The current landscape of the School Librarianship educational programs and curricula of master’s degrees in the USA has been explored. The master’s programs are currently offered in the following four venues: (1) programs that are American Library Association (ALA) accredited but not American Association of School Librarians (AASL) recognized, i.e., ALA Only; (2) AASL recognized but not ALA accredited, i.e., AASL Only; (3) both ALA accredited and AASL recognized, i.e., Both; and (4) neither recognized nor accredited, i.e., Neither. The objectives of this study are to examine the characteristics of the School Librarianship programs and to investigate and compare the topical coverage of School Librarianship curricula across four different venues. For this study, a total of 1,150 course titles and descriptions of 84 School Librarianship master’s degree programs were collected. In the analysis, both manual classification and automated machine classification using Latent Semantic Analysis have been applied to discover the characteristics and the topical coverage of School Librarianship curricula. Some major findings of this study are as follows: First, the similarity of four School Librarianship curricula from four venues in terms of program features is uncovered as: AASL Only—Neither—Both—ALA Only. Second, the most popular topic/class in the coverage of library science courses is the “Services to User populations.” Third, in terms of the topical coverage of non-library science courses, the AASL Only encompasses the broadest coverage, which is followed by, in decreasing order of coverage: AASL Only, Neither, and Both. The empirical results provide crucial comparative data for School Librarianship programs contemplating future or current changes in response to changing technological and vocational demands.

Keywords: school librarianship, curriculum, latent semantic analysis

Introduction

With the availability of online resources and the advances in information and communication technology, the professional environment in library science has been greatly changed in the past two decades in the United States, a change that has directly and indirectly impacted School Library Media (SLM) and Library and Information Science (LIS) educational programming. To respond to the change, the National Board for Professional Teaching Standards (NBPTS) and the American Association of School Librarians (AASL) have revised the guidelines and standards for School Library Media (SLM) specialists (Garry, 2010; Stephens & Franklin, 2009). LIS programs have implemented major curriculum changes (Robbins, 1998), including the launch of iSchools to support an interdisciplinary approach to the field (Wiggins & Sawyer, 2010). These changes may impact most school
library media programs since most American Library Association (ALA)-accredited LIS programs also offer school librarian-ship programs. In view of these changes a systematic examination of nationwide curricula components is needed.

While a few empirical studies of LIS curriculum in North America have been conducted (Beheshti, 1999; Markey, 2004), a review of the literature reveals that no attempt has been made to systematically analyze curriculum components of school library programs. Such a systematic analysis is needed, however, given the change in school library programs. This study examines the curriculum components of school library programs existing within ALA-accredited programs, AASL-recognized programs, and programs that have neither ALA accreditation nor AASL recognition.

Review of the Literature

In one of the first attempts to map LIS curricula into subjects, Beheshti (1999) analyzed the titles and descriptions of courses offered by the 44 ALA-accredited Master of Library and Information Science (MLIS) programs and identified 57 major concepts with coverage intensity. The methodology was based on a hierarchical cluster analysis to create clusters of topics. According to this initial analysis, the four most intensive concepts were technology, management, organization of information, and searching and database development. Beheshti concluded that while the traditional LIS concepts were covered, newer concepts, such as database development, mathematical methods, non-print media, human-computer interface, and artificial intelligence, have also been incorporated into LIS curricula. Markey (2004) manually analyzed the LIS curricula of 56 institutional members of the Association for Library and Information Science Education (ALISE). Her study showed that a typical set of core requirements is comprised of five courses: Organization, Reference, Foundations, and Management, and one course in either Research or Information Technology. She also identified a new trend, the focus on a user-centered approach to information delivery. Hall (2009) manually examined the core curricula of 55 ALA-accredited LIS programs, focusing on the required core courses, and found six main areas of emphasis: Foundations, Organization, Management, Reference, Research Methods, and Information Technology. He concluded that the core curricula have evolved “to meet the changing complexity of the information environment,” but some areas such as information literacy and information ethics are not growing quickly enough (p. 66).

