School Library Research Summarized: A Graduate Class Project

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Preface

Although evidence demonstrating how quality school library programs improve student learning has been in existence since Mary Gaver’s original work in 1963, the research has never been well disseminated beyond the school library profession. In an effort to help school administrators and other stakeholders to better understand the importance of providing equitable, instructional school library services, the Pennsylvania School Librarians Association (PSLA) decided to update their website to include the major findings from the landmark body of research known as the “school library impact studies.” Begun in the early 1990’s by Dr. Keith Curry Lance and his associates at the Colorado Department of Education and the University of Denver, these reports primarily correlated standardized language arts test scores of students to components of school library programs. To date, 22 states and one Canadian province have provided data for such research conducted by Lance and a variety of other researchers.

As PSLA’s Legislation Co-Chairperson and a library educator, I offered to have my Spring 2011 class of LSC 5530 School Library Advocacy, an online course in the Master of Education program of the School Library & Information Technologies Graduate School, Mansfield University, tackle this project. Each student was assigned one of the major state studies to summarize. PSLA will be posting the major findings from each study on their website as reported by the students. However, the project seemed to take on a life of its own and now is also a website (http://library.mansfield.edu/impact.asp) and this booklet. A major goal of the project was to select significant findings and index them in a chart by components of a school library program, such as staffing, collections, budgets, etc. School librarians and stakeholders can now easily find which studies support specific aspects of school library programs and use the research to validate programs, positions, and budgets. Although School Libraries Work! and other similar works have done an impressive job in presenting the research, none has indexed the studies in this way.

Shortly after the website was launched on February 5, 2011, I received many emails telling me how this information was immediately being used at school board presentations, in budget justification reports, and in efforts to save school library positions being recommended for elimination. Keith Curry Lance has linked his Library Research Service website (www.lrs.org) to our site and emailed me, “this is a spectacular piece of work, a wonderfully comprehensive and detailed summary of this line of research.”

My Mansfield students have practiced “school library advocacy” in action and I would like to acknowledge their valuable contribution to the profession. They are: Dorene Akujobi (PA), Sarah Clayton (NY), Sarah Davis (PA), Lori Dearmore (WA), Aimee Feldman (NM), Elizabeth Galaska (PA), Erin Hildebrand (PA), Valarie Hunsinger (NY), Melissa Leman (NJ), Ronica Luke (PA), Adam Marcus (NY), Diane McLaren-Brighton (MI), Renee Mintz (NY), Kelly Petri (PA), Jeremy Shanly (NY), Pennelope Shoberg (PA), Erika Strout (PA), Jennifer Von Wendel (WA), Linda Webster (IL), and Todd Wehmeyer (WA).

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Quality school library programs impact student achievement. Since the 1990’s when standardized tests became a major indicator of student learning, numerous studies have been conducted to confirm the educational gains that school library programs provide in student learning. The most universal finding is the presence of full-time, certified school librarians and appropriate support staff who implement a quality, school-integrated program of library services. It has been shown that incremental increases in the following can result in incremental gains in student learning:

- increased hours of access for both individual student visits and group visits by classes
- larger collections of print and electronic resources with access at school and from home
- up-to-date technology with connectivity to databases and automated collections
- instruction implemented in collaboration with teachers that is integrated with classroom curriculum and allows students to learn and practice such 21st century skills as problem-solving, critical thinking, and communication of ideas and information
- increased student usage of school library services
- higher total library expenditures
- leadership activities by the librarian in providing professional development for teachers, serving on key committees, and meeting regularly with the principal.

The studies that examined standardized test data also factored in school and community differences. School factors generally included expenditures per pupil, teacher per pupil ratio, average years of experience of classroom teachers and average salaries. Community differences generally included educational attainment of adults in the community, children in poverty, and racial ethnic demographics. Although the effects of poverty still remain a primary force in determining student academic success, state after state showed that such socio-economic conditions could not explain away the impact of school library programs, especially school library staffing, funding, and quality collections. For example, the 2009 Texas study showed that at the elementary school level, socio-economic variables explained 26 percent of the variance; at the middle/junior high school level they explained 44 percent; and at the high school level they explained 55 percent. Library variables explained a smaller but still very significant portion of the variance in the Texas standardized test performance. They explained approximately four percent of the variance in test performance at the elementary and middle/junior high school levels and 8.2 percent at the high school level. The Wisconsin study of 2006 found that at the high school level the impact of a robust library media program was almost seven percentage points greater than the impact of the socio-economic variables. In the 2009 California study, when considering school and community variables, school library programs accounted for between 19% and 21% of the variance in STAR test scores. On the English Language Arts test, the library program was a stronger predictor of success than the other school variables. On the U.S. History test, the library program was, in fact, the best predictor of student performance—better than other school variables and better than community variables including parent education and poverty levels.

