

# School Library Research Rocks: an examination of five years of school library research

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### **Abstract**

*This research examined the state-of-the-art of research in school librarianship. Similar trends from previous research were confirmed: research in school librarianship is published in two major journals -- School Library (Media) Research and School Libraries Worldwide. Almost 80% of the research was carried out in the United States. There is a small core group of researchers working in the area of school librarianship. About half of all research is by a single author. The main themes from the research included collaboration between teachers and school librarian, technology integration, the instructional role of school librarians, professional development, analysis of materials, information literacy instruction, practices and assessment, hiring, professional development and retention of school librarians, use of multimedia resources, role of school librarians in the provision of health information, motivation of students, and research in other parts of the world. Frameworks (Aharony, 2011; Koufogiannakis, Slater & Crumley, 2005; Mardis, 2011) were incomplete and the authors present a new framework for categorizing school library research, in particular, but also LIS research, in general.*

**Keywords:** School librarianship, Research

### **Introduction**

The last update on the state-of-art research in school librarianship was carried out as a project for the International Association for School Librarianship (IASL) conference in 2005, and included a review of the literature in this area from the period extending from 2000-2005.

Review and analysis of research in school librarianship was close to the heart of the late L. Anne Clyde, who played a pioneering role in providing regular updates on this topic. Her program of research included examining the experiences of researchers in school librarianship as well as the trends in school library research. After her untimely passing in the Fall of 2005, no complete review of school library research published in scholarly journals in English has been carried out (although Mardis (2011) did examine the research presented at IASL conferences between 1998-2009 and Asselin (2011) examined IASL research publications between 2002-2008). This paper continues the work of Clyde in order to identify patterns and trends as well as quantity and quality of recent research in the area of school librarianship.

According to Haycock (1995), “research in school librarianship provides the foundation and direction for effective school library practice, and there is ample evidence of the impact of school library media specialists and school library media centers on students’ learning, given certain conditions and criteria” (para. 1).

### **Research Questions**

This research is guided by one large research question: *What is the current state-of-the-art of research in school librarianship?*

The specific questions investigated in this study are:

- How many research journal articles in school librarianship were published between 2009-2013?
- What was the percentage of research articles published in the two key journals - School Libraries Worldwide and School Library Research?
- What were the most frequent methods of data gathering used for these research papers?
- What geographical locations were most frequently used as settings for these research papers/articles?
- Who were the key researchers in the area of school librarianship?
- What were the authorship patterns in these research papers/articles?
- What themes were explored in these research papers/articles?

### **Review of the Literature**

As a profession interested in information and research, it is not surprising that there has been a long tradition of examining research in the field of library and information studies (LIS). Early work in this area included a study by Stroud (1982) who examined higher degree theses in LIS, Järvelin and Vakkari (1993) who examined articles in LIS research journals and Snelson and Talar (1991) who examined papers presented at LIS research-oriented conferences (Clyde, 2001, p. 70).

Studies have also been carried out to examine what makes a quality journal article, what journals produce the highest percentage of research articles, what is the content of articles based on key-word content analysis, what methods are used in current LIS research, and the percentage of research articles found in all LIS-related publications. Researchers interested in quality research journal articles tend to look to the quality of the journal itself. Clyde (2004) lists the following strategies for assessing the quality of the journal:

- citation analysis
- journal impact factor

- number and percentage of collaborative articles
- peer-review status
- manuscript acceptance rate
- indexing of the journal
- number of external links to the journal website. (p. 1120)

Manzari (2013) examined LIS journal prestige by surveying full-time faculty in American Library Association (ALA)- accredited programs. Clyde's (2006, 2004, 2003, 2002, 2001, 1996a, 1996b) previous work clearly demonstrates that most of the research in school librarianship has been published in two major publications (1) School Libraries Worldwide and (2) School Library Media Research now School Library Research. Clyde and Oberg (2004) in their study of research in School Libraries Worldwide between 1995-2003 found that about 30% of research articles were from the USA. Canada, Australia and the UK made up another 18%. There were 12 other countries represented as well as 10 articles that were international in scope. Clyde (2005) stated that "the field of school librarianship internationally has only a small core group of active researchers" (p. 6). Clyde (2005) found that there were a total 297 articles published between 1999-2003 and 43 authors published 3 or more articles.