In examining the implementation of professional standards into LIS curriculum, various studies have reported contradictory findings. Comparing the LIS core curricula to the subjects listed in the 1976 International Federation of Library (IFLA) standards, Marco’s study (1994) reported that no LIS program is required to cover all the basic subjects described in the standards. However, Irwin (2002), using the same IFLA standards, reported a quite different result, finding that the IFLA subjects are covered by LIS core curricula. McKinney’s article (2006) examined 56 ALA-accredited LIS curricula against eight ALA core competencies and reported that 95% of the programs have courses that address all the core competencies, but only 15% satisfy all the proposed competencies through required courses.

Research Questions

In the U.S., each of the school librarianship programs is accredited by the ALA, recognized by the AASL, or is neither ALA-accredited nor AASL-recognized. Thus, for this study, the authors categorized the educational programs of School Librarianship into the following four venues: (1) recognized by the AASL only, (2) accredited by the ALA only, (3) both rec-
ognized by the AASL and accredited by the ALA, (4) neither AASL-recognized nor ALA-accredited. Using these categories, the authors compared master’s degree school library curricula. In addition to program types, the authors also compared different course offerings of the school library curricula. The study investigated the existing similarities and discrepancies existing across the different groups of curricula, based on program and course types. The following research questions guided this study:

**RQ1.** How similar/dissimilar are program features across different school library programs?

**RQ2.** How similar/dissimilar is the coverage of library science courses within school library curricula within the same group and across different groups of curricula?

**RQ3.** How similar/dissimilar is the coverage of non-library science courses within school library curricula within the same group and across different groups of curricula?

**Methodology**

**Data Collection**

The authors manually collected a total of 1,150 course titles and descriptions from 84 school librarian master’s degree programs from their respective academic websites during the period of January through March 2013. The AASL and ALA websites were reviewed to identify the programs and to record the course titles and descriptions: http://www.ala.org/aasl/aasleducation/schoollibrary/AASL-Historical (AASL-Recognized Programs Historical List, 1989–present) and http://www.ala.org/accreditedprograms/ (ALA Accredited Programs). The 84 programs were mutually exclusively divided into four different groups: 34 programs that are AASL recognized but not ALA accredited (Group 1: AASL Only); 37 programs that are ALA accredited but not AASL recognized (Group 2: ALA Only); 7 programs that are both AASL recognized and ALA-accredited (Group 3: Both); and 6 programs that are neither AASL recognized nor ALA accredited (Group 4: Neither).

Note that this study encompassed only master’s degree programs so that non-master’s degree or non-degree programs, such as bachelor, certification, or endorsement, were excluded from the study. Overall, most school library programs offer both master’s degree as well as non-degree programs, but only master’s degree programs were included for this study. However, there are only a small number of institutions offering only non-degree school library programs that are not applicable to this study (e.g., University of Delaware and Missouri State University that offer school library certification programs only).

The lists of included programs examined for Groups 1, 2, and 3 are exhaustive, but the program list examined for Group 4 is not; in fact, a comprehensive list of programs for Group 4 does not seem to exist. Thus, to identify the programs for Group 4, the authors relied on the AASL-Recognized Program Historical List webpage above, which lists master’s degree programs that were AASL-recognized in the past but do not presently belong to any other group. In addition, for purposes of comparison, the authors added to Group 4 the school library program at Eastern Kentucky University, which has never been AASL-recognized.

**Categorization by Course Types**

Each course in the school library programs is classified into one of two groups: library science courses and non-library science courses. Non-library science courses vary program by program depending on the nature of the particular college and department offering the program. That is, non-library science courses come from
various disciplines, such as education, communication, etc. No matter whether it is a library science or non-library science course, a course is recorded as one of the three different cases: (1) required, (2) required elective, (3) elective.

**Manual and Automatic Classification of the School Librarianship Courses**

The Association for Library and Information Science Education (ALISE) has published an LIS research areas classification scheme (available at: http://www.alise.org/classification-scheme) covering all LIS areas, including school libraries. Consisting of 10 major classes and 104 subjects, the classification scheme appears to be the only comprehensive map of the LIS field from the LIS community. For that reason, the classification scheme has been adopted as a map to classify all of the school librarianship courses in this study.

