WHAT MAKES A QUALITY PH.D. PROGRAM IN LIBRARY AND INFORMATION SCIENCES?

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The intent of this study was to establish and validate criteria for use to assess the quality of a library and information sciences (LIS) Ph.D. program. The Ph.D. student-centric topology for quality Ph.D. programs was developed from a 2001 position statement by the American Association of Colleges of Nursing (AACN) regarding the quality indicators in research-focused doctoral programs in nursing. Topology components were tested using a survey instrument to establish their importance to the community of practice and their potential use to assess a Ph.D. program. Survey participants were asked to rank terms or concepts in a balanced incomplete block (BIB) design then rate, on a Likert-type scale, statements about the applicability of these terms or concepts to assessing a quality LIS Ph.D. program. Survey participants were from the Association for Library and Information Science Education (ALISE) Open Lib/Info Sci Education Forum jESSE Listserv.

Of 225 survey participants affiliated with universities or schools from North America who submitted usable surveys, slightly less than two-thirds (64.4 %) were female while 35.5 % were male. Ninety-eight participants (43.6 %) were faculty, 114 (50.7 %) were Ph.D. students or candidates, and 13 (5.8 %) were in other roles.

Statistical analysis of survey responses showed consistent results between the different demographic groups. The topology was validated by the results of the statistical analysis of the research data. Every component of the topology was acknowledged as very important to assess the quality of a LIS Ph.D. program. Faculty

was the highest ranked item in the BIB analysis with a statistically significant difference ($p < .0001$) in the mean rank order from the next highest ranked item, Ph.D. students. The rank order from the BIB analysis was as follows: faculty, Ph.D. students, programs (courses) of study, teaching, learning environment, resources, and evaluation. Faculty was also the highest rated item in the Likert-type statement analysis.

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TABLE OF CONTENTS

Appendix

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

General Background

In this era of advanced technology one might question the utility of distance education. But, as evidenced by the burgeoning growth of distance education courses and degree programs, many students believe distance education is a significant improvement over face-to-face methods (Hiltz & Turoff, 2005). The widespread availability of computers and related technology have made distance education or DE (also referred to as distance learning (DL), computer-assisted or aided learning, computer-mediated communications (CMC), eLearning, Web-based distance education, and more) a viable alternative to traditional face-to-face teaching. DE has become firmly rooted as an acceptable method of content delivery in post-graduate education. As a result, “Higher ed ain’t what it used to be” (Conhaim, 2003).

The U.S. Department of Education reported that in 2000-2001 there were over 3 million students in online courses. They expected that number to grow to over 6 million by 2006 (Waits & Lewis, 2003, p. 6). According to the 2003 Sloan Survey of Online Learning by the Sloan Consortium, over 81% of all higher education institutions offered at least one online or hybrid course (a course taught partially online and partially face-to-face) (Allen & Seaman, 2003, p. 2). Thirty-four percent offered one or more degree programs totally online but only 11% of all U.S. higher education students were enrolled in one or more online courses in the fall of 2002 (Allen & Seaman, p. 1). Furthermore, the Sloan Survey said, “A majority of academic leaders believe that online learning quality is already equal to or superior to face-to-face instruction” (Allen & Seaman, p. 3).

The field of library and information sciences (LIS) is no different than many others with respect to providing online course offerings and degree programs. There are dozens of master of library and information sciences (MLIS) DE programs, according to Detlefsen (2004) and Barron (2003). These successful programs can be considered evidence that DE programs are appropriate methods to teach LIS master's students. But what about DE programs for doctor of philosophy degree (Ph.D.) students?

In late 2005 I conducted a preliminary study analyzing an asynchronous online discussion among members of the Association for Library and Information Science Education (ALISE) to provide insight into opinions of the LIS community about online LIS Ph.D. programs. The discussion thread about online Ph.D. programs on the ALISE Open Lib/Info Sci Education Forum jESSE Listserv was lively, informative, and, at times, entertaining. The majority of posts seemed to be emotionally charged opinions, particularly those supporting or opposing online Ph.D. programs. In all, there were 71 related posts by 42 different authors from March 2004 to June 2005. All discussion posts were considered opinion and anecdotal.

The primary analytical focus of the preliminary study was on the posts that had either supporting or opposing statements. They were nearly evenly divided with 12.7% (9) in favor of or making supportive statements about online Ph.D. programs and 15.5% (11) against or making opposing views. No individual posted more than one supporting or opposing post. Due to the preliminary, exploratory nature of this study, coding was neither exhaustive nor inclusive. (Klingler, in press.)

After completing this preliminary study and finding its results inconclusive, I considered investigating further the opinions of faculty and doctoral students about

online LIS Ph.D. programs. This potential investigation would attempt to validate and expand on the comments obtained from the jESSE Listserv discussion. However, the results would still be based largely on opinion and the underlying questions would still remain; what makes a quality Ph.D. program in library and information sciences and can a quality DE LIS Ph.D. program exist? Which brings me to this research.

Statement of the Problem

We assume, in most cases, that a master's or Ph.D. degree completed all or part online (through an accredited institution of higher education) is equivalent to a degree completed in a residence program. It might be possible to approach the question of equivalency of methods in which a degree is obtained through a comprehensive comparison and contrasting of the characteristics of each. An extensive literature search seemed to indicate there are no established baselines or standards by which to measure acceptability or quality of a LIS Ph.D. program. The problem, then, was one of determining what makes a quality LIS Ph.D. program, whether in residence or via distance education. What criteria exist to assess the quality of a LIS Ph.D. program?

At this point I must emphasize that the focus of this research was assessing *programs*, not assessing the university, faculty, or student as separate entities even though these components may eventually need to be evaluated to determine overall program quality.

This research was based on the theory of communities of practice developed by Wenger. According to Wenger (n.d.), three characteristics are necessary for a community of practice: the domain, the community, and the practice:

> Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor… Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly…Members of a community of practice are practitioners. They develop… a shared practice. (Wenger, n.d.)

Members of the library and information sciences profession have all of the characteristics of a community of practice. The domain is library and information sciences in which members engage in collective learning and are passionate about their field. The LIS community consists of practitioners of education and professional library service.

LIS doctoral students and associated faculty are part of the LIS community and form a community of practice of their own. This LIS doctoral community of practice is constantly working to improve the education of future faculty and practitioners. It is this theoretical framework upon which this research was based.

Research Questions

The intent of this study was to establish and attempt to validate criteria that can be used to assess the quality of a LIS Ph.D. program. The research questions in support of this goal were:

1. What are the input criteria, characteristics, or indicators of a quality LIS Ph.D. program?
2. Can a DE LIS Ph.D. program meet these quality criteria? Or in other words, can a quality DE LIS Ph.D. program exist?

Significance of the Study

It is hopeful this study will extend existing knowledge and understanding of assessing the quality of LIS Ph.D. programs whether in residence or via distance education. In addition, this study should contribute to the development of a vocabulary for discourse and suggest a topology for assessing program quality. In the next section I offer a few definitions of terms.

Definitions of Terms

What does the word quality mean? According to Barfield (1926):

> …the word *quality* is used by most educated people every day of their lives, yet in order that we should have this simple word Plato had to make the tremendous effort (it is perhaps the greatest effort known to man) of turning a vague feeling into a clear thought. He invented a new word 'poiotes', 'what-ness', as we might say, or 'of-what-kind-ness', and Cicero translated it by the Latin 'qualitas', from 'qualis'.

Consistent with Plato's poiotes or of-what-kind-ness, the term *quality* is used throughout this dissertation in its adjective form meaning *being of high quality*. If the noun form is used, meaning *degree of excellence* or *superiority in kind,* the term will be preceded or followed by an adjective, such as poor. For example, "it is a quality program" versus "the quality is poor".

A Ph.D. is a research degree and prepares one for the professoriate, so a Ph.D. program, of necessity, is research oriented and prepares a student to teach in the academy.

The terms online and distance education are used interchangeably in this dissertation. Online or distance education courses may be part or all web-based.

A hybrid course is a course that is taught partially face-to-face and partially online.

Enculturation is “the process by which an individual learns the traditional content of a culture and assimilates its practices and values” (Merriam-Webster Online Dictionary, 2005).

Basic Assumptions

For this research I assumed that identifiable quality characteristics exist for a quality LIS Ph.D. program. I also assumed that LIS faculty and Ph.D. students know and can articulate what a quality LIS Ph.D. program is and can identify its characteristics.

A holistic approach was taken in this exploratory study. Since an accepted definition of a quality program does not exist, the phrase “quality Ph.D. program” was used as a whole concept.

Limitations and Delimitations of the Study

This research was limited to investigating LIS Ph.D. programs in North America. Data were obtained from other regions of the world, but only data from North American university faculty and Ph.D. students or candidates were analyzed for this study at this time. There are some limitations to this study that should be addressed in future studies. For example, the study sample was a non-random, volunteer sample instead of a random sample. Since volunteer participants often differ from nonvolunteers, the results obtained from the sample may not be representative of the population of LIS faculty and Ph.D. students and candidates (Frey, Botan, & Kreps, 2000). For simplicity, the survey

instrument's demographic questions do not provide the fine level of granularity of data that would be desired for a more robust study. Also, the topology upon which the survey instrument is mostly based was developed for this study and is unvalidated. Therefore, the findings from this study can be considered as providing exploratory descriptive results to an important, but unstudied, problem.

Summary

The burgeoning growth of DE courses and degree programs can be considered evidence that many students believe DE is a significant improvement over face-to-face methods (Hiltz & Turoff, 2005). The field of library and information sciences provides both online courses and degree programs. Dozens of master of library and information sciences (MLIS) DE programs exist (Barron, 2003; Detlefsen, 2004) and thus can also be considered evidence that DE programs are acceptable for LIS master's students. But what about DE LIS Ph.D. programs?

A preliminary study of a discussion thread on the ALISE Open Lib/Info Sci Education Forum jESSE Listserv showed no majority agreement about online Ph.D. programs (Klingler, in press). This research study is intended to determine what makes a quality LIS Ph.D. program, whether in residence or via DE, and answer the questions: What are the criteria, characteristics, or indicators of a quality LIS Ph.D. program? and Can a quality DE LIS Ph.D. program exist?

In Chapter 2, I review the literature that was useful in developing the ideas and setting the direction for this research.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

This chapter presents a critical review of the literature relevant to the topic of assessing doctor of philosophy degree (Ph.D.) programs. It begins with a brief history of the Ph.D. and some of the present-day concerns about doctoral programs. The majority of the chapter is a detailed review of the literature on assessing quality of graduate programs. Completing the chapter is a Ph.D. student-centric topology for quality Ph.D. programs.

In my literature search I found that much of the literature regarding assessment in higher education concerns student outcome assessment. (e.g., Bowen & Rudenstine, 1992; Denicolo, 2003; Offir, Lev, Lev, & Barth, 2001; Price, 2005; Roberts, Irani, Telg, & Lundy, 2005) Although student assessment is an important issue, it is not one that singularly serves as an indicator for a quality Ph.D. program. So the search was broadened for studies about quality indicators or criteria used to rank or assess programs or schools.

Before we look at the literature on assessing or evaluating quality, we will take a brief look at the history of the Ph.D.

Brief History of the Ph.D.

Universities began awarding doctorates in the 1200s to scholars attaining the highest level of academic achievement. These degrees were given in specific areas, their titles reflecting their specialty such as Doctor of Law, Doctor of Theology, Doctor of Science, and others. In the 1800s, German universities offered the Doctor of Philosophy

(Ph.D.) to those excelling in research. (Bourner, Bowden, & Laing, 2001). At the turn of the 20th century many U.S. doctoral students went to Europe to study then returned to form doctoral programs in the U.S. (Carnegie Foundation, 2001). In the early 1900s many in the academy were questioning the value of the Ph.D. since the academy had traditionally been concerned not with research, but with teaching and scholarship (Hoddell as cited in Hoddell, Street, & Wildblood, 2002). In the mid-1900s universities began requiring a Ph.D. as the minimum educational qualification to serve as a faculty member. According to Hoddell, Street, and Wildblood (2001), "The PhD effectively has operated as a qualification marking the end of a period of apprenticeship as a researcher." Today the Ph.D. has become so widely accepted and recognized that research has become integral to the very existence of universities (Hoddell as cited in Hoddell, Street, & Wildblood, 2002).

The National Science Foundation was formed in the mid-1940s to provide opportunities for universities to complete federal funded research. After World War II the G.I. Bill attracted so many undergraduates there weren't enough Ph.D.s to teach them. In the 1960s, the Cold War and the technology race among the world superpowers increased the demand for science and engineering Ph.D.s. The number of Ph.D.s awarded tripled during this decade. In the 1970s there were more Ph.D.s than academic positions, creating a surplus. (Carnegie Foundation, 2001)

In most fields there still is a mismatch between the number of jobs and the number of Ph.D. job seekers. There are fewer tenure-track positions and an increasing number of Ph.D.s awarded, there just aren't enough academic jobs (Golde & Dore, 2001, p. 2). Golde and Dore state: "The obvious solution to this problem is both to

reduce the number of doctoral recipients and to encourage them to consider careers outside academia. …. This dilemma is rarely discussed, perhaps because it defies simple solution" (p. 11). Some people propose that the ties between the Ph.D. and the professoriate be reduced. After all, they say, the doctorate leads to other career paths not just to an academic career. (Heathcott, 2005).

Golde and Walker (2002) tell us,

American universities have been granting the doctorate for about a century. At the end of the 20th century, we take great pride that the world sends students to the U.S. for doctoral training. Nevertheless, concerns about traditional doctoral education have been widespread and sustained for the last decade.

Among the concerns are:

- What is the purpose of doctoral education? Is it to promote the pursuit of pure knowledge or is it dedicated to career preparation and training?
- For what careers are Ph.D. holders prepared – are faculty positions the normative path or should preparation for other careers be given equal standing?
- Are the "best and brightest" being attracted to doctoral study or are they drawn to other opportunities?
- Should enrollments be reduced or should we encourage more students to pursue the Ph.D.? A contemporary version of this debate is whether US students should be privileged over international students. Efforts to diversify the workforce, the professoriate, and the pool of doctoral students adds another twist to this debate.

- What is the optimal time to degree, and how can rising time to degree be halted?
- How can additional experiences be incorporated into doctoral preparation without taking time away from research and scholarship and without increasing time to degree? (Carnegie Foundation, 2001)

According to Caserio et al. (2004), “Problems have emerged with U.S. doctoral programs; among them are high attrition rates, increased time to degree, failure to diversify, underachievement, isolation, lost opportunities for interdisciplinary work, and paucity of role models.” (p. 1699)

These are all valid questions and concerns that many have been researching for a decade or more. However, it is not the intent of this study to answer them.

Distance education (DE) has added at least one other concern to the mix: if it matters whether one earns a Ph.D. through traditional residence means or via an online program.

Residence versus Distance Education

Kim and Kusack (2005) surveyed 2,002 libraries with open positions seeking applicants with master’s of library science degrees and concluded that “despite the fact that distance programs have greatly increased over the last decade, the impact of DE on the professional librarians job market is still relatively insignificant” and “a large majority of library employers do not differentiate between distance and traditional graduates.” This study involved master’s of library science and library positions and may not apply to a LIS Ph.D.

Other research suggests that the method in which one obtains a doctoral degree *is* important. Adams and DeFleur (2005) completed a survey of chairpersons of hiring committees to determine the acceptability of a doctoral degree earned online as a credential for a faculty position. When given a choice between applicants with a degree obtained traditionally versus an online only degree, or a combination of traditional and online, 98% selected the candidate with the degree obtained traditionally. The online degree applicant was chosen only by one respondent out of 109 completed questionnaires. (pp. 77-78.) While this research was not specific to LIS, the findings could be an indication of possible results in the LIS community.

In the sections that follow we look at assessment criteria and evaluation guidelines to see how they might be used to assess the quality of a LIS Ph.D. program. But first we will review the theory of communities of practice and its applicability to a quality LIS Ph.D. program.

Communities of Practice

The theory of communities of practice was developed by Wenger. According to Wenger (n.d.), three characteristics are necessary for a community of practice: the domain, the community, and the practice:

Wenger (2000) offered this definition:

> Communities of practice are the basic building blocks of a social learning system because they are the social 'containers' of the competences that make up such a system. By participating in these communities, we define with each other what constitutes competence in a given context: being a reliable doctor, a gifted photographer, a popular student, or an astute poker player… Communities of

> practice define competence by combining three elements. First, members are bound together by their collectively developed understanding of what their community is about and they hold each other accountable to this sense of *joint enterprise.* To be competent is to understand the enterprise well enough to be able to contribute to it. Second, members build their community through mutual engagement. They interact with one another, establishing norms and relationships of *mutuality* that reflect these interactions. To be competent is to be able to engage with the community and be trusted as a partner in these interactions. Third, communities of practice have produced a *shared repertoire* of communal resources—language, routines, sensibilities, artefacts, tools, stories, styles, etc. To be competent is to have access to this repertoire and be able to use it appropriately. (p. 229, original emphasis)

Higher education is made up of multiple communities of practice and each person in the academy is a member of one or more communities. One of these communities includes the members of the library and information sciences profession. LIS doctoral students and associated faculty are part of the LIS community and form a community of practice of their own. This LIS doctoral community of practice is constantly working to improve the education of future faculty and practitioners. It is this theoretical framework upon which this research was based.

Table 1 exhibits a list of indicators of community of practice Cox (2005) extracted from Wenger (as cited in Cox, 2005).

Table 1

Wenger's Indicators of Community of Practice

(1) Sustained mutual relationships—harmonious or conflictual
(2) Shared ways of engaging in doing things together
(3) The rapid flow of information and propagation of innovation
(4) Absence of introductory preambles, as if conversations and interactions were merely the continuation of an ongoing process
(5) Very quick setup of a problem to be discussed
(6) Substantial overlap in participants' descriptions of who belongs
(7) Knowing what others know, what they can do, and how they can contribute to an enterprise
(8) Mutually defining identities
(9) The ability to assess the appropriateness of actions and products
(10) Specific tools, representations, and other artefacts
(11) Local lore, shared stories, inside jokes, knowing laughter
(12) Jargon and shortcuts to communication as well as the ease of producing new ones
(13) Certain styles recognized as displaying membership
(14) A shared discourse reflecting a certain perspective on the world

Note: Taken from Cox (2005)

The indicators from Table 1 that would seem to apply to or influence assessment of a Ph.D. program are indicators 2-5, 7-10, and 14.

Price (2005) investigated the methods and difficulties of establishing and using assessment standards within a higher education community of practice. She notes that "[a]n assessment standards discourse is needed to support the functioning of assessment communities of practice... Without meaningful discourse shared knowledge of assessment standards can only partially be achieved. (p. 226)" Community of practice members come together to exchange ideas and share best practices.

Smith and Rodgers (2005) concluded that "being student centered is a necessary but not a sufficient condition for a student learning center of practice. Leaders may need to specify a student learning interpretation of student centeredness in order to avoid the fallacy of confusing a student-centered pedagogy with learning-centered pedagogy."

Program Evaluation or Assessment

As mentioned earlier in this chapter, program evaluation or assessment may involve student assessment but that is only one area to be considered. So, what is meant by program evaluation or program assessment, assessing quality in higher education? According to Mizikaci (2006):

> Program evaluation can be defined as a systematic operation of varying complexity involving data collection, observations and analyses, and culminating in a value judgement with regard to the quality of the program being evaluated, considered in its entirety, or through one or more of its components. (p. 41)

Koslowski (2006) said that these ideas are not only contentious; the quality movements generally brought to mind are "neither easily applicable, nor endearing to academic professionals." Koslowski lists four types of assessment used in higher education as elucidated by Gates et al. (as cited in Koslowski, 2006). They are: Guided

self-assessment—similar to the International Standards Organization 9000 model; Intermediary conducted assessment—state higher education governing and coordinating boards, accrediting bodies, and others; Independent self-assessment—the institution accepts full responsibility for the quality process; and, Provider or intermediary conducted student competencies-based assessment—focuses on student outcomes. (Gates et al. as cited in Koslowski, 2006)

The “lack of clarity of the concept of quality” is one of the factors responsible for keeping higher education from implementing quality systems (Meirovich & Romar, 2006). “Despite ongoing debate for over a decade, academics and policy makers appear to have been unable to develop an agreed definition of the concept of quality (Lakomski & Marshall as cited in Meirovich & Romar, 2006).

Mizikaci (2006) lists several ways in which quality has been defined:

Quality as excellence. This definition is considered to be the traditional academic view that holds as its goal to be the best.

Quality as zero errors. This is defined most easily in mass industry in which product specifications can be established in detail, and standardized measurements of uniform products can show conformity to them. As the products of higher education, the graduates are not expected to be identical, this view is not always considered to be applicable to higher education.