Koufogiannakis, Slater and Crumley (2004) presented six domains of librarianship to help classify areas of research. These include:

| <b>Domain</b>                                | <b>Definition</b>  |
|--|--|
| <b>Collections</b>                           | Building a high-quality collection of print and electronic materials that is useful, cost-effective and meets users' needs   |
| <b>Education - LIS Education as a subset</b> | Incorporating teaching methods and strategies to educate users about library resources and how to improve research skills<br>- Specifically pertaining to the professional education of librarians |
| <b>Information Access and Retrieval</b>      | Creating better systems and methods for information retrieval and access.  |
| <b>Management</b>                            | Managing people and resources within an organization. This includes marketing and promotion as well as human resources.  |
| <b>Professional Issues</b>                   | Explore issues that affect librarianship as a profession   |
| <b>Reference/ Enquiries</b>                  | Providing service and information access that meets the needs of library users   |

Table 1: Librarianship domains from Koufogiannakis, Slater & Crumley (2004)

Aharony (2011) builds on the work of Zins (2007) to present ten categories with examples of keywords to help classify research articles using content analysis.

| <b>Category</b>                                      | <b>Examples</b>   |
|--|---|
| <b>Foundations</b>                                   | Historical note   |
| <b>Methodology</b>                                   | Chi square method, bibliometric analysis, qualitative study, scientometric analysis, webometrics                          |
| <b>Information/Learning Society</b>                  | The virtual scholar, web usage studies, information literacy, information theory, scientific community                    |
| <b>Information Technology</b>                        | Meta search engines, search logs, information retrieval systems, intelligent ranking algorithm, mobile information system |
| <b>Data Organization and Retrieval</b>               | Information seeking, searching, browsing, search strategies, search terms   |
| <b>Information Industry Economics and Management</b> | Cost-benefit ratio, knowledge management, tacit knowledge, explicit knowledge, digital libraries                          |
| <b>Information Ethics and Law</b>                    | Ethics, legal information, open access publications, open source, copyright   |
| <b>User Studies</b>                                  | Information needs, information need analysis, user behavior, information behavior, user studies                           |
| <b>Diffusion Studies</b>                             | Information resources, public libraries, library users, information dissemination, print publications                     |
| <b>Social Information Studies</b>                    | Disabled people, adolescent well-being, cultural aspects, health information ties, cancer information overload            |

Table 2: Keywords used to help classify research analysis using content analysis from Aharony (2011), p. 31.

Mardis (2011), in her examination of Research Forum Papers at International Association of School Librarianship (see Table 3) conferences between 1998-2009, found that information skills and literacy, information technology, reading and reading promotion, and education in LIS made up over 50% of the research topics.

| <b>Paper Topic</b>              | <b>Frequency</b> | <b>Percent</b> |
|---------------------------------|------------------|----------------|
| Information skills and literacy | 56               | 28.1           |
| Information technology          | 21               | 10.6           |
| Reading and reading promotion   | 19               | 9.0            |
| Education in LIS                | 16               | 8.0            |
| The profession                  | 14               | 7.0            |
| Analysis of LIS                 | 12               | 6.0            |

| <b>Paper Topic</b>   | <b>Frequency</b> | <b>Percent</b> |
|----------------------|------------------|----------------|
| Other aspects of LIS | 11               | 5.5            |
| Information seeking  | 10               | 5.0            |
| LIS activities       | 9                | 4.5            |
| Methodology          | 9                | 4.5            |
| Publishing           | 7                | 3.5            |
| National survey      | 6                | 3.0            |
| Censorship           | 4                | 2.0            |
| Library history      | 2                | 1.0            |
| Principal support    | 2                | 1.0            |
| <b>Total</b>         | <b>199</b>       | <b>100.0</b>   |

Table 3: Research Forum Paper Topics, 1998-2009 (N=199) from Mardis (2011).

Asselin (2011) examined the extent and nature of internationalism in IASL publications from 2002-2008 that were published in *School Libraries Worldwide* and in the Research Forum of IASL Conference Proceedings. She found that the United States contributed about 33% of the research. Also “all studies of the international co-authored articles were conducted in developed countries” (Asselin, 2011, Quantitative Results, para. 4). The research methods included interviews, questionnaires, surveys, case studies and observations.

