SCHOOL LIBRARY RESEARCH
Research Journal of the American Association of School Librarians

Volume 20, 2017
ISSN: 2165-1019

Approved November 29, 2016
www.ala.org/aasl/slr

A Study of How We Study: Methodologies of School Library Research 2007 through July 2015

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Abstract

In this study we investigated the research designs employed to study the interdisciplinary profession of school librarianship during a time period of notable changes across both the Pre-K–12 and school library domains. To conduct this work, we analyzed all 217 articles published in School Library Research (SLR) and School Libraries Worldwide (SLW) *from 2007 through July 2015. Results point to the high variability in research designs employed and limited inclusion of Pre-K–12 students as participants. The articles also exhibit high incidences of collaboration between scholars but limited involvement of practitioners as researchers. Findings are discussed in relation to research and practice.*

Introduction

School librarianship is a discipline with one foot planted in education and one in library science. As such, school librarianship shares the priorities and shifts in standards, technologies, and reform efforts with Pre-K–12 education, and also reflects the needs of a twenty-first century library space and program for students and the school community. The purpose of this content analysis was to explore how school library researchers conduct research as we attempted to understand how constraints observed by those in the field ultimately shape the studies that school library researchers publish. Examples of these constraints are cumbersome Institutional Review Board (IRB) processes, limitations of time devoted to research, demands and expectations within

higher education, and difficulties negotiating with schools and school districts to conduct research in Pre-K–12 settings.

In this study, we investigated the research designs employed to study the interdisciplinary profession of school librarianship during a time period of notable changes across both the Pre-K–12 and school library domains. To conduct this work, we analyzed the methods described in 217 research studies published in *School Libraries Worldwide* (*SLW*) and *School Library Research* (*SLR*) from 2007 through July 2015.

We selected the time period with two key events in mind. First, the 2007 publication of the American Association of School Librarians (AASL) *Standards for the 21st-Century Learner* introduced an updated set of learning standards for school library instruction. The previous standards were published in the 1998 *Information Power*: *Building Partnerships for Learning* (AASL and AECT 1998). Two additional key documents from AASL support the implementation of these new standards: *Empowering Learners: Guidelines for School Library Programs* (2009) and *Standards for the 21st-Century Learner in Action* (2009).

Another significant event in this time period was the introduction of the Common Core State Standards (CCSS) in 2010. A national set of standards with state-added content, curricula, and implementation processes, the CCSS introduced new rigor and content requirements for English Language Arts (grades K–5 and 6–12), English Language Arts in Science and Technical Subjects (grades 6–12); English Language Arts in History (grades 6–12); and Mathematics (K–8 and high school). The integration of research and media skills across the standards and the emphasis on college and career readiness were suggested as opportunities for school librarians to lead in implementing the CCSS in their schools (Loertscher and Lewis 2013).

Also of note during this timeframe was the economic recession of 2007–2009, which led to widespread reductions in state funding for K–12 schools (Leachman et al. 2016). In turn, school library programs in the U.S. experienced drastic cuts in funding and declines in school library staffing (Harvey 2011), leading AASL to release two toolkits to support school librarians' advocacy efforts (ALA 2008).

Research Questions

The overarching question this study sought to answer was: What are the research designs employed to study the interdisciplinary profession of school librarianship? Five sub-questions guided the collection and analysis of data:

A. What percentage of articles published in school library research journals qualify as original empirical research?

B. What are the research designs and data-collection methods employed in school library research?

C. Who are the research participants in school library research?

D. Who conducts school library research?

E. Do the participants of school library research vary depending on the researchers' levels of experience?

Rationale

The inspiration for this study came, in part, from dialog among the Educators of School Librarians Section (ESLS) at the 2015 ALA Midwinter Meeting. As part of ESLS's biannual content-focused discussion, the group examined the intersection of academic library and information science (LIS) environments and the Pre-K–12 settings where school librarian candidates intern and teach. Among the topics posed for discussion was a series of questions on research, including research methods successful in gaining access and cooperation from school environments; groups or topics of research interest that are problematic in terms of gaining permission to observe or study; and barriers, workarounds, and partnerships (ESLS 2015). Dialog within the group offered a range of experiences and perspectives, including hesitance or limitations in studying minors in the Pre-K–12 setting; variations in university IRB processes; success with individual partnerships with school librarians on small-scale or action research; and the need for junior faculty to build relationships with schools.

Building from our consideration of these issues, we sought in this study to investigate whether—or how—published school library research might reflect these concerns. We extrapolated from these topics additional questions of how tenure processes may affect research agendas of school library LIS faculty and who is conducting research (i.e., junior or senior faculty, and in what collaborative configurations, as applicable). Thus, we constructed our research questions pertaining to methods and participants (stemming from the concerns with obtaining permission to conduct research in schools) and who is conducting research (related to questions about tenure and approaches to research).

Other reasons for pursuing this work were to update and add to the existing body of research on school library research methods, particularly in the era since the 2007 publication of AASL's *Standards for the 21st-Century Learner* and the 2010 introduction of the Common Core State Standards.

Literature Review

Studies on Research Methods in LIS

Various dimensions of research methods and publications in the field of library and information science have been studied in the literature. The following are some studies most pertinent to the current work.

