The Internationalization of the Academic Library: A Systematic Review of 25 Years of Literature on International Students

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The Internationalization of the Academic Library: A Systematic Review of 25 Years of Literature on International Students

Amanda B. Click, Claire Walker Wiley, and Meggan Houlihan*

This study is a systematic review of the library and information science (LIS) literature related to international students and academic libraries. A systematic review involves the methodical collection and analysis of a body of literature and is growing in popularity in the LIS field. Three well-known LIS databases were systematically searched for articles related to the topic, and manual bibliography searches were conducted to find additional publications. Journal articles, book chapters, and conference papers were included or excluded based on established criteria. Findings show that articles published about international students and academic libraries have increased steadily between 1990 and 2014. The majority of authors are affiliated with universities and institutions in the United States, although an increase in represented countries is apparent. Fewer than half of the articles can be considered original research, and surveys are the most popular method for data collection. The LIS field—and international students—would benefit from further exploration of this topic, particularly from original research with practical implications.

Introduction
The literature about issues related to international students in academic libraries is not as prevalent in the library and information science (LIS) literature as might be expected, particularly since the number of international students studying in the United States increased by 72 percent between the 1999–2000 and 2013–2014 academic years.1 However, because this student group may have unique research and information-seeking needs, a subsection of the literature does address various issues, support, and services for this population. The research presented here, a systematic review of this literature, seeks to explore who is studying international students, which methods are being used to do so, and which topics are of particular interest to the researchers. Petticrew and Roberts advocate for the use of the systematic review in this type of research, stating

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that this method can “provide a means of dealing with the information mountain, by allowing large amount of research information to be distilled into a manageable form.” To our knowledge, a systematic review of the literature regarding international students in academic libraries has not been previously conducted. The study was designed to synthesize the findings of a number of publications, provide information for practitioners wishing to better serve this population, and identify additional areas of study for the future.

The study detailed here adhered to Kelly and Sugimoto’s steps for conducting a systematic review. Literature published between 1990 and 2014 was examined to identify and analyze the research about international students in academic libraries during the last 25 years. While the systematic review is not an often-used method in LIS research, it is gaining popularity and acknowledged as a valuable method. A recent publication from the Association of College & Research Libraries (ACRL) cites systematic literature reviews as a method of which librarians should be aware for their own research and practice as well as to support the evidence-based practice of other researchers. The authors advocate for this and other evidence-based methods that can produce high-quality and implementable LIS research.

Research Questions
This study addresses the following research questions:

- Which trends in authorship can be identified in the LIS literature regarding international students?
- Which specific topics related to international students are addressed in the literature?
- Which research methods are commonly found in the LIS literature on international students?

Literature Review
The literature on international students in the academic library is a subset of the literature on the internationalization of the academic library, which can be considered an aspect of the internationalization of higher education. This review of the literature provides context by focusing on these larger themes. It includes definitions of important concepts and information about how internationalization in higher education has evolved over the years. It also covers perspectives on the internationalization of the academic library, including the literature on services for study-abroad students, the internationalization of library and information science (LIS) education, and the development of international branch campuses.

Internationalization of Higher Education
In her 2013 book, *Internationalization and the North American University Library*, Bordonaro points out that there is “not a single universally accepted definition of internationalization in higher education.” More than 20 years ago, Knight offered the following: “Internationalisation of higher education is the process of integrating an international/intercultural dimension into the teaching, research, and service functions of the institutions.” In 2004, she proposed a new working definition: “Internationalization at the national, sector, and institutional levels is defined as the process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education.” This definition is still commonly used in the literature. Note that globalization and internationalization, while related, are not synonyms. According to Altbach and Knight, globalization refers to “the economic, political and societal forces pushing 21st-century higher education toward greater international
involvement.”9 Thus, globalization is considered the underlying force for change, while internationalization is the process of change.

Clearly there has been interest in—and concern about—the internationalization of higher education for decades. In 1995, the American Council on Education (ACE) published *Educating Americans for a World in Flux*, which called for “major changes in how colleges and universities educate their students about the rest of the world.”10 The document offered ten ground rules for the internationalization of higher education:

1. Require that all graduates demonstrate competence in at least one foreign language.
2. Encourage understanding of at least one other culture.
3. Increase understanding of global systems.
4. Revamp curricula to reflect the need for international understanding.
5. Expand study-abroad and internship opportunities for all students.
6. Focus on faculty developments and rewards.
7. Examine the organizational needs of international education.
8. Build consortia to enhance capabilities.
9. Cooperate with institutions in other countries.
10. Work with local schools and communities.

More recent literature calls for institutions of higher education to cultivate global competence, “the ability of faculty, staff and students to not only contribute to knowledge, but also to comprehend, analyze, and evaluate its meaning in the context of an increasingly globalized world.”11 These ideas are not only embraced by those in higher education. A 2004 report published by the Committee for Economic Development reiterated several of the ACE’s “ground rules,” stressing the importance of foreign language requirements, study abroad, international student recruitment, and international studies curricula.12

In 2012, ACE published the findings of the Mapping Internationalization on U.S. Campuses Survey, “which is designed to assess the current state of internationalization at U.S. institutions, examine progress and trends over time, and identify priorities going forward.”13 Responding institutions indicated that internationalization has increased in recent years, with particular emphasis on curriculum development, overseas partnerships, and the recruitment of international students and faculty. The results of a related study focused on contributions by academic libraries to internationalization on U.S. campuses is briefly discussed in the next section.

