

*NYLA/SSL Spring Conference May 2, 2015*

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**New Findings!**  
**School Librarians & Student  
Academic Achievement**

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# Theoretical Background

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- ❖ Research confirms that student achievement, especially in the areas of English and math, is impacted by clusters of variables including those related to:
  - ❖ the classroom
  - ❖ capacities of the school and
  - ❖ socio-developmental factors
- ❖ Recent teacher evaluation systems have used value-added models try to identify the specific teacher / classroom contributing effects on students during a school year (Konstantopoulos, 2014).

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# Theoretical Background

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- ❖ The debate continues over the extent to which student achievement is explained by student background and socio-demographic factors.
- ❖ Studies of school financing and school quality show school-related factors do impact student outcomes (Gottfried, 2012).
- ❖ This study examines the impact of the school librarian (SL)-- on student English Language Arts (ELA) and math achievement levels in a school, while taking account of prior achievement, a wide range of student socio-demographic variables, and building level characteristics and history.
- ❖ Underlying this analysis is the key assumption that what teachers and school librarians and other educational staff do actually impact students and their academic performance.

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# The Researchers

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- ❖ **Michael S. Radlick, PhD**  
Institute for Research on Learning Technology Visions
  
- ❖ **Joette Stefl-Mabry, PhD**  
University at Albany, State University of New York  
Primary Investigator (PI)

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# Back-Story

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- ❖ Radlick and Stefl-Mabry attend AASL national research summit in April 2014, as two of 50 leading school library and educational researchers to investigate causal phenomena in school library instruction, resources and services.
- ❖ *Finally—Convincing Evidence for the Impact of School Librarians?* presented at the American Educational Research Conference (AERA) on April 18, 2015.
- ❖ Awarded **Institute of Museums and Library Services** grant March 31, 2015 for: *The School Librarian Effect on Student Academic Achievement in New York State Research Project* 2015-2018.

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# The Research Question

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- ❖ This specific study focused on answering the initial overarching question—*is there evidence that a full-time (or more) public school librarian (SL) has a positive impact on student achievement in that school?*
- ❖ This is the first part of a larger, on-going research initiative exploring the **causal effects** of school librarians and school library resources on student achievement in the public schools of New York State.

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# Design of the Study

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- ❖ All public school buildings in New York State outside of New York City with grades 3-8 (N=2,245).
- ❖ Framed within the context of a strong statistical analysis techniques called structural equation modeling (SEM).
- ❖ Controlled for a number of other variables including prior year student achievement, student demographic variables and building characteristics.
- ❖ Data for the study came from a variety of New York State Education Department (NYSED) sources including the annual Basic Educational Data System (BEDS) survey of schools.

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# Design 'cont.

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- ❖ Longitudinal, between-schools design, studied all New York State's 2,245 public schools (which excluded schools in New York City) that had students in grades 3 thru 8.
- ❖ Of those 2,245 schools, there were 1,511 (67.3%) that had a full time or more school librarian, while there were 743 schools (32.7%) that did not have a least a full time school librarian.

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# Design 'cont.

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- ❖ The student achievement outcome measures were the New York State Education Department's annual state assessments transformed into the Department's school performance index measure for ELA or Math.
- ❖ SEM path model were used to examine the New York State ELA and math Common Core Performance Index for 2012-13 (and also the change in ELA and Math Performance Index in the school from 2011-12 to 2012-13) while controlling for a wide range of demographic and school characteristics.

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# Initial Analysis

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- ❖ The initial analysis of this study (independent t-tests) found statistically significant higher mean academic performance in both ELA and math for students in schools with school library media specialists. For example, the effect size for ELA was .50.
- ❖ However, differences in academic performance between schools with and without school librarians could be attributed to many other factors in addition to school librarians.

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# Causal Modeling Approach

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Given the shortcomings of prior approaches to answering this question about school librarian effect and the desire to examine causal models that could better identify and support this school library effect (Cook, 2014), we chose a causal modeling approach using structural equation modeling (SEM) to account for as many of the covariates influencing student achievement as possible within the school, and to get a more realistic estimate of whether school librarians did impact student achievement even after taking account of the many other influencing factors.

