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Increasing numbers of American library science schools have incorporated information science into their curricula during the past 40 years. This shift has sparked debate among scholars who call this marriage of the two programs an "identity crisis" in LIS education, while little research has studied perceptions of the two fields and how they relate to each other. This study used an online survey to explore the perceptions of master's students at the School of Information and Library Science at the University of North Carolina—Chapel Hill to determine (1) how LIS students perceive the fields of information science and library science, and (2) their perceptions of how information science differs from library science. Survey results indicate that students perceive differences in the job activities and social status of librarians and information scientists, understand the theoretical connection between the fields, and consider the distinction important. This research will help the school in developing curricula and making program decisions, and it will also help us understand how information science is understood by the next generation of information professionals.

Headings:

Information science -- North Carolina -- Chapel Hill.
Information science -- Study and teaching -- United States.
Library education -- Curricula.
Library education -- North Carolina -- Chapel Hill.
Library schools -- Curricula -- North Carolina.

"ARE YOU LS OR IS?" A Study of SILS Students' Perceptions of Programs

by Erin R. White

A Master's paper submitted to the faculty of the School of Information and Library Science of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Science in Information Science.

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Approved by

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INTRODUCTION

Over the past 40 years, an increasing number of American library schools have begun to include information science in their curricula, because of the fields' shared origins and response to rapid technological change in the profession (Markey, 2004). Now that information science has found a home in library programs, what used to be known only as "library science" (LS) is now "library and information science" (LIS), and library schools have changed their names and their missions to accompany this change in varying ways (Koenig and Hildreth, 2002). In light of LIS schools' increasing emphasis on information science, LIS researchers and practitioners are debating the implications these shifts hold for the future of librarianship and LIS education (Gorman, 2004; Dillon and Norris, 2005; Cronin, 1995 and 2002). Discussion in the literature suggests that LIS schools are undergoing an "identity crisis" due to expanding definitions of what kinds of work information professionals perform and a heightened need for those professionals in everyday workplaces (Gorman, 2004).

Despite ongoing and often emotional discussion of identity crisis in the field, little research has examined LIS students' perceptions of a gap, if any, between library science and information science studies. As more schools of library and information science reformulate their curricula and reconsider the scope of their programs, more research on students' perceptions of the LIS field is needed, specifically in regards to information science's place in LIS. As the next generation of information professionals, LIS students will be building the future of the fields as practitioners, researchers, and faculty. How they view the differences in the fields will affect how their work and research are carried out in the future. The purpose of this study is to examine (1) how students at the School of Information and Library Science (SILS) at the University of North Carolina—Chapel Hill perceive the fields of information science and library science, and (2) their perceptions of how the two fields relate to each other.

LITERATURE REVIEW

HISTORY OF INFORMATION SCIENCE

Information science is not a new field. The beginnings of the discipline can be traced back over one hundred years to the work of Paul Otlet and Henri LaFontaine, who sought to improve communication about science (Lilley, 1989). At the time, the field was known as Documentation, and its goal was to provide access to documents in any format, in any place—not just in libraries (Vakkari, 1995). By the late 1930s, documentation had come to America, when the American Documentation Institute (ADI) was formed. Documentation gradually blurred into information science after World War II, in response to both Vannevar Bush's oft-cited work "As We May Think" and the grip of new technologies that began to flourish amid a booming post-war economy (Saracevic, 1992). The ADI became the American Society for Information Science and Technology in the late 1960s, cementing the rise of information science as LIS scholars know it today (Lilley, 1989).

DEFINING INFORMATION SCIENCE

Despite a large body of literature and an active scholarly community, scholars

have struggled to define information science since the field's inception (Wersig, 1992). Debates about the place and purpose of information science in the late 1980s prompted a conference devoted to discussion about the nature of the discipline (Vakkari, 1992). Wersig (1992) and others (Cronin, 1995) claimed that the scope of the field had not been defined from the outset, and that the field is in need of a stronger conceptual framework.

INFORMATION SCIENCE AND LIBRARY SCIENCE

Information science education has coexisted with library science education because the fields have common origins and a similar mission to facilitate access to graphical documents (Vakkari, 1995). Debates in LIS literature about both the purpose of information science and its place in library science today, however, have been frequent and heated (Lilley, 1989).

Do the two fields belong together? Buckland (1996) recounted the history of information science in library science and offered an explanation for the initial tensions spurring from the integration of the fields in the 1950s. Buckland claimed that librarians have always been interested in cutting edge technology, citing microfiche as an example. The dominant paradigm of library science in the 1950s, however, focused on philosophical merits of library science rather than the technical aspects of service and process. When information science came along after World War II, it was met with arguments and resistance from librarians, who saw the infusion of technology as an attack on the core values of a field that had been stable for so long.

The information science versus library science issue was raised most recently in the fall of 2004, as Michael Gorman, former president of the American Library Association, wrote that library science was going through a crisis due in large part to the incorporation of information science into the library science curriculum. Gorman wrote that information science was pushing out core competencies in library science, and urged readers to consider a core LIS curriculum for all library schools that de-emphasized the role of information science. In rebuttal to Gorman's piece, Dillon and Norris (2005) studied current employment and teaching statistics in ALA-accredited library schools, which suggested much less of a crisis than Gorman perceived. The authors posited instead that the newfound emphasis on information science be seen as a positive change for a field that needs to remain relevant in a time of rapid technological and social change. Stepping back from the conversation, Estabrook (2005) wrote that library and information science have integrated well, but LIS schools have failed to explain the connections between the two fields and show how they are both relevant for library practice. Because of this lack of communication, the two fields are seen as dichotomous, rather than coexistent.

Information Schools and Changes in LIS Education. Two studies have followed the effects of information science's appearance in library science schools and beyond. Koenig and Hildreth (2002) examined trends in naming conventions and paradigms of library schools. Of the schools surveyed, fourteen had transitioned into Information Schools, or iSchools. Some iSchools arose from library programs (i.e. Washington), and some came not from library science, but as new initiatives from within a University (i.e. Penn State). The study also found that library schools are being moved into larger programs or repositioned as part of newer, larger programs, such as the College of Communication at the University of Tennessee. A later study by Markey (2004) corroborated Koenig and Hildreth's research, noting the emergence of information science courses, concepts, and naming structures at library schools. Markey also found that, though many schools now included "information" in their titles, the changes to the programs were in name only, as the programs made no additional changes to their mission statements or curricula.

Some researchers have argued for a more radical change in LIS education, beyond name changes and realignments. Former Indiana University dean Blaise Cronin proposed a more radical transformation for LIS education in 1995. Cronin suggested that information science must dominate in order for information and library science to coexist. The author also suggested moving library science programs to trade schools. Cronin later wrote that information science programs are repositioning themselves outside the "club" of schools that are ALA-accredited, and that, in order to stay legitimate, information science schools must look beyond the American Library Association to create educational standards for information science programs (2002).

