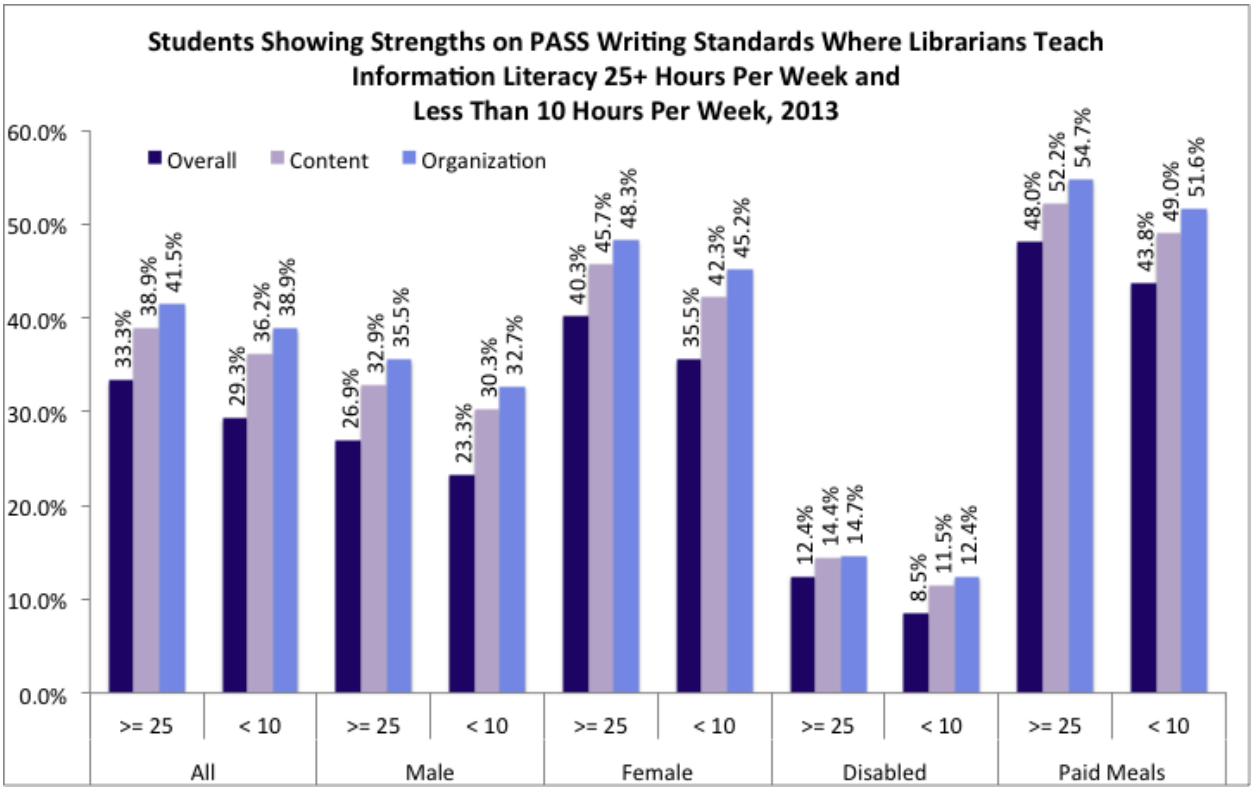


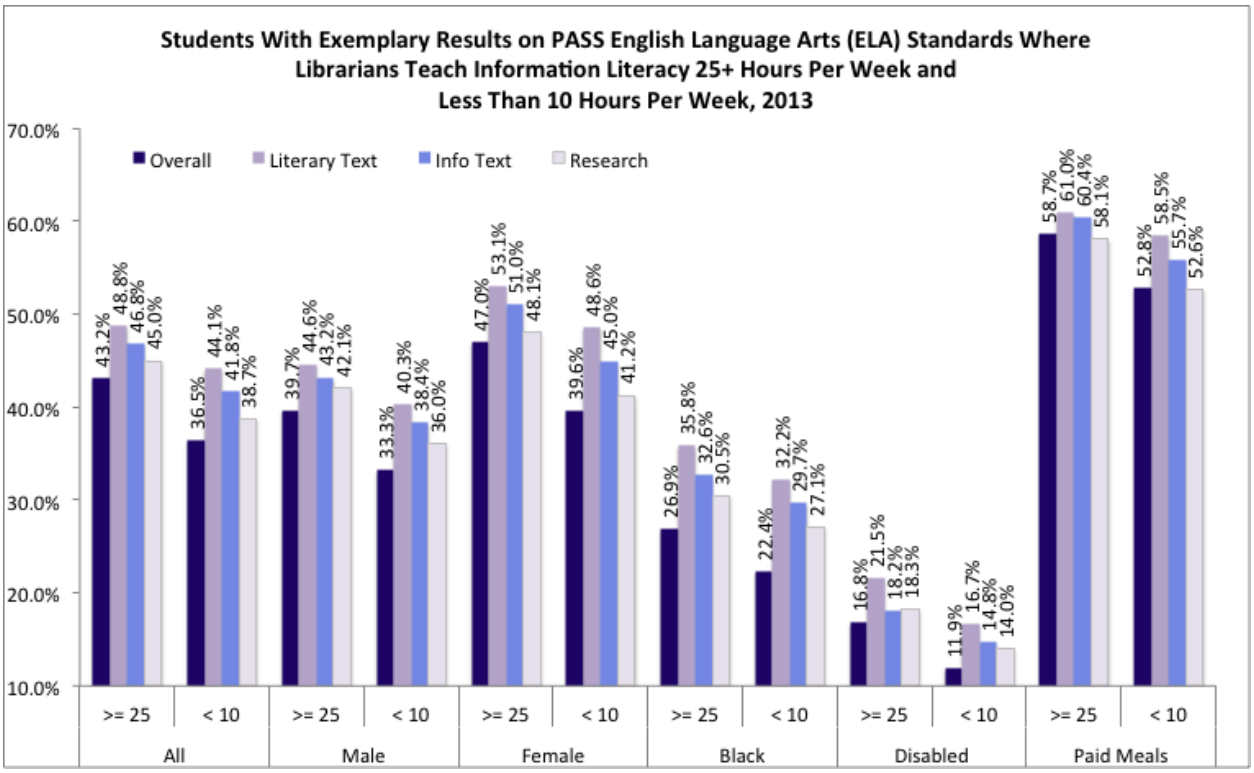
There is further evidence that poorer students—those eligible for subsidized and free meals—were more likely to have exemplary ELA results and less likely not to meet ELA standards.

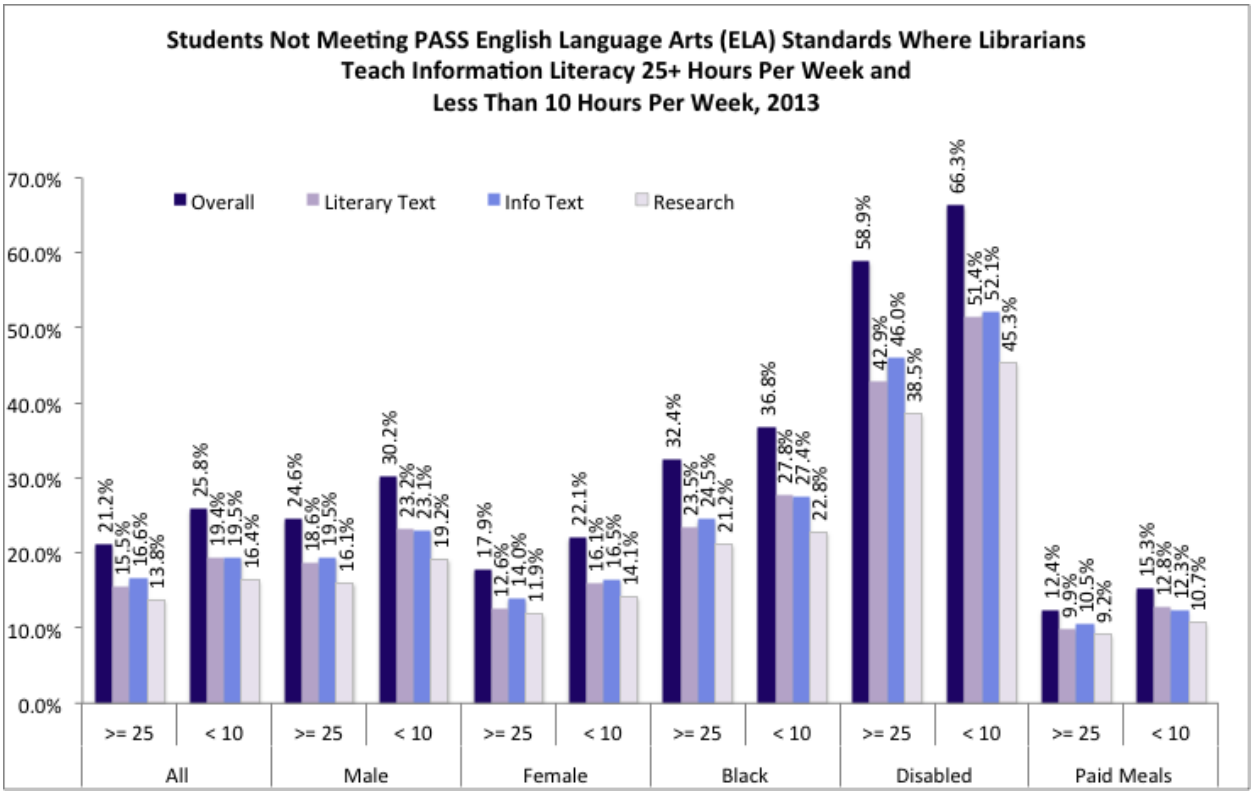


Secondly, let us compare schools whose librarians taught for 25 or more hours per week with those where librarians spent fewer than 10 hours per week teaching.

Where librarians spent the most time teaching (compared to the least), all students and several key student cohorts—those of both genders, disabled students, and those eligible for paid meals—were more likely to show strengths on PASS Writing standards, more likely to have exemplary results on ELA standards, and less likely to not meet ELA standards.


Students Showing Strengths on PASS Writing Standards Where Librarians Teach Information Literacy 25+ Hours Per Week and Less Than 10 Hours Per Week, 2013
Overall
Content
Organization
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
33.3% 38.9% 41.5%
29.3% 36.2% 38.9%
26.9% 32.9% 35.5%
23.3% 30.3% 32.7%
40.3% 45.7% 48.3%
35.5% 42.3% 45.2%
12.4% 14.4% 14.7%
8.5% 11.5% 12.4%
48.0% 52.2% 54.7%
43.8% 49.0% 51.6%
>= 25
< 10
All
Male
Female
Disabled
Paid Meals


Students With Exemplary Results on PASS English Language Arts (ELA) Standards Where Librarians Teach Information Literacy 25+ Hours Per Week and Less Than 10 Hours Per Week, 2013
Overall
Literary Text
Info Text
Research
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
43.2% 48.8% 46.8% 45.0%
36.5% 44.1% 41.8% 38.7%
39.7% 44.6% 43.2% 42.1%
33.3% 40.3% 38.4% 36.0%
47.0% 53.1% 51.0% 48.1%
39.6% 48.6% 45.0% 41.2%
26.9% 35.8% 32.6% 30.5%
22.4% 32.2% 29.7% 27.1%
16.8% 21.5% 18.2% 18.3%
11.9% 16.7% 14.8% 14.0%
58.7% 61.0% 60.4% 58.1%
52.8% 58.5% 55.7% 52.6%
>= 25
< 10
All
Male
Female
Black
Disabled
Paid Meals



While there were only small differences between schools with more and less teaching by librarians, the relationships between student performance on PASS Writing and ELA standards and librarians spending more time teaching information literacy is consistent across a wide variety of student groups, particularly gender, race, disability status, and socio-economic differences.

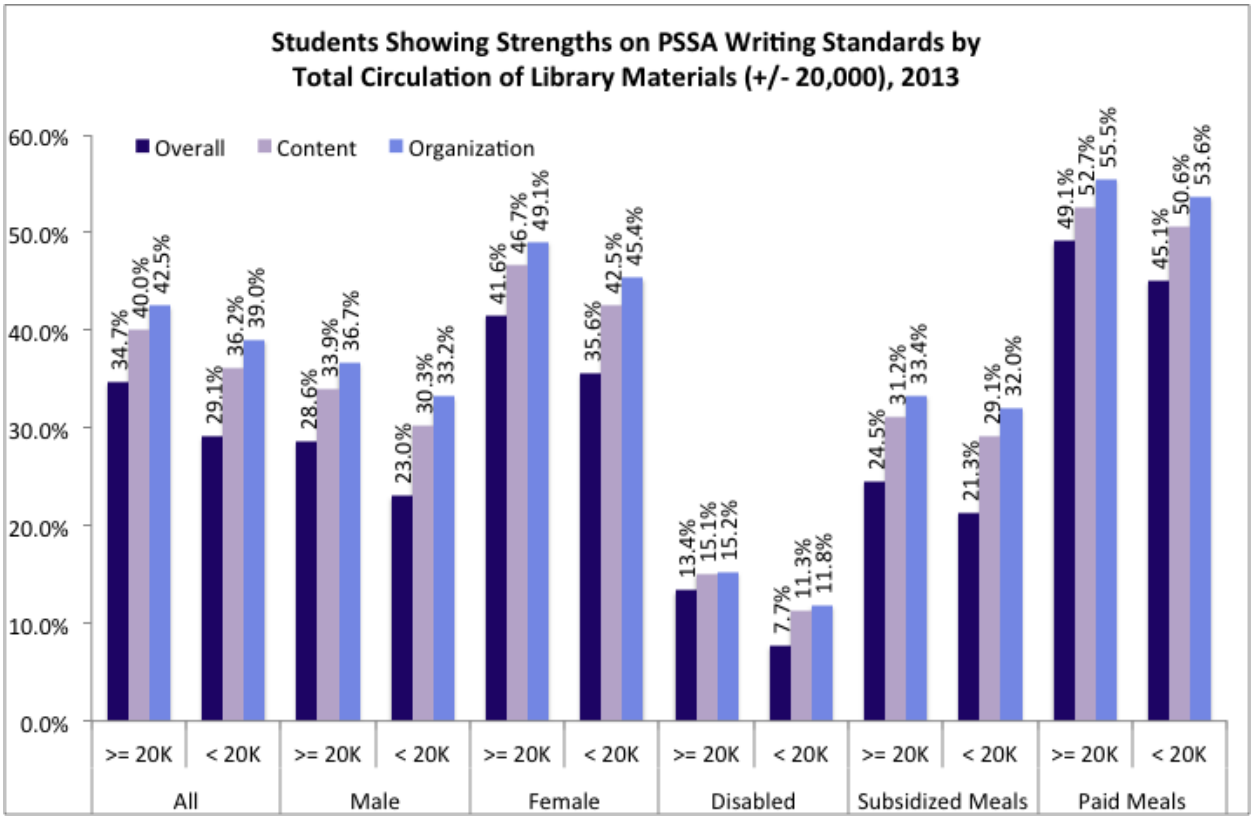
Circulation of Library Materials

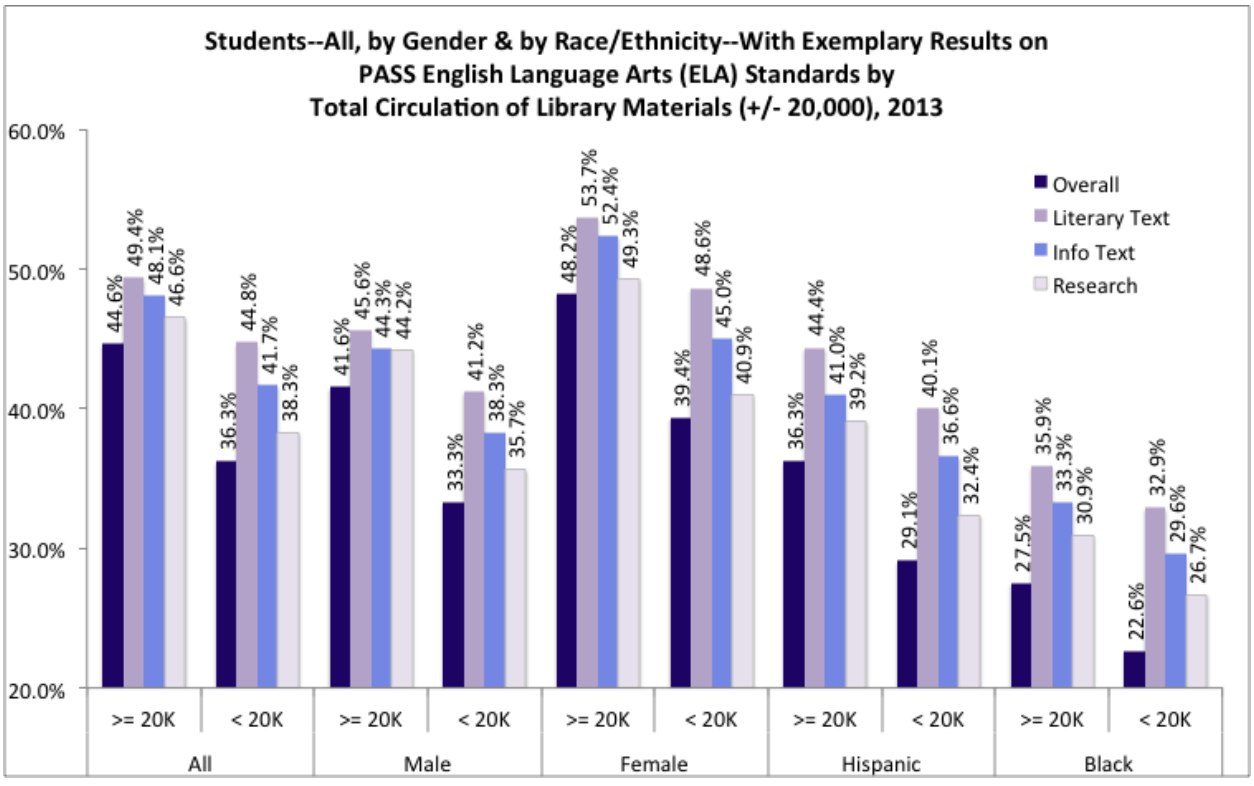
The role of digital information in public education is growing rapidly. More and more, students and teachers alike rely on information obtained via the Internet—whether from free websites or licensed databases. Further, the role of e-books is also growing rapidly. Nonetheless, books and other traditional print and non-print materials are still responsible for the majority of library circulation transactions, particularly those associated with reading and broadly-based research required for many writing assignments. For total circulation of library materials in 2012-13, the median among elementary and middle schools that responded to the South Carolina School Library Survey and for which PASS test results were available was approximately 20,000 checkouts. On a per-student basis, the median was 36 checkouts.

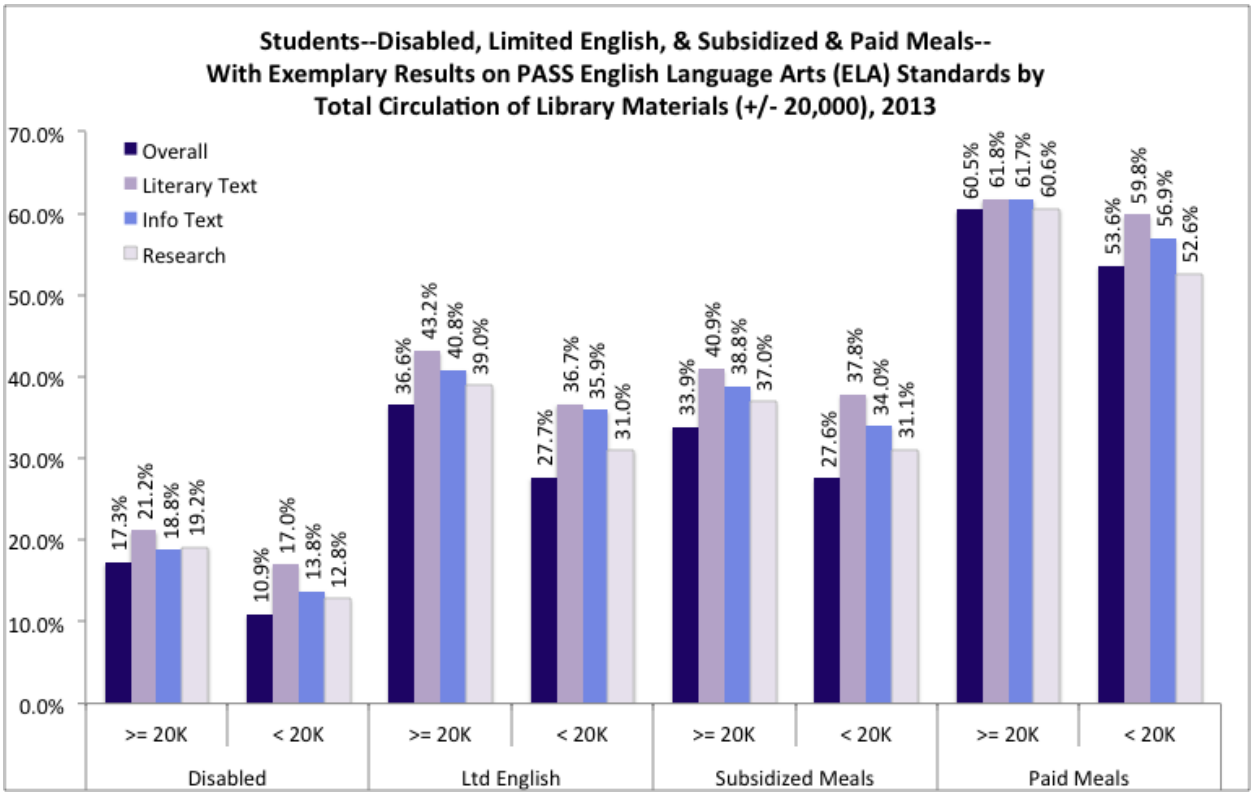
Total Circulation

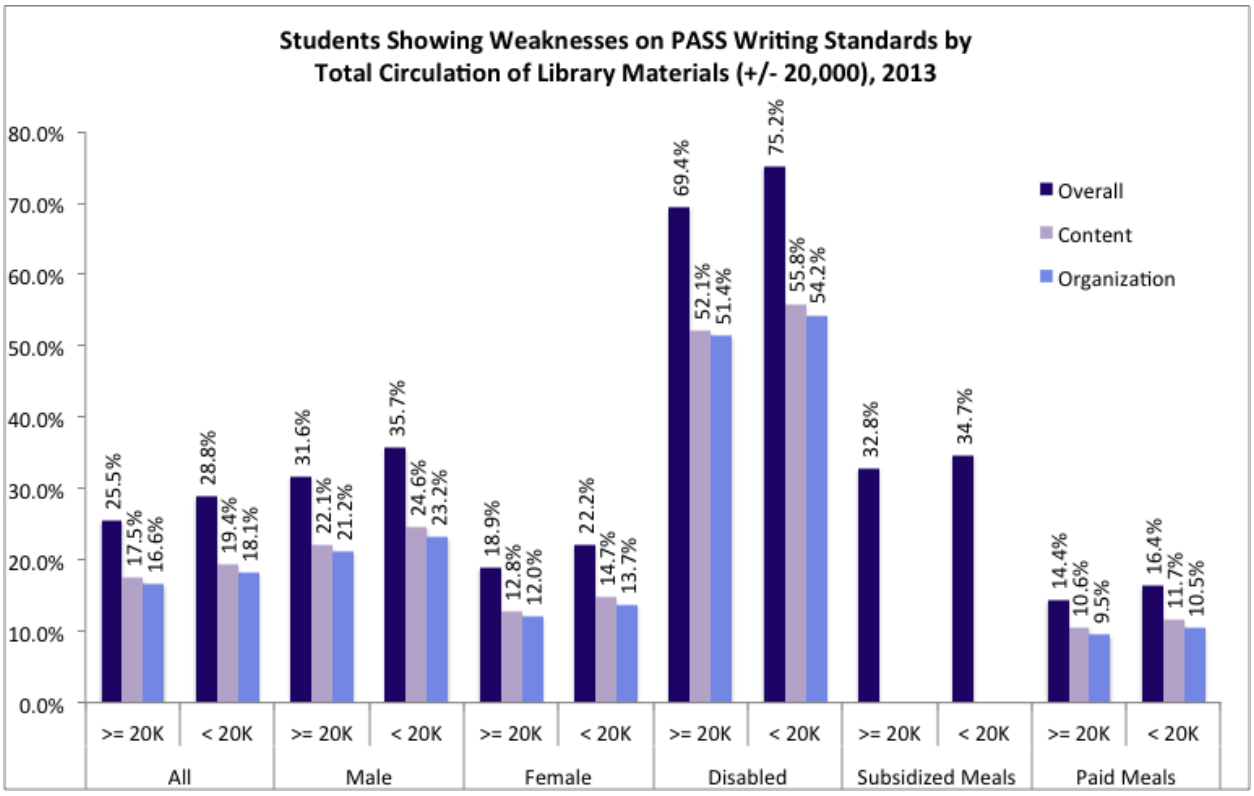
First, let us examine the relationships between PASS Writing and English Language Arts (ELA) results and total circulation.

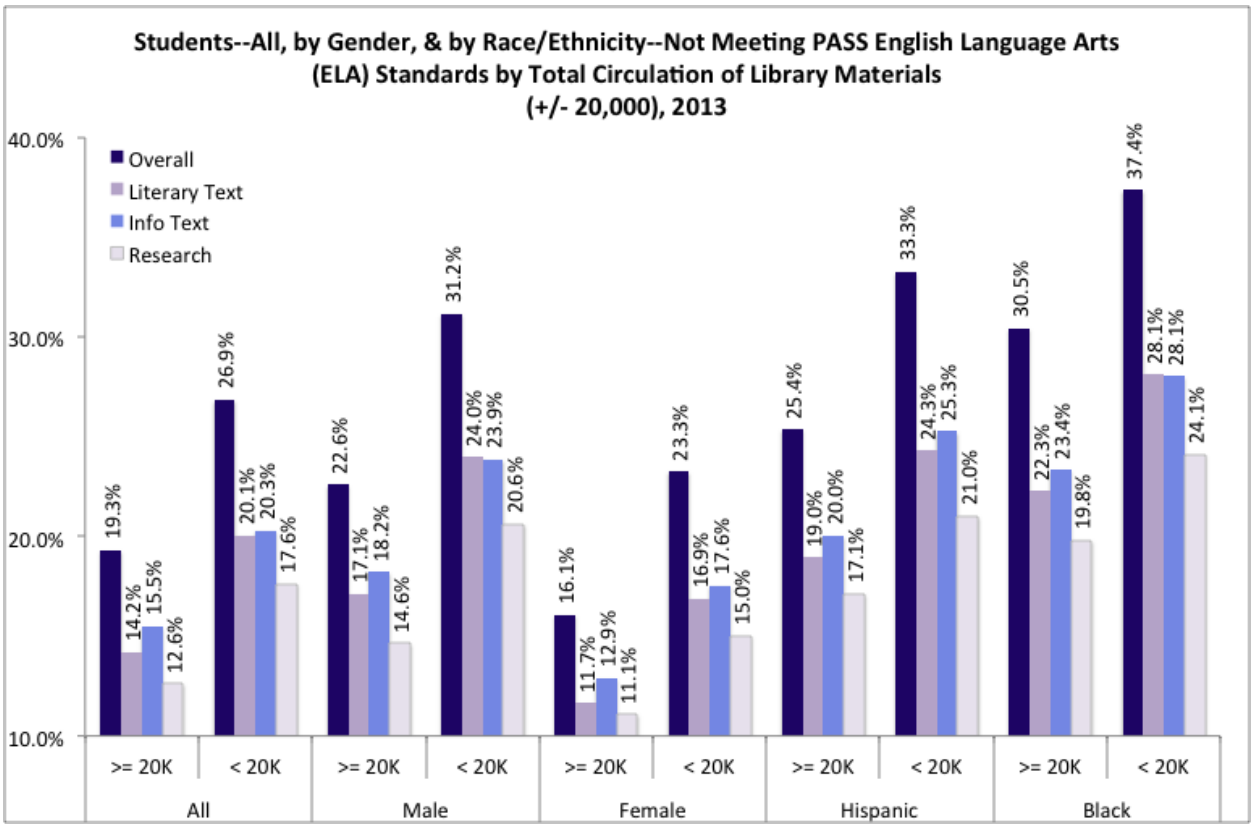
All students—both male and female as well as those who are disabled and poorer students who are eligible for subsidized or paid meals—were more likely to show strengths on the PSSA Writing standard—overall and on Content and Organization—if their libraries circulated at least 20,000 items. Similarly, for all students—regardless of gender, race/ethnicity, disability status, limited English status, and subsidized/paid meals status —higher total circulation was similarly associated with exemplary results on ELA—overall and on Literary Text, Informational Text, and Research. Conversely, these same student cohorts were less likely to show Writing weaknesses and not to meet ELA standards, if their libraries circulated more materials. (The lone exception was for subsidized meals students, for whom differences on Writing's Content and Organization standards were not significant.)