Research by Koufogiannakis, Slater and Crumley (2004) examined journal articles published in 2001 and found that “of the 2664 articles reviewed, 30.3% were identified as research articles” (p. 236). Turcios, Agarwal and Watkins (2014) examined Simmons College Library journal collection and found that 57% (101 titles) are journals with academic/scholarly content but only 16% of articles were identified as research (p. 475). Examining the 307 research articles, Turcios et al. found that the most frequent research methods were survey (21%), other (20%), case study (13%), content analysis (13%), interviews (9%), experimental research (8%), and bibliometrics (5%) (p. 477). Other methods included action research, classroom research, observation, focus groups, and usability (Turcios et al., 2014, p. 477).

Using the framework initially proposed by Clyde (2001), this study gathered and examined research journal articles in school librarianship published in English and within the time frame of 2009-2013. This paper intends to provide an overview of the current research in school librarianship and will also identify key researchers in the area of school librarianship between 2009-2013.

## Method

Along with research articles published in *School Libraries Worldwide* and *School Library Research*, the authors completed a detailed search of all databases that index school library research. Clyde's checklist (2001) was used to identify articles that are included in this study. Articles were published in English, were more than two pages long and included of some kind of statement that the work is based on research with the problem or phenomenon to be investigated well defined. Moreover, these articles have a clear statement of purpose, hypotheses to be tested or a well-defined focus of inquiry, with research methods thoroughly described. A literature review or a background to the research, as well as a reference list or bibliography accompanied the publications. Finally, we examined results and conclusions that are drawn from these publications.

Each identified article was printed out and key information was gathered including author(s), date of publication, journal, participants, method(s), location of the study (if available), themes, and findings. A breakdown of the number of articles from each publication was carried out, as well as a search to identify active researchers. We also examined patterns of authorship, and research methods used. The papers were read and themes and findings summarized. Using content analysis, the authors also categorized the themes found in the research articles.

## Findings

This research seeks to understand the current state-of-the-art of research in school librarianship by examining research journal articles in school librarianship published in English and within the time frame of 2009-2013. The findings are organized by specific questions investigated in this study.

### ***How many research journal articles in school librarianship were published between 2009-2013?***

In all, 98 papers that had a clear literature review, a research methodology, clear research questions as well as findings and a discussion section were examined from the two major journals and a number of other publications. A total of 45 articles were identified in *School Libraries Worldwide*, 48 were found in *School Library (Media) Research* and five articles were obtained from other journals published over the same time period.

### ***What was the percentage of research articles published in the two key journals - *School Libraries Worldwide* and *School Library Research*?***

*School Libraries Worldwide*

| Issue          | Themes Covered by the specific issue | # of Research Articles | # of other Articles | Total |
|----------------|--------------------------------------|------------------------|---------------------|-------|
| Jan 2009 15(1) | Research into Practice               | 3                      | 1                   | 4     |
| July 2009      | Relationships                        | 5                      | 1                   | 6     |

| Issue              | Themes Covered by the specific issue  | # of Research Articles | # of other Articles   | Total                |
|--------------------|---|------------------------|-----------------------|----------------------|
| 15(2)              |   |                        |                       |                      |
| Jan 2010<br>16(1)  | Inquiry based learning for 21st century   | 2                      | 4                     | 6                    |
| July 2010<br>16(2) | Issues for the next Decade  | 5                      | 1                     | 6                    |
| Jan 2011<br>17(1)  | School library as Space<br>School library as Place                                    | 3                      | 1                     | 4                    |
| July 2011<br>17(2) | School librarian Leadership Around the world  | 5                      | 6                     | 11                   |
| Jan 2012<br>18(1)  | Connections: school librarians linking learning, leadership, technology and society   | 5                      | 5                     | 10                   |
| July 2012<br>18(2) | International perspectives on school library education: From face to face to distance | 5                      | 6                     | 11                   |
| Jan 2013<br>19(1)  | Outliers : School Librarianship Enables Success in All Environments                   | 8                      | 2                     | 10                   |
| July 2012<br>19(2) | Story: International common ground in school librarianship (Story as Methodology)     | 4                      | 6                     | 10                   |
| <b>Total</b>       |   | <b>45<br/>(57.7%)</b>  | <b>33<br/>(42.3%)</b> | <b>78<br/>(100%)</b> |

Table 4: Breakdown and percentage of research articles published in School Libraries Worldwide