STUDENTS' PERCEPTIONS OF LIS

In order to understand how to ask students about their perceptions of information science, as well as how to research this issue, we turn to previous studies of student perceptions of information work. Three relevant studies of students' perceptions of information workers all yielded similar results, namely that the information professions are not perceived equally. Within LIS programs and outside of them, students perceive library work as having lower social status, requiring fewer technical skills, and having lower salaries than other kinds of information work (Harris and Wilkinson, 2004; Duff, Cherry and Singh, 2005; Aharony, 2006).

Harris and Wilkinson (2004) measured undergraduate students' perceptions of information work and found that students perceived a large status gap between librarians and other information professionals. The researchers found that information producers, rather than information distributors, held higher prestige. Librarians had the lowest perceived status, while internet researchers were ranked higher, despite the fact that the two jobs are nearly identical. Two subsequent studies of LIS students yielded similar results. Duff, Cherry, and Singh (2005) studied the perceptions of graduate students in archives, information science, and library and information science. As in Harris and Wilkinson's study, students ranked librarians' status as lower than other information workers. Aharony (2006) conducted a very similar study of undergraduate information science students to gauge students' perceptions of the tasks information workers perform and each information worker's professional status. The researcher found that students ascribe significantly different job responsibilities to librarians than to other information professionals, and perceived librarians as having a lower status than other information professionals.

GENDER IN LIS

Much of the discussion about information science's place in library science also explores the tensions that have arisen from information science, an historically maledominated field, rising to power within librarianship, a traditionally female-dominated field. Hildenbrand (1999) found that systematic sexist practices have existed within librarianship since the 1920s, when men climbed the ranks of library administration faster and were paid more than women regardless of their position. The author expressed concern that as technology became more popular within LIS, the gender divide would grow larger. Gorman built partly on Hildenbrand's work in his article detailing the crisis in LIS, expressing concern about the idea that the male-dominated information science field would overrun library science (2004). Studies of students' perceptions of status in information work also have implications for gender, librarianship, and women in technology. This reoccurring thread helps inform conceptualizations of tensions within LIS education and the field at large. Though the scope of this study and paper are not sufficiently large to address gender issues within LIS education, this understanding of cultural issues within LIS may help when considering the results of this study.

BACKGROUND AND SETTING

The School of Library Science at the University of North Carolina at Chapel Hill opened its doors in 1931, and in 1987 the school changed its name to include the word "information" to reflect the growing importance of information management in American society ("UNC SILS » About SILS", 2008). SILS is regularly ranked as one of the leading LIS schools in America ("UNC SILS » About SILS", 2008), making it one of many LIS schools dealing with this epistemological shift. SILS administrators were present at the 2006 meeting of the iSchools, and the school belongs to the coalition of iSchools ("iSchools", 2008). The school has not formally changed its name to reflect its status as an iSchool, however, nor has its program offerings changed since its affiliation with the iSchools consortium began, according to the Internet Archive's 2006 version of SILS' web page ("UNC SILS » Degrees & Programs", 2008).

At present, the SILS graduate program has grown to over 270 students, with 27% of students studying Information Science ("Enrollment Statistics", 2008). The SILS

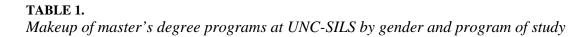
graduate masters program is divided into Library Science and Information Science program tracks. Students choose which path to follow upon entering the program and are free to move between the tracks during their time at the school. The core curricula of the two programs differ by three courses, and all courses are open to graduate students in either track. Thus, there is room for fluidity in coursework and in choice of program.

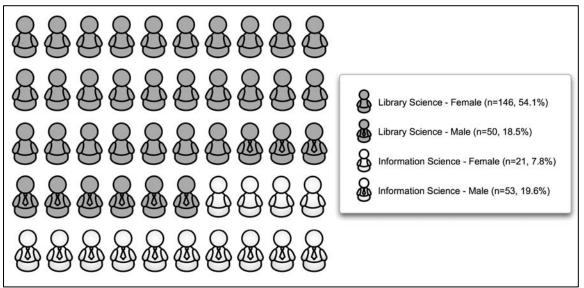
Method

SAMPLE

This study utilized a convenience sample of master's students at the School of Information and Library Science at UNC—Chapel Hill. The study did not include undergraduates or doctoral students at SILS. It was assumed that master's students knew about both the library science and information science programs at SILS and had made a decision as to which program track to follow. As of spring 2009, there are 270 master's students at SILS, both full-time and part-time. Table 1 outlines the breakdown of students by program and gender.

Students were not offered any payment for their participation in the study, but were instead given the chance to enter their e-mail addresses in a drawing to win one of two \$25 gift cards to UNC Student Stores.





("Enrollment Statistics", 2008)

SURVEY INSTRUMENT

SILS students' perceptions were gathered using an online survey instrument using Qualtrics software provided by UNC's Odum Institute for Research in Social Science. An initial survey was pre-tested on two members of the SILS master's student population before it was launched. The pre-testers suggested an open-ended question to capture students' feelings about the relationship between the two fields, and suggested that some extraneous questions be removed. The survey was modified and shortened slightly to make it more convenient for students who were short on time.

The survey invitation with a link to the live survey (Appendix A) was sent to the SILS-masters listserv in mid-January 2009, and the survey stayed open for two weeks. Of the 270 students on the SILS-masters listserv, 114 (42%) responded to the survey invitation. Of those 114 responses, 102 were complete and were used for analysis.

The survey instrument used a combination of scales adapted from previous studies of student perceptions of information work and scales we developed. The final version of the survey (Appendix B) included primarily Liker asked about information science, then about library science. The survey also included one open-ended question asking students about the relationship between the two fields, and another open-ended question for respondents who reported changing their fields of study.

What are students' perceptions of the library and information science fields? To find an answer to this question, we drew on the previous studies of students in library and information programs and occupational studies to measure students' perceptions of:

(1) Job activities. This scale was based on the work of Aharony (2006), who asked participants how much they agreed that certain activities "fit" the jobs of information scientists and librarians. This survey's list of job activities drew directly from the list of activities in Aharony's survey, with the exception of "use of and instruction in information resources", which was broken into two separate activities. The list of job activities includes: information retrieval; building, updating, and managing websites; information filtering; information summation; guidance to reference resources; indexing and classification; matching processed information to a client's profile; instruction in information resources; use of information resources; and advice and recommendation about specific items. Subjects were asked to rate on a Likert scale how much they agreed or disagreed with these activities as describing work first of information scientists, then of librarians.

- (2) Occupational prestige. Measurement was based on the work of Hodge, Siegel and Rossi (1964), who developed a scale to measure perceptions of jobs' social standing. The researchers presented subjects with a list of occupations and asked them to rank each occupation's social standing on a scale from "poor" to "excellent." The researcher attempted to create a list that covered a wide range of careers. The list of occupations for this study included five jobs that would be considered the work of a librarian: reference librarian, library assistant, archivist, elementary school librarian, and library director; and five jobs considered the work of an information scientist: systems administrator, programmer, web developer, IT consultant, and IT director.
- (3) Other descriptors. The researcher created this semantic differential scale to attempt to measure students' perceptions of the field based on a series of adjective pairs. Students were asked to rank the extent to which they agreed that descriptive phrases are relevant for information science, then for library science. These descriptors attempted to measure student perceptions of scope of the fields, using the following terms: "broad" and "narrow"; "theoretical", "practical"; and orientation of the fields, using the following terms: "people-oriented"; "public-sector", "private-sector."
- (4) Confidence defining information science and library science and describing the fields to others, before and after entering SILS. This was measured using a series of Likert-scale questions.