**Internationalization of the Academic Library**

Witt, Kutner, and Cooper point out that the goal of the ACE survey is to provide a comprehensive overview of internationalization in U.S. higher education, but it does not include academic libraries. Modeling the survey, they conducted a study to explore the role academic libraries play in internationalization. Similar to the ACE study, findings showed increased internationalization activity and funding and also highlighted the importance of support from high-level leaders in the organization. However, the respondents to the ACE study tended to rate internationalization as “high” or “moderate” on their campuses, while the academic library respondents were much less likely to report at this level. The authors note that, “although internationalization activity has increased in responding libraries, explicit articulation of it in planning documents often has not occurred.”14 Bordonaro also explored the role of university libraries in internationalization in a phenomenological study in which she surveyed librarians as well as international students and scholars in North America. Eighty-six percent of librarian respondents clearly believe that the library should play a role in internationalization. While they acknowledged the challenges of serving international
populations, they identified many benefits: expanding the knowledge of librarians, providing personal satisfaction, improving library services, enriching campuses, and supporting the international flow of scholarly information.\textsuperscript{15}

Much of the literature on the internationalization of the academic library is focused on serving international students. This subset will not be discussed in this review of the literature, as it will be thoroughly covered in the Findings and Discussion sections. Supporting study-abroad students is another evident theme. Wang and Tremblay describe the experience of providing library services and resources to students studying at their university’s international centers in Costa Rica, China, India, Japan, and South Africa. After surveying students and faculty in the program, librarians were better equipped to develop and promote appropriate services like reference chat, electronic resources, and online tutorials.\textsuperscript{16} Denda collected data from students, administrators, and faculty in the study-abroad programs at her university and also conducted an environmental scan of library websites to collect information about services for study-abroad students. Her efforts resulted in new outreach initiatives such as a dedicated study-abroad research guide and library participation in events like the study-abroad outbound orientation.\textsuperscript{17} As a result of surveying study-abroad students in Costa Rica, Kutner discovered that these students were uncertain about remote access to library resources and services. For example, they were not confident in their abilities to access library databases or request interlibrary loan materials while abroad. Participants made a variety of suggestions for remediying this situation, including specialized library instruction and collaboration between the study-abroad office and library.\textsuperscript{18}

The librarians who are responsible for the internationalization of the academic library are generally the products of LIS education. Abdullahi, Kajberg, and Virkus argue that international and intercultural perspectives and opportunities are a crucial part of training high-quality library and information professionals. They focus on curricular issues, such as revising existing curricula to integrate international issues, and developing an “internationally recognized professional qualification.”\textsuperscript{19} While this article focused on North America, Kajberg surveyed European LIS schools regarding internationalization activities. He found that half of the responding programs featured internationalization in their mission statements, and almost all specified that efforts have been made to internationalize the curriculum. A variety of examples were provided, including teaching some courses in English and developing reading lists with global perspectives. However, Kajberg does express some concern about the lack of “long-term, resource demanding, challenging collaborative initiatives and activities.”\textsuperscript{20}

Despite the growth of international branch campuses in recent decades, the literature on their academic libraries remains sparse. Related publications tend to be reflective pieces about the experiences of librarians abroad.\textsuperscript{21} In 2013, Green published the results of a survey of branch campus librarians, designed to learn more about the services offered by these libraries. While branch campus library outcomes were similar to those of U.S.-based libraries (such as helping students develop information literacy skills), some distinctive issues emerged from the data. The librarians at these campuses deal with unique challenges, often related to living and working in an unfamiliar culture. In addition, to provide services and resources to their patrons, they must negotiate collaborations with home institutions thousands of miles away.\textsuperscript{22} In a forthcoming book chapter, Click and Houlihan present findings of an exploratory study about information literacy and library instruction programs at American-style international libraries, including both branch campuses and autonomous institutions. Survey responses made it clear that most of the libraries use American standards for their library instruction programs, such as the ACRL \textit{Information Literacy Competency Standards for Higher Education}, but adapt them to meet the needs of their student populations.\textsuperscript{23}
Method
Petticrew and Roberts define systematic reviews as “literature reviews that adhere closely to a set of scientific methods that explicitly aim to limit systematic error (bias), mainly by attempting to identify, appraise and synthesize all relevant studies (of whatever design) in order to answer a particular question (or set of questions).” The systematic review is similar to content analysis. However, the former is focused on the analysis of research, while the latter emphasizes summarizing content. The systematic review is not especially common in the LIS field, although the literature indicates that it is slowly growing in popularity. Koufogiannakis, a proponent of evidence-based practice and systematic reviews, maintains a wiki that tracks systematic reviews in the LIS literature (http://lis-systematic-reviews.wikispaces.com/). In 2012, the wiki listed 37 articles total, 24 of which were in the health sciences librarianship subfield. By 2015, the number of articles listed on the wiki had more than doubled to 82.

This study uses a systematic review of the LIS literature to explore how modern academic libraries provide services and support to international students, answering research questions related to study design, authorship patterns, and research topics. Petticrew and Roberts recommend the use of systematic review under several circumstances, including:

- When a general overall picture of the evidence in a topic area is needed to direct future research efforts
- When an accurate picture of past research and past methodological research is required to promote the development of new methodologies.

This study included the following steps:
1. Identify sources from which studies would be selected.
2. Develop and evaluate inclusion and exclusion criteria to guide the selection of articles from these sources.
4. Develop a coding scheme for analyzing articles.
5. Apply coding scheme to articles.

Each of these steps is explained further in the following subsections.

Source Identification
Because this study focused on academic libraries, we determined that the major LIS databases would be the best sources for literature on services for international students. We chose to search Library & Information Science Source (LISS), Library and Information Science Abstracts (LISA), and Library, Information Science & Technology Abstracts (LISTA). Once articles from these databases were collected, we performed a manual bibliography search of each to identify additional sources that fit our criteria but were not retrieved in the database searches. This technique resulted in the discovery and analysis of book chapters and conference papers in addition to journal articles.