*School Library (Media) Research*

| Volume | Year | # of Research Articles | # of Other Articles | Total |
|--------|------|------------------------|---------------------|-------|
| 12     | 2009 | 8                      | 0                   | 8     |
| 13     | 2010 | 7                      | 0                   | 7     |
| 14     | 2011 | 11                     | 1                   | 12    |
| 15     | 2012 | 13                     | 0                   | 13    |

|              |      |                   |                 |                 |
|--------------|------|-------------------|-----------------|-----------------|
| 16           | 2013 | 8                 | 0               | 8               |
| <b>Total</b> |      | <b>48 (97.9%)</b> | <b>1 (2.1%)</b> | <b>49(100%)</b> |

Table 5: Breakdown and percentage of research articles published in School Library (Media) Research

As it can be seen in tables 4 and 5, the percentage of research articles was very high (97.9 %) in *School Library (Media) Research* journal. On the other hand, research papers represented only 57.7 % of all the papers published in *School Libraries Worldwide*.

***What are the most frequent methods of data gathering used for research?***

The most popular choice for data gathering in the research articles was the questionnaire/survey method. A number of researchers used survey monkey and other online methods while many created their own instruments. Interviews and content analysis were very popular choices as well, followed by participant observation and focus groups. The following table provides a breakdown of the diverse methods used for doing research. It should be noted that in many cases researchers adopted more than one method to gather data, thus combining several methods to triangulate their data.

| <b>Type of Data Gathering Method</b>     | <b>Frequency</b> |
|--|------------------|
| Questionnaire/survey                     | 41               |
| Interviews                               | 35               |
| Content Analysis                         | 22               |
| Participant Observation                  | 17               |
| Focus Group                              | 12               |
| Case study                               | 9                |
| Statistical analysis                     | 6                |
| Ethnographic study                       | 4                |
| Special instruments (metrics to measure) | 3                |
| Study of Artefacts                       | 2                |
| Social network Analysis                  | 1                |
| Discourse Analysis                       | 1                |
| Action Research                          | 1                |

Table 5: Most frequent methods of data gathering for research

***What geographical locations were most frequently used as settings for these research papers/articles?***



| Country   | Frequency |
|---|-----------|
| USA   | 77        |
| Canada  | 5         |
| Australia   | 4         |
| UK  | 2         |
| Hong Kong   | 2         |
| Brazil  | 2         |
| Nepal, Honduras, Ireland, Israel,<br>Jamaica, Kuwait, Philippines, Nigeria,<br>Slovenia, Lebanon (one each) | 8         |

Table 6: Geographical locations of research ( Note that the USA was also involved in a paper with several other countries)

Research in school librarianship during the period of 2009-2013 was predominantly carried out in the United States of America (77.8%). Canada and Australia were also represented.

***Who are the key researchers in the area of school librarianship?***

This review identified only 8 authors who had 3 or more articles published between 2009-2013. The most prolific researchers as revealed by this review were Sue Kimmel, Ruth Small, Renée Hill, Marilyn Arnone, Rebecca Reynolds, Jami Jones, Melissa Johnston and Ann Ewbank-Dutton.

| Number of published Articles/Papers | Frequency |
|-------------------------------------|-----------|
| 4 articles/ papers                  | 2         |
| 3 articles/ papers                  | 6         |
| 2 articles/papers                   | 15        |

Table 7: Patterns of Authorship, 2009-2013

***What were the authorship patterns in these research papers/articles?***

| <b># of authors per article /Paper</b>       | <b>Frequency</b> | <b>Percentage</b> |
|--|------------------|-------------------|
| Articles/papers with one author              | 45               | 45.9              |
| Articles/papers with two authors             | 30               | 30.6              |
| Articles/papers with three authors           | 21               | 21.4              |
| Articles/papers with more than three authors | 2                | 2.1               |
| <b>Total</b>                                 | <b>98</b>        | <b>100%</b>       |

Table 8: Authorship patterns, 2009-2013

Almost 46% of the research papers published had a single author while 54% indicated some amount of collaboration with two or more authors working on a particular research project

***What were the main themes in the research papers/articles?***

*Collaboration*

The most recurring theme in the reviewed papers was collaboration between teachers and school librarians. There was one case study documenting the collaboration process in the design of professional workshops for a group of elementary school teachers and librarians, authors also examined perceived barriers to collaboration as well as the promotion of collaboration at an international level. Leadership skills in librarians were found to be predictors of advanced teacher and school librarian collaboration. Papers revealed that teachers (mostly science teachers) often had no clear understanding of the instructional role of the school librarian. Some positive aspects of collaboration occurred serendipitously, for example while helping students understand the importance of avoiding plagiarism.