To what extent do students perceive a difference between information science and library science? To inform a response to the second research question, we compare data from the previous scales measuring perceptions of library science and information science. Three additional parts of the survey sought to measure these differences:

- (1) Similarities between information science and library science. The Likert-scale questions asked whether students believe the two fields share similar goals; are fundamentally the same; complement each other; should be consolidated into one academic program; and differ in name only.
- (2) Thoughts regarding the relationship between information science and library science. This question was open-ended and optional.
- (3) Students' own degree paths at SILS. This included the student's degree program; whether the person considered switching degree programs; if so, whether the student switched programs; and if so, why.

Demographics. Demographic information gathered from the survey for the purpose of data analysis included gender, degree program, and number of semesters at SILS.

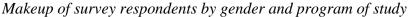
RESULTS

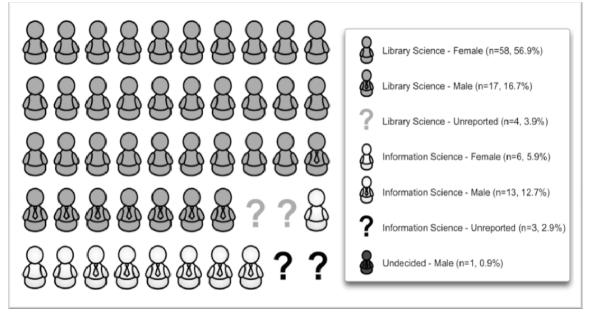
Of the 114 responses to the survey, 102 were complete and were used for data analysis. Quantitative data was exported into Microsoft Excel, where we calculated means of Likert and semantic differential questions and compared the means across respondents from the two degree programs. Qualitative data was exported into TAMS Analyzer software and coded iteratively using an open coding scheme until saturation was reached. The codes and their definitions for the purpose of data analysis are listed in Appendix C.

RESPONDENT DEMOGRAPHICS

Of the survey respondents, 77% were students in the library science program, while 22% were information science students. One student had not yet decided on a program of study, and because most of data analysis divided students based on their program of study, data from this respondent was used only for aggregate calculations. Respondent data resembled the actual demographic makeup of SILS, as demonstrated in Table 2. Information science students were slightly underrepresented, however, and almost one third of information science student respondents (n=7) reported that they had started SILS as library science students.







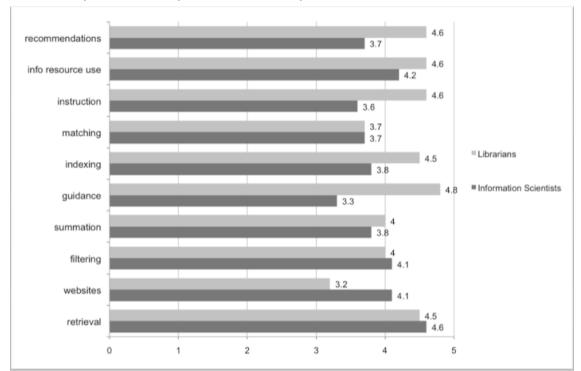
SURVEY DATA

The first question the survey sought to examine was: what are students' perceptions of the library and information science fields? We attempted to measure this by capturing students' perceptions of (1) job activities, (2) occupational status or prestige,

(3) descriptors covering scope and orientation of the fields, and (4) students' confidence defining the fields to themselves and others, before and after coming to SILS.

Job activities. Students were given a list of tasks associated with information work and asked how much they thought that type of task applied first to information scientists, then to librarians. Table 3 shows the mean of all students' responses for the

TABLE 3.



Perceived job activities of Librarians and Information Scientists

two fields. Librarians rated as high as or higher than information scientists on all but three axes, the largest exception being in the "building, updating, and managing websites" category. Librarians far outpaced information scientists (>= 1.0 difference) in the "guidance to reference resources" and "instruction in information resources" categories. In general, students from both programs tended to rate the job activities for each type of professional similarly (see Tables 10 and 11, Appendix E). This data is very similar to the results from Aharony's study, which found that tasks traditionally associated with information itself, such as information filtering and retrieval, matching information to a profile, and website management were considered job activities of the information scientist, while more traditional library activities were associated with the role of the librarian (2006).

Responses from the free-text question concerning the relationship between library science and information science provided some follow-up to this question as well. As students described their thoughts of the differences between the fields, they wrote about differences in terms of the activities professionals in the fields perform:

I...think of information scientists as people who assume the role of managing any kind of information, whether it's company records, digital objects, web resources, or distributed resources, or anything else. Librarians may do any of these things, but it seems that library science focuses a little more on providing service and access to a wide array of potential resource users.

Others expressed similar thoughts about information scientists as having more

generalized skills for data management, while librarians focus on bibliographic

management and reference and instruction:

An information scientist will gather requirements and conduct needs analysis...A Librarian will conduct "reference" interviews with patrons to things ranging from their simple reading preferences to recommend a book or more complex research needs to assist a patron in conducting research.

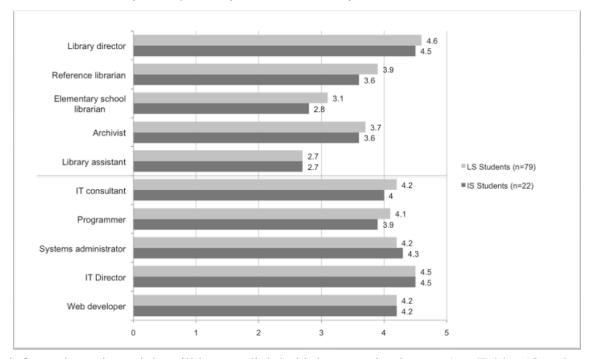
Students articulated the differences between the fields as being more practical

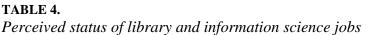
than theoretical. The difference between the fields was instead related to the execution

and context of the work being done:

The settings in which both [fields] may be practiced could be perceived as different. "IS" could be practiced anywhere, but I think of LS as happening in a specific type of institution, room, etc.

