

School Library Media Research: An Analysis of Articles Found in School Library Media Research and the ERIC Database

Best of ERIC

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The purpose of this paper is to study the research that has been completed on school library media centers in recent years. This paper attempts to build upon similar studies that were published in 1993 by Grover and Fowler and in 2003 by Clyde. Studying the research published in School Library Media Research (1998-2004) and the ERIC database (1992-2003) will summarize for the professional community information on many aspects of school library research. This study contributes to the professional literature by determining what types of research methods have been most prevalent in school library research articles, what topics have been addressed by the research, what grade levels have been the focus of the research, and how recent research studies compare to prior studies of school library media research conducted by Grover and Fowler (1993) and Clyde (2003).

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Introduction

Research is a vital component to almost every profession today, and research in the field of library and information science is no exception. The lack of research completed by current library practitioners is a recognized concern in the library and information science (LIS) field. Practicing librarians often do not see themselves as members of the research community, and academic researchers have a tendency to believe that the research completed by LIS practitioners is not as significant as their own (McNicol 2004).

Research is often informally completed by librarians in various library areas, such as public, special, academic, and school libraries. Most often, the results of practitioners are used only for the purpose of furthering the needs of their particular library without considering the research important to anyone else. However, in order for research findings to be implemented in the practice of librarianship, it is necessary for those research reports to be published in professional and research journals (Clyde 2003).

The concept of evidence-based librarianship (EBL) has created an awareness of the value of research literature among library professionals. One of the keys to evidence-based librarianship is the identification of new research findings, which can be used to promote the professional practice of librarians (Koufogiannakis and Slater 2004). For school librarians, it is especially important to use new research of the profession to build upon current practices and provide evidence to the community of how the school library helps lead to the academic success of the students (Todd 2003).

As school library funding becomes an increasingly important issue, school librarians will need to answer whether or not school libraries make a difference in student achievement. School library research provides the basis for effective school library practice, and there is abundant evidence to show the positive impact that school library media specialists (SLMSs) and school libraries have on the academic achievement of students (Haycock 1995).

The questions remain: what research has been completed regarding school libraries and how can librarians keep up with the current research that is being disseminated regarding their profession? With the growth of the Internet, online resources can provide library professionals around the world the opportunity to access research related to school library media centers.

Purpose of the Study

This study attempted to analyze the research that has been conducted on school libraries from two different online sources. Prevalent research methods and topics within school library research were identified. Which grade levels have been the subject of school library research in the past years was also determined. Studying the articles available on these online sources allowed for an analysis of the content that is readily available to almost any education professional or researcher with Internet access. This research also contributed to the growing literature regarding research of the LIS field.

Guiding Research Questions

This research analyzed the characteristics of studies completed on school library research that have been indexed in two online sources. The guiding questions that were used to study these articles included:

- What research methods have been most prevalent in these articles on school library research?
- What topics have been addressed by the research?
- Which grade levels have been the focus of the research about school libraries?
- How do recent research methods used to study school libraries compare to prior studies of research conducted on school libraries by Clyde (2003) and Grover and Fowler (1993)?

Delimitations

This study included only the results found by searching for articles in the online journal *School Library Media Research (SLMR)* and in the ERIC database.

- The *SLMR* Web site (www.ala.org/ala/aasl/aaslpubsandjournals/slmrb/schoollibrary.htm) was used to access articles published from 1998 to 2004.
- The ERIC database, accessed through the EBSCOhost Data Research site of the University of Southern Mississippi Libraries Web site, was used to access full-text-only articles published from 1992 to 2003. The following subjects descriptors were used as search limiters to access the appropriate ERIC articles: “school libraries” AND “research” NOT “student research.”

Definitions

SLMR

SLMR “is an official journal of the American Association of School Librarians. It is the successor to School Library Media Quarterly Online. The purpose of *School Library Media Research* is to promote and publish high-quality original research concerning the management, implementation, and evaluation of school library media programs. The journal will also emphasize research on instructional theory, teaching methods, and critical issues relevant to school library media.”

(www.ala.org/ala/aasl/aaslpubsandjournals/slmrb/aboutslmr/aboutslmr.htm)

EBSCOhost

“EBSCOhost is a powerful online reference system accessible via the Internet. It offers a variety of proprietary full-text databases and popular databases from leading information providers. The comprehensive databases range from general reference collections to specially designed, subject-specific databases for public, academic, medical, corporate and school libraries.”

(<http://bll.epnet.com lynx.lib.usm.edu/>)

ERIC

“The Education Resources Information Center (ERIC), sponsored by the Institute of Education Sciences (IES) of the U.S. Department of Education, produces the world’s premier database of journal and non-journal education literature. The ERIC online system provides the public with a centralized ERIC Web site for searching the ERIC bibliographic database of more than 1.1 million citations going back to 1966. More than 107,000 full-text, non-journal documents (issued 1993-2004), previously available through fee-based services only, are now available for free. ERIC is moving forward with its modernization program, and has begun acquiring materials for addition to the database.” (www.eric.ed.gov/).

ERIC Database from EBSCO host

“ERIC, the Educational Resource Information Center, provides access to education literature and resources. The database provides access to information from journals included in the Current Index of Journals in Education and Resources in Education Index. ERIC provides full text of more than 2,200 digests along with references for additional information and citations, and abstracts from over 1,000 educational and education-related journals.”

(<http://web16.epnet.com lynx.lib.usm.edu/>)

ERIC Subject Descriptors

ERIC subject descriptors search the subject headings that briefly describe the item's content. By utilizing the subject descriptors instead of the default settings in an ERIC search, the user should have results returned with only subject descriptors instead of results from the title, author, subjects (descriptors/identifiers), institution name, core subjects, and the abstract summary fields. The following definitions were taken from the ERIC thesaurus and used as limiters in the search of the ERIC database:

- **School libraries:** used for elementary libraries, high school libraries, secondary school libraries.
- **Research:** the Scopes notes states, "Systematic investigation, collection, and analysis of data to reach conclusions, estimate effects, or test hypotheses"; this term is used for applied research and basic research.
- **Student research:** the Scopes note states, "Research by, not about, students."