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# Results from Structural Equation Models

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- ❖ Based on results from the SEMs, which controlled for many other variables, school librarians are shown to have a statistically significant impact on student achievement in English Language Arts (both the 2012-13 ELA Performance Index and the Change in ELA Performance Index from 2011-12 to 2012-13), but not on math.
- ❖ Impact was significant, even after controlling for student demographic factors (gender, disability status, limited English status, minority status, and poverty), school factors (NCLB status, size of school, high resource-need status, and numbers of disciplinary incidents reflective of school climate), and prior academic performance in the building in both ELA and math.

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# Impact of School Librarians

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- ❖ We had hypothesized that the impact of school librarians would be on English Language Arts (ELA), but not math achievement, and the SEM results confirm this impact both for the 2012-13 ELA Performance Index and the Change in ELA Performance Index from 2011-12 to 2012-13.
- ❖ School librarians have a greater impact on literacy related achievement than mathematics because of their training and focus on information and digital literacy

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# Role of School Librarians and Common Core State Standards

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- ❖ We hypothesized that the role of the school librarian has taken on even greater importance as a result of the Common Core State Standards (CCSS) (especially the CCSS for English Language Arts) and the teacher evaluation process in NYS under the Annual Professional Performance Review (APPR) process.
- ❖ The CCSS demands specific pedagogical shifts in ELA that include: more informational text, engaging rigorous evidence-based focus on text, writing using evidence from sources, and building academic vocabulary.
- ❖ School librarians, as a result of their professional training and their centrality in a school, are poised to support teachers and students with ELA shifts, and in fact in most cases, have been doing so for years based on the research.

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# School Librarians and Student Achievement

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- ❖ The school librarian effect on school ELA academic performance **is statistically significant.**
- ❖ The effect size is relatively small and, not unexpectedly explained a relatively small part of the variance in total academic achievement as compared with other variables in the models.
- ❖ The path coefficients from the SEM models show there are other factors that have a much greater impact on the outcome measures in both ELA and math, such as prior academic performance and poverty—which had the highest effects in the model.

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# Size is Relative

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- ❖ The relative size of the *School Librarian Effect* is not surprising, given that the school librarian is a school-level resource in effect spread across the entire school building, and given that it is a school-level outcome measure we are using.
- ❖ In contrast, a regular classroom teacher's effect is estimated by other researchers to account for 7% to 21% of the variance in student achievement.
- ❖ However, each individual teacher is only impacting a small group of students in the school (i.e. a single classroom of students).

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# Significance of Study

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- ❖ School library research arena is filled with over 20 statewide studies.
- ❖ Many used only perceptual data as student achievement measures (Shannon, 2012; Small & Snyder, 2009; Todd, 2004).
- ❖ Some use more quantitative achievement results, but did not take account of other student or school-related covariates (Lance, 2005; Lance & Hofschire, 2012).
- ❖ Others had small sample sizes or samples that were not fully representative of their entire state population or used weak designs.
- ❖ Some of the studies use simple correlational methods or at best partial correlations to try to control for a few variables.

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# Methodological Challenges

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- ❖ The New York State Education Department (NYSED) provides a tremendous range of data about New York State students, schools and districts. However, the data are complex and multifaceted. There is tremendous variability across the 700 districts in terms of size and student demographics.
- ❖ Across the thousands of public, private, and charter school buildings there is a multitude of grade ranges, and when taking account of school consolidations and shifts within schools, the end result is that both the number of schools and data about schools can shift year-to-year.
- ❖ Because of this variability, calculations, especially longitudinal calculations, can be complicated, and can result in data that becomes missing for a particular year due to changes in a school building.