Occupational status. Students were asked to give their impression of the general "standing" or status of five librarian jobs and five information scientist jobs. In general, library jobs were ranked lower in status than information science jobs. Table 4 shows students' perceptions of the statuses for the ten jobs, separated by degree program. There are some limitations of this measure that may bias the responses higher for the information scientist jobs, but it should be noted that, even when the three highest-status library jobs are compared to the three lowest-status information science jobs, the

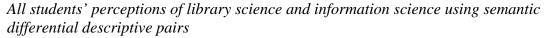


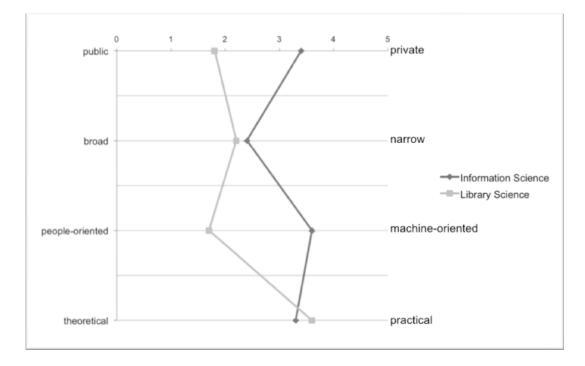


information science jobs still have a slightly higher perceived status (see Tables 12 and 13, Appendix F). Once again, student responses were similar across the two programs, though information science students tended to ascribe lower statuses to all jobs than library science students. This data echoes Aharony's findings, which indicated that students perceived library jobs to have lower status than information science jobs (2006).

Other descriptors. Students answered a series of semantic-differential questions measuring how much they believed sets of descriptors applied to the fields of information science and library science. Responses are illustrated in Table 5. In general, students perceived the largest divergences on the people-oriented/machine-oriented and public/private axes, with students rating information science as more machine-oriented and private-sector than library science. Students from both disciplines tended to agree on these measures, with two exceptions: information science students rated information science as more people-oriented than library science students did; and library science students rated library science as more broad than information science students did (see Tables 14 and 15, Appendix G).

TABLE 5.





Responses to the open question about differences between the fields also provide context for this question and corroborate the results from other questions. When describing the fields, students used some of the descriptors listed in Table 6. Students were more likely to position the work of librarians in a service context, while placing the work of information scientists in the realm of data processing in the private sector:

Library science puts a heavy emphasis on instructional methods and theory (i.e. the reference interview and the goals of walking the client step-by-step through materials as an educational exercise)...[Information science is] focused on infrastructure and efficiency and serving clients with technological tools.

This descriptive data suggests that students see library science as more people-

oriented, hands-on, and social, while information science is more technical, business-

oriented, and broad. Differences in students' perceptions of their own program and "the

other program" may help us understand where students see the dividing lines between the

fields.

TABLE 6.

Phrases used to describe library science and information science in free-text answers Information Science

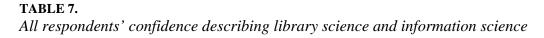
Information Science	Library Science
Rigorous	People-oriented
Future	Squishy
Technical	"Touchy-feely"
Pragmatic	Idealistic
Utilitarian	Tactile
Interdisciplinary	Service-focused
Broad	"Traditional"
Business-oriented	Location-specific
New school	Old school
	Social

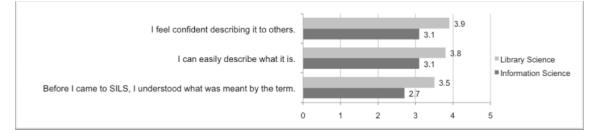
Confidence describing information science and library science. In this measure,

students rated how comfortable they were defining information science and library

science before they came to SILS and now. Table 7 shows the average confidence ratings

for all students for both disciplines. On average, students felt confident defining library science both before and after they entered SILS. Respondents were less confident



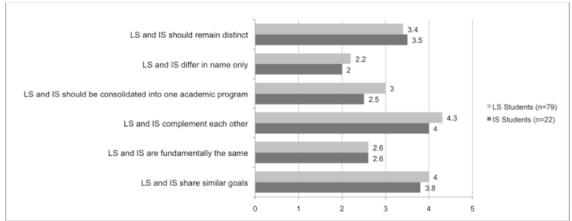


describing information science before they came to SILS. Broken down by students' degree programs (Tables 16-19, Appendix H), confidence ratings for describing library science are similar. Information science students rate their confidence in describing information science higher than library science students do, but all students feel confident describing library science.

To what extent do students perceive a difference between information science

and library science? The scales above give us a picture of how students conceptualize information science and library science, and how those ideas compare to each other. The next scale on the survey measured students' perceptions of how the fields theoretically relate to each other. Table 8 describes the extent to which students in each program agreed with a series of statements about the relationship between library science and information science. In general, students rated the disciplines as being complementary and having similar goals, but were less likely to say that the fields should be consolidated.

TABLE 8.



Comparison of perceptions of similarity between library science and information science by program of study

Students' comments on this question were thorough and varied. Some students

saw similarities between the programs' missions, and did not understand the need for

distinction between them:

Really, it all comes down to information. ... Given the closeness of the two fields, I strongly believe that the arbitrary division should be eliminated and that UNC should grant a degree in Library and Information Science.

A few others, however, did not see where the two fields met:

I really don't understand why we share a department with IS. I often wonder why the IS people didn't just go to school for computer science, seeing as that seems to be where their true hearts lie.

Most respondents, however, saw a connection between the fields and understood

why information and library science were situated in the same academic program.

Frequently, respondents reiterated previous questions, saying that the two fields share the

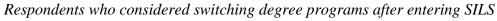
same goals and complement each other. Many of those respondents also advocated

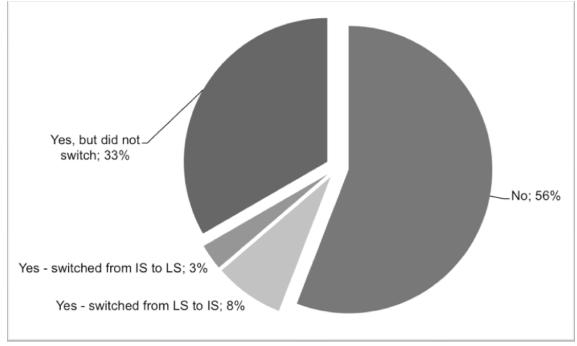
keeping the fields distinct:

It's clearly difficult to separate them when you get down to it, but I think there is a distinct difference for many individuals. Although I think keeping a loose and easily-crossed boundary between them is a good idea, I don't think that getting rid of the boundary altogether is smart.

Changes in degree programs. Along with gender and degree program, students also answered questions regarding whether they had considered moving from one degree program to the other. Table 9 describes how students answered. About 44% of the survey respondents reported that they had considered switching, and 11% did change degree programs—most of them from library science to information science. In fact, nearly one third (7 of 22) of information science respondents were library science students when they entered SILS. More information on this breakdown by program is in Appendix J, Tables 20 and 21.

TABLE 9.





When asked why they switched programs, many students cited personal reasons, namely that they discovered that their true interests lay in the other programs. Two respondents were turned off by certain library science classes, which they found "limiting" and "traditional." Three other respondents—two information science students, one library science student—reported switching because they believed that they would be more marketable to future employees with skills gained from earning the other degree.