Kalervo Jarvelin and Pertti Vakkari examined methods used in publications of LIS research in the form of articles and papers (1990, 1993; in Clyde 2002). Mirna E. Turcios, Naresh Kumar Agarwal, and Linda Watkins conducted a content analysis of one year of LIS periodicals collected by the Simmons College Library, and, among other findings, determined that of the 1,880 articles analyzed in 105 titles, 16 percent of the content qualified as research. The most-common method of study was the survey; least utilized approaches were focus groups and usability (2014). Lili Luo and Margaret McKinney studied articles published by the *Journal of Academic Librarianship* from 2004 to 2013 and found that 64 percent of the articles were primary research, with descriptive articles and essays comprising the remaining content (2015).

Kelly Blessinger and Paul Hrycaj studied frequently cited LIS journal articles published during the time period 1994 to 2004; their analysis included characteristics of authorship. These researchers noted that 84 percent of articles in the journals were published by university faculty, reflecting a shift from more practitioner-published articles reported in previous studies (2010). Other studies of methods include Gooneshwaree Beesoon and Jennifer L. Branch-Mueller's work, in which they presented a comprehensive literature review of methodology studies in LIS and a suggested framework for LIS research classification, building on frameworks devised by previous researchers (2015).

Studies about Research in Other Education Disciplines

Just as scholars in librarianship have appraised the state of the discipline through examination of the methods employed in research, so, too, have those in various specialties of education. Christine Sleeter (2014) analyzed 196 articles published in teacher-education journals in 2012. While a number of methods were employed across the articles, more than one-third reported survey research, and less than 1 percent reported large-scale mixed-methods studies. Of greater concern was the fact that only 6 percent investigated the impact of teacher learning on student outcomes. Analysis of research published in prominent journals in special education found that descriptive studies accounted for the majority of research published and that research examining interventions with Pre-K–12 students comprised about 15 percent of the reported research (Mastropieri et al. 2009). Similarly, descriptive studies comprised the majority of the research reported in school psychology, but intervention studies accounted for less than 10 percent (Villarreal et al. 2013). In an analysis of science, technology, engineering, and math (STEM) education journals, Josh Brown (2012) found that the vast majority of studies using Pre-K–12 student participants were action research rather than traditional research studies, and the findings supported previous assessments that more-rigorous quantitative and qualitative studies are needed to better support the field. Analysis of three science-education journals points to the prevalence of learning context and teaching as themes of research in this field and the predominance of contributions from English-speaking researchers from the United States, United Kingdom, and Australia (Lin, Lin, and Tsai 2014).

Earlier Studies about School Library Research

This study of methods in school library research updates previous work about scholarship in school librarianship. Looking at the two decades of literature prior to our research, methods were examined as part of broader studies of the characteristics of school library research, research that also included analysis of topics, quantity of studies, grade levels, geographical regions of studies and authors, authorship (single versus multi-author papers and active researchers), and publications for research (Grover and Fowler 1993; Clyde 2001, 2002, 2004b; Clyde and Oberg 2004; Oberg 2006; Wirkus 2006; Asselin 2011). Beesoon and Branch-Mueller examined the period 2009–2013 in their study of school library scholarship; their study included research on amount of research, venue for publishing research, methods of data gathering, geographic regions studied, authorship (single versus multi-author papers and active researchers), and topics (2015).

Writing in 1993, Robert Grover and Susan Fowler suggested that the use of multiple methods in data gathering may have indicated a shift toward qualitative methods. In the period following

their work, the use of multiple research methods was a finding of numerous studies (Clyde 2002; Oberg 2006; Wirkus 2006; Asselin 2011). Several studies identified an emphasis on qualitative methods in school library research (Oberg 2006; Wirkus 2006; Asselin 2011). Clyde affirmed a shift in qualitative methods in the early 1990s (2004b).

The predominant method of data collection (possibly in combination with other methods) was the survey or questionnaire (Grover and Fowler 1993; Clyde 2002, 2004b; Wirkus 2006; Oberg 2006; Beesoon and Branch-Mueller 2015). Experimental studies were reported as rare or among the least-used methods across the 1990s (Grover and Fowler 1993; Clyde 2002, 2004b) and early 2000s (Wirkus 2006). Studies that did not gather original data included content analysis of literature or documents, discussion of children's or young adult library literature or collections, assessment of information resources, and online course data (Grover and Fowler 1993; Asselin 2011).

As described below, the current study follows methods of studying published research employed by Ryan S. Wells et al. (2015) in their study of research methods in higher education journals. Though taken from another discipline, the coding scheme and analysis method were an appropriate fit for our research questions focused on school librarianship and our rationale.

Methods

Data Sources

For this study we analyzed all 217 articles published in *School Library Research* (*SLR*) and *School Libraries Worldwide* (*SLW*) from 2007 through July 2015. Although five-year or ten-year spans are fairly standard for analyzing methodological trends of specific domains within education and librarianship (e.g., Goodwin and Goodwin 1985; Luo and McKinney 2015; Schram 2014; Wells et al. 2015), this analysis was designed to capture methodological changes since the adoption of new standards by AASL. Therefore, this analysis spans the year of the standards' adoption through the commencement of this study.

We selected *SLR* and *SLW* because they are the academic journals associated with the two major associations for school librarians: American Association of School Librarians and International Association of School Librarians (IASL), and the only two research journals that focus exclusively on school librarianship. Further, these two journals account for a significant proportion of all published research related to school librarianship (Beesoon and Branch-Mueller 2015; Clyde 2004b).

Data Collection and Analysis

As the basis of our analysis, we adapted forms and procedures used by Wells and colleagues (2015) to study research methods in higher education. Specifically, based on preliminary coding of the data, we modified the coding form of Wells et al. to include additional qualitative research design categories, as well as information about participants, sample sizes, educational standards, and researchers. The final coding scheme used for data collection is in Appendix A.