Inclusion and Exclusion Criteria
This systematic review was designed to include all the scholarly LIS literature on international students in academic libraries, including journal articles, conference papers, books, and book chapters, published between January of 1990 and December of 2014. Often the LIS literature describes particular projects developed and undertaken in specific libraries. These publications generally would not be considered original research, and we will label these “what we did” pieces. Although they are not original research, they do provide information that helps to answer the research question and thus were included in the study. Book reviews and news articles were excluded, as well as dissertations and theses. All English-language articles, book chapters, books,
and conference papers about international students in academic libraries found in the LISS, LISA, and LISTA databases or in the manual bibliography search were included in this review of the literature.

**Search and Selection Process**
We searched each of the three databases for articles with “international student” or “foreign student” in the title, abstract, subject terms, or author-supplied keywords. The results were filtered to include only results from peer-reviewed, scholarly journals. Initially, there were 161 results from LISS, 106 from LISA, and 143 from LISTA. After removing duplicates, we were left with a list of 121 articles to analyze. In this first round, we limited the search to articles published between 2000 and 2014. Upon expanding the scope of the study to 1990 to 2014, we conducted another database search and the manual bibliography searches. This expansion resulted in 110 additional publications, for a total of 231 to be analyzed.

**Code Development and Application**
Features of the articles, including those related to authorship, study design, and research topic, were manually coded. More detail about these features can be found in table 1. Some codes were developed prior to analysis, such as those for affiliation type, position category, method, and population type. Codes for these features were added and changed throughout the first round of coding. The category codes for topics were allowed to emerge from the data, but they were also finalized after the first round. Many of the publications were not original research, and, in most cases, study design features were not coded for these. Publications that included a methods or methodology section were identified as original research.

<table>
<thead>
<tr>
<th>Feature Type</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publication</td>
<td>Category (such as journal article, or book chapter)</td>
</tr>
<tr>
<td></td>
<td>Date</td>
</tr>
<tr>
<td></td>
<td>Research Classification (such as original research or general literature)</td>
</tr>
<tr>
<td>Authorship</td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td>Affiliation Type (such as college or university library, LIS department, or school)</td>
</tr>
<tr>
<td></td>
<td>Position Category (such as LIS faculty, librarian, PhD student)</td>
</tr>
<tr>
<td></td>
<td>Location by Country</td>
</tr>
<tr>
<td></td>
<td>Collaboration (such as single author, within library, between institutions)</td>
</tr>
<tr>
<td>Study Design</td>
<td>Study Location by Country</td>
</tr>
<tr>
<td></td>
<td>Method (such as survey, interviews, pre- and post-tests)</td>
</tr>
<tr>
<td></td>
<td>Population Type (such as undergraduate students, PhD students, librarians)</td>
</tr>
<tr>
<td></td>
<td>Population Country of Origin</td>
</tr>
<tr>
<td></td>
<td>Theory and/or Models (such as Bruce’s relational model of information literacy, second language acquisition theories)</td>
</tr>
<tr>
<td>Article Content</td>
<td>Topics (such as reference services, multicultural/intercultural issues, library instruction)</td>
</tr>
</tbody>
</table>
The 231 articles were divided into three sections, and two of the three authors analyzed each section. Following analysis, each set of authors discussed the coding of the shared one-third (77 articles) to ensure agreement. Thus, each author coded two-thirds of the total articles. An additional 84 publications were excluded during this analysis, resulting in a total of 147 included in the study. Publications were removed for a variety of reasons. Many were not actually about international students; for example, participants were identified as “ESL,” “multicultural,” or “nontraditional.” Others were not related to academic libraries. In addition, the manual bibliography search turned up many articles from nonscholarly publications, which were outside the scope of this systematic review. A list of all 147 journal articles, book chapters, and conference papers can be found in appendix A. Codes were finalized after this round. Finally, each author conducted a second round of coding, in which she analyzed the one-third of the articles she had not previously examined. At the end of this process, each article had been coded and agreed upon by all three authors. The final 147 articles were coded and analyzed in spreadsheet format. The study findings are shared using descriptive statistics, so more complex data analysis software was not necessary.

Findings
This section covers findings related to publication category (such as journal article or book chapter), authorship and collaboration, research methods, theories and topics, and study locations and populations.

Publication Categories
Of the 147 publications that met the study criteria, 117 were published in scholarly journals. Fifty-eight different journals were represented. Only six journals published five or more articles that met the study criteria: Reference Services Review (13), The Journal of Academic Librarianship (11), The Reference Librarian (10), The International Information & Library Review (6), Research Strategies (5), and College & Research Libraries (5). A list of all journals and the number of included articles for each can be found in appendix B. Twenty-one of the publications were book chapters. One book, Jackson and Sullivan’s International Students and Academic Libraries: Initiatives for Success, contributed 13 of these chapters. Each was coded separately because this is an edited volume of chapters written by different authors. Thus, chapters from a total of nine books were included in the study. A handful of conference papers turned up in the search, mostly from conferences in Australia. Of the nine papers, only four were from LIS-specific conferences (such as the Australian Library and Information Association’s Biennial Conference), and others were focused on other subfields in higher education (such as the Pacific Rim Conference on the First Year in Higher Education). All conference papers were published online or in print proceedings. Full citations for all journal articles, book chapters, and conference papers can be found in appendix A.