*Technology integration*

The technological aspect of school librarianship was approached from two perspectives. First of all, papers covered librarian's perception of their own competence at technology integration and leadership especially with regards to emerging technologies. Concerns were expressed about the inclusion of classes in technology for preservice school librarians in MLIS or MEd coursework. There was a general perception that school librarians were not keeping up with advances being made in technology. Issues in the integration of Web 2.0 technologies were addressed, as well as disparities in the availability of advanced technological tools and services in schools. The second perspective was to examine how librarians were able to help students to use information technologies (for example, databases) that were available in school libraries. One paper also covered the use of assistive technologies to help children with autism.

*Instructional role of librarians*

Five papers focused on the importance of, as well as the influence of, a school librarian's work on student achievement. Six more papers examined aspects of the instructional role of the school librarian. School librarians seemed to be involved in teaching not only information and digital literacy, but also scientific literature review. Some were involved in teaching concept mapping skills along with evaluation of online materials. The assessment of school

children's level of information literacy seems to be one of the responsibilities of school librarians. Moreover, they are also involved in developing instruments to measure perceived competence of students. One study examined the role of the school librarian in influencing students' use of technology while another surveyed school librarians' impact on achievement and motivation of their students.

#### *Professional development*

Papers explored the professional dispositions of school librarians along with the impact of web 2.0 technologies on the professional lives of teachers. Findings also indicated that professional development opportunities did not match with needs in the area and that there was a need for advocacy for the profession. The role of professional libraries in providing culturally relevant professional development to school librarians was also discussed.

#### *Analysis of materials*

One of the surveyed research articles examined the portrayal of people of color and people with disabilities in books and graphic novels. Another article explored the issues LGBT-themed books in school libraries. One paper carried out an analysis of eBooks being offered by the library to check if these held sufficient numbers of e-books in Spanish, to cater for the increasing number of learners in the United States of America who speak this language. Finally, an analysis of the poetry collection in the school library was carried out by another of the research papers.

#### *Information literacy of students*

Research papers focused on students' perception of their own literacy skills and how often they were ethical users of information. One paper examined the ethical use of information. Findings revealed that high school students were more ethical users of information than elementary school students.

#### *Librarian's perception of best practices to improve and assess learning and information literacy*

Five research papers focused on the influence of librarians on student learning and achievement. There were a number of papers documenting the kind of support that school librarians provided to children with disabilities as well as the guided enquiry activities designed for gifted students or for children with disabilities. Librarians were also involved in a number of activities that would raise the test scores of students through reading exposure. They developed instruments to measure perceived competence of students, documented the availability and use of databases by students and carried out a comparison of school achievement between libraries with similar funding. The school culture and its effect on the establishment of an effective school library program was also examined by researchers.

#### *Hiring and Retention of School Librarians*

A number of research papers raised concerns about sensitive issues such as the retention of librarians, staffing levels and the effect of library staff reduction on student achievement. Other papers focused on the criteria used for the selection of school librarians and competencies that principals looked for when hiring. One paper specifically dealt with the ways in which school superintendents use the research and information experience of school librarians to solve problems while another one documented problem of schools without

libraries and librarians in rural areas of the United States of America. Lastly, researchers examined the school culture's effect on the establishment of the school library program.

#### *LIS programs and factors that influence educators to become librarians*

Papers documented how taking Web 2.0 influenced LIS students in becoming technology leaders as they reported that it changed them personally and professionally. One paper specifically examined the extent to which LIS course prepared students to become culturally competent to serve the needs of culturally diverse youth in library settings while an investigation into the use of ePortfolios indicated that they demonstrated high quality presentations from students and confidence in the ability to master new tools. Pre-service librarians also demonstrated eagerness to implement American Association of School Libraries (AASL) standards for the 21st century learner as well as using Evidence Based Library and Information Practice (EBLIP) to improve their practice.

#### *Use of multimedia resources*

A number of research papers focused on the use of audio-visual materials in teaching as well as using video games as learning resources. Research even involved digital image tagging by students and one paper examined a school librarian's perception of limits imposed on social media in school context.

