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Joanne Koukoulas

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2018

# School Library Trends: A Bibliometric and Content Analysis

Joanne Koukoulas

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Fall 9-28-2018

# School Library Trends: A Bibliometric and Content Analysis

Joanne Koukoulas

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School Library Trends: A Bibliometric and Content Analysis

A Dissertation

Submitted to the Faculty

of

The Palmer School of Library and Information Science

at

Long Island University

by

Joanne Koukoulas

In partial fulfillment of the requirements for the degree

of

Doctor of Philosophy

September 2018

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**Palmer School of Library and Information Science**  
**DOCTOR OF PHILOSOPHY IN INFORMATION STUDIES**

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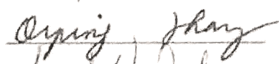


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(Attach Abstract)

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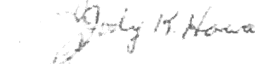

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## ABSTRACT

Today, AASL Twitter is one of the most widely used social media communications among school library practitioners. While scholarly communications in school library is conducted in an array of topics across the field of school library, it is difficult to establish how much of the scholarly communications is exposed to these practitioners.

The study included three phases in its design: 1) To conduct a bibliometric analysis to find out the major authors, affiliations, themes and evolution of journals in field of school library, 2) To complete a content analysis of the AASL Twitter social media communications to find out the major participants, affiliations and themes and evolution in AASL Twitter communications, 3) To compare and contrast the major authors and themes of evolution in scholarly communications in the field of school library and AASL Twitter communications.

During the years 1905-2018 scholarly communications have gone through various stages including infancy, growth and an upsurge stages. In recent years scholarly communications have been decreasing from the years 2010 to 2018. Trends in themes among scholarly communications and AASL Twitter communications include media, books, reading, Internet, children, literacy, standards, awards, technology, education, public, resources, teachers, students and electronic themes among other results. The trends between scholarly communications in the field of school library and AASL Twitter communications help provide support for future constructive goals among school library professionals.

Keywords: School library, AASL Twitter, bibliometric analysis, content analysis, Venn diagram, scholarly communications, practitioner communications

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## CHAPTER 1 INTRODUCTION

### 1.1 Background

According to the American Association of School Librarians (AASL), school librarians are vital instructional partners, informational specialists, teachers, program administrators and leaders in schools across the United States (AASL, 2017b). Even though school librarians are a dynamic part of education in most public schools across the United States, school librarians have been cut or reduced when funding is low (Edwards, 2012; Holland & Vance, 2015; Peet & Vercelletto, 2016). Even with this reduced funding the strength of school libraries need to be resilient which requires the continuing work of scholarly communicators to support the growth of school libraries and its professionals in our country.

Concurrently, scholarly communications in the field of school library focuses on issues such as pedagogy (instructional theory and teaching methods) and school library programming (management, implementation and evaluation), (AASL, 2017; Dickinson et.al., 2012; Grover & Fowler, 1993; Howard & Eckhardt, 2005; Howard, 2015). Such scholarly communications help build upon the knowledge base and inform action in the field of school library (Subramaniam, 2014; *School Libraries Work*, 2016). As scholarly communications continue to uncover impending issues in school library they also transform school library agendas and focus for this field of expertise.

This study poses epistemological implications for the field of school library. The paths of knowledge incorporate a variety of ways to gain information, and while scholars disseminate information mainly through formal scholarly communication (such as journals, conferences,

books, etc.), social media networking provides an additional way to allow professionals to keep up with the field and share their experiences in an informal way. A popular social networking platform for school library is Twitter (AASL, 2017). Other social networks include Facebook, Pinterest, LinkedIn, Google+ and Instagram for school library professionals. (See . 1).

**Table 1: Comparison of Followers of 6 AASL Social Media Networks (As of October 2017)**

AASL Social Media Networks	Followers
Twitter	22.4K
Facebook	9,525
Pinterest	1,268
LinkedIn	585
Google+	429
Instagram	201

For the purposes of this dissertation, Twitter social media connections will be used because it has an abundance of communications among its participants. The AASL Twitter communications provides a great amount of communications that scholars should be interested in as well as practitioners for best practices. Their merging ideas of both practitioners and scholars offer the field of school library a wealth of ideas, if we can only decipher what is truly the focus and trends for them.

However, it is not clear whether school library professionals actively participate in both scholarly communications and social media communications. School librarians have numerous professional functions and responsibilities, which often impacts their ability to communicate with scholars. In parallel, school library scholars are not always able to take the time to take part in social media communications and to impart valuable information to the practitioners through social media activities. Although scholarly communications in the field of school library is

conducted in an assortment of themes, we can only wonder if practitioners are exposed to these ideas or if these ideas are similar to their own.

The proposed study aimed at identifying similarities and differences between scholarly communications and AASL Twitter social media communications trends in the field of school library. It conducted a bibliometric analysis of scholarly communications and content analysis of Twitter social media network communications in the field of school library to identify similarities and differences. The findings of the study begin to support constructive connections to strengthen school library professional goals such as fostering the love of reading, literacy and learning, providing access to resources in a variety of formats, promoting opportunities for students to become effective users of information, and advocacy in school library programming as a whole (Barnett, 2015; Church, 2017; Kachel, 2016; Levitov, 2013; Smith, 2017).

## **1.2 Statement of Research Questions**

The following research questions (RQs) pertain to the trends for scholarly communications in the field of school library:

*RQ 1: Who are the major authors and their affiliations for scholarly communications in the field of school library?*

*RQ 2: What are the major themes and evolution for scholarly communications in the field of school library?*

*RQ 3: What are the major journals for scholarly communications in the field of school library?*

The following research questions (RQs) pertain to AASL Twitter communications:

*RQ 4: Who are the major participants and their affiliations in AASL Twitter communications?*

*RQ 5: What are the major themes and evolution in AASL Twitter communications?*

The following research question (RQ) pertains to comparing and contrasting the results of scholarly communications and AASL Twitter communication trends:

*RQ 6: What are the similarities or differences in authors and their affiliations between scholarly communications and AASL Twitter communications for school library professionals?*

*RQ 7: What are the similarities or differences in themes between scholarly communications and AASL Twitter communications for school library professionals?*

### **1.3 Significance of Proposed Dissertation Study**

This dissertation study uncovered the scope of implications for the paths of knowledge in the field of school library or ways in which school library professionals obtain knowledge in practice. While scholarly communications in the field of school library is conducted in an array of topics across the field of school library, it was difficult to know how much of the scholarly communications were exposed to practitioners and if their focus was similar or different. Likewise, it was difficult to know what school library professionals focused their attention upon and what these trends were through social media activities. The research study compared and contrasted trends to identify similarities and differences between scholarly communications in the field of school library and AASL Twitter communications. Identifying these similarities and differences in trends will help strengthen and support future school library professional goals.



## CHAPTER 2 LITERATURE REVIEW

The areas of literature review encompass the importance of scholarly communications in the field of school library, pedagogy, programming, professional communication on social media and scholarship, school library practitioners using AASL Twitter, bibliometric analysis, content analysis, and a Venn diagram to analyze the focus and trends in the field of school library. The first part of the literature review includes an overview of scholarly communications in the field of school library. Scholarly communications in the field of school library includes the importance of pedagogy and programming to foster best practices in the field of school library and is discussed in the review of literature. Pedagogy issues are discussed to gain an improved understanding of the importance of instructional theory and instructional goals for both certified school library teacher candidates and to continue to professionally develop existing school librarians. The importance of teaching methods for school librarian candidates and existing school librarians will be discussed to better form an understanding of the need for best practices in teaching practice. Secondly, the importance of professional communications on social media, including AASL communications and Twitter are discussed in this section. Thirdly, bibliometric analysis and its three laws are discussed to provide a vehicle to analyze scholarly communication trends in the field of school library. Subject and co-word analysis will be discussed to form an understanding of how frequencies of subjects are identified to show impact of research in the field of school library. Furthermore, content analysis will be discussed to provide a way to analyze the Twitter social media connections of participants, their affiliations, and topics of discussions among them. Lastly, a Venn diagram will be used as a tool to provide a visualization to compare and contrast relationships between two datasets.

## **2.1 Scholarly Communications in School Library**

Scholarly communications in the field of school library encompass but are not limited to library users, technology, resources, school librarians and management of school library programs (Grover, 1993). These communications in the area of school library include instructional theory, best practices, teaching methodology and issues relevant to the field of school library (AASL, 2016). More recently, the Institute of Museum and Library Services (IMLS) awarded the NxtWave grant which recognized the need to foster and develop the skills of future scholars in the field of school library, to create and contribute to the knowledge base of the profession, to conduct more evidence based research in the school library profession, to create a research agenda of AASL and the importance of training practicing school librarians in the use of research to improve their programs and the field of school library (AASL, 2014a; AASL, 2016; AASL, 2017; Dickinson et.al., 2012; Howard & Eckhardt, 2005; Howard, 2015). Scholarly communications continues to be a necessary component for the growth and promotion in the field of school library professionals today.

### **2.1.1 Research on Pedagogy in School Library**

According to AASL Executive summary (2013) the most important part of a school librarian's job is to develop students' literacy skills and focus upon 21<sup>st</sup> Century Literacy Skills, National School Library Standards, integration of technology in content areas, differentiating instruction and reading instruction (AASL, 2017). Both school librarian candidates and existing school librarians need instruction to apply best practices in their instruction to meet education goals.

### **2.1.2 Research on Programming in School Library**

School library programs that integrate information literacy skills and literature and offer opportunities to collaborate in research projects support quality school library programs (AASL, 2017; Church, 2017; Easley, 2017; Huggins, 2017; Williams, 2016). School libraries place the learner at the center of its programming. School library programming provides students with the ability to learn information literacy. School librarian candidates need explicit guidance in library programming best practices to be able to carry out these responsibilities once they attain positions in schools. Likewise, existing school librarians must continue their professional development to understand the needs of school libraries and its constituents to carry out these functions.

### **2.2 Professional Communications on Social Media**

The use of social media is widespread across diverse communities and disciplines. The use of social media has allowed academia and its practitioners in particular subjects to connect to topics related to their field of expertise (Sugimoto, 2017). Bornmann (2016) stated that social media reveals shifts and visibility in scholarship and their communications. As a result of using social media and creating a more broad audience, the research can be seen and viewed by more individuals (Van Noorden, 2014). There is considerable evidence of scholarly communication via social media (Moran, Seaman, & Tinti-Kane, 2011; Ponte & Simon, 2011; Rousidis, Garoufallou, & Balatsoukas, 2013; Tenopir et al., 2013). The use of social media by researchers in general, ranges from 75 to 80% in large-scale surveys (Rowlands et al., 2011; Tenopir et al., 2013; Van Eperen & Marincola, 2011). Facebook and other social networks have been widely

used for communications (Bowman, 2015; Capano, Deris, & Desjardins, 2009; Haustein, Peters, Barllan, et al., 2014; Madhusudham, 2012; Moran et al., 2011).

Social networking provides an informal setting in which people can connect while attending other activities to obtain information and expand upon ideas related to their interests. Social networking communities are easily accessible and provide a unique opportunity for groups of people to connect with others anywhere and anytime. This unique information service is extremely useful when someone wants to gain information in his or her field and is not required to provide any information in return. The risks are few when joining these types of communities and there are many possible benefits for consumers in gaining new information to meet their needs.

Social networking communities create relationships and connections among users (Paz, 2009). These communities connect and engage people to one another (Hjorth, 2013). Consequently, there is a social shaping within the use of varying Internet technologies (Goodwin, 2008). Social networking communications such as Twitter provide their users with information networking and strengthen relationships among users. Hirsch & Silverstone (2003) similarly stated, social networking communities converge to learn, create and explore information for their own needs. In parallel, the Pew Research Center noted users of Facebook and Twitter had increased their usage in social media in recent years (PEW Research Center, 2011). Exploring these social media communications further can uncover their potential impact.

The combined uses of metrics enable us to better measure the impact of studies in the social sciences (Chavda & Patel, 2015; Eysenbach, 2012; Mcfedries, 2012). Eysenbach (2012) stated, "Tweets can predict highly cited articles within the first 3 days of article publication.

Social media activity either increases citations or reflects the underlying qualities of the article that also predict citations, but the true use of these metrics is to measure the distinct concept of social impact” (34). In the same vein, social media increases citations of scholarly communications and their impact (Chavda & Patel, 2015). It is helpful to evaluate social media connections of school library professionals so that we may find out what key topics are trending and what key topics need further investigation in the field of school library.

### **2.2.1 AASL Professional Communications on Social Media**

Social media networking provides a vehicle in which practitioners and scholars can communicate ideas and concepts specifically related to their field within a large audience. According to AASL, its social media platforms include Twitter, Facebook, Google+, Instagram, LinkedIn, and Pinterest (AASL, 2017). For the purposes of this study, Twitter social media network was focused upon as a vehicle to share news and information, educational trends, to contribute to the school library community and promote professional interactions in the field of school library.

The importance of demonstrating the value of research and scholarly communications in academia has been of great importance in academia and with the use of social media the hope is to reach a broader audience using social media platforms (Wilsdon et al., 2015). In this perspective, social media platforms are used to measure impact of scholarly communications. The importance of using a variety of metrics is to establish the social impact of scholarly works.

The content analysis of Twitter data provides a breakdown of social media communications to specific scholarly works, and scholar’s social media impact. Although school

library social media networking provides a plethora of information to its users, the question remains if these practitioners' interests reflect that of scholarly communications in the field of school library today.

### **2.2.2 AASL Twitter Communications**

Twitter feeds such as AASL expand upon the social connections among school library professionals (AASL, 2017). Social networking such as Twitter reaches its constituents by creating an atmosphere where stakeholders could expand their knowledge, stay current, and exchange ideas in their field of expertise (Fisher & Bishop, 2015). We can also evaluate the trends in communication to find out key topics of importance among school library professionals.

Additionally, in the field of library Qiong (2013) found that a large percentage of adopters of new technologies find social media to be a highly convenient source to acquire new information. Information services such as Twitter information services provide their users with reference and instant information when they want or need it. However, not all users adopt or use information services within a community at the same rate. Rogers (2003) described how members of social system or community adopt innovations such as social networking services in different ways. Communities today utilize social media channels of communication as a means to obtaining information and services related to their interests and needs. Analysis of school library professionals' usage of Twitter provided us with school library trends.

## **2.3 Bibliometric Analysis**

The use of bibliometric analysis is an effective tool to measure impact of research in the field of school library. The impact identifies who the key researchers are and the impact of the journals or papers in a given field of expertise. The use of bibliometric analysis using subject and co-word analysis provides us with a quantifiable value we can use as a measure in the prominence of scholarly communications.

Bibliometrics is an evaluative tool in which impact in scholarly communications areas can be identified (King, 1987; Narin, 1976). Bibliometrics can include an analysis of literature in a specific field, impact of specific researchers and impact of specific journals or papers. The number of citations for a given paper, scholar, institution indicate its impact in specific areas of academia. Researchers can find out the impact of journals by looking at the number of times the article has been cited (Mcfedries, 2012). Bibliometrics are used to evaluate the extent to which scholarly works impact their field of expertise (Noyons, 1999) and are an important component of this study. Bibliometric studies provide a method to analyze the usage of scholarly works (Osareh, 1996; Pelzer & Wiese, 2003; Pritchard, 1969; Roy & Basak, 2013; Tijssen & Leeuw, 1988). Bibliographic methods provide a quantitative measure in evaluating literature in a variety of disciplines. Bibliometric analysis was an important component in this dissertation since it allowed us to evaluate the impact of journals, authors, themes and the institutions of scholarly communications for the field of school library.

### **2.3.1 Three Bibliometric Laws**

Bibliometric laws provide a means to describe the working of a system in quantifiable representations. The three prime bibliometric laws are Lotka, Bradford and Zipf's laws. Lotka's Law reveals the frequency distribution of an author's works in a given field. It takes into account

the number of publications and the number of authors credited with such publications (Egghe, 2005; Lotka, 1926; Nicholls, 1989). It is a measure used to identify author productivity in a large dataset. Bradford's law reveals patterns of how literature in a subject is dispersed in journals. Bradford's formula provides a way to estimate the most productive sources of a total set of sources. In this way, we can distinguish the highest yield of contribution of a set of journals for a specific range of dates (Bradford, 1985; Hjørland & Nicolaisen, 2005). Zipf's Law provides familiar high frequency words in a given dataset of articles to establish the frequency of subject matter occurrence (Wentian, 1992; Zipf, 1949). These laws help to analyze the impact of literature in a specific field, the researchers, and specific journals or papers.

### **2.3.2 Subject Analysis**

Subject analysis provides us with a measure to analyze how often subjects are most evident in scholarly articles in the field of school library. This type of subject analysis helps us identify the number of scholarly articles in the field of school library that we want to utilize for research within a specific research theme. The articles that have the highest frequency of subjects have a greater influence in the given field of expertise (An, Zhang & Yu, 2011; Mitchell, 2006; Olson, Boll & Aluri, 2001).

### **2.3.3 Co-word Analysis**

Co-word analysis is a content analysis technique that uses the repetition of incidence of pairs of words in a large number of text to identify relationships between ideas within a specific subject area (Small, 1977). The frequencies of co-word incidences are clustered into groups and are mapped out to identify relationships. The relationships that form different clusters can be



compared with other data for different time periods and identify relationships of pairs of words to identify dominant relationships among keywords in a dataset (Coulter, Monarch & Konda, 1998; Courtial & Law, 1989; Turner & Rojouan, 1991). This analysis identified relationships of trends in scholarly communications for the field of school library and AASL Twitter communications.

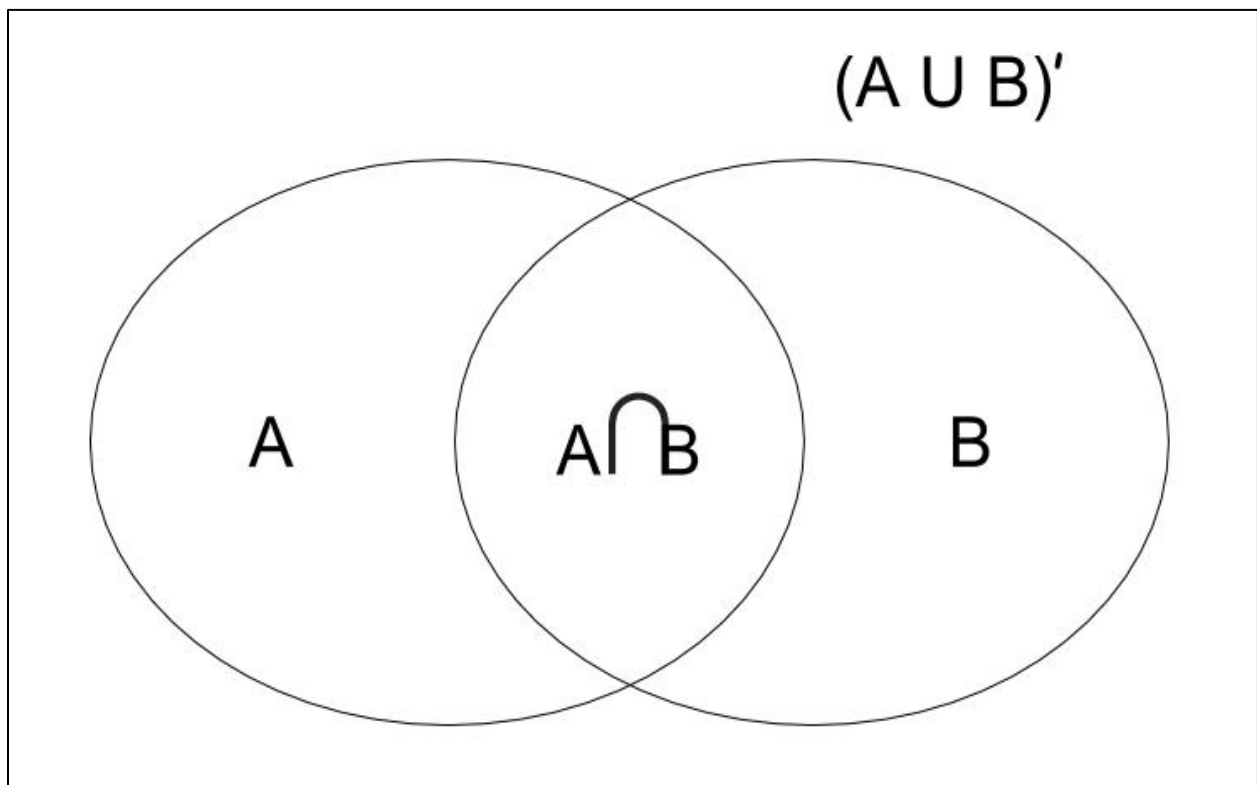
## **2.4 Content Analysis on Twitter**

There have been many contributions in research using content analysis of Twitter communications. The content analysis of Twitter feeds helps to identify tweeting communications. Using the automated techniques such as Tweets, Re-Tweets and Likes, researchers can conduct content analysis (Al-Daihani, Suba & AlAwadhi, 2015). They can assign discriminative tokens or values and code the topics and participants who are participating in Twitter for a specific subject or assigned variable. Based on annotated values of user Tweets, Re-Tweets and Likes we are able to compute similarities among users considering the information communications of Twitter feeds. User similarities are used to create clusters of participants with similar behaviors and can interpret these activities of groups such as AASL users of Twitter (Ogan & Onur, 2017; Segesten & Bossetta, 2017). More specifically, authorship, affiliation and themes of focus of AASL Twitter communications were used in the proposed dissertation study.

