CERTAIN CHARACTERISTICS OF iSCHOOLS COMPARED TO OTHER LIS PROGRAMS

by

ROBERT WEDGEWORTH

A Dissertation submitted to the

Graduate School-New Brunswick

Rutgers, The State University of New Jersey

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Graduate Program in Communication, Information and Library Studies

written under the direction of

Tefko Saracevic, PhD

and approved by

_____

_____

_____

_____

New Brunswick, New Jersey

January 2013

ABSTRACT OF THE DISSERTATION

Certain Characteristics Of iSchools Compared To Other LIS Programs

By ROBERT WEDGEWORTH

Dissertation Director:
Professor Tefko Saracevic

This dissertation compares 17 iSchools and 36 other LIS schools that offer the ALA-accredited Master's degree program according to certain characteristics. The study compiles quantitative and qualitative data on 32 variables and sub-variables drawn from the schools' web sites, ALISE 2010 Statistical Report, and Elsevier's SCOPUS database. The variables include size of FTE faculty, size of FTE ALA Master's degree enrollment, total school income, total school external income, types of courses in the ALA Master's program, types of research degrees held by full-time professorial faculty, quantity of research by full-time professorial faculty, the range of journals in which faculty research was published, and the level of journal cocitation among the full-time professorial faculty. Statistical analysis of the data using t-tests and logistic regression tests reveal significant differences between the iSchools and the other LIS schools that offer the ALA Master's degree. This dissertation raises more questions than it answers, but it does lay a foundation of basic information about iSchools and other LIS programs that will contribute to the search for a precise iSchool identity.

ACKNOWLEDGEMENTS

I gratefully acknowledge the patience, support, and guidance of my PhD Committee for this dissertation: Dr. Tefko Saracevic, Chair, Dr. June Lester, Dr. Daniel O'Connor, and Dr. Marie Radford.

In addition, I gratefully acknowledge the guidance and support of my original PhD Committee: Dr. Susan Artandi, Chair, Dr. Ernest R. DeProspo, Dr. Derek De Solla Price, Yale University, and John Sherrod, Director, National Agriculture Library. Further, I would like to thank former faculty members of the Graduate School of Library Service: Dr. Ralph Blasingame, Dr. Paul S. Dunkin, and Dr. Mary V. Gaver.

My fellow students, Dr. Hardy R. Franklin and Dr. F. William Summers, never gave up on me and continued to encourage me to fulfill all of the requirements for the PhD.

I am especially grateful to Natalie J. Hall and Judith Farley for their assistance. This dissertation is dedicated to my long-suffering wife, C.K. Wedgeworth, without whom this work would not have been possible.

I gratefully acknowledge support from the HEA Title IIB fellowship program that enabled my doctoral studies and a grant from the National Library of Agriculture that supported my initial research efforts

TABLE OF CONTENTS

LIST OF WEB SITE SOURCES

http://www.ala.org/accreditedprograms/reportsandpublications/prismreports

www.scopus.com

info@slis.ua.edu

www.albany.edu/informationstudies/.

http://www.slis.ualberta.ca

http://sirls.arizona.edu

http://www.slais.ubc.ca

http://gse.buffalo.edu/lis

www.slis.cua.edu

http://www.clarion.edu/1095

http://sim.management.dal.ca/

http://www.dom.edu/gslis

http://www.ischool.drexel.edu

http://slim.emporia.edu

http://slis.wayne.edu

http://slis.fsu.edu

http://www.hawaii.edu/lis

http://www.lis.illinois.edu

http://www.slis.indiana.edu

http://slis.grad.uiowa.edu

http://www.kent.edu/slis

http://cis.uky.edu/lis

http://www.liu.edu/CWPost/Academics/Schools/CEIS/PSLIS.aspx

http://sites01.lsu.edu/wp/slis/

http://www.gradschool.umd.edu/catalog/programs/lbsc.htm

http://www.mcgill.ca/sis/

http://www.si.umich.edu/academics/msi/library-and-information-science-lis

http://education.missouri.edu/SISLT/

http://www.nccuslis.org/

http://slis.ou.edu

http://www.ischool.pitt.edu/

http://www.pratt.edu/academics/information_and_library_sciences/

www.qc.cuny.edu

http://comminfo.rutgers.edu

http://www.southernct.edu/ils/

http://www.simmons.edu/gslis/

http://slisweb.sjsu.edu

http://www.stjohns.edu/academics/graduate/liberalarts/departments/lis

http://si.usf.edu

http://ischool.syr.edu

http://www.sis.utk.edu

http://www.ischool.utoronto.ca

http://www.twu.edu/slis/

http://www.libsci.sc.edu

http://www.usm.edu/library-information-science

http://gseis.ucla.edu

http://sils.unc.edu

http://lis.uncg.edu

http://www.lis.unt.edu/

http://www.uri.edu/artsci/lsc/index.php

http://si.usf.edu

http://www.gslis.utexas.edu

http://www.waynestate.edu

http://www4.uwm.edu/sois/

http://polyglot.lss.wisc.edu/slis/index.htm

http://ischool.uw.edu

http://www.fims.uwo.ca/acad_programs/grad/lis.htm

LIST OF ALA-ACCREDITED MASTER'S DEGREE PROGRAMS AS OF FEBRUARY 2010

1. School of Library, Archival and Information Studies, University of British Columbia, Vancouver, British Columbia, CANADA. http://www.slais.ubc.ca
2. Graduate School of Education and Information Studies, Department of Information Studies, University of California, Los Angeles, Los Angeles, CA. http://gseis.ucla.edu
3. College of Information Science and Technology, The iSchool at Drexel, Drexel University, Philadelphia, PA. http://www.ischool.drexel.edu
4. College of Communications and Information, School of Information Studies, Florida State University, Tallahassee, FL. http://slis.fsu.edu
5. Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign, Urbana, IL. http://www.lis.illinois.edu
6. School of Library and Information Science, Indiana University, Bloomington, IN. http://www.slis.indiana.edu
7. College of Communication and Information, School of Library and Information Science, University of Kentucky, Lexington, KY. http://cis.uky.edu/lis
8. College of Information Studies, University of Maryland, College Park, MD. http://www.gradschool.umd.edu/catalog/programs/lbsc.htm
9. School of Information, University of Michigan, Ann Arbor, MI. http://www.si.umich.edu/academics/msi/library-and-information-science-lis
10. School of Information and Library Science, University of North Carolina at Chapel Hill, Chapel Hill, NC. http://sils.unc.edu
11. College of Information, Department of Library and Information Sciences, University of North Texas, Denton, TX. http://www.lis.unt.edu/
12. School of Information Sciences, Library and Information Science Program, University of Pittsburgh, Pittsburgh, PA. http://www.ischool.pitt.edu/
13. School of Communication and Information, Library and Information Science Department, Rutgers-The State University of New Jersey, New Brunswick, NJ. http://comminfo.rutgers.edu

14. School of Information Studies, Syracuse University, Syracuse, NY. http://ischool.syr.edu
15. School of Information, University of Texas at Austin, Austin, TX. http://www.gslis.utexas.edu
16. Faculty of Information, University of Toronto, Toronto, CANADA. http://www.ischool.utoronto.ca
17. Information School, University of Washington, Seattle, WA. http://ischool.uw.edu
18. School of Library and Information Studies, University of Alabama, Tuscaloosa, AL. info@slis.ua.edu
19. Faculty of Education, School of Library and information Studies, University of Alberta, Edmonton, AB, CANADA. http://www.slis.ualberta.ca
20. School of Information Resources and Library Science, University of Arizona, Tucson, AZ. http://sirls.arizona.edu
21. School of Library and information Management, Emporia State University, Emporia, KS. http://slim.emporia.edu
22 School of Library and Information Science, Kent State University, Kent, OH. http://www.kent.edu/slis
23. Palmer School of Library and Information Science, Long Island University, Brookville, NY. 11548–1300 .http://www.liu.edu/CWPost/Academics/Schools/CEIS/PSLIS.aspx
24. School of Library and Information Science, Louisiana State University, Baton Rouge, LA. http://sites01.lsu.edu/wp/slis/
25. School of Information Studies, McGill University, Montreal, Quebec, Canada. http://www.mcgill.ca/sis/
26. School of Information Science and Learning Technologies, University of Missouri-Columbia, Columbia, MO. http://education.missouri.edu/SISLT/
27. School of Library and Information Science, North Carolina Central University, Durham, NC. http://www.nccuslis.org/
28. School of Library and Information Studies, University of Oklahoma, Norman, OK. http://slis.ou.edu

29. School of Information and Library Science, Pratt Institute, New York, NY. http://www.pratt.edu/academics/information_and_library_sciences/
30. Graduate School of Library and Information Studies, University of Rhode Island, Kingston, RI. http://www.uri.edu/artsci/lsc/index.php
31. Division of Library and Information Science, St. Johns University, Queens, NY. http://www.stjohns.edu/academics/graduate/liberalarts/departments/lis
32. College of Arts and Sciences, School of Information, University of South Florida, Tampa, FL. http://si.usf.edu
33. University at Buffalo, State University of New York, Graduate School of Education, Library and Information Studies, Buffalo, NY. http://gse.buffalo.edu/lis
34. College of Communication and Information, School of Information Sciences, University of Tennessee, Knoxville, TN. http://www.sis.utk.edu
35. College of Computing and Information, Information Studies Department, University at Albany, State University of New York, Albany, NY. www.albany.edu/informationstudies/.
36. School of Library and Information Science, The Catholic University of America, Washington, D.C. www.slis.cua.edu
37. College of Education and Human Sciences, Department of Library Science, Clarion University, Clarion, PA. http://www.clarion.edu/1095/
38. Faculty of Management, School of Information Management, Dalhousie University, Halifax, Nova Scotia, CANADA. http://sim.management.dal.ca/
39. Graduate School of Library and Information Science, Dominican University, River Forest, IL. http://www.dom.edu/gslis
40. Information and Computer Sciences Department, Library and Information Science Program, University of Hawaii at Manoa, Honolulu, HI. http://www.hawaii.edu/lis
41. School of Library and Information Science, University of Iowa, Iowa City, IA. http://slis.grad.uiowa.edu
42. Department of Library and Information Studies, University of North Carolina at Greensboro, Greensboro, NC. http://lis.uncg.edu

43. Graduate School of Library and Information Studies, Queens College, City University of New York, Flushing, NY. www.qc.cuny.edu
44. School of Library and Information Science, San Jose State University, San Jose, CA. http://slisweb.sjsu.edu
45. Graduate School of Library and Information Science, Simmons College, Boston, MA. http://www.simmons.edu/gslis/
46. School of Library and Information Science, University of South Carolina, Columbia, SC. http://www.libsci.sc.edu
47. School of Education, Information and Library Science Department, Southern Connecticut State University, New Haven, CT. http://www.southernct.edu/ils/
48. School of Library and Information Science, University of Southern Mississippi, Hattiesburg, MS. http://www.usm.edu/library-information-science
49. School of Library and Information Studies, Texas Woman's University, Denton, TX. http://www.twu.edu/slis/
50. School of Library and Information Science, Wayne State University, Detroit, MI. www.slis.wayne.edu
51. Faculty of Information and Media Studies, University of Western Ontario, London, Ontario, CANADA. http://www.fims.uwo.ca/acad_programs/grad/lis.html
52. School of Library & Information Studies, University of Wisconsin-Madison, Madison, WI. http://polyglot.lss.wisc.edu/slis/index.htm
53. School of Information Studies, University of Wisconsin-Milwaukee, Milwaukee, WI. http://www4.uwm.edu/sois/

GLOSSARY OF TERMS

ALISE: The Association for Library and Information Science Education.

ALA Master's Degree: A Master's degree program accredited by the Committee on Accreditation of the American Library Association.

iCaucus: An organization of schools or colleges concerned with information (www.ischools.org).

iConference: An annual event whose participants include faculty and students from the iSchools and invited guests.

iSchools: Schools or Colleges that are members of the iCaucus (www.ischools.org).

Journal co-citation: The incidence of articles by different authors appearing in the same journal.

Multicollinearity: A statistical phenomenon in which two or more variables are closely correlated.

Other Schools: Schools or Colleges that offer the ALA Master's, but are not members of the iCaucus.

Outliers: Extreme data points more than 3 standard deviations from the mean.

SCOPUS: An index of research journal content produced by Elsevier.

LIST OF TABLES

LIST OF GRAPHS

CHAPTER 1

INTRODUCTION AND PROBLEM STATEMENT

Introduction

A radical transformation has taken place in the world of libraries and librarians since the middle of the 20th century. The question has been asked repeatedly, "What is the future of libraries?" But the obvious companion question about the future of librarians is seldom asked. Driven primarily by new information technologies, librarians have made incremental changes to adjust to their rapidly changing environments. However, recent developments in their professional education programs suggest that incremental change is no longer adequate. To understand this challenge some historical background is necessary to put the problem into context.

Following World War II, the advent of information science, which emphasized scientific information and the scientific study of information and its uses, challenged the older field of librarianship. Librarianship or library science continued to maintain its traditions in bibliography, cataloging and classification, and institution-based services to users. In the 1960's and 1970's, documented by Machlup (1962), major influences on the library and information science (LIS) fields emerged also from economics. From sociology Bell (1973) brought influence to bear on LIS, while inspirational individuals made major contributions to the LIS fields from mathematics, like Robert Hayes at UCLA, and from physics, like Gerard Salton at Cornell. Hayes organized and taught a basic computer course to librarians who staffed the Library 21 exhibit at the 1962 Seattle World's Fair. Several of them went on to become leaders in the development of library automation projects. Hayes became the dean of the library and information science

program at UCLA, leading the field in new directions. Through experiments in his lab at Cornell, Salton became a leading figure in the emerging field of information science and influenced the beginnings of computer-based information storage and retrieval.

One of the first comprehensive efforts to bridge the gap between information science and librarianship came in the research and thinking of Jesse Shera. In his *Foundations of Education for Librarianship,* Shera (1972) identified the basic elements of education for librarianship as knowledge of "the characteristics of the recorded information, the characteristics of readers, and the methods for bringing the graphic records and readers together." (p.206)

What was driving these advances in thinking was the rapid application of computers and other new information technologies—photocopying, microfilming, etc.—to information problems. Online databases of information across academic disciplines were growing exponentially. Networks for distributing the results of online searches grew comparably. Throughout the balance of the 1970's new methods for applying computers to library and information science operating problems became dominant. Wedgeworth traced the progression in editing the *ALA Yearbook* (1976–1985). As this period of accelerated operational activity proceeded, there is little evidence of efforts to build upon the theoretical work of Shera and others.

Beginning in the late 1980's, according to Larsen (2008), the deans of several of the leading LIS programs began informal meetings to share ideas and to coordinate their efforts. The deans, led by Toni Carbo Bearman at the University of Pittsburgh, sought to distinguish themselves from the broader LIS field. By 2002, the group had grown to include the deans of LIS programs in more than 10 institutions and began to identify the

group formally as 'information schools," or "iSchools." Robert Taylor had established the first iSchool at Syracuse University in the early 1970's, emphasizing information organization, information systems, and information services while de-emphasizing institution-based services. In a 2010 personal conversation with Bearman, she noted that the new iSchool effort was originally conceived as a forum ("iCaucus") for discussing administrative rather than intellectual issues affecting the iSchools in their respective universities. Later the group spawned a broader forum, called the iConference, for faculty and students that does discuss such issues.

Currently, members of the leadership group meet as the iCaucus, sponsor conferences that involve faculty, students, and researchers, and host a website, www.ischools.org, to promote their activities. According to the web site, the purpose of the iSchools organization is to:

- Lead and promote the information field
- Create effective responses to strategic research and academic opportunities
- Provide support for and solutions to shared challenges
- Provide informed perspectives on matters of public policy as they affect the collection, organization, dissemination, use and preservation of information

By 2010, the iCaucus had held its fifth annual iConference and counted 31 institutions within its ranks, seven of which were outside of North America. Seven of the 24 iSchools in North America originated from the fields of computer science and engineering rather than from LIS programs. The principal organizing concept of iSchools programs is the relationship of information, people, and technology. This concept seems oddly reminiscent of Shera's work.

Problem Statement

According to the 2010 statistics of the Association for Library and Information Science Education (ALISE), the iSchools movement now includes the majority of the largest full-time equivalent (FTE) faculties of programs in the LIS field. The movement also includes the majority of those LIS programs in research universities (defined by the Carnegie Endowment for the Advancement of Teaching). But it has yet to articulate its identity clearly. King (2006) indicated that controversy regarding identity within the LIS field goes back more than 40 years. Assertions that LIS programs no longer identify with libraries and librarians sparked an intense debate within the American Library Association (ALA) in 2005–2006. During the debate it became clear that there was little solid evidence upon which to base many of the assertions that LIS education programs were increasingly ignoring libraries. However, some of the early statements by advocates of the iSchool movement and changes in the names of the LIS programs that dropped "libraries"—UCLA, Michigan, Drexel, SUNY Albany—tended to support these allegations. This debate came to a head in 2005–2006 during the tenure of Michael Gorman as president of ALA, when he chose library education as his presidential theme.

