

**Bachelor's Degree In Library And Information Science Field: A Comparative Analysis Study Performed On Distinguished American Universities / By Dr. Hossam Eldin Mohamed Refaat Abouserie. Department of Library and Information Science, Faculty of Arts, Helwan University, Egypt, 2009. Email: Hossam\_usa@yahoo.com**

**Abstract**

This study explored the state of bachelor's degree offered at top Library and Information Science schools in the United States in 2009. Schools selected were accredited on the Master's level and ranked as top five Library and Information Science schools by the American Library Association, ALA. The study embraced the comparative analysis methodology. The focus of the study was on various points related to the BA degree, such as accreditation, program emphasis, course offerings, distance learning, cost, admissions requirements, and rate.

The study found bachelor degree in Library and Information Science to be the least offered degree. The basic requirements to enroll in bachelor degree programs varied from one school to another. Rank and accreditation were restricted to graduate programs on the master's level, and not on the bachelor level. Each school had its unique curriculum, as schools had different concentrations and various focuses. Number and type of courses offered (core, elective) varied from one school to another. Courses offered were on-campus (residential) courses and schools didn't have a choice of distance learning at the undergraduate level. Tuitions paid were relatively high and varied not only from a school to another but also within each school according to student's status (In-State Student & Out – of – State Student). Each program had its own admission requirements. Some schools required students to take some courses, while other schools required students to take certain tests. The study found that the University of Michigan had its unique system, in that it divided students into three types: prospective students, transfer students and international students, defining certain requirements for each type. The study found the school at Syracuse University offered more choices to students, such as obtaining dual degrees, registering in honor programs and studying abroad.

**Background**

Education for librarianship varies widely in different countries.<sup>1</sup> In that, the academic preparation for professional librarians in the United States and Canada includes, in addition to a bachelor degree in a certain field, a one or two-year master's degree in

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<sup>1</sup> Education for librarianship: From Wikipedia, the free encyclopedia, available at <[http://en.wikipedia.org/wiki/Education\\_for\\_librarianship](http://en.wikipedia.org/wiki/Education_for_librarianship)>

library and information science, library science or information science from an American Library Association (ALA) accredited university.<sup>2</sup>

In the United Kingdom and some other countries, a librarian usually has a three- or four-year bachelor's degree in library and information studies or information science; separate master's degrees in librarianship, archive management, and records management are also available. These degrees are accredited by the Chartered Institute of Library and Information Professionals and the Society of Archivists.<sup>3</sup>

In Germany and some other countries, the first step for an academic librarian is to hold a Ph.D. in a subject field, followed by additional training in librarianship.<sup>4</sup>

### **Literature Review**

Although numerous articles and studies discuss general Library and Information Science education, studies of Library and Information Science bachelor degree in specific is a generally unexplored area. In a search of the literature, studies were identified as follow.

1- A window of opportunity: Libraries in higher education Alan Bundy. Library Management. Bradford: 2003. Vol. 24, Iss. 8/9; pg. 393, 8 pgs<sup>5</sup>

A version of this study was presented to the 24th annual conference of the International Association of Technological University Libraries (IATUL) Ankara, Turkey, 2-5 June 2003 as "Changing the paradigm: libraries, education and networking". The writer indicated that "In progressive universities the next 25 years will see graduate qualities; massification, technology; flexible delivery and new disciplines drive pedagogical change. The lecture and online transmission of rapidly outdated content will continue to give way to a focus on the qualities required by students for employability and lifelong learning. Heavier and more diverse workloads on university teachers will encourage the disaggregation of their teaching. This will provide a window of opportunity for academic librarians to demonstrate their educational partnership role. They should contribute proactively to that disaggregation and, as a key accountability, to the development of information literate students.

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<sup>2</sup> Education for librarianship: From Wikipedia, the free encyclopedia, available at <[http://en.wikipedia.org/wiki/Education\\_for\\_librarianship](http://en.wikipedia.org/wiki/Education_for_librarianship)>

<sup>3</sup> Education for librarianship: From Wikipedia, the free encyclopedia, available at [http://en.wikipedia.org/wiki/Education\\_for\\_librarianship](http://en.wikipedia.org/wiki/Education_for_librarianship)

<sup>4</sup> History\_of\_library\_and\_information\_science, From Wikipedia, the free encyclopedia, available at [http://en.wikipedia.org/wiki/History\\_of\\_library\\_and\\_information\\_science](http://en.wikipedia.org/wiki/History_of_library_and_information_science)

<sup>5</sup> <http://proquest.umi.com/pqdweb?did=488401861&sid=8&Fmt=3&clientId=45596&RQT=309&VName=PQD>

2- Educational preparation of entry-level professional librarians employed by Florida research libraries by Elgohary, Amgad A., Ph.D., The Florida State University, 2003 , 150 pages<sup>6</sup>

The purpose of this study was to investigate the preparation of entry-level research librarians. It described the relationship between formal library education and work in research libraries from the perceptions of entry-level librarians and their supervisors. The main goal of the study was to help library and information studies schools to prepare future research librarians and equip them with in-demand knowledge and skills. The results of the study would be of benefit for administrators and educators at library and information studies schools who were concerned with preparing MLIS students to work in research libraries. Two web-based surveys were used to collect data from 45 entry-level research librarians in Florida, and 18 heads of departments at the same libraries. Descriptive and inferential statistics were used for data analysis. Findings of the study validated 28 required competencies for entry-level research librarians. Perceptions of research librarians indicated that schools of library and information studies in the U.S. had helped their recent graduates, who work in research libraries, in acquiring 64% of the required competencies.

3- Special feature: Whither library education? by Michael Gorman. *New Library World*. London: 2004. Vol. 105, Iss. 9/10; pg. 376<sup>7</sup>

This study advanced the idea that there was a crisis in library education, varying in severity from country to country and calls for a new model of library education that would meet the demands of libraries and librarianship in the years to come. Among the problems seen were that library schools had become hosts to information science and information studies faculty and curricula. These disciplines were, at best, peripheral to professional library work and, at worst, inimical to it. There is a growing gender divide in Library and Information Science (LIS) schools between "information science"-oriented male teachers and library course-oriented female teachers. Many of the topics regarded as central to a library education by would-be employers were no longer central to, or even required by, today's LIS curricula. Modern communications technology has led many library educators to concentrate on that technology and dismiss anything about libraries that is not amenable to a technological solution. The gap between what was taught in many LIS schools and what was being practiced in libraries is wide and widening. This paper called for a national core curriculum that would apply to all schools in a country.