#### *Role of librarians in the provision of health information*

There was a focus on the important role that librarians can play in disseminating health information, however research indicated that school librarians did not want to become gatekeepers of health information. On another note, school librarians had issues with providing sexual health information and research indicated that Principals and district superintendents had conflicting expectations about the role of the school librarian in this area.

#### *Motivation of students*

Research papers delved into the intrinsic motivation for information seeking and learning in students and factors that foster it. It was found that students' Intrinsic motivation was influenced by their perceived competence of their school librarian's abilities in technology. One study revealed that libraries' impact on student achievement and motivation is high while staff regard the school library to have a positive impact on students' motivation

#### *Research in other parts of the world*

A few papers addressed issues related to school librarianship in geographical areas that were not typically North American. One paper documented problems in the delivery of LIS program in Jamaica and recommended an overhaul to allow flexibility to take it over summer and/or online and include more of the teaching aspect in the course. Other studies focused on the evaluation of information literacy programs in Lebanon, the use of the library for reading purposes in Nigeria, and an appraisal of community-based learning in the Philippines. One paper highlighted enrichment programs for gifted students in Slovenia, another examined the cultivation of leadership skills in school librarians in Israel and a third was a comparison of school library services in private and public schools in Kuwait. The researchers also located and examined a case study exploring the impact of the school library on pupils' personal development in Ireland. Finally, one paper highlighted case studies

from Honduras, Brazil and Nepal along with the USA to document the roles of professional organizations in school library education.

## Discussion

This research examined the current state-of-the-art of research in school librarianship by examining research journal articles in school librarianship published in English and within the time frame of 2009-2013. In all, 98 papers were examined -- 45 articles from *School Libraries Worldwide*, 48 articles from *School Library (Media) Research* and five articles were obtained from other journals. 97.9 % of the articles in *School Library (Media) Research* and 57.7 % of the articles in *School Libraries Worldwide*.

The most popular choice for data gathering in the research articles was the questionnaire/survey method. Interviews and content analysis were very popular choices as well, followed by participant observation and focus groups. Asselin (2011) found only two of 153 research articles using focus groups as a method but in our work the method seems more popular with 12 out of 98. Almost 46% of the research papers published had a single author while 54% indicated some amount of collaboration with two or more authors working on a particular research project. Research in school librarianship during the period of 2009-2013 was predominantly carried out in the United States of America (77.8%). Asselin (2011) found that about 33% of research was carried out in the US while Clyde and Oberg (2004) noted 30%.

This may be the result of the fact that many of the articles in *School Library (Media) Research* are by US researchers. There is a more diverse population attending and presenting at the IASL conferences and publishing in IASL publications like *School Libraries Worldwide*. The most prolific researchers as revealed by this review were Sue Kimmel, Ruth Small, Renée Hill, Marilyn Arnone, Rebecca Reynolds, Jami Jones, Melissa Johnston and Ann Ewbank-Dutton. This review identified only 8 authors who had 3 or more articles published -- a far cry from the 57 documented for the 1995-1999 review (Clyde, 2001, p. 71) and 43 authors for the 1999-2003 (Clyde, 2005, p. 6). The trend may indicate that researchers are publishing fewer research papers in the area of school librarianship or that they are also presenting their research at conferences and publishing in peer-reviewed conference proceedings. This may also be an indication that there are fewer school library researchers working now as compared to 20 years ago. Further research will be required to examine researchers in school librarianship and to compare findings to the work of Clyde (2005). Further research to examine articles/papers in published conference proceeding will also be required.

The main themes from the research included collaboration between teachers and school librarian, technology integration, the instructional role of school librarians, professional development, analysis of materials, information literacy instruction, practices and assessment, hiring, professional development and retention of school librarians, use of multimedia resources, role of school librarians in the provision of health information, motivation of students and research in other parts of the world.