DISCUSSION

DIFFERENCE

This study's results are ultimately very similar to previous studies of student perceptions of information work, especially Aharony's 2006 study. Students perceive librarians and information scientists as having different job activities: information scientists work with data, while librarians perform more traditional library tasks, such as reference, instruction, and bibliographic processing. Students' chosen descriptors for the two fields also echo these differences: librarians do work that is people- and serviceoriented, while information scientists do work that is machine-oriented, technical and less "tactile." Students largely agreed on these differences, but information science students saw their field as more people-oriented than library science students did, and library science students saw their field as more broad than information science students did. This gap in perceptions, though small, may indicate that students in the fields hold slightly stereotyped views of the other field.

Students also perceive information scientists as having higher-status jobs than librarians, much like students in previous studies of perceptions of information work. Despite similarities between the types of work being done, librarians are ascribed lower statuses than information scientists. This disparity in statuses is important to consider as librarianship incorporates information science trends more and more, and must be studied further.

SIMILARITY

When asked about the theoretical relationship between information science, students had more complex thoughts to share. Though, on average, students were less confident describing information science than library science, many respondents nevertheless saw the connection between the fields. Students recognized the fields' shared goals, and some declared the perceived differences between the two to be "false," "arbitrary," "flawed," "ill-defined," "illusory," "tricky," "tenuous," and "frustrating." Students reiterated the connection between the programs and the need for collaboration between the two, but said that often collaboration is done in a way that dichotomizes the two fields rather than bringing them together in a cohesive way:

Largely, I believe the goals and practices of both disciplines are the same, but the curriculum, teachers and content of courses tend to invite labels or attitudes that favor one or the other, leading to a division.

This disconnect between the theoretical and day-to-day combination of the fields also contributed to some students' feelings of a cultural divide within the school. Some respondents specifically mentioned a culture of "us versus them" that occasionally results in resentment:

I sometimes feel put off by what I perceive to be information science folks' prejudice against library science folks. I get a sense that the IS students at SILS resent being in a program that is historically LS, but this was where to get the degree. I have gotten the sense that IS students don't have much patience with their LS counterparts and what is important to them (I assume this is probably because LS folks often don't have a good sense of what IS folks do or what is important to them). I also feel as though IS people maintain a very definite distance from LS people, a sort of 'we know how this all works' clique that really goes beyond differences in curriculum or interests.

Though some students expressed cultural disconnect between the programs, responses on many survey questions did not differ widely between students from the two programs, and free-text answers were very similar as well. Common threads among all of these responses were that library science and information science are interconnected, but that connection must be articulated well, lest the divide between them be seen as harmful:

As long as people within Information Science see the pro-social roles of librarianship, technology, and organization as distinct and separate fields, then the evolution and value of Information Science as a whole will be stymied.

At the same time, students feel that, though the divide between the programs can

be overstated, it is still necessary, and should be presented as friendly and collaborative:

While I think they should remain distinct programs, I think it would be helpful to emphasize the similarities and overlap between them.

Overall, the results of this study suggest that students are savvy participants in their LIS educations and are actively seeking to understand the dynamic between information science and library science, from day to day and semester to semester. Students' responses indicate an intricate understanding of the fields' relationships to each other, and a desire to preserve a distinction, but not a division, between the fields.

LIMITATIONS

There were many limitations to this study. The sample size, though normal for an online survey, was still less than 50%, which means that these statistics may not be directly generalizable to the larger population. The people who took this survey could have been SILS students who hold especially strong opinions about the programs here,

and may not have been representative of the master's student body at SILS. This includes the researcher, who, as a master's student at SILS, is inherently biased. The primary limitation of this study, then, is that the researcher is studying a group phenomenon as a member of that group. This brings its own sets of biases, but every effort has been made to maintain neutrality.

Further limitations come from the use of untested scales for measuring (1) descriptors of library and information science, (2) student confidence in describing the fields, and (3) perceived similarities between the fields. Because these scales were created solely for the purpose of this study, it is not known how adequately they can measure the phenomena they were created to measure. Consistent data from pretesting and formal data gathering seem to indicate that the scales were somewhat successful, however.

Additionally, adaptations of existing scales, such as Hodge, Siegel and Rossi's occupational status scales, were imperfect. Though we attempted to develop a list of five library jobs and five information science jobs that had similar statuses, the list used here was mentioned in informal post-survey feedback as containing more lower-status library jobs than lower-status information science jobs. Thus, comparisons of status ratings between the two types of job may be inaccurate. More diligent pretesting likely would have helped with this problem.

Finally, the survey method itself brings its own set of limitations. Surveys are typically high on reliability because they produce consistent results, but the true difficulty is having a valid research instrument that adequately measures what it is intended to measure (Babbie, 2007). According to Babbie, surveys are useful for studying large populations, but not so good at capturing the nuance of issues, which is certainly a limitation of this study. Ideally, future studies would supplement a survey with a series of one-on-one interviews or journals to capture personal anecdotes, and to further probe students about their conceptions of information science and library science.

CONCLUSIONS

Despite day-to-day differences, students of library and information science express very similar beliefs about the roles of library and information science and their relationship to each other. Students still see differences between the job activities and social statuses of librarians and information scientists, much like the LIS students in earlier studies. Despite a shifting workplace where the librarian is more of an information scientist than ever, students still believe that librarians' and information scientists' jobs are divergent. At the same time, students have difficulty defining the field of information science and are grappling with its relationship to library science.

Despite these perceptions of theoretical and day-to-day differences in the fields, students are advocating for a more fluid, though still existent, boundary between the two fields that is bolstered by an understanding of a common goal. As information work becomes more ubiquitous and the notion of librarianship continues to incorporate more information science concepts, perhaps students' perceptions of differences between the fields will change. For now, LIS educational institutions must foster students' complex understandings of the fields as a collaborative, mutually beneficial learning experience for students in both programs. Institutions must also seek to "connect the dots" between the two fields to show their interconnectedness and their relationships to the everyday practice as Estabrook (2005) argued, lest the difference between the fields be seen as oppositional.

Hopefully this study will provide valuable information to administrators and faculty at SILS, and may help in making decisions about course content, degree programs and curricula, and even larger issues such as the school's mission statement and marketing tactics. This study may also prove useful to administrators at library schools elsewhere who may be looking to see "how things are done" at one top-ranked library school, or to better understand the dynamic between library science and information science students within one academic program. The results may not generalize to other academic programs, but would provide some context for administrators who are making curriculum decisions within an LIS educational setting.