Clearly, the studies confirm that quality school library programs with full-time, certified librarians and library support staff are indicative of and critical to student achievement. In fact, quality school library programs may play an even greater role in providing academic support to those students who come from economically disadvantaged backgrounds. In closing the achievement gap and assuring that all students are prepared with the 21st century skills they need to succeed, school leaders and librarians need to embrace this body of research and foster school library programs that can make a difference in student learning. Schools that support their library programs give their students a better chance to succeed.

**The Pennsylvania Study of 1999-2000**

The Pennsylvania study entitled *Measuring up to Standards: The Impact of School Library Programs and Information Literacy in Pennsylvania Schools*, was conducted by Keith Curry Lance with Marcia J. Rodney and Christine Hamilton-Pennell. With 435 participating school libraries, the study examined the following characteristics: 1) hours of the school library; 2) school library staff; 3) paid staff activities; 4) usage of school library services; 5) school library technology; 6) school library resources;
7) annual operating expenditures for the school library; and 8) school library information management. PSSA reading test scores from the 1998-99 academic year for 5<sup>th</sup>, 8<sup>th</sup>, and 11<sup>th</sup> graders were also examined for the schools in relation to school library characteristics.

The results of the Pennsylvania study found that PSSA reading scores linked directly to school library staffing, information technology, and integrating information literacy in instruction. In fact, PSSA scores improved with increases in school librarian staff hours and support staff hours. Higher scores also were present where networked computers enabled students and staff to utilize the ACCESS PA database, the Internet, and licensed databases. The “keystone” finding was the importance of teaching information literacy as an integral part of standards and classroom curriculum. Test scores increased as librarians spent more time teaching cooperatively with teachers, teaching information literacy skills independently, providing in-service training to teachers, serving on standards and curriculum committees, and managing information technology. These predictors of academic achievement could not be explained away by the aforementioned school and community differences which were also examined.

### School Library Impact Studies Chart

School Library Program Components and the States/Province in which they were found to have a Positive Association with Student Achievement