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<sup>6</sup> <http://proquest.umi.com/pqdweb?did=765030421&sid=8&Fmt=2&clientId=45596&RQT=309&VName=PQD>

<sup>7</sup> <http://proquest.umi.com/pqdweb?did=728494191&sid=8&Fmt=4&clientId=45596&RQT=309&VName=PQD>

4- Exploring the guidelines for library services to distance education programs, by Latham, Clara, Ph.D., Texas Woman's University, 2005 , 150 pages.<sup>8</sup>

This research explored the various elements of providing library services to distance education programs. The elements of these services were analyzed relative to the Association of College and Research Libraries' Guidelines for Distance Learning Library Services. The question of useful standards was analyzed in order to clarify the role of library service in the overall provision of distance education programs. By rating these guidelines, operational definitions were set in order to analyze services provided by various libraries in different settings and sizes. The major categories of the guidelines: management, finances, personnel, facilities, resources, services, documentation and library education, were converted into measurable, operational activities. A questionnaire was sent to library services representatives in universities across the United States asking that the guidelines be rated for usefulness and practicality, from essential to useless. Analyzing the questionnaire responses reveal several concepts. A partnership between the distance education library staff and the computing center was one of the most essential concepts. Adequate funding for the distance education component of library services was considered essential by the respondents, as is easy to access virtual services. Another essential concept revealed in the study was timeliness of delivery of materials.

5- Toward library and information science education in the European Union: A comparative analysis of library and information science programs of study for new members and other applicant countries to the European Union Primoz Juznic, Branka Badovinac. *New Library World*. London: 2005. Vol. 106, Iss. 3/4; pg. 173, 14 pgs.<sup>9</sup>

This research presented an analysis of the development of schools of librarianship and information science (LIS) in the European Union (EU) applicant states until 2004. It discussed the potential and actual changes in their organization, notably their curriculum. The comparative analysis of LIS programs was performed. The model presented by Wilson in 2001 was selected as the model for analyzing the data. The aim was to support the Wilson model with some empirical data from the specific countries. The results showed that the long history of traditional library education in these schools was not a great obstacle to adapting the curriculum to new professional and political standards. LIS schools had generally changed their curriculum towards those of modern LIS schools and had also embraced the EU outlines regarding higher education.

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<sup>8</sup> <http://proquest.umi.com/pqdweb?did=1031040941&sid=8&Fmt=2&clientId=45596&RQT=309&VName=PQD>

<sup>9</sup> <http://proquest.umi.com/pqdweb?did=834272251&sid=8&Fmt=4&clientId=45596&RQT=309&VName=PQD>

6- Library Education in Latin America and the Caribbean, by Adolfo Rodríguez, Gallardo. *New Library World*. London: 2007. Vol. 108, Iss. 1/2; pg. 40<sup>10</sup>

The study aimed to analyze the number of schools and programs of library science that existed in Latin America and the Caribbean from 1985 to date. It was written to understand the nature of library science teaching, and to provide a numerical analysis of the schools and programs identified. The study was based on previous works that collected information on programs and institutions devoted to library science teaching. The main sources were the works of Fang (1985), Fang et al. (1995) and Maris and Giunti (1999). Differences between the Hispanic-Portuguese and Anglo-Saxon educational systems were described, as well as what they meant to library science teaching. With the purpose of standardizing the Anglo-Saxon and Hispanic-Portuguese systems, the various study programs were divided according to the classification used by Fang and Nauta. It was evident that the number of schools and programs had been increasing and decreasing, and although the causes of this trend were not known, the data showed that Latin American library science studies were continuously in motion. Regarding the creation of schools and programs, the data that had been gathered suggested an influence from European and American schools first and UNESCO programs later. Numerical data were provided per country on the number of schools and programs for training, technical studies, tertiary-undergraduate studies, tertiary-graduate studies and tertiary-postgraduate studies..

7- Education for library and information studies in Canada: a cross-cultural comparison. by Ken Haycock. *New Library World*. London: 2007. Vol. 108, Iss. 1/2; pg. 32<sup>11</sup>

The study aimed to highlight the unique characteristics and homogeneity of the Canadian accredited programs in library and information studies compared with those programs in the USA. By disaggregating the American and Canadian information and limiting the data to the accredited degree program only, comparisons could be drawn between the two data sets. The generalizations and themes were then validated by comparison with the recent history of development of Canadian schools. The history of development of Canadian graduate programs and the national context had resulted in programs that were more homogeneous than diverse. The programs were housed in public research institutions, with competition for spaces. The students were full-time, studying a curriculum with more required courses. Faculty have more time for research. Access was an issue. The profession was generally satisfied, but points to inadequacies in education for

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10 <http://proquest.umi.com/pqdweb?did=1181916581&sid=8&Fmt=3&clientId=45596&RQT=309&VName=PQD>

11 <http://proquest.umi.com/pqdweb?did=1181916521&sid=8&Fmt=3&clientId=45596&RQT=309&VName=PQD>

management and favors more internships. The separation of Canadian and American models allowed for greater attention to national approaches providing a beginning point for further study.

8- Cultural mediation in library and information science (LIS) teaching and learning, by Ismail Abdullahi. *New Library World*. London: 2008. Vol. 109, Iss. 7/8; pg. 383<sup>12</sup>

The purpose of this study was to highlight the importance of culturally mediated instruction in library and information science teaching and learning. The paper dealt with the general concept of the cultural dimension of human development through identification of students who were culturally different from the main stream orientation, by creating culturally mediated instruction in a learning environment. The study elaborated the role of LIS schools in this direction. It suggested ways in which LIS education could be improved by being inclusive with the changing global society and its needs. It was evident that culturally inclusive instruction could enhance the learning of LIS students who were responsive to the needs of their diverse communities and who were able to be change agents to their institutions and professions. The study presented ways by which LIS educators could create a better learning environment base inclusive of all cultures represented in the classroom.

9- Tribes and territories in Library and Information Studies education, by Grealy, Deborah S., Ph.D., University of Denver, 2008, 258 pages.<sup>13</sup>

A conceptual and relational analysis of descriptors, keywords, and abstracts of dissertations, completed between 2000-2006 in Library and Information Studies revealed cultural and disciplinary patterns in LIS research. These patterns were analyzed in an effort to ascertain whether recent assertions by library practitioners that the curricula and research in the U.S. and Canadian universities, which confer the first professional degree for librarians, were divorced from the needs of practice. The study examined the culture of LIS, examining disciplinary and faculty factors to delineate the field's current parameters as a field of practice and an academic discipline. The sample was limited to a random sample of those dissertations completed between 2000 and 2006 at North American institutions that both offered doctoral programs in library and information science-related programs and confer the ALA-accredited Master's degree.

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<sup>12</sup> <http://proquest.umi.com/pqdweb?did=1518114931&sid=3&Fmt=3&clientId=45596&RQT=309&VName=PQD>

<sup>13</sup> <http://proquest.umi.com/pqdweb?did=1594477431&sid=5&Fmt=2&clientId=45596&RQT=309&VName=PQD>

10- Education and continuing professional development for Indonesian academic librarians; A survey, by Imas Maesaroh, Paul Genoni. *Library Management*. Bradford: 2009. Vol. 30, Iss. 8/9; pg. 524<sup>14</sup>

The study aimed to report base-line data on the current levels of education, skills, and knowledge of Indonesian academic librarians, and provided an insight into their continuing professional development. The study reported: the current level of qualifications of librarians working in Indonesian academic libraries; and the current level and type of continuing professional development and work place training in Indonesian academic libraries. The study included the results of a questionnaire delivered to all librarians working in Indonesian public universities. The survey instrument was based on that used in the NEXUS survey distributed to Australian library and information studies (LIS) professionals in 2006. The study included a comparison of survey results on key indicators for Indonesian and Australian library and information staff. The research reported comparative shortcomings in the level and standard of education available to Indonesian academic librarians. The issue of continuing professional development was more complex, with quite high levels of participation in some types of training reported by the Indonesian respondents, but generally lower levels of satisfaction with that training than reported by their Australian counterparts.