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# Complexities of Data Reporting

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- ❖ Because of the complexities of the data reporting, it generally takes NYSED at least a full year for a school year's data to be released. The data about school librarians comes from the extensive annual State Education Department Basic Educational Data System (BEDS) survey. It is comprehensive, typically reflecting 100% of the public school districts and buildings in New York.
- ❖ During the 2012-13 year, the entire survey was not completed for the public schools in New York City.
- ❖ In addition, private schools and public charter schools do not have to complete the library survey.

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# Challenges re: BEDS

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- ❖ Data on the BEDS library survey reflect school answers to a self-reported survey of all school buildings, and there is no absolute assurance that the person actually completing the library section of the survey is the most knowledgeable and involved person in the district with respect to library staffing, library organization, or library functions.
- ❖ BEDS “Day” is typically in October and all public schools in NYS are mandated to complete the BEDS form.
- ❖ We will be seeking input from school librarians and school library systems directors for advice re: how to improve BEDS “Question 21”.

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# BEDS Survey

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**BASIC EDUCATIONAL DATA SYSTEM  
PUBLIC SCHOOL DATA FORM  
FALL 2014**

**SCHOOL NAME AND CODE**

***This paper form should not be returned to SED.***

This paper form must only be used for the local gathering of data. Data represented in this form are required to be submitted to SED via the BEDS On-line IMF Application. Your district's BEDS Coordinator or Superintendent will have details for entering data into the BEDS On-line IMF Application and your district's protocol for doing so.

**PERSON COMPLETING THIS FORM**

# BEDS Question 21 (Q21)

## 21. LIBRARY/LIBRARY MEDIA CENTER (LMC)

### A. Facility

1. Does this school have a school library/LMC or access to a shared school library/LMC in this building? ..... Yes  No

If NO, skip to Item 22 on the next page.

2. Does another school in this building share this school library? ..... Yes  No

### B. Resources as of October 1, 2014

1. Total number of **books** in this school library/LMC (traditional paper copy).....

2. Total number of **electronic books** that are cataloged and available in this school library/LMC .....

3. Total number of **non-book materials** that are cataloged and processed in this school library/LMC.....

4. Total number of **database subscriptions**, including those provided by NOVEL (statewide) regional library council, School Library System, or other library consortia .....

5. Total **number** of computers with **Internet access** in this school library/LMC .....

6. a. Does the library have an **automated system** to access library resources? ..... Yes  No

- b. If yes, is this school's library catalog available on the Internet? ..... Yes  No

7. Is this school a participant in a School Library System (SLS)? ..... Yes  No

8. Does the library have a Web presence in the form of a Web page or Web Portal?..... Yes  No

9. Is this library equipped with an LCD projector?..... Yes  No

10. Is this library equipped with an **interactive white board**?..... Yes  No

# BEDS Q21 'cont.

## C. Staffing

1. Does this school have one or more **certified Library Media Specialists (LMS)**? ..... Yes  No

If **Yes**, which most closely approximates the portion of a full-time position devoted to library functions? (Check one)

a. 1/2 time or less  LMS      b. full-time  LMS      c. full-time plus  1/2 time LMS      d. 2 full-time  LMS      e. More than 2  full-time LMS

2. How many professional staff **other than a certified LMS** are assigned to the library? (Enter 0 if none)

3. How many paid **Support Staff** are assigned to the library? (Enter 0 if none) .....

## D. Program

1. How many hours is the library media center **staffed and open for student use**? (Check one)

a. fewer than 10..... hours a week      b. 10-20 hours a..... week      c. open during all..... school hours      d. open during all school..... hours and before and/or after school

# BEDS Q21 'cont.

2. Which of the following terms BEST describes the method used to schedule school library classes? (Select one.)

- a. Fixed/Block: classes scheduled at regularly specified times
- b. Flexible: open schedule, i.e., scheduled at varying times according to need
- c. Mixed: some classes block scheduled; some classes flexibly scheduled
- d. No classes are scheduled