Quality as fitness for purposes. This approach requires that the product or service has conformity with customer needs, requirements, or desires.

Quality as transformation. This concept focuses firmly on the learners: the better the higher education institution, the more it achieves the goal of empowering

students with specific skills, knowledge and attitudes which enable them to live and work in the knowledge society.

Quality as threshold. Defining a threshold for quality means setting certain norms and criteria. Any institution that reaches these norms and criteria is deemed to be of quality.

Quality as value for money. The notion of accountability is central to this definition of quality with accountability being based on the need for restraint in public expenditure.

Quality as enhancement or improvement. This concept emphasizes the pursuit of continuous improvement and is predicated on the notion that achieving quality is central to the academic ethos and that it is academics themselves who know best what quality is at any point in time. (Campbell & Rozsnayi as cited in Mizikaci, 2006, p. 38)

Quality of excellence is the definition of quality employed in this study.

Baldrige Award Education Criteria

The Malcolm Baldrige Quality Award or similar criteria have been used primarily for quality improvement and self-assessment efforts (Karathanos & Karathanos, 1996; Mizikaci, 2006). When the Baldrige Award criteria were first established, they targeted manufacturing and service organizations. The primary goal of the criteria is customer satisfaction. In 1994, the Baldrige organization developed and released the “Malcolm Baldrige National Quality Award: Education Pilot Criteria 1995.” As with any good quality initiative, the criteria were piloted to ensure their utility. The education criteria have been published every year since 1994.

There is no doubt that a school or degree program would become better as a result of an assessment process using the criteria. Some institutions of higher education have turned to the Malcolm Baldrige National [Quality] Award program for a framework to assess and implement continuous quality improvement (Burke, 2006).

The Baldrige criteria are similar to accreditation standards in that they are nonprescriptive. There are seven main categories with 19 items or supporting criteria and questions (Appendix A).

Scoring of responses to the criteria is based on two dimensions: Process and Results. Process is “the methods your organization uses and improves to address the Item requirements in Categories 1-6” (Baldrige, 2006). There are four factors used to evaluate process: Approach, Deployment, Learning, and Integration.

Results are the “outputs and outcomes” (Baldrige, 2006) from Criteria Items 7.1 through 7.6. Like the Process dimension, there are four factors to evaluate Results:

- your current level of performance
- rate (i.e., slope of trend data) and breadth (i.e., how widely deployed and shared) of your performance improvements
- your performance relative to appropriate comparisons and/or benchmarks
- linkage of your results measures (often through segmentation) to important student and stakeholder; program, offering, and service; market; process; and action plan performance requirements identified in your Organizational Profile and Process Items (Baldrige, 2006)

Having used the Baldrige Criteria to conduct self-assessments of the quality of a business organization and a public sector organization, my experience has been that

the Baldrige Criteria can be effective but require significant resources and commitment to implement.

Program Quality

What is a quality graduate education? Bowen and Rudenstine (1992) offer the following view:

> Institutional quality is a notoriously elusive concept. Assessments of undergraduate education, for example, are frequent and often well publicized, but they are so imprecise and impressionistic that their utility is highly questionable. Efforts to evaluate graduate education are less frequent, and while such evaluations are certainly open to criticism, they have the great advantage of focusing on individual disciplines or departments at specific institutions, and of applying a limited set of criteria relevant to the more sharply defined purposes of doctoral training and advanced research in specific fields. (Bowen & Rudenstine, p. 63)

Bowen and Rudenstine (1992) developed a rubric for assessing quality that used what they called standard criteria to assign each program they reviewed to one of four tiers. They used four criteria from a 1982 study by Jones, Lindzey, and Coggeshall (as cited in Bowen & Rudenstine, 1992): program size, characteristics of graduates (such as fellow support and time-to-degree), reputation of the faculty and program based upon peer survey results, and university library size (Bowen & Rudenstine, p. 63). Note that two of the four criteria are quantitative in nature (program size and University library size) and the other two are qualitative. Reputation of the faculty and program based

upon peer survey results seems to be the measure with the most potential for bias of the four.

Reputational Measures

Reputational surveys or reputational measures are a method of assessing a doctoral program. The National Research Council published the results of a study of Research-Doctorate Programs in 1995. Upon review of the study, the Committee to Examine the Methodology to Assess Research-Doctorate Programs concluded that two weaknesses of the 1995 study were:

> *Flawed measurement of educational quality.* The exceptional measure of program effectiveness in graduate education, derived from a question asked of faculty raters, confounded research reputation and education quality.
>
> *Emphasis on the reputational measure of scholarly quality.* This emphasis gave users the impression that a 'soft' criterion, subject to 'halo' and 'size effects,' was being overemphasized for the assessment of programs. (Ostriker, Kuh, & Voytuk, 2003, p. 1)

Accreditation Standards

Some would suggest using accreditation standards as the measuring stick to assess LIS Ph.D. programs.

According to the Council for Higher Education Accreditation (CHEA), "Accreditation is the primary means by which the quality of higher education institutions and programs is assured in the United States" (CHEA, 2006). Eaton (CHEA, 2001a) states it a little differently, "Accreditation is a process of external quality review used by higher education to scrutinize colleges, universities and higher education programs for

quality assurance and quality improvement." and "Accredited status is a signal to students and the public that an institution meets at least minimal standards for its faculty, curriculum, student services, and libraries" (CHEA, 2006).

While the CHEA provides general guidelines to the accrediting organizations, each accrediting body sets its own accreditation standards in areas such as curriculum, faculty, student achievement, and others (CHEA, 2001b).

As for accrediting DE programs, in 2001 CHEA published a monograph series that addressed the challenges of accrediting higher education institutions offering distance learning programs. They reported that all 1,680 institutions offering DE to 1.6 million students in 1997-1998 were accredited (CHEA, 2001a).

CHEA published another Monograph Series in 2003 dealing with accreditation accountability and the federal government. They recognized agreement between accreditors and the federal government on three issues:

- It is essential that accreditation be accountable to higher education, students, and the society.
- This accountability is achieved by developing and using evidence of the effectiveness of institutions and programs.
- This evidence of effectiveness is a mix of information about resources, processes, institution and program performance, and student learning outcomes. (CHEA, 2003)

These issues are consistent with the need to assess programs, such as LIS doctoral programs. Unfortunately, they appear to be a recurring theme in the CHEA monographs without apparent resolution.

American Library Association Accreditation

One of the accrediting organizations recognized by the CHEA is the American Library Association (ALA). The ALA *Standards for Accreditation of Master's Programs in Library and Information Studies 1992* (ALA, 1992) include six major areas: mission, goals, and objectives; curriculum; faculty; students; administration and financial support; and physical resources and facilities. Admittedly the ALA standards do not apply to doctoral programs as the ALA states; "These standards are limited in their application to the evaluation of graduate programs of library and information studies leading to a master's degree" (ALA, 1992). Nor are these standards prescriptive.

Other Standards and Criteria

The American Society for Information Science and Technology (ASIST), Special Libraries Association (SLA), Medical Library Association (MLA) and others provide guidelines, standards, and recommendations that usually involve lists of specific topics to be taught or outlines of recommended curricula. These lists are useful in assessing programs to see if they offer the right courses, but provide limited guidance on assessing other dimensions.

American Society for Information Science and Technology

The American Society for Information Science and Technology (ASIST) has developed educational guidelines that "include both academic and practical applications of information science topics…" (ASIST, 2001). These guidelines come with several disclaimers as to their non-exhaustive inclusion of topics and the voluntary nature of usage. Basically, the ASIST educational guidelines list six areas that information science programs might want to include in their curricula: foundations of information

science, information use and users, methods of inquiry, information processing, information technology, and information service provision and management (ASIST, 2001). There are several topics under each of these six areas. For example, under the area methods of inquiry are found the topics basic research methods, measurement and evaluation, assessment technologies, and critical thinking and problem solving (ASIST, 2001). These guidelines would have some, albeit limited, utility in assessing the quality of a LIS Ph.D. Program.

Special Libraries Association

The document, *Competencies for Information Professionals of the 21st Century,* published by the Special Libraries Association (SLA) (2003), lists the knowledge, competencies, and skills required by information professionals to perform in their "unique role in gathering, organizing and coordinating access to the best available information sources for their organization…" These are grouped into two types of competencies, professional competencies and personal competencies.

"Professional Competencies relate to the practitioner's knowledge of information resources, access, technology and management, and the ability to use this knowledge as a basis for providing the highest quality information services" (SLA, 2003). There are four major competencies forming the professional competencies: managing information organizations, managing information resources, managing information services, and applying information tools and technologies (SLA, 2003). Note that three of the four competencies concern management and the fourth deals with practical skills.

"Personal Competencies represent a set of attitudes, skills and values that enable practitioners to work effectively and contribute positively to their organizations,

clients and profession" (SLA, 2003). The personal competencies state that every information professional:

- Seeks out challenges and capitalizes on new opportunities
- Sees the big picture
- Communicates effectively
- Presents ideas clearly; negotiates confidently and persuasively
- Creates partnerships and alliances
- Builds an environment of mutual respect and trust; respects and values diversity
- Employs a team approach; recognizes the balance of collaborating, leading and following
- Takes calculated risks; shows courage and tenacity when faced with opposition
- Plans, prioritizes and focuses on what is critical
- Demonstrates personal career planning
- Thinks creatively and innovatively; seeks new or "reinventing" opportunities
- Recognizes the value of professional networking and personal career planning
- Balances work, family and community obligations
- Remains flexible and positive in a time of continuing change
- Celebrates achievement for self and others (SLA, 2003).

This same list of competencies could be applied to a plethora of disciplines. Some overlap exists between these competencies and Wenger's indicators of community of practice (Table 1).

Medical Library Association

According to the Medical Library Association's (MLA) *Platform for Change: Recommendations* (1991), "Lifelong learning must be a cornerstone of every individual's professional development plan…. [T]his document sets forth some general recommendations, then outlines specific recommendations for those who play key roles in the professional development of health information professionals." The MLA recommendations include both general and targeted recommendations for the individual health information professional, the MLA, employers, library and information science education, and the National Library of Medicine.

American Association of Colleges of Nursing Doctoral Programs Quality Indicators

During my literature search I was unable to find any standards existent specifically for assessing Ph.D. programs in LIS, but I located an excellent document on quality doctoral programs in another area. The *Quality Indicators in Research-Focused Doctoral Programs in Nursing* (2001) published by the American Association of Colleges of Nursing (AACN) seemed to provide an excellent framework from which to establish criteria to evaluate LIS Ph.D. programs.

In 2001, the American Association of Colleges of Nursing (AACN) published a position statement regarding the quality indicators in research-focused doctoral programs in nursing. This position statement included an excellent framework for evaluating a program holistically. The AACN (2001) said,

> Research-focused doctoral programs prepare students to pursue intellectual inquiry and conduct independent research for the purpose of extending knowledge. In the academic community, the PhD, or Doctor of Philosophy degree, is the most commonly offered research-focused degree… The purposes of the research-focused doctoral degree are to prepare for a lifetime of intellectual inquiry, creative scholarship, and research; provide preparation that leads to careers in government, business, and industry as well as academia; and result in extension of knowledge.

The AACN indicators of quality are given in five major categories: faculty, programs of study, resources, students, and evaluation. The detailed indicators in each of these categories are given in Appendix B.

With minor modifications, these indicators could become indicators of quality for any Ph.D. program, including a LIS Ph.D. program.

It is curious to note that in some important aspects, nursing and LIS are alike. For example, there exists a shortage of nurses and nursing faculty (AACN, 2005) and there also exists a shortage of librarians and LIS faculty due to retirement and other factors. Based on 1990 Census data, the American Library Association (ALA) says that nearly 58% of “librarians will reach the age of 65 between 2005 and 2019. Based on a 2000 survey published by Library Journal, 40% of library directors said they would retire in nine years or less” (ALA, 2005). Several DE Ph.D. programs in nursing and LIS are now being created in an effort to alleviate the shortages of practitioners and faculty in both disciplines.

A Ph.D. Student-Centric Topology for Quality Ph.D. Programs

The high-level indicators of quality in the AACN position statement, combined with another encompassing concept, learning environment, suggested by a committee member were used to develop a topology for this study. (See Figure 1.) This topology is Ph.D. student-centric. The Ph.D. student is surrounded by resources that are required for any quality program and, therefore, are underlying all other criteria of the proposed topology except for the learning environment that encompasses and frames both the Ph.D. student and resources. Within the resources boundary also fall evaluation, faculty, and programs of study whose overlapping boundaries represent the interdependence of them all. The overlapping boundaries of evaluation, faculty, and programs of study also fall within the boundary of the Ph.D. student domain indicating the importance of each of these three concepts and their intersections to the Ph.D. student. Working definitions of these terms or concepts are found in the survey instrument in Appendix C.

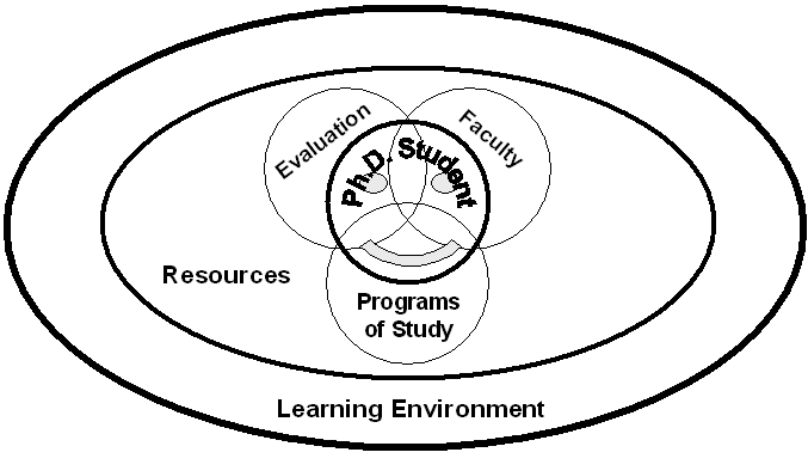

Figure 1. Ph.D. student-centric topology for quality Ph.D. programs.

While this proposed topology appears to reflect the critical components of a quality LIS Ph.D. program, a survey instrument is introduced in Chapter 3 that was designed to validate the topology and its components.

Summary

The Ph.D. has a long and glorious history beginning with its roots in doctorates awarded in fourteenth century Europe. In the 1800s, German universities offered the Doctor of Philosophy (Ph.D.) to those excelling in research. Today, the Ph.D. is considered a requirement for teaching at a university and signifies “the end of a period of apprenticeship as a researcher” (Hoddell, Street, & Wildblood, 2001). There have been several studies on the status of the Ph.D. bringing to the forefront many challenges or issues facing the Ph.D. One of the problems is too many Ph.D.s and not enough academic jobs. DE has added to the list of issues, raising the question if it makes a difference to earn a Ph.D. through a traditional residence program or via an online program.

LIS doctoral students and associated faculty form a community of practice. It is within the communities of practice theory framework that this research is based. As the “social ‘containers’” (Wenger, 2000) of competence, the community defines what makes one competent. The community must have dialog on assessment standards for “[w]ithout meaningful discourse shared knowledge of assessment standards can only partially be achieved (Price, 2005).”

We looked at the literature to help us answer the question, What makes a quality Ph.D. program? Among the things considered to help us identify a quality Ph.D. program were Bowen and Rudenstine’s (1992) rubric for assessing quality, reputational

measures, accreditation standards, the Malcolm Baldrige Award Education Criteria, and other standards and criteria from organizations like ALA, ASIST, SLA, and MLA. Part of the difficulty in establishing assessment criteria is they are not applied easily and are not generally accepted by the academy (Koslowski, 2006). The AACN Doctoral Program Quality Indicators are an outstanding set of assessment criteria easily adapted to LIS Ph.D. programs. These indicators of quality were used to develop a Ph.D. student-centric topology for quality Ph.D. programs. In Chapter 3, a survey instrument was employed to help validate the topology.

CHAPTER 3

METHODS

Introduction

Data for this study was obtained using a survey instrument. This chapter contains information about the development and pilot testing of the survey instrument, the target population, how the data was collected, survey construction, and data analysis. A summary concludes the chapter.

Pilot Survey

A survey instrument was originally designed with four parts: ordered pairs, ordered categories (Likert-type), partial ranks balanced incomplete block (BIB), and demographics. It was submitted to and approved by the University of North Texas (UNT) Institutional Review Board (IRB).

A pilot test of the study was conducted with faculty and Ph.D. students at UNT. Invitations to participate in the pilot survey were emailed to a combination of approximately 130 UNT School of Library and Information Sciences (SLIS) faculty, recent information Science (IS) doctor of philosophy degree (Ph.D.) graduates, and IS Ph.D. students/candidates. Most of the names and email addresses were obtained from the UNT SLIS web site. The survey instrument was administered online using SurveyMonkey.com.

Responses were received from 17 of the invitees: three faculty and 14 Ph.D. students. Although the response rate was only about 10%, the feedback and data were highly instructive and most useful in revising the survey for the final administration.

Survey respondents commented on the following issues:

- The survey was too long and repetitive. In addition to the written feedback, this was evidenced by the fact that four of the 17 respondents did not complete the survey including the last part that contained demographic questions. One respondent answered the first 60 of 78 pairwise rankings and no other questions or sections of the survey. Another respondent completed about half of the first part of the survey, answered all of the second part, skipped the third part and answered the last part.
- Terms used in the survey needed clarification. Four respondents made similar comments.
- One question needed to be reworded to ask faculty how long they have held their doctorate instead of their Ph.D.

In response to this feedback, I removed one of the sections of questions. The demographic data needed to remain, so it was not a candidate for deletion. The ordered pairs section and the partial ranks balanced incomplete blocks (BIB) section were designed to provide the same data, so the ordered pairs section was chosen for deletion since it contained 78 pairwise ranking questions compared to the 13 ranking questions (further reduced to 7) in the partial ranks BIB section. The demographics section was placed at the beginning of the survey to insure collection of demographic data. Also, clarifications and/or definitions of the terms used in the survey were included as part of the survey. Revisions were made before making the survey generally available to the study participants.

The final survey instrument is included at Appendix C.

Participants

The target population for this study was LIS faculty and Ph.D. students. This cross-sectional survey used a non-random, volunteer sample from the ALISE Open Lib/Info Sci Education Forum jESSE Listserv that has over 1400 participants. Survey participants were self-selected thereby avoiding the complexities of developing a large, pseudo-random list of participants to notify, monitor, and remind individually. Since the jESSE listserv has an international flavor with members outside of North America, information about the participant's global region was part of the demographic data gathered. Data from only North American university faculty and Ph.D. students or candidates was analyzed. Data collected from participants outside of North America were preserved for possible future analysis.

Data Collection

The desire was to obtain as high a rate of survey return as possible. I attempted to achieve a high rate of return by implementing modified suggestions from Glatthorn (1998):

- Use a clearly written, easy to complete survey.
- In a pre-survey announcement, convey the importance of the survey and inform that the survey results will be shared with participants.
- Besides the initial notification of survey availability, a reminder notice was posted one week after initial notification.
- A final reminder was posted one and one-half weeks after the initial notification.

Instrument Construction

The first part of the survey instrument was a simple demographic questionnaire used to identify the region of the world the participant's university or college is in, whether the participant is faculty or a Ph.D. student or candidate, year of birth, and gender. Faculty participants were asked to identify how long they have held their doctorate and if they are tenured. Ph.D. students or candidates were asked about their Ph.D. program, if it is a residence, distance education, or combination program, whether they have taught an undergraduate or graduate course, and if they are seeking or planning to seek a faculty position. After the demographics part of the questionnaire, the terms and concepts were clarified.

The second and third parts of the survey instrument were developed from terms or concepts derived from the Ph.D. student-centric topology for quality Ph.D. programs (Figure 1), other terms or concepts related to assessment or evaluation of an educational program, and terms or concepts from a preliminary study (Klingler, in press).

Balanced Incomplete Block Design

For the second part, six terms or concepts came directly from the Ph.D. student-centric topology for quality Ph.D. programs: Ph.D. students, faculty, resources, evaluation, programs (courses) of study, and learning environment. A seventh term or concept, teaching, was added to round out the design. (Teaching was one of 13 terms or concepts included in the original survey instrument design that was piloted. The seventh term or concept could have been any of the other six from the original survey construct. Teaching was chosen for no particular reason. Other choices could have

been interdisciplinarity, accreditation, enculturation, flexibility, technology, or convenience.)