### **Definitions**

Library science or Library and Information science is considered to be an interdisciplinary field that applies the practices, perspectives, and tools of management, information technology, education, and other areas to libraries; the collection, organization, preservation, and dissemination of information resources; and the political economy of information.<sup>15</sup> A bachelor's degree is defined as "an academic degree awarded for an undergraduate course or major that generally lasts for four years, but can range from two to six years depending on the region of the world".<sup>16</sup>

The bachelor of library science or bachelor of library and information science, which is commonly abbreviated as "B.L.S.", "B.Lib.", or "B.L.I.S.", often with the periods omitted "BLS", "Blib", or "BLIS" is a degree sometimes awarded to students majoring in library science.<sup>17</sup>

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<sup>14</sup> <http://proquest.umi.com/pqdweb?did=1919923131&sid=1&Fmt=2&clientId=45596&RQT=309&VName=PQD>

<sup>15</sup> [http://en.wikipedia.org/wiki/History\\_of\\_library\\_and\\_information\\_science](http://en.wikipedia.org/wiki/History_of_library_and_information_science)

<sup>16</sup> Bachelor's\_degree From Wikipedia, the free encyclopedia, available at [http://en.wikipedia.org/wiki/Bachelor's\\_degree](http://en.wikipedia.org/wiki/Bachelor's_degree)

<sup>17</sup> Bachelor\_of\_Library\_Science From Wikipedia, the free encyclopedia, available at [http://en.wikipedia.org/wiki/Bachelor\\_of\\_Library\\_Science](http://en.wikipedia.org/wiki/Bachelor_of_Library_Science)

In addition to BA degree, there are other degrees in Library and Information science, such as PhD, Master's Degree, School Library Media Program, Post-master's certifications. See table (1) for details about distribution of various degrees offered in Library and Information Science Schools in the United States and Canada according to the American Library Association, ALA in 2009 .

Table (1) Distribution of various degrees offered in Library and Information Science Schools in the United States and Canada in 2009 according to ALA<sup>18</sup>

| School                              | Number of schools | Percentage |
|-------------------------------------|-------------------|------------|
| <b>PhD</b>                          | 35                | 63.63 %    |
| <b>Other Master's Degree</b>        | 21                | 38.18 %    |
| <b>School Library Media Program</b> | 48                | 87.27 %    |
| <b>Post-master's certifications</b> | 36                | 65.45 %    |
| <b>BA degree</b>                    | 15                | 27.27 %    |

Total Accredited Library and Information Science Schools in US and Canada= 55

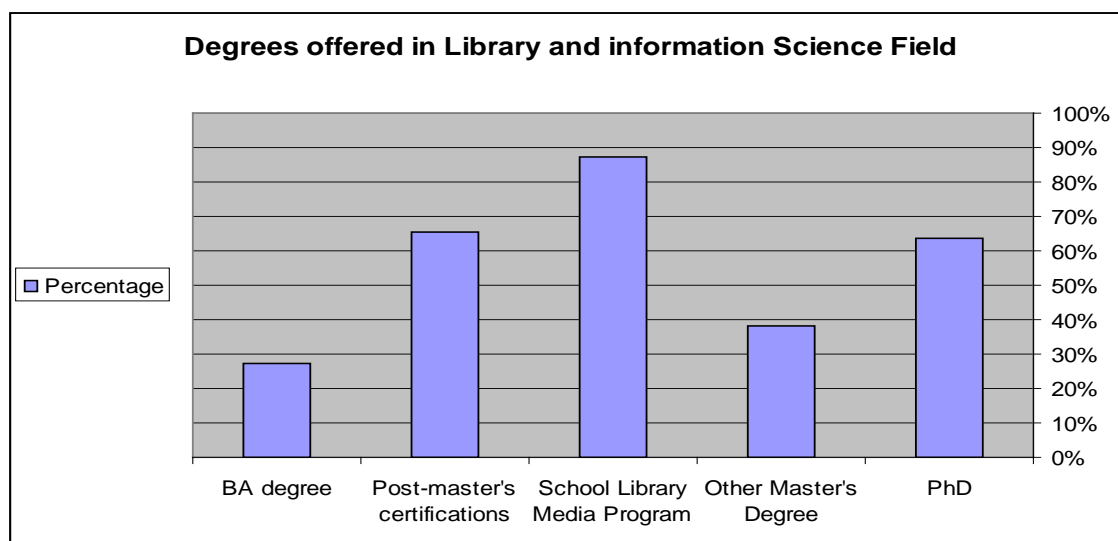


Figure (1) Distribution of various degrees offered in Library and Information Science Schools in the United States and Canada in 2009

Based on the previous table, it could be concluded that the bachelor degree was the least offered degree, 27.27 %., while the school library media program was the most offered degree, 87.27 %. The other three degrees, post-master's certification, PhD and other master's degree were in the middle with various ratios. The reason behind this might relate to the job

<sup>18</sup> Searchable database of ALA-accredited programs, Available at <<http://www.ala.org/template.cfm?section=lisdirb&template=/cfapps/lisdir/index.cfm>>



market, as the basic requirement for most job placements in the United States was might be an ALA accredited MA, school library media program.

### Methodology

The study adopted the comparative analyses methodology, as "it had been employed for both quantitative and qualitative studies of diverse phenomena".<sup>19</sup> Illustrative comparison, complete or universe comparison, and sampled-based comparisons were the three strategies used in comparative methodologies.<sup>20</sup> This study adopted the sampled-based comparisons strategy, as "it delimited part of the whole, with the goal of selecting data that were statistically representative of the variations within the whole and were intended as the basis for statistical generalizations".<sup>21</sup> The main focus of the study was on various points related to the BA degree, such as ALA accreditation, program emphasis, course offerings, distance learning, cost, admissions requirements, and rate. The sample of the study included the top five Library and Information Science Schools in the United States. However, the Graduate School of Library and Information Science at The University of Illinois was eliminated as it did not offer bachelor degree in Library Science. Therefore, the study focused on four Library and Information Science Schools in the United States in 2009. See table (2) for details.

| College name   | Score | Status     |
|--|-------|------------|
| Graduate School of Library and Information Science, University of Illinois | 4.5/5 | Eliminated |
| School of Information and Library Science, University of North Carolina    | 4.5/5 | Selected   |
| School of Information Studies, Syracuse University                         | 4.4/5 | Selected   |
| Information School, University of Washington                               | 4.3/5 | Selected   |
| School of Information, University of Michigan                              | 4.1/5 | Selected   |