## **2.5 Venn Diagram Analysis**

Venn diagrams, also known as primary, set or logic diagrams show all possible logical relationships between a finite set of data (Edwards, 2004; Ruskey & Weston, 2005; Venn,

1880a). For the purpose of this study, data were separated into two sets: bibliometric analysis of scholarly communications in the field of school library and content analysis of a specific social media network. This dissertation will uncover the focus of scholarly communications in the field of school library and the practitioner's social media focus. The Venn diagram will be able to produce any similarities and contrasting relationships between the two sets of data.



**Figure 1: Venn Diagram Representing 2 Sets of Data (Venn, 1880)**

## CHAPTER 3 METHOD

This chapter describes the methodological process used for the dissertation study to investigate the research questions identified in Chapter 1. It is comprised of five parts: 1) study design with phases for completion, 2) data collection procedures, 3) data analysis tools, 4) data analysis plan, 5) answering research questions. The study aimed at identifying possible similarities and differences between scholarly communications in the field of school library and AASL Twitter social media communications.

### 3.1 Study Design

There were three phases for the data collection in this dissertation study.

Phase 1: To evaluate which database has the highest numbers of peer-reviewed scholarly articles in the field of school library.

Phase 1 pertains to scholarly communication trends in the field of school library. First an evaluation of databases was conducted in order to find out which database had the most scholarly articles in the field of school library. The three databases repositories that were considered for this study were *Library & Information Science Source*, ERIC (Ebscohost), and SCOPUS, which included peer-reviewed scholarly articles for “School Library.” Once the database with the most research in the field of school library was identified, a bibliometric analysis was conducted to find out the major scholars and their affiliations, themes and evolution of scholarly communications and journals in the field of school library.

Phase 2: To complete an analysis of the AASL social media networks.

Phase 2 focused upon AASL Twitter social media communications. A content analysis of the AASL Twitter social media network was performed to identify key authors, affiliations and

topics of focus for these communications. In addition, NVivo software was used to organize and analyze the data from AASL Twitter social media connections.

Phase 3: To compare and contrast the major themes of evolution of research in the field of school library and AASL Twitter communications.

The last phase of the proposed research study focused upon the similarities and differences in scholarly communications in the field of school library for scholars and social media communications (comparing the results from Phase 1 and Phase 2) for practitioners in the field of school library. Once the similarities and differences were established, there was evidence to help identify trends in scholarly communications and social media connections of school library professionals. Identifying trends are used to help strengthen school library professional interests and support constructive connections for both practitioners and scholars in this field.

### **3.2 Definitions of Related Terms**

*Articles*- research, essays, case studies, commentaries, reviews.

*CSV files*- is a demarcated text files that use a comma to separate values.

*Coding*- is an essential task in most qualitative projects—it involves gathering all the material about a particular theme or case into a node for further exploration.

*Co-word Analysis*- is a content analysis technique that uses the repetition of incidence of pairs of words in a large number of text to identify relationships between ideas within a specific subject area.

*Dendrogram*- is a diagram used to illustrate hierarchical clusters or co-related terms.

***NCapture-*** is a free web browser extension, developed by QSR that enables you to gather material from the web to import into NVivo. You can use NCapture to collect a range of content such as social media content from Twitter.

***NVivo 12 Plus Software-*** is a tool developed by QSR that helps collect data from Twitter. You can download specific months of specific Twitter feeds. You can use auto-coding or code unique nodes specific to your study to acquire quantitative results.

***Nodes-*** is a collection of references about a specific theme, place, person or other area of interest. You gather the references by coding sources such as tweets, interviews, focus groups, articles or survey results.

***Pearson Correlation Coefficient-*** is a measure of the strength of the association between two variables.

***Peer-reviewed Journals-*** articles that are written by experts and are reviewed by other experts in the field before the article is published in the journal in order to insure the article's quality.

***Scholarly Communications-*** articles that are included in peer-reviewed journal articles.

***Stopwords-*** words that do not contribute significance to be used in specific search queries.

***Subject Analysis-*** is a measure to analyze how often subjects are most evident in scholarly articles within the field of school library.

### **3.3 Data Collection Procedure**

The data collection procedure included the bibliometric analysis of research in the field of school library and content analysis of AASL Twitter social media communications. The

bibliometric analysis included choice of search terms, choice of database, choice of bibliometric fields and data crawling. The content analysis of AASL Twitter social media communications included choice of social media network, choice of metadata for AASL Twitter feed.

### **3.3.1 Data Collection for Bibliometric Analysis**

#### *Choice of Search Terms*

The search terms were determined for the scholarly articles in the field of school library. The initial search terms that was inspected was “school librar\*”, which included variations of the search term format (such as uppercase, lowercase, hyphens, singulars, plurals, abbreviations) was utilized for similar expressions to establish term/s for this study.

#### *Choice of Database*

The three databases repositories that were considered for this study were *Library & Information Science Source*, ERIC (Ebscohost), and SCOPUS (Elsevier, 2016), which included peer-reviewed scholarly articles for “School Library”. These particular databases were reviewed to find out which database had the most peer-reviewed scholarly articles for the field of school library was used for this study. According to *Library & Information Science Source* database, peer-reviewed scholarly articles included articles that were written by experts and are reviewed by other experts in the field before the article is published in the journal in order to insure the article’s quality. The database that had the largest number of scholarly articles for the longest time period was used in this dissertation study.

#### *Choice of Bibliographical Fields*

After the search terms database was determined, a bibliometric analysis of metadata from the selected database was collected for the following fields: year of publication, title of peer-

reviewed journal articles, author/s, affiliation, and subject area. The bibliometric analysis of the metadata was compared and discussed for this study.

#### *Data Crawling*

The most frequently indexed authors including search terms, publications and author were downloaded in a .csv format. Once this data was downloaded, it was then broken down into datasets comprising of author, subject and journals of articles. In addition, frequency of subjects was analyzed to figure out the key themes of peer-reviewed scholarly articles in the field of school library for the selected database. In this way the datasets were collected and then compare them with AASL Twitter communications.

### **3.3.2 Data Collection for AASL Twitter Analysis**

#### *Choice of AASL Twitter Social Media Network*

The AASL Twitter account was chosen because it is one of the main social media networks for school librarians. AASL is the national organization specifically for school library professionals, which have 22.4K followers as of October 2017. AASL Twitter reaches school library professionals far beyond any other affiliated AASL social media network. A content analysis was conducted of metadata from AASL Twitter feed to find out who and what the main communicators and communications were over time.

#### *Choice of metadata of AASL Twitter*

The entire AASL Twitter feed was analyzed for all the years the AASL Twitter account exists. All of the AASL Twitter feed month by month for all the years since its establishment was downloaded using NCapture . Then all of the .pdfs were uploaded into NVivo for analysis.

The text was divided up into nodes by theme and authorship. NVivo auto-coded the text from the entire feed for theme and grouped themes including all extensions such as #read, #reading, read, reads. The text was auto-coded by NVivo which captured any Twitter communicator such as @aasl, @lieberrian, @LoriDonovan14.

### **3.4 Data Analysis Tools**

The data analysis that was applied included bibliometric analysis and content analysis using NVivo 12 Plus software to reveal commonalities of authorship, affiliations and themes of focus for scholarly communications in the field of school library and AASL Twitter social media communications.

#### **3.4.1 Analysis Tools for Bibliometric Analysis & Content Analysis**

##### *Choice of NCapture*

NCapture is a free web browser extension, developed by QSR that enables the researcher to gather material from the web to import into NVivo. You can use NCapture to collect a range of content such as social media content from Twitter. NCapture was used to aggregate all AASL Twitter communications for the years 2008-2018. Each month was captured as a .pdf and all months were gathered and imported into NVivo for content analysis.

##### *Choice of NVivo 12 Plus Software*

NVivo software is highly accepted statistical software used by researchers for qualitative analysis and social network analysis. NVivo 12 Plus for Windows enables you to import data from a variety of sources such as Twitter and .csv files which can be used for analysis. It provides relationship coding, text search, word frequency, and coding comparison queries. The



data can be exported and easily shared by producing visualizations of datasets (QSR International, 2017). Additionally, NVivo enables you to create dendrogram cluster analysis using statistical relationships among datasets.

The qualitative content analysis of the data in these files identified the trends in scholarly communications in the field of school library and social media communications among practitioners in the field of school library. For the academic database data, the subjects from each article were extracted to understand the key research trends. For the AASL Twitter data, nodes were created to capture the subjects from Tweets to understand the trends in authorship, affiliation and themes over time to identify trends.

NVivo 12 Plus Software provides visualization of the bibliometric data (e.g. author, affiliation, theme) in terms of their relationship, intensity, and hubs. Then, the scholarly articles in the field of school library from a database were downloaded, coded and classified based on their authorship, affiliation and themes of focus. NVivo 12 Plus software analyzed such bibliometric data, and presented the results into a visual network diagram, in which top authors, affiliation, and themes were clearly identified. By running above analyses with AASL Twitter data and scholarly communications data respectively, the results of author, affiliation and theme were compared and contrasted so that we could explore the difference and similarities between these two datasets.

### **3.4.2 Analysis utilizing a Venn Diagram**

#### *Choice of Venn diagram*

Datasets from the bibliometric analysis of scholarly communications in the field of school library and content analysis of AASL Twitter social media communications were able to show

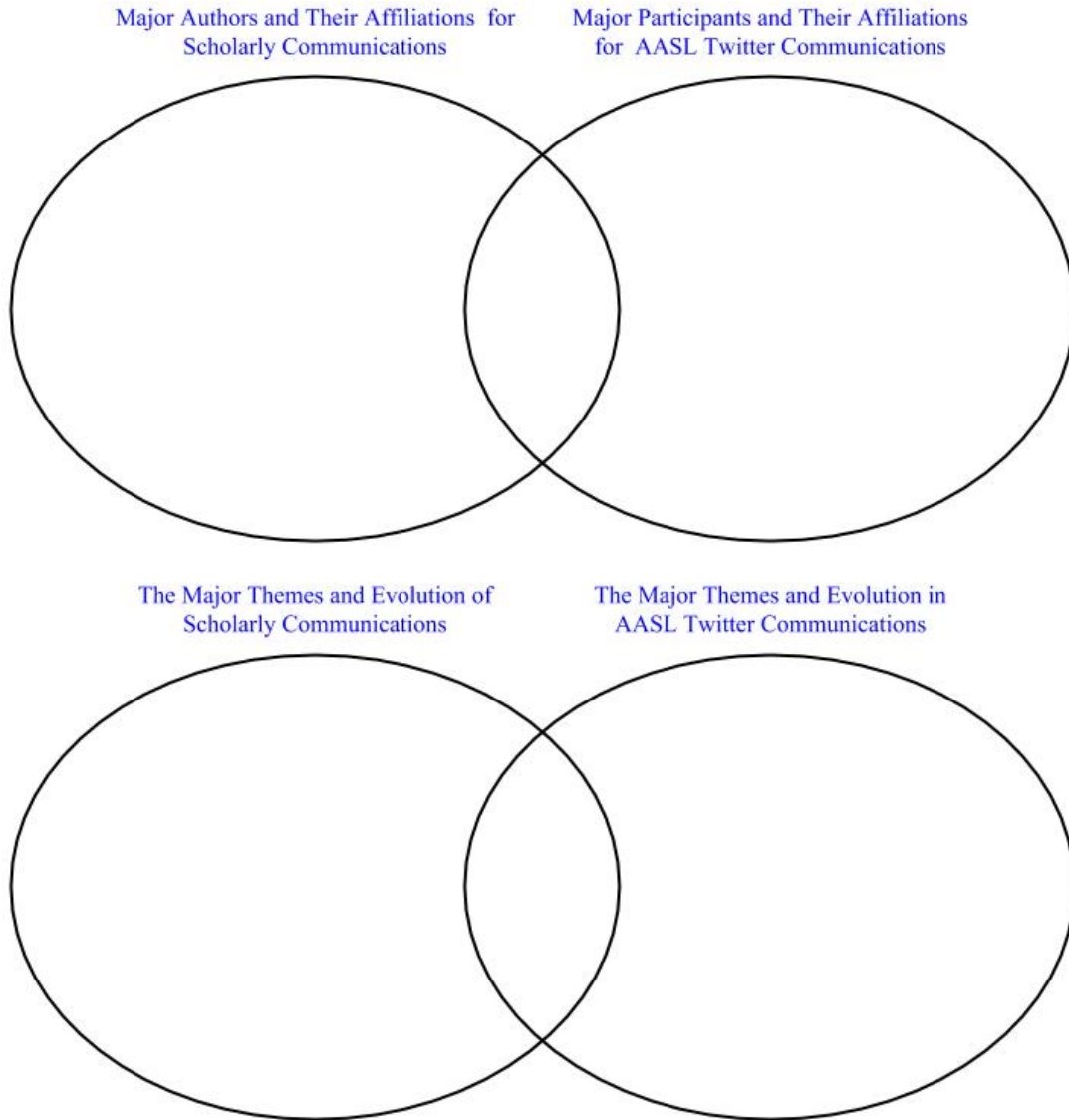
all possible logical relationships between both sets of data. The Venn diagrams showed all the relationships within the aforementioned datasets to uncover the focus of scholars in the field of school library and the practitioner's social media focus.

**Conceptual Map Utilizing Venn Diagram**

(The analysis of all possible logical relationships between two topics)

Venn diagrams were conceived around 1880 by [John Venn](#)

**The Similarities or Differences of Scholarly Communications and AASL Twitter Communications  
in the Field of School Library**



**Figure 2: Venn Diagram- Conceptual Map**

### 3.5 Data Analysis Plan

Datasets from Bibliometric analysis of scholarly communications in the field of school library (Phase 1) and content analysis of AASL Twitter social media connections (Phase 2) were incorporated in the use of the Venn diagram (Phase 3). The bibliometric analysis of scholarly communications in the field of school library included authorship, affiliations and themes were used to compare and contrast with AASL Twitter communications of authorship, affiliations and themes of focus among its users.

Research question (RQs) 1, and 2 pertain to trends in scholarly communications for the field of school library. RQ 1 revealed the major authors and their affiliations for scholarly communications in the field of school library. RQ 2 uncovered the major themes (topics) and evolution of scholarly communications in the field of school library throughout the years. RQ 3 disclosed the major journals for scholarly communications in the field of school library using the *Library & Information Science Source* Database. Research questions (RQs) 4, and 5 pertain to the trends in AASL Twitter communications for the field of school library. RQ 4 revealed the major participants and their affiliations in AASL Twitter communications. RQ 5 uncovered the major themes and evolution of AASL Twitter communications. The last two research questions pertained to the similarities and differences between scholarly communications and AASL Twitter communications in the field of school library. RQ 6 disclosed the similarities and differences in authors and their affiliations between scholarly communication and AASL Twitter communications. Lastly, RQ 7 divulged the similarities and differences in themes between scholarly communications and AASL Twitter communications for school library professionals.

### 3.5.1 Analysis for Scholarly Communications Trends on School Library

*RQ 1: Who are the major authors and their affiliations for scholarly communications in the field of school library?*

The frequency of major scholars in the field of school library were determined by data crawling the frequency of authorship of scholarly articles in the field of school library by using the search terms, "School librar\*". The results reflected the major scholars in the field of school library. The frequency of major authors in scholarly communications in the field of school library were determined by data crawling scholarly communications from 1905- 2018 using the *Library & Information Science Source* databases .csv text files. Next, using macros in excel, frequency of authors and themes were identified. These authors and themes were imported into NVivo 12 Plus software and datasets were coded into nodes, then frequency and cluster analysis was conducted to identify top authors.

Co-word analysis was conducted using Excel sorting and frequency tools to find out co-occurrence of authors who wrote articles/papers together. This identified relationships among authors of scholarly communications.

*RQ 2: What are the major themes and evolution for scholarly communications in the field of school library?*

The frequency of major themes and evolution of research in school libraries was determined by the same method used above for RQ1. A frequency and cluster analysis was conducted using NVivo to identify top themes of all scholarly communications.

*RQ3: What are the major journals for scholarly communications in the field of school library?*

The Bibliometric analysis included frequency of publication and years for all the peer-reviewed journal articles obtained in the database for school library. The results reflected the top journals in the field of school library from this database.

### **3.5.2 Analysis Pertaining to AASL Twitter Communications**

*RQ4: Who are the major participants and their affiliations in AASL Twitter communications?*

The frequency of major participants in AASL Twitter communications in the field of school library was determined by data crawling all AASL Twitter communications from 2008-2018 using NCapture and then uploaded the datasets into NVivo for analysis. The text was auto-coded by NVivo which captured any Twitter communicator such as @ aasl, @lieberrian, @LoriDonovan14. All of this dataset was uploaded into Excel to calculate frequencies and cleanup any errors (such as @aas). Then data was uploaded into NVivo to create visualizations.

Once top AASL Twitter participants were identified, such as @JohnSmith, a web-based search was conducted to identify participants' first name, last name, their affiliation, town and state where they work. In this way the top AASL Twitter participants and their affiliations were identified.

*RQ5: What are the major themes and evolution in AASL Twitter communications?*

The frequency of major themes and evolution of AASL Twitter communications was determined by data crawling all AASL Twitter communications from 2008- 2018 using NCapture and then uploaded into NVivo for analysis. All the text from each .pdf was highlighted and aggregated into a theme node through drag and drop tool options in NVivo. NVivo calculated frequencies of themes of what appeared in the text for all of the .pdfs. Then NVivo

auto-coded text from the entire feed for theme including exact words and all extensions such as #read, #reading, read, reads. Once all of the text was divided up by theme, frequencies were calculated using NVivo tools and create visualizations.

### **3.5.3 Comparison Analysis between Scholarly Research and AASL Twitter Communications**

*RQ 6: What are the similarities and differences in authors and their affiliations between scholarly communications and AASL Twitter communications for school library?*

The top authors and their affiliations of both the scholarly communications and the AASL Twitter communications were compared using a Venn diagram to reveal any commonalities and differences.

*RQ 7: What are the similarities and differences in themes between scholarly communications and AASL Twitter communications for school library?*

The top themes of both the scholarly communications and the AASL Twitter communications were compared using a Venn diagram to reveal any commonalities and differences.

## CHAPTER 4 RESULTS

In this chapter, the results from *Library & Information Science Source* and NCapture searches have been organized and are compared in relation to the seven research questions. The comparison of the scholarly communications and AASL Twitter practitioner communications provides a comprehensive understanding of trends in the field of school library.

### 4.1 Results for Trends of Scholarly Communications in the Field of School Library

The results in this section of this dissertation reflect the major authors and their affiliations, major themes and evolution for scholarly communications and lastly the results for major journals for scholarly communications in the field of school library over time using the data from *Library & Information Science Source* database.

#### 4.1.1 Major Authors and Their Affiliations of Scholarly Communications

The top 51 authors and their affiliations for scholarly communications have been identified in the field of school library (Table 2) from 1905- 2018 in the *Library & Information Science Source* database.