The purpose of this part of the survey instrument was to have participants rank the seven terms or concepts. One way to accomplish would have been to list all seven terms or concepts together and have participants put them in rank order. Besides being a complicated task, the outcome would be affected by the order in which the terms or concepts appeared in the list. Another approach could have been to develop a matrix or block or terms or concepts to rank. A complete block would be a 7 x 7 matrix that included every term or concept in every column and row. This design is called a balanced complete block. Balanced because “all distinct pairs of treatments appear together in a block an equal number of times.” (Giesbrecht & Gumpertz, 2004) Complete because every treatment is present in each block. While accounting for positional bias of the terms or concepts, this would be a more complex task for the survey participants. Instead of ranking one row of seven items there would be seven rows of seven items to rank. Another method would be to create pairs of all terms for ranking because it is much simpler to choose between two items. Although the individual paired comparisons would be easier, pairing each of the seven items with every other item would require $n \bullet (n\text{-}1)$ or 42 pairs. Participants might grow weary of ranking so many pairs of the same terms.

The design I decided to use was balanced incomplete blocks. The balanced incomplete block design chosen for this study presented to participants seven blocks of three terms or concepts for ranking. The blocks are incomplete because not every term or concept is present in each block. This design, shown in Table 2, has the following

design parameters: *b* = 7 blocks, *t* = 7 treatments (or terms or concepts), *k* = 3 treatments in each block, *r* = 3 times each treatment appears in a block, and *L* = 1 time each treatment is paired with another treatment in a block. Ranking three items at a time is a manageable task and the incomplete blocking can be statistically analyzed.

Table 2

Balanced Incomplete Block Design
(t = 7, b = 7, r = 3, k = 3, L = 1)

Block	Treatment	Treatment	Treatment
1	1	2	4
2	2	3	5
3	3	4	6
4	4	5	7
5	5	6	1
6	6	7	2
7	7	1	3

Likert-type Ordered Categories Design

In the third part of the survey instrument, ordered categories (Likert-type), participants were asked to indicate the degree to which they agree or disagree with 20 statements as they apply to a quality LIS Ph.D. program. This design established rank ordering of the seven terms or concepts included in the BIB design because all of the seven terms or concepts used in the BIB design appeared in statements in this section. (Resources: statement 1; Ph.D. students: 3 & 11; evaluation: 6; teaching: 8; learning environment 15; faculty: 16; and programs (courses) of study: 20.) The other statements are either of a general nature or about issues or comments observed in the preliminary

study (Klingler, in press). This part used a six point Likert-type scale: strongly disagree, disagree, moderately disagree, moderately agree, agree, and strongly agree. The six points scale was used to force participants to choose whether they agree or disagree with the statements. Schuman and Presser found that offering a neutral middle point increased the proportion of middle point responses “by 10 to 20% on most issues” (In Frey, Botan, & Kreps, 2000, p. 91). According to Vojir, Jones, Fink, and Hutt (2006): “Most researchers believe that omission or inclusion of the neutral/undecided point makes little significant difference in research outcomes.”

Several of the statements in the Likert-type section were negatively worded (statements 9, 10, 12, 15, and 17) to be useful in the analysis to determine if the participants had carefully read the statements.

The second and third parts of the survey instrument were designed to validate each other. The partial ranks BIB design and the ordered categories (Likert-type) design incorporated some of the same terms or concepts and should reflect consistency on those same terms and concepts.

There were two optional open-ended questions at the conclusion of the survey instrument to allow participants the opportunity to comment. In the first, participants were asked to list and briefly explain terms or concepts they would include that weren’t in the survey. The second asked for “any additional comments.” All other questions in the survey required a response except these two final questions.

Data Analysis

The three parts of the survey instrument were analyzed as follows:

Answers to the demographic questions provided data about the participants that were used to sort and further analyze the other data. The North American participants were identified prior to analyzing any other responses, and then combined with the results from the other parts of the survey instrument to determine if there were any statistically significant differences in the results between demographic groups.

For incomplete block designs there are two ways to analyze the data; using intrablock and interblock methods of analysis. Data from the partial ranks BIB part of the survey were converted to rank preference profiles and compared and contrasted with the results from the ordered categories (Likert-type) analysis.

The ordered categories data were tabulated into a matrix using Likert scaling. But before analyzing these data, they were normalized as though there was a neutral midpoint. Vojir, Jones, Fink, and Hutt (2006) said:

> [T]he neutral/undecided point does exist in the agree-to-disagree continuum regardless of whether it is presented to the respondent. The assignment of numbers to Likert scales with a neutral/ undecided point is different from the assignment of numbers to Likert scales without a neutral/undecided point. In the 4-point case, assuming that the numbers 1 to 4 are used, the neutral/undecided point is relegated to half a scale point between the “Disagree” and “Agree” responses (2.5), whereas in the 5-point scale case (numbers 1 to 5), the neutral/undecided point is associated with the number 3.

Vojir, Jones, Fink, and Hutt (2006) described a study with two measurement periods. In the first measurement period they used a four-point Likert-type scale. Some surveys completed during the first measurement period had both of the left and right of center choices circled together indicating neither agree nor disagree. In the second measurement period they used a five-point scale and included the neutral middle point. When they compared the results from both surveys, there appeared to be a significant change. By including the same middle point in both sets of data and recalculating the results, the differences were insignificant. “It’s an artifact of the scaling, a type I error.” (Vojir, Jones, Fink, & Hutt, 2006) In the event of possible future research on this topic, I have calculated results of the six-point Likert-type scale as though it had a midpoint.

The mean and standard deviation of each item was calculated along with the Pearson (r) correlation for each item with the total values. The correlation was used as a discrimination index for each item. If the item and the total score correlate highly, it is internally consistent. Cronbach’s alpha reliability coefficient or Cronbach’s alpha was calculated. Consistency and variability of each item were inspected.

Summary

A pilot test of a four-part survey instrument was administered to faculty and Ph.D. students at UNT using SurveyMonkey.com. Based on feedback from the pilot test the survey instrument was modified for the final administration.

A three-part survey instrument was administered online using SurveyMonkey.com. The population for this study was a non-random, cross-sectional, volunteer sample of library and information sciences (LIS) faculty and Ph.D. students from the ALISE Open Lib/Info Sci Education Forum jESSE Listserv. The over 1400

participants on this Listserv include members outside of North America, but only the data from North American university faculty and Ph.D. students or candidates were analyzed.

The survey instrument parts were demographics, partial ranks BIB, and ordered categories (Likert-type). Data from the partial ranks BIB part of the survey were converted to rank preference profiles then compared and contrasted with the results from the ordered categories analysis. The ordered categories data were tabulated into a matrix using Likert Scaling. The mean and standard deviation were calculated along with the Pearson (*r*) correlation for each item with the total values. The Pearson (*r*) correlation was used as a discrimination index for each item. If an item correlated highly with the total score it was internally consistent. After Cronbach's alpha was calculated, the consistency and variability of each item were inspected. All results were reviewed and compared for consistency between the second and third parts of the survey instrument.

Chapter 4 details the analysis of the collected data.

CHAPTER 4

DATA ANALYSIS AND RESULTS

Introduction

The main purpose of this study was to establish and attempt to validate criteria that can be used to assess the quality of library and information sciences (LIS) doctor of philosophy degree (Ph.D.) programs. To validate a topology that was developed as a basis for assessing program quality, data were collected through a survey instrument that was completed by 258 participants. Qualitative methods (content analysis) and quantitative methods (correlation and analysis of variance) of data analysis were used to evaluate the data.

This chapter presents a summary of the demographic data gathered on survey participants, results of the qualitative and quantitative data analysis, and a detailed discussion of the results. A summary of the results and research findings concludes the chapter.

Demographics of Survey Participants

A total of 258 participants began answering the survey instrument during the period of availability from August 13, 2006 through September 27, 2006. Of the total participants, 244 were from North America and 14 participants were from the rest of the world. Nine were from Europe (including the United Kingdom), 4 from Asia/Pacific, and 1 from Africa. There were no participants from South America.

Only survey responses from participants identifying themselves as being affiliated with a university or school located in North America were analyzed for this study. Of the 244 participants from North America, 225 submitted a usable survey. A

usable survey was one in which the participant completed at least through the balanced incomplete blocks (BIB) part of the survey. Survey responses of participants were recorded only to the point they exited the survey. Seven of the 225 usable surveys did not have responses to all of the Likert-type statements. Throughout the rest of this dissertation, the use of the word participants means participants from North America that submitted usable surveys.

There were more female participants (145 or 64.4%) responding to the survey than male participants (80 or 35.5%), which approximates the proportions of the female and male populations in the library and information sciences academic field.

Ninety-eight participants (43.6%) were faculty, 114 (50.7%) were Ph.D. students or candidates, and 13 (5.8%) were in other roles. The proportion of Ph.D. students or candidates to faculty seems high in comparison with what would be expected in the academy.

Table 3 shows the distribution of participants by gender and role. These data indicate there is a higher proportion of female participants than male in all roles except Other Faculty.

Table 3

Participant Gender by Role

Role	Gender	Number of Participants	Percent of Role
ALL Faculty	Female	58	59.2
	Male	40	40.8
LIS Faculty	Female	56	61.5
	Male	35	38.5
Other Faculty	Female	2	28.6
	Male	5	71.4
ALL Ph.D. Student or Candidate	Female	81	70.4
	Male	34	29.6
LIS Ph.D. Student or Candidate	Female	77	70
	Male	33	30
Other Ph.D. Student or Candidate	Female	4	80
	Male	1	20
Other	Female	7	53.8
	Male	6	46.2

The mean age of all participants was 45.7 years (range, 23 - 71; median, 46). Figure 2 shows graphically the distribution of ages and birth year of all participants. The mean age of all faculty participants was 50.3 years (range, 30 – 68) and all Ph.D. students or candidates had a mean age of 40.6 years (range, 23 – 66). Table 4 shows the mean age of participants by role.

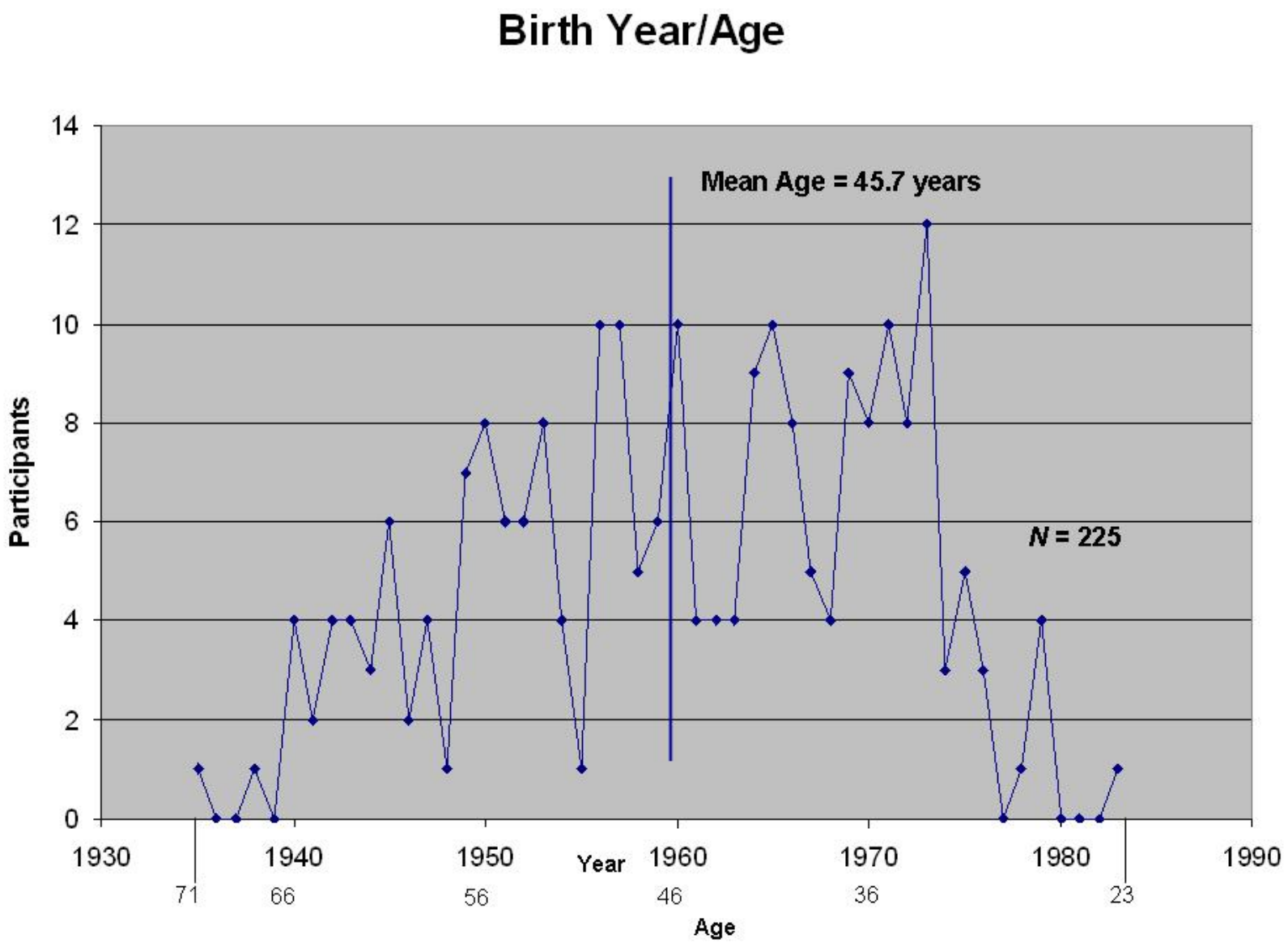

Figure 2. Participant birth year/age distribution.

Table 4

Mean Age by Role

Role	Mean Age (years)
All Faculty	50.3
LIS Faculty	50
Other Faculty	53.6
All Ph.D. Student or Candidate	40.6
LIS Ph.D. Student or Candidate	40.3
Other Ph.D. Student or Candidate	46.6
Other	56.1

Nearly half (45.5%) of the faculty participants reported having held their doctorate more than 10 years. Two-thirds (66.7%) reported having held their doctorates more than 5 years. See Table 5 for a summary of all responses to the question about how long faculty participants held their doctorate.

Per Table 6, the self-reported tenure status shows that slightly less than half (49.5%) of the faculty participants are tenured. There are a large number of faculty participants (34.5%) that are not tenured but are in a tenure track position.

Table 5

Faculty Time Held Doctorate

Time Held Doctorate	Number of Participants	Percent
Do Not Hold Doctorate	5	5.05
Less than 1 year	8	8.08
More than 1 year Less than 2 years	6	6.06
More than 2 years Less than 5 years	14	14.1
More than 5 years Less than 10 years	21	21.2
More than 10 years	45	45.5

Table 6

Faculty Tenure

Tenure	Number of Participants	Percent
Tenured	49	49.5
In a tenure track position	37	37.4
Not in a tenure track position	13	13.1

The majority (58.3%) of Ph.D. student and candidate participants are involved in doctoral programs that are completely residential. Approximately 40% indicated some involvement with distance education (DE). Only one of 115 Ph.D. student or candidate survey participants reported being in a completely DE doctoral program. See Table 7 for all types of doctoral programs reported.

Table 7

Type of Program for Ph.D. Student or Candidate

Type of Program	Number of Participants	Percent
100% Residence	67	58.3
Mostly Residence/Partially DE	20	17.4
Nearly Evenly Split between Residence and DE	7	6.1
Partially Residence/Mostly DE	18	15.7
100% DE	1	0.9
Other	2	1.7

Table 8 shows the self-reported data on teaching experience of Ph.D. students or candidates. Over two-thirds (67.8%) of Ph.D. student or candidate participants reported having experience teaching at a higher institution of learning. Nearly one-third (32.2%) have never taught at an undergraduate or graduate level.

Table 8

Teaching Experience of Ph.D. Student or Candidate

Teaching Experience	Number of Participants	Percent
Taught Graduate Students	33	28.7
Taught Undergraduate Students	22	19.1
Taught Both Graduate and Undergraduate Students	23	20
Have Not Taught	37	32.2

A total of 96 (83.5%) of Ph.D. students or candidates are seeking or plan to seek a faculty position. Nineteen (16.5%) are not seeking faculty positions. Approximately half (55 or 47.8%) of the Ph.D. student or candidate participants have completed all but dissertation (ABD).

In summary, the typical faculty survey participant was most likely female with a mean age of 50.3 years that has held her doctorate over 5 years and probably over 10 years. She may or may not be tenured. The typical Ph.D. student or candidate was also most likely female with an mean age of 40.6 years. She is most likely to be in a residence doctoral program, probably has teaching experience, and is seeking or planning to seek a faculty position. She may or may not be ABD.

One final note in regards to the demographics of the sample population: it is very risky to infer any type of generalizability of the survey results to any specific population.

In the next section we look qualitatively at the responses to the open-ended survey questions.

Qualitative Analysis of Open-Ended Responses

There were 218 survey participants of 225 completing a usable survey that completed all of the survey questions. The remaining seven completed only the BIB part of the questions or the BIB part and some of the Likert-type responses. Those not completing all of the survey questions did not have an opportunity to submit their comments to the open-ended questions at the end of the survey. Ninety-two participants out of 218 completing the survey shared their comments in one or both open-ended questions. Sixty-four participants offered comments on the first question, “What other terms or concepts were not included in the survey that you feel should be included? In

the response area please tell us what they are and briefly explain why you would include them." Sixty-two participants provided additional comments in response to the second open-ended question/statement, "You may provide any additional comments, if you would like." All participant comments are listed in Appendix D.

Preliminary inspection of all participant remarks on open-ended questions revealed comments that were not necessarily applicable for the given question. For example, comments of a general nature were made in response to the question on "terms or concepts… not included in the survey that… should be included." A participant commented "Distance education is a very broad concept. There is good and bad DE like campus-based ed." The opposite was true, also. For the second question on "additional comments" one participant commented that "Faculty-Student collaboration… should really be encouraged." Another wrote that "availability of funding… is an important aspect." As a result, all comments were grouped into a single pool for analysis.

After careful analysis of the 126 responses, 11 major categories were identified. The major categories were research, finances, interaction (used categorically for collegiality, collaboration, or association between students and students, students and faculty, and faculty and faculty), mentoring, publications, faculty (specifics), courses (specifics), academics, dissertation, programs, teaching (specifics). Coded comments submitted by only one or two participants were grouped into one general category. These general category comments involved terms or concepts such as history, interdisciplinarity, location, service, support, technology, cohorts, professional development, flexibility, planning, presentations, prestige, quality, reputation, and value. Three participants made comments in both open-ended questions that could be coded

in the same category. See Table 9 for a list of the categories of comments about terms or concepts. Coding of comments was subjective and independently assigned by me. No other coders were used to determine consistency of the coding process. Due to the exploratory descriptive nature of this study, coding was neither exhaustive nor inclusive.

Table 9

Comment Categories for Terms and Concepts

Category	Number of Participants
Research	23
Finances	10
Interaction	8
Mentoring	6
Publications	6
Faculty (specifics)	5
Courses (specifics)	4
Academics	3
Dissertation	3
Programs	3
Teaching (specifics)	3
General (History, Interdisciplinarity, Location, Service, Support, Technology, Cohorts, Professional Development, Flexibility, Planning, Presentations, Prestige, Quality, Reputation, Value)	1 or 2 each

Several comments were made about terms and concepts already included in the survey: faculty, courses (programs of study), and teaching. These comments either added to or further clarified the importance of the term or concept. For example, a

participant suggested as a term or concept, “Teaching opportunities for PhD students.” The term teaching was clarified in the survey as follows: “In the context of this study, teaching refers to educating or instructing performed by doctoral students.” Another participant commented there needed to be “More about the different roles faculty play – administrator, counselor, teacher, mentor… The word faculty is not enough of a definition.” The term faculty was also described in the survey as “[t]he teaching staff/professors teaching courses in the program, advising, or providing guidance.”

The largest category of comments on the survey question “terms or concepts… not included” was about research (23 participants or 10.2%). This category is reflective of the role research plays in Ph.D. programs. Research and teaching were discussed in Chapter 1 as a critical and fundamental part of any Ph.D. program. Although the Ph.D. student-centric topology for quality Ph.D. programs proposed in Chapter 2 and the terms and concepts Included in the survey do not specifically mention research, it would be part of several of the topology components, such as learning environment, resources, faculty, and Ph.D. student.

There are distinct relationships between research and other categories. For example, some of the comments about research included financial considerations, such as “Access to research funding.” As one would expect, research was also tied to publications.