<table>
<thead>
<tr>
<th>LIBRARY SERVICE / CHARACTERISTICS</th>
<th>STATE / PROVINCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAFFING / AVAILABILITY</strong></td>
<td></td>
</tr>
<tr>
<td>Number of hours of staffing at library</td>
<td>CA1, CA2, CO1, CO2, DE, IA, IL, IN, MA, MI, MN, NC, NM, NJ, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Full-time librarian</td>
<td>AK, CA2, CO3, IA, IN, MA, MI, MN, NJ, OH, ON1, ON2, OR, PA, WI</td>
</tr>
<tr>
<td>Scheduling to make libraries available</td>
<td>IA, ID, IL, IN, MI, MO, NJ</td>
</tr>
<tr>
<td>Number of hours the library is open to students &amp; teachers</td>
<td>AK, CA2, IA, IL, IN, MA, MI, MN, MO, NC, NM, ON1, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Certified school librarian</td>
<td>CA2, DE, IA, ID, MA, MI, MN, MO, NJ, NY, OH, PA, WI</td>
</tr>
<tr>
<td>Other: Support staff</td>
<td>CA2, DE, IA, MA, NJ, OH, ON1, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Other: Flexible scheduling</td>
<td>CA1, CO2, DE, ID, IL, IN, MI, NJ, OH, ON2, WI</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Other: Use of volunteers in addition to certified staff</td>
<td>MA, TX, WI</td>
</tr>
<tr>
<td><strong>INSTRUCTION / INFORMATION LITERACY CURRICULUM</strong></td>
<td></td>
</tr>
<tr>
<td>Instruction to students</td>
<td>AK, CA1, CA2, CO1, DE, IA, ID, IL, IN, MA, MI, NJ, NM, OH, ON1, ON2, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Provide reading incentive programs</td>
<td>IA, NJ, NM, ON2, WI</td>
</tr>
<tr>
<td><strong>PROFESSIONAL DEVELOPMENT / TRAINING</strong></td>
<td></td>
</tr>
<tr>
<td>Professional development training for teachers by librarians</td>
<td>AK, CA1, CA2, CO2, DE, IA, ID, IN, NJ, NM, OH, OR, PA, TX, I</td>
</tr>
<tr>
<td>Other: Provide teachers with technology support</td>
<td>CA2, DE, ID, NJ</td>
</tr>
<tr>
<td><strong>COLLABORATION / COOPERATION</strong></td>
<td></td>
</tr>
<tr>
<td>Collaboration between librarians and teachers</td>
<td>AK, CA1, CA2, CO2, DE, IA, IL, IN, MI, NJ, NM, OH, ON2, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Meet regularly with the principal</td>
<td>CA, CO2, DE, IA, ID, IN, NJ, NM, ON2, OR, TX, WI</td>
</tr>
<tr>
<td>Other: Serve on key committees (standards, curriculum, etc.)</td>
<td>CA, CO2, IA, ID, IN, ON, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Other: Cooperative relationships with public libraries</td>
<td>AK</td>
</tr>
<tr>
<td><strong>ELECTRONIC NETWORKING AND TECHNOLOGY</strong></td>
<td></td>
</tr>
<tr>
<td>Networked computers in the library for student use</td>
<td>AK, CA1, CA2, CO2, DE, IA, IL, IN, MI, MO, NJ, NM, OH, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Libraries that network electronic resources to classrooms</td>
<td>CA2, IA, IL, IN, MI, OH, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Automated collections /online catalog</td>
<td>CA2, IA, IN, MA, MI, MO, NJ, OR, WI</td>
</tr>
<tr>
<td>Other: Librarians facilitate use of technology to students and teachers</td>
<td>NY, OH, ON2</td>
</tr>
<tr>
<td><strong>COLLECTIONS AND RESOURCES</strong></td>
<td></td>
</tr>
<tr>
<td>Print volumes held or per student</td>
<td>CA2, CO1, CO2, DE, IA, IL, IN, MA, MI, NJ, NM, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Recency/currency of copyright dates</td>
<td>DE, IA, IL, NC, NJ, TX, WI</td>
</tr>
<tr>
<td>Periodical subscriptions per 100 students</td>
<td>CO2, CO3, DE, IA, IL, MA, NJ, NM, OR, PA, TX, WI</td>
</tr>
<tr>
<td>Video collections per 100 students</td>
<td>CO3, IA, MA, MI, NJ, NM, TX, WI</td>
</tr>
<tr>
<td>Audio materials</td>
<td>IA, MA, MI, NJ, NM, TX, WI</td>
</tr>
<tr>
<td><strong>Electronic reference titles per 100 students</strong></td>
<td>CO2, NJ, NM, WI</td>
</tr>
<tr>
<td><strong>Access to licensed databases</strong></td>
<td>CO2, IA, IN, MI, NC, NJ, NM, OR, PA, WI</td>
</tr>
<tr>
<td><strong>Other: statewide electronic catalog</strong></td>
<td>IA, MI, NJ, PA, WI</td>
</tr>
<tr>
<td><strong>Other: Collection development policy that addresses reconsideration procedures</strong></td>
<td>AK, TX</td>
</tr>
</tbody>
</table>

## USAGE

| Usage of library (as measured by the number of visits to the library individually or in groups) | CO3, IA, IL, IN, MA, MI, MO, NM, ON1, OR, TX, WI |
| Usage of library (as measured by the number of books & materials checked out) | IA, IL, MI, MO, WI |

## FUNDING / BUDGET

| Library expenditures per student/total budget | CA1, CA2, CO1, CO2, CO3, DE, IA, IL, IN, MA, MI, MN, NC, NJ, NM, ON2, OR, PA, TX, WI |

**NOTE:** At time of publication, the 2003 Florida study was unavailable and not reflected in this chart.

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**BIBLIOGRAPHY**

State Abbreviations Used in Chart above, the Citation and Link

**AK**  

**CA1**  

**CA2**  
[http://digital.library.unt.edu/ark:/67531/metadc9800/](http://digital.library.unt.edu/ark:/67531/metadc9800/)

**CO1**  

**CO2**  

**CO3**  

**DE**  
[http://www2.lib.udel.edu/taskforce/study.html](http://www2.lib.udel.edu/taskforce/study.html)
**STAFFING**

The relationship between the presence of a full-time, certified librarian and student achievement on PSSA reading scores is significant at all three grade levels. *(Pennsylvania 2000)*