**Table 2: Top Authors and Their Affiliations for Scholarly Communications**

Author ID	Frequency	Author	Affiliation
AU1	82	Loertscher, David V.	San Jose State University
AU2	72	Marcoux, Elizabeth	University of Washington 1922-2006
AU3	53	Haycock, Ken	University of Southern California and Ken Haycock & Associates Inc. Vancouver, BC
AU4	45	Everhart, Nancy	Florida State University
AU5	43	Lamb, Annette	Indiana University
AU6	37	Dickinson, Gail	Old Dominion University, VA
AU7	35	Clyde, Laurel A.	University of Iceland 1946-2005

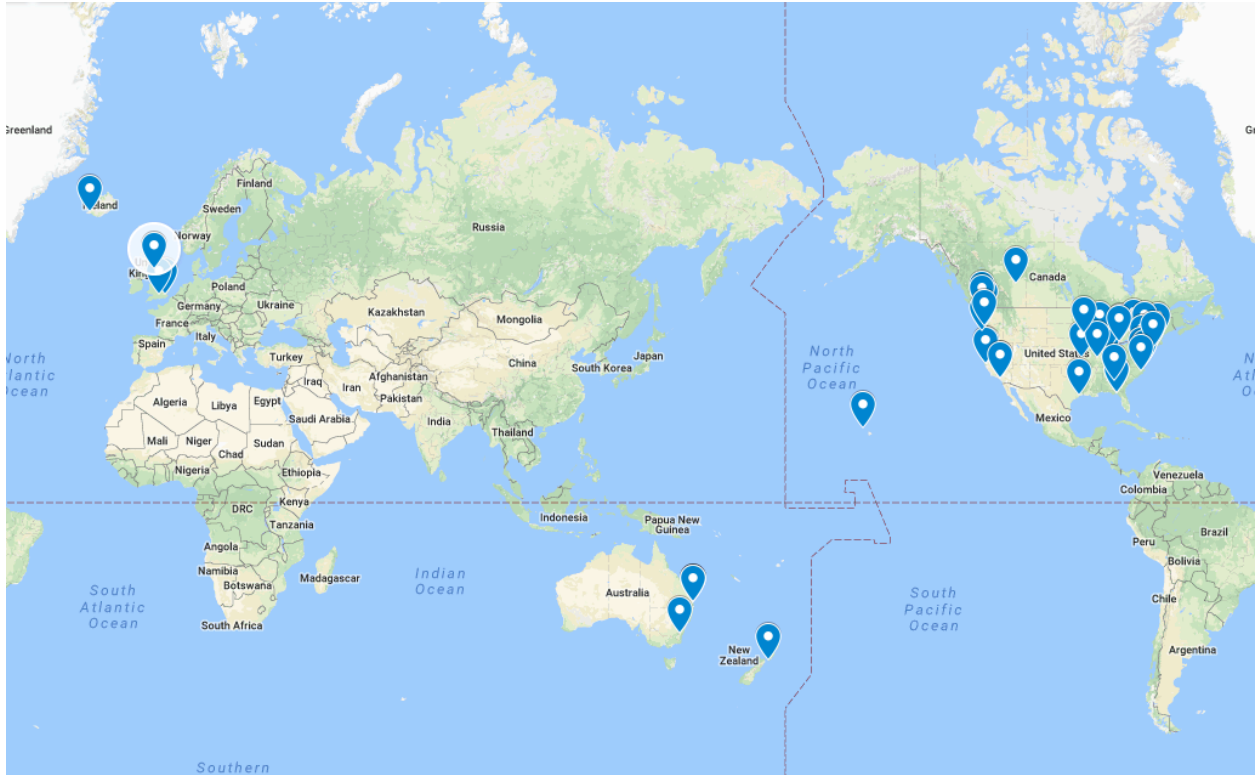


AU8	33	Oberg, Dianne	University of Alberta, AB, Canada
AU9	33	Mardis, Marcia A.	Florida State University
AU10	32	Johnson, Larry	University of Oakland, CA
AU11	31	Abilock, Debbie	Nueva School, Hillsborough, CA
AU12	28	Todd, Ross J.	Rutgers University, NJ
AU13	27	Read, Katherine	Oregon State University 1904-1991
AU14	27	Braxton, Barbara	Palmerston District Primary School, Australia
AU15	25	Coatney, Sharon	Blue Valley School District, Kansas
AU16	25	Kachel, Debra E.	Antioch University, WA
AU17	22	Rosenfeld, Esther	University of Toronto, Canada
AU18	22	Asselin, Marlene	University of British Columbia, Canada
AU19	21	Troutner, Joanne	Purdue University, IN
AU20	21	Geller, Evelyn	Columbia University, NY
AU21	21	Yucht, Alice H.	Rutgers University, NJ
AU22	21	Killeen, Erlene Bishop	University of Wisconsin, WI
AU23	20	Shenton, Andrew K.	University of Delaware, DE
AU24	19	Moreillon, Judi	Texas Woman's University, TX
AU25	19	Griffiths, Laura	Institute of Advanced Legal Studies, London U.K.
AU26	19	McPherson, Keith	University of Victoria, Canada
AU27	19	Williams, Isobel	Australian School Library Association (ASLA)
AU28	19	Ray, Mark	Director of Innovation and Library Services for Vancouver Public Schools, WA
AU29	19	Farmer, Lesley S. Johnson	California State University, CA
AU30	18	Reeder, Geneva	Pennsylvania School Library Association (PSLA), PA
AU31	18	Johnston, Melissa P.	University of West Georgia, GA
AU32	17	Small, Ruth V.	Syracuse University, NY
AU33	17	Harada, Violet H.	University of Hawaii, HI
AU34	17	Gordon, Carol A.	Southern Illinois University
AU35	16	Kilpatrick, Thomas L.	University of Virginia
AU36	16	Johns, Sara Kelly	Syracuse University, NY
AU37	16	Hughes-Hassell, Sandra	University of North Carolina at Chapel Hill
AU38	16	Butler, Rebecca P.	Northern Illinois University, IL
AU39	16	Hoare, Rachel	Australian School Library Association (ASLA), Australia
AU40	16	Daniel, Heather	Wall Township Public Schools, NJ

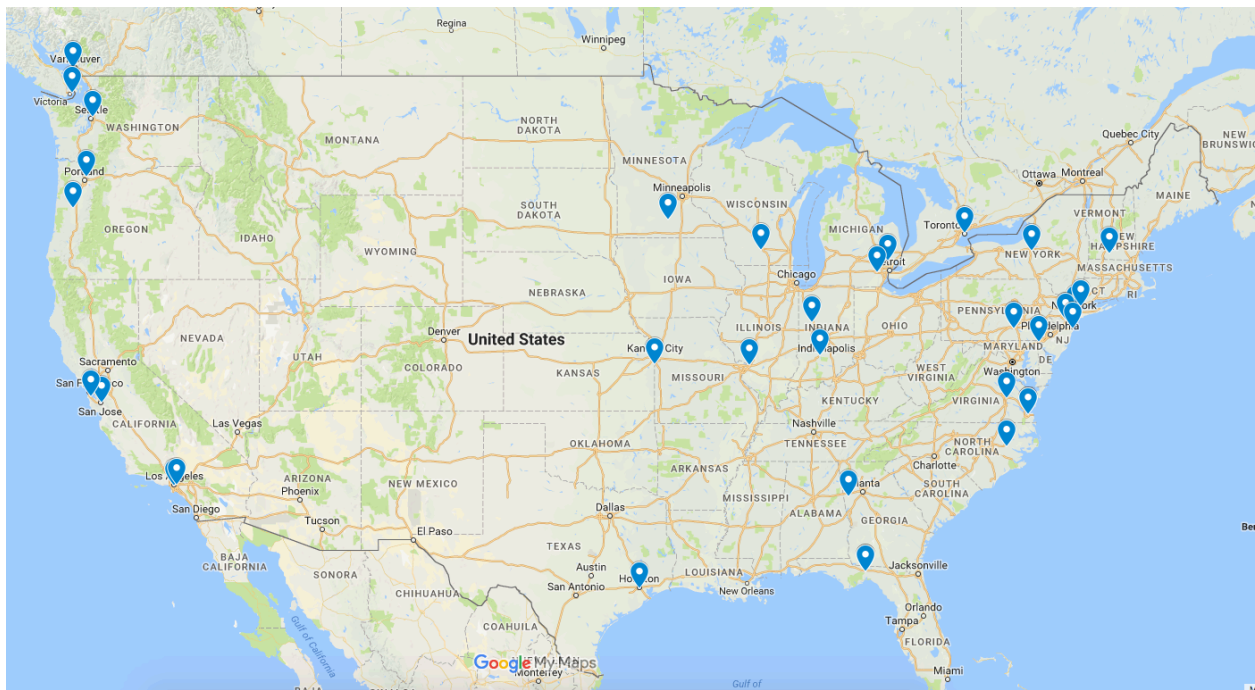
AU41	16	Foster, Marg	Pennsylvania School Library Association (PSLA), PA
AU42	16	Herring, James E.	Queen Margaret College, Edinburgh, U.K.
AU43	15	Fontichiaro, Kristin	University of Michigan, MI
AU44	15	Bonanno, Karen	Managing Director of Eduwebinar Pty Ltd.; Australian School Library Association (ASLA), Australia
AU45	15	Johnson, Doug	Director of Technology for the Burnsville-Eagan-Savage (MN) Public Schools and Minnesota State University, MN
AU46	15	Martin, Ann M.	Educational Specialist for Library Information Services for the Henrico County Public Schools, Richmond, Virginia.
AU47	15	Kimmel, Sue C.	Old Dominion University, VA
AU48	14	Band, Barbara	Barbara Band is Features Editor of The School Librarian and a former chair of CILIP, U.K.
AU49	14	Daniels, Greig	School Library Association of New Zealand Aotearoa
AU50	14	Berger, Pam	Southern Westchester BOCES, Westchester NJ
AU51	14	Jones, Jami L.	East Carolina University, NC

The world map (Figure 3) reveals the top authors for school library scholarly communications in the world for the years 1905-2018 from the *Library & Information Science Source* database. The highest concentrations of authors are located in the United States.

The United States map (Figure 4) reveals the top authors for school library scholarly communications in the United States for the years 1905-2018 from the *Library & Information Science Source* database. The highest concentration of authors is located on the eastern and western coasts and others in the mid-eastern part of the United States. There are no significant authors of publications in mid-western part of the United States.



**Figure 3: Top Authors' Affiliations for Scholarly Communications- World Map**



**Figure 4: Top Authors' Affiliations for Scholarly Communications- United States Map**



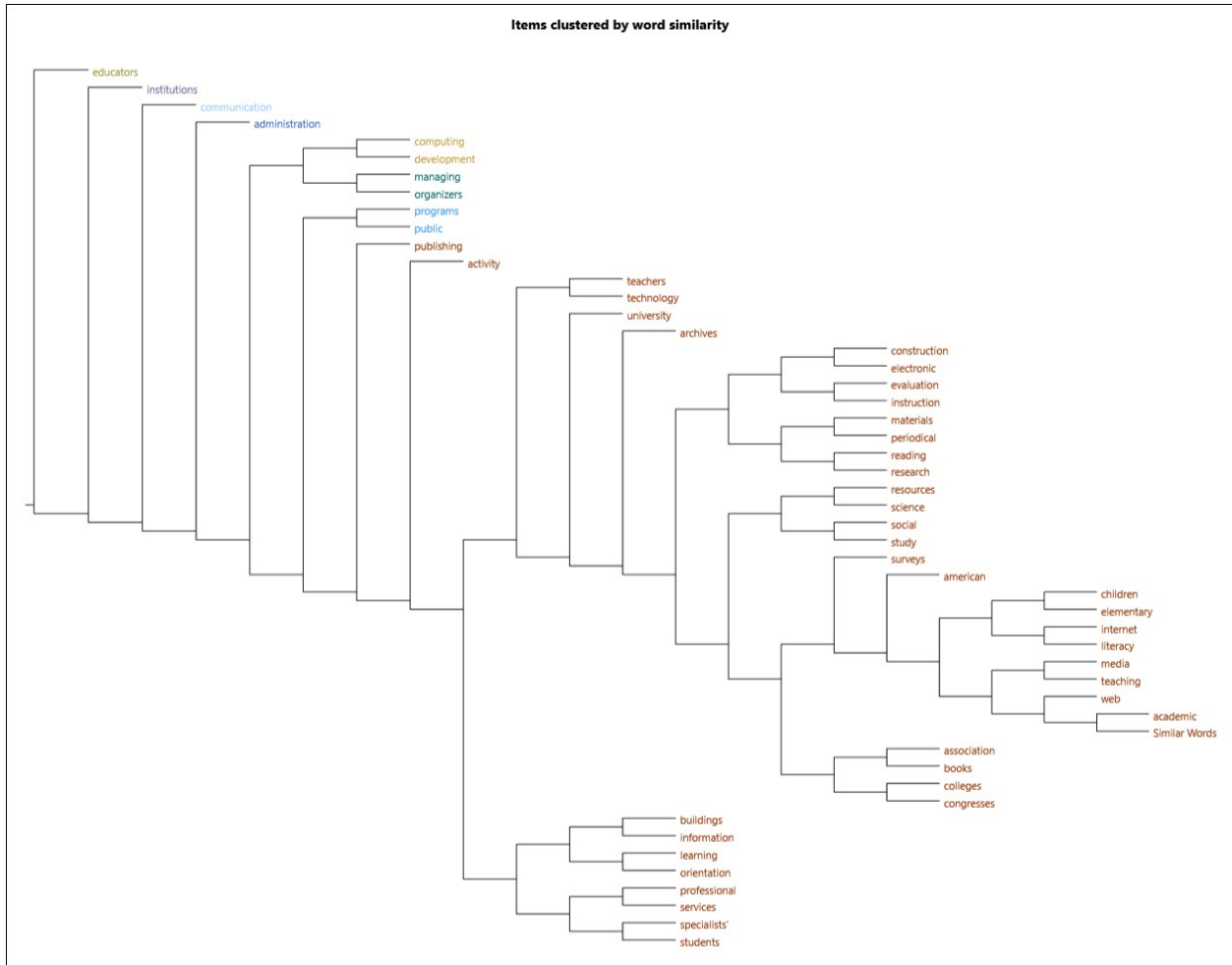
overall total equals 100%. The similar words were grouped together in NVivo by exact matches and with stemmed words to target frequency of reoccurring themes. The general aspects of school library with its extensions, state names, country names have been excluded as stop-words so that it would limit distraction from overall top themes of school library.

**Table 3:** NVivo Analysis of Scholarly Communications-Themes

Word	Length	Count	Weighted Percentage (%)	Similar Words
media	5	275	2.61	media
education	9	274	2.60	education, educational
information	11	257	2.44	information
specialists	11	254	2.41	specialists, specialists'
books	5	191	1.81	book, books
science	7	188	1.78	science, sciences
internet	8	153	1.45	internet
children	8	144	1.37	children
congresses	10	142	1.35	congress, congresses
public	6	141	1.34	public, publication, publications
reading	7	135	1.28	read, reading
orientation	11	130	1.23	orientation
research	8	128	1.21	research
academic	8	127	1.21	academic
services	8	125	1.19	service, services
administration	14	119	1.13	administration, administrative
collection	10	110	1.04	collection, collections
societies	9	101	0.96	societies, society
computing	9	100	0.95	computation, computer, computers, computing
programs	8	95	0.90	program, programmed, programming, programs
literacy	8	93	0.88	literacy
copyright	10	86	0.82	copyright
literature	10	83	0.79	literature
activity	8	79	0.75	active, activism, activities, activity
interests	9	76	0.72	interests
evaluation	10	74	0.70	evaluation
aims	4	72	0.68	aims
objectives	10	72	0.68	objectives

institutions	12	72	0.68	institute, institutes, institution, institutional, institutions
study	5	71	0.67	studies, study
organization	12	70	0.66	organization, organizations, organizers
resources	9	70	0.66	resource, resources
development	11	66	0.63	developing, development
catalogs	8	66	0.63	catalog, cataloging, catalogs
conferences	11	65	0.62	conference, conferences
teacher	7	63	0.60	teacher, teachers, teachers'
electronic	10	62	0.59	electronic
design	6	60	0.57	design
materials	9	59	0.56	materials
standards	9	56	0.53	standards
students	8	56	0.53	student, students
awards	6	55	0.52	award, awards
reference	9	55	0.52	reference
bibliographies	14	54	0.51	bibliographies, bibliography
construction	12	54	0.51	construction
automation	10	53	0.50	automation
surveys	7	53	0.50	surveys
management	10	52	0.49	management
technology	10	51	0.48	technological, technologies, technology
websites	8	51	0.48	website, websites

The dendrogram (Figure 6) and its analysis (Table 4) reveal a concentration of themes that include resources, management and stakeholders. Cluster 1 represents Resources and Management. Cluster 2 represents Resources and Stakeholders. This cluster encompasses stakeholders of schools, stakeholders of elementary, stakeholders of legislation and stakeholders of colleges as well as emphasis in research. There are various outliers in the dendrogram including publishing, activity, university and archives that don't really show interconnections among themes so the focus is on the clusters where themes are interconnected by overall themes.



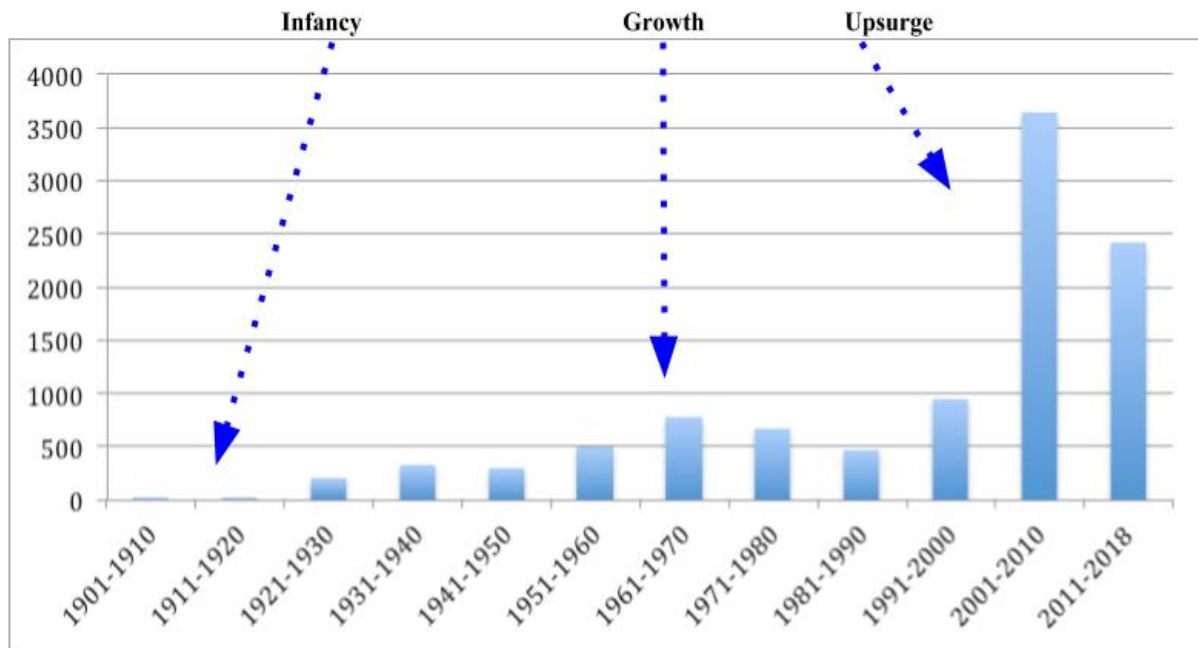
**Figure 6: Dendrogram of Major Themes of Scholarly Communications**

**Table 4: Major Themes of Scholarly Communications- Dendrogram Analysis**

Cluster	Encompassing Areas	Scholarly Communications Themes
1	(orange & blue)	1.0 Resources & Management
2	(brown)	2.0 Resources & Stakeholders 2.1 Stakeholders of Schools 2.2 Research 2.3 Stakeholders of Elementary 2.4 Stakeholders of Legislation 2.5 Stakeholders of Colleges

### 4.1.3 Results for Major Journals for Scholarly Communications

Figure 7 shows the total number of publications in the field of school library by year from *Library & Information Science Source* database. In general, the number of publications peaked between 2001-2010.



**Figure 7: Total Number of Publications on School Library from Library & Information Science Source (1905-2018)**

The chart reveals stages of growth in publications of scholarly communications in *Library & Information Science Source* database for the field of school library. From 1905-1921, literature was sparse and scholarly communications was in its very early stage of development. During the years 1921-1991 scholarly communications in the field of school library began to emerge in this stage of growth. In its latest stages of development, from 2001-2010 there is a considerable upsurge of growth in scholarly communications. Unpredictably, during the past



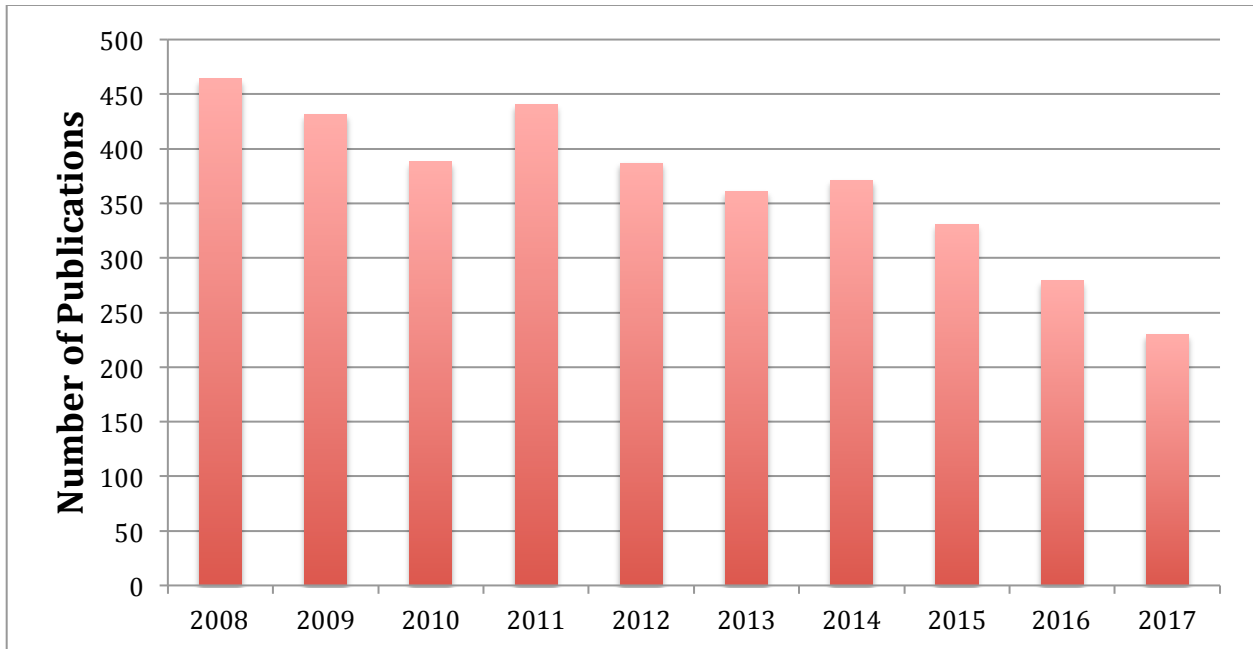
recent years scholarly communications have been decreasing from the years 2010 to 2018 (Figure 7).