Questions regarding the identity, scope, and nature of LIS or information education persist in the literature. In a penetrating article about the tensions between groups seeking the autonomy of a professional school in LIS and those seeking a place for the discipline among other academic disciplines, Dick (1995) concluded, "The question regarding the essential disciplinary nature of library and information science, or what kind of discipline it is, is still unsettled." (p.218)

Commenting further on this matter of identity relative to inclusiveness, Debons and Harmon (2006) noted:

> In a reversal of fortunes, I-schools are seen as playing the host (or hostess) roles by providing multidisciplinary homes for pre-existing, elderly fields, as it were. The information field is no longer viewed as a newly hatched orphan, but as a parent home providing the foundation for experimenting with different disciplinary amalgams. The risk has shifted away from the prior task of getting a fledgling information discipline accepted into some established home in the academy during the 1960's and 1970's to the present risk of deciding what disciplinary thrusts in I-schools to include, which to exclude and how to do so? (para.6)

One indication that the status of information education programs in their respective universities remains unsettled occurred during the 2009–2010 academic year when the highest ranked LIS program in the nation faced an internal review that could have resulted in a merger with programs not ranked similarly in their respective fields, according to a study produced by the University of Illinois at Urbana–Champaign (2010).

There is no consensus that establishes clearly the current nature and scope of study and research in the information fields. Representatives of iSchools attending the 2009 iConference stated repeatedly that they were there to get a better sense of the concept of the iSchool and to clarify the mission of the group. One 2009 iConference attendee noted that its current leaders do not articulate a clear vision, as did earlier leaders like Shera and Taylor. Another suggested that iSchools might be the "intelligent" wing of librarianship. Still another indicated that the core concept of the iSchool movement is bringing people and information together. These participants recognize that the success of their programs depends greatly on the ability of leaders to explain their programs to university administrations in order to command the resources necessary to fulfill their mission. They also understand that universities tend to select leaders based on their vision, their ability to explain their goals, and their ability to garner resources.

Understanding the basic scope, nature, and key characteristics of information education programs is fundamental to these tasks.

As the most significant effort to define the nature of the library and information science fields for the future, the iSchools are a logical focus for study. The problem is how to discern the differences, if any, between those programs that identify themselves as iSchools and those that do not. A further complication is that a small number of iSchools, such as Georgia Tech and Penn State, have their origins in engineering schools and computer science departments. These programs have no prior relationship with LIS programs. How do the profiles of these programs differ from those of other iSchools?

A major difficulty in approaching research on these questions is the many different administrative constructs out of which universities in North America host LIS and other information education programs. Some programs are separate colleges within their university; some are integral units of other colleges, like education or communications, while still others are independent schools or units below the level of a college within their university. Aversa (2011) put the structural complexity of LIS programs in perspective when she spoke at the January 2011 ALISE conference:

> The LIS education landscape was altered when a host of public universities brought on board full master's programs in the late 1960s and early 1970s. Just so we all have the same perspective, be aware that between 1965 and 1975, 17 of the 62 currently ALA accredited programs were accredited by ALA for the first time. That's greater than one fourth of the existing schools that have yet to celebrate the fortieth anniversaries of their founding. All but two of those programs reside in public institutions. Meanwhile, in the next decade, between 1985 and 1995, at least ten programs closed down – and all but two of them were in private universities. We should also understand that the private universities that still have programs have mainly kept them free standing: if I'm not mistaken, most of the private universities that host programs allowed them to remain autonomous colleges: Drexel, Catholic, Dominican, Simmons, Syracuse, and Pratt come to mind and there may be others. At the same time, a good proportion of the programs that are hosted in public institutions have become parts of larger

> units – Rutgers, Kentucky, Greensboro, South Carolina, Alabama, Kentucky, Buffalo, Arizona, and Tennessee, Hawaii – even UCLA – are now subunits of larger colleges, and there are a number of others as well. North Texas and FSU have joined the club as well. (p.2)

Aversa went on to assert that those LIS programs that are part of larger colleges enjoy several benefits that autonomous LIS programs do not. On the other hand, the only disadvantage of being part of a larger unit relates to being dependent on the level of trust between the LIS program head and the Dean of the larger unit.

All of the units, schools, or colleges in the U.S. and Canada that call themselves iSchools and offer LIS programs, voluntarily adhere to the ALA Standards for Accreditation for programs leading to the Master's degree (ALA Master's). These programs also contribute statistics to ALISE. Using data from these and other sources to define the population for this study, it may be possible to compare the respective programs on a number of quantitative and qualitative variables, in order to address several basic questions. For purposes of this study the population excludes LIS programs outside of North America as well as iSchools that do not offer LIS programs.

Another major difficulty in approaching this dissertation is the limited amount of prior research upon which to base this study. There is much commentary in the literature regarding the status and nature of LIS education, but the research identified consists primarily of studies that Taylor (1979) called the "how" rather than the "what" and "why" of aspects of the several LIS programs. Two studies by Burnett and Bonnici (2006) and Bonnici et al. (2009) address the evolution of the LIS field to the "iField." These are very relevant to the study proposed here. In sum, the problem I address here is what "is" the LIS field, and how do the iSchools differ from those that do not identify themselves as iSchools—if, indeed, they do differ

CHAPTER 2

PURPOSE AND OBJECTIVES

Purpose

Within the scope of the problem that has been identified, the purpose of this research is to establish whether there are characteristics of iSchools that are separate and distinct from those of other LIS programs (Other Schools), in order to determine the general range and scope of those differences, if any. In searching for these differences, I expect the study to shed light on the effect of size on the respective programs, as well as the influence of the faculty background and research. The general outcome of the research will be an average profile of certain characteristics of the ALA Master's program for both iSchools and Other Schools.

Objectives

This dissertation examines certain characteristics of LIS programs to determine if the programs of the iSchools offering the ALA-accredited Master's degree program (ALA Master's) are significantly different from those of other LIS programs (Other Schools) that offer the same degree. These characteristics are the size of the faculty and student enrollment, the types of curricula, and the financial resources of such programs. The population for this study is the 17 iSchools and 36 other LIS programs that offer the ALA Master's (Other Schools) as of February 2010. This population excludes all iSchools outside of North America; all iSchools that did not originate from LIS programs; all programs for which the primary language of instruction is not English; and all programs that have been accredited for less than 15 years. This latter criterion ensures

a certain level of maturity defined as the successful completion of at least two comprehensive accreditation reviews, which are conducted every seven years.

Research Questions

The study is based on data representing the academic years 2005–2006 to 2009–2010. Specific objectives to be pursued during the course of this study include, but are not limited to, addressing a set of research questions.

RQ 1. How does the size of the FTE faculty in the ALA Master's program of the iSchools compare with the size of the FTE faculty of the Other Schools?

RQ 2. How does the number of students in the ALA Master's programs in the iSchools compare with the number of students of the Other Schools?

RQ 3. How does the proportion of ALA Master's students in the total enrollment of the iSchools compare to the proportion of ALA Master's students in the total enrollment of Other Schools?

RQ 4. How does the amount of total funding of the iSchools differ from the amount of total funding in the Other Schools?

RQ 5. How does the amount of external funding of the iSchools differ from the amount of external funding in the Other Schools?

RQ 6. How do the types of curricular offerings under the ALA Master's program of the iSchools differ from the types of curricular offerings of the ALA Master's program in the Other Schools?

RQ 7. How do the number and types of curricular offerings of the iSchools in addition to the ALA Master's program differ from those of the Other Schools?

RQ 8. How do the types of research degrees held by full-time faculty teaching in the ALA Master's programs at iSchools differ from those of full-time faculty in the Other Schools?

RQ 9. For full-time faculty teaching in the ALA Master's program, how does the quantity of research produced in 2005–2009 by iSchools faculty differ from that of similar faculty in the Other Schools?

RQ 10. For full-time faculty teaching in the ALA Master's program, how does the number of different journals represented in the research produced in 2005–2009 by iSchools' faculty differ from that of full-time faculty in the Other Schools?

RQ 11. For full-time faculty teaching in the ALA Master's programs, how does the level of inter-relatedness of iSchool faculty research in research journals that appeared in 2005–2009 differ from that of the Other Schools? Inter-relatedness here means journal cocitation, or instances in which two or more faculty members of the same faculty publish research in the same journal.

RQ 12. How do the aggregate characteristics identified in this study differ between the iSchools and the Other Schools?

The original plan for this dissertation was to produce a solely quantitative study. However, preliminary research revealed that the several variables included in the ALISE statistics showed multicollinearity in that they appear to measure similar phenomena. Therefore, a subset of the quantitative data for 2010 originally proposed, that appears in an ALA Committee on Accreditation *Prism* report (ALA-COA Trends Data), was used instead. The 2010 ALA-COA Trends Data is retrievable from

www.ala.org/accreditedprograms/reportsandpublications/prismreports. It is a subset of the *2010 ALISE Library and Information Science Education Statistical Report*. (ALISE, 2010) Therefore, the ALA-COA Trends Data are called ALISE Statistics except when referring to the actual tables.

The dissertation collects and analyzes multiple sources of quantitative and qualitative data in the following manner. For each of the data sets there is a *null* hypothesis or hypotheses. For the analysis of the statistical data a number of hypotheses apply.

Hypotheses

Hypothesis 1*:* There is no difference in the size of the FTE faculty teaching in the ALA Master's program between the iSchools and the Other Schools. I compiled data to address this hypothesis from the ALA-COA Trends Data column D.

Hypothesis 2: There is no difference in the number of FTE ALA Master's students between the iSchools and the Other Schools. I compiled data to address this hypothesis from the ALA-COA Trends Data column K.

Hypothesis 3: There is no difference in the percentage of FTE ALA Master's students compared to the total FTE student enrollment in the school or college between the iSchools and the Other Schools. I compiled data to address this hypothesis from the ALA-COA Trends Data column N.

Hypothesis 4: There is no difference in the total funding for the iSchools compared to the total funding of the Other Schools. I compiled data to address this hypothesis from the ALA-COA Trends Data column R.

Hypothesis 5: There is no difference in the amount of external funding of the iSchools compared to the amount of external funding of the Other Schools. I compiled data to address this hypothesis from the ALA-COA Trends Data column U. While external funding does not distinguish between research and other purposes, it is a gross indication of research and other activities beyond the normal courses of study.

To address the question of differences in the courses of study within the ALA Master's program of the iSchools and the Other Schools I employed the following *null* hypothesis.

Hypothesis 6*:* There is no difference in the types of courses offered in the ALA Master's degree programs of the iSchools compared to those of the Other Schools.
I compiled data related to this hypothesis from the web sites of the iSchools and the Other Schools detailing the courses offered during the 2009–2010 academic year that can be taken to fulfill the requirements of the ALA Master's program. These data fall into the following categories.

- History, Issues, and Policy
- General Management
- Methods and Techniques
- Youth Literature and Services
- Library Services
- Information Services
- Information Organization
- Information Management

Since the schools and colleges that offer the ALA Master's degree program also offer other degree and certificate programs, I made an attempt to discern differences in the types of other curricular offerings between the iSchools and the Other Schools. The following *null* hypothesis addresses this question:

Hypothesis 7: There is no difference in the number and types of additional curricular offerings in the ALA Master's programs of the iSchools compared to the Other Schools. I compiled data to address this hypothesis from the *2010 ALISE Library and Information Science Education Statistical Report*, Tables III-7–10 tabulating MIS programs, MA programs, Ph.D. programs, joint degree and certificate programs offered by the iSchools and the Other Schools. The fact that several ALA Master's programs accredit an MA degree instead of an MS degree is noted and does not appear to skew the results.

In order to analyze the question of faculty diversity I posit the following *null* hypothesis.

Hypothesis 8: There is no difference in the types of research or terminal degrees in the background of the full-time professorial faculty teaching in the ALA Master's program of the iSchools compared to similar faculty of the Other Schools.

I compiled data to address this hypothesis from the websites of the iSchools and the Other Schools identifying the full-time professorial faculty teaching in the ALA Master's program as of the 2009–2010 academic year. I determined the research or terminal degree held by each faculty member, if any, using the institutional websites, faculty *vitae,* and direct communication. These data fall into five categories: Education, LIS, Arts and

Humanities, Social Sciences and STEM (science, technology, engineering and mathematics).

I addressed questions regarding the diversity of faculty research using hypotheses nine through eleven.

Hypothesis 9: There is no difference between iSchools and Other Schools with respect to the quantity of research published 2005–2009 by the full-time professorial faculty teaching in the ALA Master's program of the two respective groups. I compiled data to address this hypothesis from the *SCOPUS* database using an author search to identify articles by each full-time professorial faculty member teaching in the ALA Master's program that appeared in a refereed journal in the years 2005–2009.

Hypothesis 10: There is no difference between iSchools and Other Schools with respect to the number of different journals in which the research published between 2005 and 2009 of full-time professorial faculty teaching in the ALA Master's program appeared.

I compiled data to address this hypothesis from the *SCOPUS* database using an author search to identify articles by each full-time professorial faculty member teaching in the ALA Master's program that appeared in a refereed journal in the years 2005–2009.

Hypothesis 11: There is no difference between iSchools and Other Schools with respect to the number of journal cocitations in journals in which the research of full-time professorial level faculty teaching in the ALA Master's program appeared between 2005 and 2009.

I compiled data to address this hypothesis from the *SCOPUS* database using an author search to identify articles by each full-time professorial faculty member teaching

in the ALA Master's program that appeared in a refereed journal in the years 2005–2009. Each of the journals in which these articles appeared is compared with each journal in which other members of the same faculty published articles during 2005–2009 to determine the number of journal cocitations that occurred.

Hypothesis 12*:* There is no difference between the trait profiles of the iSchools compared to the trait profiles of the Other Schools.

I compiled data to address this hypothesis from the full master file of 32 variables and subvariables that comprise all of the data for this study

Problem Significance

The level of tension on the campuses of many colleges and universities about the "ownership" of information programs and the boundaries of those programs is growing. Schools and departments as wide-ranging as engineering, computer science, communications, and LIS lay claim to some or all of these emerging research and study areas that are at times labeled "informatics." In general, informatics refers to human-computer interactions in the processing or management of information, especially as informatics is related to specific disciplinary fields like medical informatics, bioinformatics, archives informatics, business informatics, and education informatics.

In the near future, understanding the relationship between iSchools and other LIS programs, and iSchools and other programs that focus on information will be essential for maintaining and improving the standing of such programs within the university. Shera (1972) and, to a greater extent, Taylor (1979) sought to define the LIS field independently of its institutional origins—libraries.

In this context, identity of a specific field becomes critical for establishing primacy over emerging programs of study and research. Moreover, in this context, as Wiggins & Sawyer (2012) state:

> Disciplines matter because they create and legitimate boundaries among scholars and scientists. The differentiating force of these boundaries are (*sic)* reflected in the kinds of questions being asked by scholars, the ways in which scholars seek and represent evidence, claims, and insights; and the nature of what is knowledge. (p.10)

Within larger schools of education or communications there will be increasing pressures to define the boundaries of the iField. These boundaries may or may not blur with the increasing development of interdisciplinary degree programs within the larger units since faculties will need to agree on the content of such programs. Finally, the iSchools movement will need to develop a clearer understanding of its origins and present status in order to plan confidently for its future.

In the effort to carve out a distinct intellectual space for iSchools and Other Schools among the network of academic disciplines, the research presented here makes a significant contribution toward the challenge of describing iSchools and Other Schools more precisely. To understand whether iSchools are different from Other Schools one must ask why they are different or why they are not different. And further, does any difference have an impact on quality?

This research contributes to the literature describing the LIS field in the first decade of the 21st century. Its findings provide baseline descriptions of certain characteristics of LIS programs. Hayes (1983), Budd (2000), Chen (2008), Wiggins & Sawyer (2012), and Bar-Ilan (2010) looked solely at certain characteristics of iSchool faculty research while Burnett and Bonnici looked at the development of the iSchools within the broader LIS field. The research presented here is a more comprehensive look

at basic descriptive characteristics of LIS programs. It creates a substantial dataset that can be used as a platform for further research.

As noted above, this research assumes that the data compiled are a reasonable reflection of the characteristics being studied. It also assumes that the methods selected for the analysis of the data are appropriate to the questions being raised. This research does not address questions of assessment or performance.

Research Perspectives and Variables

The overall aim of this research is to produce a profile of the average iSchool and the average Other School, based on certain essential characteristics of their ALA Master's programs. The most likely research perspectives for exploration in this study are the faculty, the curriculum, the students, and the general statistical profile of the relevant programs. Although looking at the characteristics of students enrolled in the relevant programs would seem a promising approach, such data are not currently available. Further, the ALISE statistical data indicate that the state and regional geographical origins of the largely self-selected student bodies are the most likely defining characteristic. According to the ALISE statistics (2010) an average of 75% of the students enrolled in LIS programs originate from the local state or province. In addition, privacy laws impede access to student data. Therefore, the lack of baseline data from a source from which all students are selected appears to limit student data as a variable in the study proposed here.