Table (2) Score and Status of top five Library and Information Science Schools in 2009

### Program Accreditation

Accreditation is "a process in which certification of competency, authority, or credibility is presented. Organizations that issue credentials or certify third parties against

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19 Comparative Analysis - General Strategies Of Comparative Methods, Comparative Methods In The Study Of Kinship, The Family, And Marriage, Available at

<<http://family.jrank.org/pages/300/Comparative-Analysis.html#ixzz0jdlAHzuK>>

20 Comparative Analysis - General Strategies Of Comparative Methods, Comparative Methods In The Study Of Kinship, The Family, And Marriage, Available at

<<http://family.jrank.org/pages/300/Comparative-Analysis.html#ixzz0jdouyurv>>

21 Comparative Analysis - General Strategies Of Comparative Methods, Comparative Methods In The Study Of Kinship, The Family, And Marriage, Available at

<<http://family.jrank.org/pages/300/Comparative-Analysis.html#ixzz0jdwGfBgO>>

official standards are themselves formally accredited by accreditation bodies".<sup>22</sup> A school has to meet a wide variety of criteria to receive accreditation from the American Library Association.<sup>23</sup>

ALA accreditation "indicates that the program has undergone an external review and meets the ALA Committee on Accreditation's Standards for Accreditation of Master's Programs in Library and Information Studies. These standards evaluate a program's mission, goals, and objectives; their curriculum, faculty, and students; their administration and financial support; and their physical resources and facilities".<sup>24</sup>

The purpose of accreditation is to "assure the educational community, the general public, and other agencies or organizations that an institution or program (*a*) has clearly defined and educationally appropriate objectives expressed as student learning outcomes, (*b*) maintains conditions under which achievement of objectives can reasonably be expected, (*c*) is in fact accomplishing objectives substantially, and (*d*) can be expected to continue to do so. Accreditation serves as a mechanism for quality assessment and quality enhancement with quality defined as the effective utilization of resources to achieve appropriate educational objectives and student learning outcomes".<sup>25</sup>

The American Library Association through the Committee on Accreditation "protects the public interest and provides guidance for educators. Prospective students, employers recruiting professional staff, and the general public concerned about the quality of library and information services have the right to know whether a given program of education is of good standing. By identifying those programs meeting recognized standards, the Committee offers a means of quality control in the professional staffing of library and information services".<sup>26</sup> See table (3) for details.

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<sup>22</sup> Accreditation: From Wikipedia, the free encyclopedia, available at <<http://en.wikipedia.org/wiki/Accreditation>>

<sup>23</sup> <http://www.ala.org/ala/educationcareers/careers/librarycareerssite/whatyouneedchooseschool.cfm>

<sup>24</sup> American Library Association Library Information Studies & Directory of Institutions Offering Accredited Master's Programs 2008–2009

<sup>25</sup> Gloria Chernay, *Accreditation and the Role of the Council on Postsecondary Accreditation* (Washington, DC: The Council on Postsecondary Accreditation, 1990), p. 3

<sup>26</sup> Standards for Accreditation of Master's Programs in Library & Information Studies Adopted by the Council of the American Library Association January 15, 2008 [www.ala.org/accreditation](http://www.ala.org/accreditation)

| <b>Library and Information Science Schools</b>                | <b>University of Illinois—Urbana-Champaign Champaign, IL</b>   | <b>University of North Carolina—Chapel Hill Chapel Hill, NC</b>  | <b>Syracuse University Syracuse, NY</b>   | <b>University of Washington Seattle, WA</b>   | <b>University of Michigan—Ann Arbor Ann Arbor, MI</b>   |
|---|--|--|---|---|---|
| <b>Degrees Accredited by the American Library Association</b> | <ul style="list-style-type: none"> <li>▪ Master of Science</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Master of Science in Library Science</li> <li>▪ Master of Science in Information Science</li> </ul>                         | <ul style="list-style-type: none"> <li>▪ Master of Science in Library and Information Science</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Master of Library and Information Science</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Master of Science in Information</li> </ul>  |
| <b>Other Degrees or Certificates</b>                          | <ul style="list-style-type: none"> <li>▪ PhD</li> <li>▪ Other Master's Degree</li> <li>▪ School Library Media Program</li> <li>▪ Post-Master's Certifications</li> </ul> | <ul style="list-style-type: none"> <li>▪ PhD</li> <li>▪ Bachelor's Degree</li> <li>▪ School Library Media Program</li> <li>▪ Post-Master's Certifications</li> </ul> | <ul style="list-style-type: none"> <li>▪ PhD</li> <li>▪ Other Master's Degree</li> <li>▪ Bachelor's Degree</li> <li>▪ School Library Media Program</li> <li>▪ Post-Master's Certifications</li> </ul> | <ul style="list-style-type: none"> <li>▪ PhD</li> <li>▪ Other Master's Degree</li> <li>▪ Bachelor's Degree</li> <li>▪ School Library Media Program</li> <li>▪ Post-Master's Certifications</li> </ul> | <ul style="list-style-type: none"> <li>▪ PhD</li> <li>▪ School Library Media Program</li> <li>▪ Bachelor's Degree (Added recently)</li> </ul> |

Table (3) Distributions of degrees offered at top five ALA accredited Library and Information Science Schools in the United States in 2009 <sup>27</sup>

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27 Library Information Studies & Directory of Institutions Offering Accredited Master's Programs 2008–2009 Revised November 1, 2008. American Library Association Office for Accreditation [www.ala.org/ala/aboutala/offices/accreditation](http://www.ala.org/ala/aboutala/offices/accreditation), Available at <[www.ala.org/ala/aboutala/offices/hrdr](http://www.ala.org/ala/aboutala/offices/hrdr)>

Based on previous table, it could be concluded that the four schools received accreditations on the master's degree level and none of them received accreditations on the bachelor degree level. Therefore, the need to work on accreditation for the bachelor degree might be an essential to insure high quality education.