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APPENDIX A: EMAIL TO SILS-MASTERS LISTSERV

To: <u>SILS-masters@listserv.unc.edu</u>

From: erinrwhite@unc.edu

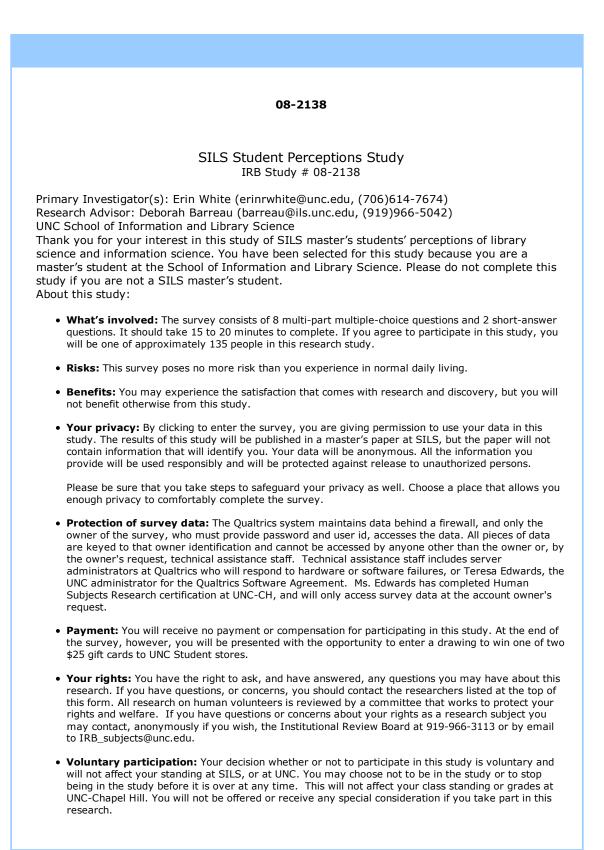
Subject: Invitation to participate in a study of SILS Master's Students Study title: SILS Student Perceptions of Library Science and Information Science Primary Investigator(s): *Erin White* (erinrwhite@unc.edu, (706)614-7674) Research Advisor: *Deborah Barreau* (barreau@ils.unc.edu, (919)966-5042) UNC School of Information and Library Science

Please consider participating in this study of SILS master's students' perceptions of library science and information science. This survey will be open from today until February 7, 2009. The survey that you will complete will consist of eight multi-part multiple-choice questions and two short-answer questions. The survey should take 15 to 20 minutes to complete.

At the end of the survey, you will be presented with the opportunity to visit another website and enter your e-mail address in a drawing to win a \$100 gift card to UNC Student stores.

Thank you for your time! [LINK TO SURVEY]

Appendix B: Survey Instrument



If you click on the button below and submit a completed survey, you are indicating your agreement to participate based on reading and understanding this form. If you have any questions, please contact an investigator identified at the top of this form prior to completing the survey.

If you do not wish to participate in this study, please navigate away from this web page.

Based on the information above, I agree to participate in this study by clicking the "next" button below.

Your time at SILS

How many semesters (including this one) have you been a student at SILS?

Information Science and Library Science

In this section you will be asked to describe your perceptions of information science and library science.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
information retrieval	0	0	0	0	0
building, updating, and managing websites	•	0	0	0	•
information filtering					-
information summation	•		0	•	0
guidance to reference resources			0	0	•
indexing and classification	0	0	0	0	0
matching processed information to a client's personal profile	0	0	0	0	0
instruction in information resources		0	0	0	•
use of information resources		0	0	0	0
advice and recommendation about specific items	-		0	0	-

Please indicate your agreement with how much each activity applies to the role of the Information Scientist.

Please indicate your agreement with how much each activity applies to the role of the Librarian.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
information retrieval	0	0	0	0	0

building, updating, and managing websites	0	0	-	0	-
information filtering	0	•	•	0	
information summation		0	0	0	0
guidance to reference resources		-		0	0
indexing and classification		0		0	
matching processed information to a client's personal profile	0	0			
instruction in information resources	-	~	-	0	
use of information resources		0		÷	0
advice and recommendation about specific items		0		0	0

For each job mentioned, please choose the statement that best gives your personal opinion of the **general social standing** that the job has.

	Poor	Below Average	Average	Good	Excellent	Not sure
Web developer	•	0	0	0	0	0
Reference librarian	0	0		0	0	0
IT Director	-	-	0	-	-	-
Library assistant		0				0
Archivist	-	0		-		-
Elementary school librarian		0				0
Systems administrator	0	0	0	0		0
Library director		0			-	
Programmer		0				
IT consultant			0			0

Please rate how well the following words describe the field of information science.

broad

public-sector				private-sector			
0	•	0	0	0			
broad				narrow			
~	0	0	0	~			
people-oriented				machine-oriented			
0	0	0	0				
theoretical				practical			
0	0	0					
Please rate how well the following words describe the field of library science.							
public-sector				private-sector			
•	0	0	0	0			

narrow

		0	0	0
people-oriented				machine-oriented
0	•	•	0	0
theoretical				practical
0	0	0	0	•

Please indicate your agreement with the following statements:

Library Science and Information Science...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
share similar goals	0	0	0	0	0
are fundamentally the same	-	•	•	0	-
complement each other		0	0		•
should be consolidated into one academic program	•	0	0	0	
differ in name only	-	0	0	0	0
should remain distinct	-	0	0	0	0

If you have any additional thoughts about library science and information science's relationship, please share them here.

Defining Information and Library Science

Please indicate your agreement with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Before I came to SILS, I understood what was meant by the term "information science."	0	0	0	0	0
I can easily describe what information science is.	0	0	0	0	0
I feel confident describing information science to others.	0	0	0	0	0

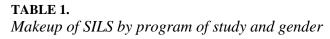
Please indicate your agreement with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Before I came to SILS, I understood what was meant by the term "library science."	0	0	0	0	•

	ily describe what library is.	0	0	0	۲	0
feel con science t	fident describing library to others.	0	0	•	•	•
			Demograp	nics		
What	is your sex?					
	Female					
0	Male					
0	prefer not to say					
\ A/b :el						
	h master's degree are MS, Information Science	you pursuing a	IT SILS?			
0	MS, Library Science					
0	Not sure/undecided					
0	Not applicable					
					ianaa ar fram Lik	vrany Salanaa ta
Have Inforr	you ever considered s nation Science?	witching from I	nformation Scier	nce to Library Sc	aerice, of from Lik	Jary Science to
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Did y	nation Science? Yes No ou switch?	o Information Scier	nce	ice to Library Sc		
Did y	nation Science? Yes No ou switch? Yes - from Library Science t	o Information Scier	nce	ice to Library Sc		
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APPENDIX C: CODE LIST FOR QUANTITATIVE DATA ANALYSIS

- **Definition:** how people outside SILS define the disciplines (n=3)
- **Definition>IS:** students' conceptions of IS (n=8)
- **Definition>LS:** students' conceptions of LS (n=7)
- **Descriptors>IS:** one- or two-word descriptor of IS (n=11)
- **Descriptors>LS:** one- or two-word descriptors of the fields (n=10)
- **Duties>IS:** perceived job duties of the information scientist (n=3)
- **Duties>LS:** perceived job duties of librarians (n=4)
- **History:** conceptions of the "future", the past, the traditional and nontraditional (n=7)
- **Interpersonal:** personal issues among students (n=3)
- **Job_skills:** what job skills are needed (n=5)
- **Perceived differences:** students' perceptions of others' perceptions of differences between the fields meta-differences (n=14)
- **Perceived intentions:** the perceived mindsets, motivations, and intentions of "the other half" (n=3)
- **SILS:** how SILS defines the fields, institutionally and via courses and curriculum (n=15)
- Switching reasons>institutional: SILS or university reasons for switching (n=3)
- Switching reasons>personal: affective or personal reasons for switching (n=10)
- Switching reasons>professional goals: how respondents saw their career goals affected by/affecting their degree decisions (n=7)
- **Switching_reasons>theoretical:** theoretical differences between the fields as a reason for changing degree programs (n=3)
- **Theoretical:** how the fields theoretically relate to each other (n=37)
- What should be done: what the future of LIS education should look like (n=10)