The authors were trained with an established coding protocol, by coding, comparing and discussing a random sample set consisting of about 10% of the collected course titles. After the training process, the authors manually classified all the library science courses (excluding non-library science courses) into the classification map on the basis of the titles and descriptions of the courses. A general coding rule is that only one out of the 104 subjects is assigned to each course, which is broad enough to cover all major topics of the target course. The single subject-based classification has the case of exception that two or three subjects can be assigned if the same number of subjects is explicitly specified with equal weight. Another study parameter was that if a course covered a specific topic in school library, then the authors assigned the topic to the course. Using Cohen’s kappa for assessing inter-rater agreement for nominal level variables (Cohen, 1960), the authors achieved an inter-coder reliability score of 0.833, indicating more than substantial agreement between the two coders (Carletta, 1996).

As an extended model of the classic Salton’s vector space model (Salton, Wong, & Yang, 1975), Latent Semantic Analysis (LSA), proposed by Deerwester, Dumais, Furnas, Landauer, and Harshman (1990) was employed. This is a theoretical model for representing the contextual meaning of words by statistical computations applied for information clustering (Xu, Liu, & Gong, 2003) and information visualization (Landauer, Laham, & Derr, 2004). A distinctive feature of the LSA model is to identify latent patterns existing in the complex relationships between words and the various contexts, such as the documents in which they are found. LSA begins with the creation of a co-occurrence matrix $M$, where the columns represent different contexts and the rows represent different words. An entry $(i, j)$ in the matrix $M$ corresponds to the frequency of the word $i$ appearing in the context $j$. The matrix is then analyzed by applying singular value decomposition (SVD) to derive the associated hidden semantic structures from the matrix.

Non-library science courses in the dataset are derived from various fields, such as education and communication. Refer to Appendix A for the list of the unique non-library science course titles. No single scheme was used as a common platform for classifying the non-library science courses. For that reason, manual classification of non-library science courses was not preferable. Instead, the authors attempted to cluster and visualize a collection of the non-library science courses. Due to the popularity and the unique latent feature, the authors intended to use LSA for automatically clustering and visualizing non-library science courses onto a Euclidean space. In implementation, a co-occurrence matrix for non-library science courses was created, wherein a column corresponds to each non-library science course and a row refers to a unique word from the titles and descriptions.
Results

The results of the analysis that follow are described according to the research questions.

RQ1. How similar/different are program features across different school library programs?

To answer RQ1, each of the four school librarianship program groups has been analyzed and compared for the following four distinct features: (a) names of academic units offering the programs, (b) levels of academic units offering the programs, (c) degree names, and (d) credit hours per program.

Names of Academic Units

The academic unit shall be defined as the smallest unit in which school library master’s degree programs are offered. Fig-

![Diagram]

**Figure 1.** Names of Academic Units Offering the School Librarianship Programs.

**KEY:**
- LIS = Library and Information Science or Sciences
- Education = Names beginning with Education or Educational such as “Education,” “Education and Allied Professions,” “Educational Studies,” “Educational Technology,” etc.
- Information = Names beginning with Information such as “Information,” “Information Sciences,” “Information Studies,” etc. except ILS
- LISt = Library and Information Studies
- Library = Names beginning with Library, such as “Library, Information, and Media Studies,” “Library Media,” etc. except LIS, LISt, and LS
- LS = Library Science
- ILS = Information and Library Science
- Curriculum = Names beginning with Curriculum, “Curriculum and Instruction,” and “Curriculum, Leadership, and Technology”
- Leadership = Names beginning with Leadership, “Leadership Studies,” and “Leadership and Educational Studies”
- Others = Names bearing words Professional, Special, Graduate, Teacher, Teaching, and not belonging to any other categories
Figure 1 demonstrates a bar chart summarizing the percentage of academic units with various names. In compiling the names, words referring to unit levels, such as school, department, college, etc., were excluded.

Of all the 84 programs (i.e., referring to the TOTAL series in Figure 1), nineteen units (22.6%) are named Library and Information Science or Sciences (LIS). The same number of units has names beginning with “Education” or “Educational.” Fourteen entities (14.3%) have unique names bearing the words “Graduate,” “Special,” “Teacher,” etc. Examples include [School of] Graduate and Continuing Studies, [Department of] Special Educational Services and Instruction, and [Department of] Teaching, Learning, and Technology.

Within the group of AASL Only, names beginning with “Education” or “Educational” occur at a rate of more than 50 percent. However, in the group of ALA Only, LIS is the most commonly occurring term. Meanwhile, in the Both group (i.e., both in AASL and ALA), LIS and LISt are equally cited as the most frequently used terms. In the Neither group, unlike the other groups, the most frequently cited term occurring is Others, meaning that a single dominant name does not exist for the programs in the group.