Assumptions

It was assumed that the articles accessed for this study had been reviewed by the blind referee process described in the "Submission Process" section of the *SLMR* Web site (www.ala.org/ala/aasl/aaslpubsandjournals/slmrb/aboutslmr/manuscriptpolicy/manuscriptpolicy.htm). It was also assumed that the articles accessed for this study had been reviewed and accepted by the consultants at ERIC. It was further assumed that the articles included in the ERIC database had been correctly indexed with proper subject descriptors to retrieve the articles needed.

Importance of the Study

By analyzing the available articles related to school library research, this study adds to the available literature on research in the LIS field. It also adds to previous studies on the topic of research completed about school libraries. Recognizing and building on past research studies can provide a framework for school libraries' continued effectiveness and possibly even the continued existence of school libraries. The completed research may also lead to relevant findings regarding the field of research in school libraries, and it may provide a way to identify gaps in the research that could be addressed by future studies.

This study was also important to inform decision-makers about the research found regarding school libraries and academic achievement. In a study by Lau (2002), it was found that only 41 percent of the 242 principals surveyed believed the school library had a positive impact on standardized test scores, and only 47 percent said there was a direct link between an effective school library and increased student achievement. In the same study, only 37 percent of the principals had been made aware of current research of library programs and students' achievement, and only 35 percent of principals were made aware of current research on reading development.

Lau's study seemed to show that there has been a lack of communication and understanding about the importance of the school library media center. If more principals, superintendents, teachers, parents, and school board members were aware of the positive research findings

regarding school libraries and academic achievement, perhaps there would be more support for school libraries in general.

Literature Review

Literature Regarding *SLMR*

The online journal *SLMR* exists as the scholarly refereed journal of the American Association of School Librarians. As such, the journal provides a full description of the literature, methods, and results of research that has been completed regarding many aspects of school library media centers. Compared to a print journal, *SLMR*'s electronic format allows for nearly unlimited space for the research information along with charts, tables, and graphs that may be included to summarize research findings (Callison 2004).

Maintaining high standards for research articles is important to the journal's editorial board. As stated by the current editor, Daniel Callison, "successful manuscripts for future publication in *SLMR* should include:

- clear research questions grounded in the literature;
- measurement of actions taken by educators to improve learning;
- rigorous research methods that generate convincing evidence; and
- a fair interpretation of findings that illustrate problems as well as successes." (Callison 2004, 19)

A study completed in 2005 surveyed the value of more than seventy refereed library and information science research journals. Deans and directors from ALA-accredited institutions across the continent ranked the value of these journals in promotion and tenure evaluations. In this study, *SLMR* ranked sixteenth and was the top ranked journal in the school library media field. According to the *SLMR* Web site, the journal was also the only online journal to be ranked in the top twenty (www.ala.org/ala/aasl/aaslpubsandjournals/slmrb/slmrranking/ranking.htm). This survey helped to validate the importance of *SLMR* in the field of school library research.

Literature Regarding the ERIC database

The primary mission of the ERIC system is "to improve American education by increasing and facilitating the use of educational research and information to improve practice in learning, teaching, educational decision making, and research, wherever and whenever these activities take place" (Robbins 2001, 6). Today the database contains more than one million records, which makes it the largest education database and a favorite resource for educators around the world (Tenopir 2004). For these reasons, it was logical that a study regarding the content of research articles on school libraries found in ERIC would be relevant to the literature of LIS research.

Wells's comparative analysis of ERIC and the Library and Information Science Abstracts (LISA) database showed that while ERIC's database was not devoted to library issues, it proved to be superior in that study, although LISA's database was larger and specific to librarianship (1993). The study compared coverage that included acquisition policy, types of material, currency, duplication, recall and precision, price, and the use of authority controls. Wells's study was

relevant to the current research in that it showed ERIC was a viable source for information regarding librarianship, although it was not devoted to that subject. The ERIC database would be a likely source for education professionals and researchers to use when trying to identify information regarding school libraries.

Literature on Studies of LIS Research

Kumar (1995) analyzed the content of ten LIS journals published from June 1994 to June 1995. This research identified information regarding subject trends and authorship characteristics, as well as author affiliation. Each article's subject was categorized to determine whether it was a research or non-research based article. Kumar's research determined that the most popular research method was the survey method and that 71 percent of the articles in the study were non-research based. This study was relevant to the current study in that it analyzed articles to determine the research method used and trends of subject matter published in the field of LIS.

Peritz examined a core list of thirty-nine LIS journals over a number of years to determine the subject of the research, as well as the research method used (1980). Nour analyzed research articles in forty-one LIS journals, identified the research method used, and then classified the articles by subject (1985). Jarvelin and Vakkari (1990) examined thirty-seven LIS journals and identified the topics and research methods used for the articles published in 1985. Jarvelin and Vakkari later replicated their work by analyzing a similar set of journals from earlier years (1993). Williams and Winston examined the research published in five LIS journals to determine the research methods used as well as characteristics of the authors (2003).

Koufogiannakis, Slater, and Crumley (2004) examined research literature published in 2001. They worked to classify the domains of research, the methods utilized, and the trends of journals publishing LIS research articles. This research came to the conclusion that it would be difficult to make a comparison between the frequency of use of research methods and subject or domain trends found in their study and previous studies because of the variations of systems used by previous researchers to categorize the research.

The current research study built on the previous research in that it attempted to categorize research topics, and it also determined which types of research methods have been the most prevalent in school library research. The current research was unlike the research previously described in that it dealt specifically with articles found only in the ERIC database and *SLMR* journal, and it dealt only with school library research.

Literature of Studies Related to Research of School Libraries

There has been a worldwide interest in research designed to understand the various ways in which the school library contributes to student achievement. A study conducted by Clyde (2003) focused on school library research articles from thirty-one nations. The study analyzed the number of articles that were published about each nation's school libraries between 1991 and 2000. Of the 484 total articles in the data set, the United States led the world with 41.5 percent of the articles (201 articles). Australia (17 percent, 83 articles), Canada (9 percent, 42 articles), and the United Kingdom (6 percent, 30 articles) followed. Research taking place on an international scale ranked fourth on this list, and accounted for 8 percent of all articles covering school library research (39 articles).