### **Program emphasis**

Several library science schools by the 1990s began a transformation into more broadly-defined information schools. It was noticed that the names of some schools dropped the word "library" entirely. The result was a wide variety of schools, some more traditional and others much more geared towards a variety of information professions.<sup>28</sup>

The study found **University of North Carolina** named its school as *School of Information and Library Science* and it offers The Bachelor of Science in Information Science Program, and Information Systems (Minor). The information science major (BSIS) is designed to prepare its graduates for a variety of careers in the information industry, including information architecture; database design and implementation; web design and implementation; and networking support and information consulting; as well as for graduate study. Please visit our curriculum section for more information."<sup>29</sup> The main goal is to produce graduates ready to face the ever-changing call for information in today's world.<sup>30</sup>

The study also found that **Syracuse University** named its school as *School of Information Studies* and it offers The B.S. in Information Management and Technology, Global Enterprise Technology (Minor), and Information Management & Technology (Minor) The Bachelor of Science in Information Management & Technology at the School of Information Studies focuses on the human as well as the technological elements of information systems. Students learn to see the "big picture" through coursework that covers the information industry spectrum. Students focus on the needs of information users, learn the value of information as well as technology, and develop a flexible and highly portable set of skills for the 21st century workplace."<sup>31</sup>

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28 ALA, How to choose a library science school, Available at

<http://www.ala.org/ala/educationcareers/careers/librariycareerssite/whatyouneedchooseschool.cfm>

29 University of North Carolina, School of Information and Library Science, Degrees & Programs BSIS Overview, available at <<http://sil.unc.edu/programs/bsis/index.html>>

30 University of North Carolina, School of Information and Library Science, Supporting SLIS, available at <<http://sil.unc.edu/support/>>

31 Syracuse University, School of Information Studies, Bachelor of Science in Information Management and Technology, Available at <<http://ischool.syr.edu/academics/undergraduate/bsmt/index.aspx>>

The study also found that **University of Washington** named its school as *Information School* and it offers bachelor degree in Informatics. The main purpose is to prepare information leaders. That can research the problems and opportunities of information, design solutions to information challenges, and make information work.<sup>32</sup>

And finally, **University of Michigan** named its school as *School of Information* and offers bachelor degree in Informatics. Informatics graduates are prepared for many roles in business, research, government, and non-profit organizations. Depending on the track of study completed, graduates are also equipped with the academic background necessary for graduate study in many fields including computer science, business, education, information, statistics, law, medicine, public health, and natural and social sciences.<sup>33</sup>

Based on previous analysis it was found that most schools prepare their graduates to none traditional careers in the Information Industry fields. None of the four schools mentioned the traditional jobs of Library Science graduates that deals with regular operations as, cataloging, classification, Indexing, collection development, etc. The reason behind this might refer to that the library and information science is a fast paced discipline that is affected by the new advancements and changed it form a traditional focus to non-traditional focus.

### **Course offerings**

"Course offerings are important to review to ensure that the school will meet the needs in terms of the types of courses offered. In that, if someone wishes to become a youth services librarian, it is important to enroll in a school that offers courses on children's literature, storytelling, early literacy, etc. School librarians will want to be particularly careful that they can receive certification in school library media. Some schools are geared towards full-time students, while others offer courses in multiple locations and during weekend and evening hours. Other items to consider are the options to take cognate courses in other schools, dual degree programs, and PhD programs".<sup>34</sup> See table (4) for details.

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32 University of Washington, Information School, Available at  
<<http://ischool.uw.edu/aboutschool.aspx>>

33 Informatics: An interdisciplinary major at University of Michigan, available at  
<<http://informatics.umich.edu/node/1>>

34 ALA, How to choose a library science school, Available at  
<<http://www.ala.org/ala/educationcareers/careers/librarycareersite/whatyouneedchooseschool.cfm>>

Table (4) Distribution of bachelor credits at Library and Information Science Schools in the United States in 2009

| School            | University of North Carolina <sup>35</sup>  | Syracuse University <sup>36</sup> | University of Washington <sup>37</sup> | University of Michigan <sup>38</sup> |
|-------------------|---|-----------------------------------|--|--------------------------------------|
| Number of credits | 30 Credit + Several concentrations based on clusters of electives in particular areas | 123-6                             | 180                                    | 16 Perquisites + 44                  |

The study found the core and courses offered in Library and Information Science Schools to be as followed:

### North Carolina

The information science major consists of 10 courses (30 credits), including a prerequisite course, INLS 200.

| The courses required for completion of the BSIS                             |
|---|
| INLS 101, Foundations of Information Science                                |
| INLS 200, Retrieving and Analyzing Information (prerequisite to enrollment) |
| INLS 261, Tools for Information Literacy                                    |
| INLS 285, Information Use for Organizational Effectiveness                  |
| INLS 382, Information Systems Analysis and Design                           |
| INLS 523, Introduction to Database Concepts and Applications                |
| INLS 697, Emerging Topics in Information Science                            |

Table (5) The courses required for completion of the BSIS at North Carolina

In addition to these required courses, each student should work with his or her advisor to select a coherent set of four or more electives that will meet the student's objectives.

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35 University of North Carolina, School of Information and Library Science, Degrees & Programs BSIS Curriculum, available at <<http://sils.unc.edu/programs/bsis/curriculum.html>>

36 Syracuse University, School of Information Studies, Undergraduate Programs, available at <<http://ischool.syr.edu/academics/undergraduate/index.aspx>>

37 University of Washington, Information School, Informatics Courses, Available at <<http://ischool.uw.edu/informatics/courses.aspx>>

38 University of Michigan, School of Information, Available at <<http://informatics.cms.si.umich.edu/node/23>>

## Syracuse University

The degree program is comprised of the following courses:

| <b>Courses</b>  | <b>Types</b>  |
|---|---|
| <b>Primary Core<br/>(24-25 credits)</b>                             | <ul style="list-style-type: none"> <li>• 4 Management Courses</li> <li>• 3 Technology Courses</li> <li>• 2 Overview/Introductory Courses</li> </ul>                   |
| <b>Information Management and Technology Electives (15 credits)</b> |   |
| <b>Arts and Sciences<br/>Requirements<br/>(36 credits)</b>          | <ul style="list-style-type: none"> <li>• 3 Social Science Courses</li> <li>• 3 Humanities Courses</li> <li>• 3 Science/Math Courses</li> <li>• 3 Electives</li> </ul> |
| <b>Skills Electives<br/>(21-23 credits)</b>                         | <ul style="list-style-type: none"> <li>• 4 Communications Courses</li> <li>• 2-3 Mathematics/Language Courses</li> <li>• 1 IT Programming Course</li> </ul>           |
| <b>General Electives (21-24 credits)</b>                            |   |

Table (6) Bachelor degree required courses at Syracuse University

Concentrations: Students select at least one of five concentrations to develop expertise and advance in their careers.

- 1- Information Security,
- 2- Project Management,
- 3- Network Management,
- 4- Web Design and Management,
- 5- Database Management

## University of Washington

| <b>Informatics Core Courses</b>  |   |
|--|---|
| All required Core courses in the Informatics major are listed here.      |   |
| CSE 143 Computer Programming for Engineers and Scientists II (5 credits) |   |
| CSE 373 Data Structures and Algorithms (Prereq: CSE 143; 3 credits)      |   |
| INFO 330 Information Architecture (5 credits)                            |   |
| INFO 340 Database Management and Information Retrieval (5 credits)       |   |
| INFO 343 Web Technologies (5 credits)                                    |   |
| INFO 360 Design Methods for HCI (5 credits)                              |   |
| INFO 380 Information Systems Analysis and Management (5 credits)         |   |
| INFO 450 Information Policy (5 credits)                                  |   |
| INFO 470 Research Methods (5 credits)                                    |   |
| INFO 481 Project Management (5 credits)                                  |   |
| <b>Required Capstone Course</b>  | INFO 490 Design and Development of Interactive Systems<br>(8 credits) |

Table (7) Required core courses in University of Washington

### Choosing Electives for the Informatics Major

Informatics majors are required to take a minimum of 12 credits of “Major Electives” (Students admitted to the major without INFO 100 must take 17 credits of Major Electives.) The Major Elective credits are required in addition to the Informatics core and capstone courses. Major Elective courses may be selected from upper-division Informatics electives as well as courses from outside departments. The Information School offers a variety of possible options under its various program prefixes (INFO, LIS, IMT, and INSC). In addition to the upper-division Informatics courses, Informatics majors may find courses in the LIS program to be of interest. Beside its regular courses, the LIS program offers special topics courses each quarter in areas such as content management, diversity issues for information professionals, competitive intelligence, ethics in Information, outcomes-based evaluation, and even Google (as a search engine and social phenomenon). Many of these courses will readily be approved for Informatics Major Electives.