It should be noted that we found three annotated bibliographies that would be of value to anyone in the LIS field interested in this topic but were not included in the study. We searched them for relevant publications, but did not include them in the analysis because our coding scheme was not designed for this type of publication. They are listed in appendix C. Note that the Moeckel and Presnell bibliography is actually a companion piece to an article that is included in the study. The trend line in figure 1 shows that the number of publications increased steadily over this 25-year period. This study identified only one publication about international students and academic libraries in both 1996 and 1999. The high in 2011 (18 publications) can be attributed to the 13 chapters in International Students and Academic Libraries: Initiatives for Success.
Authorship and Collaboration

For the 147 articles included in the systematic review, there were a total of 239 authors. Specific job titles were unknown for half of the authors. Of those whose positions were clearly listed, 91 (38%) identified as a librarian and 9 (4%) as LIS faculty. A few faculty from other, and sometimes unexpected, disciplines including business information, education, math, and marketing also contributed to the literature. Only six authors were identified as PhD students. More than half of the author titles were unknown, due to lack of information and consistency in how journals describe authors of articles. Many articles listed only faculty rank, such as assistant professor, or only
included the name of the university. An author was only classified as “librarian” if a specific job title was listed either in the byline or author notes, whether or not the article text made it clear that the author was a librarian. Author position categories are summarized in figure 2.

To gather more information about authors, affiliations such as “college or university library” or “LIS school” were coded. These affiliations were more widely documented and provided insight that was absent in the review of author positions. Sixty-one percent of the 239 authors were affiliated with a college or university library, more than 20 percentage points higher than the number of authors who were specifically identified as librarians in the author title classification. Thirteen percent of authors were affiliated with an LIS graduate program, and 13 percent were affiliated with a college or university without a specific title or department listed. Seven percent of authors identified as faculty from other department and schools, such as the Department of Mathematics and Statistics, Faculty of Humanities and Social Sciences, and School of Computer and Security Science. See table 2 for more detail on author affiliation.

<table>
<thead>
<tr>
<th>Affiliation Category</th>
<th>Number of Authors</th>
<th>Percentage of Total Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>College or University Library</td>
<td>146</td>
<td>61%</td>
</tr>
<tr>
<td>LIS Graduate Program</td>
<td>30</td>
<td>13%</td>
</tr>
<tr>
<td>College or University</td>
<td>31</td>
<td>13%</td>
</tr>
<tr>
<td>Other Schools and Departments</td>
<td>17</td>
<td>7%</td>
</tr>
<tr>
<td>Unknown</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>Community College Library</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>239</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Although 54 percent of the selected publications were written by a single author, the remaining 46 percent represent various forms of collaborative authorship. Twenty-one of the publications (14%) were the result of authors from different universities or institutions working together. This includes authors from two different universities, as well as authors from, for example, a university and a government agency. Twenty-one (14%) of the collaborations were categorized as “within university.” However, this code did not include collaborations within the library, only those between the library and another office or department. Surprisingly, “in library” collaborations were slightly less common than “within university” at 19 (12%). In a few cases, no information was provided about author affiliations, but multiple authors indicated collaboration. These 10 publications were coded as “unknown collaboration type.” Some articles fit into more than one category when it came to collaboration. For example, an article written by two authors from the same library and one author from another university would be classified as “in library” and “between institutions,” so these classifications overlap in some cases. For this reason, the numbers in table 3 do not add up to 147 total articles, nor do the percentages equal 100 percent. Only six of the articles were the result of international collaborations, but research partnerships were evident between universities in the United States and South Korea, Australia and Canada, and the United States and China.
The majority of authors (66%) were affiliated with universities and institutions in the United States. Eleven other countries appeared in the analysis for author affiliation: Australia, Canada, China, Ireland, New Zealand, Nigeria, Qatar, South Korea, Sweden, the United Arab Emirates, and the United Kingdom. Australian (13%) and Canadian (8%) institutional affiliations were the most common behind the United States. See table 4 for the number of authors from each country.

<table>
<thead>
<tr>
<th>Country of Affiliation</th>
<th>Number of Authors</th>
<th>Percentage of Total Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>158</td>
<td>66.1%</td>
</tr>
<tr>
<td>Australia</td>
<td>31</td>
<td>13.0%</td>
</tr>
<tr>
<td>Canada</td>
<td>20</td>
<td>8.4%</td>
</tr>
<tr>
<td>China</td>
<td>8</td>
<td>3.3%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>8</td>
<td>3.3%</td>
</tr>
<tr>
<td>Ireland</td>
<td>3</td>
<td>1.3%</td>
</tr>
<tr>
<td>South Korea</td>
<td>3</td>
<td>1.3%</td>
</tr>
<tr>
<td>Sweden</td>
<td>3</td>
<td>1.3%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>Qatar</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>239</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**Research Classification**

Of the 147 publications, 70 (48%) were identified as original research, while 77 (52%) did not meet the criterion to be labeled this way. Only publications that included a methods or methodology section in the main text were considered original research. Certain exceptions were made for journals published outside of the United States that use a different format for scholarly publications. In a few cases, the articles were clearly reporting on original research but did not contain a section explicitly labeled “Methods” or “Methodology.” Of the 77 nonoriginal research publications, only 38 were
“what we did” articles, usually describing a specific project or program developed by a library to better meet the information needs of international students. The remaining 39 articles were generally literature reviews or best practices and summarized recommendations for supporting international student populations. This group will be referred to as general literature.

![Figure 3: Percentage of Publications by Research Classification](image)

**Research Methods and Theories**

The analysis of the research methods used to study international students in academic libraries is perhaps the most useful and valuable result of this study. As the criterion for original research was the presence of a methods section, only the 70 articles labeled in this way are included in the research methods analysis. Surveys were by far the most widely used research method. Forty-seven of these 70 (67%) research articles used surveys—either online, print, or as part of a mixed-methods study. This is not surprising given the growth and development of online survey and data analysis tools, such as Survey Monkey and Qualtrics. Interviews were the second most popular, and 21 studies (30%) used this method either as the sole method or as part of a mixed-method design. Testing was used in four of the studies, albeit by slightly different names such as skills testing, multiple choice testing, or pre- and post-testing. Eighteen (26%) of the studies used mixed research methods including different combinations of the following: surveys, testing, writing analysis, focus groups, interviews, website content analysis, research portfolios, key tracking, and collection usage statistics.