Table 5 reflects the publication trends for school library from the *Library & Information Science Source* database during the years of 2008-2017 including percentage of total publications for the specific years. This data represents recent changes in the output of scholarly communications as the numbers of publications are declining in volume.

**Table 5: Publication Trends of Library & Information Science Source (2008-2017)**

Years	Publications Trends: Frequency	Percent
2008	464	12.60%
2009	431	11.70%
2010	388	10.53%
2011	441	11.97%
2012	387	10.51%
2013	361	9.80%
2014	371	10.07%
2015	331	8.99%
2016	279	7.58%
2017	230	6.24%
Total= 3683		100.00%

The bar chart included in Figure 8 reflects a visual representation of the declining publication trends for school library in the *Library & Information Science Source* database during the years of 2008- 2017.



**Figure 8: Total Number of Publications on School Library (2008- 2017)**

Scholarly publications of articles were ranked throughout the years in increments of ten years from 1900- 2018 by title of publication. The ranking of all *Library & Information Science Source* publications for the field of school library provides a lens in which to identify top journals over time and shows the numbers of publications are highly distributed in various time periods. Three groups were established for the following time periods: Group 1- Infancy (1921-1930), Group 2- Growth (1931-1990), and Group 3 Upsurge (1991-2018) in Table 6. The journal titles highlighted in yellow represent three standard deviations that account for approximately 99.7% of the dataset, which reveal top journals for each time period. The journal titles highlighted in yellow and green represents two standard deviations that account for approximately 95% of the dataset. The journal titles highlighted in yellow, green and blue represents one standard deviation that accounts for approximately 68% of the dataset. It shall be

noted that there are some medical and business school library journals noted in the growth and upsurge eras.

**Table 6: Journal Analysis (3 Stages)**

Journal Title	Group 1 Infancy (1921- 1930)	Journal Title	Group 2 Growth (1931- 1990)	Journal Title	Group 3 Upsurge (1991 - 2018)
Library Journal (1876).	34	Library Journal (1876).	920	Knowledge Quest	1044
Elementary School Journal	18	New Zealand Libraries	92	Teacher Librarian	1001
High School Journal	15	Australian Library Journal	79	School Libraries Worldwide	458
School Review	14	Bulletin of the Medical Library Association	78	ACCESS (10300155)	360
Education	3	Top of the News	76	Learning & Media	273
Library Review	3	Ontario Library Review	72	Medium	175
Peabody Journal of Education (0161956X)	3	Bogens Verden	64	Collected Magazine	165
<b>Total</b>	<b>90 of 100</b>	Library Trends	62	CILIP Update	167
<b>Mean</b>	0.27	National Elementary Principal	55	Library & Information Update	132

<b>Standard Deviation (SD)</b>	2.27	<b>Total</b>	<b>1498 of 2739</b>	<b>School Library Research*<sup>1</sup></b>	<b>124</b>
<b>Mean + SD</b>	2.54	Mean	7.36	<b>Total</b>	<b>3902 of 6177</b>
<b>Mean + 2SD</b>	4.82	Standard Deviation (SD)	49.16	Mean	16.60
<b>Mean + 3SD</b>	7.09	<b>Mean + SD</b>	<b>56.53</b>	Standard Deviation (SD)	83.37
		<b>Mean + 2SD</b>	<b>105.69</b>	<b>Mean + SD</b>	<b>99.98</b>
		<b>Mean + 3SD</b>	<b>154.85</b>	<b>Mean + 2SD</b>	<b>183.35</b>
				<b>Mean + 3SD</b>	<b>266.62</b>
Note: SD= Standard Deviation (approx. 68% of sample) 2SD= Standard Deviation (approx. 95% of sample) 3SD= Standard Deviation (approx. 99.7% of sample)					

#### 4.2 Results for AASL Twitter Communications in the Field of School Library

The following bar chart provides the number of AASL Twitter communications for the years 2008-2018.

The following journal title changed names over time: School Library Research (2012-2017) and School Library Media Research (1999-2011). The table reflects this data to include both under one journal. School Library Media Quarterly was not indexed; therefore there was no data in *Library & Information Science Source* database relating to this particular journal.

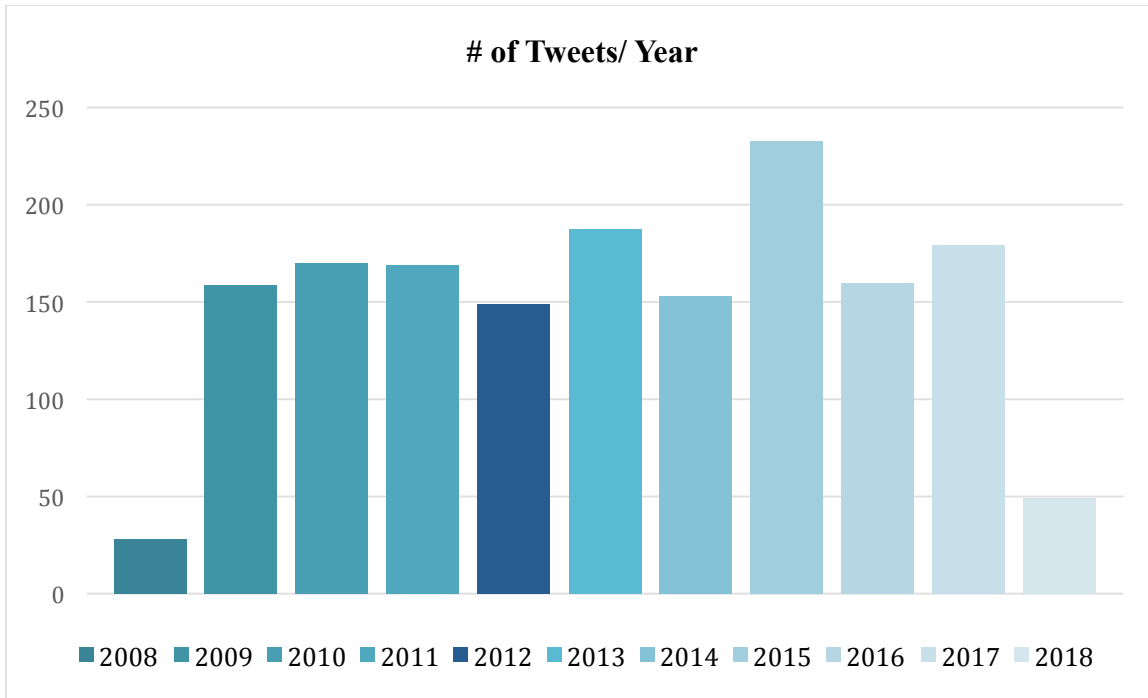
Changed names over time:

SLR 2012-2017

SLMR 1999-2011

SLMQ 1991-1997 (not indexed)

1



**Figure 9: Number of Tweets per Year of AASL Twitter Communications (September 2008-March 2018)**

Table 7 shows the number of AASL Tweets by year (2008-2018). The average number of Tweets is approximately 149 per year, and the median number of Tweets is 160 per year. In 2008, only three months September- December 2008 of AASL Twitter data are included and represents the onset of this social media usage. The AASL Twitter feed includes January- March of 2018, where this data collection ends for this study.

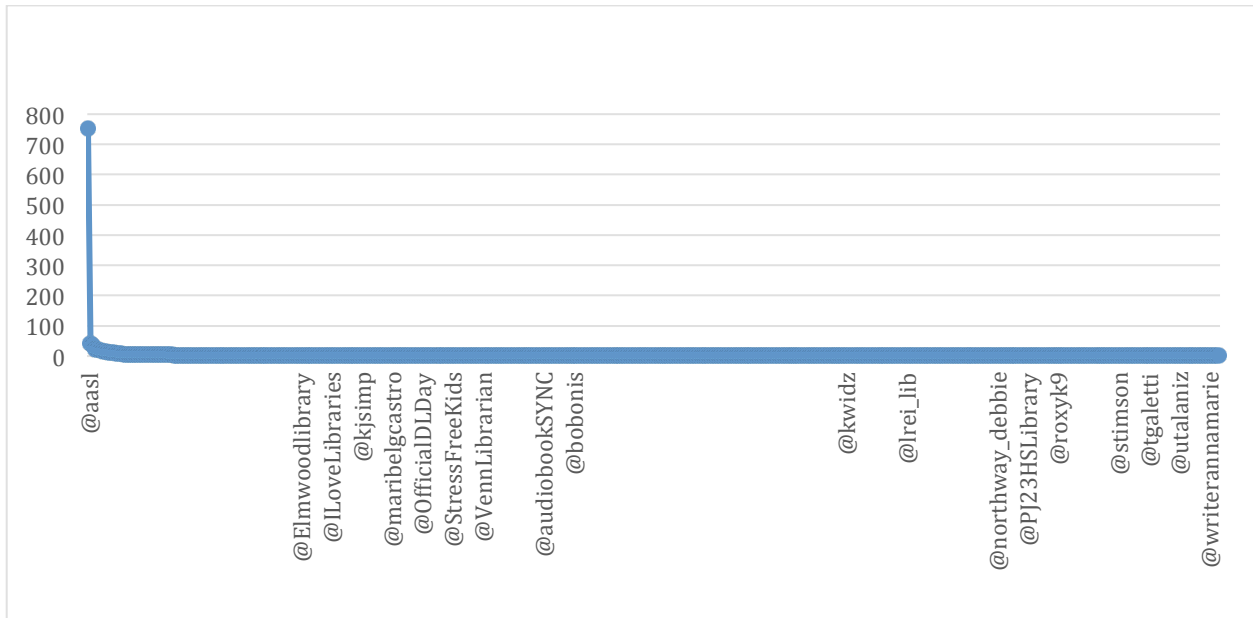
**Table 7: Number of Tweets per Year (2008-2018)**

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
# of Tweets	28	159	170	169	149	187	153	233	160	179	49

#### 4.2.1 Major Participants and their Affiliations in AASL Twitter Communications

Figure 10 uncovers a long-tailed distribution that is representative high in volume of Tweets by AASL itself. The long-tailed section identifies all other Tweets that is significantly

low in volume in comparison of all AASL Twitter communications as a whole.



**Figure 10: Total Number of Tweets by Top AASL Twitter Participants from 2008-2018**

Even though, the long-tailed distribution of Tweets is low in volume, the key participants are identified in AASL Twitter Communications (Table 8). Other than AASL, the top ten participants of AASL Twitter communications are identified with their Twitter handles below. The frequency of the participants' Tweets was calculated and their percentage of Tweets that contributed to the total number of Tweets for all AASL Twitter communications is reflected in the analysis.

**Table 8: Top 10 Participants in AASL Twitter Communications**

Top 10	AASL Twitter Participants	FREQ	% Of Total 1637 Participants
	<u>@aasl</u>	754	46%
1	<u>@lieberrian</u>	42	3%
2	<u>@SafeLibraries</u>	36	2%
3	<u>@LoriDonovan14</u>	20	1%
4	<u>@shannonmmiller</u>	20	1%
5	<u>@spkowalski</u>	17	1%
6	<u>@rivas_barbara</u>	15	.90%

7	<a href="#">@ALALibrary</a>	14	.80%
8	<a href="#">@lesliepreddy</a>	11	.70%
9	<a href="#">@bglibrarynotes</a>	11	.70%
10	<a href="#">@mluhtala</a>	10	.60%

Table 9 reveals the top AASL Twitter participants and their affiliations for AASL Twitter communications.

**Table 9: Top 10 AASL Twitter Participants and Their Affiliations**

Top 10	AASL Twitter Participant	Participant Name & Affiliation
	<a href="#">@aasl</a>	AASL empowers leaders to transform teaching & learning. Tweets from staff & volunteer editorial board. Editorial board posts are signed with member initials.
1	<a href="#">@lieberrian</a>	Kristina Holzweiss, Educational Technology Enrichment Specialist, Syosset High School, Long Island, NY
2	<a href="#">@SafeLibraries</a>	Dan Kleinman, Expert- Dangers to children in Public Libraries Safelibraries.org, Chatham, NJ
3	<a href="#">@LoriDonovan14</a>	Lori Donovan, District Media Coordinator- Chesterfield County Public Schools, Chesterfield, VA
4	<a href="#">@shannonmmiller</a>	Shannon Miller, K-12 district teacher librarian- Van Meter Community School, Spokesperson, Advocate, Van Meter, Iowa.
5	<a href="#">@spkowalski</a>	Sue Kowalski, Librarian- Pine Grove Middle School Library East Syracuse, NY
6	<a href="#">@rivas_barbara</a>	Barbara Rivas, Librarian- Houston Independent school District Houston, Texas
7	<a href="#">@ALALibrary</a>	American Library Association (ALA), Chicago, Illinois
8	<a href="#">@lesliepreddy</a>	Leslie Preddy, Librarian- Perry Meridian Middle School Indianapolis, IN
9	<a href="#">@bglibrarynotes</a>	Rachel Klug, Librarian-Bruce Guadalupe Community School Milwaukee, WI
10	<a href="#">@mluhtala</a>	Michelle Luhtala, Librarian- Westport Public Schools Westport, CT

#### 4.2.2 Major Themes and Evolution in AASL Twitter Communications

The major themes and evolution in AASL Twitter communications in the field of school library are reflected in the word cloud below (Figure 11). The largest text represents the high



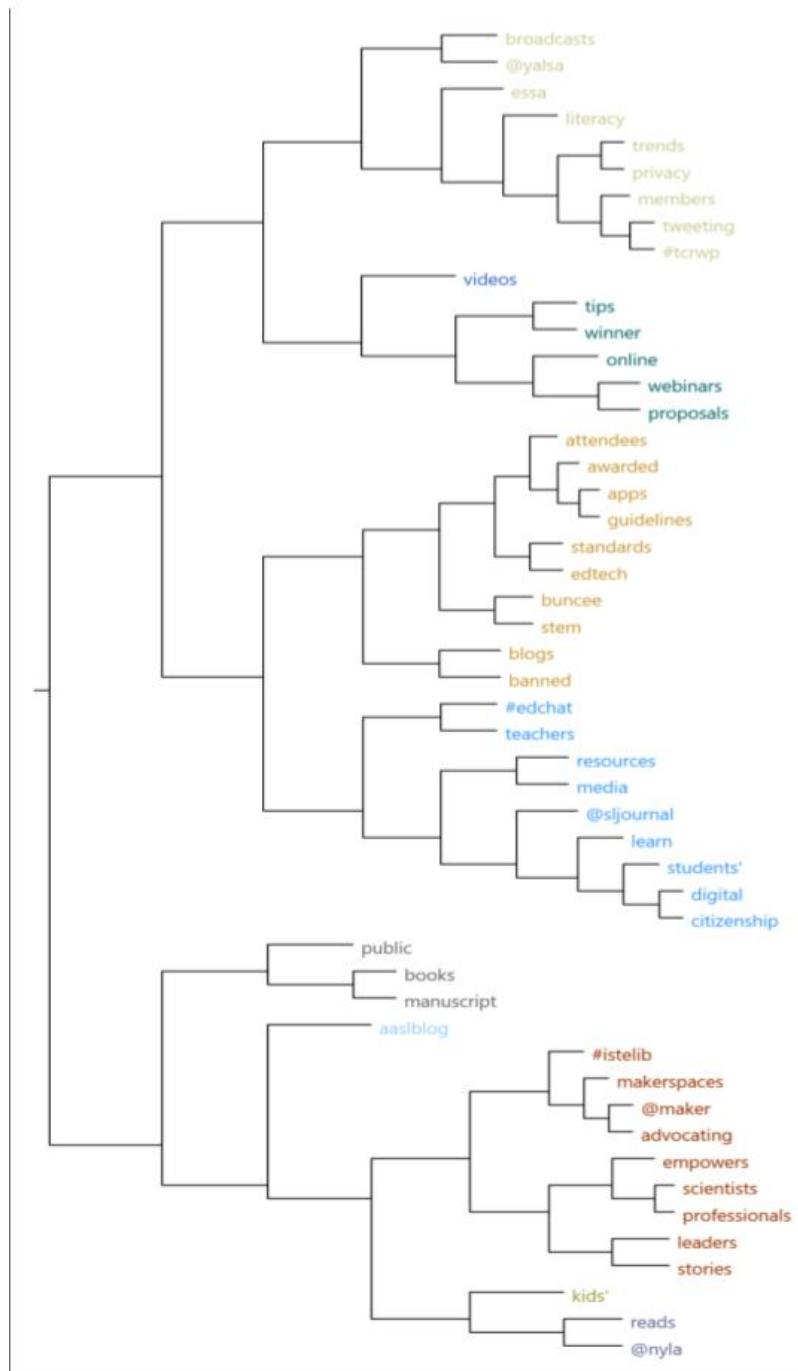


overall total equals 100%. The similar words were grouped together in NVivo by exact matches and with stemmed words to target frequency of reoccurring themes. The general aspects of school, library with its extensions, state names, and country names have been excluded as stop-words so that it would limit distraction from overall top themes of school library.

**Table 10: Major Themes in AASL Twitter Communications- NVivo Summary**

Word	Length	Count	Weighted Percentage (%)	Similar Words
apps	4	305	0.61	#apps, app, apps
trends	6	234	0.47	trended, trending, trends
privacy	7	225	0.45	privacy
students'	9	189	0.38	#student, #students, students, students'
leaders	7	181	0.36	leader, leaders
videos	6	178	0.36	#videos, video, videos
webinars	8	165	0.33	#webinar, webinar, webinars
makerspaces	11	164	0.33	#makerspace, #makerspaces, @makerspaces, makerspace, makerspaces
aasblog	8	160	0.32	aasblog
standards	9	156	0.31	standardized, standards
essa	4	154	0.31	#essa, essa
empowers	8	147	0.29	#empower, empower, empowering, empowers
public	6	147	0.29	public, publication, publications
members	7	140	0.28	members
broadcasts	10	136	0.27	broadcasting, broadcasts
reads	5	135	0.27	#read, #reading, read, reads
books	5	131	0.26	#books, booked, books, books'
resources	9	129	0.26	#resources, resource, resources
tweeting	8	120	0.24	tweeted, tweeting
learn	5	119	0.24	#learning, learn, learned, learning'
digital	7	119	0.24	digit, digital, digitized
@yalsa	6	118	0.24	@yalsa, yalsa
#edchat	7	115	0.23	#edchat
stories	7	115	0.23	stories
literacy	8	104	0.21	#literacy, literacies, literacy
media	5	92	0.18	media, media'
#tcrwp	6	87	0.17	#tcrwp
blogs	5	87	0.17	blog, blogs
@sljournal	10	85	0.17	@sljournal
edtech	6	81	0.16	#edtech, @edtech, edtech

guidelines	10	68	0.14	guidelines
teachers	8	66	0.13	#teachers, teachers, teachers'
@maker	6	66	0.13	#maker, #makered, @maker, makers
buncee	6	59	0.12	@buncee, buncee
online	6	58	0.12	online
@nyla	5	56	0.11	@nyla, nyla
#istelib	8	55	0.11	#istelib, @istelib
banned	6	53	0.11	banned, bans
kids'	5	52	0.10	#kids, kid, kids, kids'
scientists	10	50	0.10	scientist, scientists
stem	4	50	0.10	#stem, stem
advocating	10	49	0.10	advoc, advocates, advocating
professionals	13	48	0.10	professionally, professionals
citizenship	11	47	0.09	citizenship
proposals	9	45	0.09	proposals
manuscript	10	44	0.09	manuscript
tips	4	44	0.09	#tips, tips
winner	6	43	0.09	winner, winners, winners'
attendees	9	42	0.08	attendee, attendees
awarded	7	39	0.08	awarded, awards



**Figure 12: Dendrogram of Major Themes of AASL Twitter Communications**

The original data (.pdf form) for the years 2008-2018 for all of the AASL Twitter feed was coded into nodes using NVivo 12 Plus software to include participants and themes. The dendrogram for AASL Twitter themes (Figure 12) depicts three areas for co-occurrence of themes for the stated years. The co-word analysis identifies relationships between ideas within a specific subject area and is formed into clusters. The dendrogram uses Pearson coefficient (a measure of correlation between variables) of all themes. The overall themes are arranged to form central relationships for the groups of themes. In this case, there are three clusters or groups revealed (Table 11) in this analysis.