Using the associations' websites, we identified all articles published in the two journals, and randomly divided publication volumes between the two researchers so that coding was close to evenly divided, with both researchers coding articles from both publications. All coding was

based on information obtained from the article itself with the exception of information about who conducts school library research, which was taken from the biographical statements about the authors. Additionally, for country in which the research took place, if the information was not included in the article, we coded it based on the country of the first author.

After initially coding twenty-five articles each, we randomly selected a total of ten articles (five articles coded by each researcher), and both researchers coded these again to ensure both reliability between coders and within a coder's own work (inter-coder and intra-coder reliability). We discussed discrepancies in the coding and devised strategies to ensure consistent coding across the dataset.

Limitations

There are a few limitations and concerns to note regarding the data collection. First, because this analysis was limited to one U.S. journal and one international journal, generalization to the entire school library research field cannot be made. Additionally, author affiliations and roles/ranks were not consistently provided in the articles studied. As with any study of published works over time, affiliations are typically listed as of the date of publication, so any search efforts to clarify roles or affiliations had limited usefulness.

Some terminology used to describe university faculty roles carried different meanings in different countries. For example, in U.S. colleges and universities, "lecturer" implies primarily a teaching position outside the faculty tenure track. In some countries outside the U.S., the lecturer role may represent a tenure-track professor role.

Research methods were not always stated outright in the studies examined, one aspect of a broader observation about the wide variety of formats used to report research. Methods of statistical analyses were sometimes specified and sometimes described only generally. An area that was noted by the authors as a strength of some papers was a specific designation of intended audience, particularly in light of advocacy efforts in the school library field. Target audiences for the work were not noted in all papers.

In applying this data and interpreting its significance to the school library research sphere, it may be considered a limitation that the school library profession in the U.S. does not have an established, published national research agenda. AASL's CLASS Research Forum whitepaper may fulfill this need to some extent, albeit only in one area of research focus: impact. In contrast, YALSA (Young Adult Library Services Association, a division of the American Library Association) has an explicit well-developed National Research Agenda that identifies four priority areas for research on young adults and libraries that are aligned with the organization's mission and based upon survey results suggesting gaps in existing research and questions aimed at filling the gaps (YALSA 2011).

Results

What Percentage of Articles Published in School Library Research Journals Qualify as Original Empirical Research?

As displayed in table 1, *SLW* and *SLR* publish equivalent numbers of empirical research articles, but there is significant disparity across the two journals in the percentages of published materials that qualify as empirical research, research that "is based on observed and measured phenomena and derives knowledge from actual experience rather than from theory or belief" and may be recreated and tested (Penn State Universities Libraries 2016; Fischer 2011). Other categories of articles published include editorial or introduction, expository supported by data, historical review, literature review, opinion/position paper, and theoretical examination. Nearly all papers published in *SLR* during the nine-year period studied were research articles, compared with slightly less than 60 percent of material published in *SLW*. In the presentation of results that follows here, "research" refers to original empirical research. Further analysis of the other categories (editorial, expository, etc.) was not part of this investigation.

Table 1. Types of articles published during period studied: 2007 through July 2015.

	School Libraries Worldwide **(n = 134)**	***School Library Research*** **(n = 83)**	**Total (n = 217)**
Editorial/introduction	18 (13.43%)	0 (0%)	18 (8.3%)
Expository supported by data	10 (7.46%)	1 (1.20%)	11 (5.07%)
Historical review	3 (2.24%)	0 (0%)	3 (1.38%)
Literature review	8 (5.97%)	0 (0%)	8 (3.69%)
Opinion/position paper	16 (11.94%)	1 (1.2%)	17 (7.83%)
Theoretical examination	0 (0%)	1 (1.2%)	1 (0.46%)
Original research	79 (58.96%)	80 (96.39%)	159 (73.27%)

What Are the Research Designs and Data-Collection Methods Employed in School Library Research?

Table 2 illustrates the broad research designs used in the 159 research articles published in the two journals. Across the two publications, nearly half of the studies were fully qualitative; about one third were mixed methods; and less than a fifth were exclusively quantitative in design.

Table 2. Broad research design of studies examined.

	School Libraries Worldwide **(n = 79)**	***School Library Research*** **(n = 80)**	**Total (n = 159)**
Qualitative research study	40 (50.63%)	35 (43.75%)	75 (47.17%)
Mixed-methods research study	24 (30.38%)	29 (36.25%)	53 (33.33%)
Quantitative research study	15 (18.99%)	16 (20%)	31 (19.50%)

Many of the studies published in the two journals employed multiple methods to answer research questions; thus, total numbers of methods used exceed the number of articles published. For example, in Samuel K. W. Chu, Maggie Y. K. Mak, and Ka-yee Tsang's (2010) investigation of the use and efficacy of a news database by upper-primary school students and teachers, these researchers recorded the users' online activities in a database, used a Likert scale to survey participants, conducted semi-structured interviews, and assessed students' learning approaches using a standardized instrument. The results reported quantitatively described how participants use the database, qualitatively described participants' perceptions of the database, and used the findings from ANOVAs (analyses of variance) to explain differences in students' learning approaches based on frequency of use of the database. Therefore, during coding the study was categorized as Descriptive (quantitative), Descriptive (qualitative), and Ex post facto/causal comparative.