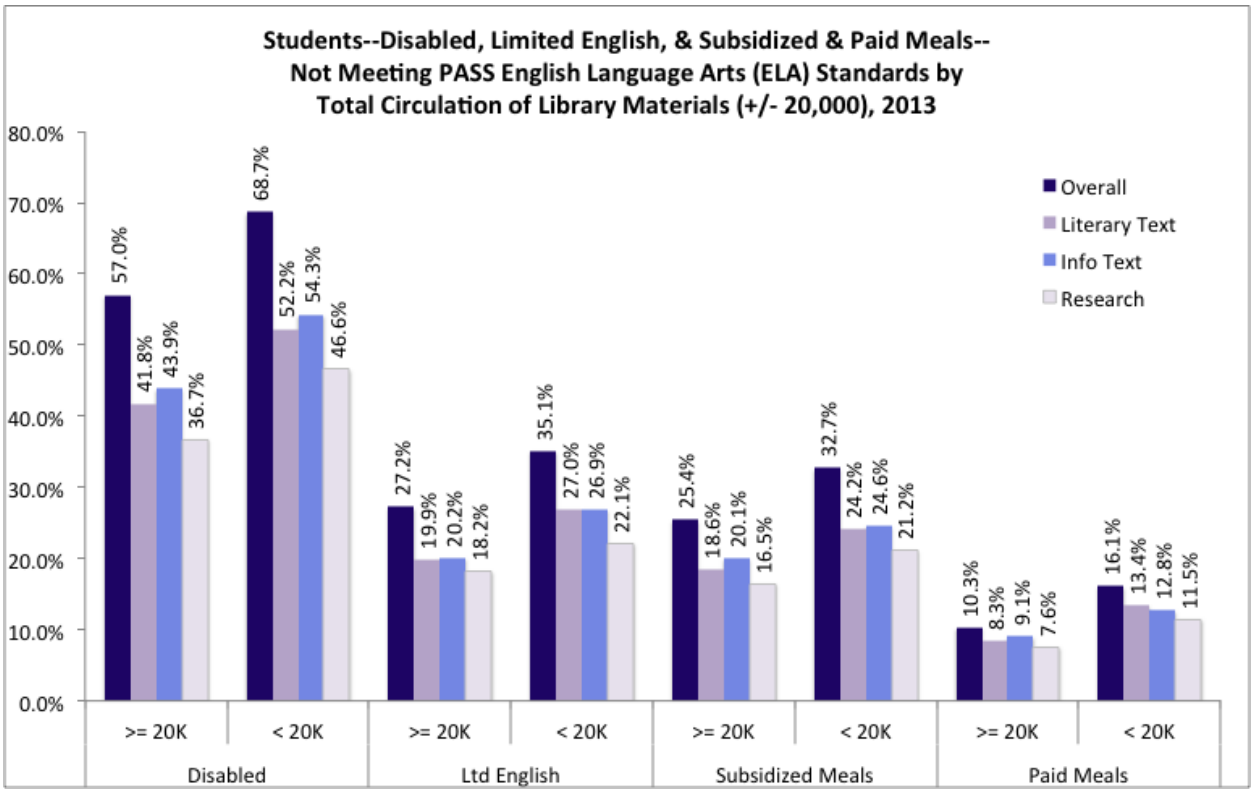

Students Showing Strengths on PSSA Writing Standards by
Total Circulation of Library Materials (+/- 20,000), 2013
Overall
Content
Organization
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
34.7% 40.0% 42.5%
29.1% 36.2% 39.0%
28.6% 33.9% 36.7%
23.0% 30.3% 33.2%
41.6% 46.7% 49.1%
35.6% 42.5% 45.4%
13.4% 15.1% 15.2%
7.7% 11.3% 11.8%
24.5% 31.2% 33.4%
21.3% 29.1% 32.0%
49.1% 52.7% 55.5%
45.1% 50.6% 53.6%
>= 20K
< 20K
All
Male
Female
Disabled
Subsidized Meals
Paid Meals


Students--All, by Gender & by Race/Ethnicity--With Exemplary Results on
PASS English Language Arts (ELA) Standards by
Total Circulation of Library Materials (+/- 20,000), 2013
Overall
Literary Text
Info Text
Research
60.0%
50.0%
40.0%
30.0%
20.0%
44.6% 49.4% 48.1% 46.6%
36.3% 44.8% 41.7% 38.3%
41.6% 45.6% 44.3% 44.2%
33.3% 41.2% 38.3% 35.7%
48.2% 53.7% 52.4% 49.3%
39.4% 48.6% 45.0% 40.9%
36.3% 44.4% 41.0% 39.2%
29.1% 40.1% 36.6% 32.4%
27.5% 35.9% 33.3% 30.9%
22.6% 32.9% 29.6% 26.7%
>= 20K
< 20K
All
Male
Female
Hispanic
Black


Students--Disabled, Limited English, & Subsidized & Paid Meals--
With Exemplary Results on PASS English Language Arts (ELA) Standards by
Total Circulation of Library Materials (+/- 20,000), 2013
Overall
Literary Text
Info Text
Research
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
17.3% 21.2% 18.8% 19.2%
10.9% 17.0% 13.8% 12.8%
36.6% 43.2% 40.8% 39.0%
27.7% 36.7% 35.9% 31.0%
33.9% 40.9% 38.8% 37.0%
27.6% 37.8% 34.0% 31.1%
60.5% 61.8% 61.7% 60.6%
53.6% 59.8% 56.9% 52.6%
>= 20K
< 20K
Disabled
Ltd English
Subsidized Meals
Paid Meals


Students Showing Weaknesses on PASS Writing Standards by
Total Circulation of Library Materials (+/- 20,000), 2013
Overall
Content
Organization
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
25.5% 17.5% 16.6%
28.8% 19.4% 18.1%
31.6% 22.1% 21.2%
35.7% 24.6% 23.2%
18.9% 12.8% 12.0%
22.2% 14.7% 13.7%
69.4% 52.1% 51.4%
75.2% 55.8% 54.2%
32.8%
34.7%
14.4% 10.6% 9.5%
16.4% 11.7% 10.5%
>= 20K
< 20K
All
Male
Female
Disabled
Subsidized Meals
Paid Meals

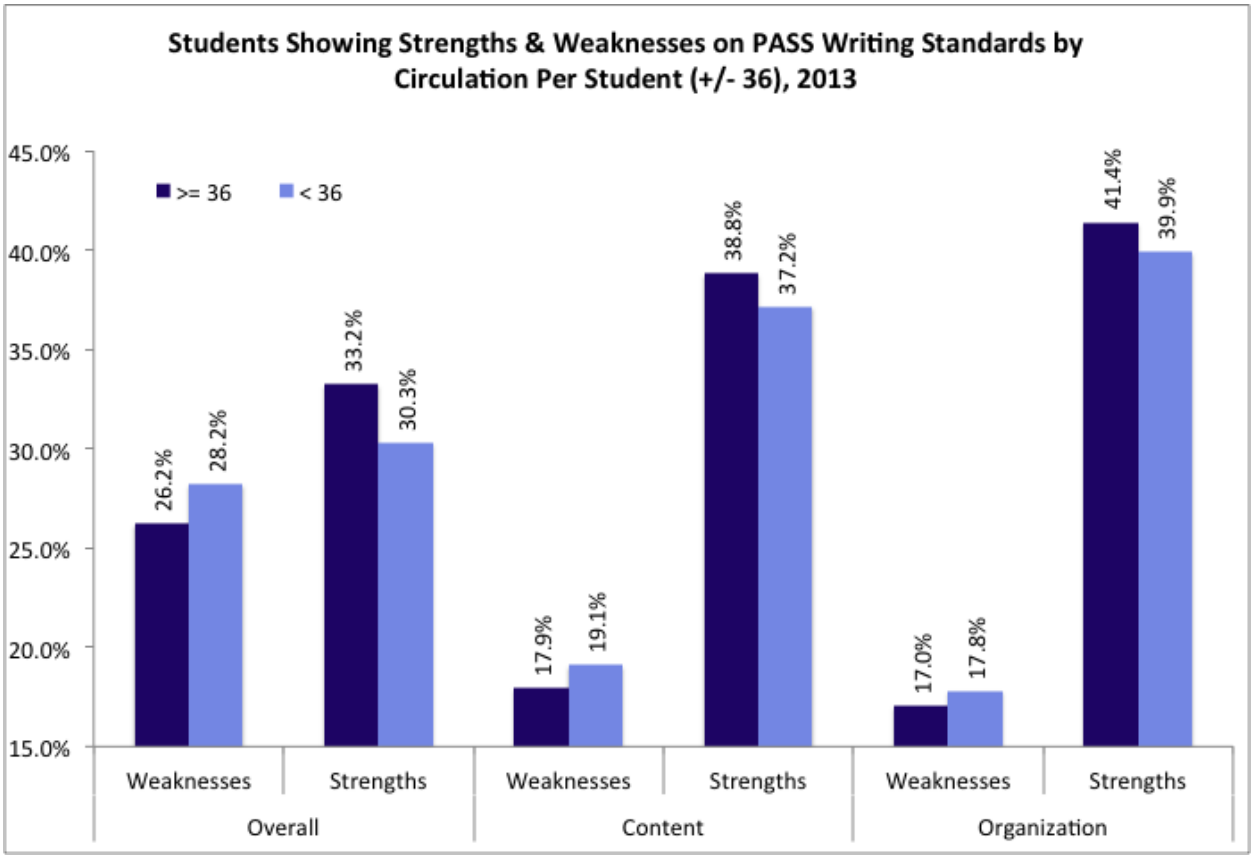

Students--All, by Gender, & by Race/Ethnicity--Not Meeting PASS English Language Arts (ELA) Standards by Total Circulation of Library Materials (+/- 20,000), 2013
40.0%
30.0%
20.0%
10.0%
Overall
Literary Text
Info Text
Research
19.3% 14.2% 15.5% 12.6%
26.9% 20.1% 20.3% 17.6%
22.6% 17.1% 18.2% 14.6%
31.2% 24.0% 23.9% 20.6%
16.1% 11.7% 12.9% 11.1%
23.3% 16.9% 17.6% 15.0%
25.4% 19.0% 20.0% 17.1%
33.3% 24.3% 25.3% 21.0%
30.5% 22.3% 23.4% 19.8%
37.4% 28.1% 28.1% 24.1%
>= 20K
< 20K
All
Male
Female
Hispanic
Black

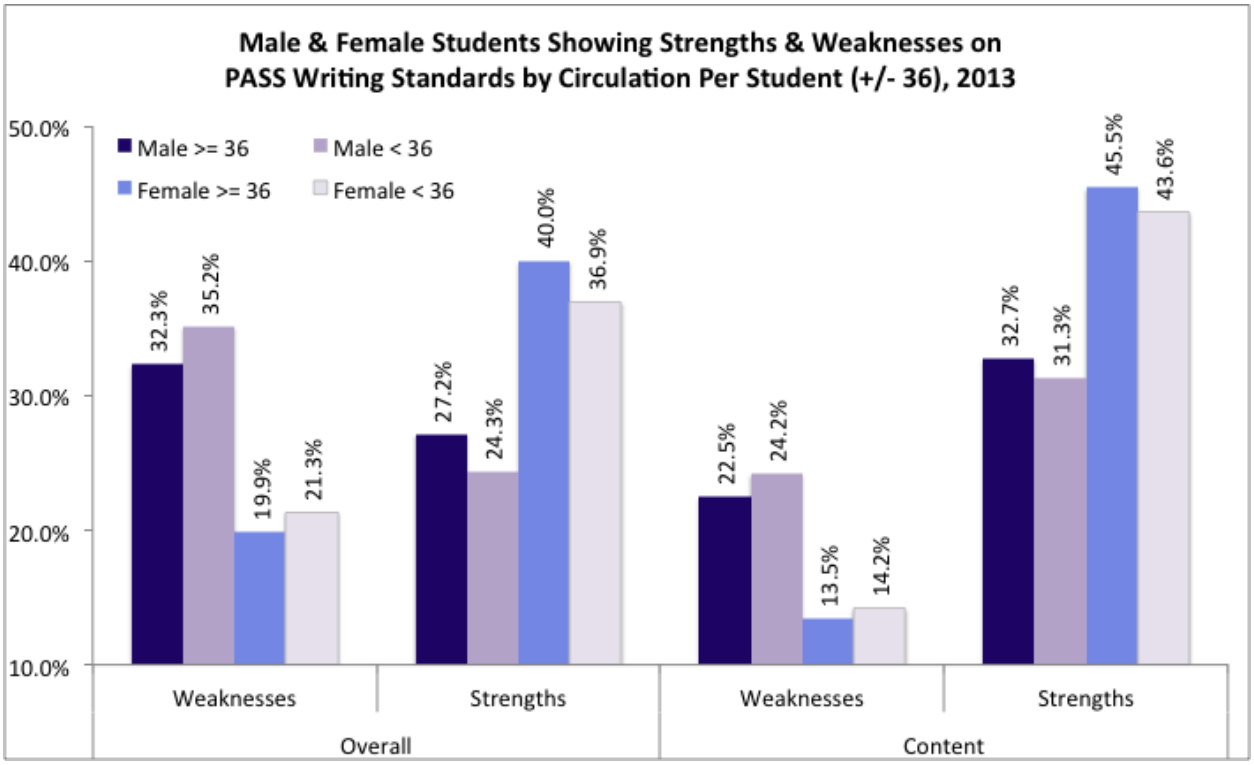

Students--Disabled, Limited English, & Subsidized & Paid Meals--Not Meeting PASS English Language Arts (ELA) Standards by Total Circulation of Library Materials (+/- 20,000), 2013
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Overall
Literary Text
Info Text
Research
57.0% 41.8% 43.9% 36.7%
68.7% 52.2% 54.3% 46.6%
27.2% 19.9% 20.2% 18.2%
35.1% 27.0% 26.9% 22.1%
25.4% 18.6% 20.1% 16.5%
32.7% 24.2% 24.6% 21.2%
10.3% 8.3% 9.1% 7.6%
16.1% 13.4% 12.8% 11.5%
>= 20K
< 20K
Disabled
Ltd English
Subsidized Meals
Paid Meals

Circulation Per Student

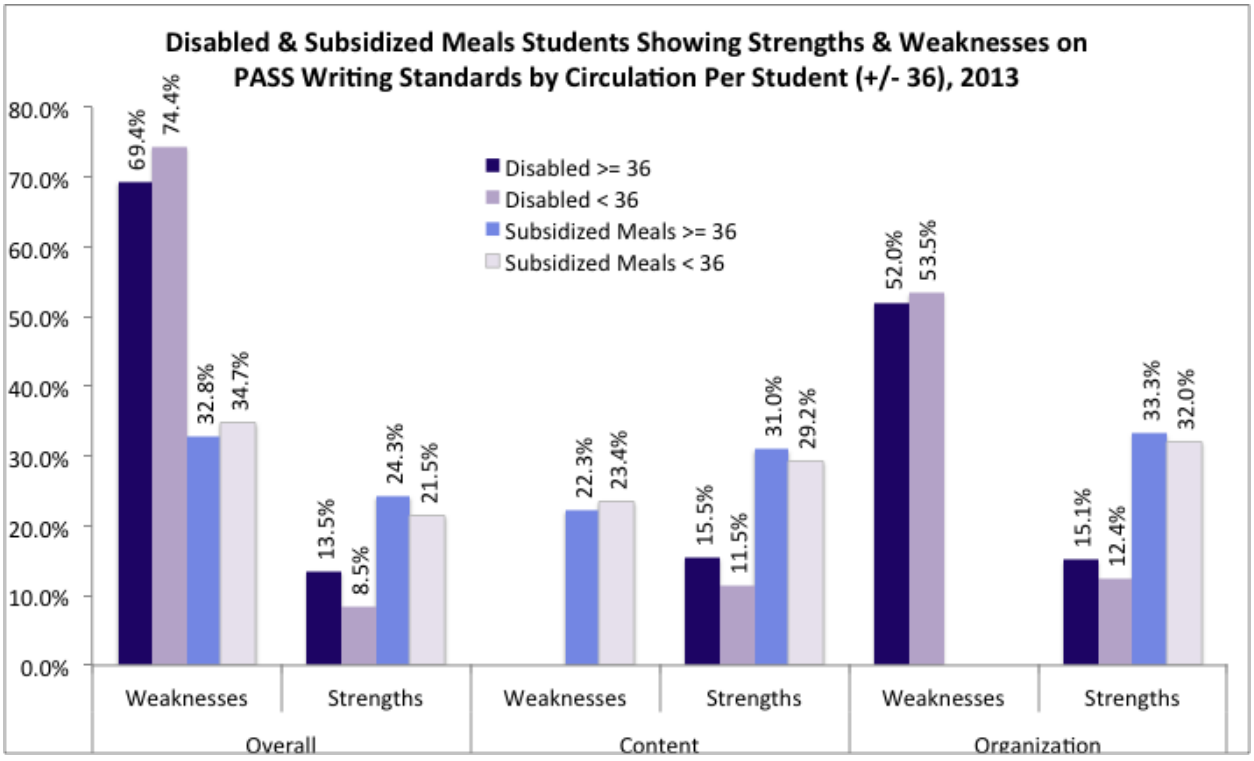
Secondly, let us examine the relationships between PASS results and circulation per student.

All students—and particularly disabled and subsidized meals students—were more likely show strengths and less likely to show weaknesses on PASS Writing standards—overall and on Content and Organization—if circulation per student met or exceeded 36 items annually. Both female and male students, examined separately, were more likely to show strengths and less likely to show weaknesses on Writing standards—overall and on Content, but not Organization—if the threshold of 36 checkouts per student was met.

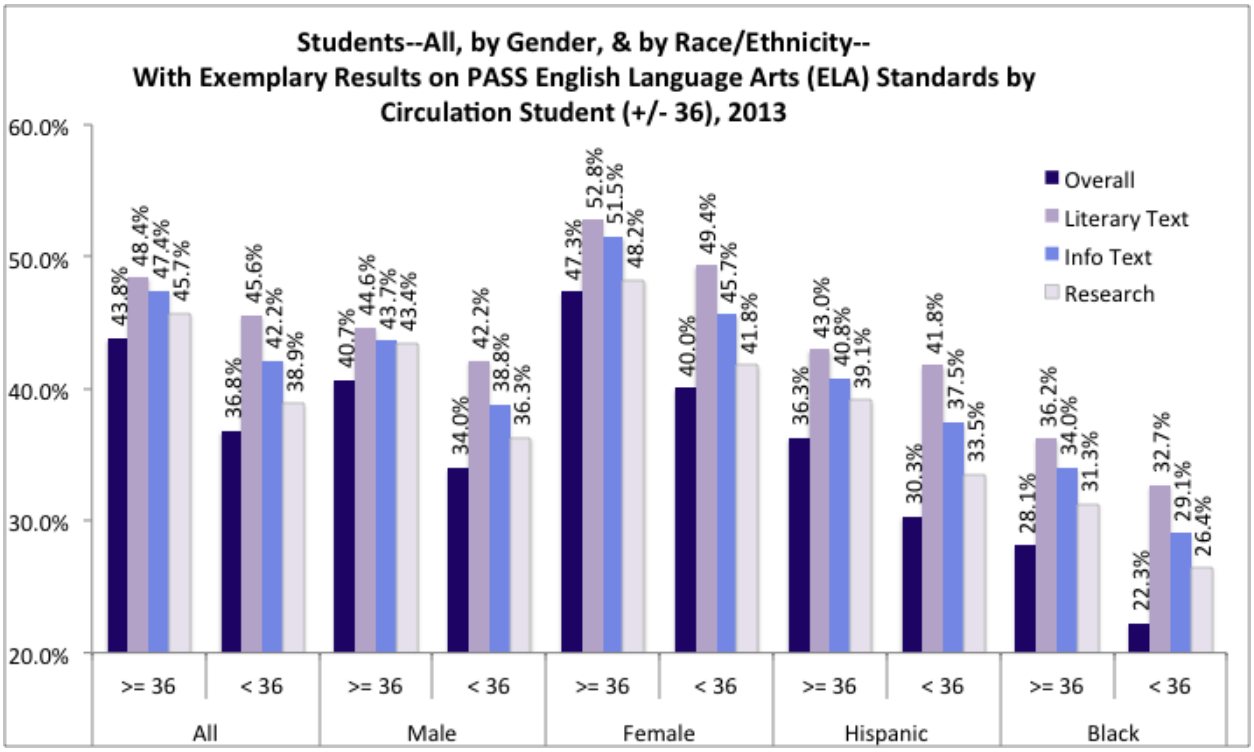


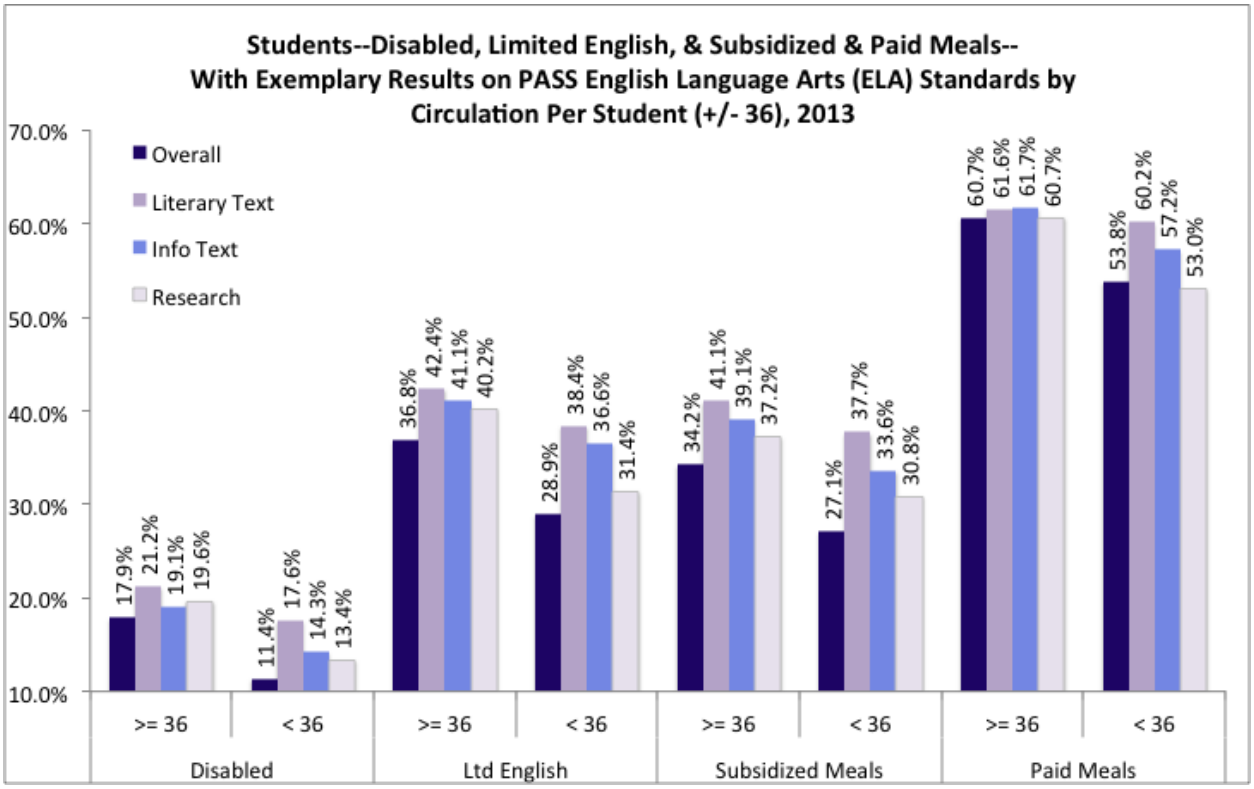


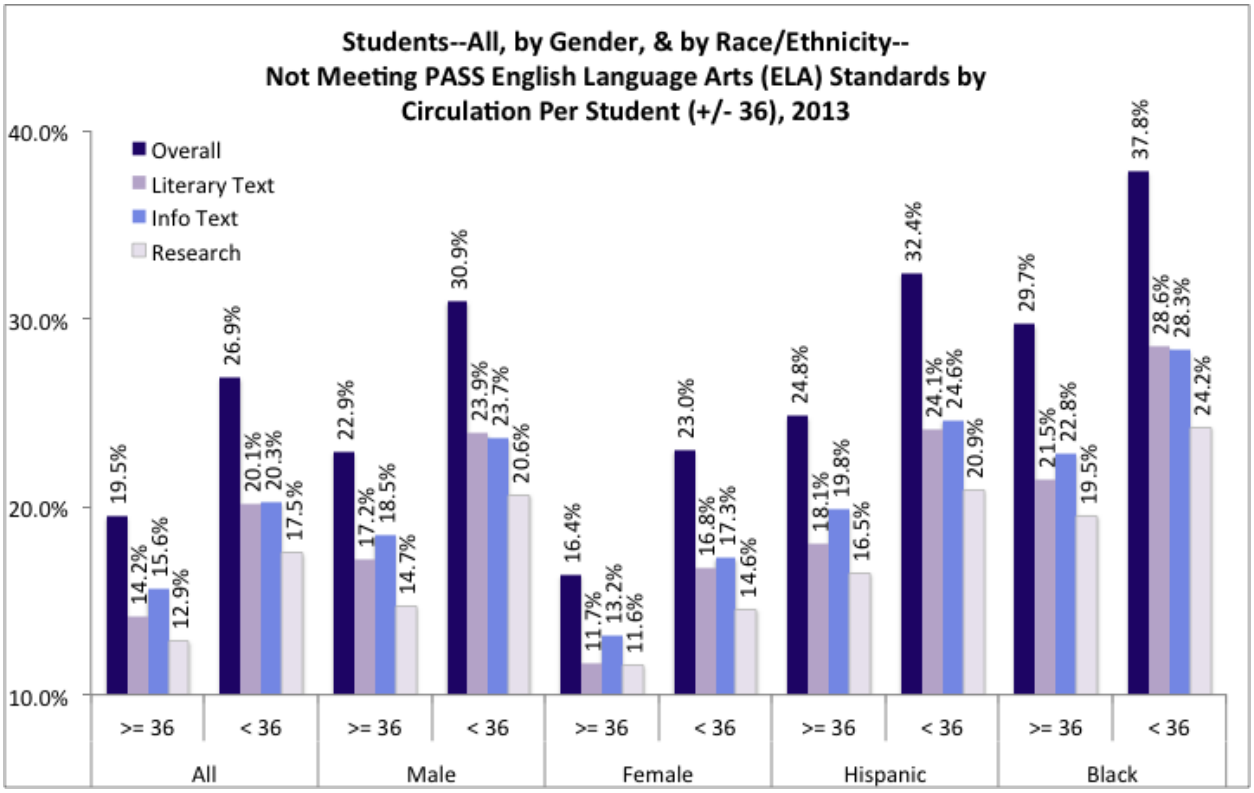
Further evidence indicates that disabled students and poorer students—those eligible for subsidized meals—were more likely to show strengths and less likely to show weaknesses on PASS Writing standards, if circulation per student was higher.

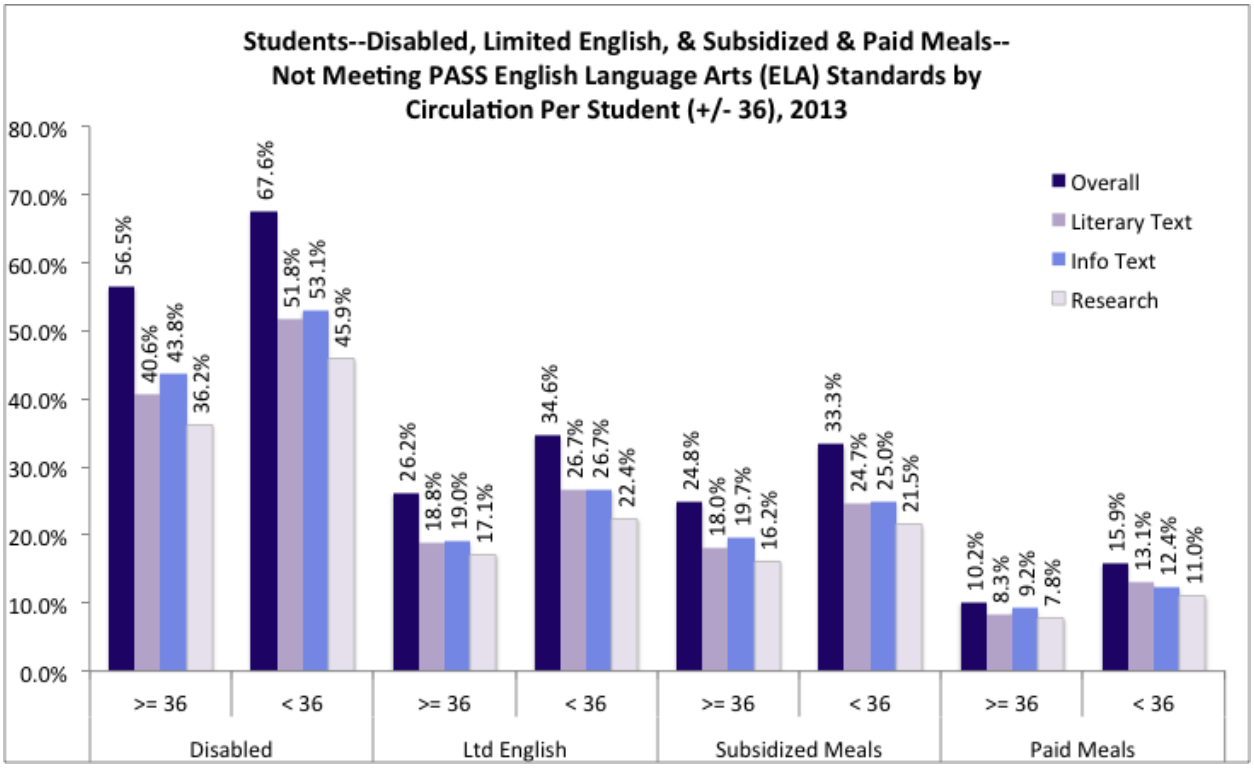


Per-student circulation was associated with an even broader array of student cohorts for ELA results—overall and on Literary Text, Informational Text, and Research. All students—regardless of gender, race/ethnicity, disability status, limited English status, and subsidized/paid meals status—were more likely to have exemplary ELA results and less likely to fail to meet these standards where per-student circulation was higher.




Students--Disabled, Limited English, & Subsidized & Paid Meals--
With Exemplary Results on PASS English Language Arts (ELA) Standards by
Circulation Per Student (+/- 36), 2013
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
Overall
Literary Text
Info Text
Research
17.9%
21.2%
19.1%
19.6%
11.4%
17.6%
14.3%
13.4%
36.8%
42.4%
41.1%
40.2%
28.9%
38.4%
36.6%
31.4%
34.2%
41.1%
39.1%
37.2%
27.1%
37.7%
33.6%
30.8%
60.7%
61.6%
61.7%
60.7%
53.8%
60.2%
57.2%
53.0%
>= 36
< 36
>= 36
< 36
>= 36
< 36
>= 36
< 36
Disabled
Ltd English
Subsidized Meals
Paid Meals


Students--All, by Gender, & by Race/Ethnicity--
Not Meeting PASS English Language Arts (ELA) Standards by
Circulation Per Student (+/- 36), 2013
40.0%
30.0%
20.0%
10.0%
Overall
Literary Text
Info Text
Research
19.5%
14.2%
15.6%
12.9%
26.9%
20.1%
20.3%
17.5%
22.9%
17.2%
18.5%
14.7%
30.9%
23.9%
23.7%
20.6%
16.4%
11.7%
13.2%
11.6%
23.0%
16.8%
17.3%
14.6%
24.8%
18.1%
19.8%
16.5%
32.4%
24.1%
24.6%
20.9%
29.7%
21.5%
22.8%
19.5%
37.8%
28.6%
28.3%
24.2%
>= 36
< 36
>= 36
< 36
>= 36
< 36
>= 36
< 36
>= 36
< 36
All
Male
Female
Hispanic
Black



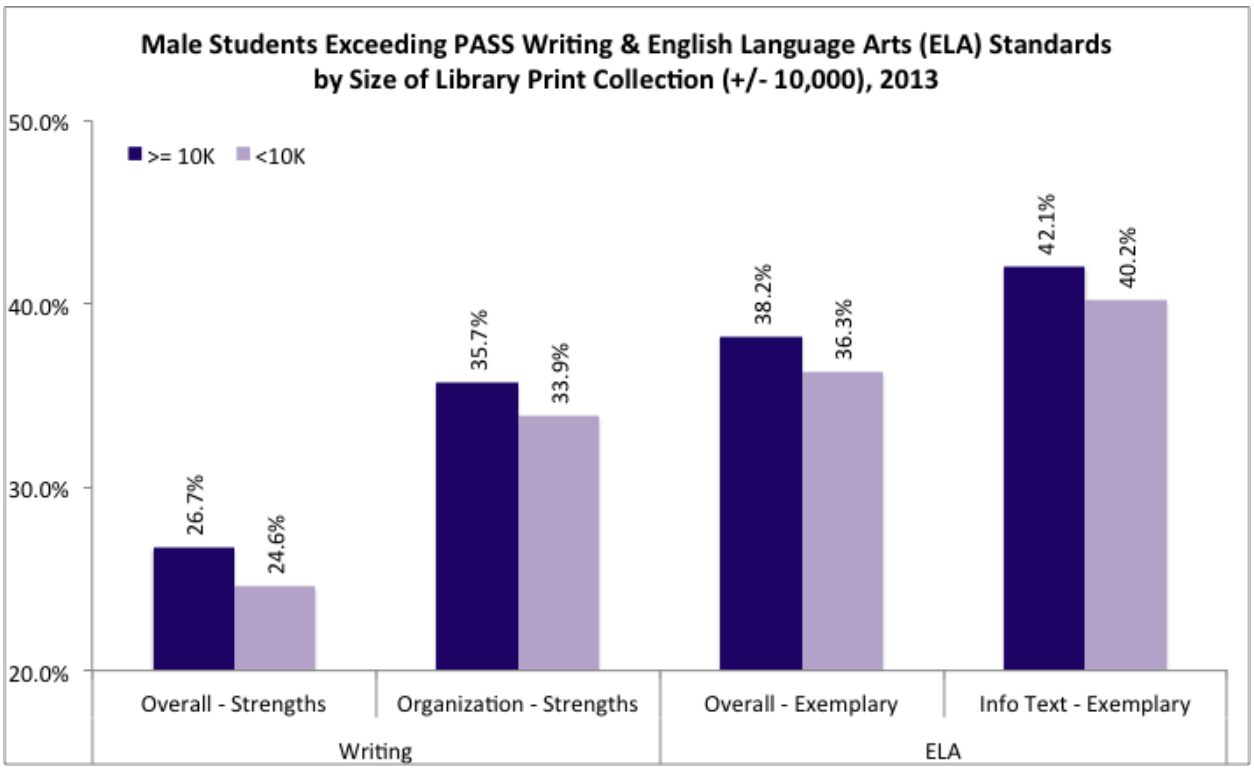
The differences in test results between comparison groups for both circulation statistics were the largest ones found in this study. This is likely a reflection of the fact that these statistics, while limited in scope in today's high-tech environment, provide the most direct data on students' use of library resources.