The second largest category of comments about “terms or concepts… not included” was about finances, followed by interaction, then mentoring and publications. The finances comments related to research grants, scholarships, fellowships, financial aid, and similar thoughts. Comments about interaction, as explained earlier, included

collegiality, collaboration, association between students and students, students and faculty, and faculty and faculty, and other similarly related topics. The publication's comment was not only related to research, but emphasized the importance of Ph.D. students publishing prior to graduation. Mentoring by faculty was viewed as an important item to consider. One of the comments on mentoring was "support/mentoring for publishing."

Many participant comments were about the survey instrument design. The majority of those were about Likert-type question design. Twenty-one participants (10 faculty and 11 Ph.D. students or 9.3%) wrote that a neutral response, such as I don't know or neither agree nor disagree, should be available for the Likert-type survey questions. A few participants commented that they did not know enough about the statements to indicate whether they agreed or disagreed. Other participants expressed their concern that not having a neutral response would result in skewed data. One participant suggested that "good ethical practices should leave the participant the option to not respond if they choose not to." As stated in Chapter 3, the lack of a neutral point was by design to force participants to choose one side of the scale. It was also a design decision to require answers to each survey question. Of course, participants had the option to not respond to questions and exit the survey at any time.

Other comments about the survey design included: "…some of the questions were not suitable for the Agree/Disagree format."; "Have you pretested the questions? They are quite confusing."; and, "The definitions and the dis/agree items are well done. The rank ordering section is overly repetitious."

In the next section we review the quantitative analysis of the survey data.

Quantitative Analysis of Survey Data

Besides the demographic data collection and the open-ended responses questions, the survey design incorporated BIB and Likert-type designs. In the sections that follow I present the analysis of the data from these parts of the survey.

Analysis of Balanced Incomplete Block Design

The BIB data were analyzed using both intrablock and interblock methods of analysis. Simple statistics are of little analytical value with these data because they do not account for the between and within effects or any interactions between these two types of effects. A general linear regression model (SAS Proc GLM) was used first in the statistical analysis of the data. The analysis of variance (*ANOVA*) table is shown in Table 10 and a complete listing of the SAS code and output of the analysis is found at Appendix E. The results (shown at the top of the *ANOVA* table) of the omnibus test, that tests all independent variables in the model, reject the null hypothesis that none of the independent variables linearly predict the dependent variable at a statistically significant level ($p < .0001$). The Type I Sum of Squares (SS) *F* Value or *F* ratio test statistic indicates that the independent variable trtmt (treatment) linearly predicts the dependent variable ($p < .0001$) and that the independent variable block does not linearly predict the dependent variable. In other words, the variance from the treatment effects is statistically significant ($p < .0001$) and cannot be accounted for by error or random variance.

Table 10

Analysis of Variance (ANOVA) Table

The GLM Procedure

Class Level Information

Class	Levels	Values
block	7	1 2 3 4 5 6 7
trtmt	7	1 2 3 4 5 6 7

Number of Observations Read	4725
Number of Observations Used	4725

Dependent Variable: *y*

Source	*DF*	Sum of Squares	Mean Square	*F* Value	*Pr* > *F*
Model	12	783.131429	65.260952	130.03	<.0001
Error	4712	2364.868571	0.501882		
Corrected Total	4724	3148.000000			

R-Square	Coeff Var	Root MSE	*y* Mean
0.248771	35.42182	0.708436	2.000000

Source	*DF*	Type I *SS*	Mean Square	*F* Value	*Pr* > *F*
block	6	0.0000000	0.0000000	0.00	1.0000
trtmt	6	783.1314286	130.5219048	260.06	<.0001

Source	*DF*	Type III *SS*	Mean Square	*F* Value	*Pr* > *F*
block	6	174.0292063	29.0048677	57.79	<.0001
trtmt	6	783.1314286	130.5219048	260.06	<.0001

The Type III *SS* table, also in Table 10, lists the Yates weighted squares of means (Giesbrecht & Gumpertz, 2004). The *F* ratio statistic from this test is used for comparing main effects in the presence of interaction. Both block and treatment main effects with interaction are included in the model and are statistically significant predictors of the dependent variable ($p < .0001$).

The Bonferroni technique of adjusting for multiple comparisons was applied to the data. Although the Bonferroni technique is often used to control the Type I error rate (rejecting the null hypothesis when it should have been accepted), this technique was particularly useful because the Bonferroni method of grouping treatments provided a way to rank order the treatments (terms or concepts) by using their means. Several pairs of the treatment means were not statistically different. Table 11 shows the rank order, corresponding survey term or concept, treatment mean, and Bonferroni groupings.

Table 11

Rank Ordering with Bonferroni Grouping

Rank	Treatment	Term or Concept	Mean	Bonferroni Grouping
1	2	Faculty	1.3644	E
2	1	Ph.D. Students	1.8222	D
2,3	3	Programs (Courses) of Study	1.8741	D C
3,4	7	Teaching	1.9600	B C
4	4	Learning Environment	2.0400	B
5	5	Resources	2.4119	A
5	6	Evaluation	2.5274	A

Note: There is no statistically significant difference between means labeled with the same Bonferroni grouping letter.

A mixed effects model (SAS PROC Mixed) was then applied to the data for interblock statistical analysis. This SAS procedure uses generalized least squares that are estimated using the restricted maximum likelihood (*REML*) method, an iterative algorithm for least squares estimation. The results are in Table 12.

Table 12

Analysis of Mixed Effects

The MIXED Procedure

Model Information

Data Set	WORK.SURVEY
Dependent Variable	*y*
Covariance Structure	Variance Components
Estimation Method	*REML*
Residual Variance Method	Parameter
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Between-Within

Class Level Information

Class	Levels	Values
trtmt	7	1 2 3 4 5 6 7
block	7	1 2 3 4 5 6 7

Dimensions

Covariance Parameters	1
Columns in X	15
Columns in Z	0
Subjects	4725
Max Obs Per Subject	1

Number of Observations

Number of Observations Read	4725
Number of Observations Used	4725
Number of Observations Not Used	0

Iteration History

Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	10204.90853327	
1	1	10204.90853326	0.00000000

Convergence criteria met.

(*table continues*)

Table 12 (*continued*).

Covariance Parameter Estimates

Cov Parm	Estimate
Residual	0.5019

Fit Statistics

-2 Res Log Likelihood	10204.9
AIC (smaller is better)	10206.9
AICC (smaller is better)	10206.9
BIC (smaller is better)	10213.4

Null Model Likelihood Ratio Test

DF	Chi-Square	*Pr* > ChiSq
0	0.00	1.0000

Type 3 Tests of Fixed Effects

Effect	Num *DF*	Den *DF*	*F* Value	*Pr* > *F*
block	6	4712	57.79	<.0001
trtmt	6	4712	260.06	<.0001

The analysis took only two iterations to converge on the least squares fit. This quick convergence is a result of the perfectly balanced data being analyzed. The covariance parameter estimate is an estimate of the residual variance, σ^2 (analogous to the mean square error from PROC GLM).

The Type 3 tests of fixed effects results indicate that the block and treatment (trtmt) main effects are statistically significant ($p < .0001$) and cannot be accounted for by error or random variance. Note that the *F* Value statistic from the mixed effects

model is the same as from the general linear model. Based on the representation of the linear model,

$$y = \beta_0 + (\beta_1 \bullet (\text{block})) + (\beta_2 \bullet (\text{treatment})),$$

the *F* ratio tests the null hypothesis

$$H_0: \beta_1 = 0 \text{ (for block) or } \beta_2 = 0 \text{ (for treatment).}$$

Analysis of Likert-type Statements

The results of the Likert-type part of the survey are shown in the Likert scaling matrix in Table 13. Each statement appears in its entirety with the sums of the answers under each response choice. Statements with the seven terms or concepts in the BIB design were worded identically: "(Term or concept) (is/are) an important consideration in assessing the quality of any LIS Ph.D. program." Table 13 also gives the mean for each statement. Table 14 summarizes the means for each of the role groups. Complete tables for each role are found in Appendix F. The mean, standard deviation (*SD*), and sums of squares were calculated for each statement (variables Stmt_1 to Stmt_20). These simple statistics are reported in Table 15. A rank order, shown in Table 16, was established by reverse ordering the mean values. The variable with the highest mean score was the highest ranked, the variable with the next highest mean score was the next highest ranked, and so forth. This method of establishing rank order was based on the assumption that means of all survey participants ratings reflect their combined judgment and that the judgment scale is the same for all variables

Table 13

Likert-type Statements, Responses, and Means—All Participants

Statement	Number of Participants							
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean	*N*
**1. Resources are an important consideration in assessing the quality of any LIS Ph.D. program.	3	2	4	57	104	53	5.83	223
2. I know of a residence LIS Ph.D. program I would recommend to a potential student as a quality program.	11	12	17	30	74	79	5.53	223
3. The Ph.D. Students are the focal point of any LIS Ph.D. program.	7	14	26	61	65	50	5.19	223
4. Accreditation is an important consideration in assessing the quality of any LIS Ph.D. program.	14	20	32	54	58	45	4.86	223

Note: Negatively worded statements marked by * have been reworded positively and the ratings inverted. The original wording is found in the survey instrument at Appendix C. Also, since the survey was a Likert-type instrument with a six-point scale and no mid-point, a midpoint was added and the data standardized to accommodate a midpoint and to ensure comparability to any future survey results (Vojir, Jones, Fink, & Hutt, 2006). Statements marked by ** contain terms or concepts that are represented in the BIB part of the survey.

(*table continues*)

Table 13 (*continued*).

Statement	Number of Participants							
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean	*N*
5. The criteria for assessing the quality of any residence LIS Ph.D. program are the same for any Distance Education LIS Ph.D. programs.	29	46	48	36	29	35	3.87	223
**6. Evaluation is an important consideration in assessing the quality of any LIS Ph.D. program.	5	3	20	81	81	31	5.33	221
7. I know of a Distance Education LIS Ph.D. program I would recommend to a potential student as a quality program.	69	72	28	21	22	9	2.70	221
**8. Teaching apprenticeships are an important consideration in assessing the quality of any LIS Ph.D. program.	3	14	23	70	84	27	5.17	221

(*table continues*)

Table 13 (*continued*).

Statement	Number of Participants							
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean	*N*
*9. A person with a Ph.D. in LIS from a Distance Education program would be at an advantage when competing for a faculty or other professional position against someone with a Ph.D. from a residence program.	49	48	59	31	18	16	3.15	221
10. Accrediting bodies recognize universities with online Ph.D. programs.	5	25	36	86	44	25	4.67	221
**11. The Ph.D. Students are an important consideration in assessing the quality of any LIS Ph.D. program.	4	8	13	46	85	64	5.67	220
*12. Enculturation can be adequately accomplished through Distance Education.	43	53	56	32	25	11	3.20	220

(*table continues*)

Table 13 (*continued*).

Statement	Number of Participants: Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean	*N*
13. There is a dire need for LIS faculty particularly with concentrations in the public library and public service areas.	8	14	26	76	64	32	5.01	220
14. The American Library Association's (ALA) "Standards for Accreditation of Master's Programs in Library and Information Studies" may provide criteria to assess the quality of any LIS Ph.D. program.	30	31	40	75	41	3	3.88	220
*/**15. The Learning Environment is an important consideration in assessing the quality of any LIS Ph.D. program.	4	5	15	26	78	92	5.91	220
**16. The Faculty is an important consideration in assessing the quality of any LIS Ph.D. program.	1	1	3	9	43	161	6.61	218

(*table continues*)

Table 13 (*continued*).

Statement	Number of Participants							
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean	*N*
*17. Universities that take themselves seriously such as Harvard and Columbia permit Distance Education degree programs.	10	22	45	60	59	22	4.57	218
18. Distance Education LIS Ph.D. programs contribute to the prestige of LIS doctorates among other faculty members in the academy.	44	62	64	33	8	7	2.85	218
19. Doctoral students graduating from a Distance Education program are as enculturated as doctoral graduates from a residence program.	54	62	55	22	18	7	2.80	218
**20. The Programs (Courses) of Study are an important consideration in assessing the quality of any LIS Ph.D. program.	1	1	6	27	105	78	6.11	218

Table 14

Likert-type Statement Means—All Roles

Statement	All Faculty Response Mean	LIS Faculty Response Mean	Other Faculty Response Mean	All Ph.D. Response Mean	LIS Ph.D. Response Mean	Other Ph.D. Response Mean	Other Response Mean	All Response Mean
1.	6.01	6.02	5.86	5.64	5.61	6.20	6.08	5.83
2.	6.08	6.13	5.43	5.00	4.99	5.20	6.00	5.53
3.	5.52	5.59	4.57	4.83	4.88	3.80	5.92	5.19
4.	4.47	4.49	4.29	5.21	5.17	6.20	4.62	4.86
5.	3.95	3.91	4.43	3.77	3.74	4.40	4.23	3.87
6.	5.48	5.48	5.57	5.14	5.19	4.20	5.85	5.33
7.	2.39	2.41	2.14	2.88	2.87	3.20	3.46	2.70
8.	5.02	4.83	4.14	5.36	5.39	4.80	4.69	5.17
9.	4.95	4.98	4.57	4.78	4.79	4.60	4.62	3.15
10.	3.21	3.22	3.00	3.43	3.47	2.60	3.38	4.67
11.	6.06	6.01	6.71	5.23	5.30	3.80	6.46	5.67
12.	5.07	5.22	3.14	4.63	4.63	4.60	4.23	3.20
13.	5.24	5.27	4.86	4.74	4.71	5.20	5.62	5.01
14.	3.59	3.56	4.00	4.17	4.15	4.60	3.62	3.88
15.	1.92	1.93	1.71	2.22	2.24	1.80	2.23	5.91
16.	6.84	6.83	7.00	6.43	6.43	6.40	6.46	6.61
17.	3.50	3.54	3.00	3.38	3.38	3.40	3.31	4.57
18.	2.49	2.42	3.43	3.21	3.25	2.40	2.54	2.85
19.	2.31	2.17	4.14	3.10	3.13	2.40	3.85	2.80
20.	6.06	6.02	6.57	6.17	6.13	7.00	6.00	6.11

Note: The subjects of statements with high means that correspond to terms or concepts in the BIB part of the survey are: Statement 1 – Resources, Statement 6 – Evaluation, Statement 8 – Teaching, Statement 11 – Ph.D. Students, Statement 15 – Learning Environment, Statement 16 – Faculty, and Statement 20 – Programs (Courses) of Study.

Table 15

Simple Statistics for Likert-type Statements

Variable	*N*	Mean	*SD*	Sum	Min	Max
Stmt_1	223	5.82511	1.05305	1299	1	7
Stmt_2	223	5.52915	1.74960	1233	1	7
Stmt_3	223	5.19283	1.64222	1158	1	7
Stmt_4	223	4.85650	1.85682	1083	1	7
Stmt_5	223	3.87444	2.07569	864	1	7
Stmt_6	221	5.33484	1.29197	1179	1	7
Stmt_7	221	2.70136	1.85164	597	1	7
Stmt_8	221	5.17195	1.43252	1143	1	7
Stmt_9	221	3.15385	1.88387	697	1	7
Stmt_10	221	4.66968	1.60806	1032	1	7
Stmt_11	220	5.66818	1.40250	1247	1	7
Stmt_12	220	3.20000	1.84465	704	1	7
Stmt_13	220	5.00909	1.58472	1102	1	7
Stmt_14	220	3.88182	1.78390	854	1	7
Stmt_15	220	5.91364	1.40345	1301	1	7
Stmt_16	218	6.61468	0.84688	1442	1	7
Stmt_17	218	4.57339	1.72449	997	1	7
Stmt_18	218	2.85321	1.59102	622	1	7
Stmt_19	218	2.79817	1.70540	610	1	7
Stmt_20	218	6.11009	0.95367	1332	1	7

Table 16

Rank Ordering for Likert-type Statements

Rank	Variable	*N*	Mean	*SD*	Sum	Min	Max
**1	Stmt_16	218	6.61468	0.84688	1442	1	7
**2	Stmt_20	218	6.11009	0.95367	1332	1	7
**3	Stmt_15	220	5.91364	1.40345	1301	1	7
**4	Stmt_1	223	5.82511	1.05305	1299	1	7
**5	Stmt_11	220	5.66818	1.4025	1247	1	7
6	Stmt_2	223	5.52915	1.7496	1233	1	7
**7	Stmt_6	221	5.33484	1.29197	1179	1	7
8	Stmt_3	223	5.19283	1.64222	1158	1	7
**9	Stmt_8	221	5.17195	1.43252	1143	1	7
10	Stmt_13	220	5.00909	1.58472	1102	1	7
11	Stmt_4	223	4.85650	1.85682	1083	1	7
12	Stmt_10	221	4.66968	1.60806	1032	1	7
13	Stmt_17	218	4.57339	1.72449	997	1	7
14	Stmt_14	220	3.88182	1.7839	854	1	7
15	Stmt_5	223	3.87444	2.07569	864	1	7
16	Stmt_12	220	3.20000	1.84465	704	1	7
17	Stmt_9	221	3.15385	1.88387	697	1	7
18	Stmt_18	218	2.85321	1.59102	622	1	7
19	Stmt_19	218	2.79817	1.7054	610	1	7
20	Stmt_7	221	2.70136	1.85164	597	1	7

Note: Statements whose rankings are marked by ** contain terms or concepts that are represented in the BIB part of the survey: Stmt_16 - Faculty, Stmt_20 - Programs (Courses) of Study, Stmt_15 - Learning Environment, Stmt_1 - Resources, Stmt_11 - Ph.D. Students, Stmt_6 – Evaluation, and Stmt_8 – Teaching.

Pearson correlation coefficients (Pearson (*r*)) were calculated between each variable as shown in Table 16. One pairing stood out from the others. There seemed to be a statistically significant, high positive correlation between Stmt_18 ("distance education LIS Ph.D. programs contribute to the prestige of LIS doctorates among other faculty members in the academy.") and Stmt_19 ("Doctoral students graduating from a distance education program are as enculturated as doctoral graduates from a residence program.") with a Pearson (*r*) of 0.7193 ($p < .0001$). Five other variable pairings had statistically significant, moderate positive correlations with Pearson (*r*) greater than 0.500:

1. Pearson (*r*) = 0.5992 ($p < .0001$): Stmt_7 ("I know of a Distance Education LIS Ph.D. program I would recommend to a potential student as a quality program.") and Stmt_18 ("Distance Education LIS Ph.D. programs contribute to the prestige of LIS doctorates among other faculty members in the academy.")
2. Pearson (*r*) = 0.5955 ($p < .0001$): Stmt_12 ("Enculturation can be adequately accomplished through Distance Education.") and Stmt_19 ("Doctoral students graduating from a Distance Education program are as enculturated as doctoral graduates from a residence program.")
3. Pearson (*r*) = 0.5457 ($p < .0001$): Stmt_3 ("The Ph.D. Students are the focal point of any LIS Ph.D. program.") and Stmt_11 ("The Ph.D. Students are an important consideration in assessing the quality of any LIS Ph.D. program.")
4. Pearson (*r*) = 0.5173 ($p < .0001$): Stmt_7 ("I know of a Distance Education LIS Ph.D. program I would recommend to a potential student as a quality program.")

and Stmt_19 (“Doctoral students graduating from a Distance Education program are as enculturated as doctoral graduates from a residence program.”)

5. Pearson (*r*) = 0.5015 (*p* < .0001): Stmt_12 (“Enculturation can be adequately accomplished through Distance Education.”) and Stmt_18 (“Distance Education LIS Ph.D. programs contribute to the prestige of LIS doctorates among other faculty members in the academy.”)

There are several other statistically significant, low positively and negatively correlated statements shown in Table 17. Table 18 shows the Pearson (*r*) values between the statements with terms or concepts included in the BIB part of the survey. Pearson (*r*) values were also calculated with all 20 statements combined with age, gender, and role data each separately. There was little or no correlation between age, gender, or role and any of the 20 statements.

Table 17

Pearson Correlation Coefficients for All Likert-type Statements

	Pearson Correlation Coefficients Prob > |*r*| under H_0: Rho=0 Number of Observations									
	Stmt_1	Stmt_2	Stmt_3	Stmt_4	Stmt_5	Stmt_6	Stmt_7	Stmt_8	Stmt_9	Stmt_10
Stmt_1	1 223									
Stmt_2	0.26805 <.0001 223	1 223								
Stmt_3	0.15243 0.0228 223	0.44876 <.0001 223	1 223							
Stmt_4	0.24282 0.0003 223	0.02902 0.6664 223	0.10218 0.1282 223	1 223						
Stmt_5	0.08058 0.2307 223	-0.03248 0.6295 223	0.05206 0.4391 223	0.08647 0.1983 223	1 223					

(*table continues*)

Table 17 (*continued*).