A total of thirty-one different nations (not including the international studies) were included in Clyde's research study. Other nations represented included Kenya, Sierra Leone, Korea, Taiwan, France, and Latvia (all with one article each). Clyde used population figures, as well as the number of library schools offering research degrees in each nation, to analyze the output of research articles per nation. This research seemed to indicate that school library research was important across the world, although the importance of the research seemed to vary.

In the same study, Clyde also analyzed the publications where the research is reported, conferences that published papers (in English) in the field of school librarianship, author productivity, research methods used, and research topics of the various studies. Clyde used Jarvelin and Vakkari's (1990) classifications for analyzing research methods and found that many of the methods identified by the 1990 study were not used in the ten years examined in Clyde's study. Clyde also determined that Jarvelin and Vakkari's classifications for the analysis of research topics did not prove to be useful for Clyde's study, as the classifications were not truly compatible for school library research. Clyde added six classification categories of research topics to the original twelve topics identified by Jarvelin and Vakkari.

Clyde's study was important to the current research in that it provided an analysis of trends across the world for school librarianship research. The current research also attempted to identify the research methods used in school library research and it categorized the research topics of various studies. Clyde's analysis of research methods was used to help determine the method of the current research.

Grover and Fowler (1993) conducted research on recent trends in school library media research in a follow-up study to one completed by Fitzgibbons and Callison in 1991. Fitzgibbons and Callison examined the reviews of research and doctoral dissertations in the field of LIS from 1927 to 1989. Among their findings were that "existing research does not build on previous research in the field; dissertations are the predominant form of research in the library media field, although these reports are often not disseminated through journal publications; and surveys are the predominant research method used in school librarianship research" (Grover and Fowler 1993). Fitzgibbons and Callison's research was important to the current study as it related to the analysis of research methods used in the library and information science research.

Grover and Fowler's 1993 study reviewed doctoral dissertations and journal literature from 1987 to 1991. The database Dissertations Abstracts International was accessed in order to determine the research methods being taught to researchers entering the field. The ERIC database was accessed to identify literature of research in journals that are widely distributed and have been screened prior to publication. Also included in the study were "Current Research" articles in the *School Library Media Quarterly*, which was the professional publication of the American Association of School Librarians at that time (Grover and Fowler 1993).

The focus of Grover and Fowler's research was to identify trends in school library research based upon dissertations and journal articles for a five-year period. They worked to determine which methods were most prevalent, identify trends in the topics, and identify which grade levels were involved in school library research during the years 1987 to 1991. Finally, the researchers analyzed the results, including the identification of areas that were in need of greater coverage in school library research (Grover and Fowler 1993).

Results of Grover and Fowler's study indicated that a majority of the research on school libraries in the time period studied relied on a single method of data collection. They determined that the questionnaire continued to be the most prevalent method of data collection, and that these studies often did not indicate specific grade levels to be studied by the research. Their suggestions for future studies included having researchers conduct studies using more inquisitive questions about *why* things are happening in the school library setting, rather than just reporting on *what* is happening (Grover and Fowler 1993). Grover and Fowler's 1993 study was important to the current study as the current research attempted to replicate much of the study completed by Grover and Fowler. Therefore the earlier study was the basis for many of the research methods of the current research.

Research Method

Selection of Research Method

In determining which articles qualified as research articles for this study, the research method of Grover and Fowler was used. According to that study, "articles will be considered reports of research if they required systematic data collection using qualitative or quantitative methods. Also included will be reviews of research, such as articles that analyze or summarize previous research" (Grover and Fowler 1993).

Clyde's study (2003) as well as Grover and Fowler's study (1993) on school library media research helped to determine the categories of research methods most prevalent in the school library research articles that were analyzed. Using Jarvelin and Vakkari's research methods classification system from 1990, Clyde determined that many of those methods were not utilized in the time period studied by Clyde. The seven methods most often used in Clyde's research study included survey, qualitative, case/action research, experiment, content/protocol analysis, literature review, and other methods (Clyde 2003).

Grover and Fowler's study on school library research included the research methods of questionnaire, literature review, content analysis, experimental, interview, two methods, and three or more methods (Grover and Fowler 1993, table 1). Because there was no description available as to how the methods were identified in Grover and Fowler's study, the categories of questionnaire and interviews were changed to survey method and qualitative method respectively.

Clyde indicated that the qualitative method of research included the various data collection methods, such as "focus groups, observation, unstructured interviews, and analysis of the written work of school students" (Clyde 2003, 10). Case studies and action research were also considered part of the qualitative method category, because those studies used very similar qualitative data collection methods as described by Clyde. Therefore the categories for research method in the current study became survey, qualitative, experimental, content analysis, literature review, and other methods. Research articles that relied on two methods (or more) were identified as such and were placed into the two-methods category when necessary.

Clyde's study utilized Jarvelin and Vakkari's categories of research topics, but Clyde determined that the categories were not a particularly good fit for school library research (Clyde 2003, 12). For this reason, Grover and Fowler's topics of research for the school library were used to

analyze the subject matter in the current research articles. These five topics included technology, clientele, information resources, SLMSs, and library media center.

The grade levels reported in the research on school libraries were identified by the same categories used in Grover and Fowler's study. The categories used included elementary (K-4), middle school (grades 5-8), high school (grades 9-12), secondary (grades 5-12), K-12, and unspecified (reference to school libraries without a specific grade level mentioned).

Data Collection Procedures

The study began with the selection of appropriate data. From the *SLMR* Web site, articles from 1998 to 2004 (volumes 1-7) were accessed from the contents page. These years were chosen as they were the only complete years of the journal available on the Web site. Each research article that was available in this online format was examined for this study.

ERIC was selected as the database of choice from the EBSCO *host* Research Database of the University of Southern Mississippi Libraries Web site. Using the advanced search feature of ERIC, full-text articles were selected as well as the limiters "school libraries" AND "research" NOT "student research" as subject descriptors. With this process in the ERIC database, the results included articles that have school libraries and research within both the major and minor descriptors of the indexed citation. "Research," according to the ERIC thesaurus, includes both applied and basic research. Some examples of research in the descriptors include "educational research," "library research," and "qualitative research."