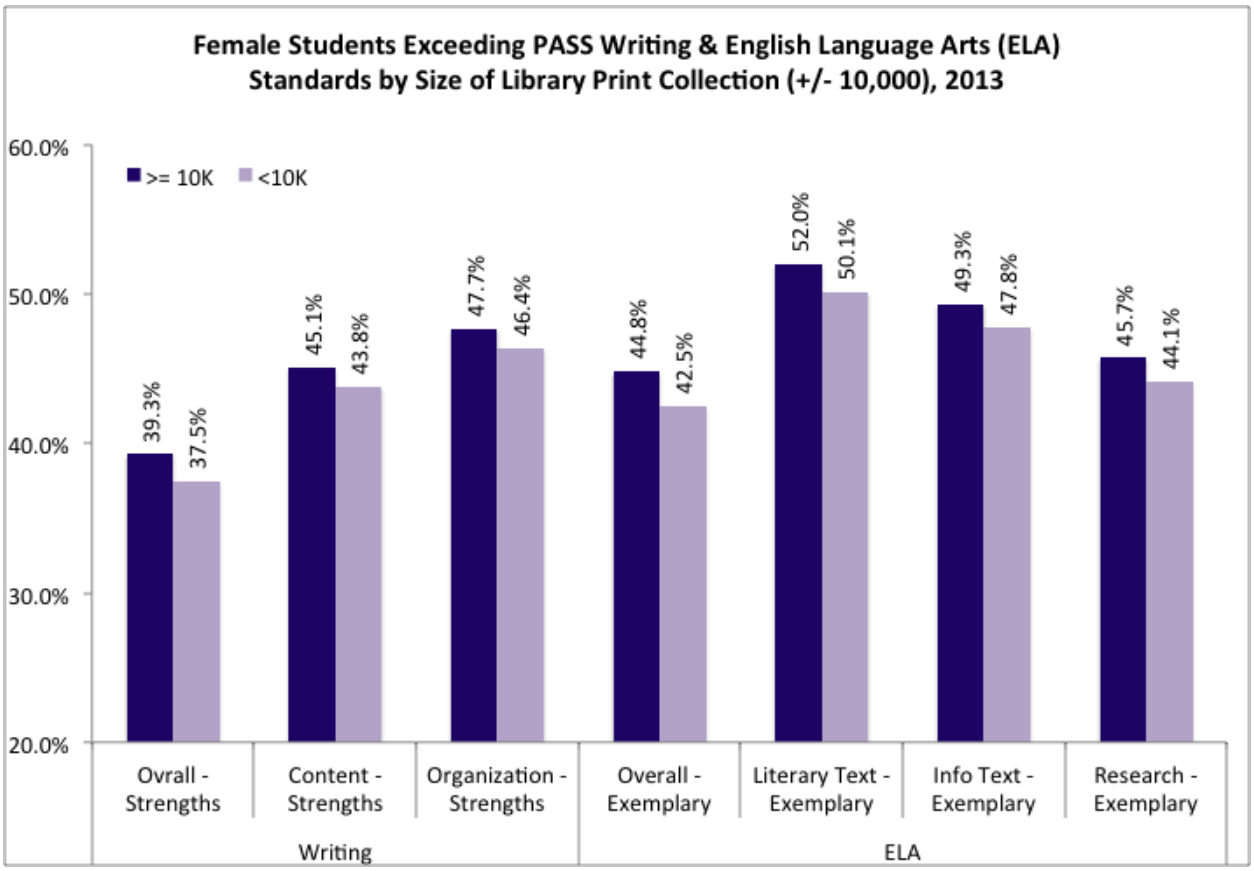
Print Collection Size

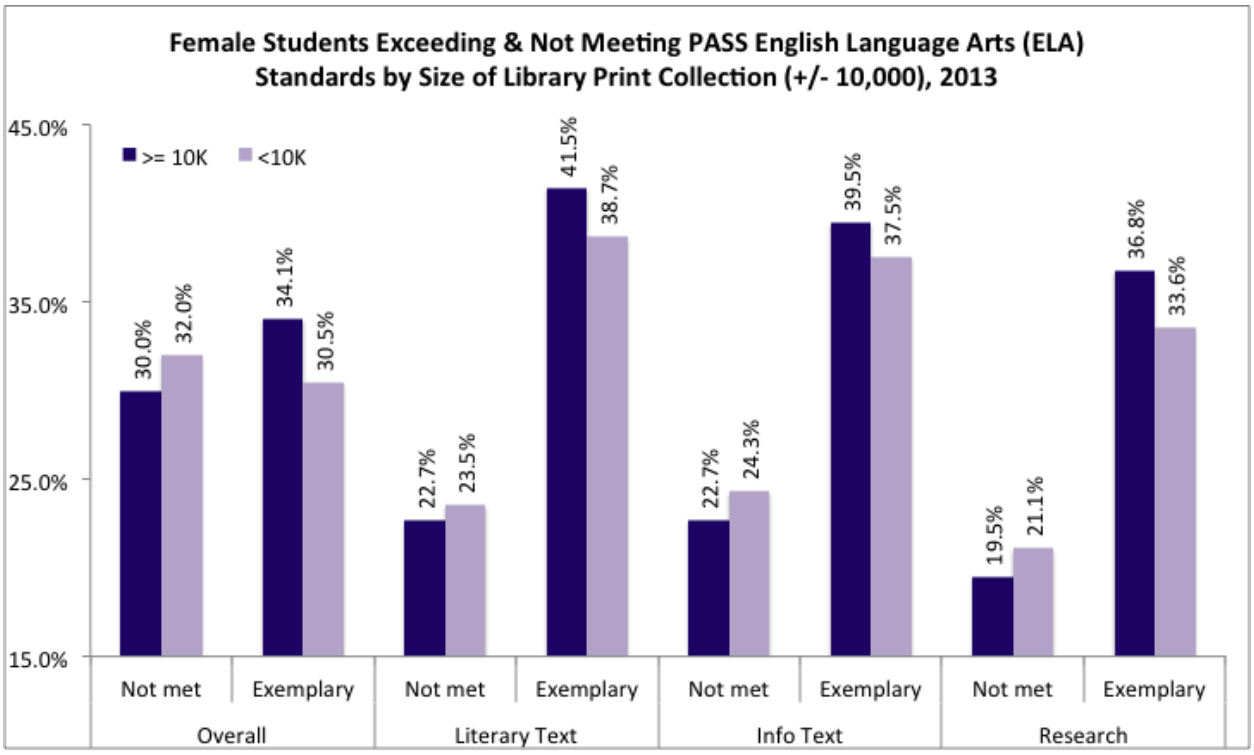
Despite the growing prominence of digital resources—from online databases to e-books—the print collections of school libraries still provide important resources. For schools that responded to the South Carolina School Library Survey and for which PASS results were available, the median size of a print collection was about 10,000 items. The top quarter of these elementary and middle schools have collections of approximately 13,000 items or more, and the bottom quarter have fewer than about 7,500 items.

First, let us consider schools whose libraries have collections equal to or above and below the median of 10,000 items.

Both male and female students were more likely to show strengths on Writing and to have exemplary results on English Language Arts (ELA), if their libraries had larger print collections. For female students, this pattern applied to all of the specific standards—Content and Organization for Writing as well as Literary Text, Informational Text, and Research for ELA. For male students, however, significant differences associated print collection size were only found for the overall standards and for Organization and Informational Text.

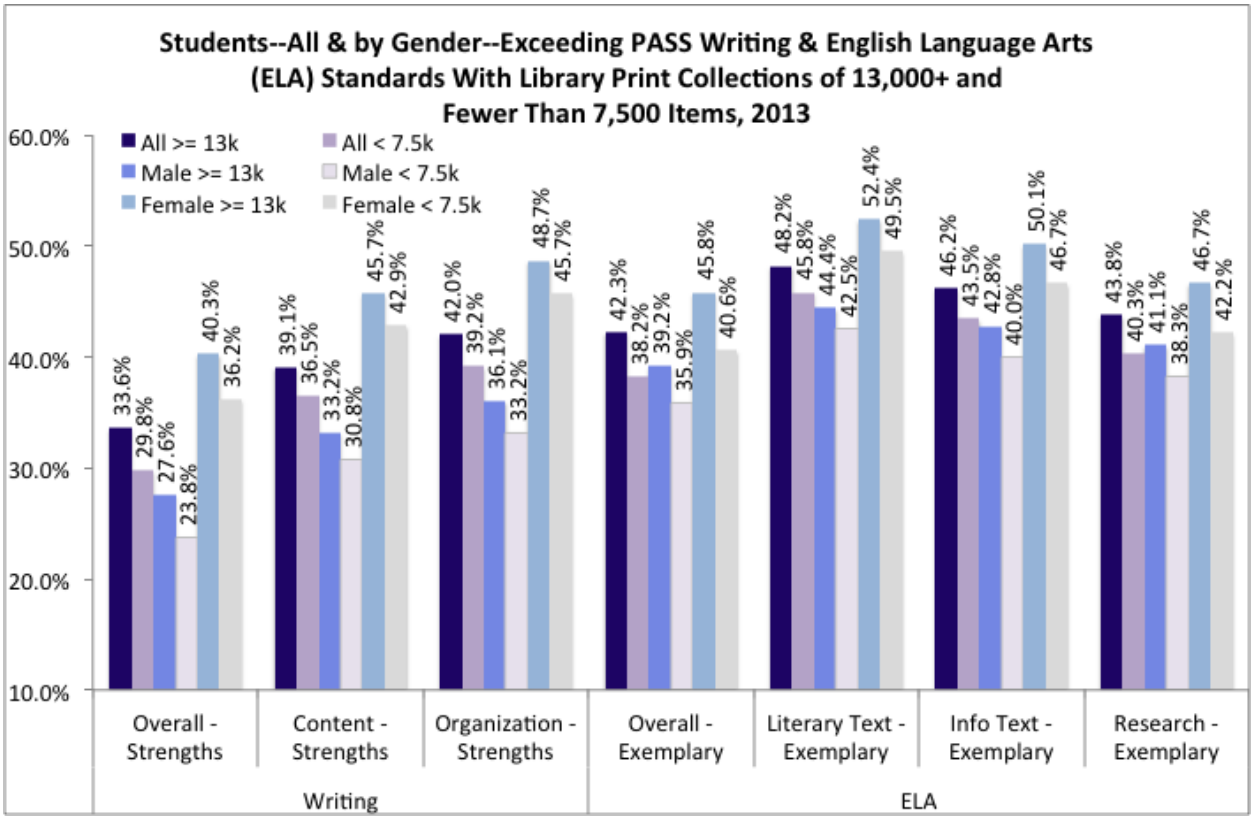

Male Students Exceeding PASS Writing & English Language Arts (ELA) Standards by Size of Library Print Collection (+/- 10,000), 2013
50.0%
40.0%
30.0%
20.0%
>= 10K
<10K
26.7%
24.6%
35.7%
33.9%
38.2%
36.3%
42.1%
40.2%
Overall - Strengths
Organization - Strengths
Overall - Exemplary
Info Text - Exemplary
Writing
ELA

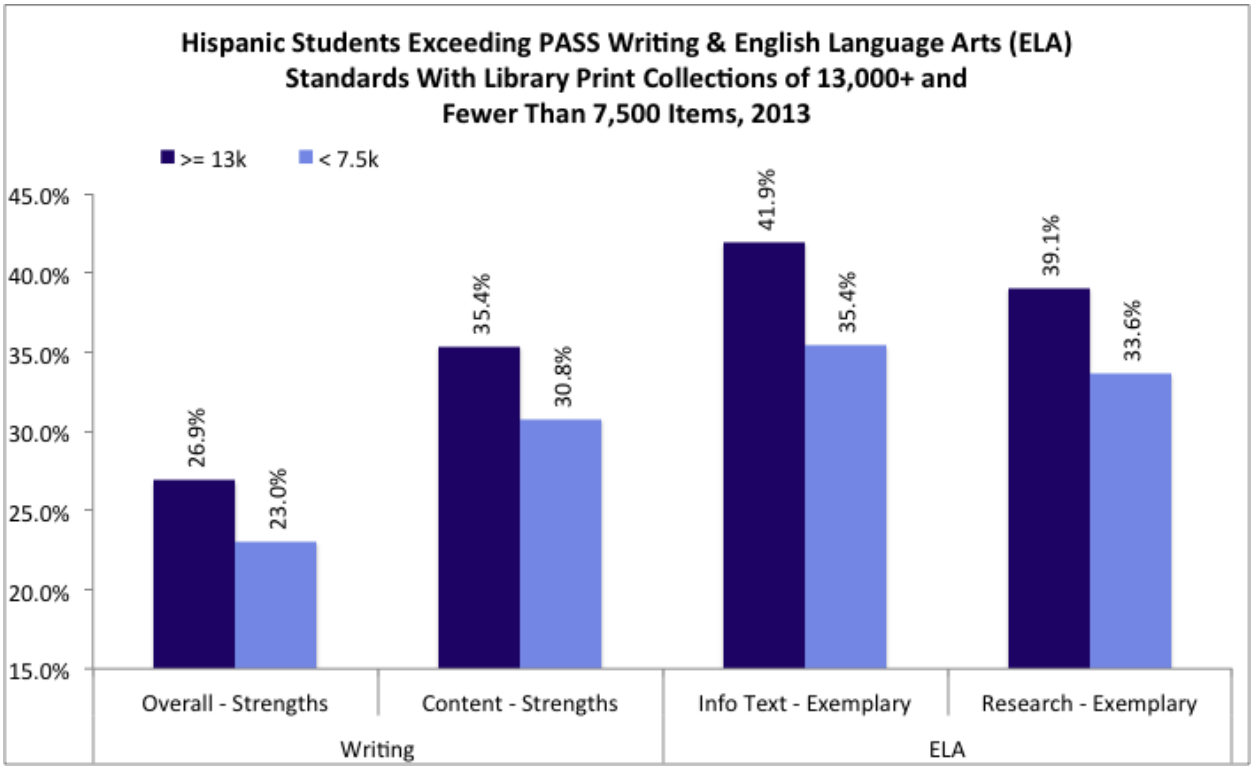

Female Students Exceeding PASS Writing & English Language Arts (ELA) Standards by Size of Library Print Collection (+/- 10,000), 2013
60.0%
50.0%
40.0%
30.0%
20.0%
>= 10K
<10K
39.3%
37.5%
45.1%
43.8%
47.7%
46.4%
44.8%
42.5%
52.0%
50.1%
49.3%
47.8%
45.7%
44.1%
Ovrall - Strengths
Content - Strengths
Organization - Strengths
Overall - Exemplary
Literary Text - Exemplary
Info Text - Exemplary
Research - Exemplary
Writing
ELA

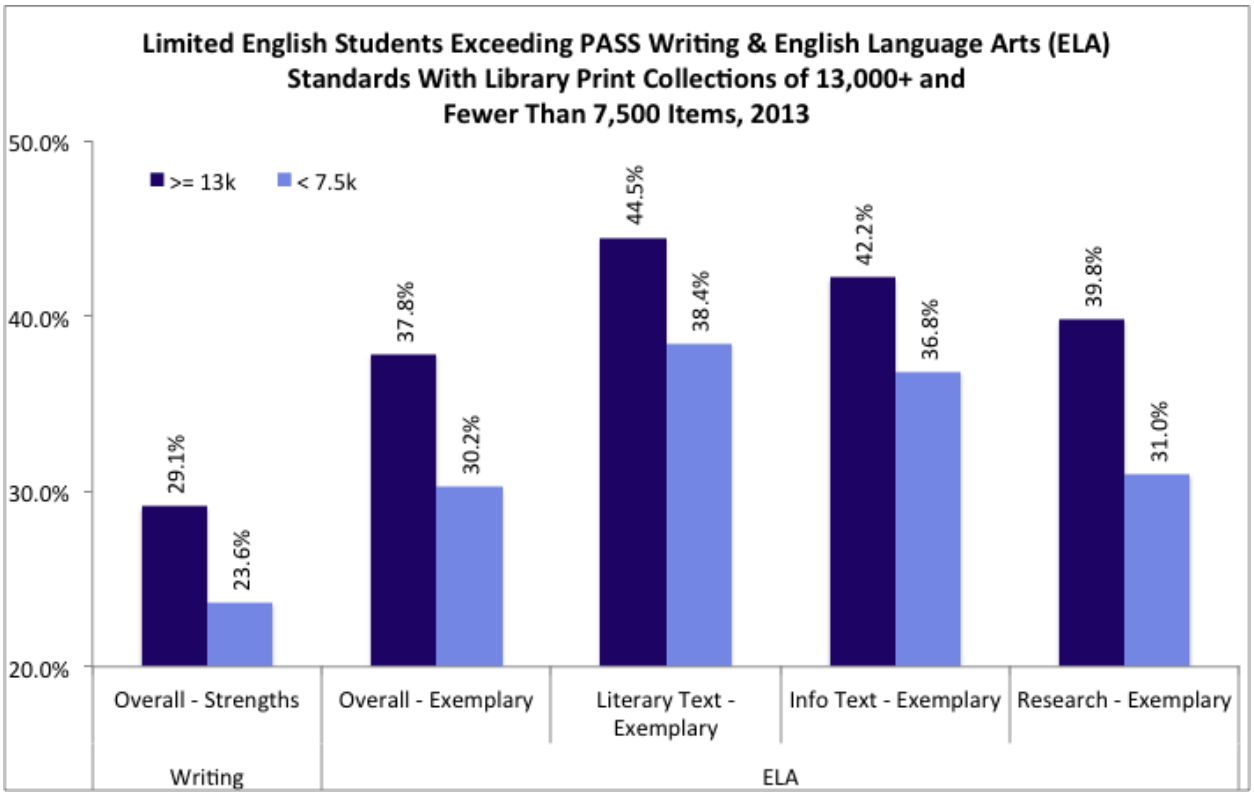

Female Students Exceeding & Not Meeting PASS English Language Arts (ELA) Standards by Size of Library Print Collection (+/- 10,000), 2013
45.0%
35.0%
25.0%
15.0%
>= 10K
<10K
30.0%
32.0%
34.1%
30.5%
22.7%
23.5%
41.5%
38.7%
22.7%
24.3%
39.5%
37.5%
19.5%
21.1%
36.8%
33.6%
Not met
Exemplary
Not met
Exemplary
Not met
Exemplary
Not met
Exemplary
Overall
Literary Text
Info Text
Research

A fuller picture of the difference access to print resources makes for students is revealed by comparing students whose libraries have the largest and smallest print collections.

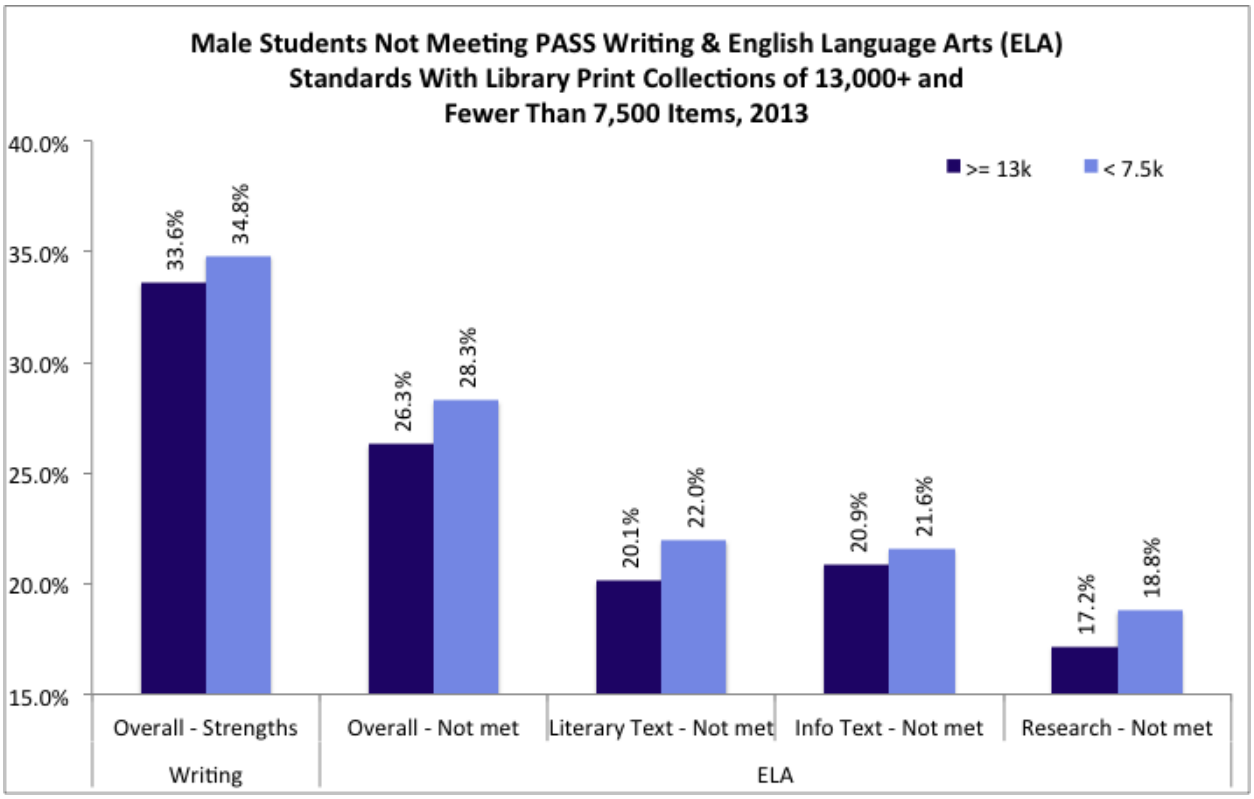
All students—and students regardless of gender, ethnicity, and limited English status—whose libraries had the largest print collections were more likely to show Writing strengths and to be exemplary in ELA than their counterparts whose libraries had the smallest such collections.

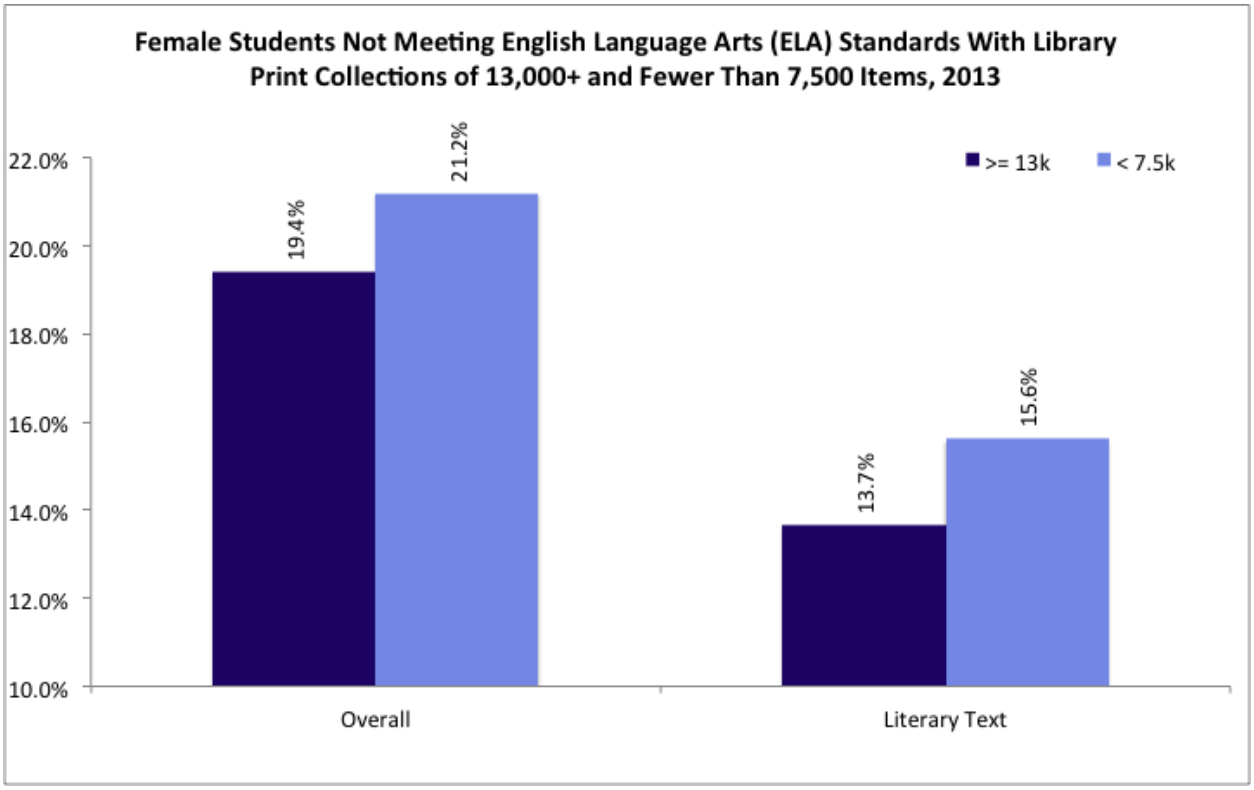


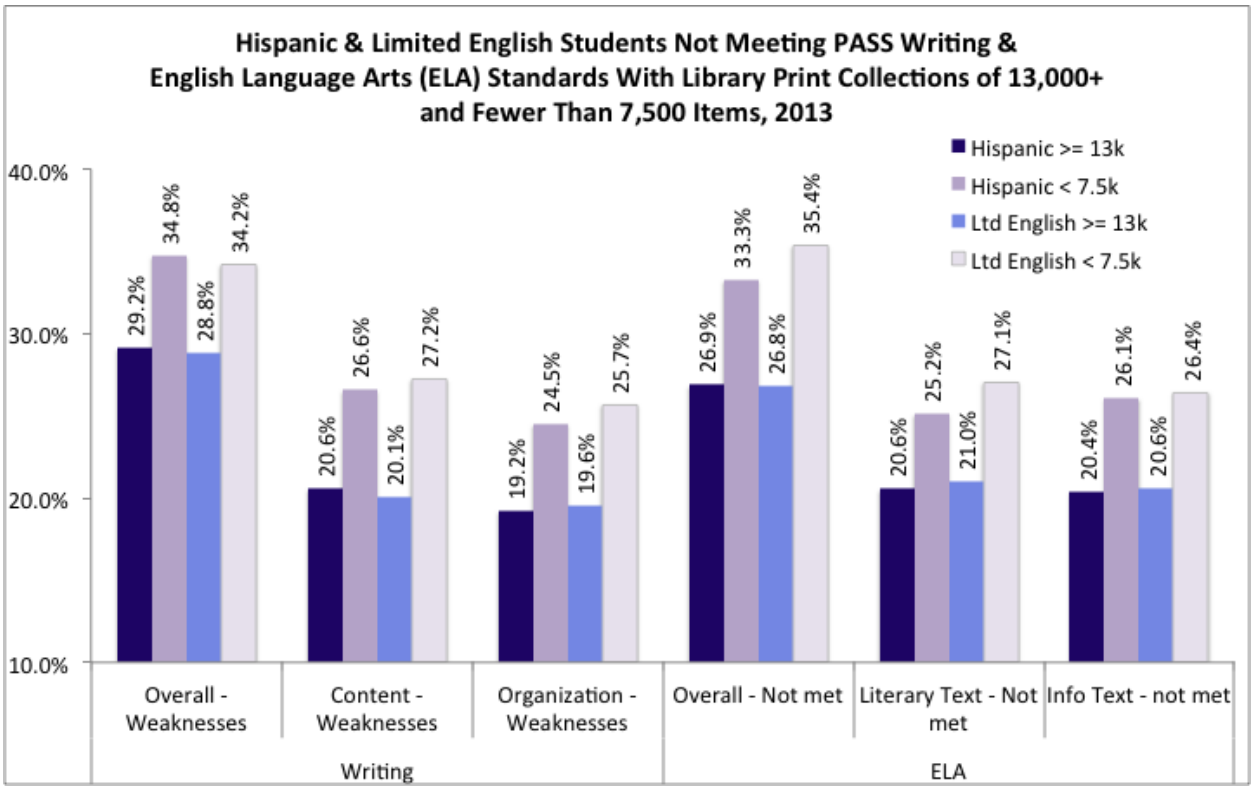

Hispanic Students Exceeding PASS Writing & English Language Arts (ELA) Standards With Library Print Collections of 13,000+ and Fewer Than 7,500 Items, 2013
>= 13k
< 7.5k
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
26.9%
23.0%
35.4%
30.8%
41.9%
35.4%
39.1%
33.6%
Overall - Strengths
Content - Strengths
Info Text - Exemplary
Research - Exemplary
Writing
ELA


Limited English Students Exceeding PASS Writing & English Language Arts (ELA) Standards With Library Print Collections of 13,000+ and Fewer Than 7,500 Items, 2013
>= 13k
< 7.5k
50.0%
40.0%
30.0%
20.0%
29.1%
23.6%
37.8%
30.2%
44.5%
38.4%
42.2%
36.8%
39.8%
31.0%
Overall - Strengths
Overall - Exemplary
Literary Text - Exemplary
Info Text - Exemplary
Research - Exemplary
Writing
ELA

If their libraries had the largest print collections, male students were less likely to show overall Writing weaknesses and less likely to not meet ELA standards—overall as well as for Literary Text, Informational Text, and Research. Access to the largest print collections was also associated with fewer female students failing to meet overall ELA standards and specifically those for Literary Text. Further, such access tended to coincide with fewer Hispanic and limited English students failing to meet Writing standards—overall, Content, and Organization—as well as ELA standards—overall, Literary Text, and Informational Text.