It is generally accepted that the background and experience of each faculty member, plus the specific courses in which these faculty interact with students contribute significantly to student development beyond the knowledge and skills students bring to

the program. Records of the academic preparation of faculty and their respective research activities are widely reported. Several research articles document the research backgrounds and research productivity of iSchool faculty. However, none of these articles addresses the relationship of iSchool faculty research productivity and research backgrounds to the broader LIS programs. (Bar-Ilan, 2010), (Chen, 2010), (Wiggins & Sawyer, 2012).

Most information education programs make their course offerings available for review by prospective students and others. In addition, each program leading to the ALA Master's degree undergoes a comprehensive review every seven years. In the course of that review extensive data on the faculty, students, and curriculum of the programs are well documented. Specific variables include the summary statistical profiles maintained by ALISE. These include, but are not limited to, faculty and student totals, types of degree programs offered, and the amount of institutional and external funding each program attracts.

Research questions addressed in this dissertation include differences, if any, in the statistical profile of the programs under study; the differences, if any, in the preparation of faculty and the characteristics of their research activities; and the differences, if any, in the courses of study offered by the information education programs included in this study. Data to address these questions comprise the major variables of this study.

Research Model

Although this is an exploratory empirical study, the theoretical framework that guides its development is grounded by the concept of a profile of certain essential characteristics of an ALA Master's program. The use of a substantial body of qualitative

and quantitative data from multiple sources, and the exercise of inductive reasoning, may make it possible to define an average profile of the characteristics of both types of programs, and thus, gain a better understanding of the phenomena under study. The use of multiple data sources will ensure an accurate representation of the target programs. However, some caution is well advised as Charmaz (2006) noted, "Methods *are* merely tools. However, some tools are more useful than others. When combined with insight and industry, grounded theory methods offer sharp tools for generating, mining and making sense of data." (p.15) Although the theoretical framework for this dissertation is not based on grounded theory, this caution is well-taken.

CHAPTER 3

LITERATURE REVIEW

Previous Research

As noted earlier, only a limited amount of research has focused on the iSchools and their relationship with other LIS programs. Several articles have dealt with characteristics of iSchools that are directly related to the proposed study. Chen (2008) looked at the question of identity by trying to distinguish what makes iSchools different. Compiling bibliographic data drawn from the *Web of Science,* Chen analyzed scientific articles authored by iSchool faculty between 1998 and 2007. Nineteen iSchools were included in a thematic map developed to show interrelationships of research themes among iSchool faculty. Author-concepts depicting what authors publish, and citation maps showing what literature authors think is important were produced. This research used *CiteSpace,* a tool for analyzing and visualizing research literature.

Focusing more closely on six iSchools, Chen identified significant author-concept groups. This is an important addition to the literature, illustrating effective tools for exploring characteristics of the research produced by iSchools faculty. Although Chen pointed out that these methods can be employed in analyzing other programs, this study is limited to iSchools. It also focused only upon the research published by iSchool faculty and did not address other characteristics of the programs.

Wiggins & Sawyer (2012) explored intellectual diversity and faculty composition by looking at the academic preparation of iSchools faculty. Choosing full-time iSchools faculty participating in the iCaucus as of 2009, the authors compiled data on the disciplines in which doctorates were held. Sorting the disciplines into nine broad

categories, Wiggins & Sawyer measured the level of interdisciplinary focus of the individual iSchools, and changes in the composition of the faculties between 2007 and 2009. Here again the study was limited to the members of the iCaucus. However, the classification of disciplines in which faculty hold doctorates is similar to this dissertation. The categories chosen are finer-grained than those presented in this dissertation, but it tends to validate the concept of sorting the disciplines into broad categories. The authors recognized the limitations of using the doctoral degree as a proxy for the intellectual field a faculty member occupies. That is, a faculty member may have received a doctoral degree in one field; do research in another; and teach in a department in yet another field, all of which complicates the classification of the intellectual field the individual occupies. In addition, this research used only one factor to determine intellectual diversity.

Thompson (2008) used six levels of abstraction to define the curricular depth of information science. He postulated six subdisciplines of information science: librarianship, information organization, information management, information systems, telecommunications, and information security. His is a theoretical argument, since it does not involve any data collection or analysis of actual programs. The subdisciplines are not a generic profile of the field, but rather a reflection of the organization of one iSchool. But the subdisciplines chosen do raise the question of what may be a generic profile of the curricular offerings of an LIS program.

The studies that relate most closely to this dissertation are Burnett & Bonnici (2006) and Bonnici et al. (2009). These coauthors based their studies on a theoretical model of the development of disciplines, in order to determine the current stage of development of library and information science as it moves towards the emerging

"iField." In Burnett and Bonnici (2006) the authors traced the similar but different trajectories of librarianship as a profession, and information technology education (ITE), which has moved away from accreditation toward an abstract disciplinary focus. In recent years, the histories have converged in a contest of the disciplinary boundaries to determine who will control certain disciplinary offerings within the university. Burnett and Bonnici indicated that information studies, which emerged from librarianship, is caught between demands for a greater emphasis on the abstract knowledge of a discipline, and the demand for professionalism required by the accreditation process of the ALA.

This study provides the historical background to the fracture that emerged early in the new century between the iSchools and the other ALA-accredited Master's degree programs. In the second study by Bonnici et al., the authors used Abbott's model drawn directly from his *Chaos of Disciplines* (2001), in an attempt to determine where the iSchools and other LIS programs lie along a spectrum from librarianship toward an "iField." Using multiple data sources—institutional websites, email communications, courses of study, etc.—they attempted to discern whether the development of the iSchools is an effort to split from LIS programs; a conflict in their respective approaches to LIS education; or the transition into a new "iField."

Their study documented the nature of the disruption in the LIS and iSchools programs as they compete for exclusive claims on some portion of the information education territory. Since it used only a random sample of 14 LIS programs, in addition to the iSchools, it did not establish a set of baseline characteristics for the entire LIS field. However, it did establish a sound theoretical basis for exploring the development of the

iField over time. Another distinction between Bonnici et al. and this dissertation is that the former used a mix of actual and projected characteristics such as faculty degrees as well as ads for prospective faculty. This dissertation attempts to capture a set of characteristics based on facts that includes both the iSchools and the other LIS programs at one point in time.

A more recent article by Dillon (2012) is a very thoughtful piece that focused on identifying the domain of iSchools. Reverting to Shera, Dillon stated clearly the relationship of information, people, and technology so often mentioned in the statements about iSchools.

Other Relevant Literature

The literature generally relevant to this study falls into five categories. First, although this is not an historical study, a certain amount of historical background is necessary to set the study in context of the questions raised. The second category is the documentation of the iSchool movement from the iCaucus to the iConference. The literature related to librarianship, its current status, and condition is the third category, and the fourth is the analyses, critiques, and projections of LIS and the iSchools. The fifth, and final, category is the methods and data sources.

I identified dozens of articles that bear on some aspect of the proposed research. The question of scope is of paramount consideration; should the origins of the iSchools movement be traced as far back as Shera and Taylor?

Two themes in the literature have been instructive in formulating the study proposed here. The first, describing the origins of the iSchool movement and its objectives, is drawn primarily from the iConference programs and presentations. In

partial reaction to the iSchool movement, the second theme draws from concern that the fundamentals of librarianship were being subordinated in LIS programs to information science or information studies. This perceived subordination was the unintended consequence of attempts by LIS programs to address changes in the current social and technological environments.

In 1973, Bell posited the coming of a post-industrial society that was dependent not upon extractive industries, but upon services to drive the economy. Machlup (1962) put these developments in the context of changes in the production and distribution of knowledge at the mid-twentieth century mark. Shera (1972) provided the background for understanding internal inconsistencies within the LIS community in his seminal work on the foundations of library education, while Bobinski (2007) surveyed the sixty years of his career in library education.

In another survey of library education, Swigger (2010) assessed the development of the ALA-accredited degree programs from the adoption of new standards in 1951 to the revised standards of 2008. Although this work did not explicitly address the iSchools movement, it did highlight most of the issues that led up to it. Swigger captured the dilemma facing the LIS field: namely, that the LIS programs have the market of employers, but the information science advocates have the momentum. How the iSchools address this dilemma was Swigger's major question. Ostlier, et al. (1995) chronicled the closing of a number of LIS programs in the 1980s and 1990s and suggested several rationales for these events. Stieg (1992) looked specifically at changes in the LIS field and noted the paramount importance of good faculty. Saracevic (2001) surveyed the development of information science, and Gorman (2003) extolled some of

the values and traditions that have defined LIS. Lynch (2008) questioned new models, new curricula, and whether the LIS programs see a partnership between professional education and practice. Cronin (2009) expressed considerable skepticism about the iSchool movement while attending the 2009 iConference held in Chapel Hill confirming an identity crisis within the iField. He also looked at domain identity and coherence in North American information studies education in a separate article two years earlier (Cronin, 2007). *The ALA Yearbook* (1976–1985), under the editorship of Wedgeworth, chronicles the history of the LIS field from 1976 until the mid-1980's, specifically the impact of new information technologies.

The picture emerges here of a field in search of itself, being propelled by the rapid introduction of new technologies, and led by a formidable group of education programs with a certain degree of momentum. The field was in a period of transition, and that transition laid the basis for the iSchool movement.

Larsen (2008) described the origins of the iSchool movement from the early meetings of a few deans to its current membership organization and annual conference. Harmon (2006) provided a succinct overview and analysis of the first iConference with its diverse disciplines competing for a place in the iSchool curriculum. Olson & Grudin (2009) described the extraordinary growth of the iSchools movement over a 15-year period, praising the multiplicity of disciplines represented, noting favorably the convergence of several programs with origins in computer science and engineering, while questioning whether the movement was sustainable. Writing about that first iConference Thomas et al. (2006) noted the disparate disciplines represented and offered several reasons why they had converged to form an interdisciplinary approach to information

education. Looking at the first iConference in retrospect, Harmon & Debons (2006) compared the event to a series of NATO Advanced Institutes that struggled with a similar set of issues related to information, and noted that other iConference participants would have their own personalized historical precedents.

At the first iConference, King (2006) questioned the importance of identity in the field, continuing a long history of questions related to defining the field. Thompson (2008) attempted to analyze the scope and breadth of the iSchools curricula and to determine the impact of information technology on the LIS field. Dillon & Rice-Lively (2006) brought a practical perspective to summarizing the conference, wondering if the participants could give an adequate explanation of the event that would be understandable to a taxi-driver. Chen drew upon data documenting research from the *Web of Science* to construct thematic maps of who is doing what at the several iSchools.

As stated above, perhaps the most interesting study of the the transition of the LIS field to the "iField," was produced by Bonnici et al. Using a theory of the development of disciplines by Abbott in the *Chaos of Disciplines* (2001), Burnett & Bonnici (2006) created a framework within which to assess change in the LIS programs. Bonnici et al. (2009) then attempted to assess movement of the LIS toward an "iField." Using content analysis and word frequency counts they compared differences between iSchools and other LIS programs. They documented microcosms within the "IField" that continue to jostle for positions of leadership. They also documented changes over time that represented not substantive change, but the absorption of old terminologies and understandings into new language expressing similar ideas. Within the relevant literature their research has the closest relationship to this dissertation.

Early in the new millennium, a series of articles began to appear expressing concerns, hopes, ambitions, threats, and uncertainties about the LIS programs. White (2000) compiled a collection of publications and speeches, primarily from 1995–2000, noting changes and posing questions as the LIS programs entered the new millennium. Weech & Pluzhenskaia (2006) documented the mutidisciplinarity of LIS faculty in response to the iSchools claims of diversity. Leonhardt (2006) outlined the role of the ALA in library education and shared his thoughts on allegations about the inadequacies of the accreditation process.

Gorman brought the conflict about the future of LIS education to a head in several provocative publications culminating with his ALA presidency in 2005–2006. Gorman (2005) cited the growing gap between what was being taught in the LIS programs and what library employers expected of new employees; and in a second article urged the ALA to use its influence in the accreditation process to build a stronger connection between education and practice. In another publication (2005, November), he had surveyed the legacy of libraries and librarianship in the face of technological change and called for a better balance between librarianship and information science. He attempted to define "library studies" as distinct from "information studies" using the ALA Standards for Accreditation and other ALA policy documents. Dillon & Norris (2005) challenged Gorman's view of the issues rejecting certain claims as unsupported by the facts and suggesting that Gorman's sense of a crisis was merely recognizing a moment of change in the field.

Estabrook (2005) responded to Dillon, pointing out some evidence of crisis. Intner (2004) acknowledged that changes had occurred over a 30-year period that had

altered libraries and librarians significantly and that LIS faculties were struggling to understand the implications for the future. Black (2006) looked at the challenges confronting LIS programs and questioned whether they were "fit for purpose." Haycock & Sheldon (2008) illustrated these perceptions of challenge and opportunity in assessing opportunities for graduates of LIS programs. Kimmel (2000) judged that, despite the issues and tensions that divide the LIS programs, these faculties will continue to exert significant influence on the direction of the field.

As early as 1979, Taylor had challenged the LIS field to recognize that the talents and skills of its researchers and practitioners were too important to society to be tied to the fate of a single institution—libraries. Recent studies have been more analytical and less anecdotal in their approach. Marty & Twidale (2011) documented their experience in developing an information education curriculum that transcends the traditional boundaries of libraries, archives, and museums.

In one of the very few studies of students in the iSchool programs, Alman et al. (2012) looked at student learning, specifically cohort learning, as a key factor in student satisfaction.

Rioux (2010) introduced theory in suggesting that a social justice approach could be integrated into LIS programs to express certain values traditionally important to LIS programs. Mackenzie & Smith (2009) researched the extent to which management is systematically a focus in preparing library and information service directors. Dearstyne (2002) assessed the needs of records and information management professionals in an intensive information technology environment and examined how LIS programs could

meet these needs. Stanton et al. (2011) analyzed the needs of escience professionals and how these needs might fit within the LIS curriculum.

In terms of research methods, Kaplan (1964) gave support to the systematic collection of acts of human behavior in search of meaning. Cresswell (2009) outlines a general approach to the research process and all of its requirements. McCain (1991) and Marion (2005) used journal cocitation results extensively to define research subfields and internal structures in research areas. The ALISE statistics provide documentation for the size and scope of the programs that are the focus of this dissertation. Of great interest to this dissertation is the analysis Mulvaney (1992) applied to certain characteristics of the iSchools. He looked at 57 ALA-accredited Master's degree programs in order to determine if certain characteristics could be used to predict rankings of quality based on opinion surveys.

Although assessments of quality is not of interest in this study, Mulvaney's use of discriminant function analysis appeared to be helpful in predicting membership in the iCaucus. However, the requirements for a sample to which discriminant function analysis may be applied rendered it less useful for the broad-based sources of data used in this dissertation. Interest in the methodologies for ranking academic programs in the LIS field traditionally followed those of other academic programs. That is, perceptions of quality by recognized leaders in the field were compiled and tabulated. Hayes (1983) raised the possibility of using citation statistics as a measure of faculty research productivity. Cronin & Overfeldt (1994) analyzed 10 years of research productivity at Indiana, using three different methods of citation statistics. Cox et al. (2012) surveyed

the history of assessment of LIS and iSchools, providing some insight into the university environment that makes assessment so important to these programs.

This and other bibliometric research raises serious questions about the validity of perception studies of faculty performance. Budd (2000) presented a thorough overview of several studies of faculty assessment and updated two of his previous surveys. Cronin & Meho (2006) used and explained a new bibliometric measure—the h-index—as it applied to the information science literature. While the h-index corresponds positively with citation counts, it offers additional discriminatory power toward measuring the influence of a given paper or set of papers. Egghe (2006) introduced a further modification of the h-index, called a g-index, that appears to improve the measure of influence by taking into consideration the evolving impact of a paper or set of papers as they are cited in the future.

More recently, Wiggins & Sawyer (2012) studied iSchool faculty research backgrounds and Bar-Ilan (2010) explored measuring the impact of iSchool faculty research in assessing their quality. However, this latter study used the *Web of Science* "affiliation" search to identify the articles included in the study. Bar-Ilan then admitted that the accuracy of the research attributed to specific faculties is questionable. Wiggins & Sawyer's (2010) study is elegant and well crafted. In describing the range and scope of iSchool faculty research backgrounds, they used a more precise disciplinary construct than is deemed necessary in the research presented here.

Clearly, statistics related to the relative size of ALA Master's programs; analysis of the research backgrounds and research productivity of faculty teaching in ALA Master's programs; and the analysis of the types of courses taught in the ALA Master's

programs, represent major variables, the analysis of which may contribute heavily to a better understanding of the programs under study.

As noted above, this dissertation does not address the question of the relative quality of the iSchools and the Other Schools. Discerning differences between them will inevitably raise the question of whether there are qualitative aspects of these differences.