Pearson Correlation Coefficients Prob > |*r*| under H_0: Rho=0 Number of Observations										
	Stmt_1	Stmt_2	Stmt_3	Stmt_4	Stmt_5	Stmt_6	Stmt_7	Stmt_8	Stmt_9	Stmt_10
Stmt_6	0.23143 0.0005 221	0.1959 0.0035 221	0.29117 <.0001 221	0.15289 0.023 221	0.17281 0.0101 221	1 221				
Stmt_7	- 0.06737 0.3188 221	- 0.08252 0.2218 221	- 0.04369 0.5182 221	 0.12441 0.0649 221	 0.12034 0.0742 221	 0.01159 0.864 221	1 221			
Stmt_8	 0.10938 0.1049 221	 0.14427 0.032 221	 0.17546 0.0089 221	 0.16869 0.012 221	 0.01394 0.8367 221	 0.15295 0.023 221	 0.03316 0.624 221	1 221		
Stmt_9	- 0.00299 0.9647 221	 -0.1854 0.0057 221	- 0.11135 0.0987 221	 0.03231 0.6328 221	 0.11231 0.0958 221	 -0.0362 0.5924 221	 0.37158 <.0001 221	- 0.03343 0.6211 221	1 221	
Stmt_10	- 0.08366 0.2154 221	- 0.09871 0.1435 221	- 0.14456 0.0317 221	- 0.10123 0.1336 221	 0.01643 0.8081 221	 -0.0406 0.5483 221	 0.16823 0.0123 221	- 0.14493 0.0313 221	 0.30194 <.0001 221	1 221

(*table continues*)

Table 17 (*continued*).

Pearson Correlation Coefficients
Prob > |*r*| under H_0: Rho=0
Number of Observations

	Stmt_1	Stmt_2	Stmt_3	Stmt_4	Stmt_5	Stmt_6	Stmt_7	Stmt_8	Stmt_9	Stmt_10
Stmt_11	0.2407 0.0003 220	0.34919 <.0001 220	0.54574 <.0001 220	0.02233 0.7419 220	0.03186 0.6383 220	0.29812 <.0001 220	0.00662 0.9223 220	0.14198 0.0353 220	0.10815 0.1097 220	0.12668 0.0607 220
Stmt_12	0.00516 0.9394 220	-0.19882 0.0031 220	-0.14561 0.0309 220	0.03365 0.6196 220	0.05899 0.3839 220	0.05009 0.4598 220	0.37125 <.0001 220	-0.19069 0.0045 220	0.47354 <.0001 220	0.30208 <.0001 220
Stmt_13	0.19194 0.0043 220	0.14392 0.0329 220	0.03792 0.5759 220	0.15431 0.022 220	0.06536 0.3346 220	0.12981 0.0545 220	0.00091 0.9894 220	0.23612 0.0004 220	-0.08593 0.2042 220	-0.08487 0.2099 220
Stmt_14	-0.02001 0.7679 220	-0.11075 0.1013 220	-0.09963 0.1408 220	0.41607 <.0001 220	0.05569 0.4111 220	0.08649 0.2013 220	0.32259 <.0001 220	0.11498 0.0889 220	0.1017 0.1326 220	-0.08659 0.2007 220
Stmt_15	0.16607 0.0136 220	0.12401 0.0664 220	-0.03821 0.5729 220	-0.06262 0.3553 220	-0.04531 0.5037 220	-0.02415 0.7217 220	-0.08348 0.2174 220	0.05956 0.3793 220	-0.09488 0.1608 220	0.06651 0.3261 220

(*table continues*)

Table 17 (*continued*).

Pearson Correlation Coefficients Prob > |*r*| under H_0: Rho=0 Number of Observations										
	Stmt_1	Stmt_2	Stmt_3	Stmt_4	Stmt_5	Stmt_6	Stmt_7	Stmt_8	Stmt_9	Stmt_10
Stmt_16	0.25208 0.0002 218	0.29069 <.0001 218	0.1447 0.0327 218	0.0242 0.9717 218	0.0399 0.5579 218	0.20569 0.0023 218	-0.18801 0.0054 218	0.10807 0.1116 218	-0.14889 0.028 218	0.02786 0.6825 218
Stmt_17	0.07217 0.2887 218	-0.07408 0.2762 218	0.01361 0.8416 218	-0.04224 0.535 218	0.08259 0.2246 218	0.03936 0.5633 218	0.17627 0.0091 218	-0.1256 0.0641 218	0.28389 <.0001 218	0.39324 <.0001 218
Stmt_18	-0.03628 0.5942 218	-0.2102 0.0018 218	-0.16032 0.0178 218	0.09469 0.1636 218	0.08479 0.2124 218	0.07959 0.2419 218	0.59918 <.0001 218	0.01723 0.8003 218	0.43061 <.0001 218	0.17322 0.0104 218
Stmt_19	-0.06183 0.3636 218	-0.20784 0.002 218	-0.0731 0.2826 218	0.09184 0.1767 218	0.17484 0.0097 218	0.07014 0.3026 218	0.51733 <.0001 218	-0.08306 0.2219 218	0.4044 <.0001 218	0.16836 0.0128 218
Stmt_20	0.33246 <.0001 218	0.01461 0.8301 218	-0.0464 0.4955 218	0.16174 0.0168 218	0.07691 0.2581 218	0.21922 0.0011 218	-0.06737 0.3221 218	0.10995 0.1055 218	-0.05539 0.4158 218	-0.02719 0.6897 218

(*table continues*)

Table 17 (*continued*).

Pearson Correlation Coefficients
Prob > |*r*| under H_0: Rho=0
Number of Observations

	Stmt_11	Stmt_12	Stmt_13	Stmt_14	Stmt_15	Stmt_16	Stmt_17	Stmt_18	Stmt_19	Stmt_20
Stmt_11	1 220									
Stmt_12	-0.0713 0.2924 220	1 220								
Stmt_13	0.07327 0.2792 220	-0.20369 0.0024 220	1 220							
Stmt_14	-0.00662 0.9222 220	0.05995 0.3762 220	0.16675 0.0133 220	1 220						
Stmt_15	-0.00767 0.91 220	-0.0515 0.4472 220	0.07221 0.2863 220	-0.05699 0.4003 220	1 220					

(*table continues*)

Table 17 (*continued*).

Pearson Correlation Coefficients
Prob > |*r*| under H_0: Rho=0
Number of Observations

	Stmt_11	Stmt_12	Stmt_13	Stmt_14	Stmt_15	Stmt_16	Stmt_17	Stmt_18	Stmt_19	Stmt_20
Stmt_16	0.21741 0.0012 218	-0.25549 0.0001 218	0.18368 0.0065 218	-0.07743 0.255 218	0.00394 0.9539 218	1 218				
Stmt_17	0.02521 0.7113 218	0.39443 <.0001 218	-0.08305 0.222 218	-0.08609 0.2054 218	0.06729 0.3227 218	-0.0689 0.3112 218	1 218			
Stmt_18	-0.11842 0.0811 218	0.50153 <.0001 218	-0.06649 0.3285 218	0.22232 0.0009 218	-0.17551 0.0094 218	-0.16872 0.0126 218	0.27604 <.0001 218	1 218		
Stmt_19	-0.03748 0.582 218	0.59549 <.0001 218	-0.11788 0.0825 218	0.17641 0.0091 218	-0.26193 <.0001 218	-0.21044 0.0018 218	0.29651 <.0001 218	0.71934 <.0001 218	1 218	
Stmt_20	0.07525 0.2686 218	-0.00947 0.8894 218	0.10224 0.1324 218	0.05135 0.4506 218	0.08628 0.2044 218	0.32094 <.0001 218	-0.03296 0.6284 218	0.04715 0.4886 218	-0.00328 0.9617 218	1 218

Table 18

Pearson Correlation Coefficients for Likert-type Statements for Seven BIB Terms or Concepts

Pearson Correlation Coefficients Prob > |*r*| under H_0: Rho=0 Number of Observations							
	Stmt_1	Stmt_6	Stmt_8	Stmt_11	Stmt_15	Stmt_16	Stmt_20
Stmt_1	1 223						
Stmt_6	0.23143 0.0005 221	1 221					
Stmt_8	0.10938 0.1049 221	0.15295 0.023 221	1 221				
Stmt_11	0.2407 0.0003 220	0.29812 <.0001 220	0.14198 0.0353 220	1 220			
Stmt_15	0.16607 0.0136 220	-0.02415 0.7217 220	0.05956 0.3793 220	-0.00767 0.91 220	1 220		
Stmt_16	0.25208 0.0002 218	0.20569 0.0023 218	0.10807 0.1116 218	0.21741 0.0012 218	0.00394 0.9539 218	1 218	
Stmt_20	0.33246 <.0001 218	0.21922 0.0011 218	0.10995 0.1055 218	0.07525 0.2686 218	0.08628 0.2044 218	0.32094 <.0001 218	1 218

Note: The statements in this table contain terms or concepts that are represented in the BIB part of the survey: Stmt_1 – Resources, Stmt_6 – Evaluation, Stmt_8 – Teaching, Stmt_11 – Ph.D. Students, Stmt_15 – Learning Environment, Stmt_16 – Faculty, and Stmt_20 – Programs (Courses) of Study.

Internal Consistency of Likert-type Questions

The internal consistency is the extent to which the individual items that constitute a test correlate with one another or with the test total. In the social sciences, the index used to measure internal consistency reliability is Cronbach's alpha reliability coefficient or Cronbach's alpha (Cronbach, 1951). A reliability coefficient may be defined as the percent of variance in an observed variable that is accounted for by true scores on the underlying construct (Hatcher & Stepanski, 1994). Cronbach's alpha indicates how well two or more variables measure the dependent construct. Cronbach's alpha was computed to determine the internal consistency reliability of the scale used on the Likert-type statements. Cronbach's alpha estimates are reported in Table 19 and Table 20.

Table 19

Cronbach's Alpha for Likert-type Statements

Variables	Alpha
Raw	0.620682
Standardized	0.617616

The raw and standardized Cronbach's alpha in Table 19 for all Likert-type statement responses combined is 0.6207 and 0.6176, respectively. Both are lower than the 0.70 value generally accepted and often cited by the literature as the lower value to show reliability or consistency (Nunnally & Bernstein, 1994). According to Yu (n.d.), "

> There isn't a commonly agreed cut-off. Usually 0.7 and above is acceptable (Nunnally, 1978). It is a common misconception that if the Alpha is low, it must be

> a bad test. Actually, your test may measure several latent attributes/dimensions rather than one and thus the Cronbach Alpha is deflated.

Or in other words, there may be multiple constructs in the data being analyzed. To test for multiple constructs I began by deleting one variable, the results from one of the Likert-type statements, one at a time and recalculating the Cronbach's alpha testing for effects of the deleted item on Cronbach's alpha. Individually eliminating three variables slightly increased the Cronbach's alpha. The deletion of Stmt_15 ("The Learning Environment is an important consideration in assessing the quality of any LIS Ph.D. program.") resulted in a new raw Cronbach's alpha of 0.6387. While this is slightly larger than the original value it is still lower than 0.70. Statistical analysis indicates that Stmt_15 has little or no correlation with the other 19 variables either individually (Table 17) or as a whole (Table 20). Deleting the variables Stmt_16 ("The Faculty is an important consideration in assessing the quality of any LIS Ph.D. program.") or Stmt_10 ("Accrediting bodies recognize universities with online Ph.D. programs.") resulted in raw Cronbach's alphas of 0.6231 and 0.6196 respectively. Also, I performed a factor analysis of the data from the Likert-type statements. This analysis indicated there were approximately seven constructs in the Likert-type part of the data.

Table 20

Cronbach's Alpha with Deleted Variable Likert-type Statements

	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
Stmt_1	0.289430	0.603871	0.336776	0.588924
Stmt_2	0.052387	0.631119	0.119368	0.617468
Stmt_3	0.129070	0.619779	0.163801	0.611778
Stmt_4	0.246717	0.604070	0.257827	0.599495
Stmt_5	0.185209	0.614895	0.186262	0.608873
Stmt_6	0.314283	0.598568	0.349378	0.587214
Stmt_7	0.434610	0.574612	0.371899	0.584144
Stmt_8	0.122831	0.619186	0.149637	0.613600
Stmt_9	0.306310	0.594778	0.248426	0.600738
Stmt_10	0.128821	0.619563	0.100048	0.619920
Stmt_11	0.192402	0.611257	0.233101	0.602757
Stmt_12	0.321189	0.592650	0.259366	0.599291
Stmt_13	0.099213	0.623096	0.135783	0.615374
Stmt_14	0.207775	0.609724	0.183516	0.609230
Stmt_15	-.058898	0.638712	-.037038	0.636928
Stmt_16	0.044661	0.623086	0.100148	0.619907
Stmt_17	0.270742	0.600700	0.241875	0.601602
Stmt_18	0.427293	0.580273	0.353154	0.586701
Stmt_19	0.410593	0.580664	0.328760	0.590008
Stmt_20	0.153074	0.615580	0.202864	0.606715

Summary

This chapter presented results of the data analysis, research findings, and discussion of the results and findings with respect to the first research question. Participants were described by demographic variables such as gender, age, type of

Ph.D. program affiliated with, Faculty tenure status, and other items. Results were presented of the analysis of the responses to the Likert-type statements including descriptive statistics (mean, standard deviation (*SD*), Pearson correlation coefficient, and Cronbach's alpha) for all observed variables. The correlation analysis indicated several statistically significant correlations between Likert-type statements. The Cronbach's alpha for the Likert-type statements indicated an inadequate level of reliability or consistency in the data. This does not necessarily indicate a poor test, but is likely an indicator of multiple constructs in the Likert-type part of the instrument. This was confirmed by a factor analysis that indicated approximately seven separate constructs. Intrablock and interblock analysis methods were used to analyze the BIB data and showed a statistically significant difference in the block and treatment main effects. The rankings of the data from both major designs of the survey (BIB and Likert-type statements) were complementary and supported each other.

CHAPTER 5

FINDINGS, RECOMMENDATIONS, AND CONCLUSION

Introduction

This chapter summarizes the findings and recommendations resulting from this study on quality library and information sciences (LIS) doctor of philosophy degree (Ph.D.) programs. There is a brief conclusion at the end of the chapter.

Summary of the Study

This study began as an interest in determining if a distance education (DE) LIS Ph.D. program was equivalent or comparable to a residence LIS Ph.D. program. Preliminary research indicated a wide range of opinions on the subject among the participants of the Association for Library and Information Science Education (ALISE) Open Lib/Info Sci Education Forum jESSE Listserv (Klingler, in press). Discussions with peers, faculty, and my doctoral committee helped me recognize that the underlying question was, “What is a good Ph.D. program?” or “What makes a quality Ph.D. program?” Until that question was answered the search for DE and residence program equivalency would be elusive. I thought, “Surely criteria exist for assessing the quality of a LIS Ph.D. program?” Unfortunately, an extensive search of the literature did not reveal any such standards or baselines, but it did identify a potential evaluative framework. The American Association of Colleges of Nursing (AACN) published a position statement in 2001 regarding the quality indicators in research-focused doctoral programs in nursing. It included an excellent framework for evaluating a program holistically. The Ph.D. student-centric topology for quality Ph.D. programs was developed from that framework.

I created a survey instrument to test the components of the topology to see if they were important to the community of practice and if they could be used to assess a Ph.D. program. This survey instrument asked participants to rank terms or concepts in a balanced incomplete block (BIB) design and rate, on a Likert-type scale, statements about the applicability of these terms or concepts to assessing a quality LIS Ph.D. program. A few other questions were piggy-backed on the survey to identify attitudes of participants on statements related to a study I conducted in late 2005 (Klingler, in press). The survey was administered to members of the ALISE jESSE Listserv.

Findings

There were 225 participants identifying themselves as being affiliated with universities or schools from North America who submitted usable surveys. Slightly less than two-thirds (64.4%) of the participants were female while 35.5% were male. Ninety-eight participants (43.6%) were faculty, 114 (50.7%) were Ph.D. students or candidates, and 13 (5.8%) were in other roles. The mean age of all participants was 45.7 years. The typical faculty survey participant was most likely female with a mean age of 50.3 years that has held her doctorate over five years and probably over ten years, and may or may not be tenured. The typical Ph.D. student or candidate was also most likely female with a mean age of 40.6 years. She is most likely to be in a residence doctoral program, probably has university teaching experience, is seeking or plans to seek a faculty position, and may or may not have completed all but dissertation (ABD).

Statistical analysis of the survey responses showed consistent and statistically significant results between the different demographic groups. The terms or concepts of

the Ph.D. student-centric topology for quality Ph.D. programs were ranked and rated highly by survey participants.

The topology was validated by the results of the statistical analysis of the research data. Each of the components of the topology was acknowledged as very important to assess the quality of a LIS Ph.D. program. Faculty was the highest ranked item in the BIB analysis with a statistically significant difference in the mean rank order from the next highest ranked item, Ph.D. students. The rank order from the BIB analysis was as follows: faculty, Ph.D. students, programs (courses) of study, teaching, learning environment, resources, and evaluation. Faculty was also the highest rated item in the Likert-type statement analysis. Ratings of the Likert-type statements gave the following rank order: faculty, programs (courses) of study, learning environment, resources, Ph.D. students, evaluation, and teaching. Two additional statements were rated highly: “I know of a residence LIS Ph.D. program I would recommend,” and “Ph.D. Students are the focal point of any LIS Ph.D. program.” Since the Ph.D. student was the focal point of the topology by design, it was interesting to discover that the Ph.D. student was ranked lower in importance to faculty in both the BIB design and the Likert-type statements of the survey. The acceptance of these items by study participants supports the conclusion that they can be the basis for assessing the quality of a LIS Ph.D. program. That is why I recommend the further development of the proposed Ph.D. student-centric model for quality Ph.D. programs.

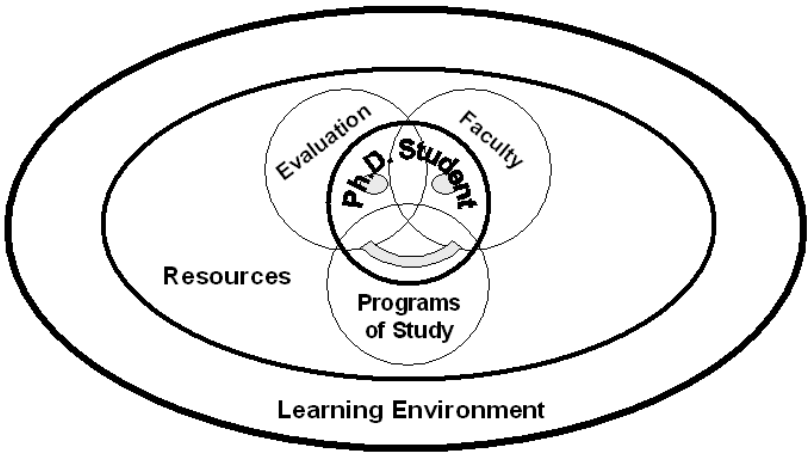

Figure 3. Proposed Ph.D. student-centric model for quality Ph.D. programs.

In their responses to open-ended questions, survey participants suggested other items they viewed as important and felt should have been included in the survey. Among those items were a variety of aspects of research, finances, interaction, mentoring, and publications. Research was the most suggested item mentioned by approximately 10% of survey participants. These additional items could be viewed as being part of components already included in the topology.

Can a DE LIS Ph.D. program meet these quality criteria or can a quality DE LIS Ph.D. program exist? This is an area that needs additional focus. It is clear from this study there are very strong feelings about DE Ph.D. programs. It seems there are many in the academy who insist that distance programs cannot or should not work. I would like to see the community of practice initiate a discourse on if DE Ph.D. programs fit, where they fit, and how we can make them work. The proposed Ph.D. student-centric model for quality Ph.D. programs should provide an excellent foundation for the dialog for assessing the quality of both residence and DE programs.

Implications for the Community of Practice and the Academy

The level of study participation signifies an interest by the community of practice in improving the quality of LIS doctoral programs in North America. As members of the community of practice begin a discourse on what constitutes a quality doctoral program, all community members will benefit from the discourse and the resulting established criteria. While this will require time and commitment to discourse and the consensus of many community members to make these improvements reality, when it occurs I predict we will see changes that will benefit not only the members of the LIS doctoral and LIS communities of practice, but the whole academy.

Recommendations for Future Research

A nice thing about a study is there are always more questions and opportunities for research generated by it. The following are potential topics I have identified for further research:

Put flesh on the proposed Ph.D. student-centric model for quality Ph.D. programs framework to further inform the community of practice regarding specific characteristics or requirements for a quality LIS Ph.D. program. Validate these modifications through another survey instrument to the same target population.