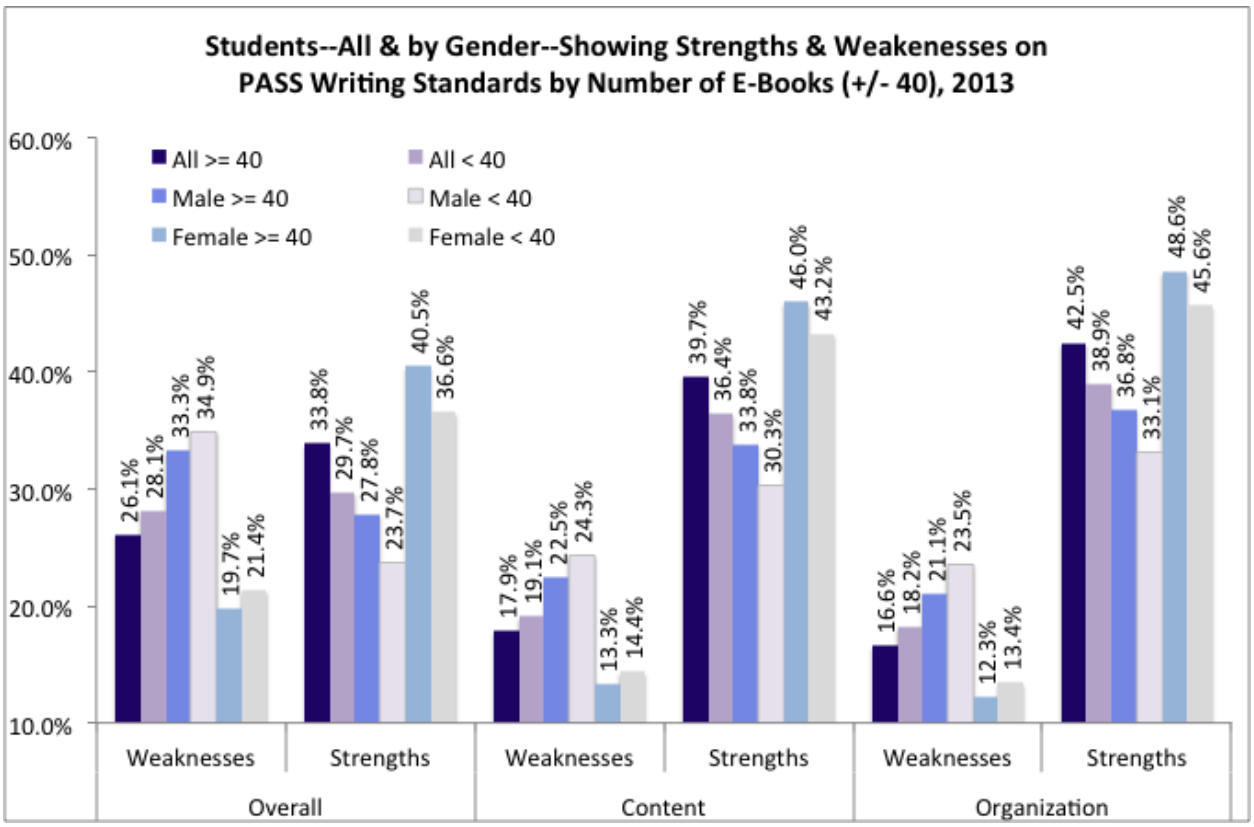


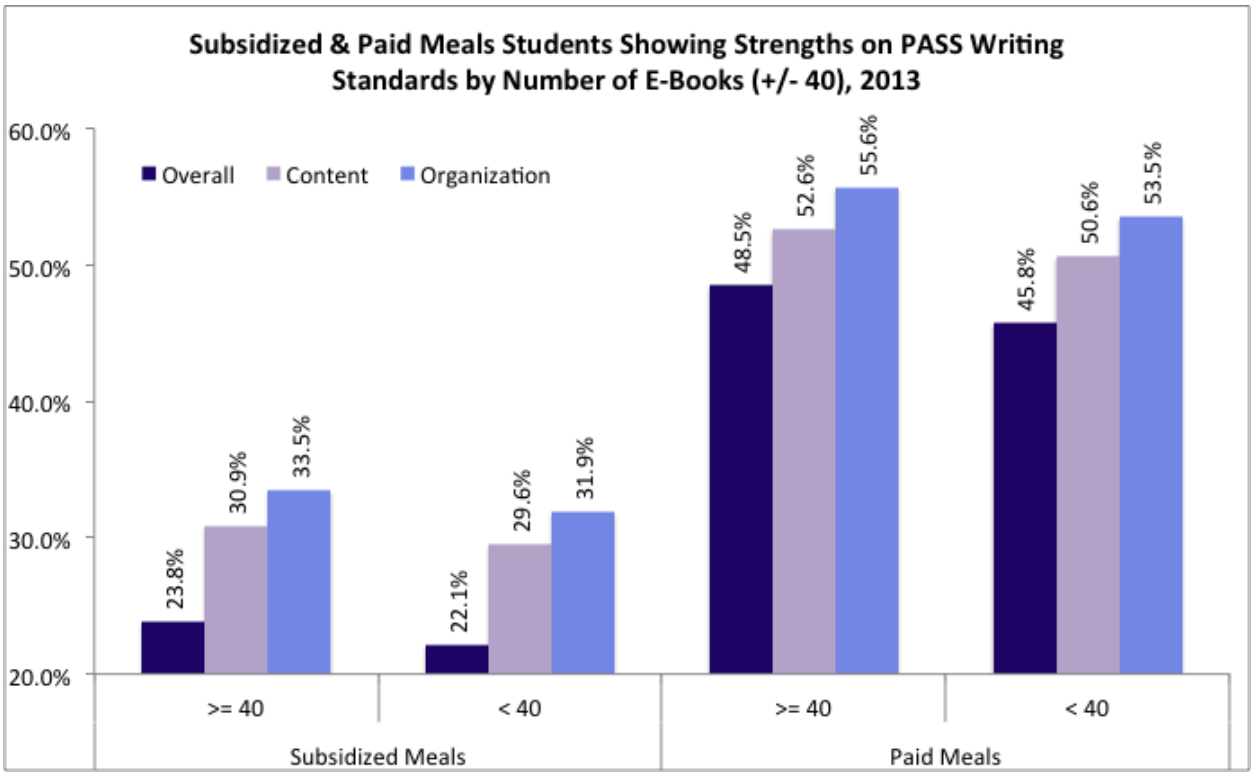
Though even these more extreme comparisons yielded somewhat mixed results, they support the belief that print collections retain value for some students, particularly those who might have language-related issues.

E-Book Collection Size

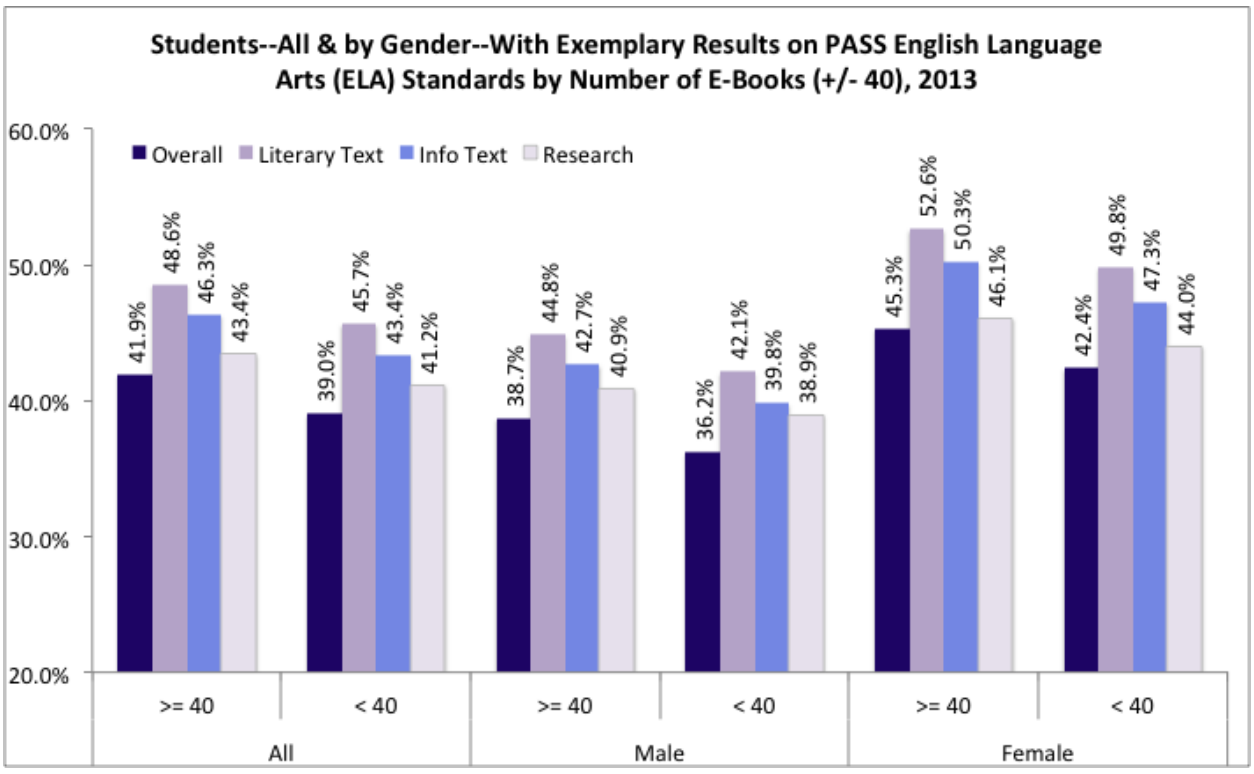
Though e-books are revolutionizing the publishing business, they are still relative newcomers to South Carolina's school libraries. Among elementary and middle schools that responded to the South Carolina School Library Survey and for which PASS results were available, the median size of an e-book collection was 40 titles.

Students, both male and female, with access to larger e-book collections were more likely to show strengths and less likely to show weaknesses on PASS Writing standards—overall, Content, and Organization. In addition, poorer students—those eligible for subsidized and paid meals—were more likely to show Writing strengths, if they had such access.





Students, female and male, were also more likely to have exemplary results on English Language Arts (ELA) standards—overall, Literary Text, Informational Text, and Research—if they had access to larger e-book collections.



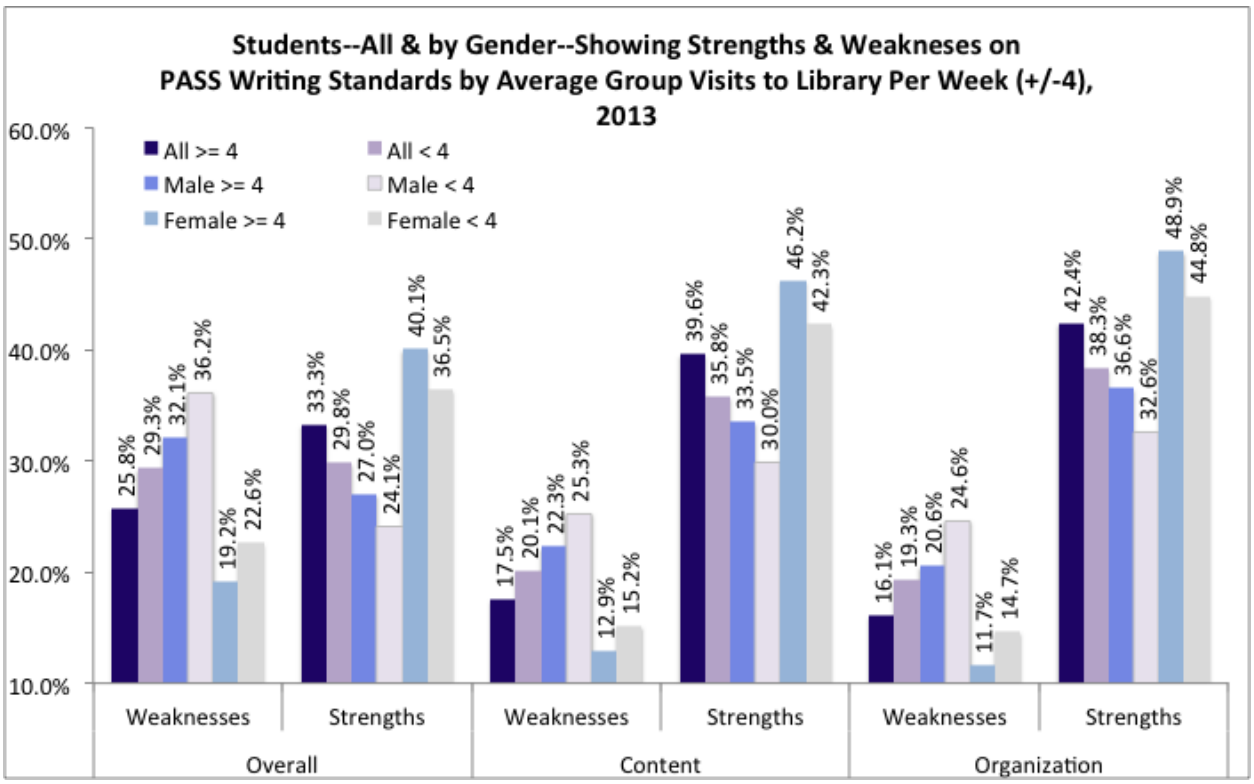
E-book collections are still sufficiently rare in many schools that there was insufficient data to assess fairly their value to other specific student cohorts.

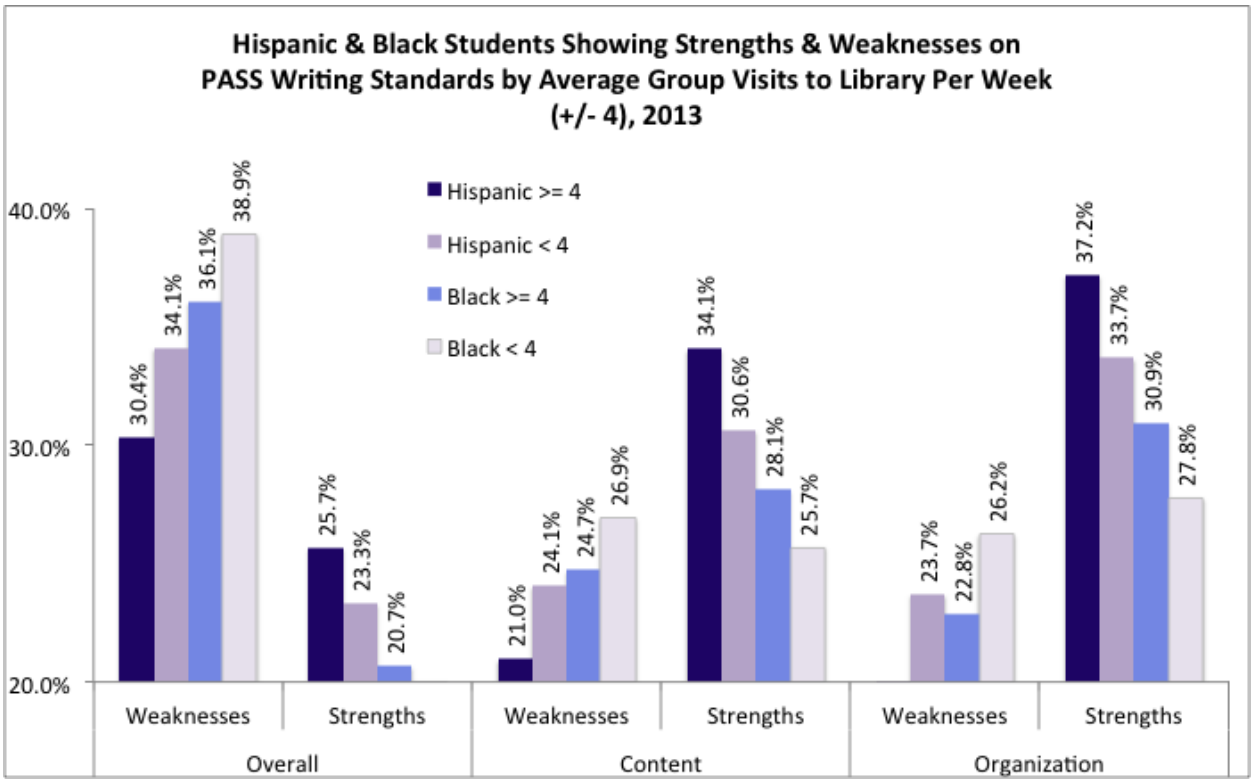
Group Visits to Library Per Week

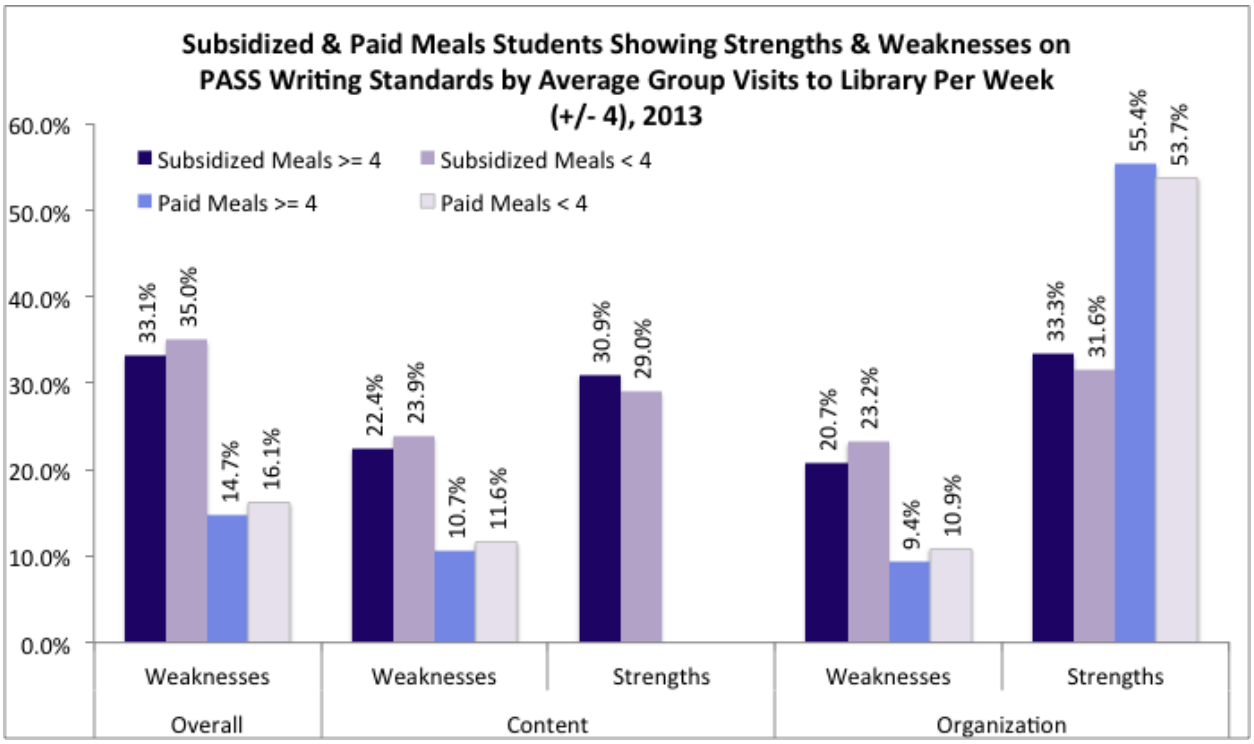
In the library world, there is a growing additional emphasis, if not shift, from library users as information consumers alone to their being information producers. "Maker spaces" and "information (or learning) commons" are even altering the physical layout of school libraries. The growing focus on collaborative learning, production, and presentation gives a new context to students visiting their school libraries whole classes at a time and in smaller ad hoc working groups. For elementary and middle schools that responded to the South Carolina School Library Survey and for which PASS results were available, the average number of weekly group library visits was 4.

Interestingly, this library variable—like circulation per capita, another one that reports very directly on the extent of student use of libraries—is related to PASS Writing results, but not the PASS English Language Arts (ELA) results. This makes a certain amount of sense, inasmuch as writing is a critical component in the information producer role described above, while reading is often a more solitary activity.

Students—regardless of gender, race/ethnicity, and subsidized/paid meals status—are more likely to show strengths and less likely to show weaknesses on PASS Writing standards—overall, Content, and Organization.







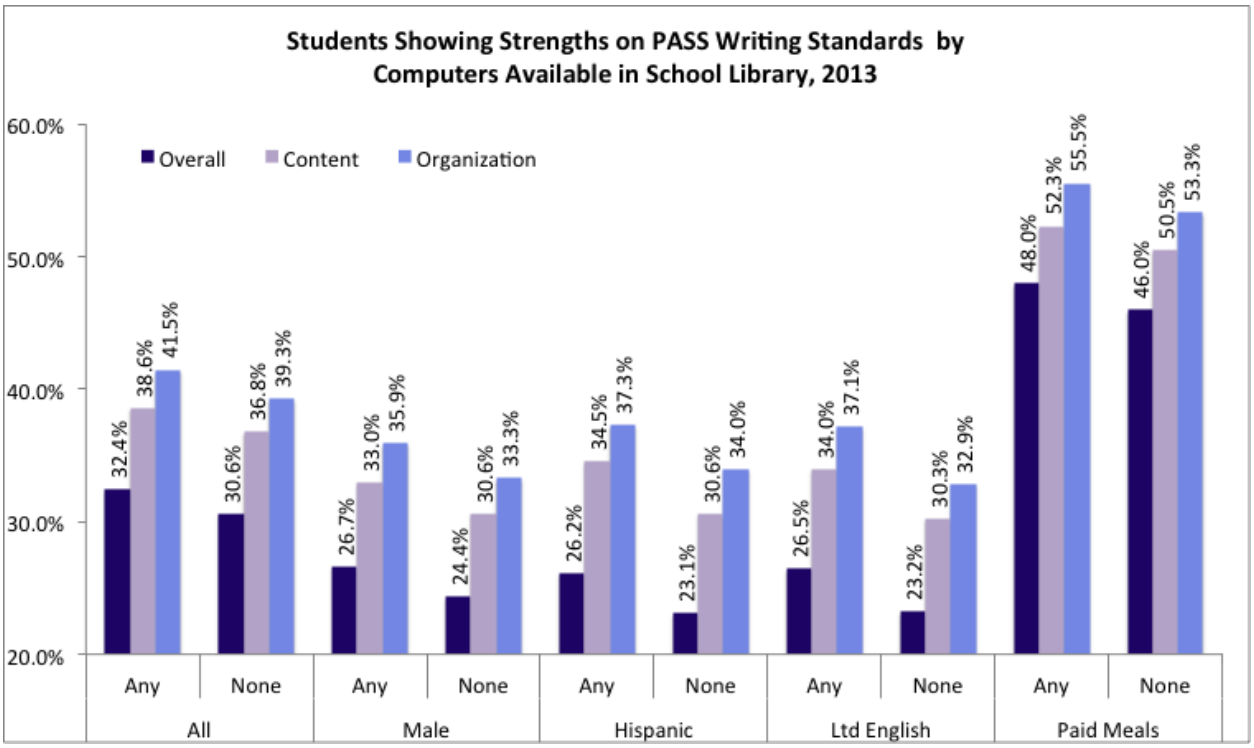
The nature of these findings is a reminder that, while libraries have been regarded traditionally as great enablers of and champions of reading, making the shift in thinking of students more as producers than consumers of information, may also recommend giving at least as much attention to Writing as ELA results.

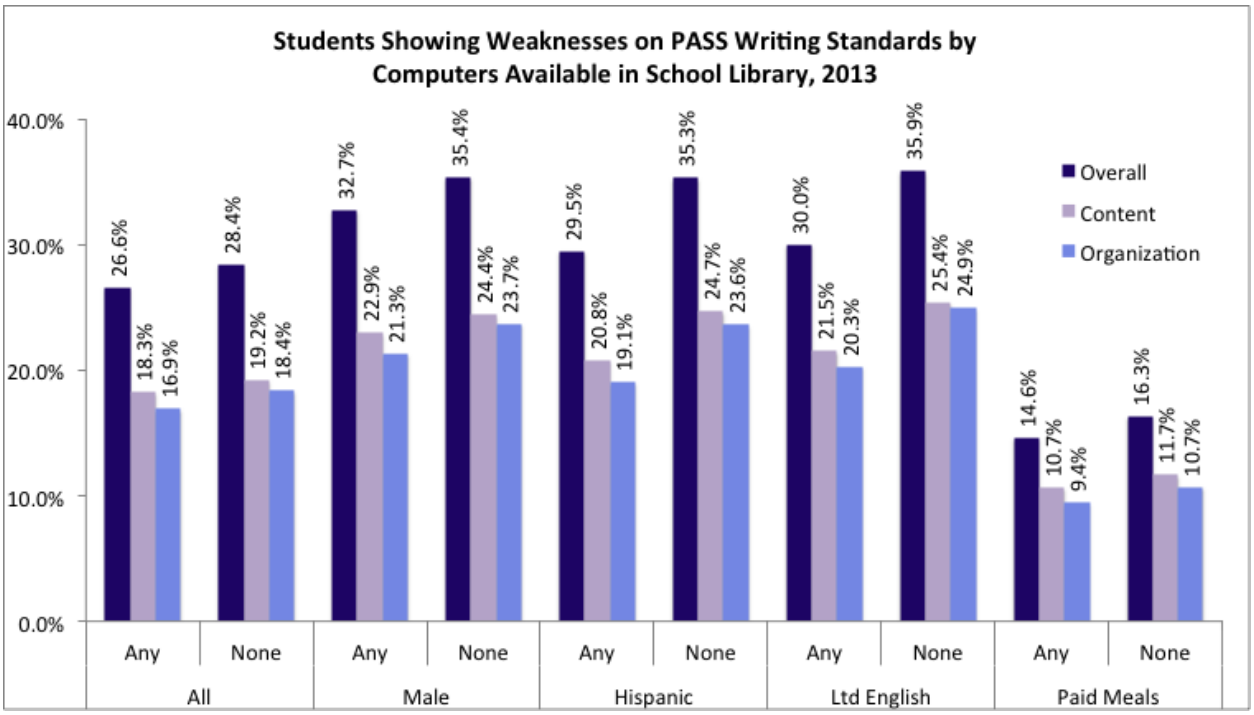
Computer Availability

Computers have become an essential component of any school library program; but, schools deploy computers in a variety of ways: sometimes they are found in libraries, sometimes in computer labs associated with libraries, sometimes in computer labs separate from libraries, sometimes in "smart classrooms", and sometimes in classrooms schoolwide. Usually, the configuration is some combination of these possibilities. For elementary and middle schools that responded to the South Carolina School Library Survey and for which PASS results were available, the median number of computers located in libraries was so close to zero as to warrant a comparison between schools with any school libraries and those with none.

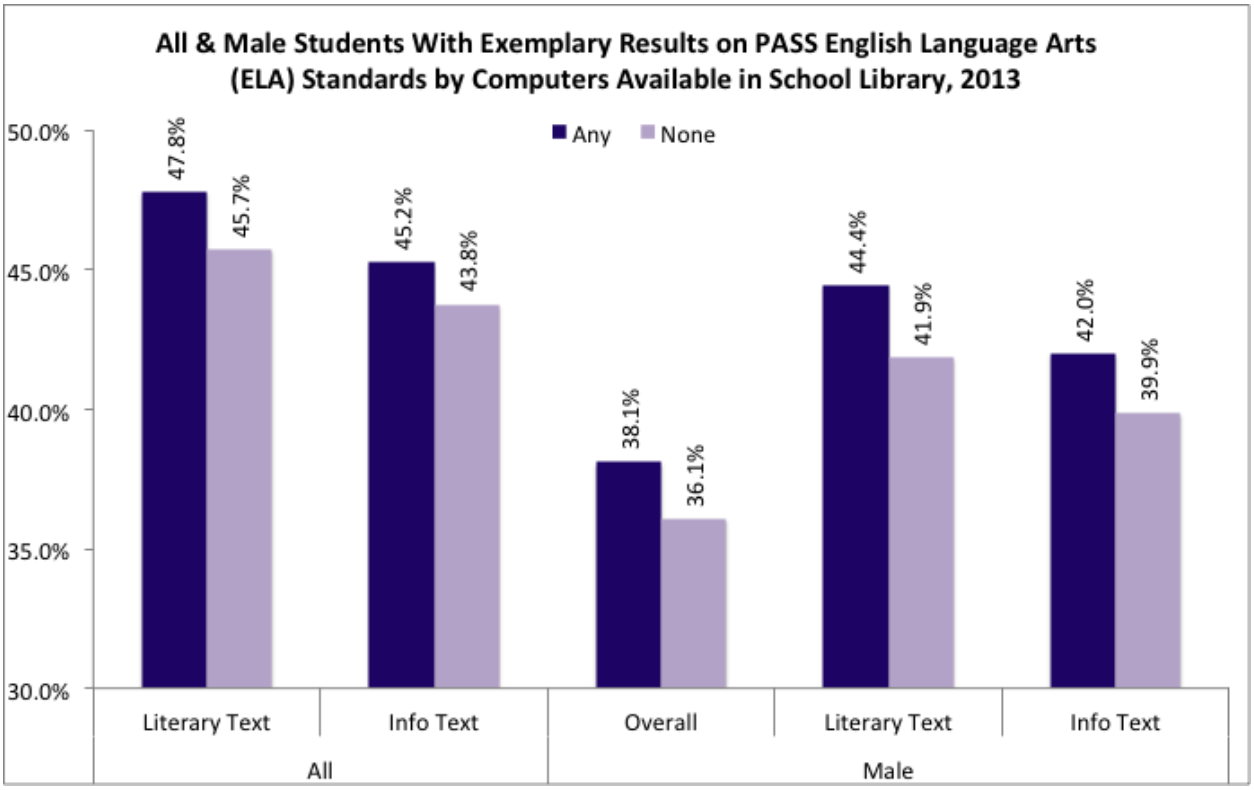
Library Computers

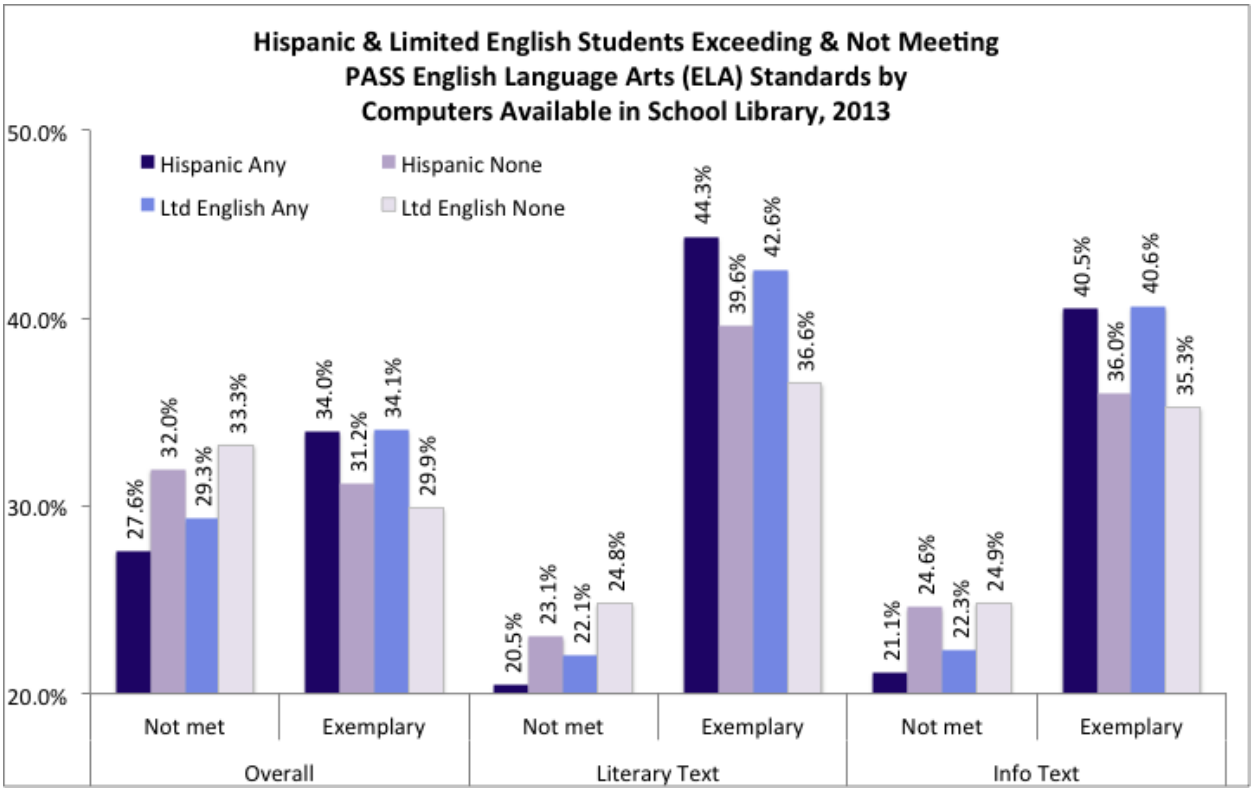
All students—and specifically male, Hispanic, limited English, and paid meals students—were more likely to show strengths and less likely to show weaknesses on PASS Writing standards—overall, Content, and Organization—if their school libraries had computers than if they did not.





Similarly, all students—and specifically male, Hispanic, and limited English students—were more likely to have exemplary English Language Arts (ELA) results—overall, Literary Text, and Informational Text—and less likely not to meet ELA standards, if they had access to computers in their libraries.