As illustrated in table 3, descriptive methods were used in more than half of all studies published across the two journals, with slightly more qualitative descriptions than quantitative. Case studies accounted for approximately one-fifth of all of the research published. The only other method used in more than 10 percent of the studies was content analysis.

Table 3. Research methods of studies examined.

r	*School Libraries Worldwide* (n = 79)	*School Library Research* (n = 80)	Total (n = 159)
Correlational	5 (6.3%)	5 (6.3%)	10 (6.3%)
Ex post facto/causal comparative	3 (3.8%)	6 (7.5%)	9 (5.7%)
Descriptive (quantitative)	37 (46.8%)	42 (52.5%)	79 (49.7%)
Descriptive (qualitative)	43 (55.1%)	44 (55.7%)	87 (55.4%)
Ethnography/inst. ethno	5 (6.3%)	5 (6.3%)	10 (6.3%)
Case study	19 (24.1%)	12 (15%)	31 (19.5%)
Action research/participant AR	2 (2.5%)	1 (1.3%)	3 (1.9%)
Content analysis	10 (12.7%)	13 (16.3%)	23 (14.5%)
Test/scale validation	2 (2.5%)	1 (1.3%)	3 (1.9%)
Discourse analysis	3 (3.8%)	2 (2.5%)	5 (3.2%)
Narrative research	3 (3.8%)	0	3 (1.9%)
Delphi/consensus bldg.	0	4 (5.0%)	4 (2.5%)
Other	1 (1.3%)	4 (5.0%)	5 (3.1%)

The primary methods for collecting data by school library researchers, as displayed in table 4, were interviews and/or focus groups and surveys. Nearly half of the studies, 77 total, reported in the two journals used a survey as either the primary or secondary means of collecting data, and almost an equal number used interviews and/or focus groups. The third most popular method for collecting data was document/artifact analysis.

Table 4. Data collection method for studies examined.

	School Libraries Worldwide **(n = 79)**	***School Library Research*** **(n = 80)**	**Total (n = 159)**
Survey (primary)	31 (39.2%)	29 (36.3%)	60 (37.7%)
Survey (secondary)	8 (10.1%)	9 (11.3%)	17 (10.7%)
Observation	17 (21.5%)	10 (12.5%)	27 (17.0%)
Interview/focus group	40 (50.6%)	36 (45.0%)	76 (47.8%)
Document/artifact analysis	30 (38.0%)	25 (31.3%)	55 (34.6%)
Test/attitude outcome measure	5 (6.3%)	8 (10%)	13 (8.2%)
Other	5 (6.3%)	7 (8.8%)	12 (7.5%)

Who Are the Research Participants in School Library Research?

Figure 1 displays the participants of the school library research studies across the two publications. Nearly 90 percent of the published studies involved human participants; however, fewer than half involved Pre-K–12 students. The grade levels of the Pre-K–12 students who did participate in the studies are displayed in table 5. School librarians themselves were the most frequent participant group involved in the studies. As shown in table 6, school librarians were the sole participants in about one-fourth of the studies. School librarians participated along with other Pre-K–12 participant groups in approximately one-fifth of the studies. Non-Pre-K–12 participant groups varied but included pre-service school librarians, undergraduate college students, and LIS and other university faculty.

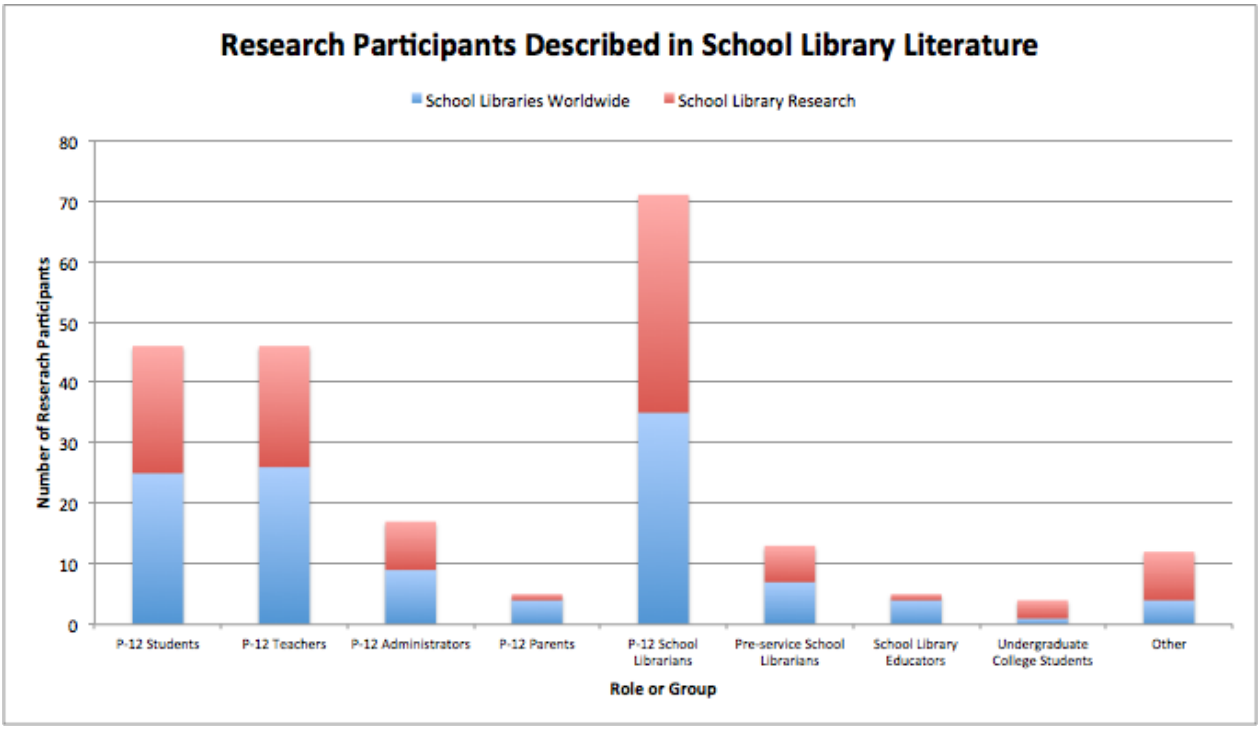

Figure 1. Research participants in studies examined.