The results from this search should not have included articles that deal with student research, which according to the definition from the ERIC thesaurus, includes "research done by students, not about students." This method should have eliminated articles that involve school libraries and research completed by students, such as articles on "teaching research skills."

ERIC database articles from 1992 to 2003 were analyzed for this study. These years were chosen because the Grover and Fowler study analyzed the articles in ERIC up to and including 1991. The year 2003 was the last full year that articles were indexed in the ERIC database before moving to the Internet site.

The quality of the research articles found in *SLMR* or the ERIC database were not addressed by this study. This study did not include articles in which the method of research was not identified, articles in which the primary language was not English, and articles which did not focus on school libraries. Collections of conference proceedings found in the ERIC database were also excluded from this study.

Organization and Analysis of Data

The full-text articles were examined to determine which research method was employed in each research article. By using of combination of the Clyde's study and Grover and Fowler's study, the research methods found in this study were charted according to the following categories: survey (including questionnaires); qualitative (including studies which use interviews, observations, case study/action research, data analysis); experimental; content analysis; literature

review; and other methods. If there was more than one main research method per study, both were identified and placed into the respective categories.

Determining the topics of research regarding school libraries utilized the categories used by Grover and Fowler. Topics of research were determined by looking at the purpose of the study, the research questions, and conclusions of the research. Grover and Fowler's research study found that the research clustered around the following five areas of the school library media field: technology, clientele, information resources, the SLMS, and managing the library media center. Following are the definitions of these topics as taken from Grover and Fowler's study:

- **Technology:** Concerned with the use and impact of information technology in a school library media setting, with little or no regard for the effect of technology on clientele.
- **Clientele:** Concentrated on preferences or attitudes of library users, or the impact on clientele of library media services. Included are such topics as the search process, learning information skills, and using technology-based services.
- **Information resources:** Studies that focused on any aspect of a collection, including studies of youth literature, censorship, and use of a type of information resource, e.g., magazines.
- **Library media specialist:** A study concerned with the preparation, role, activities, or professional status of a library media specialist.
- **Library media center:** Those studies that were concerned with the school library media center as a service organization or with management issues. Included were such studies as descriptions of the status of library media centers in selected states or countries, budget conditions, and use patterns. (Grover and Fowler 1993)

Grover and Fowler's classification for grade levels was also used in analyzing the current research articles. The research method in that study did not indicate if the full-text article would be accessed to gain this information if it was not available from the citation or abstract. The current study did access the full-text article to ascertain all of the information necessary to complete the analysis.

A spreadsheet was created to record all of these data and a second researcher conducted the same research to determine a measure of validity to the results. Upon completion of gathering the information, the results were analyzed for research methods, topics of research, and grade levels covered by the research over time. These results were also compared to the results of other studies completed by Clyde and Grover and Fowler regarding school library research.

Results

The search from *SLMR* was fairly straightforward. All articles found in the years 1998-2004 contained research articles in which the systematic data collection and research methods was readily apparent. For the years studied, there was a total of thirty-seven articles. This research study did not include the "Best of ERIC" articles that were featured in the contents page of each year. Upon studying these articles, it appeared that these "Best of ERIC" articles discussed research that was currently in progress or planned for the future.

The ERIC database results for the search "School libraries and Research" NOT "student research" and the date limits of 1992-2003 came up with sixty-five total articles. Of these, thirty-

eight actually fit the criteria of the study. This was a 58 percent rate of return for the research method employed in obtaining appropriate articles. The articles that were rejected were generally professional articles that described concepts related to the school library, but did not indicate a systematic data collection or research strategy (18 of 65 articles). Some of the articles (7 of 65) were conference proceedings or collections of articles. Two articles contained information regarding the data collected about state public library systems.

Once the articles were identified as appropriate research articles for this study, they were coded by the researcher for initial categorization. The researcher categorized each article from *SLMR* and ERIC to determine what research method (if any) was used, what topic the research covered, and what grade level the research focused on. A second researcher completed the same process of categorizing the research method, research topic, and grade level of research.

The results of this process of reliability varied for each category. The highest reliability came in categorizing the grade level researched. This part of the process achieved a 95.2 percent reliability score. This may be due to the fact that the grade level is fairly easy to identify from the text. The research method earned an 86.4 percent score of reliability. This was more difficult to determine than grade level in that there was some question as to if multiple methods were used in the research, and what specific method was used if it was not specifically mentioned. The most difficult aspect to categorize was the topic of research. This earned an 82.7 percent reliability score. Because of the fact that there were five categories to place the articles into, there was some discussion as to what exactly was the focus of the research.

Research Question #1:

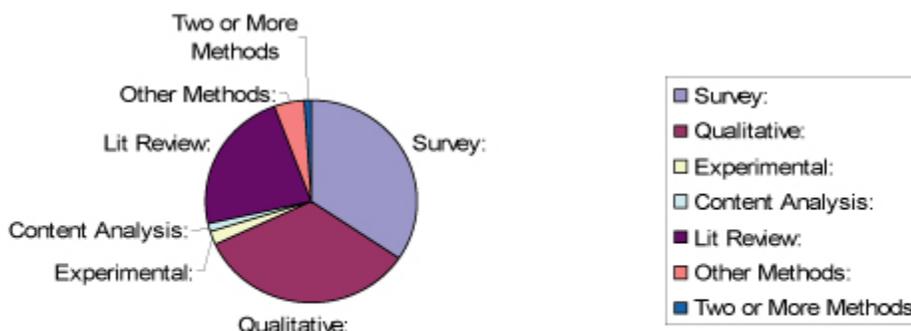
What research methods have been most prevalent in these articles on school library research?