Within the mixed method category, all 18 of the studies used surveys or interviews combined with other methods. In a couple of cases, the research design called for an unusual method such as biographical narrative or field stimulation. Occasionally an uncommon method appeared in more than one publication, but typically this was the result of multiple papers that were published about the same study.

Very few studies used any sort of theory to frame the research. Of the seven articles that did reference some sort of theory, model, or framework, one used second-language acquisition theories, another used self-directed language learning, and yet another
used the concept of acculturation.49 LIS models, such as everyday life information seeking,50 Wilson’s model of information behavior,51 and Bruce’s relational model of information literacy,52 appeared only four times.

**Study Location and Population**

Research location and details about the study population were recorded for all 147 publications, whether or not the article met the criteria for original research. While those reporting on original research generally provided locations and information about the study population such as status (example: undergraduate students) and country of origin, in some cases publications in the “what we did” and general literature categories did as well. For example, an article categorized as “what we did” detailed an information literacy program developed at a university in Ireland, for students from Pakistan and China.53 For publications like this, it was possible to identify location and country of origin despite the lack of the original research designation.

More than half of the 147 publications reviewed did not provide study locations. Forty (27%) of the studies took place in the United States, distantly followed by Canada (7%), Australia (6%), and China (4%). One study took place in both the United States and Canada, which is why the total number of publications in table 5 is 148 instead of 147.54

<table>
<thead>
<tr>
<th>Study Location Country</th>
<th>Number of Publications</th>
<th>Percentage of Total Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>40</td>
<td>27%</td>
</tr>
<tr>
<td>Canada</td>
<td>10</td>
<td>7%</td>
</tr>
<tr>
<td>Australia</td>
<td>9</td>
<td>6%</td>
</tr>
<tr>
<td>China</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Sweden</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Ireland</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Not Applicable</strong></td>
<td><strong>76</strong></td>
<td><strong>51%</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>148</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Study populations were coded for both country of origin (for example, China) and type (such as graduate students). Some of the studies selected specific groups of international students as the target population. A breakdown of the study population country of origin showed that 51 (35%) of the articles reviewed targeted a “mixed” group of international students. Study population was deemed “mixed” if the author(s) identified the population simply as “international students.” When specific countries of origin were targeted, almost all of the studies focused on students from Asia. Thirteen studies focused on students from countries such as Japan,55 China,56 and South Korea,57 which may be a result of the large number of studies conducted by researchers in the United States and Australia, both of which house an increasing number of Asian students.58 One article, a “what we did” paper about collection development for international students, focused on Somali students.59 For 78 (53%) of the articles, popu-
lation country of origin was coded as “not applicable” because no mention was made of a study population, usually because the article did not qualify as original research.

Sixty-two of these 147 publications (42%) used various student groups as the selected research population. Within these 62, more than half (35) looked at populations made up of both undergraduate and graduate students, 8 undergraduate students only, and 13 graduate students only. In eight of the publications, academic librarians were included in the targeted population. Seven studies used mixed populations, made up of some combination of faculty, staff, administrators, students, and librarians. For example, one article about outreach to international students involved surveying undergraduate and graduate students, as well as faculty and staff.

**Research Topics**

Twenty-seven different codes were identified for the publication topics. Many appeared only once in the study, such as writing, computer literacy, mobile devices, and health information. The 12 most popular topics are shown in table 6. All topics ranked below the top 12 appeared five or fewer times.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Number of Publications</th>
<th>Percentage of Total Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Literacy/Library Instruction</td>
<td>66</td>
<td>45%</td>
</tr>
<tr>
<td>Library Experience</td>
<td>41</td>
<td>28%</td>
</tr>
<tr>
<td>Language Issues</td>
<td>36</td>
<td>24%</td>
</tr>
<tr>
<td>Library Services</td>
<td>23</td>
<td>16%</td>
</tr>
<tr>
<td>Multicultural/Intercultural Issues</td>
<td>23</td>
<td>16%</td>
</tr>
<tr>
<td>Outreach</td>
<td>19</td>
<td>13%</td>
</tr>
<tr>
<td>Information Seeking</td>
<td>17</td>
<td>12%</td>
</tr>
<tr>
<td>Online Library Resources</td>
<td>14</td>
<td>10%</td>
</tr>
<tr>
<td>Collaboration</td>
<td>11</td>
<td>7%</td>
</tr>
<tr>
<td>Language Learning</td>
<td>11</td>
<td>7%</td>
</tr>
<tr>
<td>Information Behavior</td>
<td>10</td>
<td>7%</td>
</tr>
<tr>
<td>Librarian Training</td>
<td>8</td>
<td>5%</td>
</tr>
</tbody>
</table>

The “library experience” category includes any research that asked about perceptions of or experiences in any library. Most focused on the academic library of the college or university in which the international students are studying abroad. However, some explored the students’ experiences in their home countries. The “language issues” category focuses on the challenges of providing services for students with varying levels of English-language proficiency, while “language learning” refers to library support for international students developing language skills. “Information behavior” was used to indicate more general behaviors, such as the use of social media by international students or how these students meet their information needs. The “information seeking” category was used for more specific information tasks, like completing an assignment or tasks assigned by the researcher. “Library services” and “reference services” are separate categories because some studies explored a va-
riety of library services, from information literacy instruction to interlibrary loan, and others focused only on reference services. “Multicultural/intercultural issues” covered a variety of subtopics, including learning preferences and cultural differences. This code was much more prevalent in the literature from the 1990s, because publications about international students were more often general overviews of the topic.