Table 5. Pre-K–12 students as research participants in studies examined.

Student Level	*School Libraries Worldwide* (n = 79)	*School Library Research* (n = 80)	Total (n = 159)
Elementary	6 (7.6%)	6 (7.5%)	12 (7.5%)
Middle school	6 (7.6%)	4 (5.0%)	10 (6.3%)
High school	7 (8.9%)	6 (7.5%)	13 (8.2%)
Multiple levels	6 (7.6%)	5 (6.3%)	11 (6.9%)
No Pre-K–12 student participants	54 (68.4%)	59 (73.8%)	113 (71.1%)

Table 6. Pre-K–12 research participants in studies examined.

Pre-K–12 Participant Involvement	*School Libraries Worldwide* (n = 79)	*School Library Research* (n = 80)	Total (n = 159)
No human participant	9 (11.4%)	9 (11.3%)	18 (11.3%)
Non-Pre-K–12 participant	13 (16.5%)	11 (13.8%)	24 (15.1%)
Pre-K–12 librarian only	16 (20.3%)	23 (28.8%)	39 (24.5%)
Pre-K–12 librarian and other Pre-K–12 participant	18 (22.8%)	13 (16.3%)	31 (19.5%)
Pre-K–12 participant but NO Pre-K–12 librarian	23 (29.1%)	24 (30%)	47 (30.6%)

Who Conducts School Library Research?

As shown in table 7, the majority of studies were conducted in the United States; thus, it is likely—though not definitively proven—that the majority of studies were conducted by U.S. researchers or research teams. More than half of the studies published in both journals were collaboratively authored as displayed in figure 2. Collaboration based on academic rank of first author is displayed in table 8, and a chi-square test of independence points to an association between the level of collaboration and academic rank of the first author. Post-hoc examination of standardized residuals (Beasley and Schumacker 1995) supports the conclusion that associate or full professors serving as leading authors are more likely to engage in collaborative studies than expected.

Table 7. Country/region in which studies were conducted.

	School Libraries Worldwide (n = 79)	School Library Research (n = 80)	Total (n = 159)
United States	42 (53.2%)	71 (88.8%)	113 (71.1%)
Canada	7 (8.9%)	1 (1.3%)	8 (5.0%)
Australia/New Zealand	5 (6.3%)	3 (3.8%)	8 (5.0%)
Europe	7 (8.9%)	0	7 (4.4%)
East Asia	5 (6.3%)	2 (2.5%)	7 (4.4%)

Middle East	5 (6.3%)	0	5 (3.1%)
Africa	4 (5.1%)	1 (1.3%)	5 (3.1%)
Inter-regional	1 (1.3%)	2 (2.5%)	3 (1.9%)
South America	2 (2.5%)	0	2 (1.3%)
Other North American countries	1 (1.3%)	0 (0.0%)	1 (0.6%)

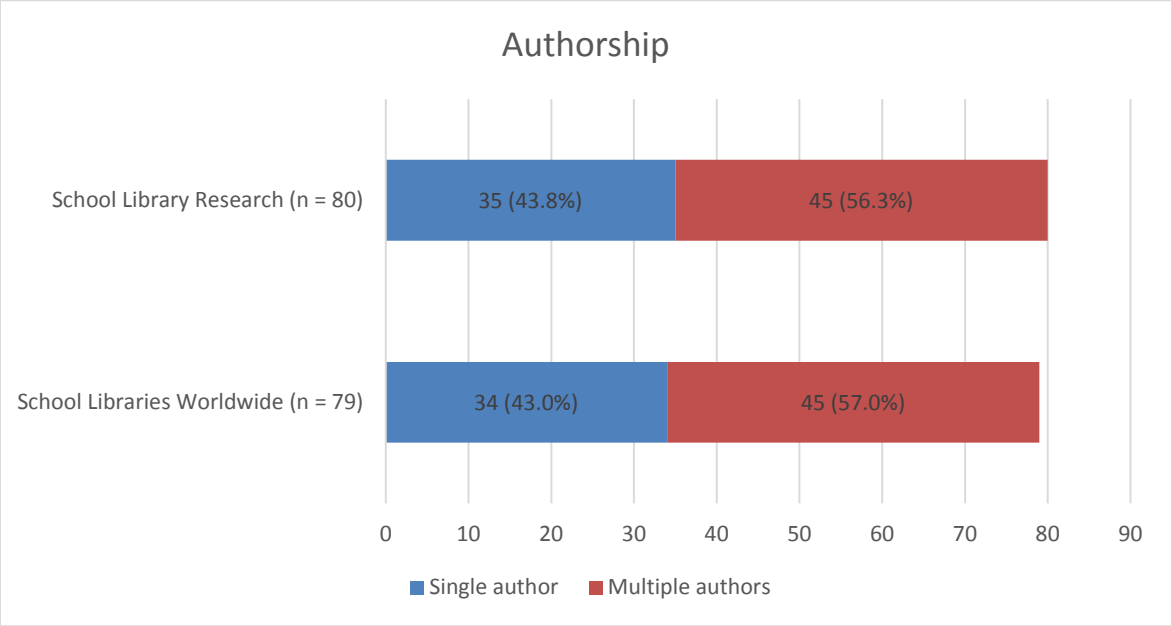

Figure 2. Authorship of studies examined.