University of Michigan

| <p><b>Data Mining and Information Analysis students</b></p>  | <p><b>Computational Informatics students</b></p>  | <p><b>Life Science Informatics students</b></p>  |
|--|---|--|
| <p><b>Track Courses (11 credits)</b></p> <p><b>The following courses:</b><br/> MATH 471 Introduction to Numerical Methods (3 credits)<br/> STATS 406 Introduction to Statistical Computing (4 credits)<br/> STATS 415 Data Mining and Statistical Learning (4 credits)</p> | <p><b>Track Courses (15-16 credits)</b></p> <p>The following course:<br/> EECS 382 Internet-scale computing (4 credits)</p> | <p><b>Track Courses (17-18 credits)</b></p> <p><b>The following courses:</b><br/> MCDB 305 Genetics (3 credits)<br/> BIO 310 Introductory Biochemistry (3 credits)<br/> BIOINF 527 Introduction to Bioinformatics and Computational Biology. (4 credits)</p> <p><b>One of the following Life Science courses:</b><br/> MCDB 427 Molecular Biology (4 credits)<br/> MCDB 428 Cell Biology (4 credits)<br/> EEB 485 Population and Community Ecology (4 credits)<br/> CHEM / BIOLCHEM 452 Introduction to Biochemistry II .(4 credits)</p> |

|  |  |   |
|--|--|---|
| <p style="text-align: center;"><b>Elective Courses (17 credits)</b></p> <p>Eight [8] elective credits must be at the 300 level or higher, and all electives should be selected in consultation with a faculty advisor.</p> | <p><b>One of the following Computational Foundations courses:</b></p> <p>EECS 281 Data Structures and Algorithms (4 credits)</p> <p>EECS 376 Foundation of Computer Science (4 credits)</p> <p>EECS 476 Theory of Internet Applications (4 credits)</p> <p>EECS 477 Introduction to Algorithms (4 credits)</p> <p>EECS 492 Introduction to Artificial Intelligence (4 credits)</p> | <p><b>One of the following Quantitative courses:</b></p> <p>EECS 382 Internet-scale Computing (4 credits)</p> <p>STATS 401 Applied Statistical Methods II (4 credits)</p> <p>STATS 449 Topics in Biostatistics (3 credits)</p> <p style="text-align: center;"><b>Elective Courses (10-11 credits)</b></p> <p>Four [4] elective credits must be at the 300 level or higher, and all electives should be selected in consultation with a faculty advisor.</p> |
|  | <p><b>One of the following Database Systems courses</b></p> <p>EECS 484 Database Management Systems (4 credits)</p> <p>EECS 485 Web Database and Information Systems (4 credits)</p>   |   |
|  | <p><b>One of the following Human-Computer Interaction courses:</b></p> <p>SI 422 Evaluation of Systems and Services Any product. (3 credits)</p> <p>EECS 481 Software Engineering (4 credits)</p> <p>EECS 493 User Interface Development (4 credits)</p> <p>EECS 494 Computer Game Design and Development (4 credits)</p>  |   |
|  | <p style="text-align: center;"><b>Elective Courses (12-13 credits)</b></p> <p>Eight [8] elective credits must be at the 300 level or higher, and all electives should be selected in consultation with a faculty advisor.</p>  |   |

Table (8) Required core and elective courses at University of Michigan

Based on previous information, it could be noticed that the curriculum also varied from a school to another. Number and type of courses offered (core, elective) varied from one school to another, as schools had different concentrations and various focuses. The reason behind this might refer to the purpose of each program that intended to prepare students for various careers. Schools were designed to prepare students for the future careers as follow. See table (9) for detail.

| School                              | Careers   |
|-------------------------------------|---|
| <b>University of North Carolina</b> | Information architecture; database design and implementation; Web design and implementation; and networking support and information consulting. <sup>39</sup>   |
| <b>Syracuse University</b>          | Information security, Project management, Network management, Web design and management, Database management. <sup>40</sup>   |
| <b>University of Washington</b>     | Business Analyst, Database Administrator, Web Developer, User Interaction Designer, User Researcher, Network Engineer, Network Administrator, Network Security Analyst, IT Director/Manager, Consultant, Project Manager, Database Specialist, Product Developer, Systems Analyst, Usability Engineer <sup>41</sup> |
| <b>University of Michigan</b>       | Archives and Records Management, Community Informatics, Human Computer Interaction, Incentive-Centered Design, Information Analysis and Retrieval, Information Policy, Library and Information Services, K-12 School Library Media, Preservation of Information, Social Computing <sup>42</sup>                     |

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<sup>39</sup>University of North Carolina, School of Information and Library Science, Degrees & Programs BSIS Overview, available at < <http://sils.unc.edu/programs/bsis/index.html>>

<sup>40</sup> Syracuse University, School of Information Studies, Undergraduate Programs, available at <<http://ischool.syr.edu/academics/undergraduate/index.aspx>>

<sup>41</sup> University of Washington, Information School, We make information work, available at <<http://ischool.uw.edu/informatics/careers.aspx>>

<sup>42</sup> University of Michigan, School of Information, What can I do with an MSI, Available at <<http://www.si.umich.edu/careers/with-an-msi.htm>>

## Distance learning

Distance learning is becoming more prevalent, and offers students a greater variety of choices in programs.<sup>43</sup> However, the study found that the four schools offer On – Campus (residential) courses only and none of the four schools offer online courses to undergraduate students. Computer and Internet illiteracy of students might be the reason behind this.

## Cost

Cost can vary greatly from one university to the next. The total cost for each person will be different. Factors to consider are: out-of-state tuition, total number of credits required, room and board, books and fees, travel, and parking. Scholarships and paid internships can help defray some of the costs.<sup>44</sup> See table (10) for details.