Apply the proposed model to one or more LIS Ph.D. programs, residence and distance, to assess both the topology and program quality.

Investigate output measures of a quality LIS Ph.D. program. Factors to consider are the program graduates' histories, job placement upon graduation, and tenure along with reputational measures of the university, school, program, and/or faculty.

Replicate the study conducted by Bunn (2004) using past and present LIS Ph.D. students to ascertain the factors enabling them to persist with their programs. Determine if any of the factors are the same as or related to those in the proposed Ph.D. student-centric model for quality Ph.D. programs.

Conduct a formal survey of LIS faculty and doctoral student opinions about online LIS Ph.D. programs.

Choose a cohort just starting in the University of North Texas distance-independent Ph.D. program and begin a longitudinal study of these students. It should include assessment of attitudes about distance education, employment expectations, as well as other factors.

Replicate the study conducted by Kim and Kusack (2005), but with Ph.D. recipients instead of master's of library science, and complete a study similar to the one by Adams and DeFleur (2005) by surveying university administrators, LIS deans/department heads, and/or promotion and tenure committees to determine whether they differentiate between a LIS Ph.D. from a traditional program and a LIS Ph.D. from an online program when making faculty employment decisions. It would be significant to see how these results compare to Ph.D.s from traditional and online programs in all disciplines.

Determine if there exists a statistically significant difference in time to the doctorate (Bowen, Lord, & Sosa, 1991) between residential LIS Ph.D. programs and those having an online component.

Investigate the need for and the level of community of practice acceptance of a second LIS doctoral degree. We have the research-oriented Ph.D. Should we also have a professional doctorate such as a doctor of library science (D.Lib.)?

Each of these studies hold promise to contribute significantly to the body of knowledge of LIS Ph.D. programs, residence and distance.

Conclusion

This exploratory descriptive study on quality Ph.D. programs validated a new framework of quality indicators in the Ph.D. student-centric topology for quality Ph.D. programs. The input criteria, characteristics, or indicators of a quality LIS Ph.D. program validated by this study, those presented in the Ph.D. student-centric topology for quality Ph.D. programs, are very important to survey participants. The six components of the topology and an additional factor were rated highly and were ranked in the following order from highest to lowest: faculty, Ph.D. students, programs (courses) of study, teaching, learning environment, resources, and evaluation. Open-ended comments on the survey instrument point to other items for consideration most of which could be viewed as being part of components already in the topology.

The community of practice comprised of LIS doctoral students and associated faculty must engage in a discourse about program assessment to formalize assessment criteria. Continued discourse on what makes a quality Ph.D. program is essential to the future of the community and the academy. The proposed Ph.D. student-centric model for quality Ph.D. programs provides an excellent foundation for that discourse.

APPENDIX A

BALDRIGE EDUCATION CRITERIA

(Baldrige National Quality Program, 2006.)

Leadership (Category 1)

1.1 Senior Leadership: How do your senior leaders lead?

1.2 Governance and Social Responsibilities: How do you govern and address your social responsibilities?

Strategic Planning (Category 2)

2.1 Strategy Development: How do you develop your strategy?

2.2 Strategy Deployment: How do you deploy your strategy?

Student, Stakeholder, and Market Focus (Category 3)

3.1 Student, Stakeholder, and Market Knowledge: How do you use student, stakeholder, and market knowledge?

3.2 Student and Stakeholder Relationships and Satisfaction: How do you build relationships and grow student and stakeholder satisfaction and loyalty?

Measurement, Analysis, and Knowledge Management (Category 4)

4.1 Measurement, Analysis, and Review of Organizational Performance: How do you measure, analyze, and review organizational performance?

4.2 Information and Knowledge Management: How do you manage organizational information and knowledge?

Faculty and Staff Focus (Category 5)

5.1 Work Systems: How do you enable faculty and staff to accomplish the work of your organization?

5.2 Faculty and Staff Learning and Motivation: How do you contribute to faculty and staff learning and motivate your faculty and staff?

5.3 Faculty and Staff Well-Being and Satisfaction: How do you contribute to faculty and staff well-being and grow faculty and staff satisfaction?

Process Management (Category 6)

6.1 Learning-Centered Processes: How do you identify and manage your key processes?

6.2 Support Processes and Operational Planning: How do you identify and manage your support processes and accomplish operational planning?

Results (Category 7)

7.1 Student Learning Outcomes: What are your student learning results?

7.2 Student- and Stakeholder-Focused Outcomes: What are your student- and stakeholder-focused performance results?

7.3 Budgetary, Financial, and Market Outcomes: What are your budgetary, financial, and market results?

7.4 Faculty and Staff Outcomes: What are your faculty and staff results?

7.5 Organizational Effectiveness Outcomes: What are your organizational effectiveness results?

7.6 Leadership and Social Responsibility Outcomes: What are your leadership and social responsibility results?

APPENDIX B

AMERICAN ASSOCIATION OF COLLEGES OF NURSING

CATEGORIES AND INDICATORS OF QUALITY

(Reproduced with permission.)

(American Association of Colleges of Nursing, 2001.)

Faculty

I. Represent and value a diversity of backgrounds and intellectual perspectives.

II. Meet the requirements of the parent institution for graduate research and doctoral education; substantial proportion of faculty hold earned doctorates in nursing.

III. Conceptualize and implement productive programs of research and scholarship that:

A. Are developed over time and build upon previous work;

B. Are at the cutting edge of the field of inquiry;

C. Are congruent with research priorities within nursing and its constituent communities;

D. Include a substantial proportion of extramural funding; and

E. Attract and engage students.

IV. Outcome indicators of productive programs of research and scholarship include:

A. Extramural grant awards in support of research or scholarship;

B. Peer-reviewed publications of research, theory, or philosophical essays;

C. Presentations of research, theory, or philosophical essays;

D. Scientific review activities such as NIH study sections and other grant application review groups;

E. Editorial review activities;

F. State, regional, national, or international recognition as a scholar in an identified area; and

G. Evidence of influence on science policy throughout the field.

V. Create an environment in which mentoring, socialization of students, and the existence of a community of scholars is evident.

VI. Assist students to understand the value of programs of research and scholarship that continue over time and build upon previous work.

VII. Identify, generate, and utilize resources within the university and broader community to support program goals.

VIII. Devote a significant proportion of time to dissertation advisement; generally each faculty member should serve as the major adviser/chair for no more than 3-5 students during the dissertation phase.

Programs of Study

The emphasis of the program of study is consistent with the mission of the parent institution, the discipline of nursing, and the degree awarded. The faculty's areas of expertise and scholarship determine specific foci in the program of study. Requirements

and their sequence for progression in the program are clear and available to students in writing. Common elements of the program of study are outlined below.

I. Core and related course content—the distribution between nursing and supporting content is consistent with the mission and goals of the program, and the student's are of focus and course work is included in:

A. Historical and philosophical foundations to the development of nursing knowledge;

B. Existing and evolving substantive nursing knowledge;

C. Methods and processes of theory/knowledge development;

D. Research methods and scholarship appropriate to inquiry; and

E. Development related to roles in academic, research, practice, or policy environments.

II. Elements for formal and informal teaching and learning focus on:

A. Analytical and leadership strategies for dealing with social, ethical, cultural, economic, and political issues related to nursing, health care, and research;

B. Progressive and guided student scholarship research experiences, including exposure to faculty's interdisciplinary research programs;

C. Immersion experiences that foster the student's development as a nursing leader, scholarly practitioner, educator, and/or nurse scientist; and

D. Socialization opportunities for scholarly development in roles that complement students' career goals.

III. Outcome indicators for the programs of study include:

A. Advancement to candidacy requires faculty's satisfactory evaluation (e.g., comprehensive exam) of the student's basic knowledge of elements I-A through I-E identified above;

B. Dissertations represent original contributions to the scholarship of the field;

C. Systematic evaluation of graduate outcomes is conducted at regular intervals;

D. Within 3-5 years post-completion, graduates have designed and secured funding for a research study OR within 2 years post-completion, graduates have utilized the research process to address an issue of importance to the discipline of nursing or health care within their employment setting.

E. Employers report satisfaction with graduates' leadership and scholarship at regular intervals post-completion; and

F. Graduates' scholarship and leadership are recognized through awards, honors, or external funding at 3-5 years post-completion.

Resources

I. Sufficient human, financial, and institutional resources are available to accomplish the goals of the unit for doctoral education and faculty research.

A. The parent institution exhibits the following characteristics:

1) Research is an explicit component of the mission of the parent institution;

2) An office of research administration;

3) A record of peer reviewed external funding;

4) Post-doctoral programs;

5) Internal research funds;

6) Mechanisms that value, support and reward faculty and student scholarship and role preparation; and

7) A university environment that fosters interdisciplinary research and collaboration.

B. The nursing doctoral program exhibits the following characteristics:

1) Research active faculty as well as other faculty experts to mentor students in other role preparations.

2) Technical support for:

(a) Peer review of proposals and manuscripts in their development phases;

(b) Research design expertise;

(c) Data management and analysis support;

(d) Hardware and software availability; and

(e) Expertise in grant proposal development and management.

3) Space sufficient for:

(a) Faculty research needs;

(b) Doctoral student study, meeting, and socializing;

(c) Seminars; and

(d) Small group work.

C. Schools of exceptional quality also have:

1) Centers of research excellence;

2) Endowed professorships;

3) Mechanisms for financial support to allow full-time study; and

4) Master teachers capable of preparing graduates for faculty roles.

II. State-of-the-art technical and support services are available and accessible to faculty, students, and staff for state of the science information acquisition, communication, and management.

III. Library and database resources are sufficient to support the scholarly endeavors of faculty and students.

Students

I. Students are selected from a pool of highly qualified and motivated applicants who represent diverse populations.

II. Students' research goals and objectives are congruent with faculty research expertise and scholarship and institutional resources.

III. Students are successful in obtaining financial support through competitive intramural and extramural academic and research awards.

IV. Students commit a significant portion of their time to the program and complete the program in a timely fashion.

V. Students establish a pattern of productive scholarship, collaborating with researchers in nursing and other disciplines in scientific endeavors that result in the presentation and publication of scholarly work that continues after graduation.

Evaluation

The evaluation plan:

I. Is systematic, ongoing, comprehensive, and focuses on the university's and program's specific mission and goals;

II. Includes both process and outcome data related to these indicators of quality in research-focused doctoral programs;

III. Adheres to established ethical and process standards for formal program evaluation, e.g., confidentiality and rigorous quantitative and qualitative analyses;

IV. Involves students and graduates in evaluation activities;

V. Includes data from a variety of internal and external constituencies;

VI. Provides for comparison of program processes and outcomes to the standards of its parent graduate school/university and selected peer groups within nursing;

VII. Includes ongoing feedback to program faculty, administrators, and external constituents to promote program improvement;

VIII. Provides comprehensive data in order to determine patterns and trends and recommend future directions at regular intervals; and

IX. Is supported with adequate human, financial, and institutional resources.

APPENDIX C

SURVEY ON QUALITY PH.D. PROGRAMS IN LIBRARY AND INFORMATION SCIENCES (LIS)

UNT
UNIVERSITY OF
NORTH TEXAS

Office of Research Services

DISCOVER THE POWER OF IDEAS

April 21, 2006

Scott Klingler
School of Library and Information Sciences
University of North Texas

RE: Human Subjects Application No. 06-137

Dear Mr. Klingler:

Your proposal titled "Survey on Quality Ph.D. Programs in Library and Information Sciences" has been approved by the Institutional Review Board as permitted under federal law and regulations governing the use of human subjects in research projects 45 CFR 46.101. **Federal policy 45 CFR 46.109(e) stipulates that IRB approval is for one year only, April 21, 2006 through April 20, 2007.**

Enclosed is the consent document with stamped IRB approval. Please copy and **use this form only** for your study subjects.

It is your responsibility according to U.S. Department of Health and Human Services regulations to submit annual and terminal progress reports to the IRB for this project. Please mark your calendar accordingly. The IRB must also review this project prior to any modifications.

Please contact Shelia Bourns, Research Compliance Administrator, ext. or Boyd Herndon, Director of Research Compliance, ext. , if you wish to make such changes or need additional information.

Sincerely,

Scott Simpkins, Ph.D.
Chair
Institutional Review Board

SS:sb

P.O. Box 305250
Denton, Texas 76203-5250

940.565.3940 TEL
940.565.4277 FAX

940.369.8652 TTY
www.unt.edu

University of North Texas Institutional Review Board

Informed Consent Notice

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

Title of Study: Quality Ph.D. Programs in Library and Information Sciences (LIS)

Principal Investigator: Scott Klingler, a doctoral candidate in the School of Library and Information Sciences at the University of North Texas (UNT).

Purpose of the Study:
You are being asked to participate in a research study which involves answering a survey that is designed to help us better understand the criteria or characteristics that define a quality Ph.D. program in Library and Information Sciences (LIS).

Study Procedures:
The research involves completing a survey that asks you to evaluate descriptive concepts or terms and to indicate your level of agreement or disagreement with statements relating to a quality LIS Ph.D. program. The survey will take about 15 to 20 minutes of your time. You must be 18 years of age or older to participate in this study. You give your voluntary consent by completing the survey. Participation is voluntary and you may stop at any time.

Foreseeable Risks:
No foreseeable risks are involved in this study.

Benefits to the Participants or Others:
If you agree to participate in this study there may or may not be a direct benefit to you. The information collected will be used to better understand what makes a quality LIS Ph.D. program. Results of this study will be made available to all participants through a web site.

Procedures for Maintaining Confidentiality of Research Records:
The survey is anonymous. At no time will you be identified by name or by any other identifying information. Data will be aggregated, or automatically combined, by computer. No individual survey responses will be reported. Information will be kept confidential, including in any publications or presentations regarding this study.

Questions about the Study:
If you have any questions regarding this study, you may contact Scott Klingler at telephone number 817-; or email at ; ɔunt.edu or Dr. Samantha Hastings, UNT School of Library and Information Science, at telephone number 940-

This research study has been reviewed and approved by the University of North Texas Institutional Review Board (IRB). The UNT IRB can be contacted at (940) with any questions regarding your rights as a research participant.

You may print this notice for your records.

Thank you for helping with this study to identify the criteria or characteristics of a Quality LIS Ph.D. Program.

APPROVED BY THE UNT IRB
FROM 4/21/06 TO 4/20/07

1. INFORMED CONSENT NOTICE

Survey on Quality Ph.D. Programs in Library and Information Sciences

University of North Texas Institutional Review Board

Informed Consent Notice

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

***Title of Study*:** Quality Ph.D. Programs in Library and Information Sciences (LIS)

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***Procedures for Maintaining Confidentiality of Research Records*:** The survey is anonymous. At no time will you be identified by name or by any other identifying information. Data will be aggregated, or automatically combined, by computer. No individual survey responses will be reported. Information will be kept confidential, including in any publications or presentations regarding this study.

***Questions about the Study*:** If you have any questions regarding this study, you may contact Scott Klingler at telephone number 817-XXX-XXXX or email at xxxxxxx@unt.edu or Dr. Philip Turner, UNT Center for Distributed Learning, at telephone number 940-565-XXXX.

This research study has been reviewed and approved by the University of North Texas Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-XXXX with any questions regarding your rights as a research participant. You may print this notice for your records.

Thank you for helping with this study to identify the inputs or characteristics of a Quality LIS Ph.D. Program.

Survey on Quality Ph.D. Programs in Library and Information Sciences

2. Demographics

Please answer the following non-identifying demographic questions that will be used to help analyze the survey data.

In what region of the world is your university/school located?

_____ North America

_____ Latin America (including Mexico)

_____ Europe (including the UK)

_____ Africa

_____ Asia/Pacific

_____ Middle East

_____ Other (text box provided)

What is the year of your birth?

(dropdown box with years from 1910 to 1990 provided)

What is your gender?

_____ Female

_____ Male

What is your role?

_____ LIS Faculty

_____ Other Faculty

_____ LIS Ph.D. Student or Candidate

_____ Other Ph.D. Student or Candidate

_____ Other (text box provided)

Survey on Quality Ph.D. Programs in Library and Information Sciences

3. Questions for Faculty

How long have you held your doctorate?

_____ I do not hold a doctorate

_____ less than 1 year

_____ more than 1 year and less than 2 years

_____ more than 2 years but less than 5 years

_____ more than 5 years but less than 10 years

_____ more than 10 years

Are you tenured?

_____ Yes

_____ No, but in a tenure track position

_____ No, not in a tenure track position

4. Questions for Ph.D. Student or Candidate

Which of the following best describes the type of your Ph.D. program?

_____ 100% Residence program

_____ Mostly Residence, Partially Distance Education

_____ Nearly Evenly Split between Residence and Distance Education

_____ Partially Residence, Mostly Distance Education

_____ 100% Distance Education

_____ Other (text box provided)

Have you taught a graduate or undergraduate course?

_____ Yes, Graduate

_____ Yes, Undergraduate

_____ Yes, Both Graduate and Undergraduate

_____ No, I have not taught either a graduate or undergraduate course

Are you seeking or planning to seek a faculty position?

_____ Yes

_____ No

Are you ABD? (Have you completed All But Dissertation?)

_____ Yes

_____ No

5. Clarification of Terms

The following terms or concepts that are used in the survey appear here in alphabetical order and are defined or explained below.

Accreditation - A process whereby a program of study or an institution is recognized by an external body as meeting certain predetermined standards. The recognition process by regional accrediting organizations such as the Commission on Colleges of the Southern Association of Colleges and Schools or the Western Association of Schools and Colleges (WASC-ACSCU) Accrediting Commission for Senior Colleges and Universities ***rather than by special accreditation groups like the American Library Association (ALA) Committee on Accreditation. The ALA does not accredit the doctorate.***

Enculturation - The process by which an individual learns the traditional content of a culture and assimilates its practices and values (Miriam-Webster Online Dictionary, 2005).

Evaluation - The systematic assessment of the worth or merit of some object. For example, an assessment of the effectiveness of an ongoing program in achieving its objectives.

Faculty - The teaching staff/professors teaching courses in the program, advising, or providing guidance.

Interdisciplinarity - The integration of concepts and epistemologies from different disciplines in research or education leading to new knowledge which would not be possible without this integration.

Learning Environment - Encompasses all aspects of the Ph.D. program. It includes the university/ school/ college infrastructure and the place and setting where learning occurs. It is not limited to a physical location and includes all the variables involved in the physical, social and psychological context of learning.

Ph.D. Students - The students or candidates in a doctoral program.

Programs (Courses) of Study - The courses in the program's curriculum.

Resources - Those activities and entities that the University makes available, such as but not limited to the libraries, computer labs, areas for student work and interaction, bookstore, administrative staff, computer systems, sources of data, offices, study carrels, etc.

Teaching - In the context of this study, ***teaching refers to educating or instructing performed by doctoral students.***

For each of the following seven groups of three concepts or terms, rank order the concepts or terms according to how important you feel each is *in relation to the others in the group as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

For example: If given the following group of concepts or terms, you decide that Convenience is most important, followed by Technology, and then by Evaluation. Mark Convenience as 1, Technology as 2, and Evaluation as 3.

__1__ Convenience

__3__ Evaluation

__2__ Technology

1. Rank order the following three concepts or terms according to how important you feel each is in relation to the others in the group *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

_____ Ph.D. Students

_____ Faculty

_____ Resources

2. Rank order the following three concepts or terms according to how important you feel each is in relation to the others in the group *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

_____ Faculty

_____ Programs (Courses) of Study

_____ Evaluation

3. Rank order the following three concepts or terms according to how important you feel each is in relation to the others in the group *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

_____ Programs (Courses) of Study

_____ Learning Environment

_____ Teaching

4. Rank order the following three concepts or terms according to how important you feel each is in relation to the others in the group *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

____ Learning Environment

____ Resources

____ Ph.D. Students

5. Rank order the following three concepts or terms according to how important you feel each is in relation to the others in the group *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

_____ Resources

_____ Evaluation

_____ Faculty

6. Rank order the following three concepts or terms according to how important you feel each is in relation to the others in the group *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

_____ Evaluation

_____ Teaching

_____ Programs (Courses) of Study

7. Rank order the following three concepts or terms according to how important you feel each is in relation to the others in the group *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

A rank of 1 is most important, a rank of 2 is second most important, and a rank of 3 is third most important.

_____ Teaching

_____ Ph.D. Students

_____ Learning Environment

For each of the following statements indicate the degree to which you agree or disagree with the statement *as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)*.

[The scale below was provided to answer each of the following questions.]

Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree

1. Resources are an important consideration in assessing the quality of any LIS Ph.D. program.

2. I know of a residence LIS Ph.D. program I would recommend to a potential student as a quality program.

3. The Ph.D. Students are the focal point of any LIS Ph.D. program.

4. Accreditation is an important consideration in assessing the quality of any LIS Ph.D. program.

5. The criteria for assessing the quality of any residence LIS Ph.D. program are the same for any Distance Education LIS Ph.D. programs.

6. Evaluation is an important consideration in assessing the quality of any LIS Ph.D. program.

7. I know of a Distance Education LIS Ph.D. program I would recommend to a potential student as a quality program.

8. Teaching apprenticeships are an important consideration in assessing the quality of any LIS Ph.D. program.

9. A person with a Ph.D. in LIS from a Distance Education program would be at a disadvantage when competing for a faculty or other professional position against someone with a Ph.D. from a residence program.

10. Accrediting bodies do not recognize universities with online Ph.D. programs.

11. The Ph.D. Students are an important consideration in assessing the quality of any LIS Ph.D. program.

12. Enculturation cannot be adequately accomplished through Distance Education.

13. There is a dire need for LIS faculty particularly with concentrations in the public library and public service areas.

14. The American Library Association's (ALA) "Standards for Accreditation of Master's Programs in Library and Information Studies" may provide criteria to assess the quality of any LIS Ph.D. program.

15. The Learning Environment is not an important consideration in assessing the quality of any LIS Ph.D. program.

16. The Faculty is an important consideration in assessing the quality of any LIS Ph.D. program.

17. Universities that take themselves seriously, such as Harvard and Columbia, do not permit Distance Education degree programs.

18. Distance Education LIS Ph.D. programs contribute to the prestige of LIS doctorates among other faculty members in the academy.

19. Doctoral students graduating from a Distance Education program are as enculturated as doctoral graduates from a residence program.

20. The Programs (Courses) of Study are an important consideration in assessing the quality of any LIS Ph.D. program.

What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them. (Open ended response area provided)

You may provide any additional comments, if you would like. (Open ended response area provided)

APPENDIX D

OPEN-ENDED COMMENTS FROM SURVEY

Question: “What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.”

Participant ID	What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.
5569383	I needed an 'I don't know' category. There were quite a few questions that I just did not have enough knowledge to answer. Also, some of the questions were not suitable for the Agree/Disagree format.
5590645	Other important concepts to consider are: mentoring/advising; the extent of established/funded research programs that doctoral students can participate in; the collegiality of the faculty and its relationship to the doctoral student community; the funding provided to doctoral students so that they can devote themselves to their studies...
5596923	PhD student interaction with each other not directly addressed in survey? I learned more from senior students than from junior faculty!
5781814	You should have included a category on the multiple choice questions for 'neither agree nor disagree' and one for 'don't know'
5786823	I wasn't clear about the meaning of 'evaluation'. Your definition provides external evaluation/accreditation as an example, but were you also thinking about faculty's evaluation of students or students' evaluations of their faculty/program?
5801622	Research opportunities, the quality of programs with which interdisciplinary work might be accomplished.
5805402	Related fields of study available to students.
5820948	Research Agenda. It seems to me that successful Ph.D. programs tend to have a focus or a very small number of foci to the research conducted by doctoral students.
5824260	placement history and history of graduates is a key criteria for determining the quality of a phd program: where have they placed PhD graduates? Have those graduates gone on to get tenure?
5825118	I think that the concept of research should be included in assessing the quality of LIS PhD programs. I am currently a PhD student in LIS and I have found that there is great disparity among PhD students in terms of publications and research opportunities depending on which faculty member they are working with. I believe that a requirement of ALL faculty who supervise PhD students is that they need to co-publish at least one article with the student(s) they are supervising.
5825829	None at this time
5834429	Publications by faculty and students are important
5896272	One critical factor in a doctoral program is interdisciplinarity, which seems to have been included only tangentially. A doctoral student may need to draw on many colleges, schools or departments within a university and that seems next to impossible to accomplish in a DE program.

Participant ID	What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.
5919987	Financial aid Teaching opportunities for PhD students
5926458	This is a survey comparing online to campus. But these are two different animals with different objectives. No one has online tenure track faculty. They have campus faculty that teach online.
5927040	other things that are important to a qual lis phd program: research opportunities fac/student collaboration grant funding mentoring
5931216	> Mission, goals, and objectives are missing. These are central to any academic program (or institution) assessment as the internal standards to which the program is held, in addition to whatever external standards are applied. At the very least, this instrument should explicitly address planning and evaluation processes. The concept of mission, goals, and objectives is now buried within the concept of 'evaluation,' which could be interpreted by someone who did not read the definitions carefully to mean evaluation of, say, student performance. > The consideration of distance education is overemphasized. Distance education is not as important to assessing a doctoral program as are many more traditional criteria, such as planning processes (above), faculty research and publication record, financial stability, etc. See, for example, the consistency of types of criteria in three assessments undertaken by UNT SLIS during 2005-2006: SACS, ALA/COA, Doctoral Program Assessment. To what are the results of this survey going to be compared? Most of the (admittedly scant) literature on evaluating LIS doctoral programs focuses on faculty publications, which are not mentioned at all in this instrument. > Outcome measures are missing. How does one assess the products of a program? (What _are_ the products?) If a distance education program can attain the same level of results in outcome measures as traditional programs, then what does this mean in terms of program reputation or prestige? (How important _is_ prestige?) > This totally ignores the enormous range of possible public- and private-sector career tracks that have nothing to do with libraries, as well as the many rich interdisciplinary connections that graduates can make intellectually and professionally.
5931375	Criterias for the faculty members: availability, competences to manage a student, leadership, acknowledgment... Mechanisms for budget the program : scholarship, etc.
5973691	None to mention

Participant ID	What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.
6090643	I am not sure what you mean by 'Distance Education'. If you mean that the student never has to set foot on campus, then I do not think that a degree should be given at the PhD level. I can accept a student completing courses through distance learning, but I firmly believe that what you term 'enculturation' can only happen on campus. How else is a student to get experience as an instructor, TA, research assistant and/or perform academic service (e.g. sitting on committees, etc.), all elements crucial in the preparation of a doctoral student for a career in academia? After all, the PhD experience is not simply a matter of successfully completing required courses, comprehensive exams, and a thesis -- there is so much more to it than that. I believe that distance education students cannot experience the richness that being in an academic milieu provides.
6139914	Research funding and research projects; professional development (preparation to be contributing faculty) PhD students need the opportunity to work on projects with established faculty because that is large part of the preparation for being a successful faculty member; funding is necessary for obvious reasons when you are a full-time student; learning the academic 'game' is essential from writing grants to creating posters and publications
6405526	The availability and number of classes being taught in the doctoral program should be considered. My university has had professors teaching doctoral classes in overload and only one or two classes available each semester, which does not provide much choice and shaping of interests.
6473649	research-because that, more than 'courses of study' is what the PhD is about, but it was never mentioned, which I consider a major oversight. colleagues--because a lot of what we learn we learn from each other.
6494965	Information technology - key component of modern LIS
6498760	Peer interaction among doctoral students.
6632331	research programs/projects the program is associated with
7110067	Emphasis on empirical research -- appears to be missing in this survey, yet it is an important aspect of doctoral studies. Since much research -- and learning how to conduct research -- requires close contact with people, surely DE students are at a disadvantage in the aspect.

Participant ID	What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.
7166124	'I don't know' buttons would have been nice. I mean, ***? There are some questions where I didn't know the answers and there was no way I could express that. And there were some things which I thought were neither important nor unimportant, and there was no way to express that on the survey. Forcng a person to have an opinion is not an accurate way of capturing how they feel or what they believe. And I kept forgetting the definitions of some of your terms. The 'teaching' term, for instance, you used a weird definition for, and I kept forgetting what you actually meant by it (i.e., teaching experience for students rather than quality of faculty teaching/pedagogy). It would have been nice to repeat the definitions of the 3 words you asked us to rank on the page, so we could keep in mind what you meant with the words. Also, the questions you asked at the end helped me figure out exactly what you were talking about, and if I had been able to fill out the ranking part of the survey after having read the questions, I would have been able to better understand in what sense you meant the words in the ranking section. Probably the first page of questions would easily have been enough to put me in the right mindset (i.e., before you asked (many) questions about Distance Ed PhDs).
7210890	Other concepts which could have been included: support/mentoring for publishing; research assistantships - the availability, quality, funding; more about teaching opportunities; access to research funding; flexibility of programs to accommodate students' needs, for example - flexibility with residency requirements; length of program; structure of program; opportunities for doc students to give guest lectures (if not teaching); flexibility to take other courses (either at doc or masters level) from other programs/disciplines.
7316938	I was not sure whether or not 'resources' included monetary assistance, particularly financial assistance without the obligation to work for the school.
7973791	An important element that signifies the quality of any Ph.D. program in any discipline is the opportunity to work with faculty on research projects that enable students to begin developing a publication history. Colleagues who have completed their degrees without any significant track record of publication have not been hired to fill faculty openings at higher echelon LIS schools.
8397883	Grant-driven projects, publications, and academic activities are more important than any learning environment. Those are professional criterion that determines the quality of a program. The professional LIS graduates will be in real life to improve their institutions. The above mentioned criterion are real-life events that motivate students to learn more, to research more and to be better prepared for future.

Participant ID	What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.
8481775	Quality of Dissertation Advisor Quality of Dissertation COmmittee members feedback and participation Timeliness of Disstn Advisor returning comments of DRAFTS in a timely manner
8486807	You did not talk about mentorship. You can have good faculty (in terms of research or even teaching reputations) and resources, etc. But often those parts are not working well together. Perhaps you included this under learning environment or enculturation, but I think mentorship is something specific.
8489134	The role of research in the Ph.D program, particularly by faculty and current studies
8492521	Technology -- the field is moving to demand skill in this area
8494721	mentoring: it should be explicit: mentoring into an academic career; conference circuit; publishing world etc -- perhaps part of the learning environment
8495227	The issue of 'interdisciplinary' studies was hardly addressed in a suitable manner that reflectd any importance whatsoever! That's what makes UNT's program such an oustanding program! So when you asked if I know of a LIS program I would refer people to, I assumed you meant a NON-INTERDISCIPLINARY program. Too vague. Furthermore, the interdisciplanary aspect creates another dimension of 'enculturation,' which is probably the foremost aspect that makes interacting with the other students such a big plus during the educational experience/process.
8497148	The importance of research which is what the phD program should be all about.
8513514	I feel that resources is too vague a term - I would distinguish between funding, to support participation in research projects and conferences for example, and physical resources such as IT and a good library.
8517233	There is a need to compare ISDOC program with other interdisciplinary PHD programs.
8518495	How much the reputation of the University or the college under which an LIS program exists might contribute in the quality of the program (support by them fits under resources but the reputation does not).
8541885	Quality, Value, Prestige, are all important terms and there's not much agreement about how to measure these in our educational programs.
8720845	The importance of forming cohorts so students have a group that will help them get through the lonely PhD process
8756865	Just to add: Ph.D. programs are not accredited by the American Library Association.
8776745	Mentorship or something about committee guidance Opportunities for clinical faculty or teaching assistance

Participant ID	What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.
9012932	Unless the distance ed. courses are laid out differently to account for/accommodate the differences in ability to cover the same amount of material as for a 'face-to-face' course plan, DL students may be at a disadvantage for (1) being able to get as much out of the material others are expected to be able to master in the same time frame, or (2) being given less material to cover, to compensate for the longer times/greater effort needed to teach and learn in a DL environment, therefore putting them 'behind' students in nominally 'par' classes but who in fact are being presented with more to learn, because it's easier to do so, or (3) some combination of the above, plus (4) greater difficulty in sharing/hashing over ideas with colleagues/peers in a serendipitous fashion. HOWEVER, re: (4), I recognize that many working PhD students don't have a lot of time outside of their school course meetings to hang out and discuss ideas with their classmates, period, even in residential programs.
9511738	Research practicum was not mentioned; in my view, it is at least as important as teaching experience as part of a PhD program.
9537020	Service to the community: quality PHD programs give back more to the community (such as working with public libraries) and encourage/enable doctoral students to do so also Faculty Productivity: if faculty are productive then doctoral students will be also, and the program will be of highr quality
9623519	While the survey researched the importance of teaching, it did directly address research experience.
9630469	Communication among students and LIS PhD professors.
9631491	Research and Publications:- (sound and continous research activities obviouisly attract quality faculty and of course, students). Scholarships, assistanship, and/or resarch funds:- (It might be part of your 'Resource' but mentioning them catagorically may help to differentiate with other 'Resources')
9632249	You haven't talked about the importance of research. You mentioned teaching apprenticeships. Research apprenticeships are just as critical to a quality PhD program.
9646358	I would add questions about the opportunities for and aspects of student research participation in PhD programs (you addressed teaching in one item).

Participant ID	What other terms or concepts were not included in the survey that you feel should be included? In the response area please tell us what they are and briefly explain why you would include them.
9650903	possibly separate from 'resources' would be the concept of 'support' for students-- not just financial (altought that is very important and often a huge impact on decision of what program to attend) or physical resources, but all that is necessary to smooth the tranistion to doc student status, enculturation, and progressing through the program. you might also need to address 'location' in some way, as many make decisions on program attendance based not merely on program reputation or 'quality' but on what is available to them nearby--many can not relocate or travel for studies, and Dist. Ed. is not widely accepted yet.
9662426	I'm not sure how to word it, but I think the relationship between faculty and Ph.D. students is very important. At some universities, research rules over relationships and it is difficult to get the mentoring you need.
9667360	Possible cost of education factors (monetary costs) and location of university.
9776948	Apprenticeship--important in preparing professionals for environments outside the traditional classroom. Study Abroad Programs--crucial in addressing and modeling crosscultural problem solving scenarios. Scholarships and Funding--crucial in acertaining high completion rates (above and beyond the 20% average)
9801151	Distance education is a very broad concept. There is good and bad DE like campus-based ed.
9801523	original, significant research
9901560	In other areas of the academy we have two types of doctoral degrees--Doctor of Philosophy in a discipline and Doctor of a discipline. LIS schools should consider this approach--a Doctor of LIS for experts in the practical aspects of the LIS discipline and a Doctor of Philosophy in LIS for our future educators.
9912250	Conferences and other scientific activities are important. Associating Ph-D students in the life of the department and the programme is also important.
9958665	Collaboration--having opportunities to collaborate closely with faculty on research is an important part of doctoral study Multidisciplinarity--being able to enroll in courses across campus is an important part of doctoral study; coursework should not be limited to what is taught by LIS faculty alone
9993860	Professional Experience

Question: “You may provide any additional comments, if you would like.”

Participant ID	You may provide any additional comments, if you would like.
5569383	Have the terms defined on the same page where they appear would have been more helpful than the glossary at the the beginning.
5581013	Have you pretested the questions? They are quite confusing. The option, Not sure, should be provided as an option in your survey.
5590645	I struggled in these rankings and in the scales because a lot of context was not considered, and the situation in any doctoral program is not so black and white. For instance, the 'resources' during my studies have varied from year to year, so there is no reliable way to rank that concept. Teaching, too, can be uneven over the course of a doctoral program.
5621805	You don't provide a 'don't know/can't respond' option, but the survey software demands responses to all questions. This will skew your results.
5780939	This was a little more 'generic' than I would have liked. For example, an online PHD program for a student who has experience in the field would not require the same level of enculturation as someone who doesn't - there was no way to express that in these questions. We have students in our PHD program whose background is another field entirely - I think enculturation from a distance would be almost impossible.
5786823	As I was answering this questionnaire I found myself grappling with what 'quality' meant, and for whom. This may help to explain some seemingly inconsistent responses. For example, I was thinking about a 'quality' program from the point of view of the student. A good student can do good work with poor faculty, curriculum, environment, and resources, and can produce a 'quality' thesis, but I believe that for the student the quality of the faculty, teaching, and mentorship are what really drive the quality of the student's experience. So although students are the core of the program, a program that is of 'good quality' from the perspective of the students needs first and foremost to provide excellent resources for the students to work with, and I believe that these resources are primarily in the form of faculty. I've worked in a residency doctoral program with full and part-time students and have witnessed differences in acculturation even between those two groups. If a doctoral student has an academic career as a goal I've observed that it's difficult to live with one foot in the theoretical academic world while at the same time trying to operate in the real-life world of full-time professional work. It regularly takes the part-time students much longer to become acculturated and face-to-face contact through classes, and coffee and beer with other students and faculty are what makes this happen.

Participant ID	You may provide any additional comments, if you would like.
5791395	The use of 'teaching' here to refer strictly to PhD students' teaching work is explained clearly in the terms section, but it was still very easy to forget that STUDENTS' TEACHING, not faculty's teaching, was being referred to when ranking various components of a program. It might be worth clarifying that in the list of terms to be ranked itself should this survey be reiterated. It might also be a good idea to provide a link to the ALA standards for accreditation of Master's programs for those who are not already familiar with them.
5791971	I found this survey very restrictive. I hope you plan interviews as follow-ups to the survey.
5803843	In North America, attention has been paid to recruitment/education of doctoral students in information science at the expense of recruitment/education of library science doctoral students. In North America, there is a shortage of PhD graduates with library orientations/backgrounds. Consequently, there are not enough library-oriented faculty in many of our graduate programs. Adjuncts are being used for core areas of librarianship, such as organization of information and collection development, and for critical areas, such as youth services. When these courses are taught by adjuncts, there is not adequate representation for these areas of librarianship at faculty meetings. This often results in inappropriate changes to the curriculum. In addition, without full-time faculty in these areas, there is no one to mentor future PhD's in these areas. This is harmful to library education and ultimately to the libraries of North America. Recruitment of youth service/youth literature doctoral students is lacking in North American programs.
5814535	You defined Interdisciplinary, but I don't recall any questions that related to it.
5815371	It would have been beneficial to add another level in the Likert scale, such as 'Do not know' or 'Not applicable' or 'No opinion'. My answers are not wholly truthful because I do not know of any distance PhD courses or how they are regarded by the academic community at large.
5820334	I wish I could have gone back to your glossary to see what you meant by 'teaching.'
5825118	I would like to emphasize my belief that the learning environment is the most influential factor in creating a quality PhD program. I believe that high attrition rates in PhD programs are not due to defective students but rather they are due to the structure of most PhD programs.
5825829	no comments at this time
5827302	Several of the forced choice items need a 'no opinion' or 'don't know' option.
5845245	Library Science and Information Science are not mutually inclusive i.e. some of us studying information science are not related to libraries in any way.

Participant ID	You may provide any additional comments, if you would like.
5866224	LIS PhD programs are not accredited and vary so widely that it is unlikely that any standard would work.
5919987	I would have strongly liked a 'don't know' option. In such questions about Harvard being a serious school that doesn't have distance ed programs... there was another question that concerned accreditation that I didn't have an answer for but the format of the online survey required that I answer the question before progressing. I'm surprised that a pilot test of the survey didn't bring this to light and it does compromise the data in my opinion.
5931216	> The definitions and the dis/agree items are well done. > The rank ordering section is overly repetitious.
5973691	None
6063271	Professional socialization is critical, but it need not be part of the PhD progrram. I have a DPhil from South Africa; my6 professional socialization came through my Masters degree programs.
6090643	I had a hard time choosing a description that fitted my PhD program. Currently our PhD program is 'ad hoc' and is thus very flexible. Although we do not have any PhD courses offered by distance education, after completing their course work (from which some are exempt due to prior research experience) many of my PhD student colleagues leave the city to live far away and only come in to visit their advisors a few times per year. I had a hard time slotting the program into your descriptions -- this is why I called it partly residence and partly distance education, although I have a feeling that my interpretation of the latter is not the same as yours.
6377181	My experience so far has been terrible in a LIS Phd program. Doctoral students should not be experimental guinea pigs in a changing information environment. thank you
6473649	You defined interdisciplinarity, but I don't remember seeing it in the survey. May be my short memory. It may be true that there is currently a shortage in some areas of the curriculum, but it is important to remember that it takes 3-6 years to produce a PhD. The ALA standards are very much about library professional education. Our PhDs are very much more about research in information studies (including, but hardly limited to libraries), and each PhD program has different strengths directly dependent on the research strengths of the faculty.
6490800	I wish that this part of your question 'as it applies to the inputs to a quality Ph.D. program in Library and Information Sciences (LIS)' on which your responses hinge was defined more clearly...I had to make assumptions about what you really mean There seem to be a bias against distance programs, are you trying to make a case for the promotion of residence programs only?Some of the responses to the last questions would be different if you allowed distinction between graduates who will go/want to go into academia, and those aspiring to other professions.