Table 8. Level of collaboration based on rank of first author.

	Single author	**Multiple authors**	**Total**
Non-academic position	10 (14.5%)	9 (10.0%)	19 (11.9%)
Assistant professor or equivalent	32 (46.4%)	29 (32.2%)	61 (38.4%)
Associate or full professor or equivalent	18 (26.1%)	43 (47.8%)	61 (38.4%)
Unknown/not disclosed	9 (13.0%)	9 (10.0%)	18 (11.3%)
X2 (3) = 7.809, p = .05			

Do Research Participants Vary Depending on Who Conducts the Research?

As table 9 demonstrates, the variation of Pre-K–12 student participants in research based on the academic rank of the first author is not statistically significant, nor is the variation in the participation of other groups, as illustrated in table 10.

Table 9. Pre-K–12 students as research participants based on rank of first author.

Author rank	Pre-K–12 Students as participants	
	Yes	No
Non-academic position	13 (11.5%)	6 (13.0%)
Assistant professor or equivalent	46 (40.7%)	15 (32.6%)
Associate or full professor or equivalent	44 (38.9%)	17 (37.0%)
Unknown/not disclosed	10 (8.8%)	8 (17.4%)
X2 (3) = 2.764, p = .429		

Table 10. Participant groups based on rank of first author.

Author rank	No human participants	No Pre-K–12 participants	Pre-K–12 librarian only	Pre-K–12 librarian AND other Pre-K–12 participant	Pre-K–12 participant but NO Pre-K–12 librarian
Non-academic position	3	2	3	3	8
Assistant professor or equivalent	7	12	14	11	17
Associate or full professor or equivalent	6	8	17	12	18
Unknown/not disclosed	2	2	5	5	4
X2 (12) = 5.115, p = .953					

Discussion

Introduction

The purpose of this content analysis was to explore how school library researchers conduct research as we attempted to understand how constraints observed by those in the field ultimately shape the studies that school library researchers publish. Examples of these constraints are

cumbersome Institutional Review Board (IRB) processes, limitations of time devoted to research, demands and expectations within higher education, difficulties negotiating with schools and school districts to conduct research in Pre-K–12 settings, and other issues identified during the ESLS meeting in ALA Winter Meeting 2015. Our study was designed to answer five questions that other researchers had asked and attempted to answer before us. We use these questions to frame our discussion and then conclude with implications for scholars and implications for practitioners.

What Percentage of Articles Published in School Library Research Journals Qualify as Original Empirical Research?

As our results demonstrate, more than 73 percent of the articles published in the two academic journals of school librarianship report original empirical research. In comparison to other areas within the LIS discipline, the percentage of research articles published in school librarianship academic journals is fairly high. In a similar study of a journal of academic libraries, Luo and McKinney (2015) reported that only 64 percent of the articles were primary research. In addition, although the analysis by Turcios, Agarwal, and Watkins (2014) included both professional and academic journals, they found that across all types of LIS journal publications, only 16 percent of articles qualified as research. Similarly, school librarianship fares comparably with other areas within Pre-K–12 education. Less than 50 percent of education articles focused on STEM topics in recent years reported mixed, qualitative, or quantitative studies (Brown 2012). Slightly more than half of school psychology articles published in academic journals reported empirical research (Villarreal et al. 2013), and 58 percent of articles published in academic journals in special education reported research (Mastropieri et al. 2009). Finally, Sleeter (2014) identified 86 percent of teacher-education articles reporting research.

What Are the Research Designs and Data-Collection Methods Employed in School Library Research?

Results of this study demonstrate that scholars in the field of school librarianship rely on a variety of designs to answer research questions. While qualitative studies are most common, there is a noteworthy distribution of mixed-methods and strictly quantitative studies in school librarianship. As Shirley Fitzgibbons and Daniel Callison (cited in Grover and Fowler 1993) noted in reviewing school library research of the twentieth century, most research conducted in the past decades was descriptive, and our results confirm that this trend persists. Research in school librarianship is comparable to that in other disciplines of Pre-K–12 education in this respect (Mastropieri et al. 2009; Villarreal et al. 2013).

Clearly, soliciting the opinions of stakeholders is of primary importance to scholars in the field of school librarianship. Our results demonstrate that surveys and interviews continue to serve as principal methods for collecting data, as previous studies have demonstrated (e.g., Asselin 2011; Clyde 2002, 2004a; Grover and Fowler 1993), but school library scholars have cautioned that over-reliance on surveys and questionnaires might be a symptom of an unhealthy profession (Grover and Fowler 1993). Nevertheless, school library researchers do not differ from their colleagues in the broader LIS community who also rely on surveys and questionnaires (Luo and McKinney 2015) as they did several decades ago (Clyde 2002), nor do they differ from

colleagues in other education disciplines such as school psychology (Villarreal et al. 2013) and teacher education (Sleeter 2014).