Discussion
This section provides further exploration of authorship trends, publication impact, further research, study implications, and limitations.

Original Research
Similar to previous research, our findings showed that surveys were by far the most widely used research method. This matches the findings of a content analysis by Turcios, Agarwal, and Watkins, in which surveys were the most frequently used method in 307 LIS research articles.69 This potentially raises questions of quality and depth of research in the LIS field. Surveys provide librarians and other LIS researchers access to quick and easily formed datasets, but they may not always be the best method to address the research question(s). From 2010 to 2014, several research methods made an appearance for the first time—including collection usage statistics, biographical narrative, research portfolios, and flowcharts—and more multifaceted studies were conducted. This may be related to the 2010 publication of The Value of Academic Libraries, which called upon the academic library community to set research agendas, assess their impact, and communicate change.70

Of the 98 publications with at least one author affiliated with a U.S. institution, only 38 were considered original research. Thus, 61 percent of the literature on international students in academic libraries published by U.S. authors qualifies as either “what we did” pieces or general literature. By comparison, 62 percent of the publications with at least one Australian author are original research. Why aren’t U.S. authors publishing more original research? Potentially they lack the needed resources, specifically time, to conduct original research. Or perhaps there is simply not as much interest in conducting original research among LIS practitioners in the United States, particularly those who are non–tenure-track academic librarians. Overall, however, the publication of original research has increased between 1990 and 2014. Seventy of the 147 (48%) analyzed publications were classified as original research. But for articles published between 1995 and 1999, only 35 percent were original research, and by 2011–2014 that number had increased to 56 percent. See table 7 for more information.

<table>
<thead>
<tr>
<th>TABLE 7</th>
<th>Numbers and Percentages of Original Research Publications for 5 Year Periods, 1990–2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Publications</td>
</tr>
<tr>
<td>1995–1999</td>
<td>23</td>
</tr>
<tr>
<td>1990–1994</td>
<td>14</td>
</tr>
<tr>
<td>2000–2004</td>
<td>23</td>
</tr>
<tr>
<td>2005–2010</td>
<td>37</td>
</tr>
<tr>
<td>2011–2014</td>
<td>50</td>
</tr>
<tr>
<td>TOTAL</td>
<td>147</td>
</tr>
</tbody>
</table>
Trends in Authorship
The dataset also shows that LIS literature has become more collaborative over the past 25 years. We identified 23 publications for this systematic review published between 1990 and 1999, as well as 50 published between 2010 and 2014. Of the first 23 publications, 17 (74%) were coded as single author, but only 26 of the last 50 (52%) received this designation. See figure 4 for more detail on the decline of single authorship. All six of the journal articles written by authors located in different countries were published between 2007 and 2014. This is to be expected, however, as global communication has become much easier and cheaper over the last 25 years.

Overall, 66 percent of the 239 authors included in this systematic review are affiliated with an institution in the United States. This number dropped a bit between 1990 and 2014, but by fewer than 10 percentage points. Table 8 shows the number of U.S.-affiliated authors for each 5-year period. For publications between 1990 and 1994, only authors from the United States, Australia, and the United Kingdom were represented. Diversity of authors increased over the years, however, and publications from 2011 to 2014 were produced by authors from the United States, Australia, Canada, China, Sweden, the United Kingdom, South Korea, Qatar, and United Arab Emirates. This increase in diversity of published authors indicates a broader interest in the globalization of higher education. As more universities compete for international students, there is likely to be continued interest in academic libraries supporting international students, as well as demonstrating their value through assessment activities resulting in publications.

Impactful Publications
This body of literature could be overwhelming for the academic librarian looking for practical guidance. A brief discussion of the specific findings and recommendations from the most impactful publications included in the study may help alleviate this burden. In this case, impact was determined by citation numbers from Google Scholar, and the eight most-cited articles from the list of 147 are discussed below. These eight articles were each coded with one of the top three occurring topics: information literacy/
library instruction, library experience, or language issues. Three of these top-cited articles were published prior to 2000, and five between 2000 and 2014. Looking at the most highly cited articles in chronological order demonstrates the changes in the needs and competencies of international students as well as the ways libraries have attempted to reach and serve this user group. All but the first of the publications report the results of original research.

Kalin’s 1992 book chapter, “The International Student in the American Academic Library,” highlights the challenges of communication, cultural differences, learning styles, and prior experience with libraries that international students often face. She makes some of the same recommendations that Liu does (see below), such as tours and librarian training, but also recommends collection development efforts as an opportunity to better serve international students. There was no study conducted as part of the research for this chapter; Kalin relies on the literature to support conclusions and recommendations.71

Allen’s 1993 study is the earliest highly cited article in our list of selected publications that specifically studies the library experience of international students. A random sample of international students at the University of Illinois at Urbana-Champaign completed a questionnaire regarding different aspects of their experience with library services and facilities, including use of the online catalog and library computers. The participants, of whom 91.6 percent were graduate or doctoral students, represented a wide range of countries, although the majority were from Asian countries. The top three aspects of libraries identified as new and unfamiliar by the participants were interlibrary loan, computer database literature searching, and term paper research counseling. Allen recommends that each library evaluate the needs of the specific populations it serves to meet their specific needs.72

In another 1993 study, Liu interviewed international students, mostly from Asian countries, at the University of California, Berkeley. Liu advocates for the interview method to avoid misunderstandings common in written self-administered surveys. Language issues were identified as a significant barrier for this group when using the library. Other barriers found were related to unfamiliarity with American-style libraries. Open stacks, different classification systems, and reference works were unfamiliar and proved challenging for participants. To overcome these barriers, Liu recommends creating glossaries of library terminology, offering library tours and hands-on workshops for international students, and fostering cultural sensitivity in library staff.73