CHAPTER 4

METHODOLOGY FOR DATA COMPILATION

Preliminary Research

In order to differentiate among the several LIS programs, I decided that the most likely research design would include a mix of quantitative and qualitative methods, applied to data collected from various research databases, the ALISE annual statistical surveys, plus additional data compiled from the websites of the respective programs. I applied other analytical methods to the resulting raw data, and drew samples of data from the Elsevier database SCOPUS to illustrate the research productivity of LIS faculty between 2005–2006 and 2009–2010. I drew samples of curricular data from websites to illustrate typical courses offered in the ALA Master's programs.

An initial test of data drawn from the ALISE statistics proved problematical due to a serious overlap of the variables selected. Instead, I used a subset of these data drawn from the ALISE statistics, that is currently used by the ALA Committee on Accreditation (COA) to monitor trends, in order to measure the relative size of the programs under study.

Approximately every seven years, the COA conducts a comprehensive review of each of its accredited programs. I obtained permission from all the programs to examine these confidential files for purposes of this study. Between 2005 and 2009, the period under study, more than 30 such reviews took place. There is a fair representation of both iSchools and other programs. However, using the data from these files would represent only a sample of the programs. In addition, most files would represent a different year of data. Extrapolations from such an unscientific sample of data would pose some

difficulties, as well as extensive limitations to any inferences made. Therefore, I did not use these data for this dissertation.

Faculty background and research data drawn from the SCOPUS database proved to be a rich potential source for analysis. In addition, the websites of the respective programs in this study provided information on the fields in which faculty hold terminal research degrees. Five groups of disciplines comprise the data collected during the preliminary research phase on research degrees, i.e., doctoral degrees. Since a number of LIS programs are closely associated with Schools or Departments of Education and many faculty in LIS programs hold degrees from LIS programs, I identified these two fields separately. Other groupings are Arts and Humanities, Social Sciences, and Science, Technology, Engineering, and Mathematics (STEM). Preliminary research revealed the feasibility of using these data to determine the relative diversity of faculty research backgrounds between iSchools and Other Schools.

Initially, I thought that an "affiliation" search of the SCOPUS database would yield evidence of the research production of the entire faculty of a given program for the period under consideration. However, these results proved unreliable in terms of the accuracy of faculty identified with the LIS programs. Therefore, I determined that an author search in SCOPUS of the research productivity of each individual identified as a full-time professorial faculty member of an ALA Master's program yielded a more reliable result. Using the SCOPUS database for the period 2005–2009, in the preliminary research phase, I compiled the number of papers that appeared in peer-reviewed journals, the number of journals represented, and the level of interdisciplinary research within each faculty as measured by journal cocitations for five iSchools and five Other Schools.

The use of journal cocitation data has been well researched by McCain (1991) and others to define research fields and relatedness among groups of researchers. While it does not establish the exact one-to-one relationship of author citation data, if one assumes that a journal represents a research area defined by its editors, contributors, and readers, it seems logical that the overlap in contributions to specific journals would be an indication of how interconnected the research areas are in which these faculty publish. Heavy journal cocitation levels would also seem to indicate a certain amount of collaborative research. My analysis of journal cocitation occurrences in the preliminary research yielded significant potential results.

Preliminary research on the curricular data proved somewhat problematical. Using information gathered from the websites of a number of iSchools and Other Schools in February 2010, I identified the courses included in the ALA Master's program. I then sorted these data into the following course types or categories:

- History, Issues and Policies
- General Management (including finance and personnel)
- Methods and Techniques
- Youth Literature and Services
- Library Services
- Information Services
- Information Organization
- Information Management

My selection of these categories was influenced by Thompson (2008) in his article, "I-School Curricula: How Wide? How Deep?" The intended purpose of these

data was to discern significant differences in the curricula of the ALA Master's programs of the iSchools compared to the Other Schools. I was not successful in my efforts to obtain expert assessments from the ALA-COA of the credibility of these categories, as representing a reasonable outline of a generic curriculum. Application of these categories to the actual curricula in the preliminary research raised the questions of whether they are reasonable representations of a generic program. The categories were not mutually exclusive, resulting in some overlap.

However, I did not consider these complexities serious enough to abandon this approach. In rethinking the idea of a comparison of curricula, it became clear that what is most important to this study is the creation of a reasonably generic profile of the curricula, especially the representation of courses that can be identified with "librarianship" as distinct from "information" courses. This distinction mirrors Taylor's efforts to pursue professionalism by distancing the LIS fields from their institutional origins. This distinction is also noted in the discussion of the research results.

Data Compilation

Using methods developed during the preliminary research phase, I compiled the data for this dissertation from several sources. The population from which the data set was compiled includes 17 iSchools and 36 Other Schools. All of these schools offer the ALA Master's program. Excluded from this population are the iSchools located outside of North America; those originating from computer science and engineering programs; LIS programs that are less than 15 years old; and those that do not use English as the primary language of instruction. I introduced the 15-year minimum to eliminate those programs that had not experienced at least two comprehensive review cycles of the COA.

This ensures that all of the programs selected for this study have attained a certain level of maturity and stability. The language exclusion was intended to avoid ambiguities in the analysis of the curricular data.

For the programs in the population, I extracted statistical data on five variables from the ALISE statistics for 2010. See Tables 1 and 2 below for the raw statistical data for iSchools on the following variables: Total FTE faculty; Total FTE ALA Master's Students; Percentage of ALA Master's students to All Students; Total School Income; and External Income (grants, gifts, etc.) I selected these variables in order to discern the comparative size of the ALA Master's programs in the iSchools compared to those in the Other Schools. ID numbers refer to the list of schools on p. viii-xi.

Table 1.

ALISE Statistics for iSchools (2010)

ID#	FTE Faculty	FTE Students	% ALA Students	Income Totals	External Income
1	18.33	154	68	1587333	0
2	13.94	135	81	3628865	1526473
3	49.08	481	54	16339132	4675049
4	32	304	50	8332771	2243941
5	37.5	414	86	10645840	4221774
6	50.5	498	94	9592458	676325
7	12.75	157	100	1564598	101000
8	36.6	290	73	4558588	2016123
9	32.51	363	88	18493938	5469334
10	41.5	296	83	9906061	5496848
11	28.8	503	86	9527136	6552976
12	37.5	261	47	15633902	6314340
13	34.75	313	55	5864358	1632158
14	57	117	11	28856482	2945502
15	24.8	250	46	5281757	1236655
16	29	377	77	7731147	431787
17	49.67	282	48	16617517	11985299

Table 2.

ALISE Statistics for Other Schools (2010)

ID #	FTE Faculty	FTE Students	% All Students	Income Total	External Income
18	20.5	202	87	2238667	379489
19	9.2	85	91	1853646	359631
20	13.25	191	98	3844142	2221614
21	11.56	227	96	3065001	2021111
22	23.75	470	97	3597936	23
23	19.26	284	90	2781138	90000
24	10.5	121	88	1027992	115150
25	12	161	73	1884189	451271
26	12.75	207	87	1900247	499947
27	15.48	236	75	1671553	130296
28	13.31	120	54	1806641	712061
29	18	286	99	2814209	323575
30	9.33	100	95	1121851	25003
31	7.66	86	95	2672311	1316000
32	15	261	100	1899172	100000
33	13	225	95	1732814	127513
34	15.4	171	64	3501481	1992370
35	15	166	95	2295554	599888
36	13.67	142	99	2130821	0
37	16.66	240	79	559660	0
38	9	110	49	1216064	172390
39	27.67	403	96	2743106	76682
40	9.33	84	96	1385653	279018
41	6.5	68	100	1804298	1021951
42	13.75	133	99	1455423	43508
43	18.3	303	100	1512020	0
44	42	1307	99	10789693	8533693
45	27.66	553	96	5169279	716491
46	21.5	286	90	3450850	1060425
47	15.66	140	48	1939642	0
48	9	83	64	1092789	230199
49	15.75	309	91	1605234	28016
50	17.5	418	97	3989292	160494
51	60.75	228	76	9209127	836471
52	17	173	94	3850296	1386053
53	34.5	291	62	5675992	4344462

In February 2010, I compiled data from the websites of each of the schools in the population. First, I downloaded the ALA Master's program curricula from each of the websites. From these files I sorted the courses listed in the curriculum for each ALA Master's program into the eight curricular categories: History, Issues, and Policy; General Management; Methods and Techniques; Youth Literature and Services; Library Services; Information Services; Information Organization; and Information Management.

The selection of these broad categories was influenced by Thompson (2008), and modified based on my experience as a member of the ALA Committee on Accreditation (COA), and the Accrediting Council of Journalism and Mass Communication (ACEJMC). I classified courses on the history of the book as History, Issues, and Policy. This category also includes information policy, copyright and intellectual property, as well as literacy. I classified courses on rare books and manuscripts under Library Services. Methods and Techniques includes research methods as well as teacher training courses. There is some ambiguity between the categories of Library Services and that of Information Services. Assuming that course titles and descriptions reflect the content, if the course title was cataloging and classification, I included it with Library Services. If the course title was the organization of information, I included it with Information Organization. Information systems and telecommunications courses were included under Information Management. While these categories are not definitive, they do give some indication of the distribution of courses within these programs. Tables 3 and 4 display the raw data for these variables. (Source: web sites listed on p. vi-vii)

Table 3.

iSchool Course Types (2010)

ID#	Hist Issues Policy	Gen Mgt	Method	Youth Lit	Lib Serv	Info Serv	Info Org	Info Mgt
1	12	4	5	15	30	4	6	13
2	13	1	8	6	18	15	11	8
3	4	0	7	6	20	6	5	9
4	5	5	2	3	3	9	4	15
5	23	5	3	10	24	12	14	21
6	13	2	3	3	28	10	10	12
7	5	1	2	6	11	7	1	5
8	8	2	6	6	15	15	7	6
9	24	5	4	1	7	23	11	29
10	11	3	6	5	16	10	6	12
11	6	2	4	5	21	10	10	15
12	4	1	1	9	23	2	6	7
13	4	3	3	4	12	11	5	8
14	6	6	1	2	9	8	4	27
15	19	3	8	6	23	12	7	18
16	21	3	2	4	30	5	10	15
17	9	4	8	4	19	11	9	9

Table 4.

Other Schools Course Types (2010)

ID#	Hist	GenMgt	Methods	YouthLit	LibServ	InfoServ	InfoOrg	InfoMgt
18	10	2	6	4	16	6	5	7
19	8	4	2	5	14	3	2	10
20	17	4	3	5	17	10	5	8
21	9	4	5	2	12	6	3	6
22	3	2	2	4	19	11	2	11
23	4	2	4	5	16	11	5	7
24	6	3	4	4	15	11	3	8
25	7	5	2	0	9	8	8	5
26	7	4	18	3	10	7	4	14
27	5	2	4	4	13	6	7	13
28	2	2	5	2	13	8	2	7
29	4	2	10	4	27	13	3	6
30	3	0	4	4	18	4	4	3
31	2	0	2	9	21	13	8	4
32	3	0	6	5	17	5	4	0
33	2	2	5	3	12	9	3	5
34	10	1	3	5	10	7	4	8
35	7	2	5	4	9	13	2	7
36	3	1	7	4	23	11	4	5
37	7	1	3	5	23	2	3	1
38	7	2	4	2	6	10	2	8
39	5	5	9	6	38	3	3	9
40	8	0	5	6	23	13	5	9
41	7	3	4	2	9	8	4	3
42	3	0	5	3	12	13	1	2
43	1	2	9	8	25	8	4	6
44	5	1	7	9	12	6	3	4
45	6	3	8	7	31	9	5	7
46	5	0	4	6	22	10	4	7
47	3	0	6	5	24	13	2	5
48	4	0	5	8	17	4	2	2
49	1	0	3	6	13	8	1	3
50	0	0	11	3	8	9	4	9
51	21	11	2	7	17	16	5	16
52	10	2	5	6	21	6	6	9
53	1	0	5	2	6	2	7	3

I collected additional data on curricular offerings beyond the ALA Master's program from the websites of the respective programs representing the existence of additional curricular choices. The raw data representing the following curricular choices are displayed in Tables 5 and 6: PhD programs; Certificate programs; Master of Information Science; Master of Science; Master of Arts; Undergraduate majors; Undergraduate minors; and Joint degrees. (Source: web sites listed on p. vi-vii)

Table 5.

iSchools Additional Curricular Choices (2010)

ID#	PhD	Cert	MIS	MS	MA	U Major	U Minor	JtDegree
1	1	1	0	0	2	0	0	4
2	1	0	1	0	1	0	0	2
3	1	2	1	1	0	0	0	0
4	1	5	0	0	0	1	1	1
5	2	3	0	1	0	0	1	1
6	1	5	1	0	0	0	0	18
7	1	1	0	0	1	0	0	0
8	1	0	0	0	0	0	0	1
9	1	0	0	0	0	0	0	5
10	1	0	0	0	0	1	1	8
11	1	4	0	0	0	0	0	0
12	1	1	1	1	0	1	0	1
13	1	0	0	0	0	1	0	0
14	1	1	1	1	0	0	1	0
15	1	1	0	0	0	0	1	0
16	1	5	0	0	0	0	0	0
17	1	0	0	1	0	0	0	0

Table 6.

Other Schools Additional Curricular Choices (2010)

ID#	PhD	Cert	MIS	MS	MA	U Major	U Minor	JtDegree
18	1	0	0	0	1	0	0	0
19	0	0	0	0	0	0	0	0
20	1	1	0	0	1	0	0	1
21	1	3	0	0	0	1	0	2
22	0	1	0	0	0	0	0	3
23	1	2	0	0	0	0	0	1
24	0	2	0	0	0	0	0	4
25	1	2	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	2	0	0	0	1	0	2
28	0	2	0	0	0	1	0	2
29	0	1	0	0	0	0	0	3
30	0	1	0	0	0	0	0	3
31	0	1	0	0	0	0	0	2
32	0	2	0	0	0	0	0	0
33	0	1	0	0	0	0	0	2
34	0	0	0	0	0	0	1	0
35	1	1	0	0	0	1	1	2
36	0	1	0	0	0	0	0	6
37	0	1	0	0	0	1	1	1
38	0	0	0	0	0	0	0	3
39	1	2	0	0	1	0	0	4
40	0	1	0	0	0	0	0	6
41	0	3	0	0	0	0	0	3
42	0	0	0	0	0	0	0	2
43	0	3	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0
45	1	1	0	0	0	0	0	3
46	1	1	0	0	0	0	0	2
47	0	1	0	0	0	1	1	0
48	0	1	0	0	0	1	1	3
49	1	1	0	0	1	0	0	1
50	0	3	0	0	0	0	0	1
51	1	0	0	0	1	0	0	1
52	1	2	0	0	1	0	0	0
53	1	1	0	0	0	0	0	8

In addition, I collected data for each school from the ALISE Statistics on the number of courses offered online. I included these data to indicate the methods of course delivery at each school. The number of courses refers to those offered via some remote delivery technique. The raw data indicating the methods of course delivery are displayed in Tables 7 & 8. (Source: ALISE 2010 Statistical Report)

Table 7.

iSchool Courses Delivered Remotely (2010)

ID#	# of courses	# online
1	3	3
2	0	0
3	84	84
4	54	47
5	90	86
6	32	18
7	21	21
8	19	12
9	0	0
10	13	13
11	52	44
12	52	52
13	13	13
14	39	35
15	0	0
16	4	3

Table 8.

Other Schools Courses Delivered Remotely (2010)

ID#	# Courses	# Online
18	29	24
19	3	3
20	47	47
21	110	33
22	34	15
23	7	0
24	25	7
25	0	0
26	103	41
27	38	38
28	0	0
29	0	0
30	28	13
31	42	13
32	41	29
33	11	7
34	38	38
35	3	1
36	38	0
37	143	128
38	3	0
39	15	3
40	9	1
41	8	0
42	39	10
43	0	0
44	316	281
45	32	4
46	43	35
47	78	78
48	81	81
49	40	40
50	40	39
51	8	8
52	20	17
53	0	0

I downloaded lists of full-time faculty with professorial level appointments from web sites for each program in the population, documenting the faculty teaching in the ALA Master's program during the 2009–2010 academic year. I compiled information on the subject fields of the doctoral degrees earned by these faculty members from the websites of the programs where they teach, as well as from Google searches when the information was not available on the website. I sorted these data into five categories: Library and Information Science (LIS); Education (ED); Arts and Humanities (A-H); Social Sciences (SS); Science, Technology, Engineering and Mathematics (STEM). The raw data from these compilations appear in Tables 9 and 10. (Source: web sites listed on p. vi-vii)

Table 9.

iSchools Faculty Degrees (2010)

ID#	LIS	ED	A-H	SS	STEM
1	11	0	1	0	0
2	7	0	3	2	1
3	10	1	1	3	10
4	9	1	1	4	3
5	14	0	2	5	6
6	6	1	2	1	3
7	7	1	1	2	0
8	7	4	1	0	6
9	7	1	3	10	14
10	15	0	0	1	6
11	18	1	0	1	1
12	12	1	0	3	17
13	11	0	1	2	6
14	10	1	0	10	7
15	11	0	0	4	3
16	11	0	6	3	6
17	11	0	1	3	7

Table 10.