Elementary students in schools with certified SLMSs are more likely to have higher ELA achievement scores than those in schools with noncertified SLMSs. *(New York 2010)*

The presence of a school librarian was the single strongest predictor of reading enjoyment for both grades 3 and 6 students. *(Ontario 2006)*

Higher library staffing levels are linked to higher reading performance for elementary, middle, and high schools (increases of almost 13 percent, over eight percent, and more than seven percent, respectively). At elementary and middle school levels, the positive relationship between better-staffed libraries and writing performance is even stronger (increases of more than 17 and 18 percent, respectively.) *(Illinois 2005)*
Proportional differences in the impact of school librarians on the lowest achievers indicates that school librarians at the elementary school level can play an important part in closing the achievement gap. (Colorado 2010)

When comparing school with and without librarians, the study indicates that the presence of a qualified school librarian can make a tremendous difference in reading achievement. This difference ranges from eight percent for high schools to 35 percent for elementary schools. For instance, schools with librarians have 35 percent more fourth graders who score proficient or above than schools without librarians. (Michigan 2003)

Schools without trained library staff tend to have lower achievement on the grades 3 and 6 reading tests (both in terms of average achievement and attaining level 3 or higher.) (Ontario 2006)

Library staffing levels of both professionals and paraprofessionals are significantly related to increases in the library services provided and increases in those services correlate with higher STAR test scores. The strength of the relationship between library services and test scores increased with grade level. These results remained significant when accounting for all other school and community variables, including average parent education level, poverty level, ethnicity, percentage of English language learners, percentage of teachers who are highly qualified, and average teacher salary. (California 2008)

Libraries with aides provide more hours of operation and allows for certified librarians to instruct and supervise activities, instead of performing basic library duties. (Wisconsin 2006)

Having adequate library staff (librarians and aides) impacts most strongly library use, as reflected by:

- Visits to the library by individual students
- Information skills instruction contacts
- Books and materials checked out
- Administration of electronic reading programs. (Texas 2001)

In all three grade levels surveyed, the students’ score will tend to rise with the increase in staffing per student and the library traffic increases. (Iowa 2002)

Key to an exemplary library program is the school librarian’s ability to be an effective teacher who maximizes teaching time, providing educational support and leadership through partnering and collaboration, while finding opportunities for integration and cross-curricular connections. (Ontario 2009)

COLLABORATION

With the augmentation of a certified library staff (which includes a certified librarian and clerical support) test scores show marked improvement due to the fact that the librarian is focused on collaboration with teachers and staff to improve scores rather than on the day-to-day operations of the library. (California 2006)
Teachers were three times more likely to rate their literacy teaching as excellent when they collaborated with librarians. *(Idaho 2009)*

Fourth Graders tend to score higher on reading tests when their schools have well developed library media center programs, particularly when librarians collaborate with classroom teachers. *(Iowa 2002)*

Student test scores were higher the more time librarians worked cooperatively with classroom teachers, the more they taught information literacy independently, and the more they provided in-service training to teachers. *(Pennsylvania 2000)*

**INSTRUCTION**

Where principals and other administrators rated the teaching of Information and Communication Technologies (ICT) standards as excellent, students at all three grade levels—elementary, middle and high school—were consistently more likely to earn advanced scores on the ISAT reading and language arts tests. *(Idaho 2009)*

At the elementary level, students score higher on the MCAS tests when the library is aligned with the state curriculum frameworks. This fact is especially true in schools that have a high percentage of free school lunches—the socioeconomic factor. *(Massachusetts 2000)*

School librarians help students acquire unique skills not taught in the classroom and information and technology skills essential for students in the 21st century. *(Wisconsin 2006)*

Schools where the librarian spends more time on instructionally-related student and teacher activities have higher WKCE scores. *(Wisconsin 2006)*

New Jersey’s school librarians contribute to student learning outcomes through an instructional program that includes the mastery of content and curriculum standards. They also address outcomes related to the development of reading through school library services that increase interest in reading, increase participation in reading, expand reading interests, and help students to become more discriminating readers. *(New Jersey 2010)*

Students see that they get good grades, particularly on research projects and assignments, when there is a highly qualified school librarian to instruct and help them. *(Ohio 2003)*