**Table 11: Major Themes in AASL Twitter Communications- Dendrogram Analysis**

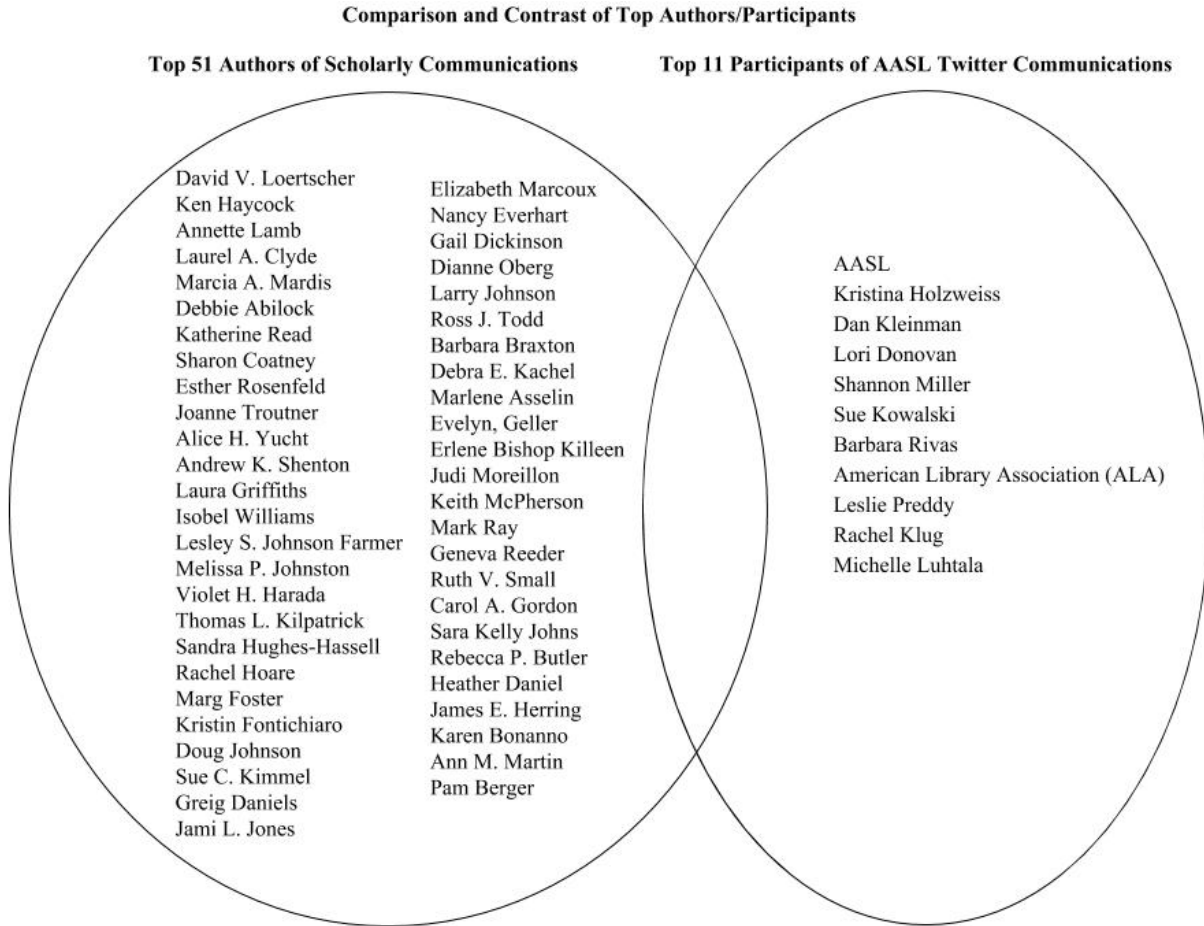
Cluster	Encompassing Areas	Twitter Themes
1	(light green & blue/green)	1.1 Regulation, Curriculum and Communication 1.2 Virtual Professional Development
2	(brown & blue)	2.1 Teaching Guidelines and Resources 2.2 Students Learning in a Digital Society
3	(gray/blue & red/green/purple)	3.1 Call for Publications 3.1 Leadership and STEAM

#### **4.3 Results for Comparing and Contrasting the Results of Scholarly Communications and AASL Twitter Communications Trends in the Field of School Library**

The following are the results for comparing and contrasting scholarly communications and AASL Twitter communications trends in the field of school library. Figure 13 depicts the comparison and contrasting trends of top authors/participants. In this figure, there are no relationships of the top authors/participants. Figure 14 depicts the comparison and contrasting trends of top themes. In this figure, there are several fundamental themes that are revealed including media, books, reading, Internet, children, literacy, standards, awards, technology, education, public, resources, teachers, students and electronic from both datasets.

### 4.3.1 Similarities and differences between Authors/Participants in Scholarly Communications and AASL Twitter Communications

The Venn diagram below (Figure 13) reveals the disparity of authors/participants in scholarly communications and AASL Twitter communications. There are no similarities of authors/practitioners in either case.

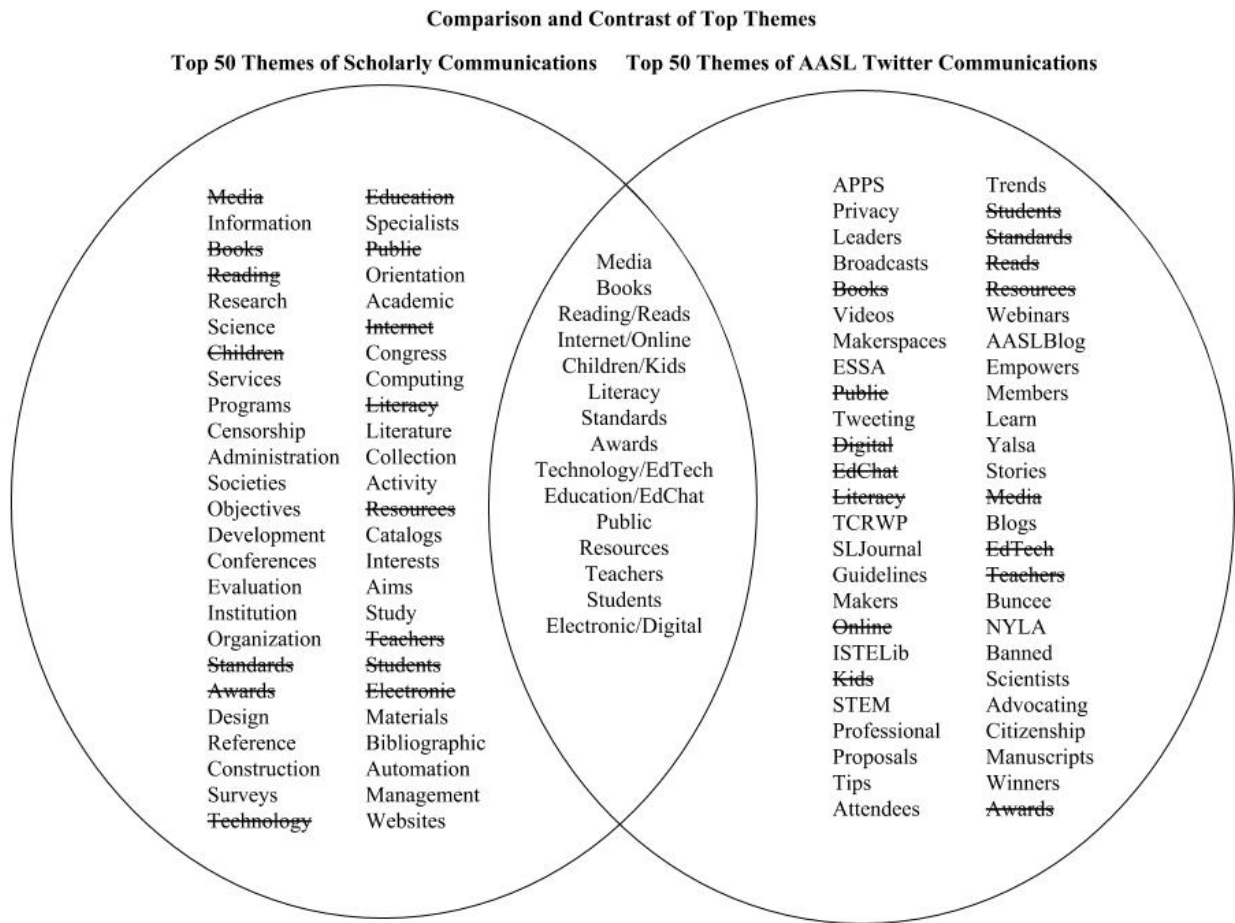


**Figure 13: Comparison and Contrast of Top Authors/Participants**

### 4.3.2 Similarities and differences between Themes in Scholarly Communications and AASL Twitter Communications

The Venn diagram below (Figure 14) reveals recurring themes in the evolution of scholarly communications and AASL Twitter communications. There are several recurring

similarities of themes across scholarly communications and AASL Twitter communications including media, books, reading, internet, children, literacy, standards, awards, technology, education, public, resources, teachers, students and electronic topics.



**Figure 14: Comparison and Contrast of Top Themes**

## CHAPTER 5 DISCUSSION

Scholars have been researching and writing about school library for many years. Various topics and scholars are prevalent in the field of school library that various trends exist. In the information studies research domain, very few studies have been conducted in school library regarding scholarly communications and social network communications, if any. This is one of the first studies of its kind where themes are identified over a large span of time. As stated previously, the key focus of this study was to discover the similarities and differences of scholarly communications and AASL Twitter communications and more specifically, identify trends in authors, their affiliations and themes. Bibliographic and content analysis were conducted to identify these trends. Statistical analysis and visualization software were used to improve understanding of the results.

One of the areas of discussion is the trend of scholarly communications in the field of school library, which includes trends of publications, authors and their affiliations, themes, and journals. Another area of conversation is the trend of AASL Twitter communications in the field of school library, which includes trends of participants and themes. The final area of discussion focuses on similarities and differences between authors/participants, their affiliations and theme trends in the field of school library.

The following discussion reflects the comparison of the findings from *Library & Information Science Source* database and the AASL Twitter feed throughout the years.

### 5.1 Trends of Scholarly Communications

The number of publications for school library has increased considerably over time, but in most recent years from 2011-2018, scholarly communications have decreased in number. There are many reasons that could substantiate why these communications have dropped. It is possible that more avenues other than social networks contribute to the reduction of scholarly publications. Scholars who work at universities must write as part of their university obligations, but if there are fewer researchers in the field of school library then this can be a contributing factor to the lessening in communications. The AASL Twitter feed communications seem low and could be caused by participants using other social media channels or other ways to communicate their ideas more and this may be why communications are not rising. Also, social media associates who oversee the AASL Twitter feed may or may not be Re-tweeting participants comments using #AASL hast tags. Another reason for the drop in scholarly communications may be that the pool of scholars, who complete most of these communications are aging out of the field, leaving the field or are not actively researching in school library and therefore lessening the number of scholarly communications. Another possibility for the lessening of these communications may be that school library practitioners have very little time to spend on extra communications that are over and above the scope of their roles in a school setting and especially when staff is limited in many school libraries today. There also are very few incentives for school librarians to pursue scholarly communications in this field. It would be helpful to the field of school library to find out why these scholarly communications have lessened in recent years and what can be done to develop scholarly communications to increase various paths of knowledge in the field of school library or other paths in which school library professionals can continue to obtain knowledge in practice. Perhaps scholarships can be offered



to gain more doctoral candidates. Perhaps awards can be given to those who actively pursue leadership roles and those who present at conferences without monetary support. So many school librarians cannot afford the time away from their jobs and pay for conferences to become more involved as scholars and communicators for the field of school library. Conceivably more collaboration between ALA and AASL to find ways or monies to help improve professional involvement, promote leadership and doctoral scholarships in the fields of school library would promote scholarly communications. These investigations would all be enlightening to the field of school library.

The prevalence of the aforementioned publications (Table 6) provides a lens in which to unveil the leading scholarly communications in recent years and over time. Scholars can continue to research and write for a variety of key publications and focus on key issues and topics that enhance pedagogy in the field of school library. Knowing what these top publications are, helping scholars who are communicating key ideas and topics of relevance to gear their works towards publications that would best fit their needs and the needs of others in their field. Bradford's law reveals patterns of how scholarly journals were dispersed over time. In addition, it distinguishes the highest contributors of the set of journals for the range of dates (1905- 2018).

Interestingly, the plotting of key authors in the U.S. and world helped to provide us a lens in which to identify where major authors of scholarly communications work which developed their areas of focus in the field of school library for the years 1905-2018 according to the *Library & Information Science Source* database. Lotka's law revealed the number of authors credited for the largest number of journals identifying the number of authors credited for the highest number of contribution in the dataset of journals from the *Library & Information Science Source*

database for the dates from 1905-2018. The interesting part is that key scholars were identified in this research and were located in specific areas in the United States. The need for more scholarship is necessary to impact the growth of scholarly communications in the field of school library. If scholars can support or mentor new scholars, this would increase scholarship in the field of school library.

The highest concentrations of authors are located in the United States. The highest concentrations of authors are located on the eastern and western coasts and others in the mid-eastern part of the United States. There are no significant authors of publications in the mid-western part of the United States. These may be contributing factors as to the strength or lack of strength of school library programs in various states and the individuals who promote them through various associations.

The bibliometric analysis has been conducted using *Library & Information Science Source* database to locate all school library scholarly communications. The top 51 authors and their affiliations for scholarly communications have been identified in the field of school library. The key contributors of scholarly communications had considerable influence in educational, professional, curriculum, teaching and learning of best practices throughout the years 1905-2018 in the field of school library. Their writings have helped promote pedagogical best practices and standards in practice in this field of expertise. It is essential to consider the factors influencing communications of these authors and how the field of school library can continue to grow instead of diminish in terms of research and writing of scholarly communications.

In addition, the top 50 themes for scholarly communications have been identified in the field of school library. Zipf's law uncovers the frequency of words in the given dataset of articles

to establish the highest frequency of subject matter occurrence. Major recurring themes have been identified that span over 113 years of scholarly communications from the *Library & Information Science Source* database. The themes largely reflect administrative, organizational and academic aspects of school library which are not major themes in AASL Twitter communications.

## **5.2 Trends of AASL Twitter Communications in the Field of School Library**

The content analysis has been conducted using AASL Twitter feed to locate the top 10 participants and their affiliations in the field of school library. Figure 10 uncovers a long-tailed distribution that represents a high volume of Tweets by AASL itself. The long-tailed section identifies all other Tweets that are significantly low in volume of AASL Twitter communications as a whole. Even though, the long-tailed distribution of Tweets is low in volume, the key participants were identified in AASL Twitter Communications (Table 7). The frequency of the top ten participants reflect a mere 0.6% - 3% of the total 1637 participants. The top participants in the AASL Twitter communications are comprised of mainly school librarians. These school librarians are located generally in the mid-eastern and eastern portion of the United States and have some influence in best practices for practitioners in the field of school library through AASL Twitter communications. It is possible that the main participants in AASL Twitter communications are located in these areas of the United States and that socio-economic and higher achievement in their schools are factors that contribute to scholarly communications.

In addition, the top 50 themes for AASL Twitter communications have been identified in the field of school library in this study. The content analysis of subjects revealed themes of AASL Twitter communications. Major recurring themes have been identified that span over the

past 10 years of AASL Twitter communications in AASL Twitter feed. The AASL Twitter communications themes reflect ways to communicate such as webinars, blogs, videos, broadcasts and publishing in digital journals but also hot topics including apps, makerspaces, STEM, advocacy and citizenship aspects of school library are not major themes of scholarly communications. Interestingly, the AASL Twitter themes reveal other modes of communication for practitioners. Perhaps there is a shift in lines of communications, yet still it is difficult to ascertain how much of the AASL Twitter communications contribute these lines of communications especially since this social network communication among its users seems low. There may be a variety of channels of communications used by practitioners that contribute to why the lessening of scholarly communications is revealed in this dissertation.

### **5.3 Comparison and Contrasting Trends in Authors/Participants of Scholarly Communications and AASL Twitter Communications in the Field of School Library**

As stated in the results section of this paper, there is no apparent relationship among authors of scholarly communications and AASL Twitter communications. The AASL Twitter communications are mainly comprised of school librarians in practice. Conversely, the authors of scholarly communications are mainly scholars in universities throughout the United States. In this part of the analysis it is important to note that these key authors have had considerable influence in the field of school library in regard to rates of publication from the *Library & Information Science Source* database, which was comprised of 10,207 scholarly communications from 1905-2018 in the onset of this analysis. In parts of the United States where scholarly communications are sparse, a degree of concern can be considered as to the lack of presence of scholars and their potential impact in these states. Uncovering these differences or looking into

more of what practitioners' concerns are can improve school libraries' best practices. It would also be helpful to find out which of the authors are aging out of the field, leaving the field or do not actively research and therefore lessening the number of scholarly communications. Further investigation would be helpful to see if age is a contributing factor as to the decrease in scholarly communications and what can be done to increase the number of scholars in academia. More action in the way of scholarships and awards may help to increase the number of scholars in this area and grow the field rather than see it decline in number of scholarly communications.

Perhaps if there were other avenues of approach to provide more opportunities or ways to groom more scholars, it would be more advantageous for them to advance in this field of expertise.

#### **5.4 Comparison and Contrasting Trends in Themes of Scholarly Communications and AASL Twitter Communications in the Field of School Library**

The top 50 themes for AASL Twitter communications have been identified in the field of school library using the *Library & Information Science Source* database. There are a number of recurring themes among scholarly communications and AASL Twitter communications over a great length of time. The main recurring themes in both communications include *Media, Books, Reading/Reads, Internet/Online, Children/Kids, Literacy, Standards, Awards, Technology/EdTech, Education/EdChat, Public, Resources, Teachers, Students and Electronic/Digital*. Many scholars and school librarians may not be so surprised of the results, but the quantitative analytical processes in this dissertation provide us with a quantitative lens in which to view the statistics. Paths of knowledge for school library have underlying similarities over time, which helps to solidify areas of focus. Likewise, looking into

the differences can help both practitioners and scholars add new focus of scholarly communications.

Several key topics are revealed in the cluster analysis of both scholarly communications and AASL Twitter communications dendrograms (Table 12). The clusters that are highly related for both dendrograms is Cluster 2 for both scholarly communications and AASL Twitter communications. Cluster 2.1 *Stakeholders of Schools* is related to 2.1 *Teaching Guidelines & Resources*. Cluster 2.2 *Research* is closely related to 3.1 *Call for Publications*. Cluster 2.3 *Stakeholders of Elementary*, Cluster 2.4 *Stakeholders of Legislation* and Cluster 2.5 *Stakeholders of Colleges* all are closely related to Cluster 2.2 *Students Learning in a Digital Society*. There are also clusters that are not related in both scholarly communications and AASL Twitter communications. The following scholarly communications cluster that is not closely related to AASL Twitter communications is Cluster 1.0 *Resources & Management*. It is possible that because this cluster includes more effects of academia it may not be representative in practitioners' communications. The following AASL Twitter communications that are not closely related to scholarly communication are Cluster 1 *Curriculum and Professional Development*, which includes 1.1 *Regulation & Curriculum* and Cluster 1.2 *Virtual Professional Development*. In addition, Cluster 3.2 *Leadership & Technology* of AASL Twitter communications is not related to the scholarly communications clusters. It is quite probable that practitioners of AASL Twitter communications view these clusters as more of "hot topics" for them and not as many arise on the forefront of scholarly communications. Especially, since there may not be as many practitioners writing scholarly communications the incidence of communications for these ideas in this venue are not as prominent.

If we consider both prevalent themes and clusters for academia and practitioners, perhaps more combined efforts among scholars and practitioners may prove to be helpful to benefit best practices and strengthen future goals in the field of school library.

**Table 12: Comparison of Dendrograms in Cluster Analysis**

Scholarly Communications Themes	Twitter Themes
1.0 Resources & Management	1.0 Curriculum & Professional Development 1.1 Regulation & Curriculum 1.2 Virtual Professional Development
2.0 Resources & Stakeholders 2.1 Stakeholders of Schools 2.2 Research 2.3 Stakeholders of Elementary 2.4 Stakeholders of Legislation 2.5 Stakeholders of Colleges	2.0 Teaching & Learning 2.1 Teaching Guidelines and Resources 2.2 Students Learning in a Digital Society
	3.0 Scholarly Communications & Leadership 3.1 Call for Publications 3.2 Leadership and Technology

### 5.5 Limitations

There were some inherited limitations regarding the research in this dissertation. Although this study explored many years of authorship, themes and journals using the scholarly communications in *Library & Information Science Source* database and AASL Twitter communications, the inclusive nature (using a great number of years) helped to provide frequency of occurrence of said topics and did not hinder or generally impact results but did generalize the themes over many years. Using the AASL Twitter feed is only the beginning of research using social media networks to reveal more information regarding communications in our field. Other research can be done to study social media networks usage among school library professionals and their potential impact. Using quantitative approaches to analyze data helped

reduce chances of error, due to its inclusivity of all data available through *Library & Information Science Source* database and the AASL Twitter social media channel over time but also limited the study for generalized themes over time.

Within the *Library & Information Science Source* database, it should be noted that there were several errors found where multiple authors with the same name were stated in a specific journal article and data cleanup was necessary in order to include only the author once within the article. It is possible that in these years the cataloger made errors while creating these entries in the database but we cannot truly know for sure and if such persons made other errors. An example of this was in a specific article where Smith, John R., SMITH, J.R. was accounted twice, but in reality there was only one author for that particular article. Although this did not happen for a great deal of entries, there were enough to process during cleanup to ensure appropriate accountability and decrease the degree of error.