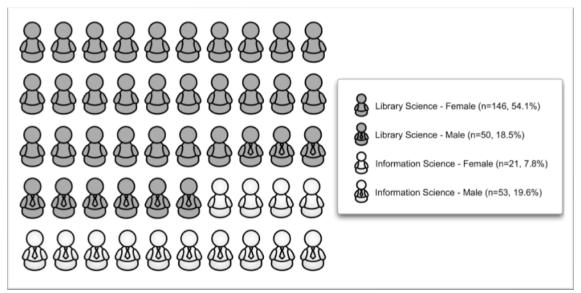
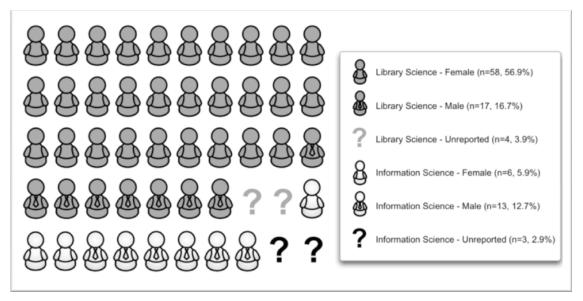


TABLE 2.

Respondents by program of study and gender

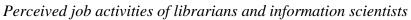


APPENDIX E: PERCEIVED JOB ACTIVITIES OF LIBRARIANS AND INFORMATION SCIENTISTS

For space purposes, job activity names have been shortened:

Job activity	Shortened name
information retrieval	retrieval
building, updating, and managing websites	websites
information filtering	filtering
information summation	summation
guidance to reference resources	guidance
indexing and classification	indexing
matching processed information to a client's personal profile	matching
instruction in information resources	instruction
use of information resources	info resource use
advice and recommendation about specific items	recommendations

TABLE 3.



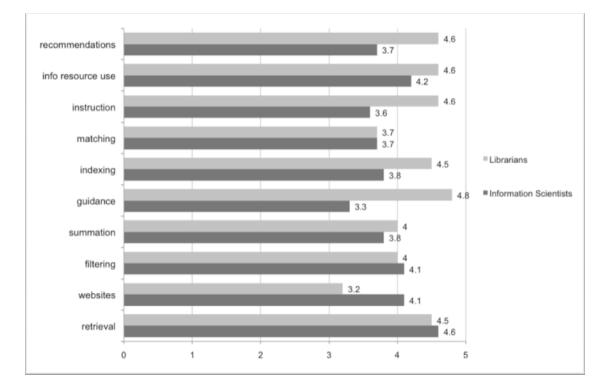
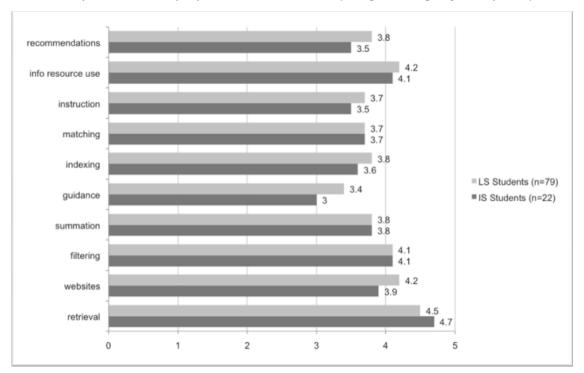
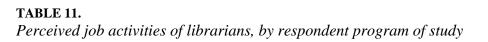
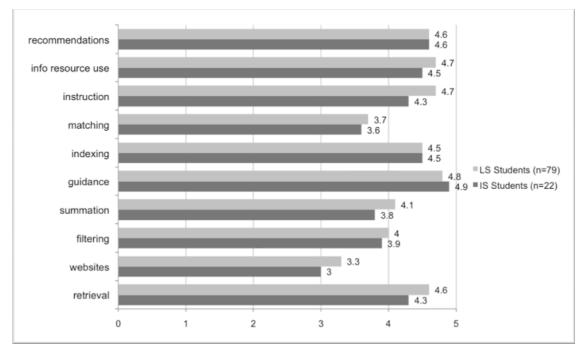


TABLE 10.



Perceived job activities of information scientists, by respondent program of study





APPENDIX F: PERCEIVED STATUS OF LIBRARIANS AND INFORMATION SCIENTISTS

TABLE 4.

Perceived status of library and information science jobs by respondent program of study

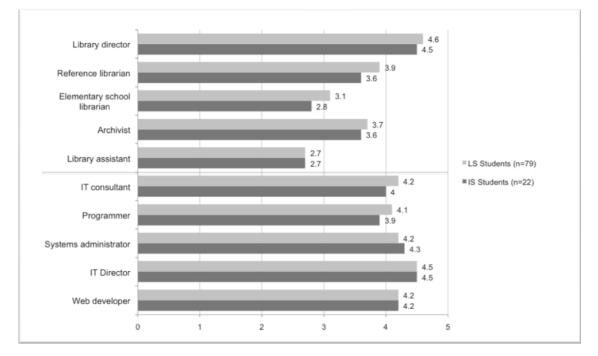


TABLE 12.

Comparison of average perceptions of status of library jobs and information scientist jobs, by respondent program of study

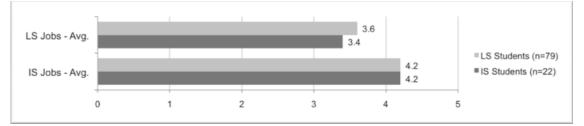
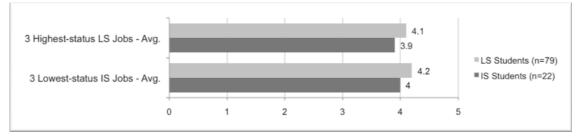


TABLE 13.

Comparison of averages of three highest-status library jobs and averages of three loweststatus information scientist jobs, by respondent program of study



APPENDIX G: DESCRIPTORS OF LIBRARY AND INFORMATION SCIENCE

TABLE 5.

All students' perceptions of library and information science using semantic differential descriptive pairs

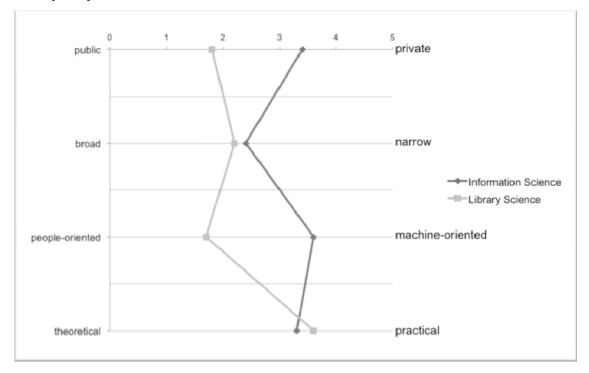


TABLE 6.