The data for this research question were broken down by the two different online resources in order to get a better idea of what types of studies were completed by each resource. The total results of the methods used in both the *SLMR* and ERIC research are shown in figure 1. The thirty-seven articles found in *SLMR* indicated the following results regarding the research methods utilized in those studies from 1998 to 2004:

- **Survey:** Fourteen of the school library research articles relied on the survey or questionnaire method in the research (37.8 percent).
- **Qualitative:** Fourteen of the research articles described qualitative methods (37.8 percent). Three studies utilized both interviews and observation as methods of qualitative data collection. Overall, five studies relied on interviews as a method of data collection and four used observation to collect the data. Four studies employed some type of data analysis (student journals, Web site, test results, and document analysis), while two studies were described as “action research, and two were described as a “case study”.
- **Experimental:** Two studies used an experimental research design (5.4 percent).
- **Content analysis:** One research study employed the content analysis method (2.7 percent).
- **Literature review:** Ten research articles utilized the method of literature review (27.0 percent).

- **Other methods:** Two articles used different methods from those listed above. One used the phenomenological method and another used the ethnography method, both of which are different types of qualitative design studies (Leedy 2005, 144).
- **Two or more methods:** Six research articles used two or more methods (16.2 percent). Of these, five used qualitative and survey methods, while one used experimental and qualitative methods.

Figure 1. Methods Used in School Library Research (*SLMR* and ERIC)



The thirty-eight school library research articles identified from the ERIC database indicated the following results regarding school library research methods:

- **Survey/Questionnaire:** Sixteen of the thirty-eight school library research articles identified the survey or questionnaire as the method for the research completed (42.1 percent).
- **Qualitative:** Fifteen research articles used some form of qualitative method (39.5 percent). Eleven of these fifteen used interviews as a part of the data collection procedure, while six used observation a part of the data collection procedure. Five articles included two or more different types of qualitative data collection.
- **Experimental:** Zero used experimental methods.
- **Content Analysis:** Zero used content analysis methods.
- **Literature Review:** Ten of the thirty-eight research articles used the literature review method (26.3 percent).
- **Other Methods:** Two methods different from the rest of the categories were noted. One study was a bibliometric study and one was a historical study. Both of these methods were part of Clyde's classification, but as this study also indicates these methods were not widely used in school library media research studies of the time period.
- **Two or more methods:** Of the thirty-eight school library research articles from ERIC during this time period, four used two or more different research methods from the categories identified (10.5 percent). Of these four, three used qualitative and survey methods, while one used literature review and survey methods.

The research indicated that overall, the survey method was the most used research method (40 percent), followed closely by qualitative methods (38.7 percent--see figure 1). These methods were followed by literature review (26.7 percent), other methods (5.3 percent), experimental (2.7 percent), and content analysis (1.3 percent). Only 1.3 percent of the articles in the study used

more than one method. Because some studies used more than one method, the totals for this portion of the research added up to more than 100 percent. This was done to get a full understanding of all of the different types of methods that were used in the research on school libraries.

Research Question #2:

What topics have been addressed by the research?

The research indicated that in the *SLMR* journal, the topic of clientele was addressed most often, followed by research on the SLMS, the school library media center, technology, and information resources. These results may indicate that research about the clientele of the school library has been emphasized by the editors of the *SLMR*. However, without further research or a lengthier study, the reason for these numbers can not be determined.

The research articles found in the ERIC database showed slightly different results. The largest number of articles focused on research about the library media center (fifteen articles), followed by clientele (twelve articles). Studies on technology and the SLMS were the next greatest number (four articles each), with information resources having the least number (three articles). One may hypothesize that articles found in ERIC may deal with the LMC on a frequent basis because of the fact that the LMC is an integral part of the school system and the research focusing on that aspect is important to the education database. Again, this can not be determined from the research conducted, but might be a suggestion for future studies.

While figure 2 shows the breakdown of topics between the articles found in ERIC and in *SLMR*, figure 3 shows the total results of the topics on school library research from both resources. The topic of clientele proved to be the most prevalent of the five categories (39 percent of articles), followed by the library media center (27 percent) and SLMS (21 percent). This finding seemed to correspond to the prevalent methods used, in that these types of topics would seem to be well-suited to research using survey and qualitative methods. Research on technology (8 percent) and information resources (5 percent) was very small in comparison to the other topics. The low number of technology research articles was surprising considering the increasing role that technology has played in the school library setting.

Figure 2. Topics of Research in Both ERIC and *SLMR*

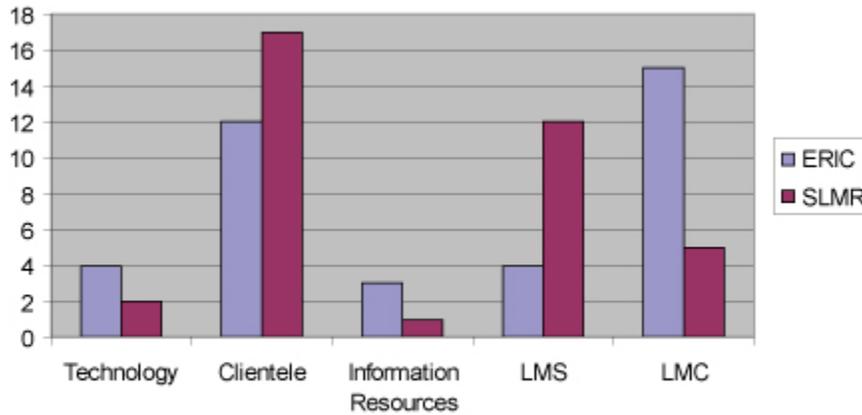
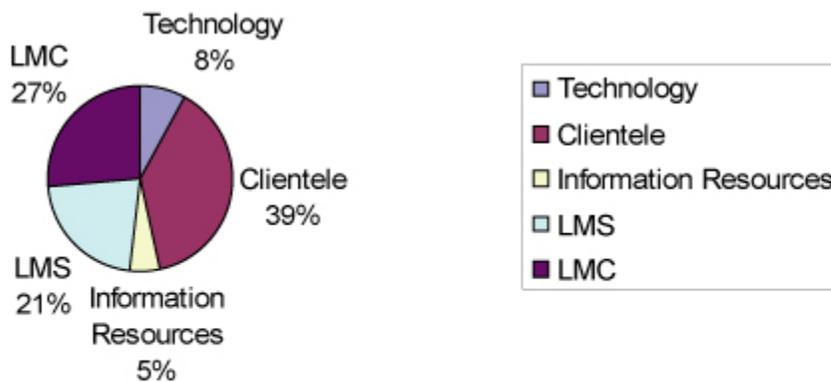