Other Schools Faculty Degrees (2010)

ID#	LIS	ED	A-H	SS	STEM
18	8	1	0	2	0
19	8	0	0	0	0
20	4	2	2	3	0
21	2	2	0	1	1
22	14	2	0	0	0
23	8	0	0	2	0
24	7	0	0	1	0
25	6	1	0	1	1
26	5	6	0	0	0
27	8	0	0	0	0
28	6	1	0	3	1
29	4	2	1	0	1
30	4	1	0	0	0
31	3	1	0	1	1
32	10	0	0	0	0
33	5	2	0	2	1
34	7	0	0	3	2
35	8	0	0	1	1
36	7	0	0	1	1
37	0	0	0	0	0
38	8	0	0	2	1
39	7	4	0	3	0
40	3	1	1	2	2
41	3	0	1	2	2
42	8	2	0	0	0
43	10	0	1	0	0
44	8	0	0	5	0
45	16	0	0	0	1
46	11	1	0	1	0
47	8	1	0	1	0
48	7	0	0	0	0
49	11	2	1	1	0
50	9	2	2	2	0
51	17	0	3	3	2
52	5	1	1	2	0
53	17	1	1	2	0

I compiled these data to discern the diversity of research backgrounds within a given faculty as well as between the two groups of programs. Education, and Library and Information Science, were singled out as doctoral programs that were likely to be sources of LIS faculty members.

I conducted a SCOPUS author search for each faculty member identified above to determine the number of research articles that were produced by each faculty member from the academic year 2005–2006 to 2009–2010. This period was chosen earlier as the base period for this research. In the beginning, I thought that access to confidential information from the ALA COA files, for which permission had been sought and obtained, would be required. Because the information necessary for this research was readily available from public sources, this information did not prove necessary. However, I did not change the base period.

I tabulated each of the articles produced and the journals in which they appeared. The data collected includes the total number of articles produced by each total faculty and the number of discrete journals in which the articles appeared. Using the Excel search function, I searched each occurrence of a journal among the articles produced by each faculty member against the research record of every other faculty member. This procedure ascertained the number of journal cocitations for the total faculty during the base period.

I included the total number of articles for each school's faculty, the number of distinct journals in which the articles appeared, and the number of journal cocitations within each faculty. I compiled these data to discern the diversity of faculty research. Assuming that a research journal represents a distinct research area defined by its editors,

authors, and readers, one may be able to discern the diversity of research produced by the several faculties. As noted above, McCain and others used journal cocitation analysis extensively to discern subdisciplines. However, this study does not attempt to identify subdisciplines within which the several faculties produce research. My intent was simply to discern the level of interconnection within a given faculty's research production.

Journal cocitations is an indicator of how closely knit or diverse a given faculty may be in terms of its research. The raw data from these compilations appear in Tables 11 and 12. (Source: SCOPUS and the web sites listed on p. vi-vii)

Table 11.

iSchools Faculty Research (2005–2009)

ID#	# Faculty	# Articles	# Journals	# Co-cites
1	12	39	25	20
2	13	42	25	39
3	25	275	159	1942
4	18	146	46	293
5	27	205	87	63
6	21	204	88	530
7	9	40	23	17
8	23	292	115	591
9	35	443	215	708
10	22	263	84	938
11	21	152	50	195
12	33	452	245	994
13	20	150	50	435
14	28	1130	510	382
15	18	64	37	34
16	26	167	79	217
17	22	294	118	926

Table 12.

Other Schools Faculty Research (2005–2009)

ID#	# Faculty	# Articles	# Journals	# Co-cites
18	11	30	17	3
19	8	50	26	16
20	11	38	23	23
21	6	0	0	0
22	16	173	105	39
23	12	29	20	29
24	10	65	18	86
25	10	88	40	93
26	11	60	37	6
27	8	21	13	10
28	11	45	22	34
29	8	4	4	0
30	5	2	2	0
31	6	5	4	0
32	10	60	32	7
33	10	29	21	6
34	12	231	81	328
35	10	31	17	0
36	9	26	15	32
37	12	12	6	0
38	11	35	23	13
39	14	51	9	57
40	9	76	16	6
41	8	20	17	0
42	10	12	7	11
43	11	15	12	0
44	13	17	11	0
45	17	87	21	436
46	13	19	11	27
47	10	2	2	0
48	7	3	3	0
49	15	25	16	3
50	15	24	20	0
51	25	134	79	99
52	9	61	26	97
53	21	88	34	193

Methodology of the Data Analysis

The problem identified for investigation in this dissertation as originally stated is what "is" the LIS field, and how the iSchools differ from those that do not identify themselves as iSchools—if, indeed, they do differ. Focusing on certain characteristics, this dissertation seeks to determine what differences distinguish iSchools from Other Schools. I compiled and loaded data previously defined into an Excel Master file of data sets. The Master file of data sets comprises data on 32 variables and subvariables. The data are both continuous and categorical. These data sets appear in the previous pages.

Given the broad based purpose of this dissertation, I considered a number of statistical tests for the analysis of the data compiled representing both qualitative and quantitative variables. The data for certain variables had to be modified. For example, the additional curricula offerings data included the full extent to which each school offered these programs. However, for the purpose of this analysis, I treated the data for these variables as categorical, i.e., yes or no data. Instead of indicating how many certificate programs a school offers, for example, the data indicate only whether the school offers a certificate program or not.

Originally, I selected the t-test of two groups for the primary statistical analysis. However, I selected logistic regression for the analysis of the curricular data and the data on faculty degrees. Since the t-test analysis assumes a normal distribution of the data, I was concerned that the presence of extreme data points would skew the results. After some deliberation, I ran additional tests without the extreme data points. For this purpose, extreme data points are defined as points exceeding three standard deviations from the mean.

After considering discriminant function analysis (DFA), I selected the logistic regression analysis for the curricular data and the data on faculty degrees. Concerns about the sample size, the types of data, and the multicollinearity of some of the variables led to this choice.

In order to gain an overall perspective on the comparison of iSchools to Other Schools, I ran a profile analysis on all the data sets to determine whether the profile variables of interest in the iSchools differed significantly from the profile variables of interest in the Other Schools. In addition, I also conducted a Multivariate Analysis of Variance (MANOVA) test to determine which profile variables were similar or different across the school types. Although the profile analysis and the MANOVA tests are of interest, the sample size of the data in this study is quite small for these tests and both analyses are considered to be very sensitive to extreme data points, and therefore, cannot be considered as credible as the other tests.

CHAPTER 5

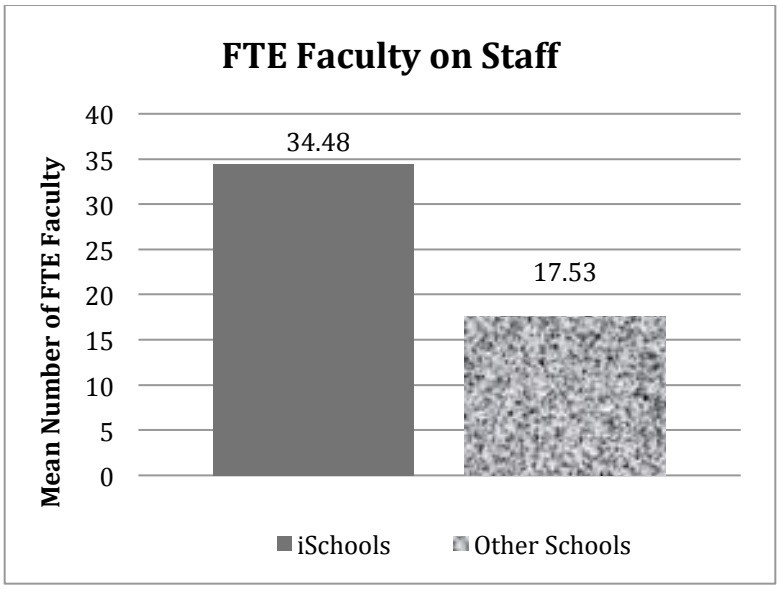
RESULTS

In this chapter I report the results of all of the statistical tests performed on the data compiled. As stated earlier, the data comprised 32 variables and subvariables. I relate each result of the statistical analysis to the corresponding research question and hypothesis. In order to guard against misinterpretation of the results, I ran additional tests of the data excluding extreme data points. The tests requested without the extreme data points confirmed the results reported above with one exception. Extreme data points, or "outliers," were identified as data points greater than 3 standard deviations from the mean, which would correspond to data points representing less than 0.12% of a normal distribution. Excluding the outliers appears to have produced data sets that conform to the parameters of normal distributions.

RQ 1: How does the size of the FTE faculty in the ALA-accredited Master's degree program of the iSchools compare with those of the Other Schools?

Hypothesis 1: There is no difference in the size of the FTE faculty between the iSchools and the Other Schools.

The t-test analysis revealed that the iSchools (M =34.48) had a significantly larger number of FTE faculty than the Other Schools (M =17.53), $t(51) = 5.12$, $p < .001$. Therefore, the hypothesis is disproved. Graph 1 illustrates this result. There were no outliers present in this data set, therefore I ran no additional tests.

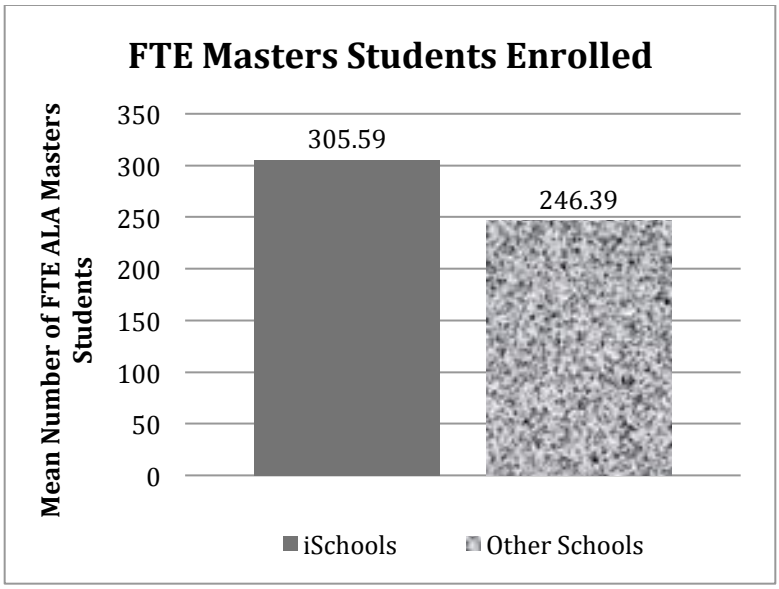


Graph 1.FTE Faculty

RQ 2: How does the number of FTE students in the ALA-accredited Master's degree programs in the iSchools compare with that of the Other Schools?

Hypothesis 2: There is no difference in the number of FTE ALA Master's degree students between the iSchools and the Other Schools.

The t-test analysis revealed that iSchools (M = 305.59) did not differ significantly from Other Schools (M = 246.39) in the number of FTE students, $t(51) = 1.06$, $p = .30$. Therefore, the hypothesis is affirmed. Graph 2 illustrates this result.



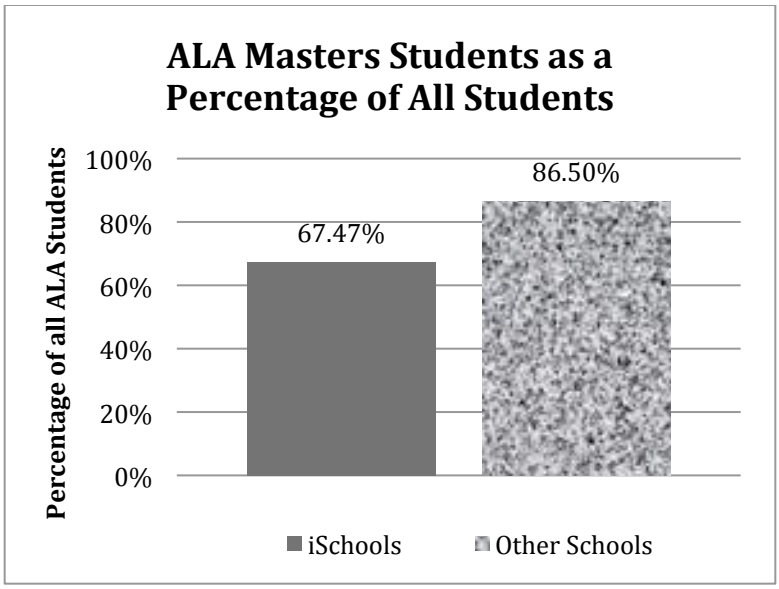
Graph 2. ALA Master's Students

I conducted an additional t-test to observe the effects of excluding outlier data. The analysis revealed that iSchools (M = 305.59) did not differ from non-iSchools (M = 216.09) in the number of FTE students, t(50) = 2.56, p < .01. These results also affirm the hypothesis.

RQ 3: How does the percentage of ALA Master's students in the total enrollment of the iSchools compare with the percentage of ALA Master's students in the total enrollment of the Other Schools?

Hypothesis 3*:* There is no difference in the percentage of ALA Master's students compared to all students in the school or college between the iSchools and the Other Schools.

The t-test analysis revealed that ALA Master's students at iSchools (M = 67.47) represented a significantly lower percentage of the total student enrollment in the school or college than ALA Master's students in Other Schools (M = 86.50), $t(23.02) = -3.09$, $p < .01$. Therefore, the hypothesis is disproved. Graph 3 illustrates these results.



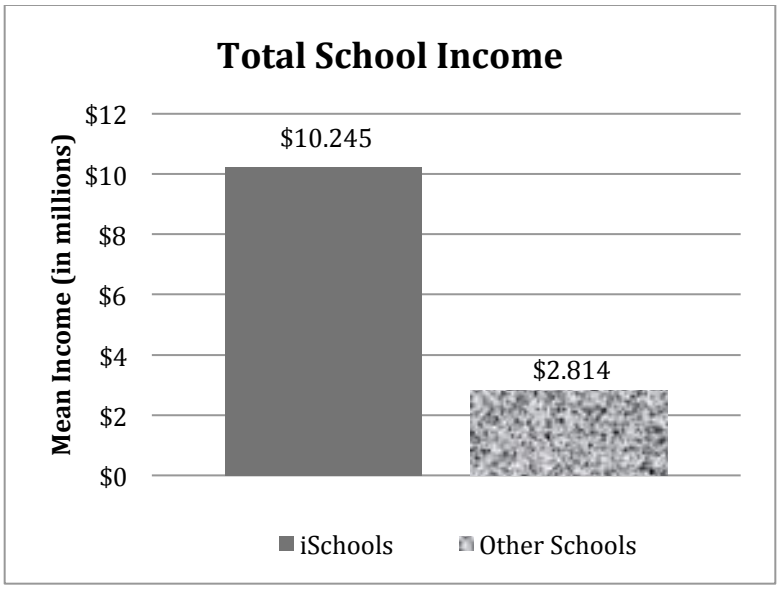
Graph 3. Percentage of Master's Students

I conducted an additional t-test to observe the effects of excluding outlier data. The analysis revealed that ALA Master's students at iSchools (M= 71) represented a significantly lower percentage of the total student enrollment in the school or college than ALA Master's students in Other Schools (M = 86.50), $t(50) = -3.15$, $p < .01$. These results also disprove the hypothesis.

RQ 4: How does the amount of total funding of the iSchools differ from the amount of total funding of the Other Schools?

Hypothesis 4: There is no difference in the amount of total funding of the iSchools compared to the amount of total funding of the Other Schools.

The t-test analysis revealed that iSchools (M =10,244,816.65) had significantly larger total incomes than Other Schools (M = 2, 813,549.53), $t(17.36) = 4.24$, p =.001. Therefore, the hypothesis is disproved. Graph 4 illustrates these results.



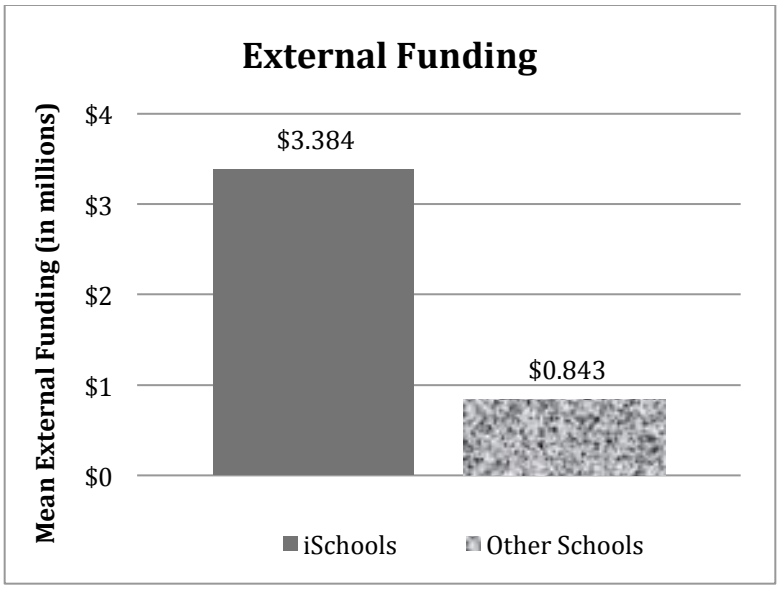
Graph 4. Total Income

I conducted an additional t-test to observe the effects of excluding outlier data. The analysis revealed that iSchools (M = 9,081,587.56) had significantly larger total incomes than Other Schools (M =2,813,549.53), $t(17.10) = 4.51$, $p < 001$. These results also disprove the hypothesis.