In addition, the articles from the *Library & Information Science Source* database, keywords were not always included in the files obtained; therefore in order to analyze data with least degree of error, subjects' analysis was used instead of keyword analysis because there was data available for subjects not keywords.

Although, "School Librar\*" was used to uncover all articles within *Library & Information Science Source*, a number of "Law School Library" were initially included and later needed to be removed in the cleanup process to ensure a better representation of "school librar\*" for this dissertation. The authors, themes and journals were analyzed in keeping with the dissertation research area of the study.



Within the study the use of algorithms in NVivo 12 Plus software provided general analysis of impact in authorship, themes and journals, but there always is a degree of error using algorithm as there is using human computations.

## **5.6 Implications for Future Research**

This paper delves into the similarities and differences of major authorship, themes and journals for scholarly communications using the *Library & Information Science Source* database and major participants and themes for AASL Twitter communications in the field of school library.

Revealing major authors of scholarly communications helps us understand the concentration of authors' works over time. It would be helpful to find out the reason scholarly communications are lessening in the field of school library. Further investigation in this area to find out the contributing factors as to the strength of school library programs in various states and if there are significant factors contributing to under-developed states where programs may be at risk or whether these locations have schools that are high achievement schools or not. More exploration in this area can include finding out whether school library scholars in academia are lessening along with the amount of research. Although many presumptions can be made while viewing the data presented, more research can be conducted to include interviews, surveys and other methods to examine this area as to why this phenomenon is happening and what can be done to further develop scholarly communications in the field of school library. Further investigations in this area would help to find out the factors influencing communications of these authors and how the field

of school library can continue to grow instead of diminish in terms of research and writing of scholarly communications to advance this field.

More research can be completed to find out if social networks or other ways of communication such as webinars, blogging, conferences, listservs and other modes of communication contribute to the reduction of scholarly communications. More research can be completed to find out how or what the AASL Twitter feed Tweets and Re-Tweets communications to its participants and if they are not only promoting the output of information but how they are incorporating hash tags such as #AASL as part of their communications. In addition, more research in AASL Twitter communications may help to identify why these communications seem low or are not increasing in recent years. In addition, more research can be done to look into grey literature such as reports published by AASL, ALA and other sources to find out what are key issues and topics among the most active members of these organizations that help frame school library focus.

Revealing major themes of scholarly communications helps us understand the concentration of recurring themes over time. Adding more research in the field using themes that practitioners are concerned about and delving deeper into if these themes are part of a larger overarching focus. This overall focus may prove to be helpful in the profession as a whole. Finding out the taxonomy of these overarching themes and sub categories for school library focus can provide both scholars and practitioner's vision and overall focus that can span the course of time. This type of taxonomic view of school library may help to provide overall vision of school library goals whether they are in the past, present and future. As new and innovative topics arise in education, creating school library

taxonomy can prove to be a fruitful avenue of discovery in research for the field of school library.

Another possibility is that school library practitioners who write scholarly communications may be interpreting research in school library, education and technology related to the field of school library and then practitioners may be using a variety of social media networks to channel these ideas. We really don't know at this point what information practitioners are posting in other social media networks or individually and if they are using hash tags and to what extent they are using them. This study begins to open doors to new ways to investigate themes of discussion among school library professionals.

## **5.7 Conclusion**

Scholarly communications in school library vary in a multitude of topics according to the analysis in this dissertation. Several similarities or recurring themes were found between scholarly communications and AASL Twitter communications. These focal themes (media, books, reading, Internet, children, literacy, standards, awards, technology, education, public, resources, teachers, students and electronic topics) have a presence over time. We can subjectively pass judgment upon and infer that they are relatively important themes in the field of school library. Although there are other themes that are not similar, we can gain understanding that these themes are important to either scholars or practitioners or at least what they centralize in their discussions and writings.

### **5.7.1 Summary from Bibliometric Analyses of Scholarly Communications**

The bibliometric analysis of scholarly communication showed three major findings.

First, the major authors come from the United States and a few international countries including Canada, Australian, Iceland and UK. Within USA, major authors are affiliated with institutions locating mostly either on the east or west coast.

Second, the publication number goes up as the research in school library moves from infant stage (1921-1930) to growth stage (1931-1990), and to upsurge stage (1991-2018). However, a closer look at the number of publications by year in the upsurge stage actually declined from year 2011 to year 2018. It is uncertain as to why this decrease has occurred, but three possible reasons might contribute to this decrease. One, it could be that as new journals were created, their publishing criteria were more selective in nature as to which journals were published from 2008 to 2018 and would cause decreases in publications. Two, the decreases in the publication numbers could be caused by more vigorous review criteria. Three, the numbers of productive scholars are lessening due to their retirement or passing. Additional investigation in this area would shed more light as to why publication rates have decreased in recent years finding out possible reasons would be helpful so that we can understand and make changes to promote publication rates in the future.

Third, the journals of school library research have changed over the years. *Knowledge Quest*, *Teacher Librarian*, *School Libraries Worldwide* are among the highest number of publications in recent years.

### **5.7.2 Summary from Content Analyses of AASL Twitter Communications**

The content analysis of AASL Twitter data revealed three similar findings.

First, the affiliations of major AASL Twitter authors mainly located in the eastern coast of the United States. The majority of them are librarians and practitioners.

Second, the total number of AASL Tweets have been decreasing in recent years. This is probably due to other communication modes (such as Facebook, webinars, blogs) participants are using but not covered by this study. More investigation as to why this mode of

communication is lessening and where school library professionals are getting their information from would help promote their professional development and their programs in their schools.

Third, major AASL Tweets include three clusters: Curriculum & Professional Development, Teaching & Learning, Scholarly Communications & Leadership.

### **5.7.3 Comparison of Scholarly Communications & AASL Twitter Communications**

In the comparison of scholarly communications and AASL Twitter communications, several findings have arisen.

First, there is almost no overlapping between major academic authors and major AASL participants. Those who are productive scholars are NOT among major AASL Tweeters. The separation of the two areas of communicators provides us with various sets of ideas and focus. Generally, scholars in academia must engage in scholarly research communications as it is a necessary as part of their jobs. On the other hand, school librarians look for ways to quickly share ideas of focus and have little time to engage in scholarly communications. It would be beneficial to conduct research in this area to find ways of connecting more ideas and focus among the various groups.

Second, interestingly major academic authors and AASL Twitter participants are mainly located on the east coast. One possible reason is due to their strong state school library associations.

Third, both scholarly communications and Twitter communications have overarching focus. (Resources & Stakeholders and Teaching & Learning). In addition, scholarly communications primarily focus on Resources & Management. It may be that school library professionals have little to do with academia or scholarly concerns. Interestingly, AASL Twitter themes include a focus on Curriculum & Professional Development and Scholarly Communications & Leadership. It seems that's Twitter participants want more information

exchanges and focus in these areas. Further investigation in this area would help promote the success of school library professionals across the country.

This dissertation reveals epistemological associations for the field of school library in the topics of major journals, authors and themes in the field of school library. These trends help serve as a reference point to help improve academic and practitioner support and increase constructive and reflective goals among school library professionals today. In addition, there are specific journals for school library that are more prominent than others. We can use these journals as a reference for scholars in school library to promote future publications and see which better suits their needs for various types of communications.

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## APPENDIX

### Appendix A: Group 1- Infancy (1921-1930)

Journal Title	Group 1 - Infancy (1921-1930)
Library Journal (1876).	34
Elementary School Journal	18
High School Journal	15
School Review	14
Education	3
Library Review	3
Peabody Journal of Education (0161956X)	3
Journal of Education	2
Journal of Educational Sociology	2
Library	2
Bulletin of the Medical Library Association	1
Elementary School Teacher	1
Independent Education	1
Ontario Library Review	1
Access (10300155)	0
Acquisitions Librarian	0
Adult Leadership	0
Advances in Librarianship	0
African Journal of Library, Archives & Information Science	0
African Research & Documentation	0
Against the Grain	0
ALISS Quarterly	0
American Archivist	0
American Biology Teacher (National Association of Biology Teachers)	0
American Documentation	0
American Education	0
American Journal of Nursing	0
American Secondary Education	0
Annals of Library & Information Studies	0
Anuario Think EPI	0
APLIS	0
Arbido	0
Architectural Forum	0
Archival Science	0

Archivar	0
Archivaria	0
Archives (00449423)	0
Archives & Manuscripts	0
Argus (Montreal, Quebec)	0
Art Documentation: Bulletin of the Art Libraries Society of North America	0
Art Libraries Journal	0
Asian Journal of Information Science & Technology (AJIST)	0
Asian Libraries	0
Aslib Journal of Information Management	0
Aslib Proceedings	0
Assistant Librarian	0
Audiovisual Librarian	0
Australian Academic & Research Libraries	0
Australian Library Journal	0
Behavioral & Social Sciences Librarian	0
Biblios	0
Biblioteca: Revista de Bibliologie si Stiinta Informarii	0
Bibliotekovedenie	0
Bibliotheksgids	0
Bibliothek Forschung und Praxis	0
Bogens Verden	0
Bollettino AIB	0
Bollettino Dinformazioni (Associazione Italiana Biblioteche).	0
Book History (Johns Hopkins University Press)	0
Bookbird: A Journal of International Children's Literature (Johns Hopkins University Press)	0
Bookbird: A Journal of International Children's Literature (University of Toronto Press)	0
Bookmobile & Outreach Services	0
Bottom Line: Managing Library Finances	0
Brazilian Journal of Information Science	0
BuB: Forum Bibliothek und Information	0
Bulletin (Special Libraries Association. Geography & Map Division)	0
Bulletin des Bibliothèques de France	0
Bulletin of Bibliography	0

Cadernos de Biblioteconomia, Arquivística e Documentação	0
Cadernos de Biblioteconomia, Arquivística e Documentação	0
California Librarian	0
Canadian Journal of Information & Library Sciences	0
Canadian Journal of Information Science	0
Canadian Library	0
Canadian Library Journal	0
Cataloging & Classification Quarterly	0
Catalogue & Index	0
Catholic Educational Review	0
CD-ROM Professional	0
Children & Libraries: The Journal of the Association for Library Service to Children	0
Chinese Librarianship	0
Choice: Current Reviews for Academic Libraries	0
Ciencia da Informacao	0
CILIP Update	0
Citaliste: The Scientific Journal on Theory & Practice of Librarianship	0
Clearing House	0
CM: Canadian Review of Materials	0
CMLEA Journal	0
Codex (2150-086X)	0
Collaborative Librarianship	0
Collected Magazine	0
Collection Building	0
Collection Management	0
College & Research Libraries	0
College & Undergraduate Libraries	0
Communications in Information Literacy	0
Community & Junior College Libraries	0
Computers in the Schools	0
Current Studies in Librarianship	0
Curriculum Journal	0
Delta Kappa Gamma Bulletin	0
DESIDOC Journal of Library & Information Technology	0
Digital Library Perspectives	0
Documentaliste: Sciences de l'Information	0

Education for Information	0
Education Libraries	0
Education Libraries Journal	0
Education of the Visually Handicapped	0
Educational Broadcasting International	0
Educational Forum	0
Educational Record	0
Educational Research	0
El Profesional de la Informacion	0
Electronic Journal of Academic & Special Librarianship	0
Electronic Library	0
Endnotes	0
English Journal	0
Evidence Based Library & Information Practice	0
Fñenix	0
First Monday	0
Focus on International Library & Information Work	0
Fontes Artis Musicae	0
Georgia Library Quarterly	0
GMS Medizin-Bibliothek-Information	0
Government Publications Review	0
Harvard Educational Review	0
Harvard Library Bulletin	0
Health Information & Libraries Journal	0
Herald of Library Science	0
Hospital Progress	0
IATUL Annual Conference Proceedings	0
IFLA Journal	0
In the Library with the Lead Pipe	0
Indexer	0
Informacao & Sociedade: Estudos	0
Informacion, Cultura y Sociedad	0
Informare si Documentare: Activitate Stiintifica si Profesionala	0
Informatie Professional	0
Information & Culture	0
Information Development	0
Information Reports & Bibliographies	0
Information Research	0
Information Research Watch International	0

Information Scotland	0
Information Searcher	0
Information Services & Use	0
Information Studies	0
Information Technologist	0
Information Technology & Libraries	0
Information World / Bilgi Dunyasi	0
Innovation (10258892)	0
Insights: the UKSG journal	0
INSPEL	0
Interface	0
Interlending & Document Supply	0
International Information & Library Review	0
International Information, Communication & Education	0
International Journal of Information Management	0
International Journal of Instructional Media	0
International Journal of Knowledge Management & Practices	0
International Library Review	0
Internet Reference Services Quarterly	0
Internet Research	0
JLIS.it, Italian Journal of Library, Archives & Information Science	0
Journal for the Society of North Carolina Archivists	0
Journal of Academic Librarianship	0
Journal of Access Services	0
Journal of Business & Finance Librarianship	0
Journal of Business Education	0
Journal of Chemical Education	0
Journal of Documentation	0
Journal of East Asian Libraries	0
Journal of Economic Education	0
Journal of Education for Librarianship	0
Journal of Education for Library & Information Science	0
Journal of Educational Media & Library Sciences	0
Journal of Educational Research	0
Journal of Electronic Publishing	0
Journal of Electronic Resources in Medical Libraries	0
Journal of Electronic Resources Librarianship	0
Journal of Experimental Education	0
Journal of Higher Education	0

Journal of Hospital Librarianship	0
Journal of Information Ethics	0
Journal of Information Literacy	0
Journal of Information Processing & Management	0
Journal of Information Science	0
Journal of Information Science & Technology Association/Joho no Kagaku to Gijutsu	0
Journal of Information, Communication & Library Science	0
Journal of Interlibrary Loan, Document Delivery & Electronic Reserves	0
Journal of Interlibrary Loan, Document Delivery & Information Supply	0
Journal of Internet Cataloging	0
Journal of Japan Society of Library & Information Science	0
Journal of Librarianship	0
Journal of Librarianship & Information Science	0
Journal of Library & Information Science	0
Journal of Library & Information Science Research	0
Journal of Library & Information Services in Distance Learning	0
Journal of Library Administration	0
Journal of Library Automation (00222240)	0
Journal of Library History	0
Journal of Map & Geography Libraries	0
Journal of Medical Education	0
Journal of Negro Education	0
Journal of Philippine Librarianship	0
Journal of Reading	0
Journal of Religious & Theological Information	0
Journal of Research & Development in Education	0
Journal of Research on Libraries & Young Adults	0
Journal of Small Business Management	0
Journal of Social Hygiene	0
Journal of Teacher Education	0
Journal of the American Society for Information Science	0
Journal of the American Society for Information Science & Technology	0
Journal of the Association for Information Science & Technology	0
Journal of the Leadership & Management Section	0
Journal of the Library Administration & Management	0



Section	
Journal of the Medical Library Association	0
Journal of University Librarians Association of Sri Lanka	0
Journal of Web Librarianship	0
Journal of Youth Services in Libraries	0
Judaica Librarianship	0
Junior College Journal	0
Kentucky Libraries	0
Knihovna	0
Knjiznica	0
Knowledge Organization	0
Knowledge Quest	0
Lancet (London, England).	0
Language Arts	0
Learning & Media	0
Legal Reference Services Quarterly	0
Liber Quarterly: The Journal of European Research Libraries	0
Libraries & Culture	0
Libraries & the Cultural Record	0
Library & Archival Security	0
Library & Information History	0
Library & Information Research	0
Library & Information Science (03734447)	0
Library & Information Science Research (07408188)	0
Library & Information Update	0
Library Collections, Acquisitions, & Technical Services	0
Library Herald	0
Library Hi Tech	0
Library History	0
Library Issues	0
Library Management	0
Library Mosaics	0
Library Philosophy & Practice	0
Library Quarterly	0
Library Resources & Technical Services	0
Library Review / Konyvtari Figyelo	0
Library Software Review	0
Library Student Journal	0
Library Technology Reports	0
Library Trends	0

LIBRES: Library & Information Science Research Electronic Journal	0
Libri: International Journal of Libraries & Information Services	0
Magyar Konyvszemle	0
Malaysian Journal of Library & Information Science	0
Mathematics Teacher	0
MC Journal	0
Medical Reference Services Quarterly	0
Medium	0
MELA Notes	0
Michigan Education Journal	0
Microform & Imaging Review	0
Monthly Labor Review	0
Mousaion	0
Music Educators Journal	0
National Elementary Principal	0
NEA Journal	0
Negro Educational Review	0
Negro History Bulletin	0
New Era	0
New Library World	0
New Review of Children's Literature & Librarianship	0
New Review of Information Behaviour Research	0
New Review of Information Networking	0
New Zealand Libraries	0
New Zealand Library & Information Management Journal	0
Nordisk Tidskrift for Bok- och Biblioteksvasen	0
Notes	0
Nursing Outlook	0
Nursing Research	0
Occupations: The Vocational Guidance Journal	0
OCLC Systems & Services	0
Online & Cdrom Review.	0
Online Information Review	0
Pakistan Journal of Library & Information Science	0
Pakistan Library & Information Science Journal	0
Pakistan Library Bulletin	0
Papers of the Bibliographical Society of America	0
Papers of the Bibliographical Society of Canada / Cahiers de la Soci�t� bibliographique du Canada	0

Partnership: The Canadian Journal of Library & Information Practice & Research	0
Pennsylvania Libraries: Research & Practice	0
Performance Measurement & Metrics	0
Personnel & Guidance Journal	0
Perspectivas em Ciencia da Informacao	0
Philobiblon: Transylvanian Journal of Multidisciplinary Research in Humanities	0
portal: Libraries & the Academy	0
Program: Electronic Library & Information Systems	0
Progressive Librarian	0
Public Library Quarterly	0
Public Services Quarterly	0
Publishing Research Quarterly	0
Qualitative & Quantitative Methods in Libraries	0
RBM: A Journal of Rare Books, Manuscripts, & Cultural Heritage	0
Reading Improvement	0
Reading Teacher	0
Records Management Journal	0
Refer	0
Reference & User Services Quarterly	0
Reference Librarian	0
Reference Services Review	0
Research Strategies	0
Resource Sharing & Information Networks	0
Review of Educational Research	0
Revista da Escola de Biblioteconomia da Universidade Federal de Minas Gerais	0
Revista Espanola de Documentacion Cientifica	0
Revista Interamericana de Bibliotecologia	0
Romanian Journal of Library & Information Science / Revista Romãna de Biblioteconomie si Stiinta Informarii	0
Romanian Journal of Library & Information Science / Revista Romãna de Biblioteconomie si Stiinta Informarii	0
RQ	0
School libraries in post-war reconstruction.	0
School Libraries Worldwide	0
School Library Media Research	0
School Library Research	0

School Management	0
School Science & Mathematics	0
Science	0
Science & Technology Libraries	0
Science Education	0
Science Teacher	0
Scientometrics	0
Scottish Libraries	0
Senior Scholastic (Teachers Edition).	0
Serials Librarian	0
Serials Review	0
Simile	0
Singapore Journal of Library & Information Management	0
Singapore Libraries	0
SLA News	0
Slavic & East European Information Resources	0
Social Education	0
Social Forces (University of North Carolina Press)	0
Social Studies	0
South African Journal of Libraries & Information Science	0
South African Journal of Library & Information Science	0
South African Journal of Science	0
Southeastern Librarian	0
Sovetskoe Bibliotekovedenie	0
Special Libraries	0
SRELS Journal of Information Management	0
Teacher Librarian	0
Teachers College Record	0
Technical Services Quarterly	0
Tennessee Libraries	0
Theological Librarianship	0
Third World Libraries	0
Today's Education	0
Top of the News	0
Trends in Education	0
Tudományos és Műszaki Tájékoztatás	0
U.S. Library of Congress Quarterly Journal	0
Urban Library Journal	0
Virginia Journal of Education	0
Vjesnik Bibliotekara Hrvatske	0
Webology	0

Wits Journal of Librarianship & Information Science	0
Young Adult Library Services	0
Zeitschrift für Bibliothekswesen und Bibliographie	0
<b>Total</b>	<b>100</b>
<b>Mean</b>	0.27
<b>Standard Deviation (SD)</b>	2.27
<b>Mean + SD</b>	2.54
<b>Mean + 2SD</b>	4.81
<b>Mean + 3SD</b>	7.08
Note:	
SD= Standard Deviation (approx. 68% of sample)	
2SD= Standard Deviation (approx. 95% of sample)	
3SD= Standard Deviation (approx. 99.7% of sample)	

#### Appendix B: Group 2- Growth (1931-1990)

Journal Title	Group 2 - Growth (1931-1990)
Library Journal (1876).	920
New Zealand Libraries	92
Australian Library Journal	79
Bulletin of the Medical Library Association	78
Top of the News	76
Ontario Library Review	72
Bogens Verden	64
Library Trends	62
National Elementary Principal	55
Education	48
Clearing House	46
Elementary School Journal	43
Canadian Library Journal	41
Peabody Journal of Education (0161956X)	40
International Library Review	38
Tennessee Libraries	38
Library Quarterly	36
American Journal of Nursing	35
Journal of Academic Librarianship	35
Southeastern Librarian	35