Levels of Academic Units

Figure 2 summarizes the levels of the academic units for the school library programs. School and department are the two most popular unit levels in the groups of AASL Only, ALA Only, and Both. Department is the most popular in the AASL Only group, but School is the most popular in the ALA Only group. Unlike the other groups, department and college are the
two most popular in Neither. An interesting fact is that no School occurs in the Neither group. Although it is less prevalent, the programs in Neither are also offered under program, division, or university.

**Professional Degrees**

As shown in Figure 3, overall, the frequency of degrees awarded are: MS > MLIS > M.Ed > MA = MLS. The professional degree names vary considerably across different groups: M.Ed is the most frequently offered degree in AASL Only, MLIS is the most frequently offered in ALA Only, MLS is in Both, and both M.Ed and MA are equally the most popular in Neither.

**Credit Hours per Program**

Figure 4 plots the credit-hour requirements for program completion for 84 programs. The most popular range of credit hours per program is between 35 and 39 credit hours across all the groups. A total of at least 60 credit hours occur only in the group of ALA Only, due to the fact that the programs are quarter-based, not semester-based. The lowest number of credit hours...
Table 1. Classification of Library Science Courses by Course Type.

<table>
<thead>
<tr>
<th>Type of Course</th>
<th>Required</th>
<th>Elective</th>
<th>Required Elective</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (Percentage)</td>
<td>765 (85.0%)</td>
<td>100 (11.1%)</td>
<td>35 (3.9%)</td>
<td>900 (100%)</td>
</tr>
<tr>
<td>Frequency per program</td>
<td>9.1</td>
<td>1.2</td>
<td>0.4</td>
<td>10.7</td>
</tr>
</tbody>
</table>

RQ2. How similar/dissimilar is the coverage of library science courses within school library curricula within the same group and across different groups of curricula?

To answer the question, the authors manually classified the courses using the ALISE classification scheme, a two-level hierarchical structure of scheme consisting of 10 major classes and 104 sub-classes (i.e., subjects). The 10 major classes are used and shown as X-axis labels in Figure 5 and 6. The manual classification result is presented in two different formats: according to (a) course type (i.e., required, required elective, and elective) and (b) program type (i.e., AASL Only, ALA Only, etc.).

The authors have collected a total of 833 different library science courses offered from the 84 school library programs. Only traditional courses are included in the library science courses, excluding non-traditional such as practicum, internship, field experience, capstone courses, etc. Out of 833, 64 courses are classified with more than one subject (i.e., sub-class).
Consequently, we have a total of 900 pairs of course types and categories. Table 1 shows the distribution of the course pairs by course type. A required elective connotes the need for an elective course as part of the required core curriculum. As shown in the table, pairs of required courses take the largest portion (i.e., 85%), followed by pairs of elective courses (11.1%). The last row of the table shows the average frequency per program.

Figure 5 lists the result of the manual classification according to three course types, required, required elective, and elective. The ‘Service to User Populations’ class turns out the most frequently used and the ‘Informatics’ class is the least frequently used across the three course types. In fact, there is not any single course assigned to the “Informatics” class. In the required courses, the “School Libraries” class is the second most popular class, and the remaining seven classes are of relatively similar popularity. In both the required elective and the elective courses, the second most popular class is “Information Systems and Retrieval.”

Table 2 shows the resulting distribution of the course pairs by program type. Directly comparing the absolute frequencies among program types is meaningless because a different number of courses were collected from different program types. Instead, the last row of the table indicates

![Figure 5. Coverage of Library Science Courses by Course Type.](image-url)
the order of the number of library science courses on average for different program types: ALA Only > Both > AASL Only > Neither.

Figure 6 plots the result of the coverage of library science courses by four program types, AASL Only, ALA Only, Both, and Neither. The most commonly frequent class across the program types is the “Services to User Populations” although the class is the second most popular among AASL Only programs. Nevertheless, the bar chart also illustrates the noticeable characteristics of each program type; in AASL Only, the most frequent class is “School Libraries”; in Both and Neither, the relatively frequent classes are the “Information Systems and Retrieval” and the “Management and Administration” classes, respectively.