Phrases used to describe library science and information science in free-text answers Information Science

Information Science	Library Science	
Rigorous	People-oriented	
Future-oriented	Squishy	
Technical	"Touchy-feely"	
Pragmatic	Idealistic	
Utilitarian	Tactile	
Interdisciplinary	Service-focused	
Broad	"Traditional"	
Business-oriented	Location-specific	
New school	Old school	
	Social	

TABLE 14.

Comparison of perceptions of information science using semantic differential descriptive pairs by program of study

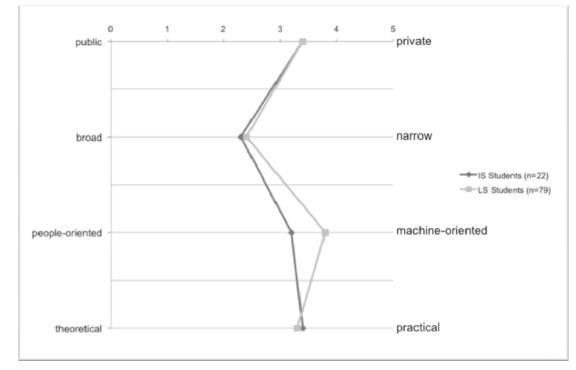
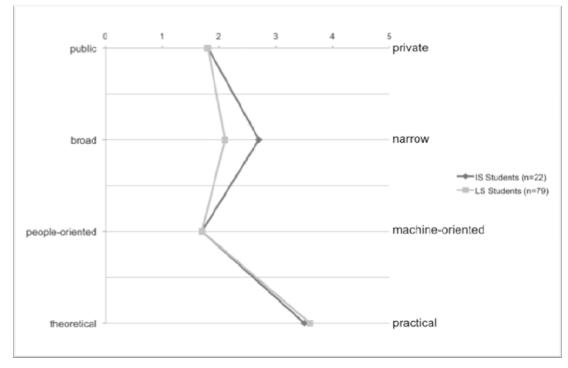


TABLE 15.

Comparison of perceptions of library science using semantic differential descriptive pairs by program of study



APPENDIX H: CONFIDENCE DESCRIBING LIBRARY AND INFORMATION SCIENCE

TABLE 7.

All respondents' confidence describing library science and information science

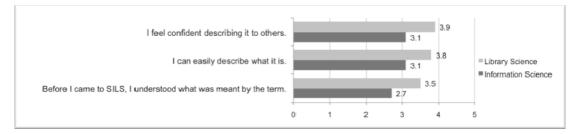


TABLE 16.

Comparison of confidence describing information science by program of study

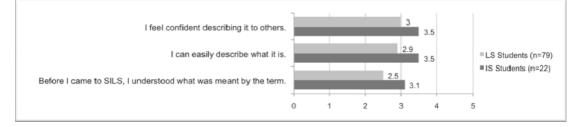


TABLE 17.

Comparison of confidence describing library science by program of study

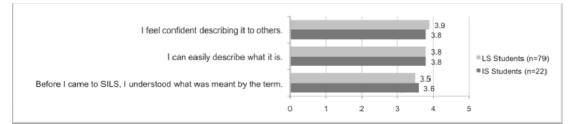


TABLE 18.

Information science students' confidence describing library and information science

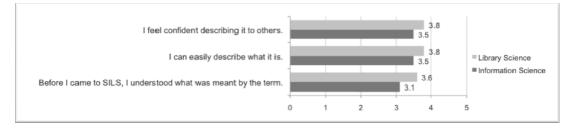
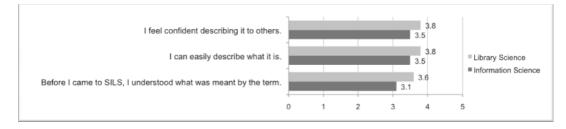


TABLE 19.

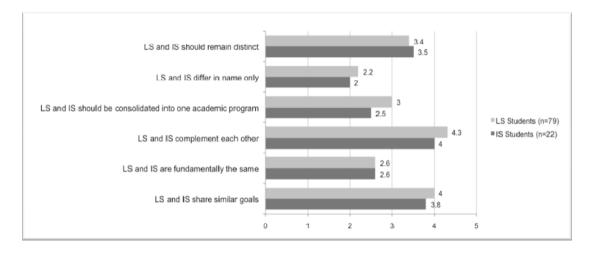


Library science students' confidence describing library science and information science

APPENDIX I: PERCEIVED SIMILARITIES BETWEEN LIBRARY AND INFORMATION SCIENCE

TABLE 8.

Comparison of perceptions of similarity between library science and information science by program of study



APPENDIX J: MOVING BETWEEN DEGREE PROGRAMS



Respondents who considered switching degree programs after entering SILS

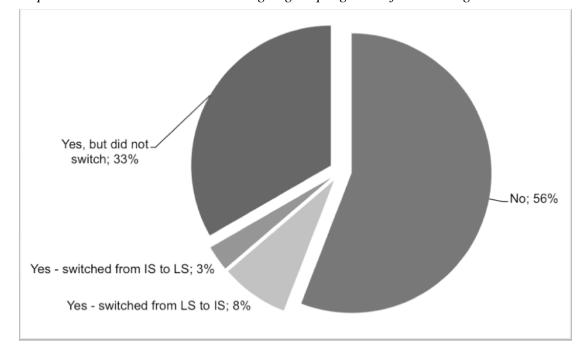
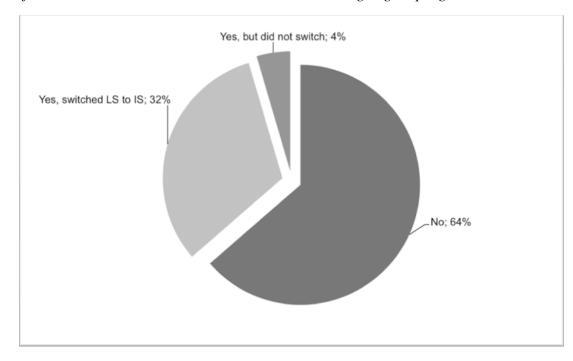


TABLE 20.Information science students who considered switching degree programs



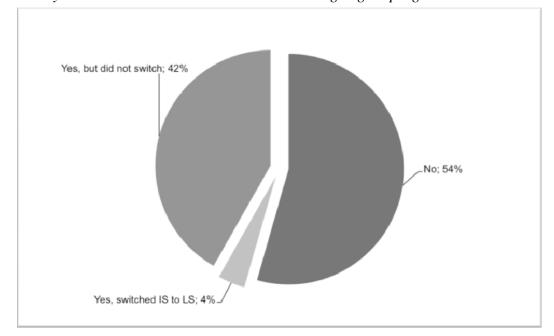


TABLE 21.Library science students who considered switching degree programs