SLA News	29
Virginia Journal of Education	28
Journal of Education	26
CMLEA Journal	26
Library Review	23
Collection Management	22
IFLA Journal	22
Singapore Libraries	19
Argus (Montreal, Quebec)	18
Bollettino Dinformazioni (Associazione Italiana Biblioteche).	18
California Librarian	17
Herald of Library Science	17
Journal of Education for Librarianship	17
Special Libraries	17
English Journal	16
Pakistan Library Bulletin	16
High School Journal	15
Georgia Library Quarterly	14
School Review	13
College & Research Libraries	13
New Library World	13
Assistant Librarian	11
Bibliotheekgids	11
Nursing Outlook	11
Reading Teacher	11
Audiovisual Librarian	10
Library Resources & Technical Services	10
NEA Journal	10
Review of Educational Research	10
Art Documentation: Bulletin of the Art Libraries Society of North America	9
Library & Information Science (03734447)	9
Canadian Library	8
Library Software Review	8
School Management	8
Aslib Proceedings	7
Documentaliste: Sciences de l'Information	7
Journal of Higher Education	7
Journal of Librarianship	7

RQ	7
Collection Building	6
Fontes Artis Musicae	6
Kentucky Libraries	6
Library & Information Science Research (07408188)	6
Senior Scholastic (Teachers Edition).	6
South African Journal of Library & Information Science	6
Australian Academic & Research Libraries	5
Journal of Teacher Education	5
Journal of Youth Services in Libraries	5
Judaica Librarianship	5
Scottish Libraries	5
Social Studies	5
Sovetskoe Bibliotekovedenie	5
Library	4
Catholic Educational Review	4
Harvard Library Bulletin	4
Journal of Library History	4
Library & Archival Security	4
Library Herald	4
Michigan Education Journal	4
Reference Librarian	4
Science & Technology Libraries	4
Science Education	4
Social Education	4
Bulletin des Bibliothèques de France	3
Curriculum Journal	3
Journal of Business & Finance Librarianship	3
Libri: International Journal of Libraries & Information Services	3
Program: Electronic Library & Information Systems	3
School Science & Mathematics	3
Today's Education	3
Zeitschrift für Bibliothekswesen und Bibliographie	3
American Biology Teacher (National Association of Biology Teachers)	2
American Education	2
APLIS	2
Catalogue & Index	2

Educational Record	2
Electronic Library	2
FÄ©nix	2
Information Reports & Bibliographies	2
International Journal of Instructional Media	2
Journal of Experimental Education	2
Journal of Library Administration	2
Journal of Library Automation (00222240)	2
Journal of Negro Education	2
Journal of the American Society for Information Science	2
Language Arts	2
Library Hi Tech	2
Mathematics Teacher	2
Medical Reference Services Quarterly	2
Mousaion	2
New Era	2
Public Library Quarterly	2
Reading Improvement	2
Revista da Escola de Biblioteconomia da Universidade Federal de Minas Gerais	2
Revista Interamericana de Bibliotecologia	2
Serials Review	2
Social Forces (University of North Carolina Press)	2
Trends in Education	2
Journal of Educational Sociology	1
Adult Leadership	1
American Archivist	1
American Documentation	1
American Secondary Education	1
Architectural Forum	1
Behavioral & Social Sciences Librarian	1
Bulletin (Special Libraries Association. Geography & Map Division)	1
Bulletin of Bibliography	1
Cataloging & Classification Quarterly	1
CD-ROM Professional	1
Delta Kappa Gamma Bulletin	1
Education of the Visually Handicapped	1



Educational Broadcasting International	1
Educational Forum	1
Educational Research	1
Government Publications Review	1
Harvard Educational Review	1
Hospital Progress	1
IATUL Annual Conference Proceedings	1
Indexer	1
Information Development	1
INSPEL	1
Interface	1
Journal of Business Education	1
Journal of Chemical Education	1
Journal of Economic Education	1
Journal of Education for Library & Information Science	1
Journal of Educational Research	1
Journal of Medical Education	1
Journal of Reading	1
Journal of Research & Development in Education	1
Journal of Small Business Management	1
Journal of Social Hygiene	1
Junior College Journal	1
Lancet (London, England).	1
Magyar Konyvszemle	1
Monthly Labor Review	1
Music Educators Journal	1
Negro Educational Review	1
Negro History Bulletin	1
Nursing Research	1
Occupations: The Vocational Guidance Journal	1
Personnel & Guidance Journal	1
Research Strategies	1
School libraries in post-war reconstruction	1
Science	1
Science Teacher	1
South African Journal of Science	1
Teachers College Record	1
Technical Services Quarterly	1
U.S. Library of Congress Quarterly Journal	1
Wits Journal of Librarianship & Information Science	1

Elementary School Teacher	0
Independent Education	0
Access (10300155)	0
Acquisitions Librarian	0
Advances in Librarianship	0
African Journal of Library, Archives & Information Science	0
African Research & Documentation	0
Against the Grain	0
ALISS Quarterly	0
Annals of Library & Information Studies	0
Anuario Think EPI	0
Arbido	0
Archival Science	0
Archivar	0
Archivaria	0
Archives (00449423)	0
Archives & Manuscripts	0
Art Libraries Journal	0
Asian Journal of Information Science & Technology (AJIST)	0
Asian Libraries	0
Aslib Journal of Information Management	0
Biblios	0
Biblioteca: Revista de Bibliologie si Stiinta Informarii	0
Bibliotekovedenie	0
Bibliothek Forschung und Praxis	0
Bollettino AIB	0
Book History (Johns Hopkins University Press)	0
Bookbird: A Journal of International Children's Literature (Johns Hopkins University Press)	0
Bookbird: A Journal of International Children's Literature (University of Toronto Press)	0
Bookmobile & Outreach Services	0
Bottom Line: Managing Library Finances	0
Brazilian Journal of Information Science	0
BuB: Forum Bibliothek und Information	0
Cadernos de Biblioteconomia, Arquivastica e Documentation	0

Cadernos de Biblioteconomia, Arquivística e Documentação	0
Canadian Journal of Information & Library Sciences	0
Canadian Journal of Information Science	0
Children & Libraries: The Journal of the Association for Library Service to Children	0
Chinese Librarianship	0
Choice: Current Reviews for Academic Libraries	0
Ciencia da Informacao	0
CILIP Update	0
Citaliste: The Scientific Journal on Theory & Practice of Librarianship	0
CM: Canadian Review of Materials	0
Codex (2150-086X)	0
Collaborative Librarianship	0
Collected Magazine	0
College & Undergraduate Libraries	0
Communications in Information Literacy	0
Community & Junior College Libraries	0
Computers in the Schools	0
Current Studies in Librarianship	0
DESIDOC Journal of Library & Information Technology	0
Digital Library Perspectives	0
Education for Information	0
Education Libraries	0
Education Libraries Journal	0
El Profesional de la Información	0
El Profesional de la Información	0
Electronic Journal of Academic & Special Librarianship	0
Endnotes	0
Evidence Based Library & Information Practice	0
First Monday	0
Focus on International Library & Information Work	0
GMS Medizin-Bibliothek-Information	0
Health Information & Libraries Journal	0
In the Library with the Lead Pipe	0
Informacao & Sociedade: Estudos	0
Informacion, Cultura y Sociedad	0

Informare si Documentare: Activitate Stiintifica si Profesionala	0
Informatie Professional	0
Information & Culture	0
Information Research	0
Information Research Watch International	0
Information Scotland	0
Information Searcher	0
Information Services & Use	0
Information Studies	0
Information Technologist	0
Information Technology & Libraries	0
Information World / Bilgi Dunyasi	0
Innovation (10258892)	0
Insights: the UKSG journal	0
Interlending & Document Supply	0
International Information & Library Review	0
International Information, Communication & Education	0
International Journal of Information Management	0
International Journal of Knowledge Management & Practices	0
Internet Reference Services Quarterly	0
Internet Research	0
JLIS.it, Italian Journal of Library, Archives & Information Science	0
Journal for the Society of North Carolina Archivists	0
Journal of Access Services	0
Journal of Documentation	0
Journal of East Asian Libraries	0
Journal of Educational Media & Library Sciences	0
Journal of Electronic Publishing	0
Journal of Electronic Resources in Medical Libraries	0
Journal of Electronic Resources Librarianship	0
Journal of Hospital Librarianship	0
Journal of Information Ethics	0
Journal of Information Literacy	0
Journal of Information Processing & Management	0
Journal of Information Science	0
Journal of Information Science & Technology Association/Joho no Kagaku to Gijutsu	0

Journal of Information, Communication & Library Science	0
Journal of Interlibrary Loan, Document Delivery & Electronic Reserves	0
Journal of Interlibrary Loan, Document Delivery & Information Supply	0
Journal of Internet Cataloging	0
Journal of Japan Society of Library & Information Science	0
Journal of Librarianship & Information Science	0
Journal of Library & Information Science	0
Journal of Library & Information Science Research	0
Journal of Library & Information Services in Distance Learning	0
Journal of Map & Geography Libraries	0
Journal of Philippine Librarianship	0
Journal of Religious & Theological Information	0
Journal of Research on Libraries & Young Adults	0
Journal of the American Society for Information Science & Technology	0
Journal of the Association for Information Science & Technology	0
Journal of the Leadership & Management Section	0
Journal of the Library Administration & Management Section	0
Journal of the Medical Library Association	0
Journal of University Librarians Association of Sri Lanka	0
Journal of Web Librarianship	0
Knihovna	0
Knjiznica	0
Knowledge Organization	0
Knowledge Quest	0
Learning & Media	0
Legal Reference Services Quarterly	0
Liber Quarterly: The Journal of European Research Libraries	0
Libraries & Culture	0
Libraries & the Cultural Record	0
Library & Information History	0

Library & Information Research	0
Library & Information Update	0
Library Collections, Acquisitions, & Technical Services	0
Library History	0
Library Issues	0
Library Management	0
Library Mosaics	0
Library Philosophy & Practice	0
Library Review / Konyvtari Figyelo	0
Library Student Journal	0
Library Technology Reports	0
LIBRES: Library & Information Science Research Electronic Journal	0
Malaysian Journal of Library & Information Science	0
MC Journal	0
Medium	0
MELA Notes	0
Microform & Imaging Review	0
New Review of Children's Literature & Librarianship	0
New Review of Information Behaviour Research	0
New Review of Information Networking	0
New Zealand Library & Information Management Journal	0
Nordisk Tidskrift for Bok- och Biblioteksvasen	0
Notes	0
OCLC Systems & Services	0
Online & Cdrom Review.	0
Online Information Review	0
Pakistan Journal of Library & Information Science	0
Pakistan Library & Information Science Journal	0
Papers of the Bibliographical Society of America	0
Papers of the Bibliographical Society of Canada / Cahiers de la Soci�t� bibliographique du Canada	0
Partnership: The Canadian Journal of Library & Information Practice & Research	0
Pennsylvania Libraries: Research & Practice	0
Performance Measurement & Metrics	0
Perspectivas em Ciencia da Informacao	0

Philobiblon: Transylvanian Journal of Multidisciplinary Research in Humanities	0
portal: Libraries & the Academy	0
Progressive Librarian	0
Public Services Quarterly	0
Publishing Research Quarterly	0
Qualitative & Quantitative Methods in Libraries	0
RBM: A Journal of Rare Books, Manuscripts, & Cultural Heritage	0
Records Management Journal	0
Refer	0
Reference & User Services Quarterly	0
Reference Services Review	0
Resource Sharing & Information Networks	0
Revista Espa�ola de Documentaci3n Cient�fica	0
Romanian Journal of Library & Information Science / Revista Rom�na de Biblioteconomie si Stiinta Informarii	0
Romanian Journal of Library & Information Science / Revista Rom�na de Biblioteconomie si Stiinta Informarii	0
School Libraries Worldwide	0
School Library Media Research	0
School Library Research	0
Scientometrics	0
Serials Librarian	0
Simile	0
Singapore Journal of Library & Information Management	0
Slavic & East European Information Resources	0
South African Journal of Libraries & Information Science	0
SRELS Journal of Information Management	0
Teacher Librarian	0
Theological Librarianship	0
Third World Libraries	0
Tudomanyos es Muszaki Tajekoztatas	0
Urban Library Journal	0
Vjesnik Bibliotekara Hrvatske	0
Webology	0

Young Adult Library Services	0
<b>Total</b>	<b>2739</b>
Mean	7.34
Standard Deviation (SD)	49.10
Mean + SD	56.44
Mean + 2SD	105.54
Mean + 3SD	154.64
Note: SD= Standard Deviation (approx. 68% of sample) 2SD= Standard Deviation (approx. 95% of sample) 3SD= Standard Deviation (approx. 99.7% of sample)	

### Appendix C: Group 3- Upsurge (1991-2018)

Journal Title	Group 3 - Upsurge (1991 - 2018)
Knowledge Quest	1044
Teacher Librarian	1001
School Libraries Worldwide	458
Access (10300155)	360
Learning & Media	273
Medium	175
Collected Magazine	168
CILIP Update	167
Library & Information Update	132
School Library Research	124
Information Searcher	81
Journal of Business & Finance Librarianship	71
Kentucky Libraries	54
Library Trends	44
IFLA Journal	42
Journal of Youth Services in Libraries	42
Library Philosophy & Practice	42
Children & Libraries: The Journal of the Association for Library Service to Children	41
CMLEA Journal	40
Evidence Based Library & Information Practice	40
Journal of Education for Library & Information Science	39
Reference Librarian	36



Biblioteca: Revista de Bibliologie si Stiinta Informatiei	34
Young Adult Library Services	34
Libri: International Journal of Libraries & Information Services	32
Against the Grain	32
New Review of Children's Literature & Librarianship	31
Tennessee Libraries	30
New Library World	30
Journal of Librarianship & Information Science	30
Journal of Academic Librarianship	29
Library & Information Science Research (07408188)	29
Bulletin des Bibliothèques de France	27
Mousaion	27
Georgia Library Quarterly	26
Focus on International Library & Information Work	26
Library Software Review	23
Information Development	23
Information Scotland	23
Pakistan Library & Information Science Journal	23
Australian Library Journal	20
Library Quarterly	20
APLIS	20
Journal of Educational Media & Library Sciences	20
Journal of Library Administration	19
Bibliothek Forschung und Praxis	19
Library Review	18
Education for Information	18
Reference Services Review	18
Electronic Library	17
South African Journal of Libraries & Information Science	17
Argus (Montreal, Quebec)	16
Public Library Quarterly	16
Scottish Libraries	15
International Information & Library Review	15
Journal of Information Literacy	15
Malaysian Journal of Library & Information Science	15
Public Services Quarterly	15
Vjesnik Bibliotekara Hrvatske	15
Documentaliste: Sciences de l'Information	14
Library Management	14

Education Libraries	13
Information Research	13
Journal of the Medical Library Association	13
Library Mosaics	13
Library Technology Reports	13
Herald of Library Science	12
Collection Building	12
Library Hi Tech	12
Innovation (10258892)	12
Perspectivas em Ciencia da Informacao	12
Reference & User Services Quarterly	12
College & Research Libraries	11
Art Documentation: Bulletin of the Art Libraries Society of North America	11
Aslib Proceedings	11
Revista Interamericana de Bibliotecologia	11
INSPEL	11
Bottom Line: Managing Library Finances	11
Library Review / Konyvtari Figyelo	11
South African Journal of Library & Information Science	10
Bollettino AIB	10
Community & Junior College Libraries	10
Partnership: The Canadian Journal of Library & Information Practice & Research	10
Qualitative & Quantitative Methods in Libraries	10
Bibliotekovedenie	9
Current Studies in Librarianship	9
Informacao & Sociedade: Estudos	9
SRELS Journal of Information Management	9
Southeastern Librarian	8
African Journal of Library, Archives & Information Science	8
Information Technologist	8
Journal of Access Services	8
Journal of Information Science & Technology Association/Joho no Kagaku to Gijutsu	8
Libraries & Culture	8
CD-ROM Professional	7
Collaborative Librarianship	7
Journal of Research on Libraries & Young Adults	7

OCLC Systems & Services	7
portal: Libraries & the Academy	7
Romanian Journal of Library & Information Science / Revista Română de Biblioteconomie si Stiinta Informarii	7
Collection Management	6
Fontes Artis Musicae	6
Australian Academic & Research Libraries	6
Judaica Librarianship	6
Behavioral & Social Sciences Librarian	6
Technical Services Quarterly	6
College & Undergraduate Libraries	6
Information World / Bilgi Dunyasi	6
Internet Reference Services Quarterly	6
Journal of Information Science	6
Journal of Philippine Librarianship	6
Knjiznica	6
Library & Information Research	6
Library History	6
LIBRES: Library & Information Science Research Electronic Journal	6
Refer	6
Serials Librarian	6
Theological Librarianship	6
Bulletin of the Medical Library Association	5
Library & Information Science (03734447)	5
Cataloging & Classification Quarterly	5
Research Strategies	5
ALISS Quarterly	5
Electronic Journal of Academic & Special Librarianship	5
Health Information & Libraries Journal	5
Informare si Documentare: Activitate Stiintifica si Profesionala	5
Interlending & Document Supply	5
Journal of Interlibrary Loan, Document Delivery & Electronic Reserves	5
Journal of the American Society for Information Science & Technology	5
Notes	5
Romanian Journal of Library & Information Science / Revista Română de Biblioteconomie si Stiinta Informarii	5

Slavic & East European Information Resources	5
Canadian Library Journal	4
Pakistan Library Bulletin	4
Library Resources & Technical Services	4
Program: Electronic Library & Information Systems	4
Medical Reference Services Quarterly	4
Advances in Librarianship	4
Art Libraries Journal	4
Asian Libraries	4
Biblios	4
Canadian Journal of Information & Library Sciences	4
Choice: Current Reviews for Academic Libraries	4
DESIDOC Journal of Library & Information Technology	4
Informatie Professional	4
Information Research Watch International	4
Journal of Library & Information Services in Distance Learning	4
Performance Measurement & Metrics	4
Audiovisual Librarian	3
Library & Archival Security	3
Science & Technology Libraries	3
Catalogue & Index	3
Journal of the American Society for Information Science	3
Serials Review	3
American Archivist	3
Indexer	3
Anuario Think EPI	3
Bookbird: A Journal of International Children's Literature (Johns Hopkins University Press)	3
Cadernos de Biblioteconomia, Arquivística e Documentação	3
Chinese Librarianship	3
Codex (2150-086X)	3
Education Libraries Journal	3
El Profesional de la Información	3
First Monday	3
Information Services & Use	3
Journal of East Asian Libraries	3
Journal of Information Ethics	3
Journal of the Association for Information Science &	3

Technology	
Knowledge Organization	3
Legal Reference Services Quarterly	3
Library Collections, Acquisitions, & Technical Services	3
MELA Notes	3
Online & Cdrom Review.	3
Online Information Review	3
Progressive Librarian	3
Resource Sharing & Information Networks	3
Tudomanyos es Muszaki Tajekoztatas	3
Special Libraries	2
Sovetskoe Bibliotekovedenie	2
African Research & Documentation	2
Arbido	2
Archives (00449423)	2
Asian Journal of Information Science & Technology (AJIST)	2
Bookbird: A Journal of International Children's Literature (University of Toronto Press)	2
BuB: Forum Bibliothek und Information	2
Computers in the Schools	2
Informacion, Cultura y Sociedad	2
Information Studies	2
Information Technology & Libraries	2
Internet Research	2
Journal of Documentation	2
Journal of Electronic Resources in Medical Libraries	2
Journal of Hospital Librarianship	2
Journal of Library & Information Science	2
Journal of Library & Information Science Research	2
Journal of Map & Geography Libraries	2
Journal of Religious & Theological Information	2
Knihovna	2
Library & Information History	2
Library Student Journal	2
Microform & Imaging Review	2
Pakistan Journal of Library & Information Science	2
Publishing Research Quarterly	2
Revista Espa±ola de Documentaci³n Cient±fica	2
Webology	2

New Zealand Libraries	1
Bogens Verden	1
RQ	1
Library	1
Revista da Escola de Biblioteconomia da Universidade Federal de Minas Gerais	1
Acquisitions Librarian	1
Annals of Library & Information Studies	1
Archival Science	1
Archivar	1
Archivaria	1
Archives & Manuscripts	1
Aslib Journal of Information Management	1
Book History (Johns Hopkins University Press)	1
Bookmobile & Outreach Services	1
Brazilian Journal of Information Science	1
Cadernos de Biblioteconomia, Arquivística e Documentação	1
Canadian Journal of Information Science	1
Ciencia da Informacao	1
Citaliste: The Scientific Journal on Theory & Practice of Librarianship	1
CM: Canadian Review of Materials	1
Communications in Information Literacy	1
Digital Library Perspectives	1
El Profesional de la Información	1
Endnotes	1
GMS Medizin-Bibliothek-Information	1
In the Library with the Lead Pipe	1
Information & Culture	1
Insights: the UKSG journal	1
International Information, Communication & Education	1
International Journal of Information Management	1
International Journal of Knowledge Management & Practices	1
JLIS.it, Italian Journal of Library, Archives & Information Science	1
Journal for the Society of North Carolina Archivists	1
Journal of Electronic Publishing	1
Journal of Electronic Resources Librarianship	1