Table (10) Distribution of costs at Library and Information Science  
Schools in the United States in 2009

| Cost           | University of North Carolina <sup>45</sup> | Syracuse University <sup>46</sup> | University of Washington <sup>47</sup> | University of Michigan <sup>48</sup> |
|----------------|--|-----------------------------------|--|--------------------------------------|
| In – State     | \$17,424                                   | \$50,100                          | \$7.692                                | Varies                               |
| Out -of- State | \$35,740                                   | \$51,663 <sup>49</sup>            | \$24.367                               | \$45,589                             |

Based on data in previous table it could be concluded that out of state students pay more annual costs than in state students. The percentage is almost equal at Syracuse University, two times University of North Carolina, and three times at the University of Washington. The study also found that University of Michigan specified a calculator website for out of state students to determine costs. Costs included various fees and varied from a school to another as follow:

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<sup>43</sup> ALA, American Library Association, How to choose a library science school, Available at <<http://www.ala.org/ala/educationcareers/careers/librarycareerssite/whatyouneedchooseschool.cfm>>

<sup>44</sup> ALA, American Library Association, How to choose a library science school, Available at <<http://www.ala.org/ala/educationcareers/careers/librarycareerssite/whatyouneedchooseschool.cfm>>

<sup>45</sup> The University of North Carolina, Scholarship and Students aid, Undergraduate and cost of attendance, available at <[http://studentaid.unc.edu/studentaid/cost/ssa\\_ug\\_general.html](http://studentaid.unc.edu/studentaid/cost/ssa_ug_general.html)>

<sup>46</sup> Syracuse University, financial information, expenses, available at <<http://www.syr.edu/futurestudents/undergraduate/applytosu/financialinfo/expenses.html>>

<sup>47</sup> University of Washington, office of planning & budgeting 2009-10, Tuition and fees (annual academic year), available at <<http://www.washington.edu/admin/pb/home/pdf/tuition/2009-10-tf-annual.pdf>>

<sup>48</sup> University of Michigan, office of undergraduate admissions, Financial Support, available at <<http://www.admissions.umich.edu/intl/financial.php>>

<sup>49</sup> Syracuse University, requirement, international students, general information, available at <[http://www.syr.edu/futurestudents/undergraduate/applytosu/requirements/international\\_requirements.html](http://www.syr.edu/futurestudents/undergraduate/applytosu/requirements/international_requirements.html)>

**University of North Carolina:** The study found that annual costs at the University of North Carolina include the following: tuition, fees, room, board books/supplies, travel, health insurance, and personal expenses. The study also found that dependent or independent student (on or off campus annual costs at University of North Carolina are less than dependent or Independent student living with parents.

**Syracuse University:** The study found that annual cost at the Syracuse University includes the following: tuition housing and meals, fees (health, activity, co curricular, and communication) and other expenses books and supplies, personal expenses and travel.

**University of Washington:** The study found that annual cost at the University of Washington includes the following: operating fee, Building fee, tuition, services & activities fee, technology fee, and IMA bond fee.

**University of Michigan:** The study found that annual cost at the University of Michigan includes: Tuition and Fees and Living Expenses. Living expenses include room, board, books, local transportation, mandatory health insurance fee, and miscellaneous expenses.)

Based on previous information, it could be concluded that these costs are relatively high and students have to look for financial support either in the university or outside to complete their undergraduate degree.

### **Admissions requirements**

Admissions requirements varied by university. The study found that two schools out of four required students to obtain certain courses as pre-admission requirement courses. In that, **University of North Carolina**<sup>50</sup> required students to obtain Mathematical sciences and Natural sciences & Historical courses. **University of Michigan** required students to obtain MATH (Calculus), Building Applications for Information Environments, Intro to Statistics and Data Analysis, and Introduction to Information Systems. In addition to this, admissions requirements included other requirement. See table (11) for details.

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<sup>50</sup> University of North Carolina, School of Information and Library Science, BSIS, Available at <[http://sils.unc.edu/news/publications/fliers/BSIS\\_sept09.pdf](http://sils.unc.edu/news/publications/fliers/BSIS_sept09.pdf)>

| University of North Carolina   | Syracuse University <sup>51</sup>  | University of Washington <sup>52</sup>   | University of Michigan   |
|--|--|--|--|
| Application  | Online Application   | ENG. COMP  | Admissions depends on type of students that could be:<br>1- Prospective Students; or<br>2-Transfer Student; or<br>3-International Students |
| A current resume, including information about work experience and/or extracurricular activities  | Demonstrate sufficient academic preparation to achieve success in their studies at Syracuse University.    | ADD. WRITING   |  |
| A brief essay (maximum of two pages) discussing the role of information (its creation, communication, storage, and/or transmission) in a particular application area or in society at large, and motivations for seeking the information science major | Demonstrate proficiency in the English language.<br><br>Demonstrate the ability to pay for their education | STAT 311<br>&<br>20 VLPA<br>Visual, Literary, and Performing Arts<br>20 I&S<br>Individuals and Societies<br>20 NW<br>The Natural World |  |

Table (11) Admission Requirements at Library and Information Science Schools in 2009

Based on the information mentioned, it could be concluded that basic requirements to enroll in bachelor degree programs varied from a school to another. While some schools require students to demonstrate a sufficient academic preparation to achieve success in their studies by writing a brief essay discussing certain issues, other schools require students to demonstrate proficiency in the English language and had obtained certain courses to insure that students applying were highly qualified for the program.

The study also found the **University of Michigan** to be having three types of admissions, prospective students, transfer students and International students. The university had different requirements as follow:

- 1- Prospective Students are asked to submit test scores ACT, SAT and a recommendation.
- 2- Transfer Students are required to submit the following prior to the deadline date:

<sup>51</sup>University of North Carolina, School of Information and Library Science, BSIS, Available at <[http://www.syr.edu/futurestudents/undergraduate/applytosu/requirements/international\\_requirements.html](http://www.syr.edu/futurestudents/undergraduate/applytosu/requirements/international_requirements.html)>

<sup>52</sup> University of Washington, Undergraduate advising at the gateway center, Available at <<http://www.washington.edu/uaa/gateway/advising/degreeplanning/gebsrofuwsc.php>>

- completed application (online only)
- final official secondary school record, including 9th through 12th grades, test data, and graduation date
- official transcripts from all post-secondary institutions
- any required essays
- application fee
- required test scores (ACT, SAT, MELAB, TOEFL, IELTS) if applicable
- requirements for specific Schools and Colleges (i.e. portfolio, audition request, etc.),

3- International Students are asked to submit application (holistic and comprehensive) to be reviewed. Application should includes:

Grades and test scores,

National system of education,

The type of institution previously attended,

The quality of student achievements,

The suitability of preparation for proposed program of studies,

Level of English language proficiency,

A detailed description of specific qualifications and academic background

### Rate

U.S. News & World Report used to rate each accredited Library and Information Science school in the United States and Canada. However, the study found that rate or rank was based on the master's level in each school, and none of them rate the program at the bachelor program. See table (12) for details.

| Rate | College Name   | Score |
|------|--|-------|
| 1    | <i>School of Information and Library Science</i><br>University of North Carolina | 4.5/5 |
| 3    | <i>School of Information Studies</i><br>Syracuse University                      | 4.4/5 |
| 4    | <i>Information School</i><br>University of Washington                            | 4.3/5 |
| 5    | <i>School of Information</i><br>University of Michigan                           | 4.1/5 |

Table (12) Distribution of Library and Information Schools rate according to American Library Association, ALA in 2009.