Baron and Strout-Dapaz’s 2001 article, “Communicating With and Empowering International Students with a Library Skills Set,” has been cited more than 100 times. The authors surveyed university libraries and international student offices to deter-

<table>
<thead>
<tr>
<th>Total Number of Authors</th>
<th>Authors with U.S. Affiliation</th>
<th>Percentage of Total Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>15</td>
<td>71%</td>
</tr>
<tr>
<td>28</td>
<td>21</td>
<td>75%</td>
</tr>
<tr>
<td>31</td>
<td>23</td>
<td>74%</td>
</tr>
<tr>
<td>72</td>
<td>45</td>
<td>63%</td>
</tr>
<tr>
<td>87</td>
<td>54</td>
<td>62%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>158</strong></td>
<td><strong>66%</strong></td>
</tr>
</tbody>
</table>
mine how to best serve this population. Respondents in both groups noted language/communication problems, adjusting to a new educational/library system, and general cultural adjustment as the three major challenges facing international students. The authors use the ACRL *Standards for Information Literacy* to suggest ways to address the challenges facing international students.\(^{74}\)

Jackson’s well-known 2005 study found that most international students were highly computer-literate and had used libraries in their home country, a significant change compared to the results of studies conducted in the 1990s. Her recommendations are to create partnerships with international student offices on campus and to increase outreach efforts to this population. Other suggestions include creating online guides and tutorials and training library staff.\(^{75}\)

In a study using stimulation method published in 2005, Curry and Copeman examined reference services for international students. The study design is particularly interesting, as the focus on reference services and the chosen method are not often found in this subset of the literature. While several aspects of reference services were discussed, language issues were the main focus. The study revealed the benefits repeating and rephrasing, explanation and instruction, and avoiding library jargon during a reference interview with international students. Early termination of the reference interview was noted as a reason a user may not return to that librarian with future questions.\(^{76}\)

In their 2007 study, Liao, Finn, and Lu investigated the information-seeking behavior of international and American graduate students at Virginia Tech using a survey. This study found that international students were much more frequent and active library users than their American peers. International students were much more likely to participate in a library workshop or orientation, viewing the library itself as a “social gathering place.”\(^{77}\) The authors note the progress that has been made with libraries serving international students. The technological barriers have decreased, as has the stigma or confusion about asking a librarian for assistance that has been reported in past studies.

**Implications and Further Research**

This study has implications for the LIS field in two ways, one related to research and one to practice. First, we hope that the study design will encourage LIS researchers—especially those in subfields outside the health sciences—to consider the systematic review a valuable and feasible method. As Petticrew and Roberts note, the method is particularly useful when an overall picture of the evidence and past research is needed to inform future research and the development of methodologies.\(^{78}\) Thus, the use of systematic review could encourage innovative work in the LIS field, allowing practitioners and scholars to better understand trends and best practices related to collection, instruction, outreach, assessment, and much more. In addition, the findings of this study demonstrate a lack of original research in the LIS literature. For example, of the 66 publications about information literacy/library instruction, 33 were categorized as original research. Many of the 33 publications that do not qualify as original research recount library programs such as orientation or one-shot instruction sessions designed for international students. If program assessment is not conducted or reported, these publications may be of limited use to readers searching for effective ways to serve international student populations.

Second, this systematic review is intended to support LIS practitioners in their efforts to support international students by providing a comprehensive guide to the literature on this population. As librarians strive to make evidence-based decisions to improve practice, the systematic review can be used as a tool to make scaling the “information mountain” less intimidating.\(^{79}\)
This study shows that academic librarians and other scholars have and will continue to pay close attention to information needs and research experiences of international students, but further research is needed to identify best practices for teaching, serving, and understanding this population. We recommend that those publishing in the LIS field on this topic focus on well-designed, replicable, original research. In addition, careful consideration of research methods to identify the most appropriate choice for a particular study would likely improve the quality and depth of research. The research topics identified in this study indicate some areas where further research is needed. For example, identifying best practices for meeting the information needs of international students—perhaps through a large multifaceted study—would be a significant and welcome contribution to the LIS literature.

Limitations
Although this systematic review was designed to be comprehensive, we acknowledge that there are some limitations to this research. The study reviewed only English-language publications in three major Western databases, including Library & Information Science Source (LISS), Library and Information Science Abstracts (LISA), and Library, Information Science & Technology Abstracts (LISTA), and the publications identified in the manual bibliography search. All non–English-language articles that appeared in the results list were excluded. Analyzing research published in other languages could address some of the gaps of author location and study location and paint a more complete picture of the information needs and academic library experiences of international students studying all over the world.

Conclusion
This systematic review of the literature established that the LIS literature on international students is limited but growing. Study findings show that single authorship has declined and that international collaborations are becoming more common. The body of literature is heavily focused on library instruction/information literacy and library experiences of international students, but original research is lacking. As it is unlikely that the number of international students studying in the United States will begin to decline anytime soon, there are ample opportunities for further research.
Appendix A. All Publications by Category

Journal Articles


Ishimura, Yusuke. “Information Behavior and Japanese Students: How Can an Understanding


Martin, Julia A., Kathleen M. Reaume, Elaine M. Reeves, and Ryan D. Wright. “Relationship Building with Students and Instructors of ESL: Bridging the Gap for Library Instruction and
The Internationalization of the Academic Library


Shao, Xiaorong, Allan Scherlen, Megan Johnson, Xuan Xu, and Yuan Hu. “Chinese Students in...