RQ 5: How does the amount of external funding of the iSchools differ from the amount of external funding of the Other Schools?

Hypothesis 5: There is no difference in the amount of external funding of the iSchools compared to the amount of external funding of the Other Schools.

The t-test analysis revealed that iSchools (M = 3,383,857.88) had significantly larger external incomes than Other Schools (M = 843,188.75), $t(19.99) = 3.16$, $p < .01$. Therefore, the hypothesis is disproved. Graph 5 illustrates these results.



Graph 5. External Funding

I conducted an additional t-test to observe the effects of excluding outlier data. The analysis revealed that iSchools (M = 2,846,267.81) had significantly larger external incomes than Other Schools (M = 843,188.75), $t(21.72) = 3.19$, $p < .01$. These results also disprove the hypothesis.

RQ 6: How do the types of curricular offerings of the iSchools differ from the types of curricular offerings of the Other Schools?

Hypothesis 6: There is no difference in the types of curricular offerings of the iSchools compared to the types of curricular offerings of the Other Schools.

The logistic regression test analysis revealed statistical significance for all 8 course types as predictors of iSchool designation, X^2 (8) = 33.08, p <.001, indicating that, as a set, the course types offered reliably predicted designation as an iSchool or an Other School. The model correctly assigned 71% of the iSchools and 94% of the Other Schools with an overall success rate of 87%. According to the Wald criterion, only Information Organization, z = 5.71, p <.05, and Information Management, z = 5.11, $p < .05$

significantly predicted iSchool designation as individual course types. However, for each additional **Information Organization** course offered, a school is just 0.56 times more likely to be designated as an iSchool. Similarly, for each additional **Information Management** course offered, a school is only 0.70 times more likely to be designated as an iSchool.

1. History: z = .000, p = .99
2. General Management: z = 1.18, p = .29
3. Methods: z = .67, p = .41
4. Youth Literature and Services: z = 2.02, p = .16
5. Library Services: z = 1.05, p = .31
6. Information Services: z = .000, p = .99
7. **Information Organization: z = 5.71, p < .05**
8. **Information Management: z = 5.11, p < .05**

Therefore, the hypothesis is disproved.

I conducted an additional test to observe the effects of excluding the outlier data. Of the 53 schools, 6 were excluded from the analysis due to the presence of outliers. The analysis revealed statistical significance for all 8 course types as predictors of iSchool designation, $X^2(8) = 25.75$, $p < .001$, indicating that, as a set, the course types offered reliably predicted designation as an iSchool or a non-iSchool. The model correctly assigned 77% of iSchools and 94% of non-iSchools with an overall success rate of 89%. According to the Wald criterion, only Information Organization, $z = 4.21$, $p < .05$, significantly predicted iSchool designation. For each additional **Information**

Organization course offered, a school is just 0.6 times more likely to be designated as an iSchool. These results also disprove the hypothesis.

1. History: z = .01, p = .92
2. General Management: z = .13, p = .72
3. Methods: z = .10, p = .76
4. Youth Literature: z = 2.87, p = .09
5. Library Services: z = 1.35, p = .25
6. Information Services: z = .14, p = .71
7. **Information Organization: z = 4.21, p < .05**
8. Information Management: z = 3.60, p < .06

RQ 7: How do the number and types of additional curricular offerings of the iSchools differ from the number and types of additional curricular offerings of the Other Schools?

Hypothesis 7: There is no difference in the number and types of additional curricular offerings in the ALA Master's programs of the iSchools compared to the Other Schools.

The logistic regression test analysis revealed statistical significance for all 8 additional curricular offerings as predictors of iSchool designation, $X^2(8) = 42.84$, $p < .001$, indicating that, as a set, the schools' pattern of degree offerings reliably predicted designation as an iSchool or a non-iSchool. The model correctly assigned 88% of iSchools and 92% of non-iSchools with an overall successful prediction rate of 91%. However, according to the Wald criterion, none of the individual degree offerings significantly predicted iSchool designation. A "no outlier" condition for this test was not

conducted because the variables are all categorical, rather than continuous, and as such, cannot produce outlier scores. The results disprove the hypothesis.

1. PhD: $z = .000$, $p = 1.00$
2. Certificate: $z = 2.18$, $p = .14$
3. MIS: $z = .000$, $p = 1.00$
4. MS: $z = .000$, $p = 1.00$
5. MA: $z = 1.10$, $p = .29$
6. Joint Degree: $z = 2.40$, $p = .12$
7. LIS offered as University Major: $z = .15$, $p = .70$
8. LIS offered as University Minor: $z = 1.12$, $p = .29$

RQ 8: How does the subject of the research degrees held by the faculty teaching in the ALA Master's programs of the iSchools differ from those of the Other Schools?

Hypothesis 8: There is no difference in the types of research or terminal degrees held by full-time professorial level faculty teaching in the ALA Master's programs of the iSchools compared to the full-time professorial level faculty teaching in the ALA Master's programs of the Other Schools.

The logistic regression test analysis revealed statistical significance for all 5 faculty degree backgrounds as predictors of iSchool designation, X^2 (5) = 39.12, p <.001, indicating that as a set, the faculty specializations reliably predicted designation as an iSchool or an Other School. The model correctly assigned 77% of the iSchools and 97% of the Other Schools with an overall success rate of 91%. According to the Wald criterion, only STEM degrees, $z = 5.11$, $p < .05$ significantly predicted iSchool designation as an individual degree background. However, for each additional faculty

member with a **STEM** degree, a school was just 0.31 times more likely to be designated as an iSchool.

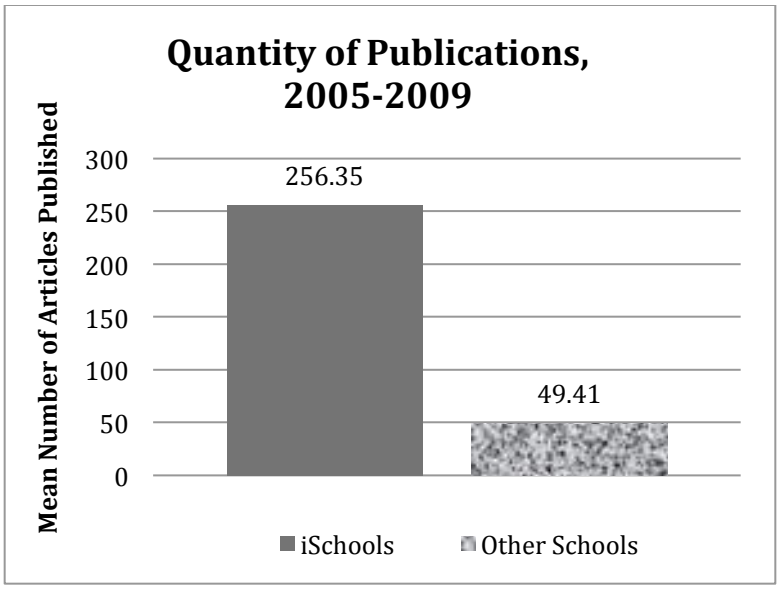
1. LIS degrees: $z = 1.44$, $p = .23$
2. Education degrees: $z = .08$, $p = .78$
3. Arts & Humanities degrees: $z = 1.72$, $p = .19$
4. Social Sciences degrees: $z = .14$, $p = .71$
5. **STEM degrees: $z = 5.11$, $p < .05$**

Therefore, the hypothesis is disproved.

RQ 9: How does the quantity of research produced in 2005–2009 by full-time professorial level faculty teaching in the ALA Master's programs of the iSchools differ from that of full-time professorial level faculty teaching in the ALA Master's programs of the Other Schools?

Hypothesis 9*:* There is no difference in the quantity of research produced between 2005 and 2009 by full-time professorial level faculty teaching in the ALA Master's programs between the iSchools and the Other Schools.

The t-test analysis revealed that full-time professorial level faculty teaching in the ALA Master's programs of the iSchools ($M = 256.35$) had a significantly greater number of published articles than full-time professorial level faculty teaching in the ALA Master's programs of the Other Schools ($M = 49.41$), $t(16.57) = 3.31$, $p = < .01$. Therefore, the hypothesis is disproved. Graph 6 illustrates these results.



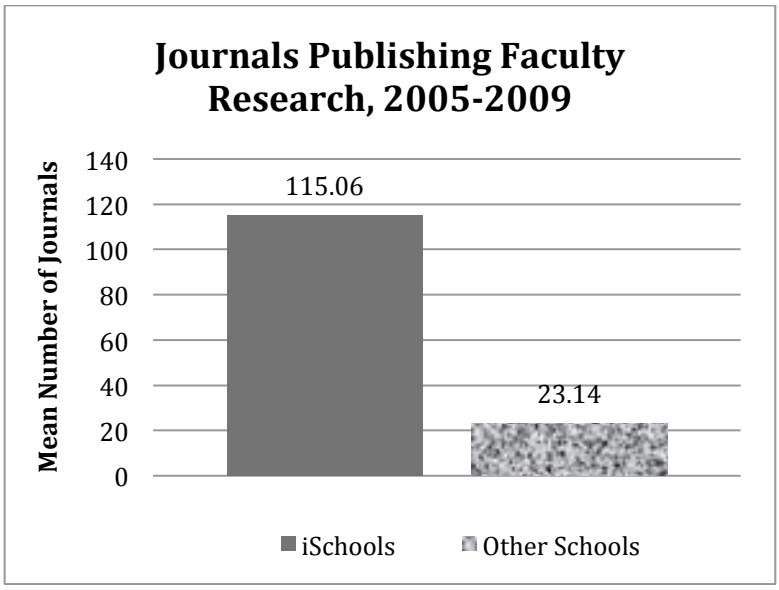
Graph 6. Number of articles

I conducted an additional t-test to observe the effects of excluding outlier data. The analysis revealed that iSchools (M = 201.75) had a significantly higher number of published articles than non-iSchools (M = 47.66), $t(17.02) = 4.59$, $p < .001$. These results also disprove the hypothesis.

RQ 10: How does the number of different journals represented in the research of the full-time professorial level faculty teaching in the ALA Master's programs of the iSchools in 2005–2009 differ from that of the full-time professorial level faculty teaching in the ALA Master's programs of the Other Schools?

Hypothesis 10*:* There is no difference between the iSchools and the Other Schools with respect to the number of different journals in which the research produced between 2005 and 2009 by the full-time professorial level faculty teaching in the ALA Master's programs appeared.

The t-test analysis revealed that iSchools ($M = 115.06$) had a significantly greater number of journal representations than Other Schools ($M = 23.14$), $t(15.55) = p < .01$. Therefore, the hypothesis is disproved. Graph 7 illustrates these results.



Graph 7. Research journals represented 2005–2009

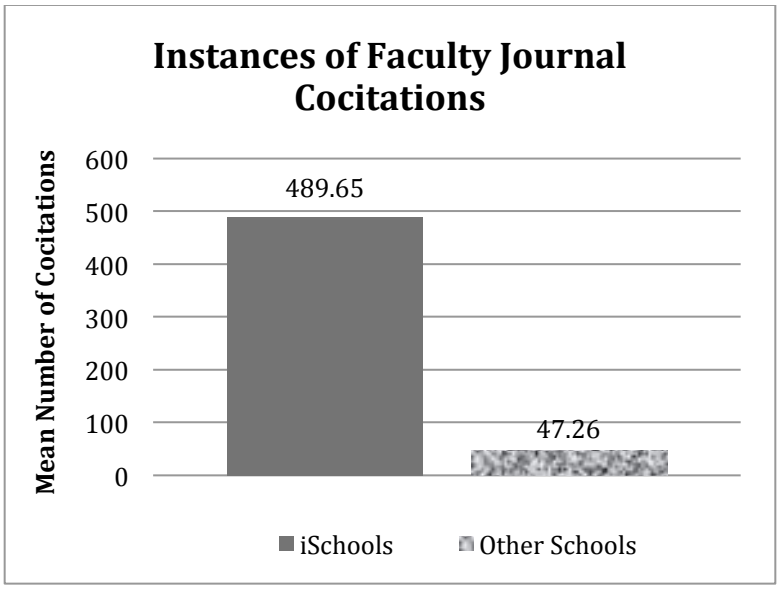
I conducted an additional t-test to observe the effects of excluding outlier data. The analysis revealed that iSchools ($M = 90.38$) had a significantly greater number of journal representations than non-iSchools ($M = 23.14$), $t(16.61) = 3.93$, $p < .001$. These results also disprove the hypothesis.

RQ 11: For full-time professorial level faculty teaching in the ALA Master's programs, how does the level of inter-relatedness of iSchool faculty research in research journals that appeared in 2005–2009 differ from that of the Other Schools?

Hypothesis 11*:* There is no difference between iSchools and Other Schools with respect to the number of journal cocitations in journals in which the research of full-time

professorial level faculty teaching in the ALA Master's program appeared between 2005 and 2009.

The t-test revealed that iSchools (M = 489.65) had a significantly greater number of journal co-citations than Other Schools (M = 47.26), $t(15.55) = 3.59$, $p < .01$. Therefore, the hypothesis is disproved. Graph 8 illustrates these results.

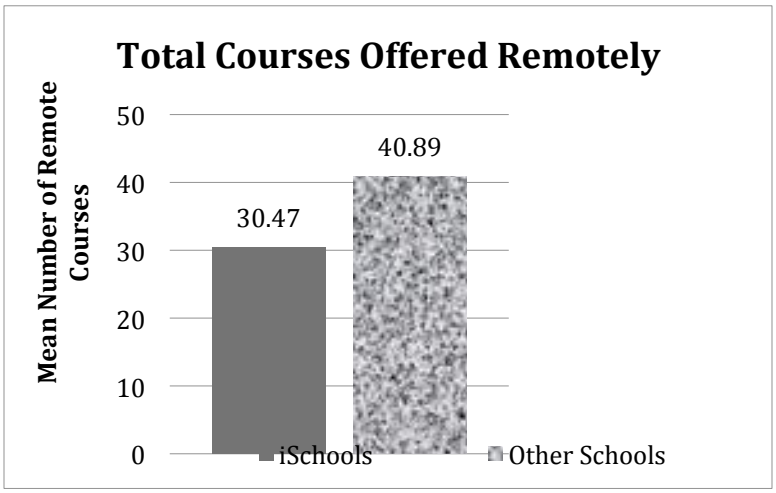


Graph 8. Number of journal co-citations

I conducted an additional t-test to observe the effects of excluding outlier data. The analysis revealed that iSchools (M = 398.88) had a significantly higher number of journal co-citations than non-iSchools (M = 47.26), $t(16.01) = 3.97$, $p < .001$. These results also disprove the hypothesis.

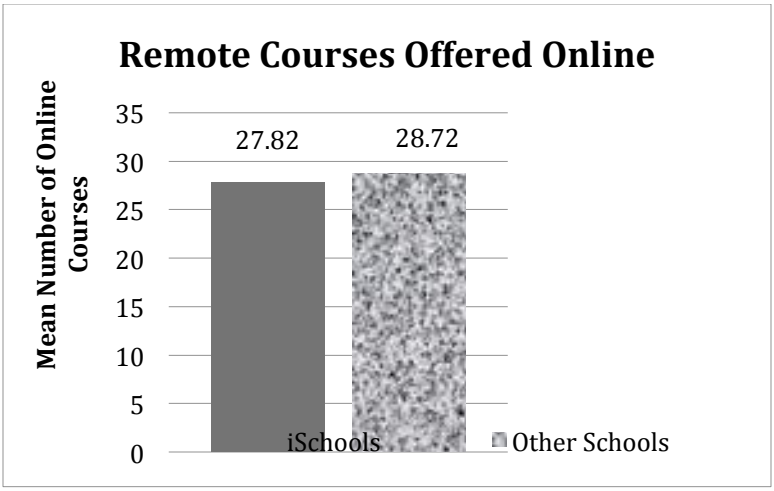
There were no hypotheses proposed for the number of courses offered remotely or the number of courses offered online. However, I conducted t-tests on these data as well.

T-test analysis revealed that iSchools (M = 30.47) did not differ from Other Schools (M = 40.89) in the number of courses offered remotely, $t(51) = -.70$, $p = .49$. Graph 9 illustrates these results.



Graph 9. Courses offered remotely

T-test analysis revealed that iSchools (M = 27.82) did not differ from Other Schools (M = 28.72) in the number of online courses offered, $t(51) = -.07$, $p = .95$. Graph 10 illustrates these results.