Although AASL does not have a research agenda, the organization seems to have prioritized causal research as demonstrated by the AASL CLASS whitepaper (2014). It is interesting that no experimental nor quasi-experimental studies have been published since 2007 in either of the two major outlets for school library research (*SLR* and *SLW*).

Who Are the Research Participants in School Library Research? Do the Participants of School Library Research Vary Depending on the Researchers' Levels of Experience?

Despite the barriers to conducting research on human subjects as expressed by ESLS members during the 2015 discussion, an overwhelming majority, nearly 90 percent, of the school library research involves human participants. School librarians were the most-common participants, serving in approximately 45 percent of the studies and as sole participant group in about one-fourth of the studies. On the other hand, less than 30 percent of the studies involved Pre-K–12 students, thus giving legitimacy to the concerns school library researchers identified. Again, school library research seems on par with that of at least one other Pre-K–12 discipline, STEM, which also has low incidences of formal research with student participants (Brown 2012). Given conversations at the 2015 ESLS meeting, we were surprised to see that the involvement of Pre-K–12 participants based on the experience levels of the researchers was not statistically significant.

Who Conducts School Library Research?

Results of this study corroborate the findings of past research: the U.S. accounts for a large majority of the research in school librarianship published in the two journals studied. However, because one of the journals making up our data set is a publication of the American Association of School Librarians, this finding might be expected. On the other hand, studies from the U.S. also accounted for a majority of those published in *SLW*, which has an international scope.

Findings from our study corroborate those of Marlene Asselin (2011) and Marcia A. Mardis (2011): the majority of studies in school librarianship are conducted by researchers living in developed countries. Our findings also point to the persistent imbalance of research conducted in English-speaking countries (Clyde 2004a; Mardis 2011; Oberg 2006). Again, given that one of the two journals investigated in this study is a publication of a division of the American Library Association, this finding might be expected, but other researchers have also noted this trend in other education disciplines (Lin, Lin, and Tsai 2014).

Throughout the school library standards and guidelines (AASL 2007, 2009a, 2009b; Schultz-Jones and Oberg 2015) are references to the power of collaboration. Therefore, it is refreshing and encouraging to see high levels of collaboration reflected in studies of school libraries and school librarianship. On the other hand, few studies involved practicing school librarians as researchers, involvement that Luo and McKinney (2015) noted as important in academic librarianship and LIS in general. They also noted that the nature of the research problem is a motivation for collaboration.

Implications for Research and Practice

This study suggests implications for research in school library methods, as well as broader topics for discussion among school library researchers and faculty about the strengths and needs of research in this field. As reported by participants at the ESLS session at the 2015 ALA Midwinter Meeting, challenges persist in gaining access to Pre-K–12 settings for conducting research with students. While we suspected that this concern leads researchers cultivating research agendas and publications for the purpose of getting tenure and promotion to study populations whom they can access with fewer perceived or actual hurdles (populations such as in-service librarians or graduate students), the findings of this study suggest that junior faculty are not significantly more or less likely to conduct research with Pre-K–12 participants than other researchers. Further, given that 90 percent of the published studies involve human participants, the findings also refute the claim that school library researchers are seeking other avenues that do not directly involve human subjects, such as collection analyses, as means to build their research agendas.

On a whole, this study points to the need for an increase in the rigor of research methods in doctoral programs that prepare researchers in LIS and school librarianship. The results demonstrate that the methods employed in school library research use less higher-level statistical analysis than methods used in other fields of study in education (e.g., Schram 2014; Villarreal et al. 2013; Vostal et al. 2008; Wells et al. 2015) but are in line with those found in other areas of LIS (Luo and McKinney 2015).

AASL has issued a call for school library researchers to engage increasingly in causal research to demonstrate the impact of school libraries on student learning (2014). A look at the current state of research in the field indicates that this call is warranted; however, it may be unrealistic. Methods suggested by the CLASS Research Forum include quasi-experimental designs (AASL 2014), which would help identify “isolated causal mechanisms” related to best practices in school libraries and, ultimately, build to large-scale impact research.

In the studies examined here, neither experimental nor quasi-experimental designs were used. Related to this finding are the number of studies conducted with small populations, in case study or exploratory approaches. These studies may be reflective of the populations and methods most available to researchers, and those parameters could also suggest that other methods are problematic to execute, including studies that involve more participants and the potential for more levels of statistical analyses.

Finally, if school library research is to investigate the impact of school libraries and school librarians on student learning, the research must involve student participants. The array of skills and experiences afforded to students by today’s school library programs are complex, including subject-area knowledge, content creation, and development of digital and traditional literacies and social skills, as well as development of civic responsibility and engagement. Gaining access to students to gather data directly regarding their learning, perceptions, and needs would likely provide information and insights not attainable through other means. Currently, however, Pre-K–12 students serve as participants in less than a third of the research.

In addition to the need for increased rigor in researcher-preparation programs, the finding that less than 2 percent of studies published involved action research indicates that increasing attention on research-methods instruction is also necessary in preparation programs for school

librarians (AASL 2010). As prerequisites to collecting and interpreting evidence to evaluate outcomes (AASL 2009, 2010; Schultz-Jones and Oberg 2015), school librarians must be prepared to identify proven practices based on constituent needs and to select and apply the most-appropriate proven practice based on contextual factors (Gibbs 2003). However, recent studies have demonstrated that practicing school librarians are not inclined to read school library research publications (Richey and Cahill 2014), nor are they likely to collect and report evidence of practice (Cahill and Richey 2012; Richey and Cahill 2014; Robins and Antrim 2012; Todd 2015).