Figure 3. Total Results for Topics of School Library Research

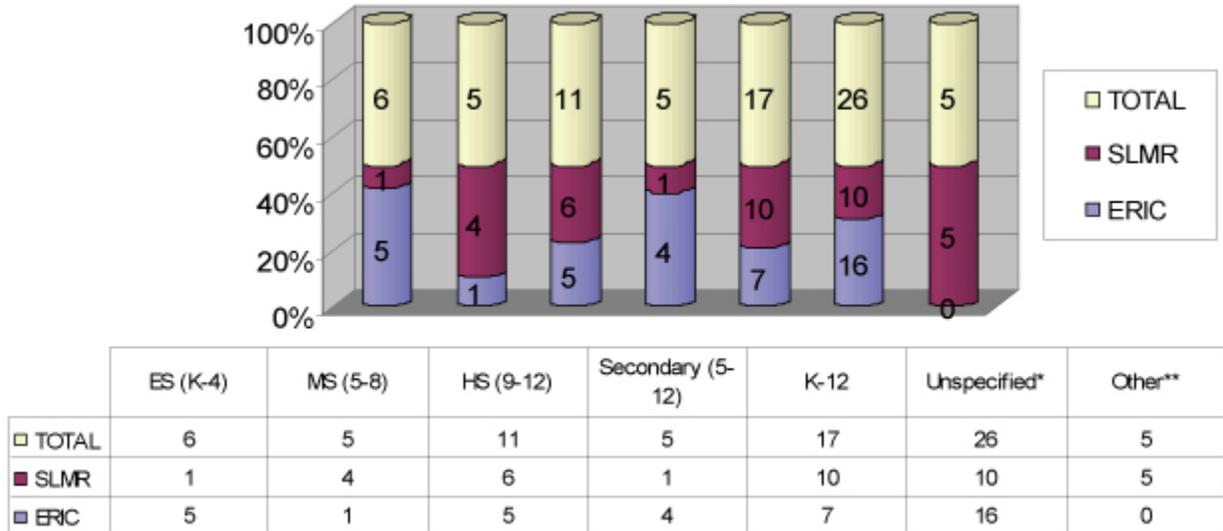


Research Question #3:

What grade levels have been the focus of the research about school libraries?

The research indicated that the largest category of research by grade level was that of “unspecified” (twenty-six total articles, see figure 4). This category referred to studies that did not indicate a specific grade level to be discussed in the research. Both the *SLMR* and ERIC articles had the largest portion of their articles fall into this category (10 and 16 articles respectively). This seems to indicate that the research conducted on school libraries often is researching general information without focusing on a specific group in the research, or that the grade level is not significant enough to indicate in the research findings.

Figure 4. Grade Levels for School Library Research



* (“Unspecified” included that research which not indicate a specific age, specific grade or specific school that was focused on in the research)

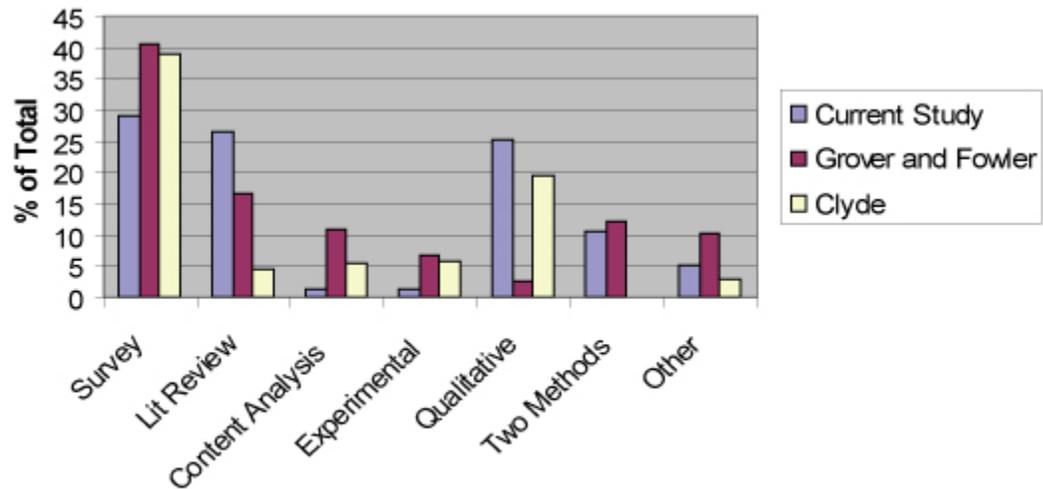
** (“Other” included research that did not fit into another category; such as studies on Pre-K students, students in grades 4 and 8, grades 3–8, grades 4–8, and students ages 2–18)

Research completed on the K-12 grade levels was the next highest in this study (seventeen total articles). Again, both the *SLMR* articles and ERIC articles shared this category as their second highest category (ten and seven articles respectively). The fewest studies were completed on the middle school (five total articles) and secondary age groups (five total articles).

Research Question #4:

How do recent research methods used to study school libraries compare to prior studies of research conducted on school libraries by Clyde (2003) and Grover and Fowler (1993)?

The finding that surveys were the most commonly used method was not surprising, considering that this was the most popular method identified by a number of other studies on LIS research. Clyde’s study on school library research from around the world indicated that 39.1 percent of the research articles from 1991 to 2000 used the survey method (2003, 10). Grover and Fowler’s study on school library research showed that 40.5 percent of research articles used a survey (or questionnaire) method (Grover and Fowler 1993, table 1). The current research showed comparable results from the data sample with 40 percent of all research articles utilizing the survey method (see figure 5).

Figure 5. Comparison of Frequency of Methods

The second most commonly used method from the current research was the qualitative method. Clyde's study indicated that in the research articles from 1991 to 2000, qualitative methods were used in 19.6 percent of the studies, which was also the second most common method in that study (2003, 10). Clyde's research also indicated that the use of qualitative methods increased over the time period studied. Interviews accounted for only 2.7 percent of the research methods found in Grover and Fowler's study (1993, table 1). The current research may provide some evidence that Clyde's analysis has merit, as 38.7 percent of the research from the current study used qualitative methods. However, the current research included case studies and action research as part of the qualitative field, while Clyde separated those categories. If case/action research was added to qualitative methods in Clyde's study, the total (28.7 percent) would be closer to the current research findings.