Book Chapters


**Conference Papers**


## Appendix B. All Journals Represented in the Study

<table>
<thead>
<tr>
<th>Journal Title</th>
<th>Number of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reference Services Review</td>
<td>13</td>
</tr>
<tr>
<td>2. The Journal of Academic Librarianship</td>
<td>11</td>
</tr>
<tr>
<td>3. The Reference Librarian</td>
<td>10</td>
</tr>
<tr>
<td>4. The International Information &amp; Library Review</td>
<td>6</td>
</tr>
<tr>
<td>5. College &amp; Research Libraries</td>
<td>5</td>
</tr>
<tr>
<td>6. Research Strategies</td>
<td>5</td>
</tr>
<tr>
<td>7. Australian Academic &amp; Research Libraries</td>
<td>3</td>
</tr>
<tr>
<td>8. Library Philosophy &amp; Practice</td>
<td>3</td>
</tr>
<tr>
<td>10. College &amp; Undergraduate Libraries</td>
<td>2</td>
</tr>
<tr>
<td>12. Journal of Information Literacy</td>
<td>2</td>
</tr>
<tr>
<td>13. Library &amp; Information Research</td>
<td>2</td>
</tr>
<tr>
<td>14. Library Management</td>
<td>2</td>
</tr>
<tr>
<td>15. New Library World</td>
<td>2</td>
</tr>
<tr>
<td>17. Southeastern Librarian</td>
<td>2</td>
</tr>
<tr>
<td>18. Technical Services Quarterly</td>
<td>2</td>
</tr>
<tr>
<td>19. The Australian Library Journal</td>
<td>2</td>
</tr>
<tr>
<td>20. Academic Exchange</td>
<td>1</td>
</tr>
<tr>
<td>21. ALISS Quarterly</td>
<td>1</td>
</tr>
<tr>
<td>22. Aslib Journal of Information Management</td>
<td>1</td>
</tr>
<tr>
<td>23. Behavioral &amp; Social Sciences Librarian</td>
<td>1</td>
</tr>
<tr>
<td>24. Bulletin (Special Libraries Association. Geography &amp; Map Division)</td>
<td>1</td>
</tr>
<tr>
<td>25. CALA Occasional Paper Series</td>
<td>1</td>
</tr>
<tr>
<td>26. Collaborative Librarianship</td>
<td>1</td>
</tr>
<tr>
<td>27. Collection Building</td>
<td>1</td>
</tr>
<tr>
<td>28. College Student Journal</td>
<td>1</td>
</tr>
<tr>
<td>29. Community &amp; Junior College Libraries</td>
<td>1</td>
</tr>
<tr>
<td>30. Education Libraries</td>
<td>1</td>
</tr>
<tr>
<td>31. Electronic Library</td>
<td>1</td>
</tr>
<tr>
<td>32. Georgia Librarian</td>
<td>1</td>
</tr>
<tr>
<td>33. Information Outlook</td>
<td>1</td>
</tr>
<tr>
<td>34. Information Research</td>
<td>1</td>
</tr>
<tr>
<td>35. International Journal of Learning</td>
<td>1</td>
</tr>
<tr>
<td>Journal Title</td>
<td>Number of Articles</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>36. Journal of Education for Library and Information Science</td>
<td>1</td>
</tr>
<tr>
<td>37. Journal of Educational Media and Library Sciences</td>
<td>1</td>
</tr>
<tr>
<td>38. Journal of Electronic Resources Librarianship</td>
<td>1</td>
</tr>
<tr>
<td>39. Journal of Further and Higher Education</td>
<td>1</td>
</tr>
<tr>
<td>40. Journal of Librarianship and Information Science</td>
<td>1</td>
</tr>
<tr>
<td>41. Journal of Library Administration</td>
<td>1</td>
</tr>
<tr>
<td>42. Journal of Library and Information Science (USA/Taiwan)</td>
<td>1</td>
</tr>
<tr>
<td>43. Kentucky Libraries</td>
<td>1</td>
</tr>
<tr>
<td>44. Law Library Journal</td>
<td>1</td>
</tr>
<tr>
<td>45. Library &amp; Information Update</td>
<td>1</td>
</tr>
<tr>
<td>46. Library Collections, Acquisitions, &amp; Technical Services</td>
<td>1</td>
</tr>
<tr>
<td>47. Library Review</td>
<td>1</td>
</tr>
<tr>
<td>48. Multicultural Review</td>
<td>1</td>
</tr>
<tr>
<td>49. PNLA Quarterly</td>
<td>1</td>
</tr>
<tr>
<td>50. portal: Libraries &amp; the Academy</td>
<td>1</td>
</tr>
<tr>
<td>51. Program: Electronic Library &amp; Information Systems</td>
<td>1</td>
</tr>
<tr>
<td>52. Public and Access Services Quarterly</td>
<td>1</td>
</tr>
<tr>
<td>53. Public Services Quarterly</td>
<td>1</td>
</tr>
<tr>
<td>54. Reference &amp; User Services Quarterly</td>
<td>1</td>
</tr>
<tr>
<td>55. Serials Review</td>
<td>1</td>
</tr>
<tr>
<td>56. Teaching English in the Two-Year College</td>
<td>1</td>
</tr>
<tr>
<td>57. The Reading Matrix: An International Online Journal</td>
<td>1</td>
</tr>
<tr>
<td>58. Urban Library Journal</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>117</strong></td>
</tr>
</tbody>
</table>
Appendix C. Annotated Bibliographies Not Included in the Study


Notes


54. Ishimura and Bartlett, “Are Librarians Equipped to Teach International Students?”

55. See Ishimura, “Information Behavior and Japanese Students.”


57. Yoon and Kim, “Internet Use by International Graduate Students in the USA Seeking Health Information.”


67. Ishimura, Howard, and Moukdad, “Information Literacy in Academic Libraries.”


76. Curry and Copeman. “Reference Service to International Students.”


78. Petticrew and Roberts, Systematic Reviews in the Social Sciences, 21.

79. Petticrew and Roberts, Systematic Reviews in the Social Sciences, 11.