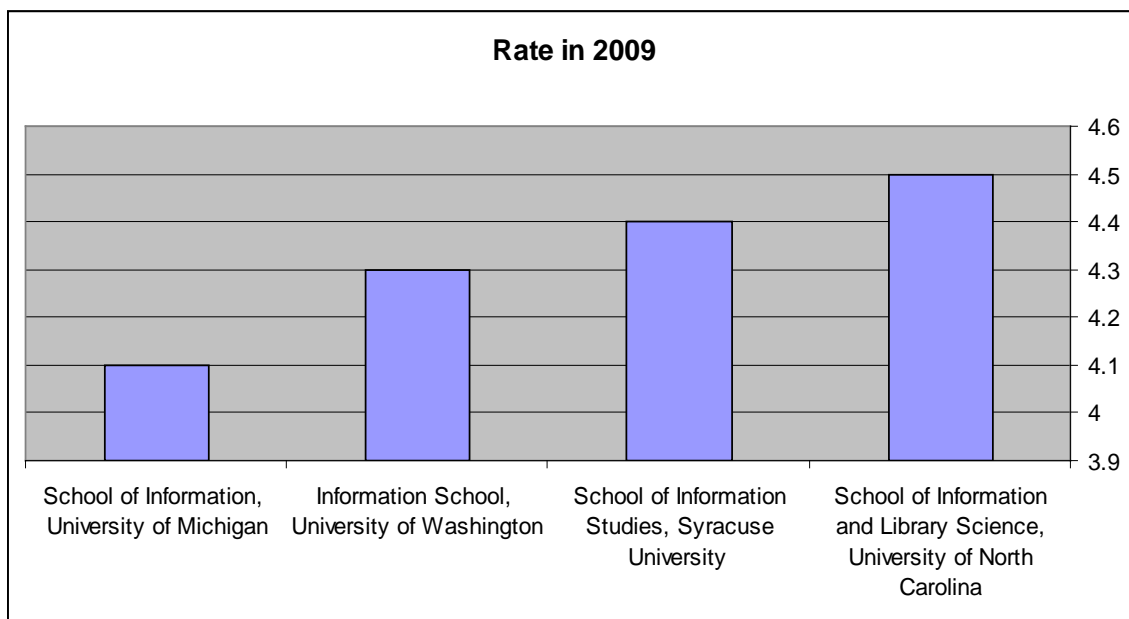


Figure (2) Rank (rate) of Library and Information Studies Schools in 2009

The study found that one school, Syracuse University, offered their students three choices while working on the bachelor degree, dual degrees, honor programs and study abroad.

### 1- Dual Degree

A dual degree program is "based on a formal agreement within one college/university or between separate colleges/ universities. Students spend 2-3 years in each degree program. After completing all requirements for both programs (usually in four to five years) the student is awarded two degrees. Dual degrees can be from the same school, or from two different colleges/universities that entered a dual degree agreement; and in the same major, or in different majors".<sup>53</sup> The study found dual degrees offered at the Syracuse University include:

- 1- School of Public Communications
- 2- School of Management.

### 2- Honor Programs

Syracuse University has had an honors program since 1963. It is named The Renée Crown University Honors Program. "It is a selective, demanding, and rewarding program for students who seek an intense intellectual challenge and are prepared to invest the extra effort required to meet that challenge. While students pursue their chosen academic course of study in their individual departments, schools and colleges, the Honors Program offers

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<sup>53</sup> Double degree, From Wikipedia, the free encyclopedia, Available at <[http://en.wikipedia.org/wiki/Dual\\_degree](http://en.wikipedia.org/wiki/Dual_degree)>



additional intellectual challenge and curricular enrichment through seminars, honors courses, special cultural events, and close contact with faculty and other honors students. The Program is open to qualified students in all of the University's undergraduate schools and colleges.<sup>54</sup>

### **3- Study Abroad**

The program at Syracuse University "allows students to customize an international experience that meets student linguistic needs--and student professional and personal goals. Students may choose from exciting and challenging locations across the globe. Browse our extensive courses and programs of study that allow them to combine liberal arts and professional degree courses".<sup>55</sup>

### **Conclusions**

Based on previous analysis, the following points were concluded:

#### **1- Bachelor Degree in Library and Information Science**

On the contrary of other degrees in different fields, bachelor degree in Library and Information Science was the least offered degree in Library and Information Science schools; in that the majority of schools offer other degrees like masters, PhD, school library media program, post master certificates, etc more than bachelor degrees. The reason behind this might relate and refer to the job market, where the basic requirement for most job placements was postgraduate degrees.

#### **2- Curriculum Focus**

The curriculum varied from a school to another. Number and type of courses offered (core, elective) varied not only from one school to another, but within each school according to the program of study. Schools had different concentrations and various focuses. The reason behind this might refer to the purpose of each program that intended to prepare students for various careers.

#### **3- Distance Learning**

Courses offered were on-campus (residential) courses and all schools in the study didn't have a choice of distance learning at the undergraduate level. Therefore, it might be useful for schools to establish distance education programs for the undergraduates. Distance learning would provide remote students the choice to enroll in distinguished universities. It might also reduce the cost and facilitate the education process.

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<sup>54</sup> The Renee Crown: University Honor Program: Syracuse University, Available at <<http://honors.syr.edu/>>

<sup>55</sup> Syracuse University, Study abroad, Welcome to abroad, Available at <<http://studyabroad.syr.edu/concrete/>>

#### **4- Tuitions and Student Status**

Tuitions were relatively high and varied from one school to another and varied also within each school according to the type of students (In-State Student & Out – of – State Student). Student loans obtained either from universities or outside were some of the solutions offered to cover various expenses.

#### **5- Program Accreditations**

The study found that the accreditation process was restricted to graduate programs on the master's level, and not on undergraduate level. Therefore, the need for accreditation might be an essential need to insure high quality education. It could be useful to establish an association either as a separate entity or connected with the American Library Association, ALA. This association would have the authority to evaluate, assess and determine standards for bachelor programs offered. Therefore, it would help in reducing variations among schools.

#### **6- Admission Requirements**

Each program had its own admissions requirements. Some schools required students to take some courses, while other schools asked students to take certain tests. That was to make sure that applying students were well qualified. The study also found that the University of Michigan had its unique system, in that it divided students into three types: prospective students, transfer students and international students, defining certain requirements for each type.

#### **7- Rank and School Reputations**

Ranks and rates were made at the master's degree level and not on the bachelor degree level.

#### **8- Educational Choices**

The study found the school at Syracuse University offered more choices to students. Choices were in obtaining dual degrees, registering in honor programs and studying abroad. These choices might encourage students to apply and would make education more exiting.

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