Graph 10. Courses offered online

Profile Analysis

RQ 12: How do the aggregate characteristics identified for this study differ between the iSchools and the Other Schools?

Hypothesis 12: There is no difference in the profile traits of the iSchools compared to the Other Schools.

I conducted a profile analysis to determine whether the profile variables of interest in iSchools differed from the profile variables of interest in the Other Schools. Mauchly's test of sphericity was significant, $p < .001$, so the Greenhouse-Geisser statistic was used, and found that the profiles' deviations from parallelism were significant, $F(8.82, 440.89) = 6.25$, partial $\eta^2 = .11$, $p < .001$. But when averaged over school type, the profile variables did not deviate significantly from flatness, $F(8.82, 440.89) = .84$, partial $\eta^2 = .02$, $p = .58$. However, the levels test revealed a significant difference across school type when scores were averaged over all variables, $F(1,50) = 37.15$, partial $\eta^2 = .43$, $p < .001$. The data indicate that the overall trait profile of the average iSchool differs significantly from the overall trait profile of the average Other School. Therefore, the

hypothesis was disproved.

Multivariate Analysis of Variance (MANOVA) test was also conducted to determine which profile variables were similar or different across school type (bold or red font equals significant findings:

1. **History, policies, and issues courses: $F(1,50) = 11.79, p = .001$**
2. General Management courses: $F(1,50) = 2.73, p = .11$
3. Methods courses: $F(1,50) = 1.42, p = .24$
4. Youth Literature courses: $F(1,50) = 1.36, p = .25$
5. Library Services courses: $F(1,50) = .42, p = .52$
6. Information Services courses: $F(1,50) = 1.66, p = .20$
7. **Information Organization courses: $F(1,50) = 24.90, p < .001$**
8. **Information Management courses: $F(1,50) = 22.09, p < .001$**
9. **Number of FTE LIS faculty: $F(1,50) = 25.12, p < .001$**
10. Number of FTE LIS students: $F(1,50) = 1.06, p = .31$
11. **LIS students as a percent of total school enrollment: $F(1,50) = 12.02, p = .001$**
12. **Total income: $F(1,50) = 32.99, p < .001$**
13. **External income: $F(1,50) = 15.59, p < .001$**
14. Number of courses offered: $F(1,50) = .32, p = .57$
15. Number of online courses offered remotely: $F(1,50) = .00, p = .96$
16. **LIS degrees: $F(1,50) = 5.99, p = .02$**
17. Education degrees: $F(1,50) = .78, p = .38$
18. **Arts & Humanities degrees: $F(1,50) = 10.20, p = .002$**

19. **Social Science degrees: $F(1,50) = 10.77, p = .002$**
20. **STEM degrees: $F(1,50) = 41.57, p < .001$**
21. **Number of articles published: $F(1,50) = 21.72, p < .001$**
22. **Number of journals represented: $F(1,50) = 19.33, p < .001$**
23. **Number of co-citations: $F(1,50) = 25.64, p < .001$**

- The profile analysis indicates that iSchools are similar to Other Schools in the following areas (9/23):
    - General Management courses
    - Methods courses
    - Youth Literature courses
    - Library Services courses
    - Information Services courses
    - Number of FTE LIS students
    - Number of online courses offered remotely
    - Faculty with Education degrees
- However, as compared to Other Schools, iSchool offerings represented a statistically significant difference in the areas listed below (14/23). Specifically, the iSchools displayed more:
    - **History, policies, and issues courses**
    - **Information Organization courses**
    - **Information Management courses**
    - **FTE LIS faculty**
    - **Total income**

- **External income**
- **Faculty with LIS degrees**
- **Faculty with Arts & Humanities degrees**
- **Faculty with Social Science degrees**
- **Faculty with STEM degrees**
- **Articles published**
- **Journals represented**
- **Journal cocitations**

The data also indicates that the iSchools displayed a significantly lower number of ALA Master's students as a proportion of total school enrollment, as compared to Other Schools.

The profile analysis is of interest for illustrative purposes only. Because the data to which it was applied violate several assumptions required for its application, specifically, the size of the sample, its results are not considered credible.

CHAPTER 6

SUMMARY AND DISCUSSION

This chapter summarizes results presented in the previous chapter and discusses the impact of these results on teaching, learning, and research. The t-test analyses of the ALISE statistical data yielded strong results. Normalizing the data for the t-test by eliminating the extreme data points yielded similar results to the t-test with the original data. The t-test analyses revealed the following:

1. The FTE faculties of the iSchools are significantly larger, on average, than those of the Other Schools
2. The average FTE ALA master's enrollments of the iSchools does not differ significantly from the average FTE ALA Master's enrollments of the Other Schools
3. As a percentage of the total school enrollment, the average ALA Master's student enrollment of the iSchools is significantly lower than that of the Other Schools.
4. The average total income of the iSchools is significantly greater than that of the Other Schools.
5. The average external income of the iSchools is significantly greater than that of the Other Schools.

Size is a major factor in the comparison of iSchools to the Other Schools. Larger faculties in the iSchools may be attributed to the wide range of curricular offerings, especially undergraduate programs. Another factor may be that many iSchools are part of a larger unit. Schools of education and communications are the most common alignments. There are Ph.D. programs in all of the iSchools. Several of the iSchools

offer undergraduate programs and several offer other degree and certificate programs. These extended curricular offerings are not as common among the Other Schools. Certainly greater incomes from both internal and external sources enable the iSchools to support larger faculties. Or perhaps, it is possible that hiring and maintaining larger faculties require greater efforts to secure stronger support from both internal and external sources. Anecdotal observations, like that of Aversa (2011) on the effect of size on the development of LIS programs is common during conferences, but there is virtually no formal literature on the importance of size to the growth and development of LIS programs. This is surprising given the relentless pressure on smaller academic units in universities to merge or dissolve over the past several decades. (Illinois, 2010) Aversa notes also that there are many advantages to the larger units. The only major disadvantage is being one step further removed from the chief academic officer of the parent university. This distance means communications are filtered through a third-party dean before they reach the chief academic officer of the iSchool or Other School.

The reason for the lack of significant difference between the iSchools and the Other Schools in the size of their ALA Master's enrollments cannot be answered clearly from the data compiled for this dissertation. Perhaps greater teaching loads among Other Schools' faculties and fewer curriculum offerings may explain this parity, but it is not clear.

Given the range and scope of curricular offerings of the iSchools, it is not surprising that the ALA Master's student enrollment as a percentage of the total school enrollment averages less than the Other Schools. However, it should be noted that for 13 of the 17 iSchools the percentage of ALA Master's students to the total school enrollment

is at or above 50%, and for most, it is well above 50%. With one exception, the ALA Master's enrollment is a dominant proportion of the total school enrollment. While it may be said that a typical iSchool reaches a broader market due to the breadth and scope of its curriculum, given the relative size of its ALA Master's program, it is not clear that it reaches a totally different market. Bonnici et al (2009) conclude that most of the iSchools continue to recognize the importance of the "library" market for their programs by absorbing it. This research confirms that the ALA Master's program is a dominant and integral component of the typical iSchool. (p. 273)

Greater total incomes and greater external incomes allow the iSchools to support more faculty and staff who can offer a wide range of programs and services. In relatively small programs (less than 25 FTE faculty), this disparity in incomes from both internal and external sources may be the single most significant factor that differentiates the iSchools from the Other Schools. In small programs, more funding means the availability of more choices for program development. More faculty, more IT capability, more support staff, and more space are all critical elements for program development.

Dillon (2012) acknowledges that early admission criteria for the iCaucus leaned heavily on research funding. In this dissertation, although external funding data does not distinguish between research funding and other grant purposes, greater levels of external funding does indicate efforts above and beyond the normal courses of study. This would include research support, staff development, curriculum experiments, and fund-raising for various other purposes. Greater incomes for iSchools may be a self-fulfilling conclusion, since income appears to be the major criterion for inclusion in the iCaucus. Although the iCaucus may consider additional criteria in the future, conversations over the summer of

2012 with Elizabeth Liddy of Syracuse University, 2012–2013 Chair of the iCaucus, confirm the current importance of income as a major criterion for eligibility.

Logistic regression analysis of the types of courses offered shows statistical significance for all eight types of courses as predictors of iSchool designation. By correctly designating either an iSchool or an Other School an average of 87% of the time, the statistical results indicate that there is a significantly different profile of courses offered in the iSchools than in the Other Schools. Although the Profile Analysis revealed similar results, it may be considered less reliable because of the number of extreme data points and the small size of the sample (population) for use in the Profile Analysis. Size alone cannot account for this difference in the types of courses, since the total number of ALA Master's courses offered in the iSchools is not significantly different from the Other Schools. The conclusion of similarity in the total number of courses in the ALA Master's programs of the iSchools and the Other Schools did not result from the statistical analyses, but from a calculation of the arithmetic means of the two groups of course totals, the difference between which was not significant.

The literature gives little guidance as to an explanation for the difference in the pattern of course types. At the beginning of this study, I interviewed several iSchool faculty members and deans at the 2009 iConference, including Andrew Dillon. At the time, Dillon expressed considerable ambiguity about the meaning of the iSchool movement. (Dillon, 2009, personal conversation, Chapel Hill, NC) More recently, Dillon (2012) asserted, "To be an iSchool is to place greater emphasis on broader human activities over these concerns with the specific agency or organizational form wherein the information practices occur." (p. 269)

Perhaps, this emphasis accounts, in part, for the difference in the types of ALA Master's courses that are offered in the iSchools. But the difference is not great enough to suggest more than movement toward a different curriculum. What appears to be at work is movement toward a new pattern of ALA Master's courses while not forsaking the traditional courses that have defined LIS programs in the past. Here Dillon (2012) noted,

> In some respects the intellectual values of librarianship have survived (and even prospered) through the emergence of iSchools, and the true legacy concerns of access, information as a social resource, and the importance of privacy and security of information are as deeply embedded in most iSchools as they are in traditional librarianship programs. (p.271)

The fact that the statistical test model shows only two course types, Information Organization and Information Management, reliably predicted designation of an iSchool may also explain some of the differences. If the iSchools give more emphasis to Information Organization and Information Management courses, and the total number of courses offered in the ALA Master's program is similar, there would have to be a difference in the extent to which other types of courses are offered. Currently, this is a speculation, subject to further confirmation.

Comparing the range and scope of the additional curricular offerings of the iSchools to the Other Schools does not reveal any specific insights. Although significant difference was found, no single degree program, not even the Ph.D., distinguishes the two groups of schools. However, size may be a factor influencing the difference in faculty backgrounds between the iSchools and the Other Schools.

Clearly, the iSchools tend to have more faculty who hold many types of research degrees. But the STEM degrees as a predictor of an iSchool designation may be an important result. Faculty members with STEM degrees tend to contribute a different set of methods, tools, and processes to LIS applications. These in turn stimulate a wider

range of research opportunities and field applications. More needs to be known about the specific contributions of the faculty members with STEM degrees before the STEM degrees can be confirmed as a significant predictor of the iSchool designation. One complexity to analyzing these data is the sizeable number of faculty members who hold interdisciplinary doctoral degrees. In this study, most of them were included in the LIS category. But a finer-grained approach as illustrated by Wiggins & Sawyer (2012) might lead to different results.

Some outstanding results presented in this dissertation are the indications of research productivity of iSchool faculty compared to Other School faculty. The number of articles produced during the period studied, the number of journals in which these articles appeared, as well as the levels of journal cocitation show impressive differences between the iSchools and the Other Schools. This is an affirmation of Dillon's assertion of the iSchool emphasis on research productivity. (2012, p.268) On average, individual iSchool faculty members produce more articles per faculty member, are represented in more journals per faculty member, and produce more journal cocitations per faculty member than individual faculty members in Other Schools.

Online delivery of courses as an option is comparable in iSchools and Other Schools. The data compiled for this study show only the number of courses available for delivery remotely and the number of courses available for online delivery. The online course delivery option has obvious advantages in producing more revenue and broadening accessibility to programs that are inequitably located across the North American continent. But according to the data compiled for this study, online course

delivery does not contribute to any significant difference between iSchools and Other Schools.

Differences in the characteristics studied for iSchools and Other Schools do not in any way address the issue of performance. Many factors contribute to the relative success of academic programs. However, the research results presented in this dissertation may suggest avenues for future research that could explain why these differences exist and what they mean

To summarize, the ALA Master's program in iSchools have larger faculties, who hold more diverse research degrees, and produce more research than their counterparts in Other Schools. iSchools tend to be better funded from both internal and external sources. Enrollments in the ALA Master's program in iSchools are about the same as Other Schools, but they represent a smaller percentage of the total enrollment in the iSchools. Nevertheless, the enrollment in the ALA Master's program is a dominant component of the total enrollment of almost all iSchools.

Teaching, Learning and Research

What is the value-added component that being an iSchool contributes to the ALA Master's program? A larger, more diverse faculty presents the opportunity to develop a robust curriculum that includes a sound theoretical foundation together with specialized academic and professional courses. However, according to the 2010 ALISE Statistics, many of the iSchools report that the minimum time to completion for the ALA Master's is twelve months. This structural limitation does not offer much opportunity to exploit a larger, more diverse faculty in a prescribed curriculum. Given the growth and development of knowledge, skills, and methods since the one-year ALA Master's

curriculum was established in 1951, it seems unlikely that the iSchools can offer much of a value-added curriculum within these time constraints. The diversity of the faculty in the iSchools does offer the opportunity for the iSchools to expose its ALA Master's students to a wider range of research methods and techniques. Here again this opportunity may be limited by the length of time the students are in the program.

This structural limitation to the scope of the ALA Master's program may inhibit the evolution of the iSchool toward the iField defined as "an academic field of study and a professional career field that deals with all the issues, opportunities, and challenges we face in our emerging Information Age." (Bonnici et al., p.264) The opportunity to remain longer in an academic program than the faculty prescribes is always available. But merely providing the opportunity still raises the question of what the iSchool faculty considers to be the "issues, opportunities, and challenges" requisite to the ALA Master's program.

The major surprise in the results is not that the ALA Master's student enrollments of the iSchools and the Other Schools are comparable, but that the ALA Master's student enrollment is the dominant component of the total iSchool enrollment. Whether it is for strategic and/or financial reasons, the ALA Master's program is firmly at the heart of the iSchools.

As Dillon (2012) notes, some traditional concerns of librarianship, such as access and information as a social resource have prospered in the iSchools even as the iSchools have diminished the concerns of libraries as a preferred agency orientation. (p. 271) This observation supports the conclusion of Bonnici et al. (2009) that the movement of

iSchools toward the development of the iField has been accompanied by the ingestion of the "L" of library into the "i" of information. (p. 273)

As a practical matter, the results of the curricular analysis reveal that the iSchools maintain a solid cadre of courses on issues, policies, and library services, while increasing their emphasis on information organization and information management courses. The library and archives employer constituency is large and identifiable as compared to the amorphous constituency of employers of graduates of information programs. Although there are tensions between the iSchools and the library community, as shown in the arguments of Gorman (2005) and others, this dissertation demonstrates that there are strong efforts among the iSchools to balance their need to retain that constituency with their intentions of developing the iField.

It comes as no surprise that the iSchools, all of whom are located in research universities, place a greater emphasis on research productivity and interdisciplinary research than the Other Schools. Yet the magnitude of the difference indicates that there may be more than relative emphasis involved. For the period studied, the iSchools' faculties produced over five times as many articles in more than seven times as many different research journals as the faculties of the Other Schools. The wider diversity of journals in which iSchool faculty articles appear is consistent with the wider diversity of faculty research backgrounds of iSchool faculty compared to faculties of Other Schools. Although it was not a focus of this dissertation, the balance of teaching loads with research time may be a factor in the observed difference. However, differences in teaching loads between iSchools and Other Schools, if true, would be another method of emphasizing research over teaching.

What is interesting is that the incidence of journal cocitations is higher within the iSchool faculties than the Other School faculties, but still seems somewhat low for the number of faculty included. Diversity of faculty backgrounds creates the opportunity to engage in interdisciplinary research, but exploiting the opportunity still appears to be a challenge. What the range of journals in which the research appears suggests is that multidisciplinary research is more common, with different faculty members publishing in their areas of expertise, and only occasionally, overlapping into the research areas in which other members of their faculty publish. The iField involves many disciplines. Therefore, the question is whether interdisciplinary research is more important than multidisciplinary research? Faculty and students can still benefit from the multidisciplinary origins of theories, methods, and techniques that individual faculty members bring to their teaching and research. Is interdisciplinary and collaborative research work an initial requirement for the advancement of the iField, or is it a natural result of the convergence of ideas, methods, and techniques focused on the same set of problems? These questions have enormous implications for the recruitment and retention of faculty.

CHAPTER 7

CONCLUSIONS

In this chapter I review the purpose of the dissertation and state the major conclusions of the research. I repeat the assumptions and limitations of the research performed and suggest future research.