3. Collaboration and integration

a. Does the LMS **collaborate and plan** with classroom teachers for instruction? Yes  No

b. Do classroom teachers accompany students to the library for whole-class instruction? Yes  No

c. Are **library and information literacy skills** taught and **integrated** into core academic areas to meet the NYS Learning Standards? (Check all that apply)

- |                                     |                          |   |                          |
|-------------------------------------|--------------------------|---|--------------------------|
| English Language Arts               | <input type="checkbox"/> | Career Dev & Occupational Studies (CDOS)      | <input type="checkbox"/> |
| Math, Science & Technology (MST)    | <input type="checkbox"/> | The Arts (Dance, Music, Theatre, Visual Arts) | <input type="checkbox"/> |
| Social Studies                      | <input type="checkbox"/> | Health, Phys Ed, Family & Consumer Science    | <input type="checkbox"/> |
| Languages Other than English (LOTE) | <input type="checkbox"/> | Other   | <input type="checkbox"/> |

d. Is the school librarian part of the school curriculum committee?.....Yes  No

e. Is the school librarian part of the school improvement team?.....Yes  No

f. Does the school librarian have access to student assessment data?.....Yes  No

4. Does the library promote **Inquiry- or Problem-based learning activities**?.....Yes  No

5. Which of the following does your school library program use? (Check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> a. Information Literacy curriculum | <input type="checkbox"/> d. Challenged Materials policy                                  |
| <input type="checkbox"/> b. Collection Development policy   | <input type="checkbox"/> e. NYSED School Library Media Program Evaluation (SLMPE) rubric |
| <input type="checkbox"/> c. Intellectual Freedom policy     |  |

6. Is student Information Literacy assessment part of the school library program? .....Yes  No

## E. Professional Development

Which of the following professional development opportunities related specifically to school librarians were available to school librarians serving in this school during the 2013-14 school year? (Check all that apply.)

- |  |   |
|--|---|
| <input type="checkbox"/> 1. In-district In-service Programs                | <input type="checkbox"/> 5. Programs offered by the School Library System |
| <input type="checkbox"/> 2. Multi-district In-service Programs             | <input type="checkbox"/> 6. Other Programs                                |
| <input type="checkbox"/> 3. Out-of-district Programs                       | <input type="checkbox"/> 7. None  |
| <input type="checkbox"/> 4. Programs Offered by Professional Organizations |   |

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# Strengths of Study

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- ❖ Focused on Common Core for the first time using the NYS CC assessments first administered statewide in May of 2013.
- ❖ Focused on the all public school buildings in NY with grades 3 thru 8 (excluding NYC).
- ❖ Also examined longitudinal growth by school, using 2012-13 and 2011-12 building ELA and math status measures.
- ❖ The study calculated a building change or growth measure from year-to-year. (Note that the 2011-12 scale score is not based on the CC assessment.) by school used both the end of year 2012-13 and 2011-12 building ELA and math status measures.
- ❖ The study calculated a building change or growth measure from year-to-year. (Note that the 2011- 12 scale score is not based on the CC assessment.)

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# Strengths 'cont.

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- ❖ Used the New York State building level measure (ELA Performance Index) that allows any and all grade levels in a building from Grade 3 to Grade 8 to be analyzed together.
- ❖ Controlled for a wide range of other variables (socio-demographic factors, student poverty, school resources and funding, school climate and prior year academic performance) to identify school librarian impact.
- ❖ Used causal modeling via structural equation modeling (SEM).



# Next Steps

- ❖ Based on the pilot study results, the authors were just awarded a three year Institute of Museum and Library Services (IMLS) research grant to expand their research to model New York City, as well as across other school years, and other school levels.
- ❖ The IMLS research grant will also allow investigation of other school library factors and resources that may impact student achievement.
- ❖ To accomplish this we need your help, we will be reaching out to the various stakeholders in the school library community in the near future.

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# Contact Information

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- ❖ If you have questions about the project please feel free to contact Joette Stefl-Mabry, PhD: [jstefl@albany.edu](mailto:jstefl@albany.edu)

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