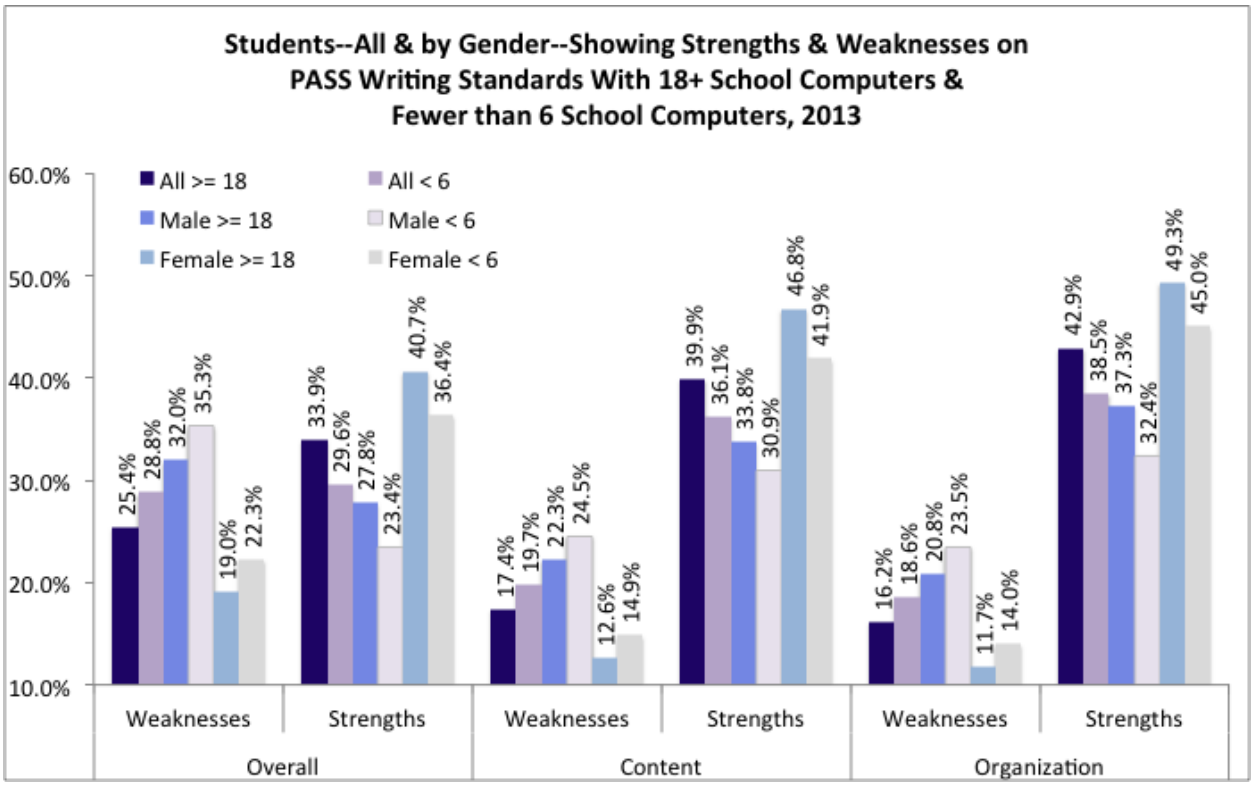


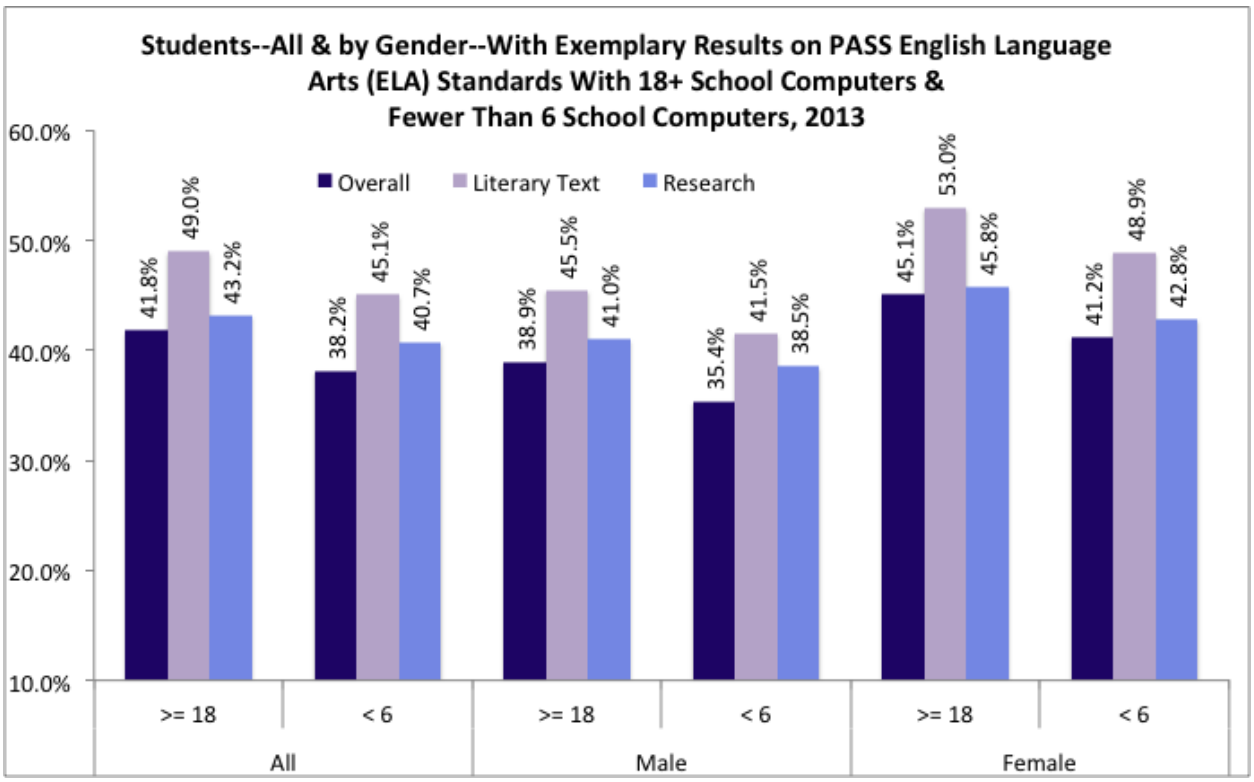


School Computers

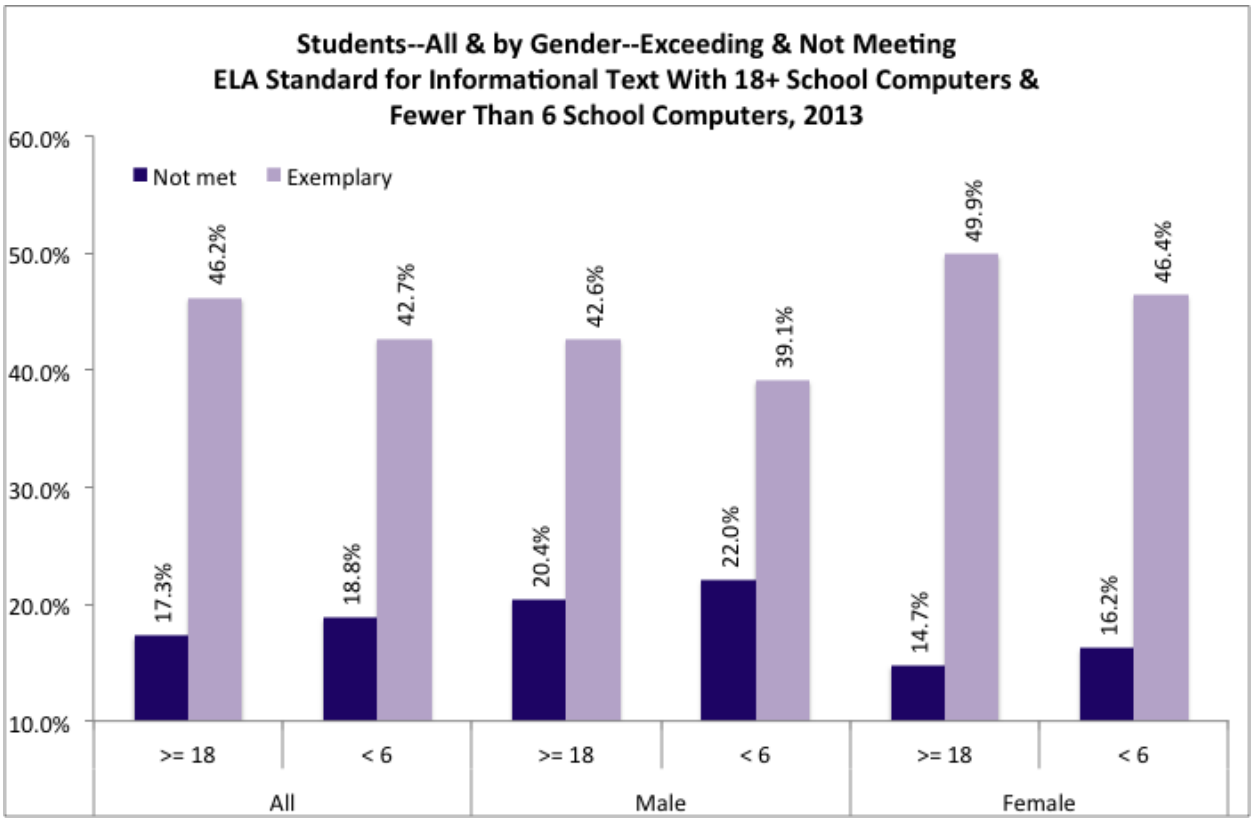
In the library survey, schools also reported the number of computers throughout the school. The top quarter of responding libraries had 18 or more computers, while the bottom quarter had fewer than 6.

All students, female and male, were more likely to show strengths and less likely to show weaknesses on PASS Writing standards—overall, Content, and Organization—if their schools reported the most computers. Likewise, if their schools were in that group, all students, regardless of gender, were more likely to have exemplary results on ELA standards—overall, Literary Text, and Research.


Students--All & by Gender--Showing Strengths & Weaknesses on PASS Writing Standards With 18+ School Computers & Fewer than 6 School Computers, 2013
All >= 18
All < 6
Male >= 18
Male < 6
Female >= 18
Female < 6
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
25.4% 28.8% 32.0% 35.3% 19.0% 22.3%
33.9% 29.6% 27.8% 23.4% 40.7% 36.4%
17.4% 19.7% 22.3% 24.5% 12.6% 14.9%
39.9% 36.1% 33.8% 30.9% 46.8% 41.9%
16.2% 18.6% 20.8% 23.5% 11.7% 14.0%
42.9% 38.5% 37.3% 32.4% 49.3% 45.0%
Weaknesses
Strengths
Weaknesses
Strengths
Weaknesses
Strengths
Overall
Content
Organization


Students--All & by Gender--With Exemplary Results on PASS English Language Arts (ELA) Standards With 18+ School Computers & Fewer Than 6 School Computers, 2013
Overall
Literary Text
Research
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
41.8% 49.0% 43.2%
38.2% 45.1% 40.7%
38.9% 45.5% 41.0%
35.4% 41.5% 38.5%
45.1% 53.0% 45.8%
41.2% 48.9% 42.8%
>= 18
< 6
>= 18
< 6
>= 18
< 6
All
Male
Female

For the ELA Informational Text standard, all students, male and female, were more likely to have exemplary ELA results and less likely not to meet those standards, if their schools reported the most computers.



Even in an age when many students bring their own technology to school—such as notebook computers, computer tablets, and large smartphones—school computers remain important to fill the digital divide that might otherwise be a substantial disadvantage for some students. Library programs rely on the widespread availability of computer technology throughout schools to extend the reach of libraries beyond their own walls.

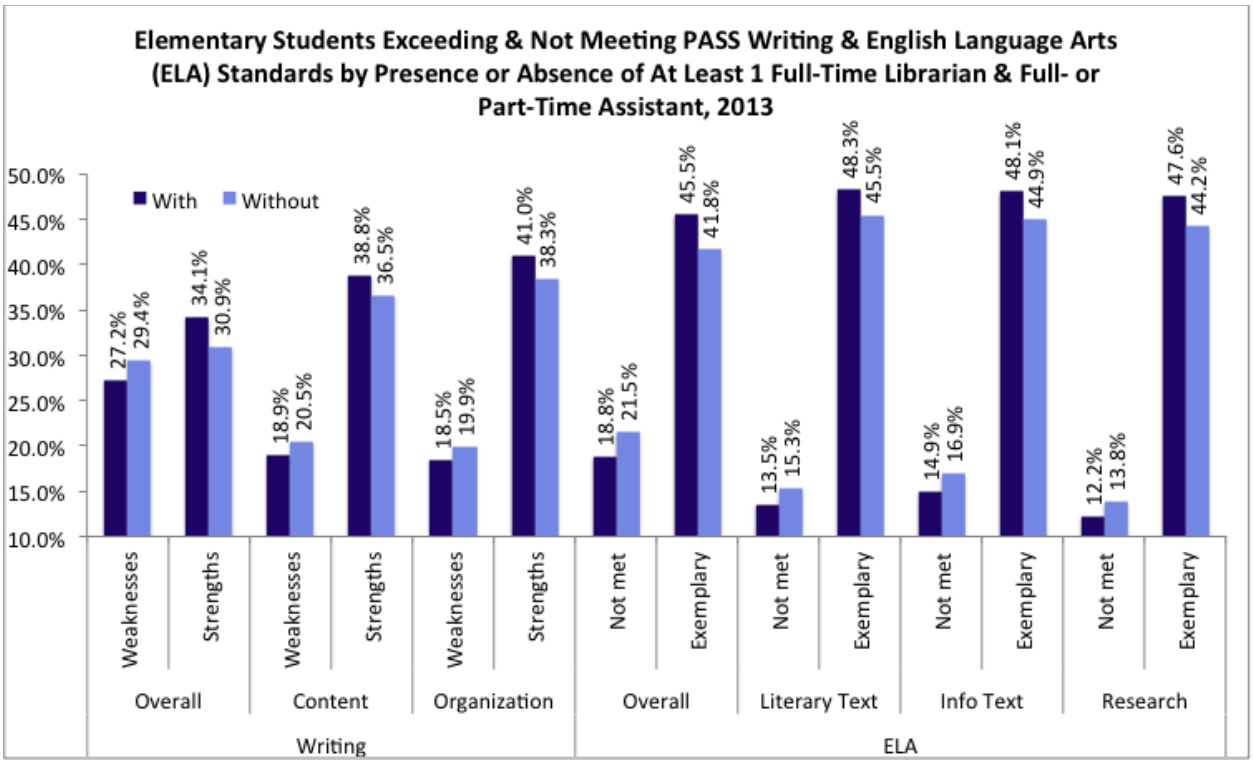
Elementary & Middle School Levels

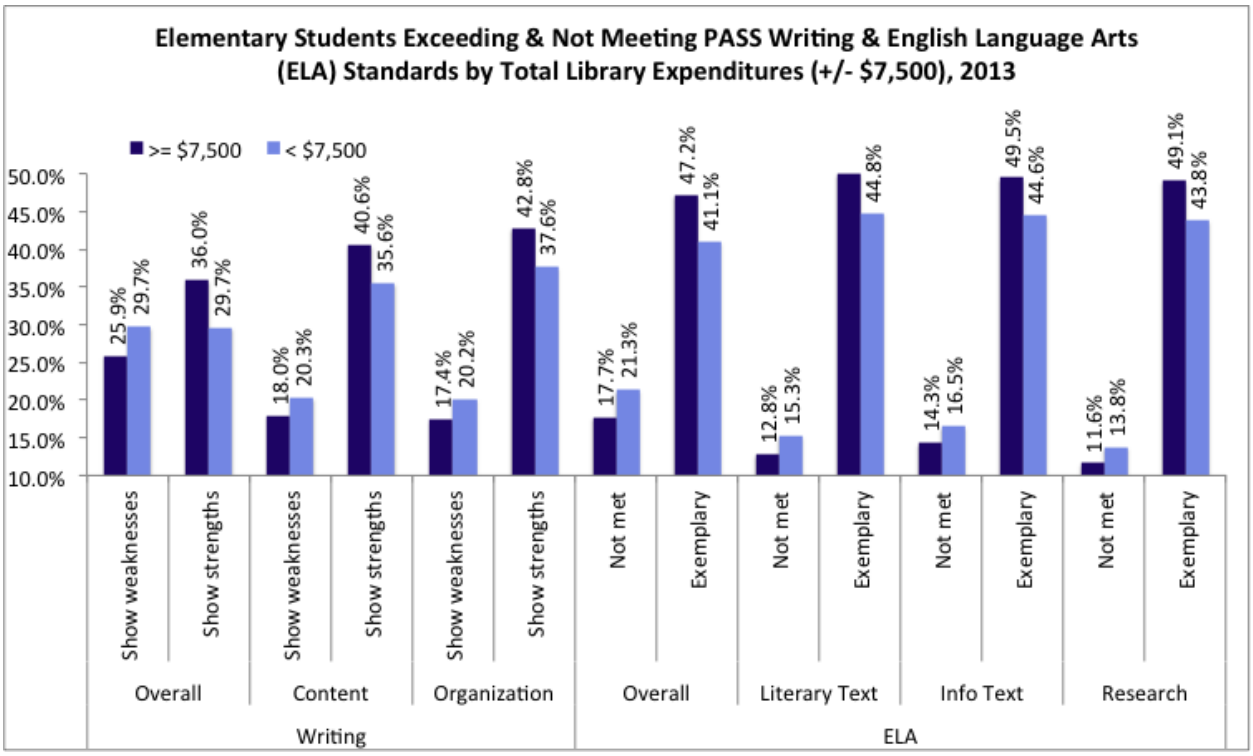
The foregoing findings apply to all schools—elementary and middle schools—that responded to the South Carolina School Library Survey and for which PASS Writing and English Language Arts (ELA) results were available. Unless otherwise noted, results on the Writing standards include overall results as well as those for Content and Organization, and results on the ELA standards include overall results as well as those for Literary Text, Informational Text, and Research.

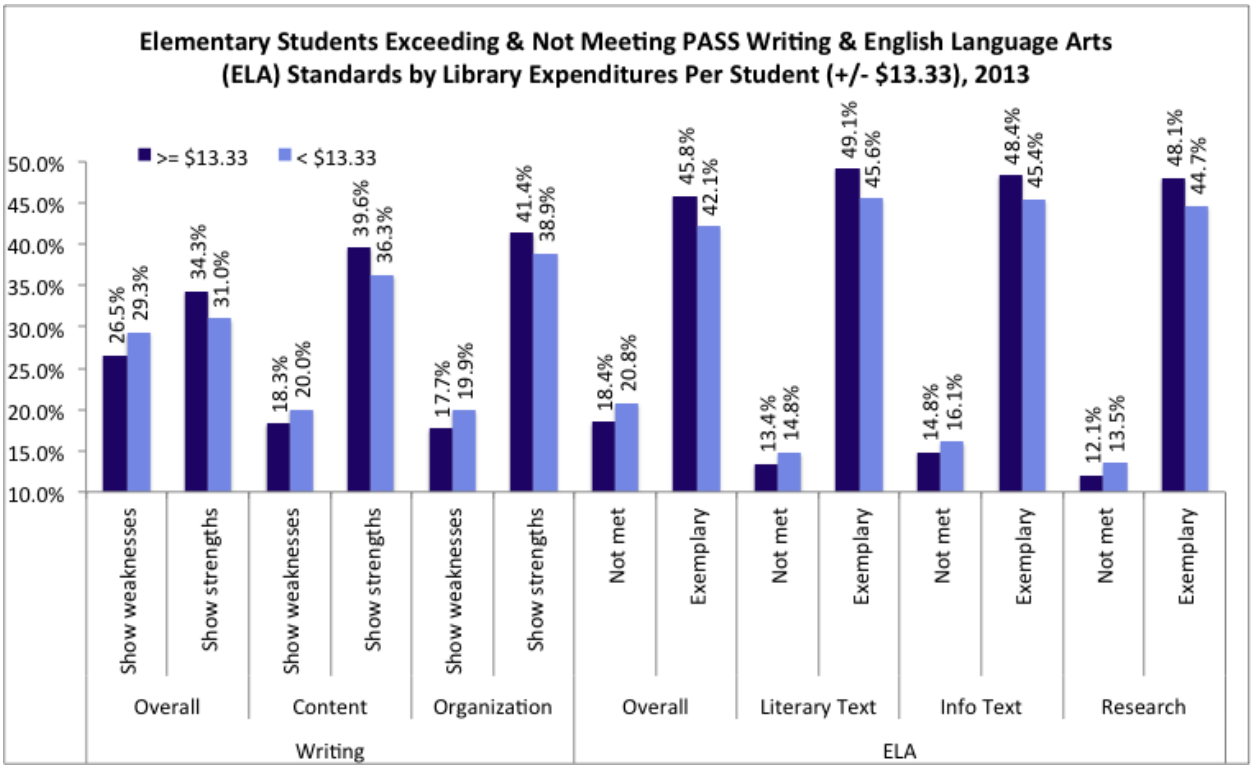
Elementary School Level

Elementary school students were more likely to exceed PASS Writing and ELA standards and less likely not to meet those standards, if their school libraries:

- Were staffed by at least 1 full-time librarian and a full- or part-time assistant
- Spent at least $7,500 in total library expenditures
- Spent at least $13.33 per student on library expenditures
- Enabled a librarian to spend at least 20 hours per week teaching information literacy
- Circulated at least 20,000 items
- Circulated at least 36 items per student
- Offered access to at least 40 e-books
- Were visited by groups of students, on average, at least 4 times per week
- Provided access to computers in the library




Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Total Library Expenditures (+/- $7,500), 2013
>= $7,500
< $7,500
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
25.9%
29.7%
36.0%
29.7%
18.0%
20.3%
40.6%
35.6%
17.4%
20.2%
42.8%
37.6%
17.7%
21.3%
47.2%
41.1%
12.8%
15.3%
44.8%
14.3%
16.5%
49.5%
44.6%
11.6%
13.8%
49.1%
43.8%
Show weaknesses
Show strengths
Show weaknesses
Show strengths
Show weaknesses
Show strengths
Not met
Exemplary
Not met
Exemplary
Not met
Exemplary
Not met
Exemplary
Overall
Content
Organization
Overall
Literary Text
Info Text
Research
Writing
ELA


Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Library Expenditures Per Student (+/- $13.33), 2013
>= $13.33
< $13.33
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
26.5%
29.3%
34.3%
31.0%
18.3%
20.0%
39.6%
36.3%
17.7%
19.9%
41.4%
38.9%
18.4%
20.8%
45.8%
42.1%
13.4%
14.8%
49.1%
45.6%
14.8%
16.1%
48.4%
45.4%
12.1%
13.5%
48.1%
44.7%
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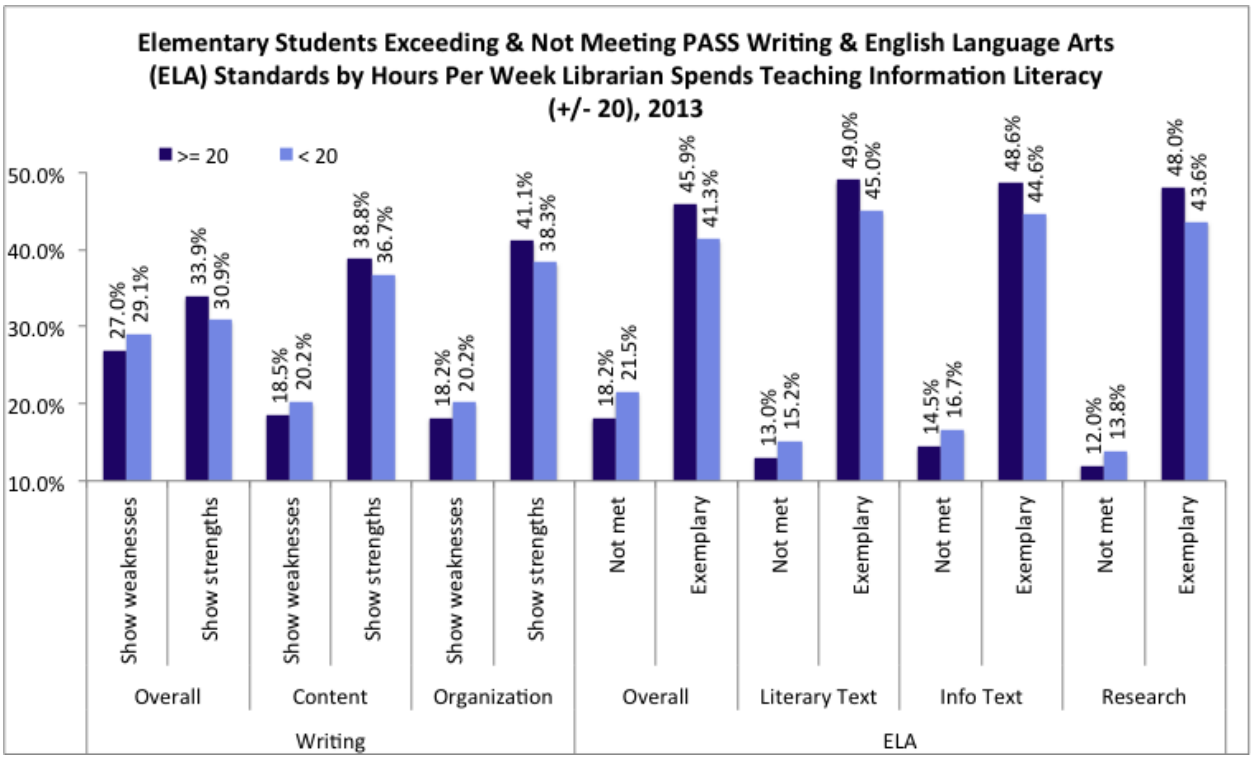
Exemplary
Overall
Content
Organization
Overall
Literary Text
Info Text
Research
Writing
ELA


Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Hours Per Week Librarian Spends Teaching Information Literacy (+/- 20), 2013
>= 20
< 20
50.0%
40.0%
30.0%
20.0%
10.0%
27.0% 29.1%
33.9% 30.9%
18.5% 20.2%
38.8% 36.7%
18.2% 20.2%
41.1% 38.3%
18.2% 21.5%
45.9% 41.3%
13.0% 15.2%
49.0% 45.0%
14.5% 16.7%
48.6% 44.6%
12.0% 13.8%
48.0% 43.6%
Show weaknesses
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Show strengths
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Exemplary
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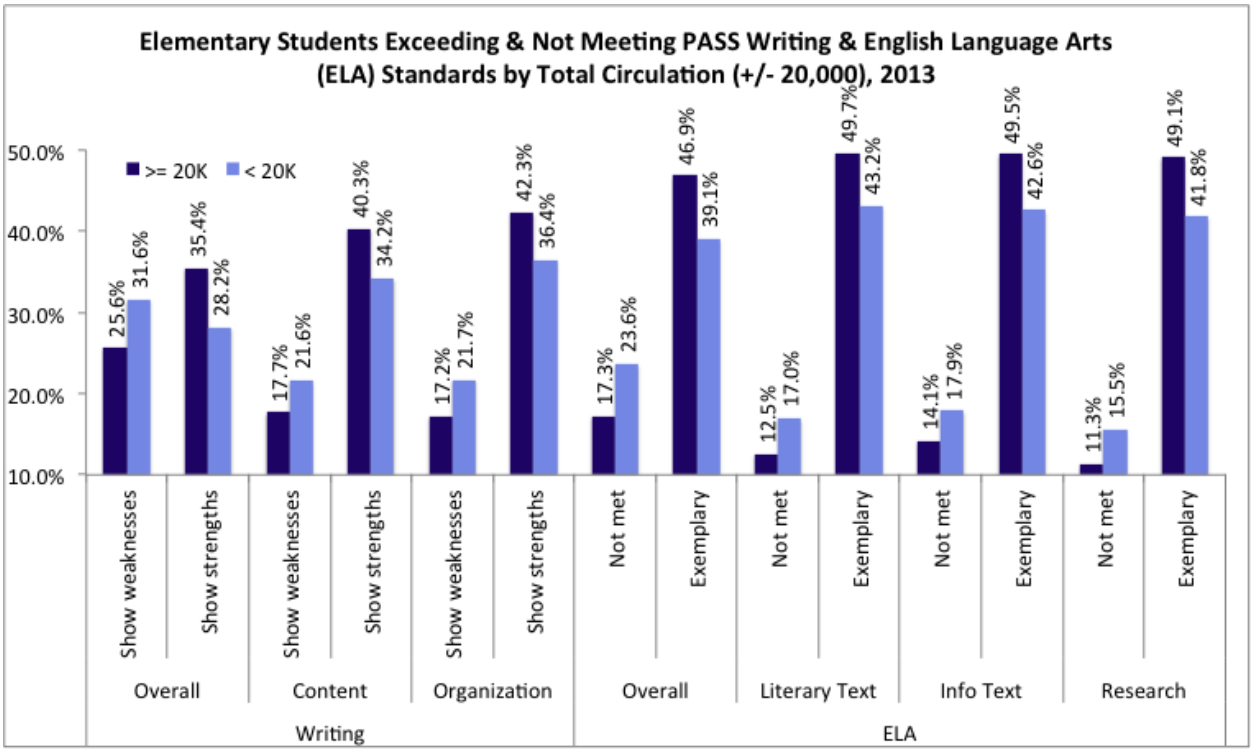
Not met
Exemplary
Overall
Content
Organization
Overall
Literary Text
Info Text
Research
Writing
ELA


Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Total Circulation (+/- 20,000), 2013
>= 20K
< 20K
50.0%
40.0%
30.0%
20.0%
10.0%
25.6% 31.6%
35.4% 28.2%
17.7% 21.6%
40.3% 34.2%
17.2% 21.7%
42.3% 36.4%
17.3% 23.6%
46.9% 39.1%
12.5% 17.0%
49.7% 43.2%
14.1% 17.9%
49.5% 42.6%
11.3% 15.5%
49.1% 41.8%
Show weaknesses
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Exemplary
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Overall
Content
Organization
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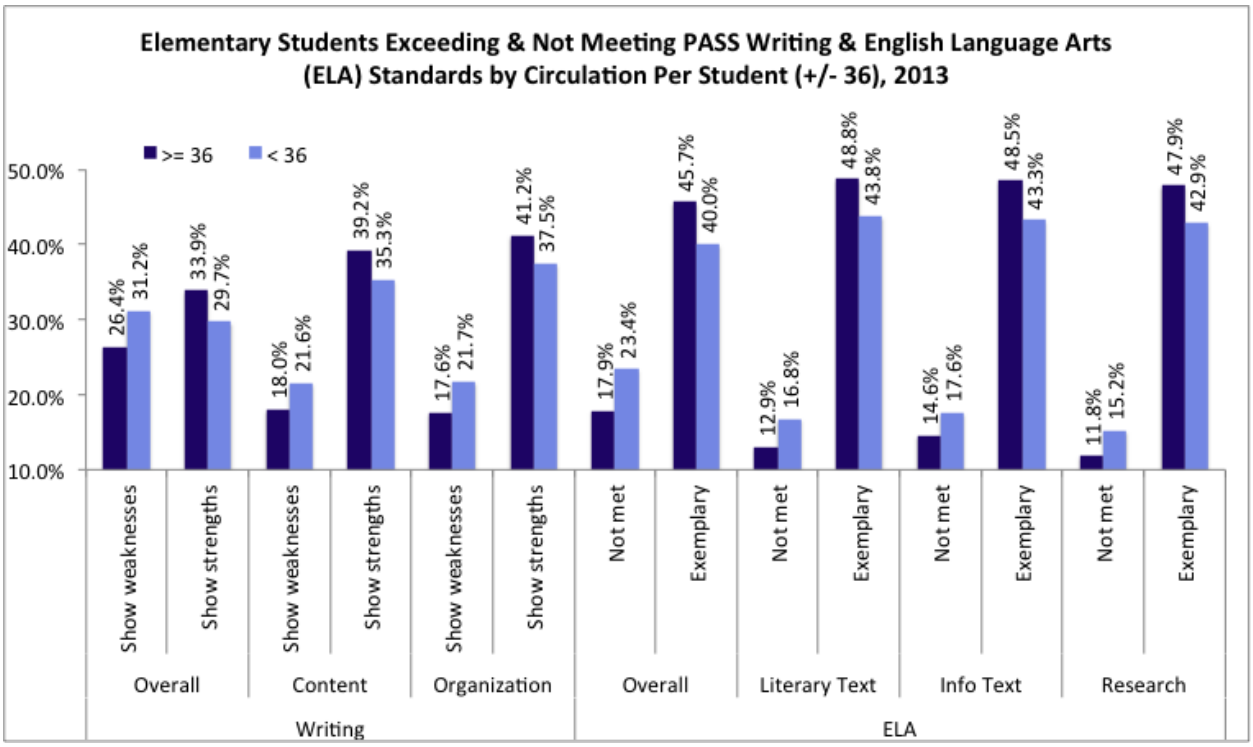
Literary Text
Info Text
Research
Writing
ELA


Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Circulation Per Student (+/- 36), 2013
>= 36
< 36
50.0%
40.0%
30.0%
20.0%
10.0%
26.4%
31.2%
33.9%
29.7%
18.0%
21.6%
39.2%
35.3%
17.6%
21.7%
41.2%
37.5%
17.9%
23.4%
45.7%
40.0%
12.9%
16.8%
48.8%
43.8%
14.6%
17.6%
48.5%
43.3%
11.8%
15.2%
47.9%
42.9%
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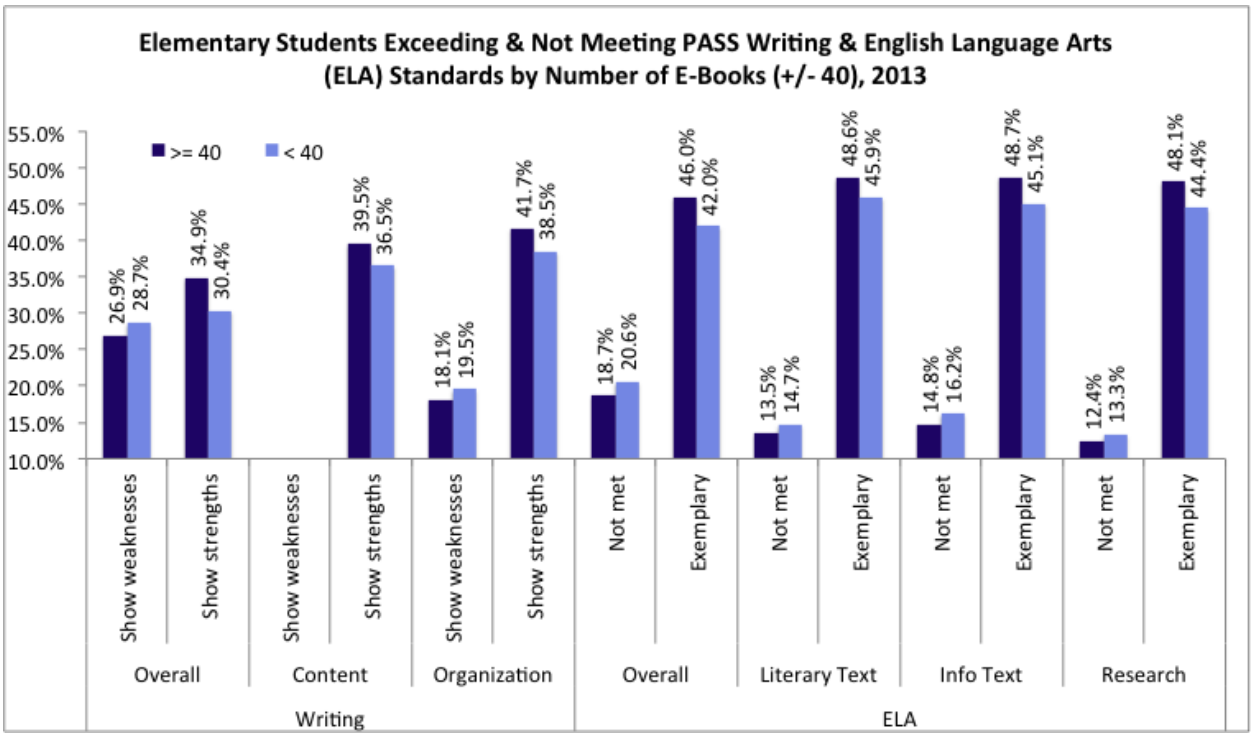
ELA


Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Number of E-Books (+/- 40), 2013
>= 40
< 40
55.0%
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
26.9%
28.7%
34.9%
30.4%
39.5%
36.5%
18.1%
19.5%
41.7%
38.5%
18.7%
20.6%
46.0%
42.0%
13.5%
14.7%
48.6%
45.9%
14.8%
16.2%
48.7%
45.1%
12.4%
13.3%
48.1%
44.4%
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Content
Organization
Overall
Literary Text
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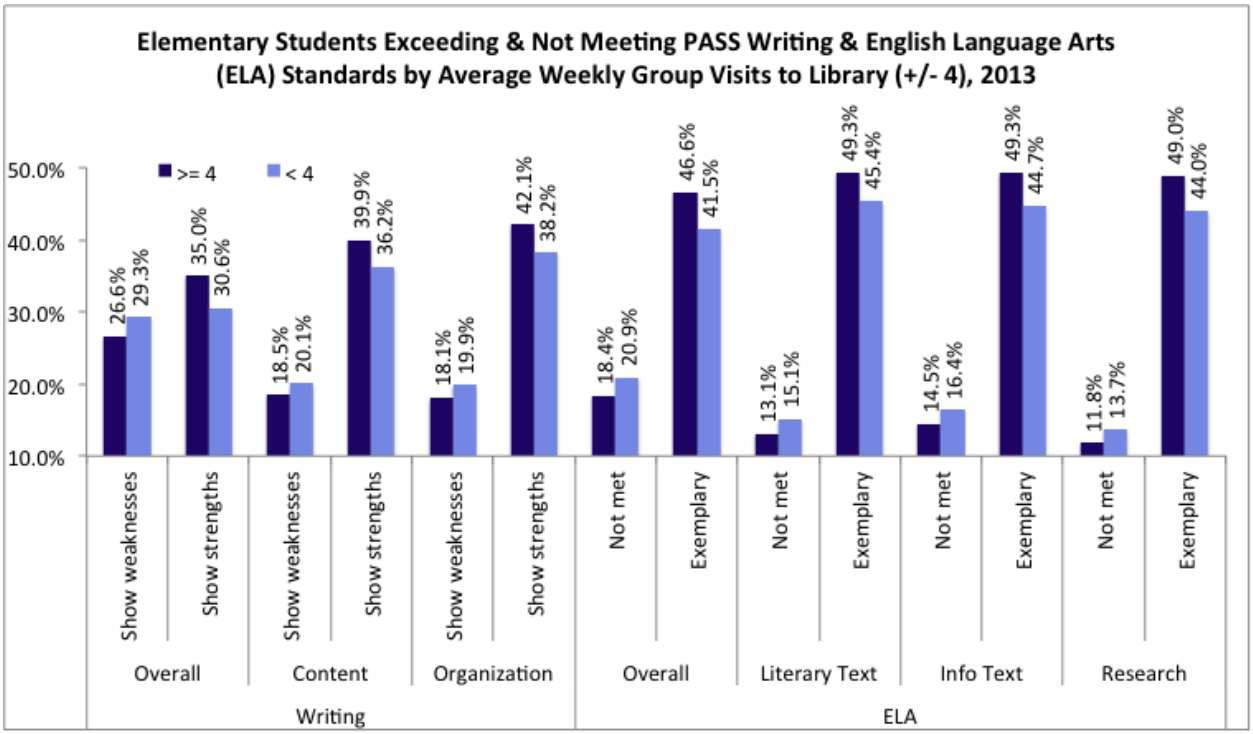
Research
Writing
ELA


Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Average Weekly Group Visits to Library (+/- 4), 2013
>= 4
< 4
50.0%
40.0%
30.0%
20.0%
10.0%
26.6%
29.3%
35.0%
30.6%
18.5%
20.1%
39.9%
36.2%
18.1%
19.9%
42.1%
38.2%
18.4%
20.9%
46.6%
41.5%
13.1%
15.1%
49.3%
45.4%
14.5%
16.4%
49.3%
44.7%
11.8%
13.7%
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Not met
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Overall
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Organization
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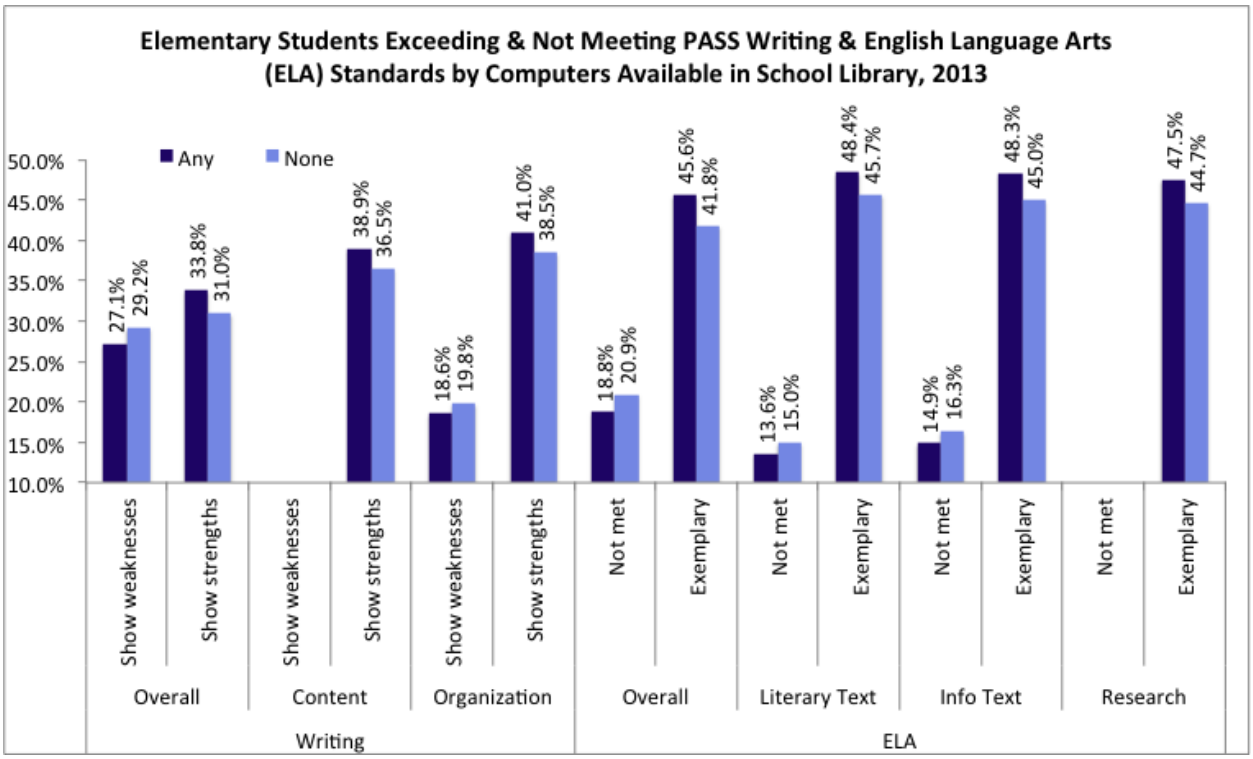
Literary Text
Info Text
Research
Writing
ELA


Elementary Students Exceeding & Not Meeting PASS Writing & English Language Arts (ELA) Standards by Computers Available in School Library, 2013
Any
None
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
27.1%
29.2%
33.8%
31.0%
38.9%
36.5%
18.6%
19.8%
41.0%
38.5%
18.8%
20.9%
45.6%
41.8%
13.6%
15.0%
48.4%
45.7%
14.9%
16.3%
48.3%
45.0%
47.5%
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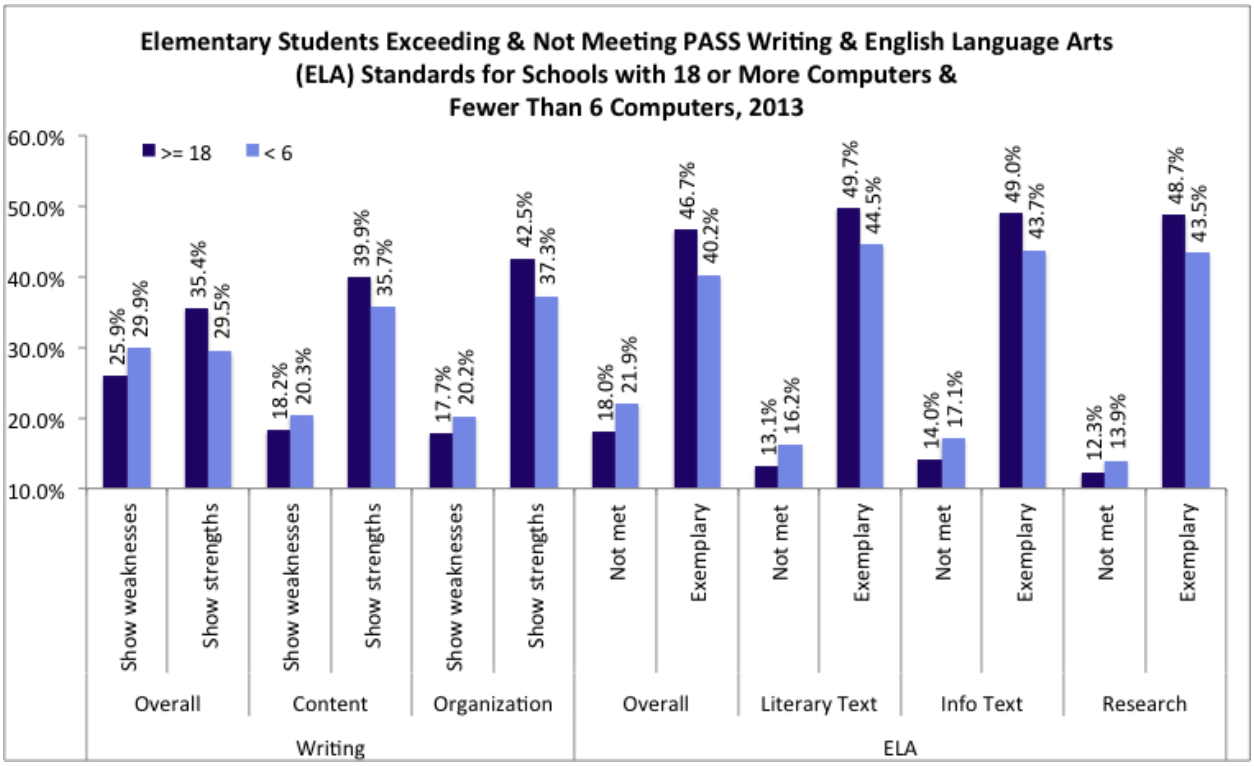
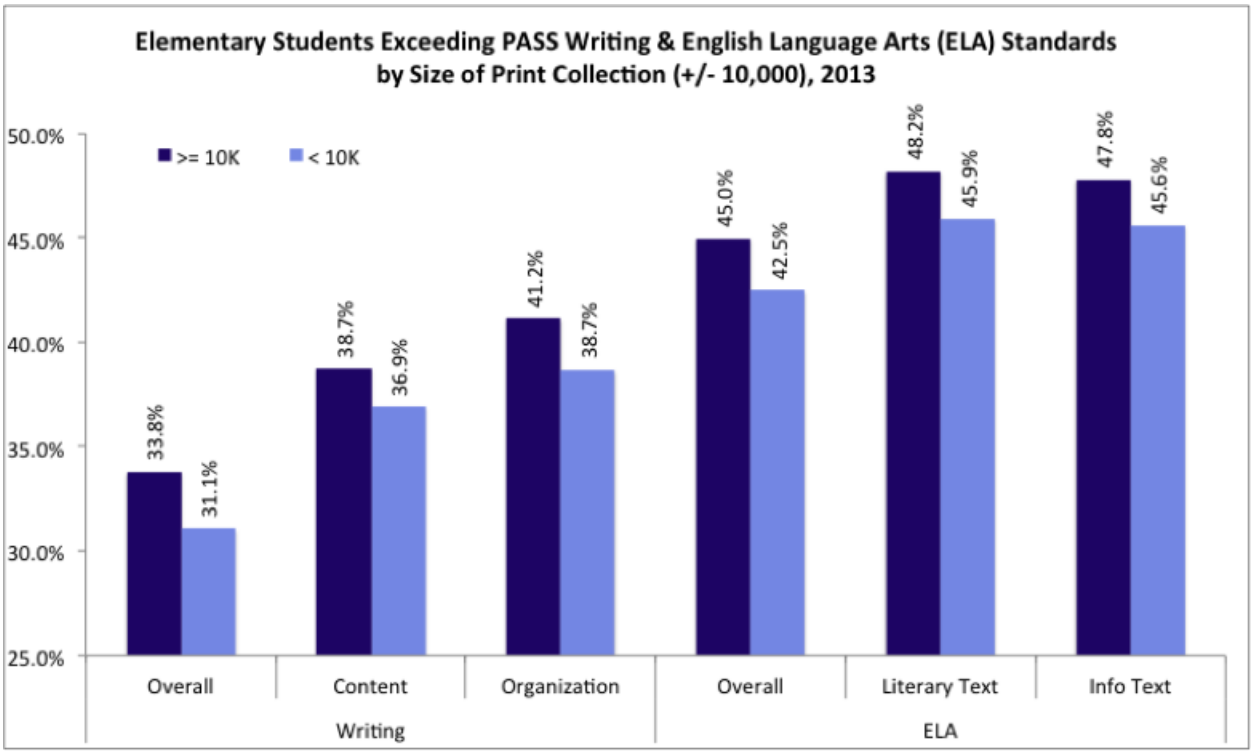
Research
Writing
ELA



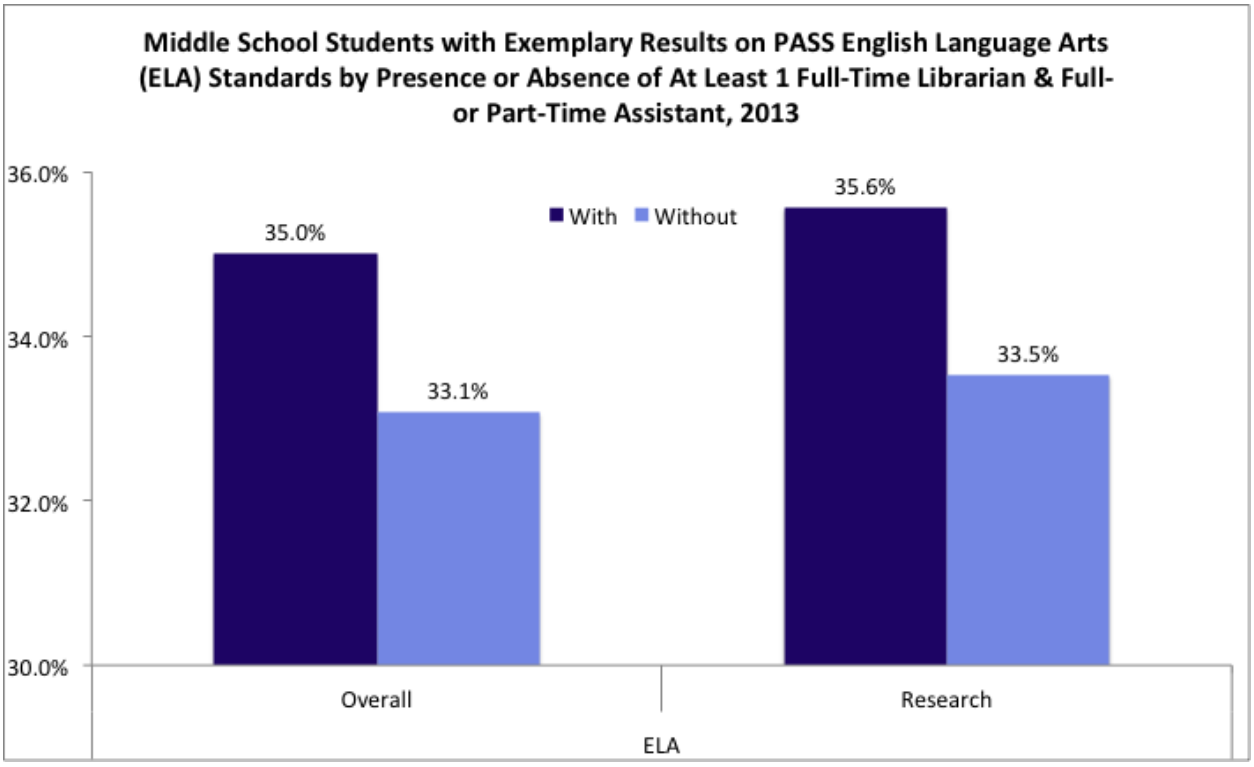
In addition, elementary students were more likely to exceed PASS Writing and ELA standards, if their school libraries held print collections of at least 10,000 items.

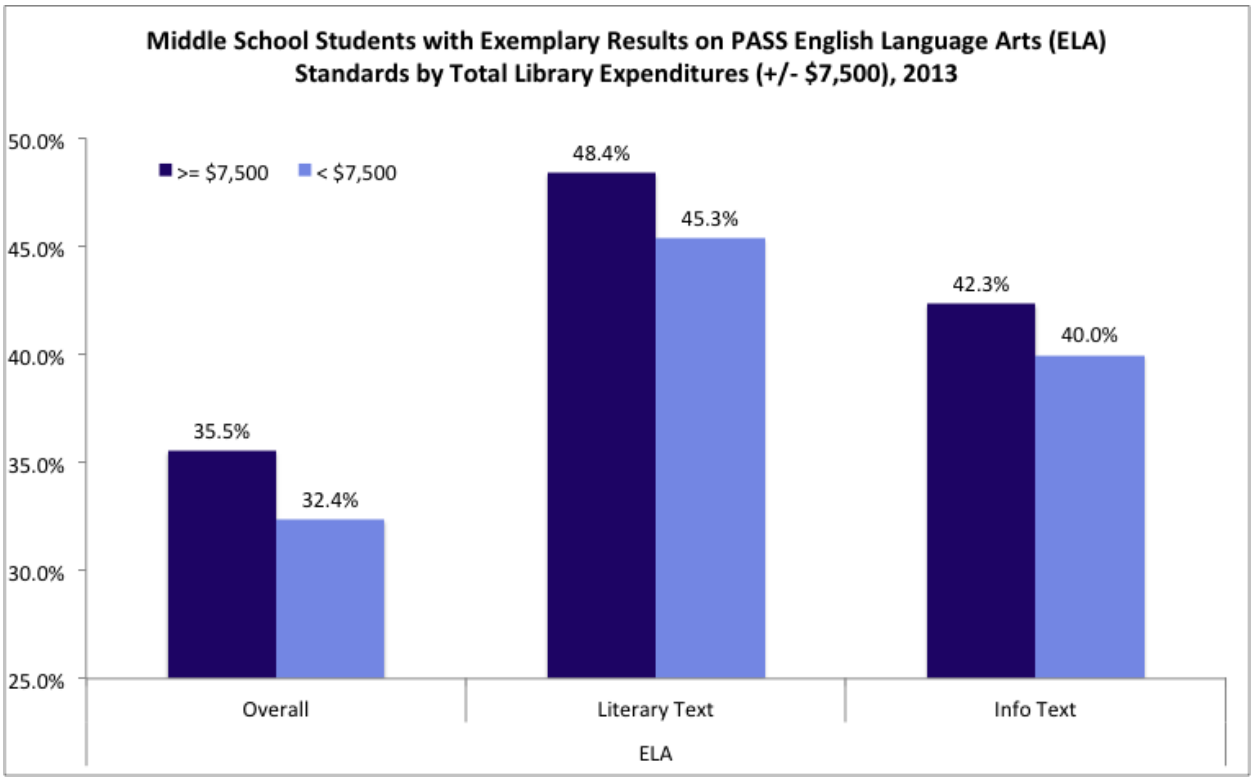


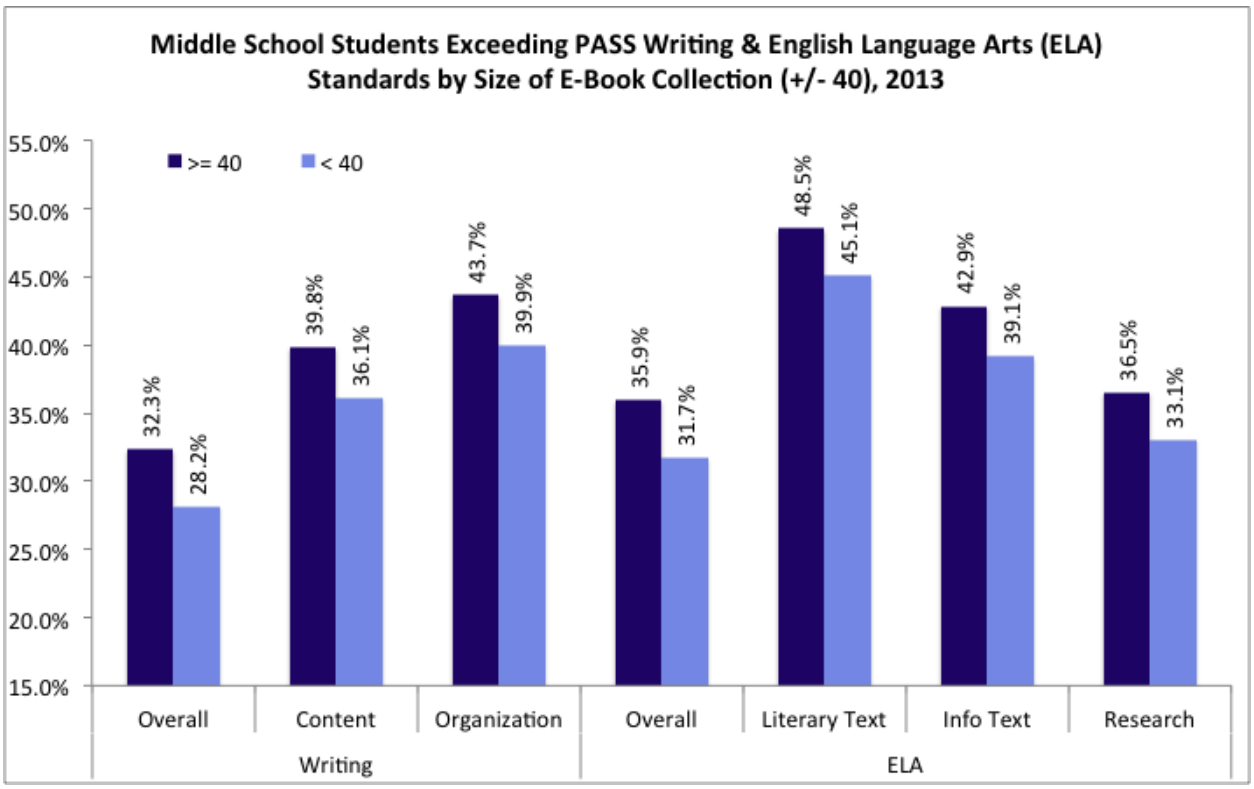
Middle School Level

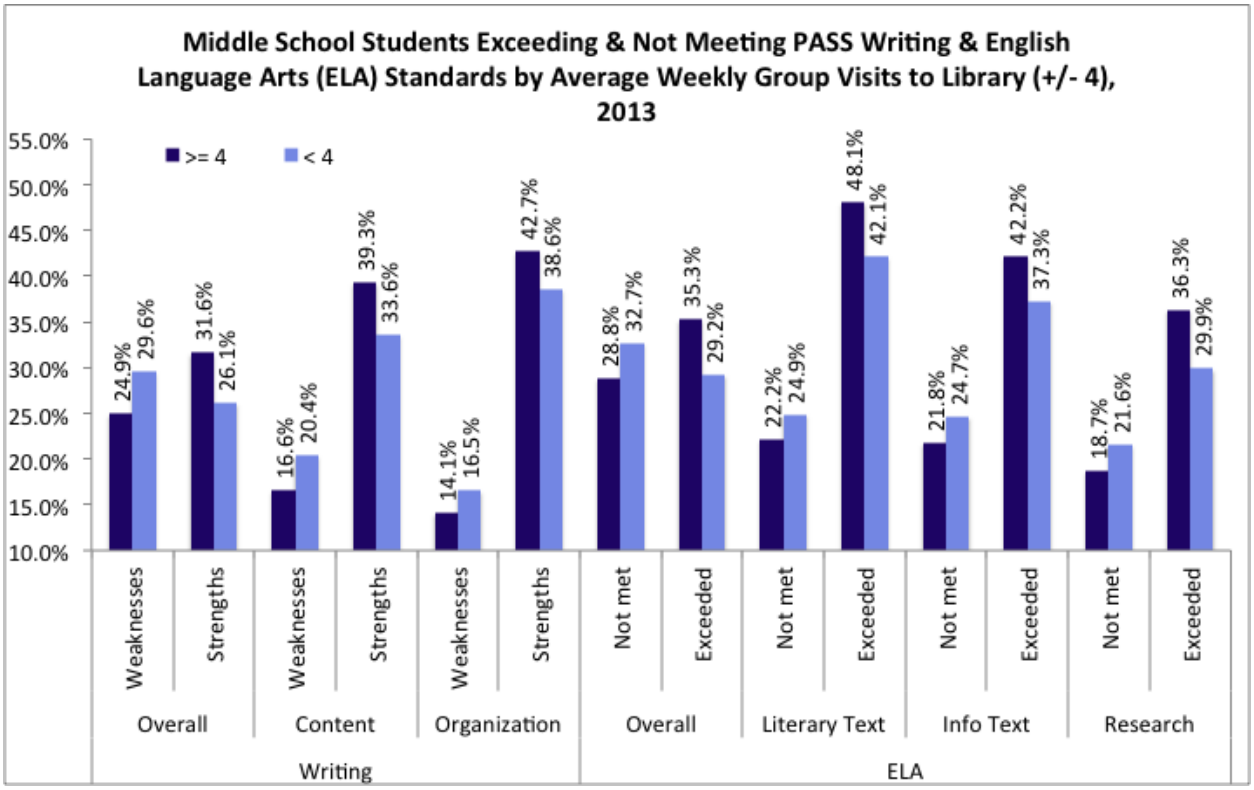
Middle school students were more likely to exceed PASS Writing and ELA standards and less likely not to meet those standards, if their school libraries:

- Were staffed by at least 1 full-time librarian and a full- or part-time assistant
- Spent at least $7,500 in total library expenditures
- Offered access to at least 40 e-books
- Were visited by groups of students, on average, at least 4 times per week




Middle School Students with Exemplary Results on PASS English Language Arts (ELA) Standards by Total Library Expenditures (+/- $7,500), 2013
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
>= $7,500
< $7,500
35.5%
32.4%
48.4%
45.3%
42.3%
40.0%
Overall
Literary Text
Info Text
ELA


Middle School Students Exceeding PASS Writing & English Language Arts (ELA) Standards by Size of E-Book Collection (+/- 40), 2013
55.0%
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
>= 40
< 40
32.3%
28.2%
39.8%
36.1%
43.7%
39.9%
35.9%
31.7%
48.5%
45.1%
42.9%
39.1%
36.5%
33.1%
Overall
Content
Organization
Overall
Literary Text
Info Text
Research
Writing
ELA



Summary

Generally, this analysis of relationships between school library characteristics and PASS Writing and English Language Arts (ELA) results for elementary and middle school students revealed that students were more likely to succeed and less likely to fail academically, if they had school library programs that were staffed, stocked, equipped, and used at levels enabling them to realize their potential to help close achievement gaps. While the quantitative differences may not have been large, they were both statistically significant and consistent across a wide variety of student cohorts. Associations between various library characteristics and student performance could not be explained away entirely by demographics such as gender, race/ethnicity, disability and language status, and poverty status (i.e., subsidized and free meals eligibility).

HSAP English Language Arts (ELA) Results

In South Carolina, high school students take the High School Assessment Program (HSAP) tests. These tests differ in noteworthy ways from the elementary and middle school levels' Palmetto Assessment of State Standards. While the PASS tests include both Writing and English Language Arts (ELA), the HSAP tests address ELA only. HSAP test results are also categorized differently. The state examines HSAP results in two ways that were used in this study: comparing students who meet state standards with those who do not meet them, and comparing those who are proficient or above on state standards with those who are less than proficient.

As for the PASS analysis, data about school libraries came from the 2013 South Carolina School Library Survey, in which school libraries were asked to report about their staffing, expenditures, collections, technology, and usage.