Table 2. Division of Library Science Courses by Program Type.

<table>
<thead>
<tr>
<th>Type of Program</th>
<th>AASL Only</th>
<th>ALA Only</th>
<th>Both</th>
<th>Neither</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (Percentage)</td>
<td>323 (35.9%)</td>
<td>458 (50.9%)</td>
<td>75 (8.3%)</td>
<td>44 (4.9%)</td>
<td>900 (100%)</td>
</tr>
<tr>
<td>Frequency per program</td>
<td>9.5</td>
<td>12.4</td>
<td>10.7</td>
<td>7.3</td>
<td>107</td>
</tr>
</tbody>
</table>
RQ3. How similar/dissimilar is the coverage of non-library science courses within school library curricula within the same group and across different groups of curricula?

To answer the research question, a total of 165 non-library science courses from the school library programs were manually collected. Non-traditional courses, such as seminar, practicum, projects, etc. were not included to the dataset. The authors divided the collected non-library science courses into different program types: 106 (64.2%) in AASL Only, 36 (21.8%) in ALA Only, 2 (1.2%) in Both, 21 (12.7%) in Neither. To visually examine the coverage of non-library science courses across program types, we plotted non-library science courses on a two-dimensional Euclidean space based on the LSA method, which is shown in Figure 7. As shown in the figure, the coverage of the non-library science courses from the AASL Only program is the largest and broad enough to encompass almost all areas covered by the courses in the other program types. An interesting finding is the rather distinctive coverage between ALA Only and Neither. The ALA Only courses cover the flattened area on the top, whereas the

![Coverage of Non-Library Science Courses by Program Type](image)

**Figure 7.** Coverage of Non-Library Science Courses by Program Type.
Neither courses tend to congregate at the central area on the top left.

Figure 8 plots some key terms from the titles and descriptions of the non-library science courses at the same Euclidian space that the courses were plotted in Figure 7. Comparing the terms and courses reveals that all program types commonly cover the concepts of leadership, web, literacy, methodology, and curriculum. Concepts of instruction, psychology, and literature are primarily dealt with in AASL Only programs but not in the other types.

The non-library science courses are divided into three course types: 81 (49.1%) required, 40 (24.2%) required elective, and 44 (26.7%) elective courses. Figure 9 plots the three course types of the non-library science courses based on the LSA method. Figure 9 demonstrates that three course types appear to have their own coverage areas. The three areas have a common zone near the (0, 0) coordinate. Nevertheless, the area for required courses has a tendency of being more centered at (0, 0). However, the areas for required elective and elective courses stretch out further along the positive x-axis (i.e., for the case of required elective courses) and the negative y-axis (i.e., for the case of elective courses). Figure 8 can be referenced to identify the further extended areas by required elective and elective cases.

Discussions and Conclusion

Compared to previous studies of LIS programs, the authors believe that this is the first comprehensive study on the close examination of school librarianship curricula.
In terms of program features, programs between AASL Only and ALA Only turn out to be the most dissimilar. Also, programs in Neither are located between those in AASL Only and Both in program features, and programs in Both are between those in Neither and ALA Only. Thus, the similarity among the programs can be presented as: AASL Only ↔ Neither ↔ Both ↔ ALA Only.

Out of the 84 school library programs, only two are quarter-based programs (both of which fall in the category of ALA Only), and the remaining 82 are semester-based. Thus, in comparing school library vs. LIS programs based on semester programs only, the range of credit hours requirements in school library programs is larger than the range in LIS programs, i.e., 30 to 48 in school library programs vs. 36 to 48 in LIS programs (Markey, 2004). School library programs in AASL Only are toward lower range of the credit hours, but a similar range of credit hours, especially at the upper range, are currently required at both the school library and LIS programs. A number of recent studies indicate the expanded role and competencies required of school library media specialists (Mardis, 2007; Shannon, 2002, 2008; Tiley & Callison, 2001). In addition, the recent technological and

**Figure 9.** Coverage of non-Library Science Courses by Course Type.
instructional demands and change have arisen in the school library community. The current circumstances may request offering more credit hours in school library programs than as it is now and/or curriculum revisions accordingly.