While Mardis (2011) found that information skills and literacy, information technology, reading and reading promotion, and education in LIS made up over 50% of the research

topics between 1998-2009, in the present review, these combined categories made up only 36.7% of the total number of research papers published.

| <b>Paper Topic</b>              | <b>Frequency</b> | <b>Percent</b> |
|---------------------------------|------------------|----------------|
| Information skills and literacy | 17               | 17.3           |
| Information technology          | 4                | 4.08           |
| Reading and reading promotion   | 1                | 1.02           |
| Education in LIS                | 14               | 14.3           |
| The profession                  | 39               | 39.7           |
| Analysis of LIS                 | -                | -              |
| Other aspects of LIS            | -                | -              |
| Information seeking             | 4                | 4.08           |
| LIS activities                  | 3                | 3.06           |
| Methodology                     | 8                | 8.16           |
| Publishing                      | 2                | 2.04           |
| National survey                 | 2                | 2.04           |
| Censorship                      | 2                | 2.04           |
| Library history                 | 1                | 1.02           |
| Principal support               | 1                | 1.02           |
| <b>Total</b>                    | <b>98</b>        | <b>100%</b>    |

Table 9: Breakdown of themes based on Mardis' (2011) Framework

There was a large group of articles focused on the role of the school librarian, issues related to school library programs and issues related to standards and student achievement. The researchers believe that Mardis' (2011) framework provided a useful starting point but needs to be further refined to include these categories.

| <b>Category</b> | <b>Examples</b>  |   |     |
|-----------------|--|---|-----|
| Foundations     | Historical note  | - |     |
| Methodology     | Chi square method, bibliometric analysis, qualitative study, scientometric analysis, webometrics | 5 | 5.1 |

| Category                                      | Examples   |           |              |
|---|--|-----------|--------------|
| Information/Learning Society                  | The virtual scholar, web usage studies, information literacy, information theory, scientific community                                     | 17        | 17.34        |
| Information Technology                        | Meta search engines, search logs, information retrieval systems, intelligent ranking algorithm, mobile information system                  | 1         | 1.02         |
| Data Organization and Retrieval               | Information seeking, searching, browsing, search strategies, search terms  | 2         | 2.04         |
| Information Industry Economics and Management | Cost-benefit ratio, knowledge management, tacit knowledge, explicit knowledge, digital libraries   | -         | -            |
| Information Ethics and Law                    | Ethics, legal information, open access publications, open source, copyright  | -         | -            |
| User Studies                                  | Information needs, information need analysis, user behaviour, information behaviour, user studies  | 10        | 10.2         |
| Diffusion Studies                             | Information resources, public libraries, library users, information dissemination, print publications                                      | 11        | 11.2         |
| Social Information Studies                    | Disabled people, adolescent well-being, cultural aspects, health information ties, cancer information overload                             | 2         | 2.04         |
| <b>Suggested New Category</b>                 |  |           |              |
| <b>Professional Issues</b>                    | <b>Role of the School Librarian, Advocacy, Hiring, Retention and Professional Development, Dispositions, Principal Support, Leadership</b> | <b>50</b> | <b>51.02</b> |

Table 10: Breakdown of themes based on Aharony's ' framework

When comparing the findings from this study with Aharony's (2011) (see Table 10), we noticed a complete lack of research articles in the areas of Information Industry, Economics and Management, Foundations, and Information Ethics and Law. This is, perhaps, not surprising given the work of school librarians in K-12 settings. What was missing for the authors was a category for professional issues. This seems not to just be a need for school library research but for all LIS research. This category is very useful in the Koufogiannakis, Slater and Crumley (2004) framework (see Table 11). What is missing for the authors in Koufogiannakis, Slater and Crumley (2004) are categories for methodology and user studies found in Aharony (2011).

| <b>Domain</b>                                | <b>Definition</b>  |          |            |
|--|--|----------|------------|
| <b>Collections</b>                           | Building a high-quality collection of print and electronic materials that is useful, cost-effective and meets users' needs   | 12       | 12.24      |
| <b>Education - LIS Education as a subset</b> | Incorporating teaching methods and strategies to educate users about library resources and how to improve research skills<br>- Specifically pertaining to the professional education of librarians | 31       | 31.63      |
| <b>Information Access and Retrieval</b>      | Creating better systems and methods for information retrieval and access.  | 2        | 2.04       |
| <b>Management</b>                            | Managing people and resources within an organization. This includes marketing and promotion as well as human resources.  | -        | -          |
| <b>Professional Issues</b>                   | Explore issues that affect librarianship as a profession   | 39       | 39.8       |
| <b>Reference/ Enquiries</b>                  | Providing service and information access that meets the needs of library users   | 4        | 4.1        |
| <b>Suggested new categories</b>              |  |          |            |
| <b>User studies</b>                          | <b>See Table 10</b>  | <b>5</b> | <b>5.1</b> |
| <b>Methodology</b>                           | <b>See Table 10</b>  | <b>5</b> | <b>5.1</b> |

Table 11: Breakdown of themes based on Koufogiannakis, Slater & Crumley's' framework

The frameworks by Aharony (2011), Koufogiannakis, Slater & Crumley (2005) and Mardis (2011) were insufficient to organize the research into clear categories. The researchers present a modified framework to be tested with future research reviews.