The literature review was used the third most often in the current research (26.7 percent). This related more closely to Grover and Fowler's study (16.9 percent--the second most frequently used) than to Clyde's study (4.5 percent--the seventh most frequently used). There was no apparent indication as to why these number varied so greatly, and therefore this might be an area for future research.

Experimental (2.7 percent) and content analysis (1.3 percent) were rarely seen in the current research study. Clyde's study indicated that experimental methods were used in 5.8 percent of the research studies on school libraries, and content analysis was used 5.6 percent of the time (2003, 11). The current research was similar to Clyde's in that experimental and content analysis were the fifth and sixth most frequently used methods in both studies. Grover and Fowler's study (1993) differed from the current study's results in that their research showed that experimental methods were used 6.7 percent of the time, and content analysis was used in 10.8 percent of the research studies (1993, table 3).

The use of "other" methods ranked fourth in popularity in both the current research (5.3 percent) and in Clyde's research (8.5 percent). This was interesting because of the fact that Clyde used eighteen different methods for classification and the current research used five methods (not

counting “other” or two methods). This perhaps indicates that the most popular methods found in Clyde’s study continue to be the most common methods used by school library researchers.

There was one bibliometric study and one historical study in the current research study, both of which were possible categories in Clyde’s study. The two remaining studies in the “other” category of the current research were described as phenomenological and ethnography, which were not part of Clyde’s categories. The results of this part of the research seem to indicate that the categories used by the current study were able incorporate all methods of research without using the “other” category with too much frequency.

Discussion

The findings of the current research seem to replicate some of the findings of earlier studies on school library research. In the Grover and Fowler study, much emphasis was placed on the type of method used to research the various topics within school library research. Grover and Fowler determined that the questionnaire (survey) was the main method used to research in technology, the SLMS and the library media center (1993). In the current research, the survey was the main method of research for studying the library media center and clientele. Table 1 indicates the frequency of topics studied by each method.

Table 1. Frequency of Topics by Method in Current Study

	Survey	Lit Review	Content Analysis	Experimental	Qualitative	Two Methods	Other
Technology	4	2.7	0	0	1.3	0	0
Clientele	5.3	10.7	0	1.3	14.7	5.3	1.3
Information resources	1.3	0	1.3	0	1.3	0	1.3
LMS	4	8	0	0	5.3	2.7	1.3
LMC	14.7	5.3	0	0	2.7	2.7	1.3
TOTAL— 75 articles	29.3	26.7	1.3	1.3	25.3	10.7	5.2

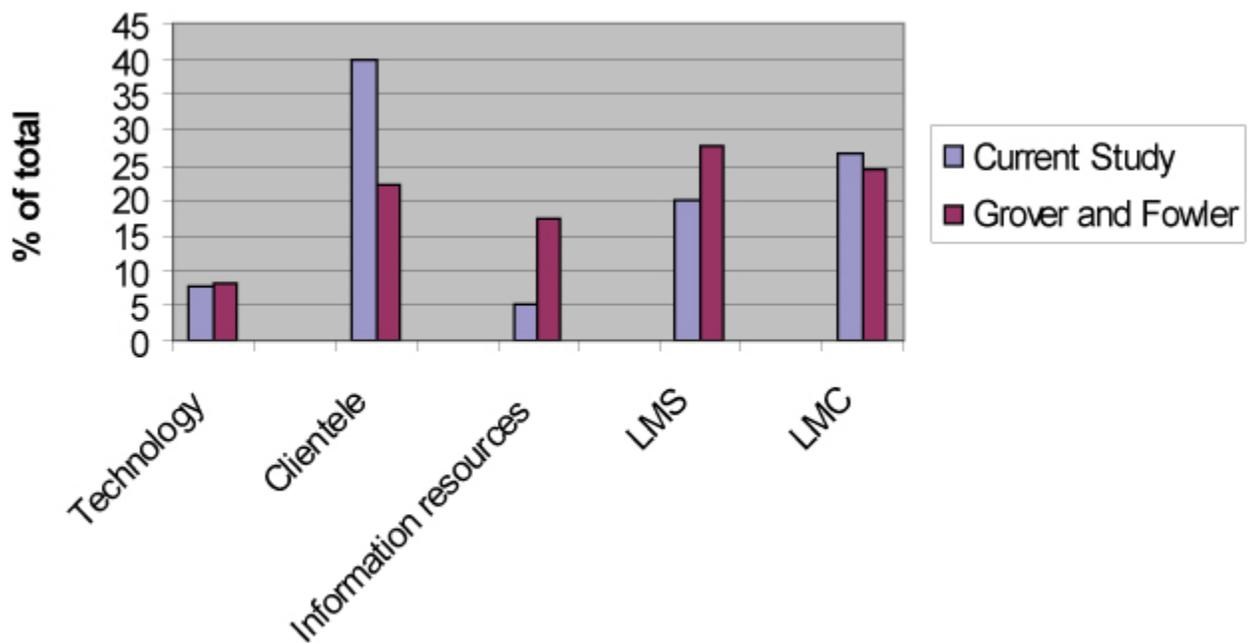
The use of the survey method may indicate that there is more to be researched after the survey is completed. There are many types of questions that can only be determined by the use of a survey instrument, however, the trend seems to continue for library researchers to rely on this type of method without delving into solving the problems that may be relevant to the school library.

In the current study, as well as in Grover and Fowler’s study, two or more methods were used to research both clientele and the library media center. This would seem to indicate that there remains a need to get a variety of data for researching those topics. Grover and Fowler found that

gathering data by experimental methods was important for studying clientele, but that overall experimental studies are not widely used in the field of school library science research (1993, online). The use of experimental methods was very infrequent in the current study, with only 1.3 percent of the articles analyzed using this method.