In coverage of library science courses, the most popular area is the “Services to User Populations” for all program types, and the most contributing subject within the area “Services to User Populations” is “Children’s/YA Literatures” (see Appendix A). The AASL Only programs appear to remain relatively strong in the “School Libraries” area but relatively weak in the “Information Systems and Retrieval” area compared to the other program types. A noticeable characteristic of ALA Only programs can be found in the fact that the ALA Only courses contribute somewhat evenly to all the areas except “Services to User Populations” and “Informatics.” Programs in the Both group can be characterized as being relatively strong in the “Information Systems and Retrieval” area. Meanwhile, programs in the Neither group appear to be relatively strong with offerings in “Organization of Information,” “Types of Libraries and Information Providers,” and particularly “Management and Administration” areas.

The “Services to User Populations” class frequently occurs across all course types. Beyond that, the largest number of required courses comes from the “School Libraries” area, whereas, that of required elective or elective courses are from the “Information Systems and Retrieval” area.

The experimental result of this study identifies the subject areas of school librarianship curricula and clearly demonstrates the distinction between school librarianship and LIS programs—not only in program features but also in course coverage, particularly in the coverage of required courses. The top three primary areas of required courses in LIS programs were reported as Technology, Management, and Organization (Beheshti, 1999), Organization, Reference, and Management (Markey, 2004), and Foundations, Organization, and Management (Hall, 2009), differing from school library programs, “Services to User Populations,” “Information Systems and Retrieval,” and “School Libraries.”

In coverage of non-library science courses, the AASL Only programs encompass the broadest area. ALA Only provides the second broadest concept space. The area represented by Neither programs falls within the area covered by AASL Only or ALA Only. The region created by Both programs is the smallest and is completely overlapped by those represented in other program types. In summary, the relationship among the areas is: ALA Only ? AASL Only ? Neither ? Both.

The plotted coverage aids in identifying the subject scopes from different course types in the school librarianship curricula. The coverage by required elective courses and the coverage by elective courses can be represented by two oval shapes with some overlap. The coverage by required courses is slightly larger than the overlapping area of the two ovals. The result seems to align with the expectation that elective courses complement the core curricula.

Data in Table 1 indicate that 85% of all school library courses are required courses, which seems to point to a solid common foundation to students; however, it also indicates a lack of student flexibility in selecting courses or subjects. In twenty-first century library education the areas of technology and information literacy are arguably two emerging subjects of importance to students in school library media programs. Some previous studies of LIS programs have pointed to a greater incorporation of technology into curricula (Beheshti, 1999; Hall, 2009; Markey 2004). As shown in Figure 5, the results of this study confirm that technology has become a major subject across all school library programs. Information literacy belongs to the area of “Service to User Populations,” the most frequently covered in school library programs. Note that while the im-
portance of information literacy within K-12 curriculum is commonly accepted, information literacy is not a major component in “Service to User Populations.” This lack of emphasis seems to suggest a need for great incorporation of information literacy into school librarianship curricula.

Revising or changing curriculum is not an easy process. Nevertheless, the rapidly changing technological and vocational “landscape” requires educational programs to adjust existing curricula to meet new educational and professional needs. This study offers an empirical “snapshot” of current school librarianship programming, program similarities and contrasts, which can provide valuable insights and foundations as school library programs evaluate present and/or future changes or alterations to course offerings and program requirements.

References


Appendix A

LIS Research Area Classification
Scheme by the Association by Library and Information Science Education*