This study aimed to discover whether there are significant differences between iSchools and Other Schools with respect to certain characteristics. I compiled data on selected quantitative and qualitative characteristics drawn from 53 schools offering the ALA Master's program, including 17 iSchools, in order to address hypotheses based on the characteristics selected. I selected literature that related directly and indirectly to this research. I selected statistical tests to be applied to the data compiled for this research. I reported the results in an earlier chapter.

Some of these differences may not be great, but they do distinguish iSchools from the Other Schools. While these data do not explain why iSchools are different or precisely what the difference means, the data strongly support this conclusion. This dissertation introduces a set of baseline characteristics of iSchools and Other Schools that offer the ALA Master's degree program. The surprise in this dissertation is the extent to which the ALA Master's enrollment is a dominant cohort of the total enrollment in the iSchools studied. However, these conclusions cannot be generalized upon beyond the group of schools studied.

Size appears to be a major factor in the differences revealed. It raises the question of whether a certain critical mass may be necessary to accomplish significant results. What may be of greater significance is that the iSchools have distinguished themselves

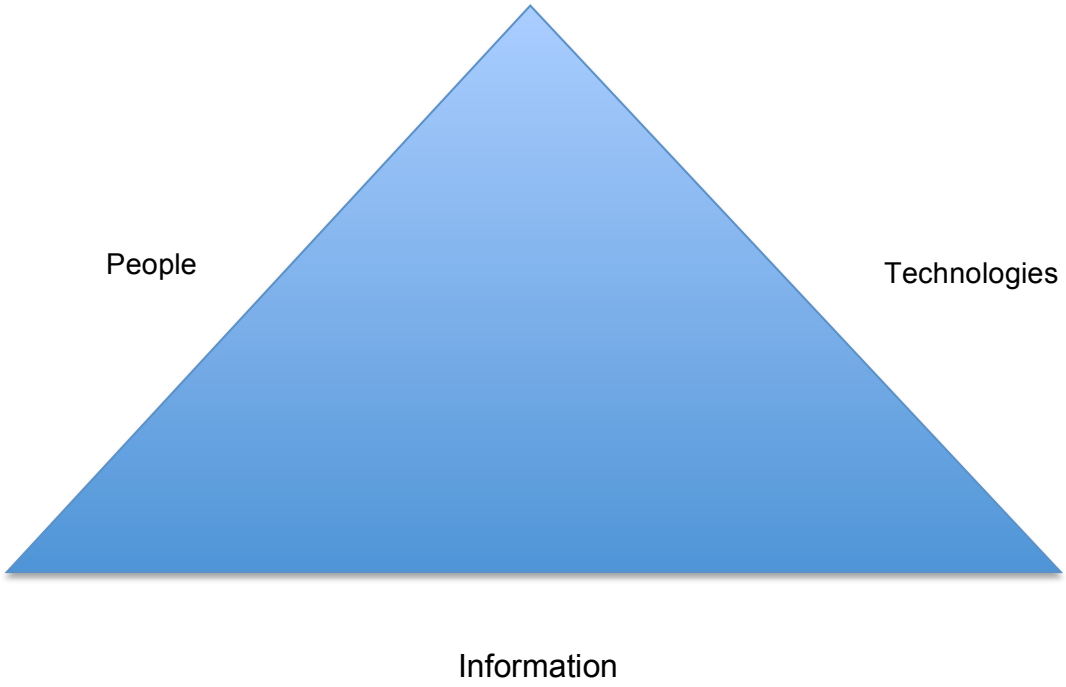
from the Other Schools without establishing a clear identity. This reinforces the results of Bonnici et al. (2009) that the iSchools are evolving toward an as yet vaguely defined new iField.

Diversity is a stated objective of the iSchools. There is considerable diversity in the backgrounds of the faculties of both iSchools and the Other Schools. This suggests the inability to exclude areas of study as noted in Bonnici et al. (2009) It is surprising, that given the diversity of the faculty backgrounds, that there is not a greater difference in the types of courses offered in the ALA Master's programs. These internal inconsistencies in the demographics of the faculties of both types of schools may be a major barrier to defining the boundaries of the field more precisely. Diversity of faculty and the emphasis on interdisciplinary research may not be working in tandem to reach agreement on the boundaries of the iField.

As the iSchools search for an identity beyond the largely descriptive characteristics studied here, perhaps, grounding their efforts in a designated domain could be useful. Such a domain was suggested by Shera (1972), reiterated by Dillon (2012), and may still be relevant today. I call it the "steel triangle" or more aptly, the "iField Triangle" that connects the characteristics of information; the information needs and uses of people; and the knowledge, skills, techniques, and technologies that facilitate understanding, analysis, and use of information. The iCaucus statements on its web site suggests a domain, but nowhere does it claim one. This assertion may be critical in the continuing competition for intellectual space on the respective campuses where the iSchools are located. In addition, claims of a distinct domain could provide guidance toward Taylor's objective of separating education for the information professions from

the institutional environments in which its practitioners work. While designating such a domain will not define the content of the field, it suggests the general boundaries of what may be increasingly called the iField.

The iField Triangle



Assumptions

The research presented here assumes that the data compiled are a fair and accurate representation of the characteristics studied. It also assumes that the methods employed to analyze the data are appropriate to the problem studied.

Limitations

The research presented here represents only iSchools and other LIS programs that offer the ALA-accredited Master's degree program; that are located in North America; that use English as the primary language of instruction; and that have been operating for at least 15 years. This research does not address questions of student outcomes or program quality. The data compiled for this dissertation did not result from independent investigation, but from self-reported data on school web sites, data reported to ALISE, and data compiled by SCOPUS.

Another major limitation to this dissertation is that there are no student outcome data that could give insight to whether these differences affect educational outcomes.

Future Research

As noted above, research on student outcomes will be critical to determining the significance of the differences revealed in this dissertation. Additional research on curricular patterns within iSchools compared to the Other Schools will tend to provide a more complete explanation for the curricular differences revealed in this dissertation. Future research on interdisciplinary and multidisciplinary research in the iSchools is needed to shed light on these areas. Deeper exploration of the research degrees held by the faculties of the two groups will tend to give a better understanding of the range and scope of the diversity of the faculties. The influence of size is another topic that needs further exploration.

In the design of the scope of this dissertation, I excluded two significant groups of schools, those iSchools with origins in schools of engineering and computer science departments and those iSchools located outside of North America.. Based on the profiles

established by the data in this dissertation, a more extensive set of comparisons may be realized. A basic question that may be asked is what do the iSchools with origins in engineering and computer sciences have in common with iSchools that offer the ALA Master's program? What do iSchools located in other regions of the world have in common with iSchools located in North America? What is the profile of these two groups that were excluded from the data in this dissertation? All of these questions suggest provocative avenues for future research.

One issue that will need to be addressed as the iSchool movement continues to develop was raised in the early interviews at the 2009 iConference. It relates to the absence of and need for the articulation of a distinct vision for the iSchools. While it is clear that the original purpose of the iCaucus was to share ideas about the administration of the member schools of the iCaucus, that is no longer sufficient to guide the iCaucus in its present form. Long term goals and a vision for the iCaucus is clearly indicated. Finally, the major challenge ahead is to fill in the iField Triangle with theories, methods, and applications that will define not only the boundaries, but the content of the iField as well.

REFERENCES

Abbott, A. (2001). Chaos of disciplines, Chicago, IL: University of Chicago Press.

Alman, S.W., Frey, B.A. & Tomer, C. (2012.October). Social and cognitive presence as factors in learning and student retention: An Investigation of the cohort model in an iSchool setting. *Journal of Education for library and Information Science*, *53* (4) 290–302.

Aversa, E. (2011). Dean's Panel Statement. Paper presented at the ALISE Conference, San Diego, CA.

Bar-Ilan, J. (2010). Measuring research impact: first approximation of the achievement of the iSchools in ISI's information and library science category—an exploratory study. In *IDEALS,* Papers presented at the 2010 iConference. Urbana-Champaign, IL: University of Illinois, p. 8–12.

Bell, D. (1973). The coming of the post-industrial society. New York, NY: Basic Books.

Black, F. A. (January 21, 2006). Patterns, perceptions and predictions: librarianship in the early 21st century. Remarks presented at the American Library Association, Midwinter Meeting, San Antonio, Texas. Unpublished.

Bobinski, G. S. (2007). Libraries and librarianship: sixty years of challenge and change. Lanham, MD: Scarecrow Press.

Bonnici, L.J., Subramaniam, M.M., & Burnett, K. (2009, April). Everything old is new again: the evolution of library and information science education from LIS to iField, *Journal of Education for Library and Information Science*. *50* (4), 263–274.

Budd, J. (2000). Scholarly productivity of the U.S. LIS faculty: an update. *The Library Quarterly*, *70* (2), 230–245.

Burnett, K. & Bonnici, L.J.(2006). Contested terrain: Accreditation and the future of the profession of librarianship. *The Library Quarterly*, *76* (2) 193–219.

Charmaz, K. (2006). Constructing grounded theory: a practical guide through qualitative analysis. Los Angeles: Sage.

Chen, C. (2008). Thematic maps of 19 iSchools. *Journal of the American Society for Information Science & Technology*, *45* (1) 1–12.

Cox, R.J., Mattern, E., Mattock, L., Rodriguez, R. & Sutherland, T. (2012, October) Assessing iSchools. *Journal of Education for Library and Information Science*, *53* (4) 303–316.

Cresswell, J. W. (2009). Research design: qualitative, quantitative, and mixed methods approaches. Los Angele, CA: Sage.

Cronin, B. (2005). An i-dentity crisis?: the information school movement. *International Journal of Information Managemen*t. *25* 363–365.

Cronin, B. (2007). Holding the center while prospecting at the periphery. *Education For Information*, *48* (2) 94–107.

Cronin, B. & Meho, L.I. (2006). Using the h-index to rank influential information scientists. *American Society for Information Science and Technology, 57* (9) 1275–1278.

Cronin, B. & Overfeldt, K. (1994). Citation based auditing of academic performance. *Journal of the American Journal for Information Science, 45* (2) 61–72.

Dearstyine, B. (2002). Information education in the 21st century. *Information Management Journal,36* (1) 52–53.

Debons, A. & Harmon, G. (2006). The i-conference in retrospect. *ASIS&T Bulletin,* Retrieved from (http://www.asis.org./Bulletin/Apr-06/debonsharmon.html).

Dick, A. L. (1995). Library and information science as a social science. *The Library Quarterly*, *65* (2), 216–235.

Dillon, A. & Norris, A. (2005). Crying wolf: An examination and reconsideration of the perception of crisis in LIS. *Journal of Education for Library and Information Science*,*46* (4) 280–98.

Dillon, A. & Rice-Lively, M. L. (2006). Passing the taxi-driver test. *ASIS&T Bulletin.* Retrieved from (http://www.asis.org./Bulletin/Apr-06/dillonricelively.html)

Dillon, A. (2012). What it means to be an iSchool. *Journal of Education for Library and Information Science, 53* (4) 267–273.

Egghe, I. (2006). The theory and practice of the g-index. *Scientometrics*. 69 (1) 131–152.

Gorman, M. (2003). The enduring legacy: technology, tradition, and the quest for balance. Chicago, IL: American library Association.

Estabrook, L. (2005). "Crying wolf" a response. *Journal of Education for Library and Information Science*, *46* (4) 299–303.

Estabrook, L. (2004). Whither library education. *New Library World*, *105* (9/10) 376–380.

Gorman, M. (2005, November). A paper on education for librarianship. Unpublished.

Gorman, M. (2005). Why library education matters. *American Libraries*, *36* (7), 5.

Gorman, M. (2005) Why library education matters—part two. *American Libraries,36* (8), 5.

Harmon, G. (2006). The first i-conference of the i-school communities," *ASIS&T Bulletin*. Retrieved from (http://www.asis.org./Bulletin//Apr-06/harmon.html).

Haycock, K. & Sheldon, B. eds. (2008). The portable MLIS insights from experts, Westport, CT: Libraries Unlimited.

Hayes, R.M. (1983). Citation statistics as a measure of faculty research productivity. *Journal of Education for Librarianship*, *23* (3) 151–172

Illinois. University. (2010, June 15). Academic unit reviews. (Final Report). Retrieved from (http://oc.illinois.edu/budget/academic-units-project-report.pdf)

Intner, S. S. (2004). Library education for the millennium. *Technicalities, 24* (6) 10–12.

Kaplan, A. (1964). The conduct of inquiry: Methodology for behavioral science. New Brunswick, NJ: Transaction.

King, J. L.(2006). Identity in the i-school movement. *ASIS&T Bulletin,*13–15. Retrieved from (http://www.asis.org./Bulletin/Apr-06/king.html).

Kimmel, M. (2000). From autonomy to systems: Education for the information and library professions. *Journal of Documentation*, *54* (4) 349–57.

Larsen, R. L. (2008). "iSchools: origins, motivations, positioning, empowerment, organization, vision. In M.J. Bates & M.N. Maack (Eds.) Encyclopedia of Library and Information Sciences, 3d ed. New York, NY: Dekker. Available online from Taylor and Francis. doi:10.1081/E-EL153-120043670.

Leonhardt, T. W. (2006). ALA's role in library education. Remarks presented at the 2006 American Library Association, Midwinter Meeting, San Antonio, TX. Retrieved from (http://mg.csufresno.edu/papers/forum/Presenter_remarks01.pdf).

Leonhardt, T. W. (2007). Thoughts on library education. *Technicalities,27* (3), 4–7.

Lynch, B. P. (2008). Library education: its past, Its present and Its future. *Library Trends*, *56* (4) 931–953.

Machlup, F. (1962), The production and distribution of knowledge in the United States. Princeton, NJ: Princeton University Press.

Mackenzie, M. L. & Smith, J. P. (2009). Management education for library directors: are graduate library education programs providing future library directors with the skills and knowledge they will need? *Journal of Education for Library and Information Science*, *50* (3) 29–142.

Marion, L. S., Wilson, C. S. & Davis, M. (2005). Intellectual structure and subject themes in information systems research: A Journal co-citation study. *Proceedings of the ASIS&T, 42* (1).

Marty, P.F. & Twidale, M.B. (2011). Museum informatics across the curriculum: ten years of preparing students for careers transcending libraries, archives, and museums. *Journal of Education for Library and Information Science*, *52* (1) 9–22.

McCain, K.W. (1991). "Core journal networks and co-citation maps: new bibliometric tools for serials research and management. *The Library Quarterly, 63* (3) 311–336.

Mulvaney, J.P. (1992). The characteristics associated with perceived quality in schools of library and information science. *The Library Quarterly, 62* (1) 1–27.

Olson, G. & Grudin, Jonathon (2009). The information school phenomenon. *Interactions 16* (2) 15–19.

Ostlier, L.J., Dahlin, T.C. & Willardson, J.D. (1995). The closing of American library schools: problems and opportunities. Westport, CT: Greenwood Press.

Rioux, K. (2010). Metatheory in library and information science: A Nascent social justice approach. *Journal of Education for Library and Information Science, 51* (1) 9–17.

Saracevic, T. (2001). A Survey of digital library education. *Proceedings of the ARIST Annual Meeting,38*, 209–23.

Shera, J. (1972). The foundations of education for librarianship. New York, NY:Wiley-Becker and Hayes.

Stanton, J.M., Kim, Y., Oakleaf, M., Lankes, R.D., Gandel, P., Cogburn, D., & Liddy, E.D. (2011). Education for escience professionals: job analysis, curriculum guidance, and program considerations. *Journal of Education for Library and Information Science, 52 (*2) 79–94.

Stieg, M. F. (1992). Change and challenge in library and information science education. Chicago: American Library Association.

Swigger, B. K. (2010). The MLS project: an assessment after sixty years. Lanham, MD: The Scarecrow Press.

Taylor, R. S. (1979). Reminiscing about the future: professional education and the information environment. *Library Journal*, *104* (16) 1871–75.

Thomas, J., von Dran, R. & Sawyer, S. (2006). The i-conference and the transformation ahead. *ASIS&T Bulletin*, 16–18. Retrieved from (www.asis.org./Bulletin/Apr-06/thomasvondransawyer.html).

Thompson, R. A. (2008). The i-school curricula: How wide? how deep? In *Proceedings of the ITERA-08 Conference*, Louisville, KY.

Wallace, D. & Naidoo, J. (2010). ALISE: library and information science education statistical report Chicago, IL: Association for Library and Information Science Education.

Wedgeworth, R., ed. (1976–1985). ALA yearbook. Chicago, IL: American Library Association.

Weech, T. L. & Pluzhenskaia, M. (2006). LIS education and multidisciplinarity: An exploratory study. *Journal of Education for Library and Information Science*, 46 (2) 154–64.

White, H.S. (1987). Perceptions by educators and administrators of the ranking of library school programs—an update and analysis. *The Library Quarterly*, *57 (*3) 252–268.

White, H. S. (2000). Librarianship-quo vadis?: Opportunities and dangers as we face the new millennium. Englewood, CO: Libraries Unlimited, Inc.

Wiggins, A. & Sawyer, S. (2012). Intellectual diversity and faculty composition of iSchools. *Journal of the American Society for Information Science and Technology*, *63 (*1) 8–21.