Perhaps the first step toward increasing casual research involves one of school librarians' favorite words: "collaboration." Collaboration between school library researchers and practicing school librarians might prove mutually beneficial. School librarians' inclusion in research teams would position them to read school library research publications (i.e., "evidence for practice") and bolster their research skills and professional wisdom (i.e., "evidence in practice"), occurrences that are likely to lead to increased collections of "evidence of practice" (Todd 2008, 40). Working collaboratively with school librarian practitioners would facilitate researchers' access to Pre-K–12 settings and participants, and keep researchers attuned to the real and perceived issues affecting school library stakeholders as the educational landscape continues to evolve.

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Appendix A: Coding Scheme

Coding Sheet: School Library Research Methods

adapted from:

Ryan S. Wells, et al. 2015. "How We Know What We Know: A Systematic Comparison of Research Methods Employed in Higher Education Journals, 1996–2000 v. 2006–2010. *Journal of Higher Education* 86 (2): 171–98.

Article Citation (APA format)

Topic

Journal Name

- School Libraries Worldwide
- School Library Research

Type of Article

- Qualitative research study
- Literature review
- Opinion/position paper
- Historical review
- Expository supported by data
- Quantitative empirical research study
- Mixed methods study
- Other:

Broad Design Type

- ○ Qualitative only
- ○ Quantitative only
- ○ Mixed

If quantitative, types of statistical analysis used see Wells et al. Appendix for type list

☐

Design(s) Used

check all that apply for mixed methods studies

- ☐ Correlational
- ☐ Ex Post Facto or Causal Comparative (unless otherwise specified all ANOVA, ANCOVA, etc.)
- ☐ Descriptive (quantitative)
- ☐ Descriptive (qualitative)
- ☐ Ethnography
- ☐ Case study
- ☐ Historical
- ☐ Action research
- ☐ Participatory action research
- ☐ Content analysis
- ☐ True experiment
- ☐ Quasi-experiment
- ☐ Meta-analysis
- ☐ Test/scale validation
- ☐ Other: ☐

Data Collection Method(s)/Source(s)

- ☐ Survey (primary)

- [ ] Survey (secondary)
- [ ] Observation
- [ ] Interview/Focus groups
- [ ] Documents/artifacts (likely qualitative)
- [ ] Meta-analysis
- [ ] Test or attitude outcome measure (experiment)
- [ ] Other:

Unit of Analysis

Sample Size

this could be number of people, books, assignments, projects, etc.

Additional Information on Sample

add as needed

Participants (general)

can select multiple groups

- [ ] School librarians
- [ ] Classroom teachers
- [ ] University students (undergraduate)
- [ ] University students (graduate)
- [ ] Elementary students (PK-5)
- [ ] Middle school students (6-8)

- [ ] High school students (9-12)
- [ ] School administrators
- [ ] Other:

Participants (specific)

example: 4 school librarians from a southeastern state

Grade level (if study involves PK-12 students)

- [ ] PK-12
- [ ] Elementary (PK-5)
- [ ] Middle (6-8)
- [ ] High School (9-12)
- [ ] Secondary (6-12)
- [ ] Other:

Standards Mentioned

these could be professional competencies or standards for the PK-12 learners

- [ ] Common Core State Standards
- [ ] State Standards (US)
- [ ] AASL Standards for the 21st-Century Learner
- [ ] AASL Empowering Learners
- [ ] Information Power
- [ ] Other:

Country

- [ ] USA

Canada

Other:

Affiliation of Author A

choose multiple affiliations, if appropriate

University faculty-assistant professor

University faculty-associate professor

University faculty-full professor

Doctoral student

Masters student

School librarian

Classroom teacher

Instructional technology specialist/coach

Academic librarian

Other:

Affiliation of Author B

choose multiple affiliations, if appropriate

University faculty-assistant professor

University faculty-associate professor

University faculty-full professor

Doctoral student

Masters student

School librarian

Classroom teacher

Instructional technology specialist/coach

Academic librarian

☐ Other: ☐

Affiliation of Author C

choose multiple affiliations, if appropriate

☐ University faculty-assistant professor

☐ University faculty-associate professor

☐ University faculty-full professor

☐ Doctoral student

☐ Masters student

☐ School librarian

☐ Classroom teacher

☐ Instructional technology specialist/coach

☐ Academic librarian

☐ Other: ☐

Affiliation of Author D

choose multiple affiliations, if appropriate

☐ University faculty-assistant professor

☐ University faculty-associate professor

☐ University faculty-full professor

☐ Doctoral student

☐ Masters student

☐ School librarian

☐ Classroom teacher

☐ Instructional technology specialist/coach

☐ Academic librarian

☐ Other: ☐

Affiliation of Author E

choose multiple affiliations, if appropriate

- ☐ University faculty-assistant professor
- ☐ University faculty-associate professor
- ☐ University faculty-full professor
- ☐ Academic librarian
- ☐ Doctoral student
- ☐ Masters student
- ☐ School librarian
- ☐ Classroom teacher
- ☐ Instructional technology specialist/coach
- ☐ Other: ☐

coding completed by

- ○ M. Cahill
- ○ R. Morris

Cite This Article

Morris, Rebecca, and Maria Cahill. 2017. "A Study of How We Study: Methodologies of School Library Research 2007 through July 2015." <http://www.ala.org/aasl/slr/volume20/morris-cahill>

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