<table>
<thead>
<tr>
<th>Development / Principles of LIS</th>
<th>Organization of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Information Science</td>
<td>Organization of Information</td>
</tr>
<tr>
<td>LIS as a Discipline</td>
<td>Descriptive Cataloguing/AACR</td>
</tr>
<tr>
<td>LIS as a Profession</td>
<td>Archival Description/RAD</td>
</tr>
<tr>
<td>Philosophy, Values, and Ethics of LIS</td>
<td>Classification and Subject Analysis</td>
</tr>
<tr>
<td>Critical Perspectives on LIS</td>
<td>Indexing and Abstracting</td>
</tr>
<tr>
<td>Libraries and Society/Culture</td>
<td>Metadata and Semantic Web</td>
</tr>
<tr>
<td>Information and Society/Culture</td>
<td>Knowledge/IR Management</td>
</tr>
<tr>
<td>Information Policy</td>
<td>Records Management</td>
</tr>
<tr>
<td>Political Economy of Information</td>
<td></td>
</tr>
<tr>
<td>Copyright/Intellectual Property</td>
<td></td>
</tr>
<tr>
<td>Books, Printing, Publishing Industry</td>
<td></td>
</tr>
<tr>
<td>Intellectual Freedom and Censorship</td>
<td></td>
</tr>
<tr>
<td>Preservation and Archiving</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIS Education</th>
<th>Management/Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIS Education and Programs</td>
<td>Administration and Management</td>
</tr>
<tr>
<td>LIS Faculty, Students</td>
<td>Personnel</td>
</tr>
<tr>
<td>Pedagogy in LIS</td>
<td>Buildings/Facilities</td>
</tr>
<tr>
<td>Research Methods</td>
<td>Funding</td>
</tr>
<tr>
<td>Distance Education in LIS</td>
<td>Strategic Planning, Marketing, Lobbying</td>
</tr>
<tr>
<td>Continuing Education in LIS</td>
<td>Evaluation of Service</td>
</tr>
<tr>
<td>International/Comparative Librarianship</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collection Development</th>
<th>Types of Libraries and Information Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collections Development</td>
<td>Digital/Virtual Libraries</td>
</tr>
<tr>
<td>Acquisitions Theory and Practice</td>
<td>Public Libraries</td>
</tr>
<tr>
<td>Preservation of Collections</td>
<td>Academic Libraries</td>
</tr>
<tr>
<td>Licensing</td>
<td>School Media Centers/Libraries</td>
</tr>
<tr>
<td>Archival Collections</td>
<td>Special and Corporate Libraries</td>
</tr>
<tr>
<td>Special Collections/Rare Books</td>
<td>Medical Libraries</td>
</tr>
<tr>
<td>Science and Technology Literatures</td>
<td>Law Libraries</td>
</tr>
<tr>
<td>Arts/Humanities Literatures</td>
<td>Government Libraries</td>
</tr>
<tr>
<td>Social Science Literatures</td>
<td>Archives and Records Centers</td>
</tr>
<tr>
<td>Government Documents</td>
<td>Community Information Centers</td>
</tr>
<tr>
<td>Serials</td>
<td>Museums</td>
</tr>
<tr>
<td>Graphic Materials: Maps, Art, etc.</td>
<td>Other Providers</td>
</tr>
<tr>
<td>Music</td>
<td></td>
</tr>
<tr>
<td>Electronic Documents</td>
<td></td>
</tr>
<tr>
<td>Other Materials Types</td>
<td></td>
</tr>
<tr>
<td>Services to User Populations</td>
<td>Information Systems and Retrieval</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>Reference and Information Services</td>
<td>Information Systems and Technologies</td>
</tr>
<tr>
<td>Electronic Reference Services</td>
<td>Information Retrieval Theory and Practice</td>
</tr>
<tr>
<td>Adult Services</td>
<td>Online Catalog Retrieval Systems</td>
</tr>
<tr>
<td>Young Adult Services</td>
<td>Database and Other Retrieval Systems</td>
</tr>
<tr>
<td>Children’s Services</td>
<td>Information Architecture</td>
</tr>
<tr>
<td>Services for Senior citizens</td>
<td>Information Visualization</td>
</tr>
<tr>
<td>Services for Multicultural Populations</td>
<td>Computer/Information Networks</td>
</tr>
<tr>
<td>Services for People with Disabilities</td>
<td>Information Technology Management</td>
</tr>
<tr>
<td>Services for Gay, Lesbian, Bisexual, and Transgendered (GBLT) Populations</td>
<td>Users and Uses of Information Systems</td>
</tr>
<tr>
<td>Diversity Issues</td>
<td>Human-Computer Interaction</td>
</tr>
<tr>
<td>Reading Advisory Services</td>
<td>Bibliometrics/Informetrics/Webometrics</td>
</tr>
<tr>
<td>Children’s/YA Literatures</td>
<td>Social Software Applications</td>
</tr>
<tr>
<td>Storytelling</td>
<td>Information Integrity and Security</td>
</tr>
<tr>
<td>Reading and Literacy</td>
<td></td>
</tr>
<tr>
<td>Information Literacy and Instruction</td>
<td></td>
</tr>
<tr>
<td>Information Needs and Behaviors/Practices</td>
<td></td>
</tr>
<tr>
<td>Information Needs/Behaviors of the Public</td>
<td></td>
</tr>
<tr>
<td>Information Needs/Behaviors of Specific Groups</td>
<td></td>
</tr>
<tr>
<td>Scholarly and Scientific Communication</td>
<td></td>
</tr>
<tr>
<td>New Literacies</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Informatics</th>
<th>Types of Libraries and Information Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Libraries</td>
<td>Curriculum Integration</td>
</tr>
<tr>
<td>Social/Community Informatics</td>
<td>Production of Materials</td>
</tr>
<tr>
<td>Health Informatics</td>
<td>Role of the School Library Media Specialist</td>
</tr>
<tr>
<td>Legal Informatics</td>
<td>Instructional Design</td>
</tr>
<tr>
<td>Museum Informatics</td>
<td></td>
</tr>
<tr>
<td>Digital Archive Informatics</td>
<td></td>
</tr>
</tbody>
</table>