Library Staffing

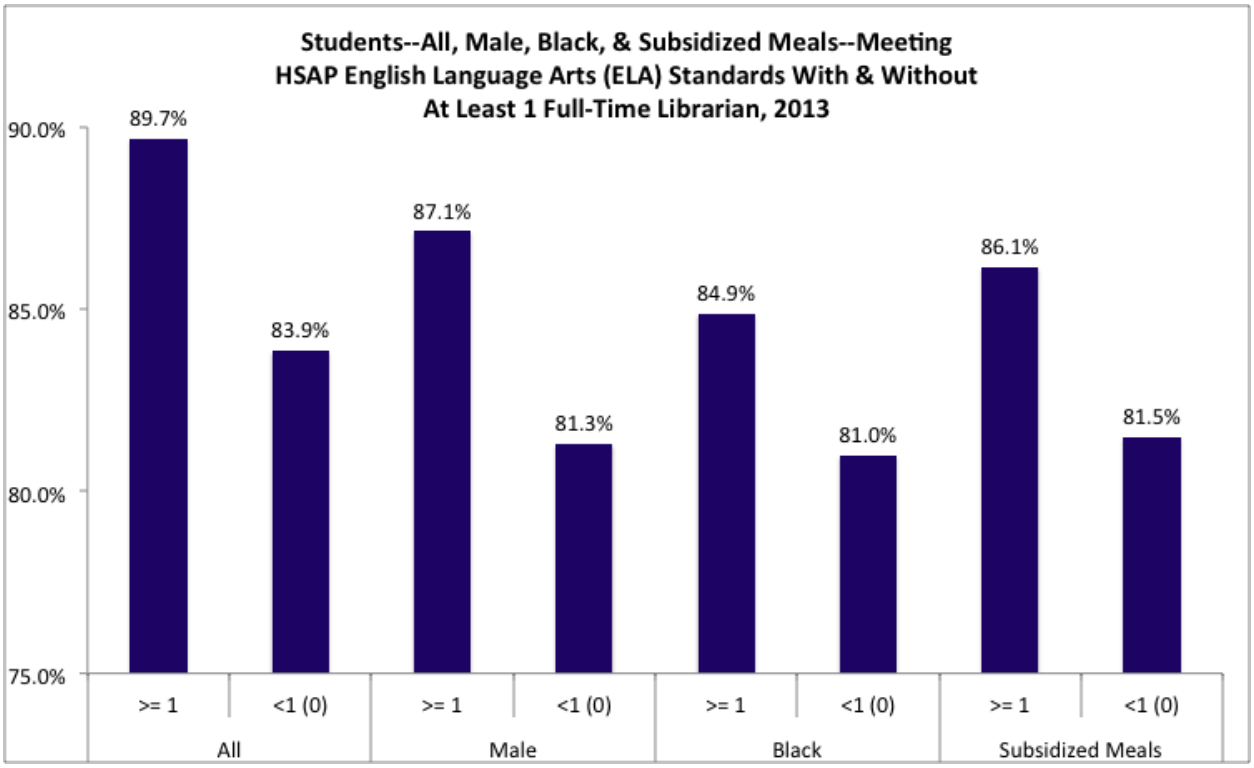
As for the Palmetto Assessment of State Standards (PASS) tests, students with better-staffed school libraries were more likely to perform well and less likely to perform poorly on the HSAP ELA tests. Staffing patterns for some high school libraries, however, are markedly different than for elementary and middle school libraries. For this reason, this analysis of HSAP results and school library data examines three staffing variables separately: whether or not a school library has at least 1 full-time librarian, whether or not it has at least 2 full-time librarians (as a substantial minority of high school libraries do), and whether or not it has at least 1 full-time library assistant. All three of these staffing variables displayed relationships with HSAP results that support the belief that school library staffing contributes to more students succeeding and fewer students failing academically.

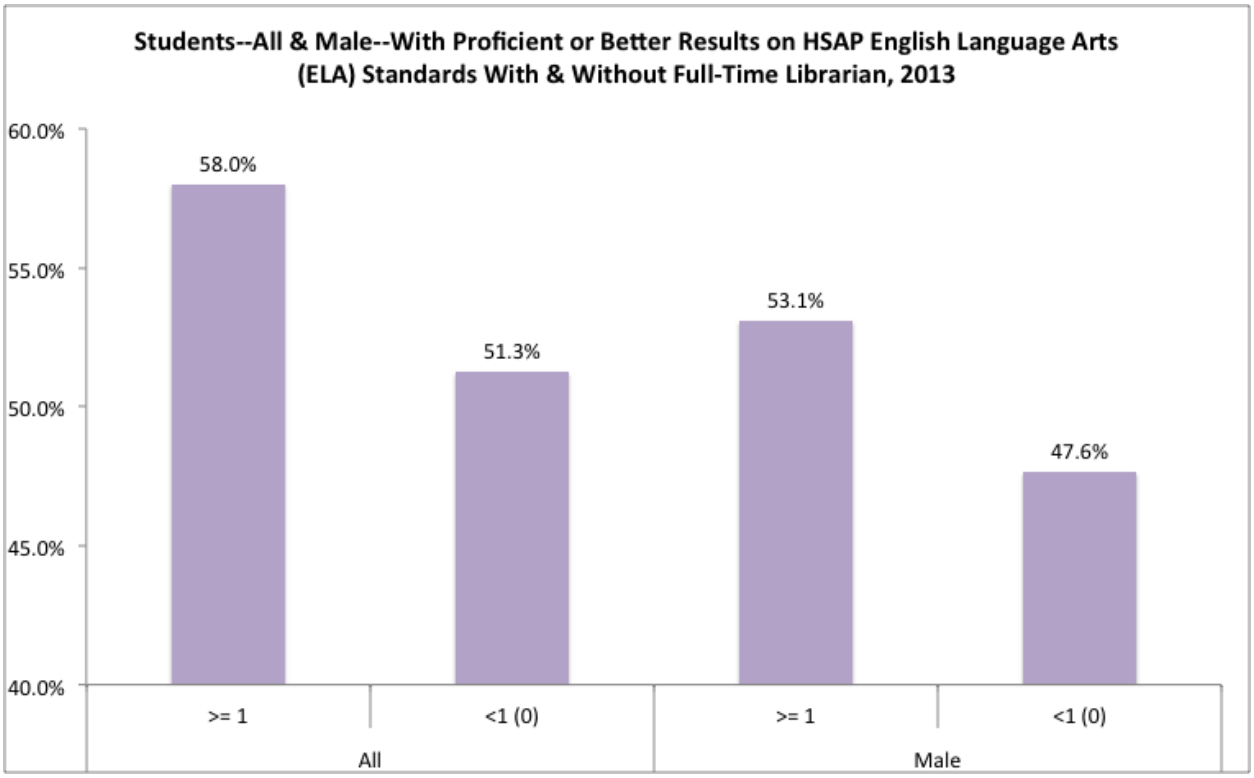
At Least 1 Full-Time Librarian

All students—and specifically male, Black, and subsidized meals (i.e., poorer) students—were more likely to meet HSAP standards, if their school libraries had at least 1 full-time librarian than if they did not.

Similarly, all students—and specifically male students—were more likely to perform at the proficient level or above on the HSAP tests, if their school libraries had at least 1 full-time librarian than if they did not.

Notably, some schools with at least 1 full-time librarian may, in fact, have had more than 1; and some schools without at least 1 full-time librarian may have had either a part-time librarian or no librarian at all.




Students--All & Male--With Proficient or Better Results on HSAP English Language Arts (ELA) Standards With & Without Full-Time Librarian, 2013
60.0%
55.0%
50.0%
45.0%
40.0%
58.0%
51.3%
53.1%
47.6%
>= 1
<1 (0)
>= 1
<1 (0)
All
Male

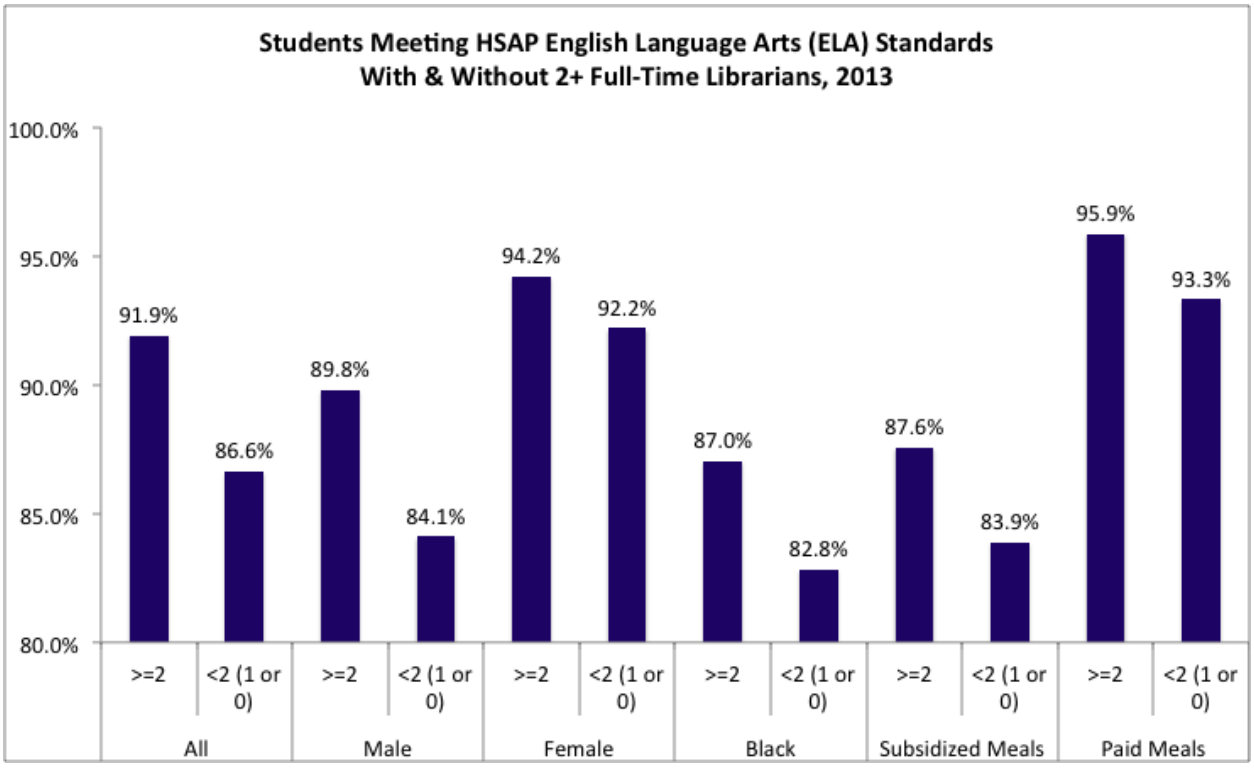
At Least 2 Full-Time Librarians

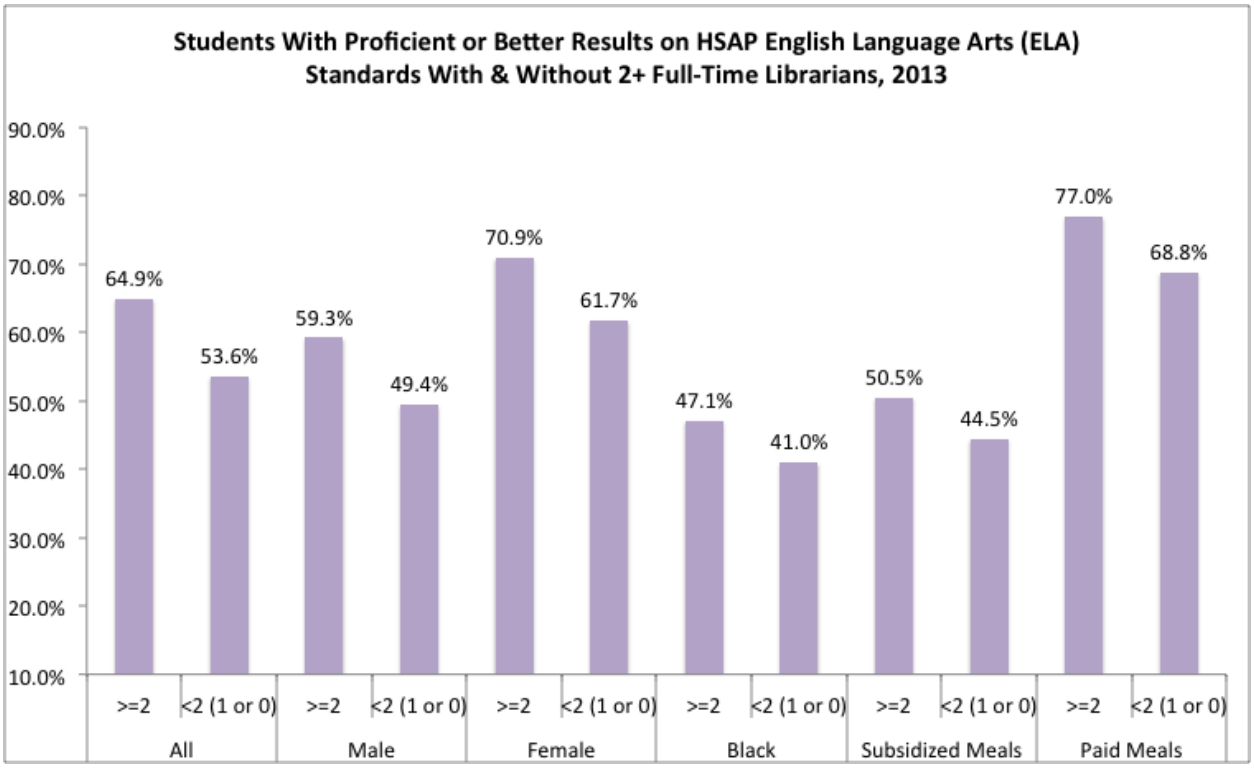
The association between HSAP results and having at least 2 full-time librarians was predictably greater than for having at least 1 full-time librarian. All students—and specifically students of both genders, Black students, and subsidized and paid meals (i.e., poorer) students—were more likely to meet HSAP standards, if their school libraries had at least 2 full-time librarians.

Similarly, all students—and students in the same specific demographic cohorts—were more likely to perform at the proficient level or above, if their school libraries had at least 2 full-time librarians.

Ordinarily, one might suspect that schools in wealthier communities are more likely to be able to afford having 2 or more school librarians. Interestingly, however, the relationships between this staffing level and both sets of HSAP results persist for poorer students—i.e., those eligible for subsidized and paid meals.

As for the previous analysis, a few schools with at least 2 full-time librarians may have had 3, while many without at least 2 full-time librarians had 1 and some, only a part-time librarian.


Students Meeting HSAP English Language Arts (ELA) Standards
With & Without 2+ Full-Time Librarians, 2013
100.0%
95.0%
90.0%
85.0%
80.0%
91.9%
86.6%
89.8%
84.1%
94.2%
92.2%
87.0%
82.8%
87.6%
83.9%
95.9%
93.3%
>=2
<2 (1 or 0)
All
Male
Female
Black
Subsidized Meals
Paid Meals

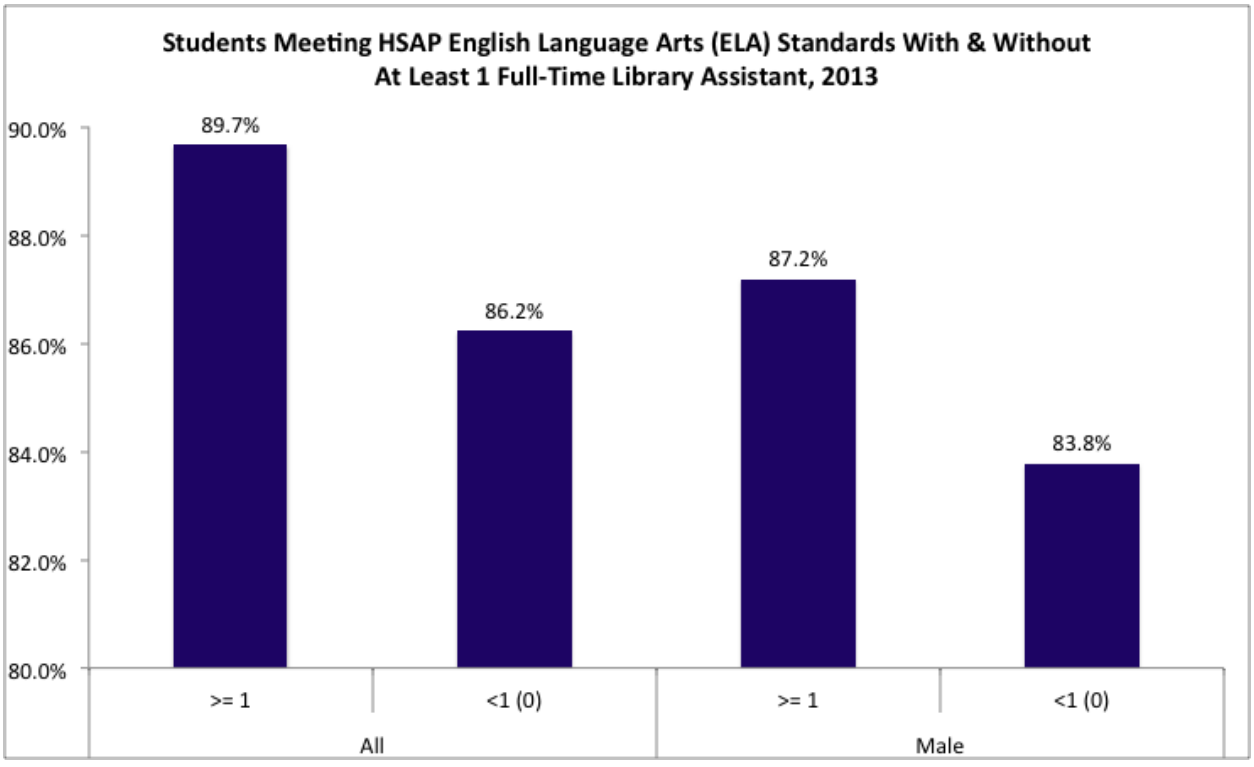

Students With Proficient or Better Results on HSAP English Language Arts (ELA)
Standards With & Without 2+ Full-Time Librarians, 2013
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
64.9%
53.6%
59.3%
49.4%
70.9%
61.7%
47.1%
41.0%
50.5%
44.5%
77.0%
68.8%
>=2
<2 (1 or 0)
All
Male
Female
Black
Subsidized Meals
Paid Meals

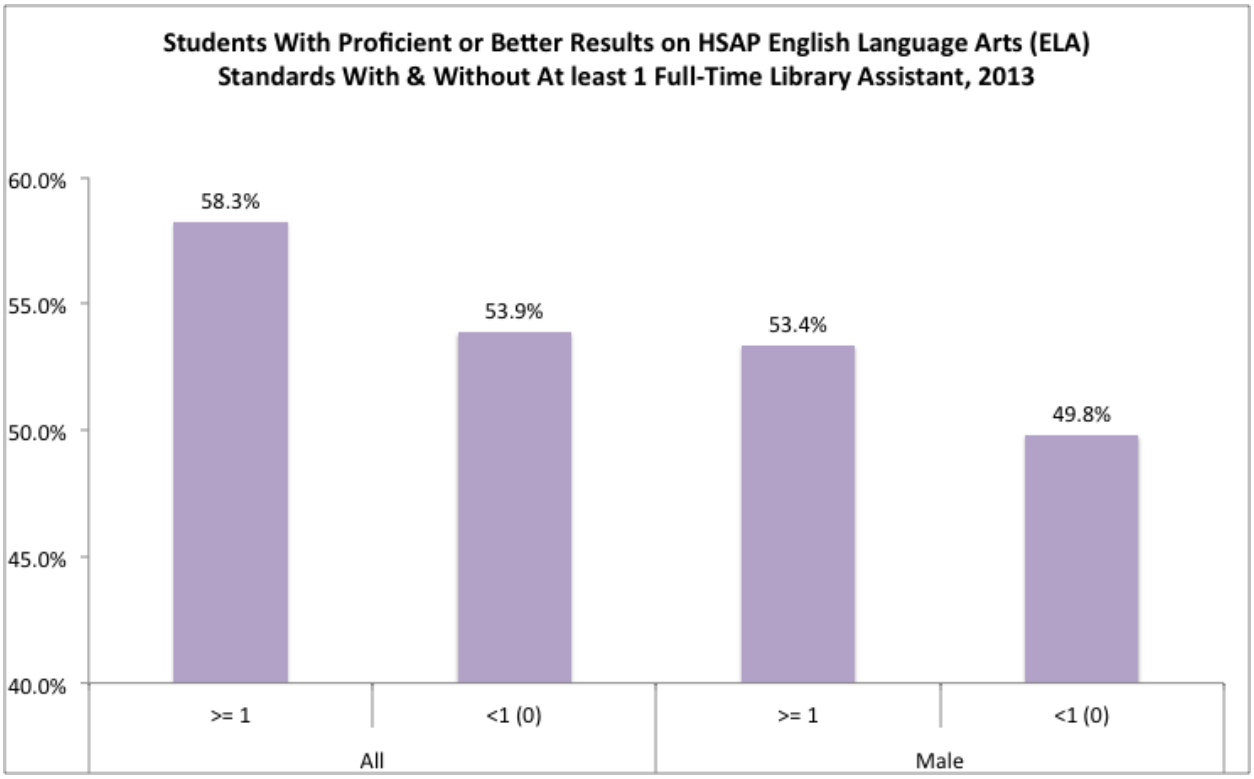
At Least 1 Full-Time Library Assistant

In addition to librarian staffing levels, HSAP results were also associated with whether or not school librarians had the support at least 1 full-time library assistant.

All students—and specifically male students—were more likely to meet HSAP standards and to reach at least the proficient level, if their school libraries had at least 1 full-time library assistant.

As for the preceding analyses, schools without at least 1 full-time library assistant may have had either a part-time assistant or none at all.

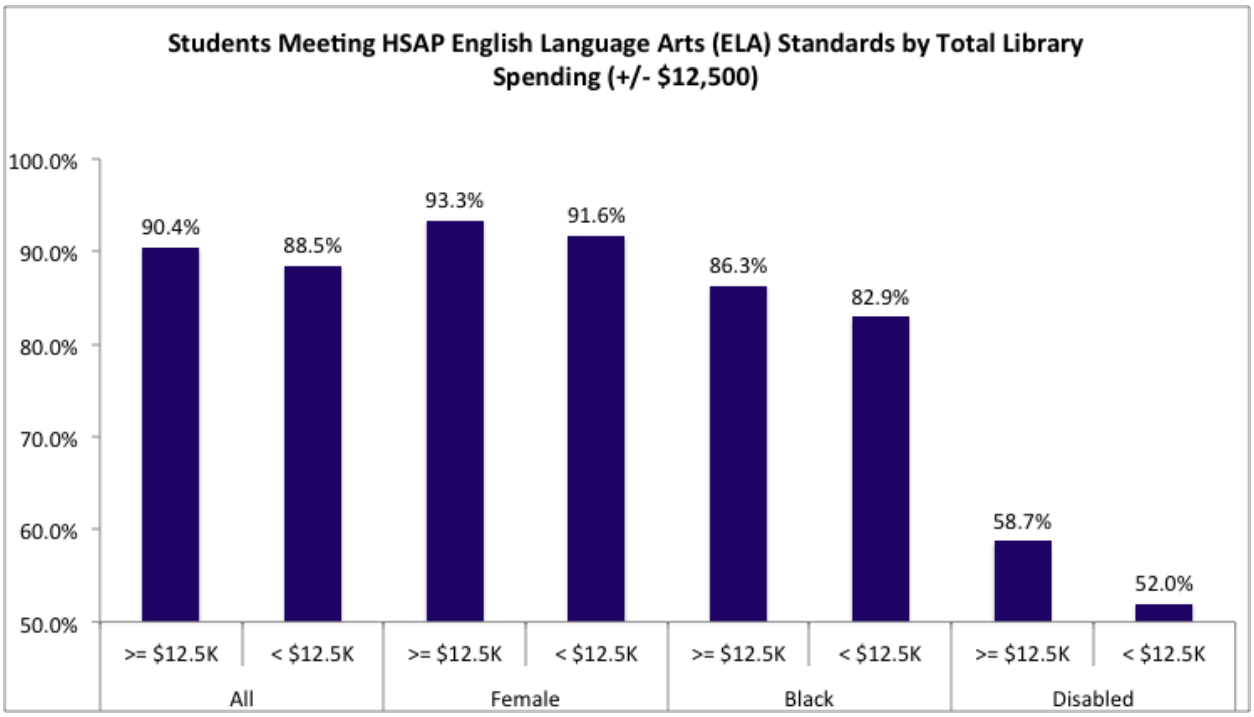


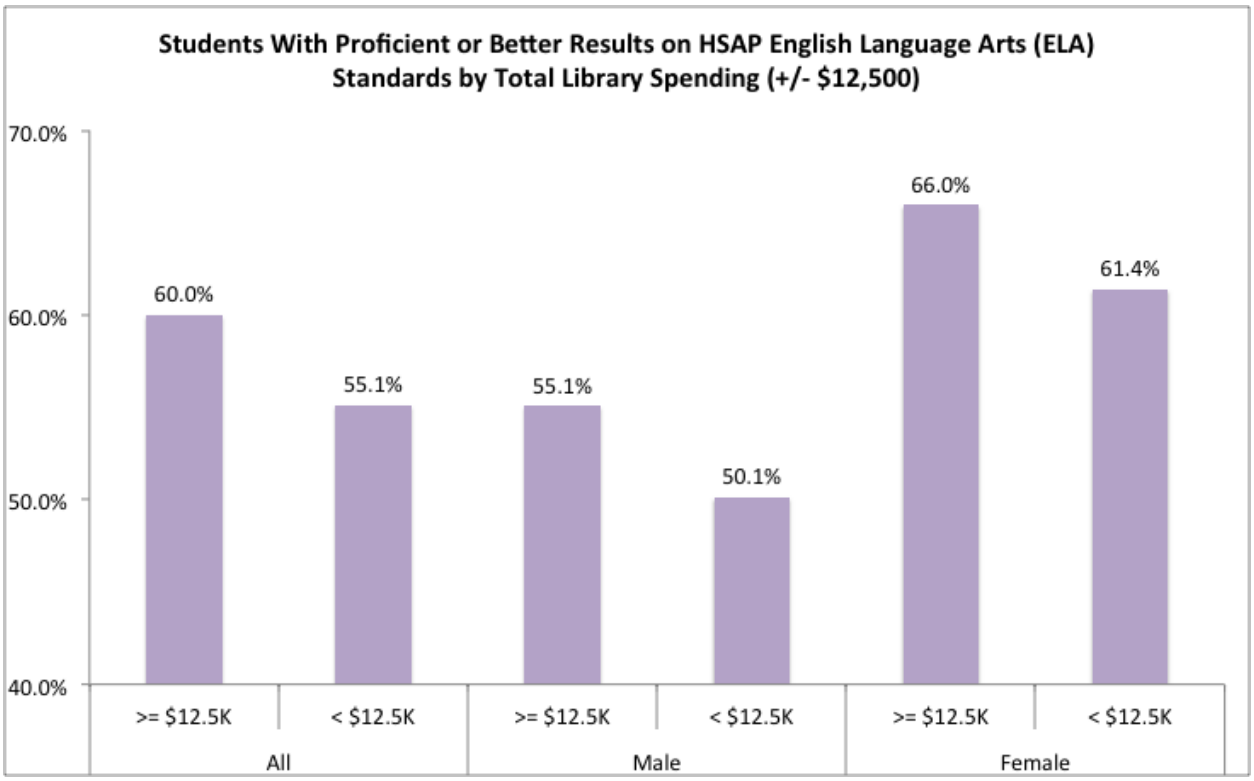

Students With Proficient or Better Results on HSAP English Language Arts (ELA)
Standards With & Without At least 1 Full-Time Library Assistant, 2013
60.0%
55.0%
50.0%
45.0%
40.0%
58.3%
53.9%
53.4%
49.8%
>= 1
<1 (0)
>= 1
<1 (0)
All
Male

Total Library Expenditures

As noted earlier, higher spending on school library programs has been linked with better achievement test results in more than a dozen states. Now, there is South Carolina evidence of this relationship indicated by HSAP as well as PASS results. Among high schools that responded to the South Carolina School Library Survey and for which HSAP results were available, the median for total library expenditures was approximately $12,500.

All students—and specifically female, Black, and disabled students—were more likely to meet HSAP standards and to have proficient or better results, if their school libraries were better-funded.

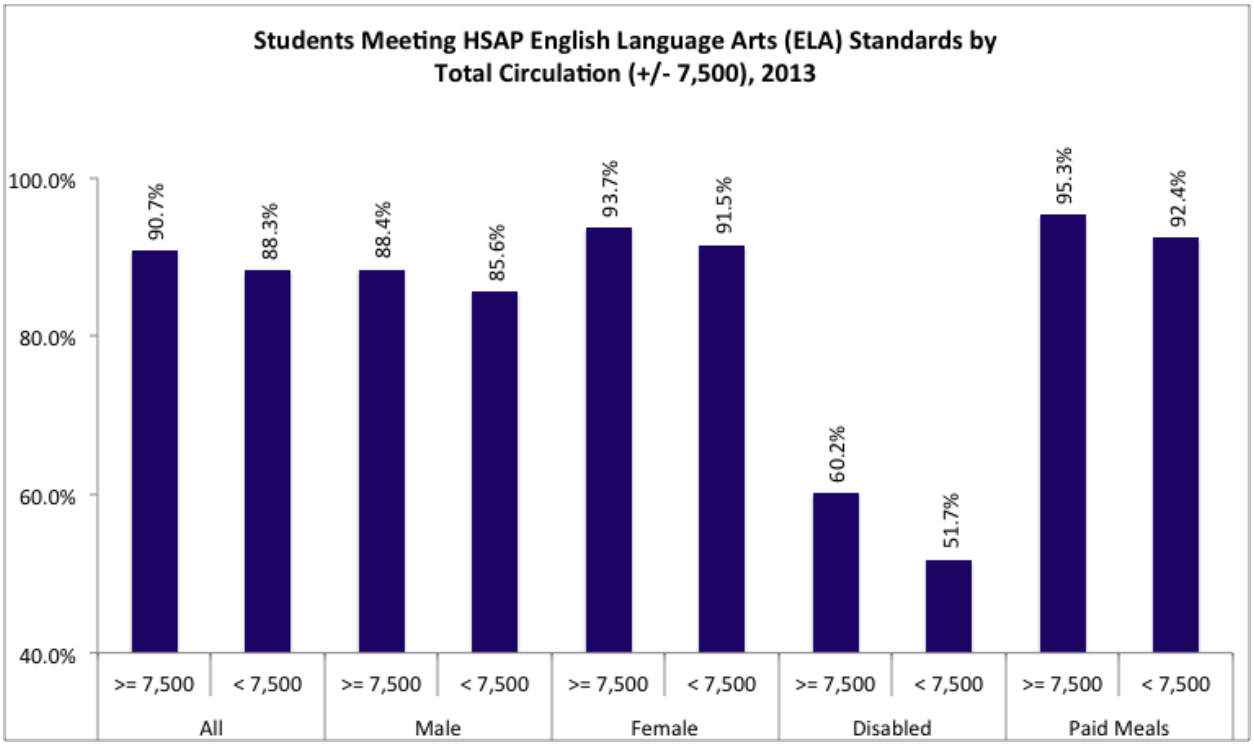


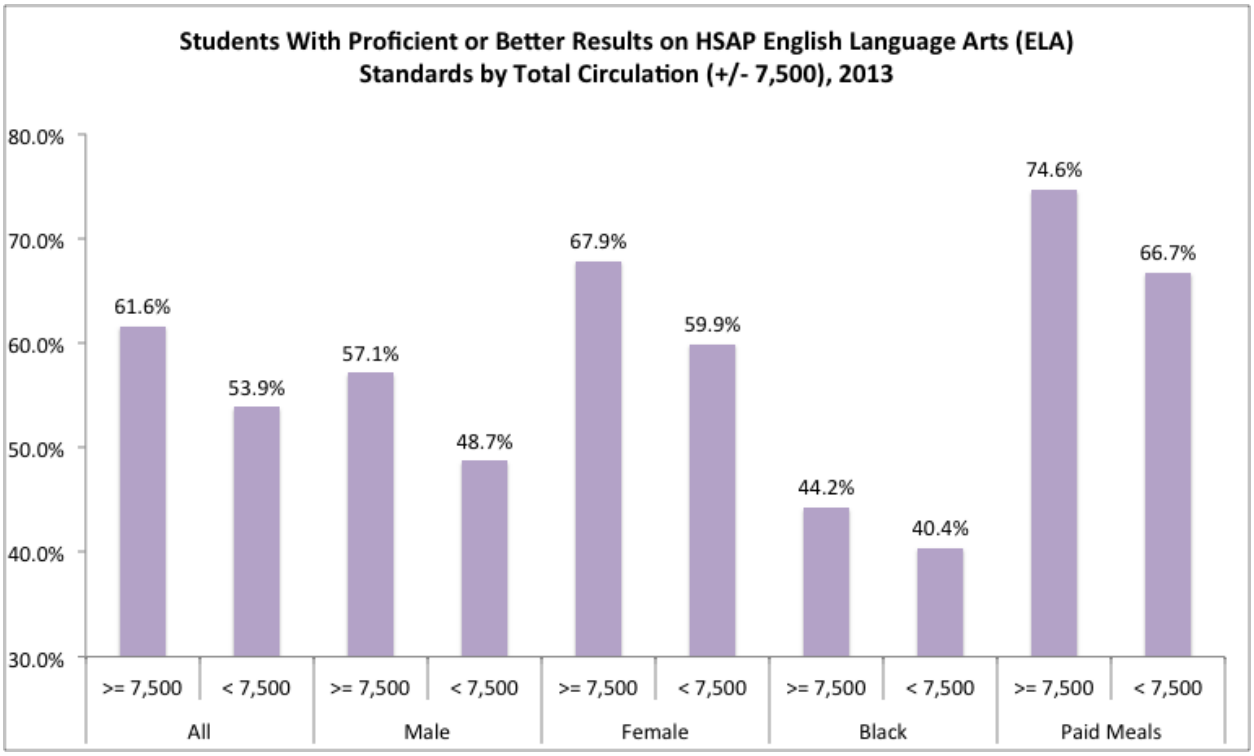

Students With Proficient or Better Results on HSAP English Language Arts (ELA) Standards by Total Library Spending (+/- $12,500)
70.0%
60.0%
50.0%
40.0%
60.0%
55.1%
55.1%
50.1%
66.0%
61.4%
>= $12.5K
< $12.5K
>= $12.5K
< $12.5K
>= $12.5K
< $12.5K
All
Male
Female

Total Circulation

While circulation of mostly physical library materials happens less frequently at high school libraries than their counterparts at lower grade levels, it indicates that the physical collections of school libraries remain an important category of the growing variety of information resources, both physical and virtual. For schools that responded to the 2013 South Carolina School Library Survey and for which HSAP results were available, the median for total circulation was approximately 7,500 checkouts for the 2012-13 school year.