### **Implications and Conclusions**

This research examined the current state-of-the-art of research in school librarianship. Similar trends from previous research were confirmed: research in school librarianship is published in two major journals -- School Library (Media) Research and School Libraries Worldwide. Almost 80% of the research was carried out in the United States. There are a small core group of researchers working in the area of school librarianship. About half of all research is by a single author. The main themes from the research included collaboration between teachers and school librarian, technology integration, the instructional role of school librarians, professional development, analysis of materials, information literacy instruction, practices and assessment, hiring, professional development and retention of school librarians, use of multimedia resources, role of school librarians in the provision of health information, motivation of students, and research in other parts of the world.



Using frameworks (Aharony, 2011; Koufogiannakis, Slater & Crumley, 2005; Mardis, 2011) identified in the literature to categorize the themes of the research articles examined was problematic for the researchers. Each of the frameworks was incomplete and so the authors present the following framework as a tool for categorizing school library research, in particular, but also LIS research, in general.

**Framework for LIS Research Classification**

(based on the work of Mardis (2011), Aharony (2011), and Koufogiannakis, Slater and Crumley (2004))

| <b>Category</b>                                 | <b>Examples</b>  |
|---|--|
| Foundations                                     | Historical issues in librarianship, core values  |
| Methodology                                     | Surveys, questionnaires, Focus groups, Participant Observation, Case Studies, Ethnographic Studies, Social network Analysis, Discourse Analysis, Action research, Chi square method, bibliometric analysis, scientometric analysis, webometrics  |
| Information Literacy Instruction and Assessment | Information Skills, Information Literacy, best practices in IL, assessment of IL instruction   |
| Information Technology Applications and Issues  | Gaming, Technology Integration, Social Media, Database Use, Assistive Technologies, Meta search engines, search logs, information retrieval systems, Mobile Devices, BYOD (Bring Your Own Device) Issues   |
| Data Organization and Retrieval                 | Information seeking, searching, browsing, search strategies, search terms, systems, better methods for information retrieval.  |
| Collection Management and Publishing Issues     | Collection evaluation, Selection of resources, evaluation of resources, inclusive collections (for example, LGBTQ), address diversity of community (multicultural, representations of families, people with disabilities), ebooks, weeding, cataloguing, social tagging, censorship and Internet filtering |
| Reading and Reading Promotion                   | Summer reading programs, book talks, books clubs, reading programs, assessing reading abilities, librarian or library's role in developing love of reading   |
| Information Policy, Ethics and Law              | Cost-benefit ratio, knowledge management, tacit knowledge, explicit knowledge, digital libraries, ethics, legal information, open access publications, open source, copyright  |
| Management Issues                               | Leadership, management, budgeting, advocating for the library, staff development and training, issues with administrators, library boards, principals  |
| User Studies                                    | Information needs, information need analysis, user behaviour, information behaviour, user studies  |

| Category                                  | Examples   |
|---|--|
| Scientific and Professional Communication | Dissemination of research, impact of research, librarian publishing patterns, LIS research trends  |
| Social Information Studies                | Services to: People with disabilities, adolescents, children, researchers, scholars, parents, cultural aspects, health information, information overload<br>Programs and Services for specialized groups |
| Professional Issues                       | Role of the Librarian, Advocacy, Hiring, Retention and Professional Development, Dispositions, Support, Leadership   |
| Education in LIS                          | MLIS Education, Professional Development, educational program evaluation, delivery models (online/blended, full/part-time), competencies, practicum experiences, accreditation,                          |

Table 12: Beesoon and Branch-Mueller Framework for LIS Research Classification

With the untimely passing of L. Anne Clyde in 2005, the database of research and researchers that she so carefully maintained was lost. The authors strongly believe that this work should continue and are committed to building a new database with this information. Mardis (2011) has already pledged her support and provided the authors with data from her study. This database will be available for other researchers and will be passed on to future school library researchers. A copy will be maintained with the IASL Executive Director.

Further research is needed to understand the experiences of school library researchers from 2005 and the second author plans to carry out that work next year.

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