*The version on 2/13/2013 available at: http://www.alise.org/classification-scheme*

**Appendix B. List of Unique Non-library Science Course Titles**

- 21st century research and data
- 21st century learning spaces
- 21st century master teacher
- Accomplished Practices Seminar
- Administration and Use of Instructional Media
- Administration of Media Programs
- Administration of Public Library Work with Children and Young Adults
- Advanced Children’s Literature
- Advanced Computer Applications in the Classroom
- Advanced Data Management
- Advanced Educational Technology
- Applications of Technology
- Applications of Technology in Education
- Applied Developmental Psychology
- Applied Educational Research
- Applied Research Methods in Education
- Applied Statistics
- Assessing Educational Achievement with Technology
- Assessing Information Needs
Balanced Literacy
Becoming a Master Teacher
Children’s Literature
Children’s Literature and Materials for Teaching Reading
Classroom Management
Computer Applications in Education
Computers in Libraries
Creativity in Education
Current Issues and Trends in Education
Curriculum & Philosophical Foundations
Curriculum for leaders in education
Curriculum Issues in the Middle School
Decision-Oriented Research and Evaluation
Design & Production of Media Resources
Design and Production of Media Materials for All Learners (available online)
Designing and Facilitating Technology-Integrated Learning
Digital Media Production
Ecological Perspectives on Development: The Childhood Years
Educational Research
Educational Research for Practitioners
Educational Technology Foundations
Electronic Media and Design
Elementary Education
Emergent and Early Literacy Development
Exceptional Child
Exceptionality, Diversity & Difference
Foundational Theories in Instructional Technology
Foundations of Educational Technology
Foundations of Learning Disabilities
Foundations of Multicultural Education
Foundations of Special Education
Foundations of the Information Professions
Fundamentals of Curriculum Development
Global Perspectives in Cultural Diversity
Government Documents
History and Philosophy of Education
History of education philosophy
Human Growth and Development
Human Information Interactions
Humanities and Social Science Information
Information Architecture and Web Design
Information Literacy for Teaching and Learning
Information Resources and Services
Information Tools
Instructional Applications of the Internet
Instructional Design
Intermediate/Middle School/High School Reading Instruction
Internet Resources
Introduction to Educational Technology
Introduction to Information Policy
Introduction to Research Methods in Education
Issues for Children and Technology
Issues in Psychology & Measurement
Issues in psychology and measurement
Issues in School, Community & Family Leadership and Learning Technologies
Leadership skills for teachers
Leading change for student achievement
Literacy programs P-5
Literature for Adolescents
Literature for Children, Adolescents and Adults
Literature for Young Adults
Literature for Young Children
Literature in the Middle Grades
Management of Information Agencies
Management of Instructional Systems
Managing TechnologicalChange
Master of education thesis proposal writing
Media and Telecommunications in Education
Media Utilization & Curriculum
Multi-Media Instructional Design
Multicultural Contexts of Teaching Learning
Multicultural education
Multiculturalism and Acculturation
Multimedia for Educators
Organization of Information
Orientation to Graduate Teacher Education Program
Pedagogy and Application of Children’s Literature in the K-12 Classroom
Philosophy, ethics, and education
Principles and Techniques of Storytelling