All students—and specifically students of both genders, disabled students, and paid meals (i.e., the poorest) students—were more likely to meet HSAP standards, if their school libraries circulated more materials. Similarly, all students—and specifically male and female students, Black students, and paid meals students were also more likely to have proficient or better results on HSAP standards.

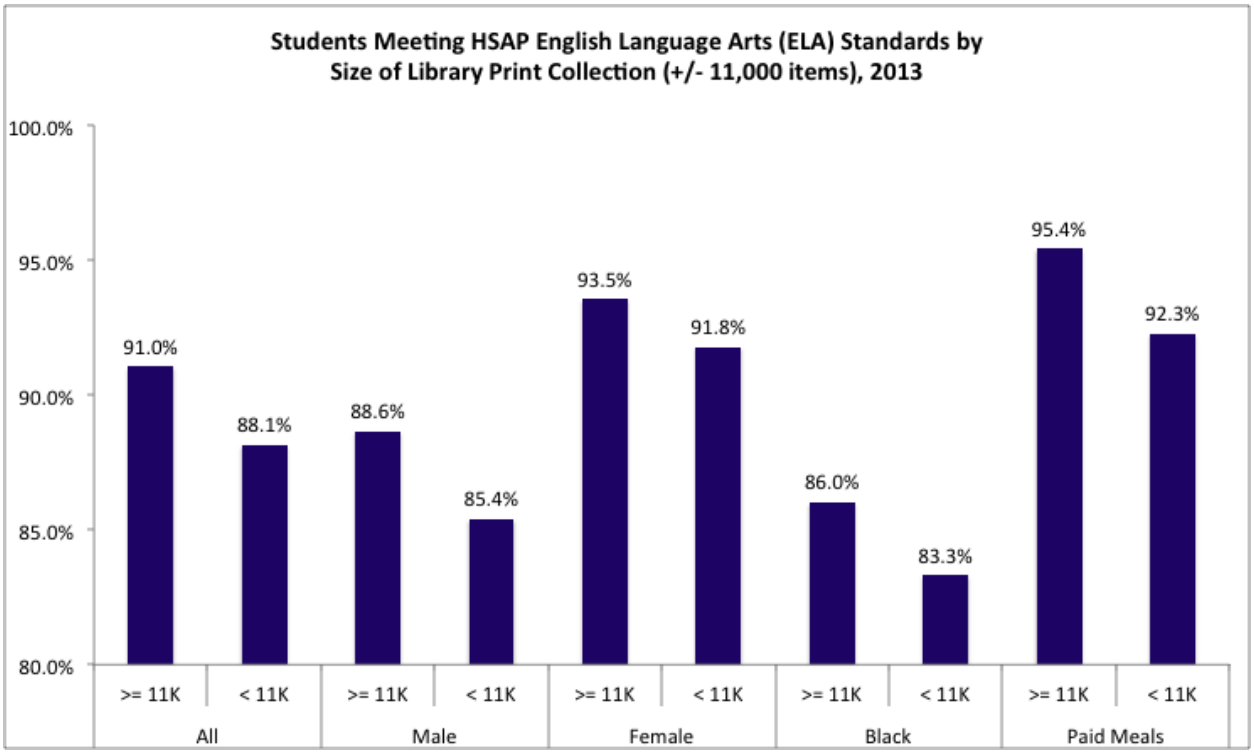



Students With Proficient or Better Results on HSAP English Language Arts (ELA) Standards by Total Circulation (+/- 7,500), 2013
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
61.6%
53.9%
57.1%
48.7%
67.9%
59.9%
44.2%
40.4%
74.6%
66.7%
>= 7,500
< 7,500
>= 7,500
< 7,500
>= 7,500
< 7,500
>= 7,500
< 7,500
>= 7,500
< 7,500
All
Male
Female
Black
Paid Meals

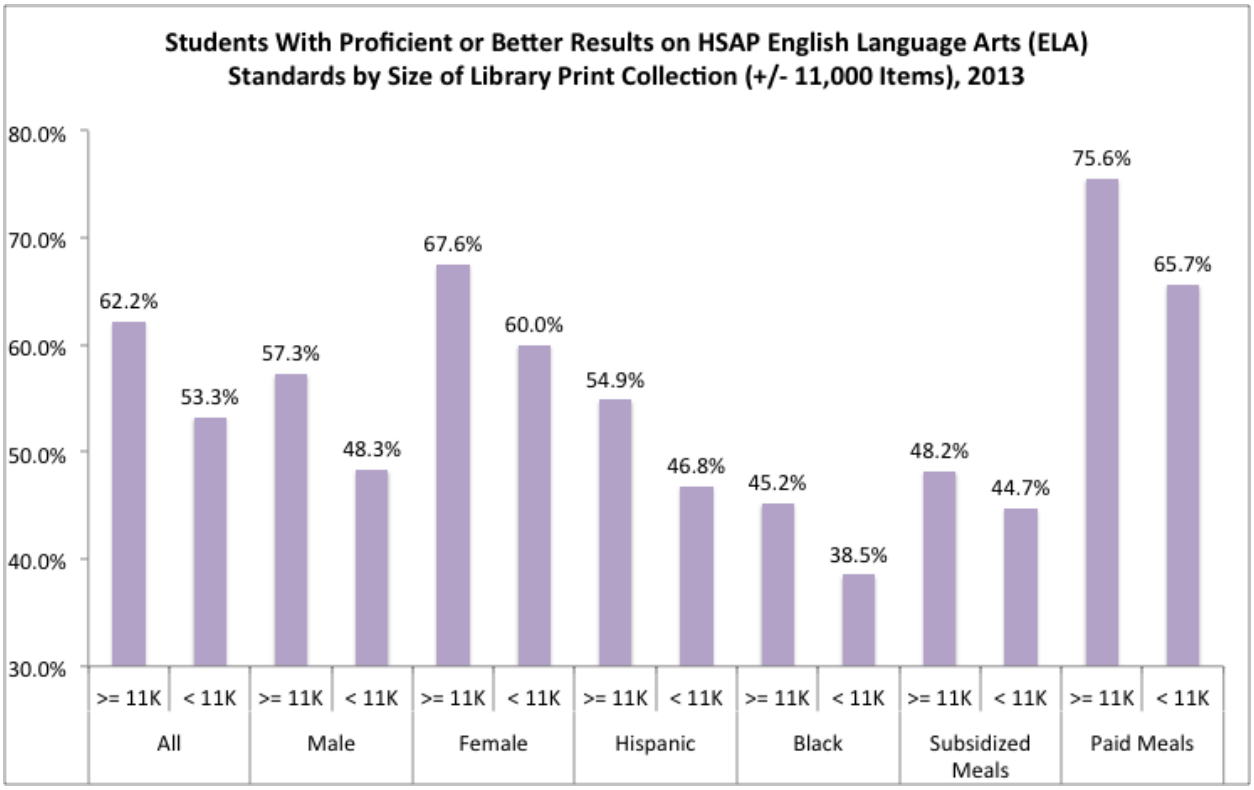
Print Collection Size

Print collections continue to be an important component of school library programs, even while websites, databases, and e-books play a more and more prominent role. For high schools that responded to the South Carolina School Library Survey and for which HSAP results were available, the median size of a print collection was about 11,000 items.

All students—and specifically both genders, Black students, and paid meals (i.e., the poorest) students—are more likely to meet HSAP standards, if their school library collections contain 11,000 or more items.



Likewise, all students—and specifically both genders, Hispanic and Black students, and subsidized and paid meals (i.e., poorer) students—are more likely to have proficient or better results on HSAP standards, if their school library collections are larger.

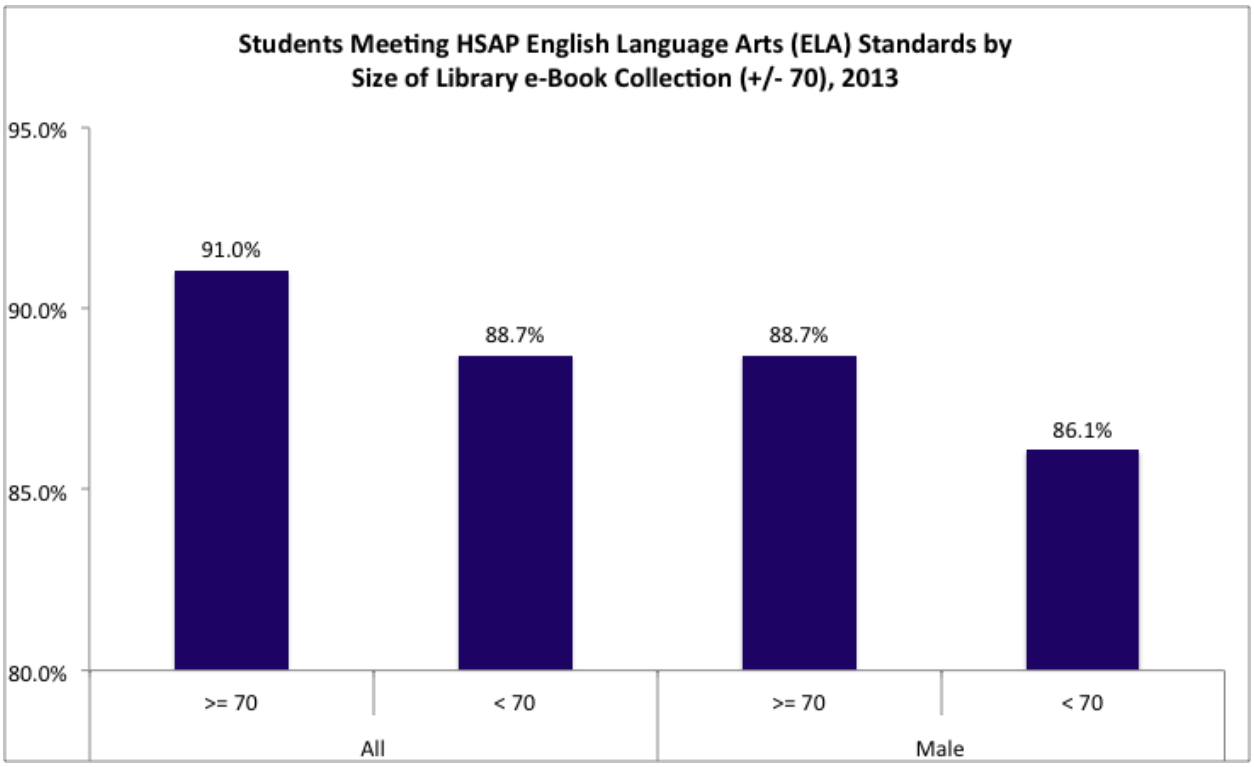

Students With Proficient or Better Results on HSAP English Language Arts (ELA) Standards by Size of Library Print Collection (+/- 11,000 Items), 2013
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
62.2%
53.3%
57.3%
48.3%
67.6%
60.0%
54.9%
46.8%
45.2%
38.5%
48.2%
44.7%
75.6%
65.7%
>= 11K
< 11K
All
Male
Female
Hispanic
Black
Subsidized Meals
Paid Meals

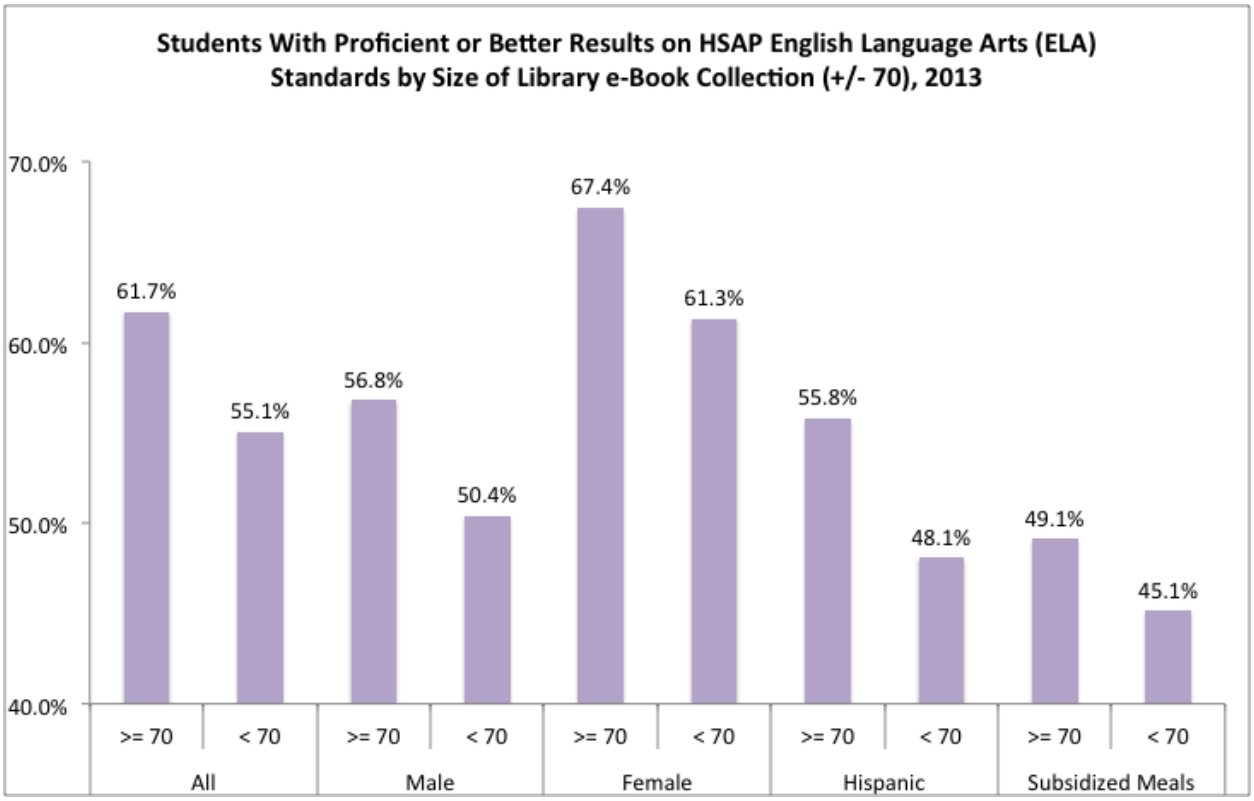
E-Book Collection

While traditional books continue to play a major role, especially in encouraging reading generally and especially free voluntary reading, e-books are transforming the publishing world. With time, they will come to play a more and more prominent role in school libraries. Even now, however, there is some evidence that e-books may play an important role in improving the probability of student success. For high schools that responded to the 2013 South Carolina School Library Survey and for which HSAP results were available, the median number of e-books available to students was 70. Of schools that responded to the statewide survey, 437 reported having ebook collections.

All students—and particularly male students—are more likely to meet HSAP standards, if their school libraries provide access to 70 or more e-book titles.

All students---and particularly both genders, Hispanic students, and subsidized meals students—are also more likely to have proficient or better HSAP results, if the e-book collections available from their school libraries are larger.



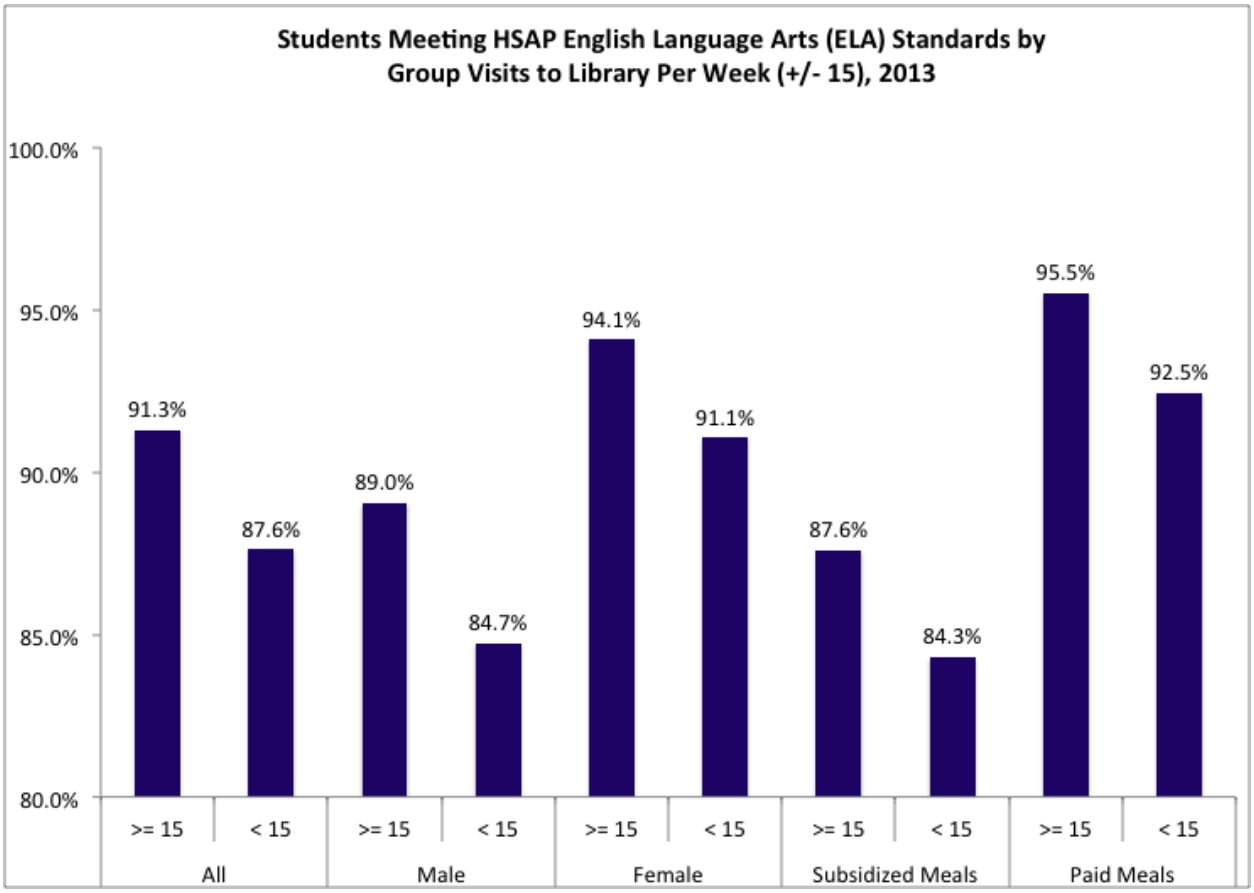

Students With Proficient or Better Results on HSAP English Language Arts (ELA) Standards by Size of Library e-Book Collection (+/- 70), 2013
70.0%
60.0%
50.0%
40.0%
61.7%
55.1%
56.8%
50.4%
67.4%
61.3%
55.8%
48.1%
49.1%
45.1%
>= 70
< 70
All
Male
Female
Hispanic
Subsidized Meals

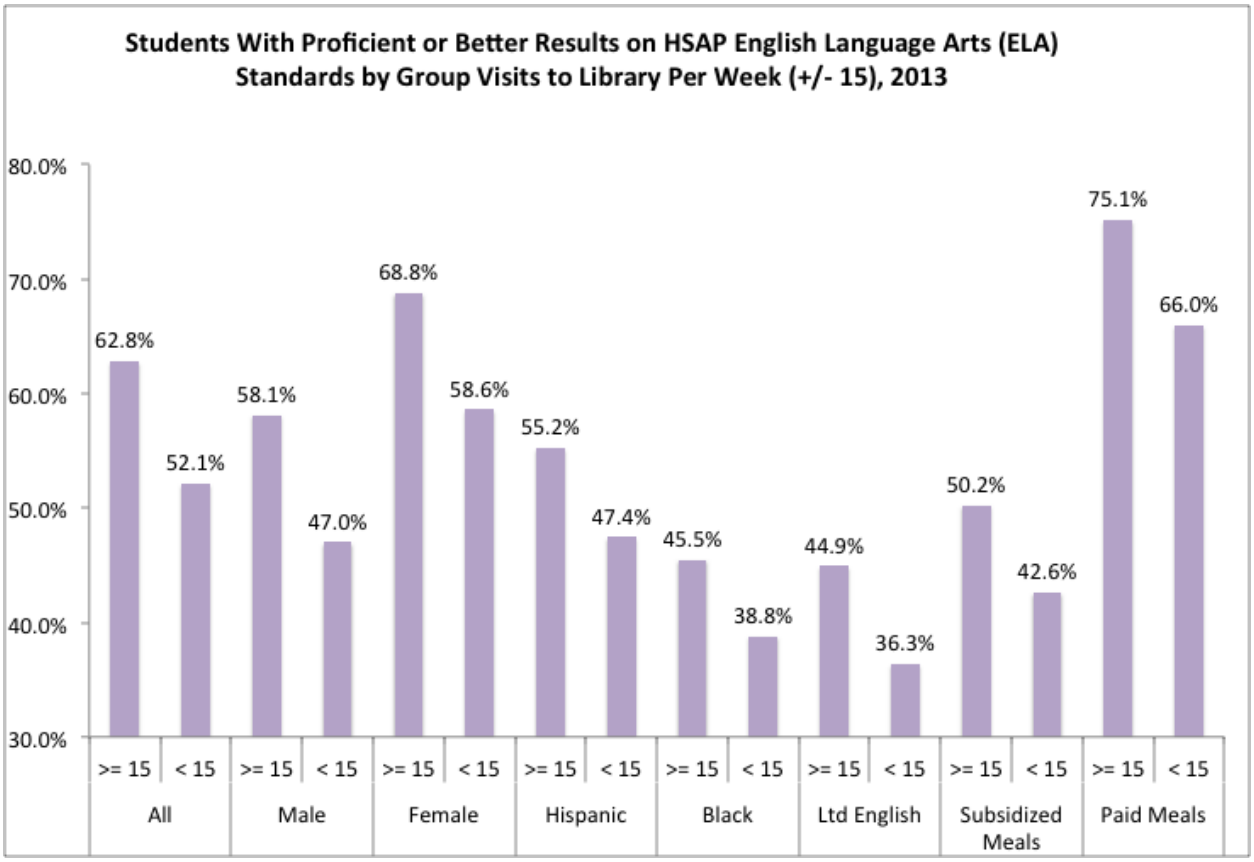
Group Visits to Library Per Week

More effective school library programs are ones that not only teach students to be better consumers of information—whether as readers or researchers—but also to be better producers of information. Many school library facilities are being re-designed to encourage their use as "learning commons" or "maker spaces"—places where whole classes of students as well as smaller groups can go to act on what they are learning in the classroom. For high schools that responded to the 2013 South Carolina School Library Survey and for which HSAP results were available, the average number of group visits to the school library per week is 15. Notably, this is a dramatically higher number than the number (4) for elementary and middle schools, where flexibly scheduled access to school libraries tends to be less common.

All students—and particularly both genders and those eligible for subsidized or paid meals (i.e., poorer students)—were more likely to meet HSAP standards, if their school libraries received 15 or more group visits per week.

The same groups were likelier to have proficient or better HSAP results under similar conditions. In addition, Black, Hispanic, and limited English students were more likely to have such results, if groups of learners visited their libraries more frequently.


Students Meeting HSAP English Language Arts (ELA) Standards by Group Visits to Library Per Week (+/- 15), 2013
100.0%
95.0%
90.0%
85.0%
80.0%
91.3%
87.6%
89.0%
84.7%
94.1%
91.1%
87.6%
84.3%
95.5%
92.5%
>= 15
< 15
All
Male
Female
Subsidized Meals
Paid Meals



Summary

As at the elementary/middle school level, this analysis of relationships between school library characteristics and HSAP English Language Arts (ELA) results for high school students revealed that characteristics of stronger school library programs were associated with students succeeding more often and failing less often. While again the quantitative differences may not have been large, they were both statistically significant and consistent across a wide variety of student cohorts. Demographics such as gender, race/ethnicity, disability and language status, and poverty status (i.e., subsidized and free meals eligibility) did not explain away all relationships between libraries and student performance.

Conclusion

To summarize the foregoing Phase I findings, another perspective is to consider which library characteristics were associated with better performance on South Carolina academic standards for particular student cohorts, including all students, male and female students, Hispanic and Black students, disabled students, limited English students, and subsidized and paid meals students.

PASS Results

Palmetto Assessment of State Standards (PASS) results were examined for all elementary and middle schools that responded to the 2013 South Carolina School Library Survey. These test results covered Writing—overall and on Content and Organization—and English Language Arts (ELA)—overall and on Literary and Informational Text and Research.

All Students

For all students, excellence on PASS Writing and English Language Arts (ELA) standards was associated with the following characteristics of school library programs:

- Having at least 1 full-time librarian and a full- or part-time library assistant
- Spending $7,500 or more annually and $13.33 or more per student
- Logging 20,000 or more checkouts and 36 or more items per student
- Providing access to 40 or more e-books
- Having public access computers in the school library and 18 or more (versus fewer than 6) elsewhere in the school

For all students, excelling at Writing only was associated with students with libraries

- Receiving 4 or more group visits per week.

For all students, excelling at ELA only was associated with these library characteristics:

- Having a librarian who teaches information literacy 20 or more hours per week
- Having a print collection of 13,000 items or more (versus fewer than 7,500 items)

Male and Female Students

There were only a few exceptions to the above patterns for male and female students.

- For male students, having a print collection of 10,000 items or more as well as one of 13,000 items or more (versus fewer than 7,500 items) was associated with both Writing and ELA achievement levels.
- For female students, having computers in the school library was not associated with either Writing or ELA results.

Hispanic Students

A more select group of school library characteristics was associated with PASS results for Hispanic students.

Both Writing and ELA achievement were associated with:

- Having at least 1 full-time librarian and a full- or part-time assistant
- Having a print collection of 13,000 or more items (versus fewer than 7,500)
- Having public access computers in the school library

For Hispanic students, Writing results only were associated with 4 or more group visits to the library per week.

Also, for these students, ELA results only were associated with a school library logging 20,000 or more checkouts and 36 checkouts per student.

Black Students

For Black students, excelling on Writing standards only was associated with a school library receiving 4 or more group visits per week.

For the same students, ELA excellence only was associated with a school:

- Spending $13.33 per student or more on the school library
- Having a school librarian who teaches information literacy 20 hours per week or more, and particularly 25 or more hours per week (versus fewer than 10)
- Logging 20,000 or more checkouts and 36 checkouts per student

Disabled Students

For disabled students, both Writing and ELA results were associated with a school:

- Having a school librarian who teaches information literacy 25 or more hours per week (versus fewer than 10)
- Logging 20,000 or more checkouts

For the same students, ELA results only were associated with a school:

- Having a school librarian who teaches information literacy 20 or more hours per week
- Logging 36 or more checkouts per student

Limited English Students

For limited English students, excelling on both Writing and ELA standards was associated with a school:

- Having at least 1 full-time librarian and a full- or part-time assistant
- Logging 20,000 or more checkouts
- Having a print collection of 13,000 or more items (versus fewer than 7,500)
- Having public access computers in the school library

For the same students, ELA excellence only was associated with a school:

- Logging 36 or more checkouts per student
- Having a print collection of 10,000 or more items

Subsidized Meals Students

For subsidized meals students, both Writing and ELA achievement were associated with a school:

- Having at least 1 full-time librarian and a full- or part-time assistant
- Spending $7,500 or more on the school library
- Logging 20,000 or more checkouts and 36 or more checkouts per student

For the same students, Writing achievement alone was associated with a school:

- Receiving 4 or more group visits per week

For the same students, ELA achievement alone was associated with a school:

- Spending $13.33 or more per student on the school library
- Having a librarian who teaches information literacy 20 or more hours per week

Paid Meals Students

For paid meals students, excelling on both Writing and ELA standards was associated with a school:

- Having at least 1 full-time librarian and a full- or part-time assistant
- Spending $7,500 or more on the school library and $13.33 per student
- Having a librarian teach information literacy 25 or more (versus fewer than 10) hours per week
- Logging 20,000 or more checkouts and 36 or more checkouts per student

For the same students, excellence on Writing standards only was associated with a school:

- Having 4 or more group visits to the library per week
- Having public access computers in the library

For the same students, excellence on ELA standards only was associated with a school:

- Having a librarian teach information literacy 20 or more hours per week

HSAP Results

High School Assessment Program (HSAP) results were examined for all high schools that responded to the 2013 South Carolina School Library Survey. Only overall results were available for English Language Arts (ELA), unlike for PASS results, which were detailed by standard.

All Students and Male & Female Students

All students were more likely to meet HSAP standards and to perform at the proficient level or above, if their schools had:

- At least 1 full-time librarian
- At least 2 full-time librarians
- At least 1 full-time library assistant
- Total library expenditures of $12,500 or more
- Total circulation of 7,500 or more checkouts
- Total print collection of 11,000 or more items
- Total e-book collection of 70 or more titles
- 15 or more group visits to the library per week

There was only one major difference in these findings by gender. For female students, HSAP performance was not associated with the presence of at least 1 full-time librarian or at least 1 full-time assistant.

Hispanic Students

Hispanic students were more likely to achieve proficient level or above on the HSAP standards, if a school:

- Had a print collection of 11,000 or more items
- Provided access to 70 or more e-book titles
- Received 15 or more group visits to the library per week

Black Students

Black students were more likely to meet HSAP standards and/or to achieve proficient level or above, if a school:

- Had at least 1 full-time librarian
- Had at least 2 full-time librarians
- Spent $12,500 or more on the school library
- Logged 7,500 or more checkouts
- Had a print collection of 11,000 or more items
- Received 15 or more group visits to the library per week

Disabled Students & Limited English Students

Disabled students were more likely to meet HSAP standards, if a school:

- Spent$12,500 or more on the school library
- Logged 7,500 or more checkouts

Limited English students were more likely to achieve proficient level or above on HSAP standards, if a school:

Received 15 or more group visits to the library per week

Subsidized and Paid Meals Students

Both subsidized and paid meals students were more likely to meet HSAP standards and/or to achieve proficient level or above, if a school:

- Had at least 2 full-time librarians
- Had a print collection of 11,000 or more items
- Received 15 or more group visits to the library per week

In addition, subsidized meals students were more likely to excel on the HSAP standards, if a school:

- Had at least 1 full-time librarian
- Provided access to 70 or more e-book titles

Further, paid meals students were more likely to achieve HSAP excellence, if a school:

- Logged 7,500 or more checkouts

Summary

The findings of Phase I of the South Carolina school library impact study are consistent with previous available-data research in revealing associations between the academic performance of students and a variety of school library characteristics: library staffing, librarian teaching activities, library expenditures (both total and per student), circulation of library materials (both total and per student), collection size (both print and e-book), and library visits by groups. Generally, these relationships, though small to middling in magnitude, were in a predictably positive direction and statistically significant, indicating that demonstrated differences are unlikely to have been produced by chance alone.