As for the research topics in school library research studies, the results were fairly similar between the current study and Grover and Fowler's study (see figure 6). The percentage of research articles that dealt with technology in Grover and Fowler's study was 8.2 percent, while the current research determined that 8 percent of the articles studied focused on technology. The Grover and Fowler study also found that 24.3 percent of the research dealt with the school library media center, and 27.7 percent of the research dealt with the SLMS (1993, table 3). The current research determined that 26.7 percent of the research examined with the school library media center and 20 percent of the research focused on the SLMS.

Figure 6. Frequency of Topics



The two major differences in topic areas came from studies about clientele and information resources. Grover and Fowler determined that studies focused on the library clientele 22.2 percent of the time, while the current research found that 40 percent of the studies focused on clientele. Studies on information resources were not as large a part of the research in the current study (5.3 percent), as compared to the study by Grover and Fowler (17.5 percent). These results may suggest that research on clientele has become more important to researchers in the recent past, and that information resources have become less important to the research on school libraries. Further studies would be needed to follow up on this hypothesis.

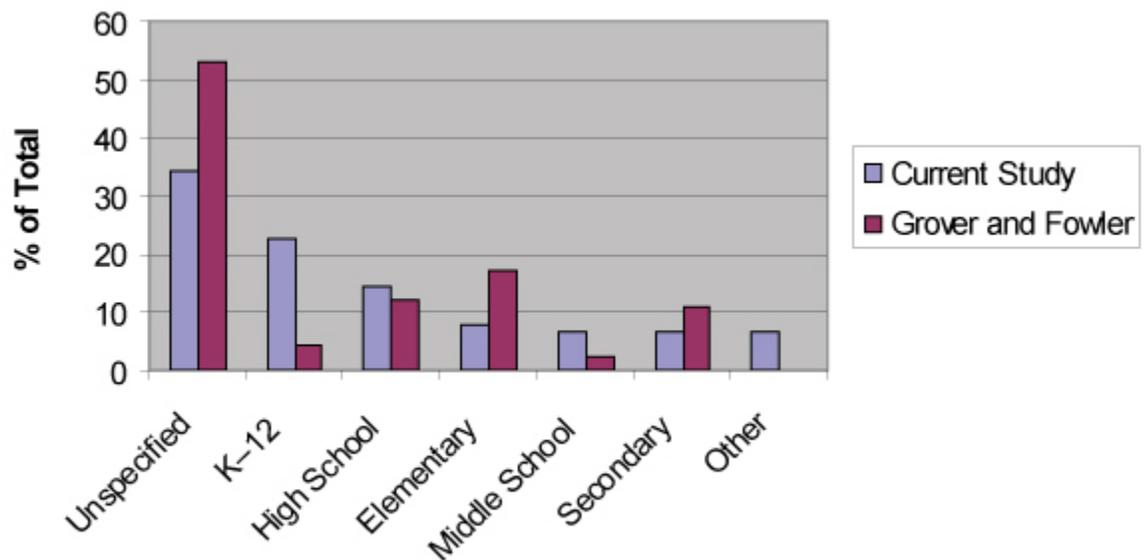
Grover and Fowler's study suggested that more research needed to be completed in the area of technology in school libraries (1993). However, research collected by the current study would indicate that this has not been achieved in the years since Grover and Fowler's study. In terms of

the importance that technology has in the school setting, especially in the area of the school library, it seems that more research should be completed on how technology is used by students. Topics related to technology such as the search process and use of information from technology sources such as the Internet should be topics of future research.

Grover and Fowler also indicated that more qualitative studies need to be completed regarding patron's use of the information resources within a library (1993, online). It would appear that this also was not realized by the research articles analyzed for this study. Very few studies overall dealt with any aspect of the resources found in the library, including the areas that were heavily covered in the time period of Grover and Fowler's study, such as attempts to censor materials and analysis of collections.

The research completed on the various grade levels of school libraries suggest that some changes have taken place since the Grover and Fowler study (see figure 7). The biggest change appears to be in the area of K-12 research. The current study indicated a fairly large percentage increase in the number of K-12 school libraries involved in school library research. There was a decrease in the number of studies completed regarding elementary school libraries.

Figure 7. Grade Levels Researched



There was a greater number “unspecified” grade levels in Grover and Fowler’s study, but there was no category for “other,” which may indicate that the methods of the two studies were different. The current study added “other” as a category to classify grade levels that were mentioned but did not fit the categories defined by Grover and Fowler’s study.

Suggestions for Future Studies

Suggestions for future studies on this topic might include using a larger collection of journals for a longer period of time to gain a greater understanding of the trends of the research on school libraries. The scope of this study is very limited, using only two online data sources for limited years to gather the research. As the ERIC database is being discontinued, it may be of value for future studies to determine if similar trends will continue in the school library research found in that site. Likewise for the *School Library Media Research* journal, it may be of interest to researchers to study trends found in that online journal as it grows over time.

An important topic related to this issue would be to determine who is reading the research that is conducted on school libraries. This might be achieved by surveying people who work in positions, such as SLMS, school principals and administrators, as well as academic librarians. This survey might include questions about which, if any, professional journals they read; how often do they read professional articles related to library and information science; how often do they implement research results to their professional practice; and how often do they conduct research related to their profession.

Who is conducting research related to school libraries is another important aspect that could be addressed in future studies. This might be done by completing an analysis on the authors of the research articles from this study or authors from another sample of school library research articles. It might be of great value to determine who writes and conducts the majority of research on school libraries. This may also lead to studies about how to encourage more librarians to conduct and write research about their professional experiences.

Regarding the trends of topics of school library research, it may be of interest to determine if new trends will develop based on government such initiatives as No Child Left Behind. The article “Research in School Library Media for the Next Decade: Polishing the Diamond” describes the trend that research in school libraries should take in the next decade (Neuman 2003). Neuman explains that research should focus on the relationship between the school library and student achievement, even though this topic has been growing in importance in the past number of years (2003).

In light of the growing importance of funding for school libraries, as well as justifying the role of school libraries in academic achievement, it would be of value to school librarians to become more active in the research process. Conducting research in their own library settings is important for evidence-based learning of their own schools, but that research also needs to be disseminated to the rest of the library profession. If school librarians are to become more involved in the research process, there needs to be some encouragement and intervention from the rest of the profession to get that research started.

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