**SCHEDULING**

Elementary schools with more flexibly scheduled libraries performed 10 percent better in reading and 11 percent better in writing on the ISAT tests of fifth-graders than schools with less flexibly scheduled libraries. *(Illinois 2005)*

The flexibility of an open timetable allowed for collaborative teaching with depth. This was attributed to the principal’s support in scheduling and through the extra funding for a full-time librarian position. *(Ontario 2009)*
Flexible scheduling and program planning stood out as the most important variables in predicting reading scores. (California 2006)

ACCESS

Students who have access to the library either during school hours or have electronic access outside the library show a significant success rate. (Missouri 2003)

The California study indicates that student access to the school library—measured by the number of hours the library is open—is significantly related to test scores at all three levels. (California 2008)

In terms of student usage, the more time students spend receiving instruction in the area of library/information literacy in which the library media staff are involved, the higher their test scores. (Alaska 2000)

Students with school libraries that have after school hours at all levels have shown higher achievement levels on the MCAS tests. (Massachusetts 2000)

SUMMER READING PROGRAMS

Participation in a Summer Reading Program has a significant correlation with student achievement measured using the WAMI. (Missouri 2003)

TECHNOLOGY

Schools that have more computers networked throughout the building—at both the elementary and high school levels—were higher achieving schools. (Pennsylvania 2000)

It is very clear that the library’s provision of a technological infrastructure, instruction in its use, and the provision of information technology tools are highly valued. Over 88 percent of faculty confirmed that the school library helped students to use the Internet better and over 80% of students stated that computers have helped them find information inside and outside of the school library. (Ohio 2003)

Elementary schools with more computers and technology equipment made up the top 25 schools for highest WCKE scores in reading and language arts. (Wisconsin 2006)

Elementary students are likely to be disadvantaged if they do not have the access to develop a range of technology competencies that can be facilitated by school librarians. (Delaware 2005)

COLLECTIONS

Schools with newer collections in their libraries had higher test scores. (Illinois 2005)

The libraries in schools with the highest TAAS performance have more resources than the libraries in the low performing schools and their librarians spend more time on collaborative instruction that integrates curriculum. (Texas 2001)
At the fourth and eighth grade levels, increased hours open as well as an abundance of total technology and collection size provided a significant impact on the English Language Arts and U.S. History CST scores. *(California 2008)*

One third of the variance in the size of a collection of a school library was explained by the school's socioeconomic status. Libraries in mid-low socioeconomic groups purchased significantly fewer books. In other words, the lower the SES, the fewer books in the collection. *(New Jersey 2010)*

Student achievement is higher in schools that house larger collections of traditional print resources as well as online resources such as Access PA and other databases. *(Pennsylvania 2000)*

As the staffing, collections and funding of school library programs grow, incrementally reading scores also rise. *(Iowa 2002)*

**BUDGET**

Schools that spent more money—twice as much or more—on their school library programs were associated with higher student achievement on reading scores. *(Pennsylvania 2000)*

Elementary schools that spend more on their libraries average almost 10 percent higher writing performance, and middle schools that invest more in their libraries average almost 13 percent higher writing levels. *(Illinois 2005)*

A strong positive relationship between budget and test scores was found at the high school level in relation to Language Arts and History scores. *(California 2008)*

There is a statistically significant relationship between higher reading scores and larger school library budgets for books and electronic resources at the elementary level. *(Minnesota 2004)*

**PROFESSIONAL DEVELOPMENT**

Across all grade levels, better-performing schools tended to be those whose principals placed a higher value on librarians providing in-service opportunities to classroom teachers. *(Indiana 2007)*

School administrators should foster the creation of schedules, facilities, and relationships that enable librarians to be “resident” providers of in-service professional development to teachers. *(Idaho 2009)*

**ACHIEVEMENT GAP**

In a declining economy, the number of hours a school library remains open can be critical, especially for students without access to books or technology at home.
The California study draws attention to the importance of access to the school library and its resources in addressing educational equity. (California 2008)

The study demonstrated that libraries can play a very special role in providing enrichment to those students who come from economically disadvantaged backgrounds and who need additional help to develop the skills they will need to succeed. (Texas 2001)

NOTES: Citations and links for the studies referred to in the parentheses can be found in the “School Library Impact Studies Chart” beginning on page 6. At time of publication, the 2003 Florida study was unavailable and not reflected in this information.
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