Journal of Information Processing & Management	1
Journal of Information, Communication & Library Science	1
Journal of Interlibrary Loan, Document Delivery & Information Supply	1
Journal of Internet Cataloging	1
Journal of Japan Society of Library & Information Science	1
Journal of the Leadership & Management Section	1
Journal of the Library Administration & Management Section	1
Journal of University Librarians Association of Sri Lanka	1
Journal of Web Librarianship	1
Liber Quarterly: The Journal of European Research Libraries	1
Libraries & the Cultural Record	1
Library Issues	1
MC Journal	1
New Review of Information Behaviour Research	1
New Review of Information Networking	1
New Zealand Library & Information Management Journal	1
Nordisk Tidskrift for Bok- och Biblioteksväsen	1
Papers of the Bibliographical Society of America	1
Papers of the Bibliographical Society of Canada / Cahiers de la Société bibliographique du Canada	1
Pennsylvania Libraries: Research & Practice	1
Philobiblon: Transylvanian Journal of Multidisciplinary Research in Humanities	1
RBM: A Journal of Rare Books, Manuscripts, & Cultural Heritage	1
Records Management Journal	1
Scientometrics	1
Simile	1
Singapore Journal of Library & Information Management	1
Third World Libraries	1
Urban Library Journal	1
Library Journal (1876).	0
Top of the News	0
Ontario Library Review	0
National Elementary Principal	0

Education	0
Clearing House	0
Elementary School Journal	0
Peabody Journal of Education (0161956X)	0
International Library Review	0
American Journal of Nursing	0
SLA News	0
Virginia Journal of Education	0
Journal of Education	0
Singapore Libraries	0
Bollettino Dinformazioni (Associazione Italiana Biblioteche).	0
California Librarian	0
Journal of Education for Librarianship	0
English Journal	0
High School Journal	0
School Review	0
Assistant Librarian	0
Bibliotheekgids	0
Nursing Outlook	0
Reading Teacher	0
NEA Journal	0
Review of Educational Research	0
Canadian Library	0
School Management	0
Journal of Higher Education	0
Journal of Librarianship	0
Senior Scholastic (Teachers Edition).	0
Journal of Teacher Education	0
Social Studies	0
Catholic Educational Review	0
Harvard Library Bulletin	0
Journal of Library History	0
Library Herald	0
Michigan Education Journal	0
Science Education	0
Social Education	0
Curriculum Journal	0
School Science & Mathematics	0
Today's Education	0



Zeitschrift für Bibliothekswesen und Bibliographie	0
American Biology Teacher (National Association of Biology Teachers)	0
American Education	0
Educational Record	0
FoXnix	0
Information Reports & Bibliographies	0
International Journal of Instructional Media	0
Journal of Experimental Education	0
Journal of Library Automation (00222240)	0
Journal of Negro Education	0
Language Arts	0
Mathematics Teacher	0
New Era	0
Reading Improvement	0
Social Forces (University of North Carolina Press)	0
Trends in Education	0
Journal of Educational Sociology	0
Adult Leadership	0
American Documentation	0
American Secondary Education	0
Architectural Forum	0
Bulletin (Special Libraries Association. Geography & Map Division)	0
Bulletin of Bibliography	0
Delta Kappa Gamma Bulletin	0
Education of the Visually Handicapped	0
Educational Broadcasting International	0
Educational Forum	0
Educational Research	0
Government Publications Review	0
Harvard Educational Review	0
Hospital Progress	0
IATUL Annual Conference Proceedings	0
Interface	0
Journal of Business Education	0
Journal of Chemical Education	0
Journal of Economic Education	0
Journal of Educational Research	0
Journal of Medical Education	0

Journal of Reading	0
Journal of Research & Development in Education	0
Journal of Small Business Management	0
Journal of Social Hygiene	0
Junior College Journal	0
Lancet (London, England).	0
Magyar Konyvszemle	0
Monthly Labor Review	0
Music Educators Journal	0
Negro Educational Review	0
Negro History Bulletin	0
Nursing Research	0
Occupations: The Vocational Guidance Journal	0
Personnel & Guidance Journal	0
School libraries in post-war reconstruction.	0
Science	0
Science Teacher	0
South African Journal of Science	0
Teachers College Record	0
U.S. Library of Congress Quarterly Journal	0
Wits Journal of Librarianship & Information Science	0
Elementary School Teacher	0
Independent Education	0

<b>Total</b>	<b>6177</b>
<b>Mean</b>	16.60
<b>Standard Deviation (SD)</b>	83.37
<b>Mean + SD</b>	99.98
<b>Mean + 2SD</b>	183.35
<b>Mean + 3SD</b>	266.72

#### Appendix D: Top 50 Themes of Scholarly Communications- Tree Map

Scholarly Articles 50 Top Themes Analysis 1

media	collections	archives	authors	specialists	conferences			
						professional	update	bibliographic
teachers	children	programs	users	materials	books	instructional	publications	
	internet		organizations	employees	communiti	bibliograp	assisted	pedagog
			digital	standards	database	informatio	portals	systems
students	services	resources	surveys	publishers	disabilitie	activitie	practitione	curricula
			online			periodicals	awards	profess

**Appendix E: AASL Twitter Participants- Frequency**

Twitter Participants	FREQ	Twitter Participant continued	FREQ
<a href="#">@aasl</a>	754	<a href="#">@DaveFra86195670</a>	1
<a href="#">@lieberrian</a>	42	<a href="#">@DesignSaunders</a>	1
<a href="#">@SafeLibraries</a>	36	<a href="#">@DigitCurator</a>	1
<a href="#">@LoriDonovan14</a>	20	<a href="#">@DOL_Research</a>	1
<a href="#">@shannonmmiller</a>	20	<a href="#">@donalynbooks</a>	1
<a href="#">@spkowalski</a>	17	<a href="#">@dparies50</a>	1
<a href="#">@rivas_barbara</a>	15	<a href="#">@DrTabitha</a>	1
<a href="#">@ALALibrary</a>	14	<a href="#">@effinglibrarian</a>	1
<a href="#">@lesliepreddy</a>	11	<a href="#">@ejclibarian</a>	1
<a href="#">@bglibrarynotes</a>	11	<a href="#">@emily_roediger</a>	1
<a href="#">@mluhtala</a>	10	<a href="#">@emilyyurilovell</a>	1

<a href="#">@CraigSeasholes</a>	9	<a href="#">@emstolar</a>	1
<a href="#">@edutalkradio</a>	9	<a href="#">@ErynInTheCity</a>	1
<a href="#">@fkompar</a>	8	<a href="#">@evernote</a>	1
<a href="#">@jane_librarian</a>	6	<a href="#">@EveryLibrary</a>	1
<a href="#">@lucysantosgreen</a>	6	<a href="#">@EWmdavis</a>	1
<a href="#">@martinls0030</a>	6	<a href="#">@FablePaul</a>	1
<a href="#">@_MichelleCooper</a>	6	<a href="#">@Flipgrid</a>	1
<a href="#">@actinginthelib</a>	6	<a href="#">@foxxinthefield</a>	1
<a href="#">@DianaLRendina</a>	5	<a href="#">@fpentlin</a>	1
<a href="#">@K12LibrarianRGV</a>	5	<a href="#">@franceyharris</a>	1
<a href="#">@LauraPAuthor</a>	5	<a href="#">@FredEnde</a>	1
<a href="#">@lucasjmaxwell</a>	5	<a href="#">@Fundchilemas</a>	1
<a href="#">@technolibrary</a>	5	<a href="#">@gottsled</a>	1
<a href="#">@wsstephens</a>	5	<a href="#">@greenbeanreads</a>	1
<a href="#">@wsstephens</a>	4	<a href="#">@hansen_vicki</a>	1
<a href="#">@CactusWoman</a>	4	<a href="#">@hari_vert</a>	1
<a href="#">@ChiSLibrarians</a>	4	<a href="#">@hatbooks</a>	1
<a href="#">@IreneKistler</a>	4	<a href="#">@hjankowski</a>	1
<a href="#">@itsmebeccam</a>	4	<a href="#">@hynnge</a>	1
<a href="#">@kathsstewart</a>	4	<a href="#">@iMayaBerry</a>	1
<a href="#">@mtechman</a>	4	<a href="#">@iMcPeake</a>	1
<a href="#">@NewHarpsichord</a>	4	<a href="#">@imcraddock</a>	1
<a href="#">@Veracode</a>	4	<a href="#">@indieschoollib</a>	1
<a href="#">@abookforfrances</a>	3	<a href="#">@infopowr</a>	1
<a href="#">@ALA_COSWL</a>	3	<a href="#">@inkyelbows</a>	1
<a href="#">@av2learner</a>	3	<a href="#">@InnovativeEdu</a>	1
<a href="#">@becalzada</a>	3	<a href="#">@IowaASL</a>	1
<a href="#">@Bridge2Lit</a>	3	<a href="#">@iSchoolK12</a>	1
<a href="#">@cppotter</a>	3	<a href="#">@IST611Rachael</a>	1
<a href="#">@DrGLunceford</a>	3	<a href="#">@jackie_child</a>	1
<a href="#">@FiammettaRocco</a>	3	<a href="#">@jaco_els</a>	1
<a href="#">@kellybrannock</a>	3	<a href="#">@JanieLamki</a>	1
<a href="#">@lbraun2000</a>	3	<a href="#">@jbaldwin_books</a>	1
<a href="#">@LMcSweeney802</a>	3	<a href="#">@JeffieLibrarian</a>	1
<a href="#">@MrsAshey</a>	3	<a href="#">@jendimmick</a>	1
<a href="#">@MrsKateCarlson</a>	3	<a href="#">@jennawritesPB</a>	1
<a href="#">@msannakoval</a>	3	<a href="#">@jenniholm</a>	1
<a href="#">@MsD_Reads_vt</a>	3	<a href="#">@jensenyetta</a>	1
<a href="#">@mskkauffman</a>	3	<a href="#">@JerriAnnHenry</a>	1
<a href="#">@OIF</a>	3	<a href="#">@joannereese</a>	1
<a href="#">@pamlibrarian</a>	3	<a href="#">@JoeJohnsonOnAir</a>	1

<a href="#"><u>@sedley1</u></a>	3	<a href="#"><u>@JohnRedVO1</u></a>	1
<a href="#"><u>@SusiGrissom</u></a>	3	<a href="#"><u>@jrepman</u></a>	1
<a href="#"><u>@suzannedix</u></a>	3	<a href="#"><u>@jrflynn</u></a>	1
<a href="#"><u>@THLibrariZen</u></a>	3	<a href="#"><u>@judiparadis</u></a>	1
<a href="#"><u>@ULCSusanBenton</u></a>	3	<a href="#"><u>@judyashby111</u></a>	1
<a href="#"><u>@umdbzj</u></a>	3	<a href="#"><u>@juliaerin80</u></a>	1
<a href="#"><u>@AbsurdWeb</u></a>	2	<a href="#"><u>@justinalpertesq</u></a>	1
<a href="#"><u>@activelearning</u></a>	2	<a href="#"><u>@justinreeve</u></a>	1
<a href="#"><u>@AFTteach</u></a>	2	<a href="#"><u>@k_fran13</u></a>	1
<a href="#"><u>@ALA_TechSource</u></a>	2	<a href="#"><u>@KarenHoppis</u></a>	1
<a href="#"><u>@ALAJenna</u></a>	2	<a href="#"><u>@KatharineGadwah</u></a>	1
<a href="#"><u>@AlbanyCAPatch</u></a>	2	<a href="#"><u>@kathyfs24</u></a>	1
<a href="#"><u>@alliejanebruce</u></a>	2	<a href="#"><u>@kaworsham</u></a>	1
<a href="#"><u>@AmyAndrewsbooks</u></a>	2	<a href="#"><u>@KeenePLibrary</u></a>	1
<a href="#"><u>@anacoqui</u></a>	2	<a href="#"><u>@kellyanne1905</u></a>	1
<a href="#"><u>@ann_ewbank</u></a>	2	<a href="#"><u>@KelseyLCohen</u></a>	1
<a href="#"><u>@apoemaday</u></a>	2	<a href="#"><u>@KentUniSLAS</u></a>	1
<a href="#"><u>@Boss_Librarian</u></a>	2	<a href="#"><u>@kjanek</u></a>	1
<a href="#"><u>@Buncee</u></a>	2	<a href="#"><u>@kkreinbrook</u></a>	1
<a href="#"><u>@ca_london</u></a>	2	<a href="#"><u>@klindskog</u></a>	1
<a href="#"><u>@caharvey2</u></a>	2	<a href="#"><u>@kristawelz</u></a>	1
<a href="#"><u>@CapstonePub</u></a>	2	<a href="#"><u>@krs814</u></a>	1
<a href="#"><u>@carolynstarkey</u></a>	2	<a href="#"><u>@KSDLibrary</u></a>	1
<a href="#"><u>@carolynvibbert</u></a>	2	<a href="#"><u>@kthoennes</u></a>	1
<a href="#"><u>@cbartow</u></a>	2	<a href="#"><u>@kwidz</u></a>	1
<a href="#"><u>@CheriDobbs</u></a>	2	<a href="#"><u>@KyDeptofEd</u></a>	1
<a href="#"><u>@churchap3</u></a>	2	<a href="#"><u>@ladybookmad</u></a>	1
<a href="#"><u>@ComicsCrusader</u></a>	2	<a href="#"><u>@LadyLibrarianND</u></a>	1
<a href="#"><u>@DonnaBaratta</u></a>	2	<a href="#"><u>@lausdccc</u></a>	1
<a href="#"><u>@EdieCrook</u></a>	2	<a href="#"><u>@LbrDragon</u></a>	1
<a href="#"><u>@EdweekLibrary</u></a>	2	<a href="#"><u>@Learning_Locker</u></a>	1
<a href="#"><u>@elissamalespina</u></a>	2	<a href="#"><u>@leslieblaha</u></a>	1
<a href="#"><u>@Elmwoodlibrary</u></a>	2	<a href="#"><u>@lhesterman</u></a>	1
<a href="#"><u>@erikaslong</u></a>	2	<a href="#"><u>@librarianMaegs</u></a>	1
<a href="#"><u>@ezdrodowski</u></a>	2	<a href="#"><u>@LibrarianMsG</u></a>	1
<a href="#"><u>@FollettLearning</u></a>	2	<a href="#"><u>@LibrariansFTW</u></a>	1
<a href="#"><u>@ginaseymour</u></a>	2	<a href="#"><u>@librariesval</u></a>	1
<a href="#"><u>@GLSEN_Education</u></a>	2	<a href="#"><u>@librarybeth</u></a>	1
<a href="#"><u>@GwenTheGweat</u></a>	2	<a href="#"><u>@librarycourtney</u></a>	1
<a href="#"><u>@GwynethJones</u></a>	2	<a href="#"><u>@LibraryLady1000</u></a>	1
<a href="#"><u>@HeyLibraraman</u></a>	2	<a href="#"><u>@librarymax</u></a>	1

<a href="#"><u>@HopewellLibrary</u></a>	2	<a href="#"><u>@LillianHoltz</u></a>	1
<a href="#"><u>@HudsonCSD</u></a>	2	<a href="#"><u>@LisaDeP</u></a>	1
<a href="#"><u>@iEARNUSA</u></a>	2	<a href="#"><u>@llohrasbi1</u></a>	1
<a href="#"><u>@ILoveLibraries</u></a>	2	<a href="#"><u>@lonnastory</u></a>	1
<a href="#"><u>@infohio</u></a>	2	<a href="#"><u>@loucabron</u></a>	1
<a href="#"><u>@InfoWitch</u></a>	2	<a href="#"><u>@love2runnteach</u></a>	1
<a href="#"><u>@janecowell8</u></a>	2	<a href="#"><u>@Loveofxena</u></a>	1
<a href="#"><u>@JaneMartellino</u></a>	2	<a href="#"><u>@lrei_lib</u></a>	1
<a href="#"><u>@jasondhovey</u></a>	2	<a href="#"><u>@LucilleBeeth</u></a>	1
<a href="#"><u>@jdlaboon</u></a>	2	<a href="#"><u>@MadelynHaussner</u></a>	1
<a href="#"><u>@jeapresident</u></a>	2	<a href="#"><u>@magicmolly</u></a>	1
<a href="#"><u>@Jennifer_Stone</u></a>	2	<a href="#"><u>@marclamonthill</u></a>	1
<a href="#"><u>@johnsonmaryj</u></a>	2	<a href="#"><u>@marris116</u></a>	1
<a href="#"><u>@joycevalenza</u></a>	2	<a href="#"><u>@MaryAnnScheuer</u></a>	1
<a href="#"><u>@KathleenGalarza</u></a>	2	<a href="#"><u>@MaryJaneMcNally</u></a>	1
<a href="#"><u>@kjsimp</u></a>	2	<a href="#"><u>@MaryWoodard</u></a>	1
<a href="#"><u>@laneyoung</u></a>	2	<a href="#"><u>@MASLibraries</u></a>	1
<a href="#"><u>@LauraBushFdn</u></a>	2	<a href="#"><u>@McConnellWrites</u></a>	1
<a href="#"><u>@leclairlib</u></a>	2	<a href="#"><u>@mcgregornyc</u></a>	1
<a href="#"><u>@liberrygurl</u></a>	2	<a href="#"><u>@mediamama</u></a>	1
<a href="#"><u>@librarian_tiff</u></a>	2	<a href="#"><u>@meesterkurt</u></a>	1
<a href="#"><u>@librarybecky</u></a>	2	<a href="#"><u>@MelissaJSLMProf</u></a>	1
<a href="#"><u>@librarylinknj</u></a>	2	<a href="#"><u>@mellie1245</u></a>	1
<a href="#"><u>@LibraryofCT</u></a>	2	<a href="#"><u>@mesraaaa</u></a>	1
<a href="#"><u>@libraryreeder</u></a>	2	<a href="#"><u>@MichelleCJarret</u></a>	1
<a href="#"><u>@LMCMcCarty</u></a>	2	<a href="#"><u>@Miegau</u></a>	1
<a href="#"><u>@LynneOakvik</u></a>	2	<a href="#"><u>@MitaliPerkins</u></a>	1
<a href="#"><u>@maribelgcastro</u></a>	2	<a href="#"><u>@MizCusick</u></a>	1
<a href="#"><u>@MaripoZe</u></a>	2	<a href="#"><u>@mnylc</u></a>	1
<a href="#"><u>@MatadorLibrary</u></a>	2	<a href="#"><u>@MollyMagro</u></a>	1
<a href="#"><u>@MatthewWinner</u></a>	2	<a href="#"><u>@MoreThanATech</u></a>	1
<a href="#"><u>@MeltyArtz</u></a>	2	<a href="#"><u>@Mrs_Dilly</u></a>	1
<a href="#"><u>@misschetzron</u></a>	2	<a href="#"><u>@MrSchuReads</u></a>	1
<a href="#"><u>@missdematteo</u></a>	2	<a href="#"><u>@MrsRubin511</u></a>	1
<a href="#"><u>@MRRONNIERAMIREZ</u></a>	2	<a href="#"><u>@myleejoseph</u></a>	1
<a href="#"><u>@MrsTonyaSimmons</u></a>	2	<a href="#"><u>@NancyW</u></a>	1
<a href="#"><u>@NancyJoLambert</u></a>	2	<a href="#"><u>@nataliaenvy</u></a>	1
<a href="#"><u>@News_O_Matic</u></a>	2	<a href="#"><u>@NCFL</u></a>	1
<a href="#"><u>@OELMA1</u></a>	2	<a href="#"><u>@newportrisites</u></a>	1
<a href="#"><u>@OfficialDLDay</u></a>	2	<a href="#"><u>@NikkiDRobertson</u></a>	1
<a href="#"><u>@poetmann</u></a>	2	<a href="#"><u>@NJASL</u></a>	1

<a href="#">@pseudandry</a>	2	<a href="#">@NJCUUniversity</a>	1
<a href="#">@Sadcampanita025</a>	2	<a href="#">@nomoretwist</a>	1
<a href="#">@SandyJBrand</a>	2	<a href="#">@northway_debbie</a>	1
<a href="#">@sandypittelli</a>	2	<a href="#">@notasausage</a>	1
<a href="#">@SassyLibr</a>	2	<a href="#">@NWaskieLaura</a>	1
<a href="#">@sksgrigsby</a>	2	<a href="#">@OCMBOCESSLS</a>	1
<a href="#">@SLPanter</a>	2	<a href="#">@OverDriveLibs</a>	1
<a href="#">@spinlight</a>	2	<a href="#">@ParentCorticalM</a>	1
<a href="#">@srmilesauthor</a>	2	<a href="#">@Pat Mo Berlin</a>	1
<a href="#">@StoryboardThat</a>	2	<a href="#">@patricialoupee</a>	1
<a href="#">@StressFreeKids</a>	2	<a href="#">@patrickmlarkin</a>	1
<a href="#">@StudioJKK</a>	2	<a href="#">@pburrell</a>	1
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<u>@CoLIBRAtoRY</u>	1	<u>@wgoetzel</u>	1
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<u>@CyndiEmma</u>	1	<u>@youngzine</u>	1
		<u>@YSSNYLA</u>	1