Participant ID	You may provide any additional comments, if you would like.
6494965	Good luck with your research
6495325	A don't know option would have been nice in this survey. I do not personally know of any distance LIS PhD programs so answering strongly disagree which I did in this case has given you a wrong impression of my opinion about this topic. Being able to check the language again would also have improved the reliability of my answers. I got a bit hazy on the concept of evaluation by the 3rd or 4th question. I would have liked to have returned to your defintions for a check. Good luck with your study!
6676323	I have met some of the students from U/North Texas distance doctoral program and was greatly impressed. The reason for this, I think, is that they were in a contingent and regarded themselves as colleagues in the unit due to the amount of time they spend with each other in the process. Any other institution looking to incorporate a similar approach would, I think, have to adopt similar steps to ensure the same degree of collegiality which is the key to the enculturation portion of the education- the stealth curriculum if you will.

Participant ID	You may provide any additional comments, if you would like.
66124	Enculturation is a *huge* part of any PhD program. Distance Education can work beautifully for a pre-professional masters degree, such as the LIS Masters, if done well (i.e., mandatory f2f sessions, especially at the beginning). It can *not* work for something like the PhD. That being said, there are two kinds of PhDs. The academic PhD, and the professional PhD. The latter is for people who need the letters to get a promotion in their workplace (i.e., public school teachers/librarians). Such a degree can be done effectively online. What I am talking about here is the academic PhD. Faculty, other PhD students, the learning environment, etc., are all vital to the experience of learning how to be an academic. It is difficult enough for people who are on-campus to have that experience, because it involves having intellectual conversations, strategic conversations, reflective conversations, and debates over structure, measurements, and standards with your colleagues, both fellow PhD students, and Faculty. The problem with distance education is that there is no way to stop by someone's office, run into them in the hall, go grab a drink at a coffeeshop or bar, or other manner of having casual conversation that will lead to intellectual exchange. It is only by seeing how professors live their lives, and why they make the choices they do, that a student can fully appreciate what being an academic entails, what being an academic ought to entail but often doesn't, etc. In essence, a PhD program is an opportunity for the PhD student to do an informal ethnography of what it is like to be an academic, which is impossible to do on a distance model because probably 90% of what academics do leaves no accessible (to the student), meaningful (i.e., showing process) online trace. And the point of this ethnography is not so that you can 'be just like my professors', but rather, so you know what you're getting yourself into, and can make informed decisions about what kind of person, and what kind of professional you want to be. And can understand viscerally what academic rigor entails.

Participant ID	You may provide any additional comments, if you would like.
7210890	I would recommend a 'don't know' category to the likert scale questions. I am a Canadian doc student and I am not familiar with the US schools, so it was difficult for me to provide an opinion for some of the statements, and the survey did not allow me to leave a question unanswered. I ended up selecting 'disagree' for my 'don't know'. But, of course, sometimes my informed opinion to some statements is 'disagree' - so I've skewed your data. My area of research is distance library services, so of course I am supportive of distance education (which is reflected in my responses), but as to the attitudes towards LIS distance PhD programs - this is something with which I not familiar. A statement I had difficulty with was the one that pertained to recommending a quality LIS PhD residence program. I personally would not use residence as recommending factor; rather if I was in the position of recommending a program to someone, my advice would be that the individual should consider several other aspects of a program before residency: personal area of research, courses and faculty and potential supervisers, access to funding sources, opportunities for teaching and RAships. Ultimately, the decision to select a particular program is very personal and specific to an individual's needs, requirements and interests, therefore I would be very reluctant to recommend a particular program and would advise that a person 'do their homework' before selecting a program. Thanks for this, this was fun, it will be interesting to see the results.
7541018	For several of the questions, my actual answer was, 'I do not know,' but that option was not made available and I was not allowed to skip those questions, making this survey rather flawed. I simply do not know enough about distance education in LIS at the doctoral level to answer those questions. Furthermore, I felt I was asked to make sweeping, frustrating generalizations at every turn.
8286448	There was no 'don't know' choice on the scale, and several times I was forced to make a choice when I did not really know the answer, such as the question re:Harvard and Columbia, also re: the need for public library Ph.D.s.
8397883	Faculty-Student colloboration through mutual projects and publications should really be encouraged.
8481775	This survey is an excellent start. My PhD experiences was one of the worst I have encountered in discussions with other doctoral candidates. If my home universty contacts me as an alumni in the future they will 'get an earful.' I feel I could have done better at walden.edu and skipped the poor quality intrinsice in my program.
8486807	You did not provide a 'do not know' box which skews your results - there were several questions which I felt forced to answer although I have no idea (ie how accreditation or Harvard deal with distanced ed)

Participant ID	You may provide any additional comments, if you would like.
8489134	A Ph.D program should focus on the theoretical foundations of the discipline, not on how to do stuff.
8492521	Please post the results of your research.
8494721	some of the questions, for which i responded disagree were really responses of 'i don't know' or 'i'm not sure'
8495227	I answered a few questions by guessing - such as the one that required the responder to know whether or not Harvard offers distance learning classes! And the one about the ALA criteria, which I'm not familiar with. What purpose does that serve to answer questions when uninformed? Maybe there should be a response selection that says 'I don't know,' so as not to skew the results of the survey.
8495350	Question 17 is somewhat ambiguous: does it mean that serious universities SHOULD not permit distance phd, or that that do not. If it is the second then this is a true or false question, not an opinion question.
8513514	Methodological comment: your questions asking for agreement with various statments did not have an option for 'I don't know' and the survey would not allow me to leave a question blank. I think good ethical practices should leave the participant the option to not respond if they choose not to.
8517233	More about the different roles faculty play - administrator, counselor, teacher, mentor. Student opinions are needed in evaluating each of these 'hats' worn by faculty to have a complete understanding of the entire responsibilities of faculty. The word faculty is not enough of a definition.
8518495	It would be nice to have a 'I don't know' or neutral choice in the scale
8546462	There are many ways to create a strong online Ph.D program. I'm not at all convinced that the ALA even has the right interests to accredit LIS PhD programs.
8556802	Questions should be more clearly asked. For instance, you ask if one agrees that universities with distance doctoral programs are accredited; but you do not say whether or not you are talking about regional accreditation of the university or professional accreditation of a program. The results will be meaningless since responders will make their own assumptions about several questions.
8568711	I found myself unable to answer truthfully some of the questions because you did not provide other categories, such as I don't know, non-applicable. This was true for questions on distance learning. Good luck with the results.
8590396	I think availability of funding (GA, TA, etc.) is an important aspect of a quality PhD program. Maybe that can be a future research study.
8720845	I look forward to seeing the results of your survey.

Participant ID	You may provide any additional comments, if you would like.
9012932	In the Master's level program, it's a bit more reasonable to try to cram in material into a DL milieu, although I don't think it's as 'effective' for the same level of effort on the part of teacher or student as for a residential program. In a PhD setting, I think the school has to go a LOT farther to account for the lack of interaction/immediacy/serendipity, perhaps even to the point of having additional courses, or longer course schedules, to accommodate/overcome the inherent disparities.
9072392	Nothing in this survey addresses the motivation or professional experience levels of the Ph.D. students except in the most generic way... these are critical considerations in assessing quality of the Ph.D. students and what the outcomes of any program, but particularly a DE program.
9381532	I don't know that it has been proven to what degree DE students have been acculturated - in the Masters program there is evidence that they have - I didn't know the answer to some of these questions - you needed a 'don't know' category. I was forced to put an answer I didn't agree with. I'm not sure if you planned it that way but it seems to me it may skew your results.
9601661	Some of the Likert scale questions should include 'don't know' or 'no opinion' options if the survey is forcing the participant to provide a response.
9631491	Thanks for choosing this interesting area and Good Luck!
9646358	I guessed on the questions concerning distance PhD programs, since I know nothing about how many exist yet - I suspect others are just speculating, too.
9662426	I am a little leery of distance education Ph.D.'s in one main area. Since beginning my Ph.D., I have had such a shift in thinking. I was already very analytical, but now I think more broadly. I see more connections between library practice and the wider world of research both in the LIS field and in other fields. I believe that this shift was necessary for me to undertake research in a meaningful way. I think it would have been difficult to make that shift had I still been immersed in my professional life where my practical side ruled everything. If I was enrolled in a distance ed. program, I would have definitely kept my job and the Ph.D. would have been a secondary thing. I think that is true for a lot of people. Only through complete immersion and quite frankly, lots of proof that I was not an expert, was I able to really see the research possibilities and for me to see my degree as more than just an additional professional degree.
9707668	Needed to add a selection for Do Not Know on the questions asking about accreditation as not all students are versed in the details of the process. This also applies to the ALA question on accreditation.

Participant ID	You may provide any additional comments, if you would like.
9770339	Some of the questions I didn't actually know the answer to, I've no idea if ALA accredits distance ed programs or if Harvard has any. Good luck with your project, it looks interesting!
9776948	Best of luck in your study.
9801523	This questionnaire seems devoid of the sense that a Ph. D. program should produce significant original research.
9901560	It is incredible to me that we have Ph.D. graduates that do not have a solid grounding in both philosophy and LIS theory. A critical aspect of a good Ph.D. program is students discussing ideas with each other and with faculty in both formal (classes) and informal settings. This is unlikely unless students have both a place to gather, time for discussion, and participation of faculty. Part time attendance, heavy workloads, busy faculty, and distance learning all mitigate against this type of discussion.
9912250	In the learning environment, the relations between faculty members can be important for the students. Sometimes bad relationships among faculty affect the students.
9993860	I have had my doctorate for about ten years now. I have taught as a full-time faculty member and am now back practicing librarianship and teaching LIS part-time. More and more I am coming to the belief that doctoral students MUST have previous practical library experience before beginning a doctoral program. There are some things about librarianship you just can't learn by having librarians come in as guest lecturers or by reading Library Journal. The knowledge and experience gained in practice only helps to make you a better teacher and an excellent researcher. As far as distance doctoral programs go ... I don't think that they can achieve the same quality of enculturation that can be achieved FTF. I also believe that the best part of my doctoral program were the faculty and how they taught me how to be a researcher, teacher and colleague. This was not always done in the classroom but often over coffee, chats after a guest lecture, or dinners out at conferences.

APPENDIX E

BALANCED INCOMPLETE BLOCK DESIGN INTRABLOCK AND INTERBLOCK STATISTICAL ANALYSIS

```
title1 'Balanced Incomplete Block Survey Data';
data survey;
   input subject block trtmt y @@;
   datalines;
1       1       1       3
2       1       1       1
3       1       1       3
4       1       1       2
.
.
.
221     7       3       2
222     7       3       3
223     7       3       1
224     7       3       1
225     7       3       1
;
run;


title2 'Intrablock Analysis using PROC GLM';

  proc glm;
    class block trtmt;
    model y = block trtmt / solution;
    means trtmt / BON;
    lsmeans trtmt /PDIFF = All CL ADJUST = BON ;
  run;


title2 'Interblock Analysis using PROC MIXED';

  proc mixed;
    class trtmt block ;
    model y = block trtmt ;
    REPEATED ;
  run;
```

Balanced Incomplete Block Survey Data
Intrablock Analysis using PROC GLM

The GLM Procedure

Class Level Information

Class	Levels	Values
block	7	1 2 3 4 5 6 7
trtmt	7	1 2 3 4 5 6 7

Number of Observations Read	4725
Number of Observations Used	4725

The GLM Procedure

Dependent Variable: *y*

Source	*DF*	Sum of Squares	Mean Square	*F* Value	*Pr* > *F*
Model	12	783.131429	65.260952	130.03	<.0001
Error	4712	2364.868571	0.501882		
Corrected Total	4724	3148.000000			

R-Square	Coeff Var	Root MSE	y Mean
0.248771	35.42182	0.708436	2.000000

Source	*DF*	Type I *SS*	Mean Square	*F* Value	*Pr* > *F*
block	6	0.0000000	0.0000000	0.00	1.0000
trtmt	6	783.1314286	130.5219048	260.06	<.0001

Source	*DF*	Type III *SS*	Mean Square	*F* Value	*Pr* > *F*
block	6	174.0292063	29.0048677	57.79	<.0001
trtmt	6	783.1314286	130.5219048	260.06	<.0001

Parameter		Estimate		Standard Error	*t* Value	*Pr* > |*t*|
Intercept		2.095873016	B	0.03715965	56.40	<.0001
block	1	0.184126984	B	0.04372564	4.21	<.0001
block	2	0.002539683	B	0.04372564	0.06	0.9537
block	3	-0.336507937	B	0.04372564	-7.70	<.0001
block	4	-0.323809524	B	0.04372564	-7.41	<.0001
block	5	-0.473650794	B	0.04372564	-10.83	<.0001
block	6	-0.083809524	B	0.04372564	-1.92	0.0553
block	7	0.000000000	B	.	.	.

The GLM Procedure

Dependent Variable: *y*

Parameter		Estimate		Standard Error	*t* Value	*Pr* > |*t*|
trtmt	1	-0.177142857	B	0.04372564	-4.05	<.0001
trtmt	2	-0.765714286	B	0.04372564	-17.51	<.0001
trtmt	3	-0.110476190	B	0.04372564	-2.53	0.0116
trtmt	4	0.102857143	B	0.04372564	2.35	0.0187
trtmt	5	0.580952381	B	0.04372564	13.29	<.0001
trtmt	6	0.729523810	B	0.04372564	16.68	<.0001
trtmt	7	0.000000000	B	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

The GLM Procedure

Bonferroni (Dunn) t Tests for *y*

NOTE: This test controls the Type I experimentwise error rate, but it generally has a higher Type II error rate than REGWQ.

Alpha	0.05
Error Degrees of Freedom	4712
Error Mean Square	0.501882
Critical Value of *t*	3.03972
Minimum Significant Difference	0.1172

Means with the same letter are not significantly different.

Bon Grouping	Mean	*N*	trtmt
A	2.52741	675	6
A			
A	2.41185	675	5
B	2.04000	675	4
B			
C B	1.96000	675	7
C			
C D	1.87407	675	3
D			
D	1.82222	675	1
E	1.36444	675	2

The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Bonferroni

trtmt	*y* LSMEAN	LSMEAN Number
1	1.77142857	1
2	1.18285714	2
3	1.83809524	3
4	2.05142857	4
5	2.52952381	5
6	2.67809524	6
7	1.94857143	7

Least Squares Means for effect trtmt
Pr > |*t*| for H_0: LSMean(i)=LSMean(j)

Dependent Variable: *y*

i/j	1	2	3	4	5	6	7
1		<.0001	1.0000	<.0001	<.0001	<.0001	0.0011
2	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001
3	1.0000	<.0001		<.0001	<.0001	<.0001	0.2426
4	<.0001	<.0001	<.0001		<.0001	<.0001	0.3926
5	<.0001	<.0001	<.0001	<.0001		0.0144	<.0001
6	<.0001	<.0001	<.0001	<.0001	0.0144		<.0001
7	0.0011	<.0001	0.2426	0.3926	<.0001	<.0001	

trtmt	*y* LSMEAN	95% Confidence Limits	
1	1.771429	1.711783	1.831074
2	1.182857	1.123212	1.242502
3	1.838095	1.778450	1.897740
4	2.051429	1.991783	2.111074
5	2.529524	2.469879	2.589169
6	2.678095	2.618450	2.737740
7	1.948571	1.888926	2.008217

Balanced Incomplete Block Survey Data
Intrablock Analysis using PROC GLM

The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Bonferroni

Least Squares Means for Effect trtmt

i	j	Difference Between Means	Simultaneous 95% Confidence Limits for LSMean(i)-LSMean(j)	
1	2	0.588571	0.455658	0.721485
1	3	-0.066667	-0.199581	0.066247
1	4	-0.280000	-0.412914	-0.147086
1	5	-0.758095	-0.891009	-0.625181
1	6	-0.906667	-1.039581	-0.773753
1	7	-0.177143	-0.310057	-0.044229
2	3	-0.655238	-0.788152	-0.522324
2	4	-0.868571	-1.001485	-0.735658
2	5	-1.346667	-1.479581	-1.213753
2	6	-1.495238	-1.628152	-1.362324
2	7	-0.765714	-0.898628	-0.632800
3	4	-0.213333	-0.346247	-0.080419
3	5	-0.691429	-0.824342	-0.558515
3	6	-0.840000	-0.972914	-0.707086
3	7	-0.110476	-0.243390	0.022438
4	5	-0.478095	-0.611009	-0.345181
4	6	-0.626667	-0.759581	-0.493753
4	7	0.102857	-0.030057	0.235771
5	6	-0.148571	-0.281485	-0.015658
5	7	0.580952	0.448038	0.713866
6	7	0.729524	0.596610	0.862438

Balanced Incomplete Block Survey Data
Interblock Analysis using PROC MIXED

Model Information

Data Set	WORK.SURVEY
Dependent Variable	*y*
Covariance Structure	Variance Components
Estimation Method	*REML*
Residual Variance Method	Parameter
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Between-Within

Class Level Information

Class	Levels	Values
trtmt	7	1 2 3 4 5 6 7
block	7	1 2 3 4 5 6 7

Dimensions

Covariance Parameters	1
Columns in X	15
Columns in Z	0
Subjects	4725
Max Obs Per Subject	1

Number of Observations

Number of Observations Read	4725
Number of Observations Used	4725
Number of Observations Not Used	0

The MIXED Procedure

Iteration History

Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	10204.90853327	
1	1	10204.90853326	0.00000000

Convergence criteria met.

Covariance Parameter Estimates

Cov Parm	Estimate
Residual	0.5019

Fit Statistics

-2 Res Log Likelihood	10204.9
AIC (smaller is better)	10206.9
AICC (smaller is better)	10206.9
BIC (smaller is better)	10213.4

Null Model Likelihood Ratio Test

DF	Chi-Square	*Pr* > ChiSq
0	0.00	1.0000

The Mixed Procedure

Type 3 Tests of Fixed Effects

Effect	Num *DF*	Den *DF*	*F* Value	*Pr* > *F*
block	6	4712	57.79	<.0001
trtmt	6	4712	260.06	<.0001

APPENDIX F

LIKERT–TYPE STATEMENT ANALYSIS

Table F1

Responses to Likert-type Statements—All Faculty

Statement	Number of Participants						
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean
1.	0	1	1	16	55	24	6.01
2.	4	3	3	5	28	54	6.08
3.	2	3	8	28	29	27	5.52
4.	9	9	16	30	22	11	4.47
5.	16	16	19	16	12	18	3.95
6.	1	2	7	33	37	17	5.48
7.	37	32	12	6	5	5	2.39
8.	1	8	11	32	38	7	5.02
9.	9	7	10	25	20	26	4.95
10.	10	21	44	8	11	3	3.21
11.	1	1	1	18	40	36	6.06
12.	3	9	12	22	32	19	5.07
13.	3	4	10	30	33	17	5.24
14.	18	14	20	30	13	2	3.59
15.	49	33	5	6	2	2	1.92
16.	0	0	0	1	13	82	6.84
17.	7	26	30	16	12	5	3.50
18.	27	28	26	13	1	1	2.49
19.	34	29	20	9	3	1	2.31
20.	0	1	3	12	49	31	6.06

Table F2

Responses to Likert-type Statements—LIS Faculty

Statement	Number of Participants						
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean
1.	0	1	1	14	51	23	6.02
2.	4	3	2	3	25	53	6.13
3.	1	3	7	26	26	27	5.59
4.	8	8	16	27	20	11	4.49
5.	16	16	16	13	12	17	3.91
6.	1	2	7	29	35	16	5.48
7.	36	28	10	6	5	5	2.41
8.	1	7	9	29	17	7	4.83
9.	8	7	9	22	19	25	4.98
10.	8	20	42	7	10	3	3.22
11.	1	1	1	18	38	31	6.01
12.	2	6	11	21	32	18	5.22
13.	2	4	9	28	32	15	5.27
14.	17	13	19	28	11	2	3.56
15.	46	30	4	6	2	2	1.93
16.	0	0	0	1	13	75	6.83
17.	5	24	29	15	12	4	3.54
18.	26	27	23	12	1	0	2.42
19.	33	29	18	6	3	0	2.17
20.	0	1	3	11	48	26	6.02

Table F3

Responses to Likert-type Statements—Other Faculty

Statement	Number of Participants						
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean
1.	0	0	0	2	4	1	5.86
2.	0	0	1	2	3	1	5.43
3.	1	0	1	2	3	0	4.57
4.	1	1	0	3	2	0	4.29
5.	0	0	3	3	0	1	4.43
6.	0	0	0	4	2	1	5.57
7.	1	4	2	0	0	0	2.14
8.	0	1	2	3	1	0	4.14
9.	1	0	1	3	1	1	4.57
10.	2	1	2	1	1	0	3.00
11.	0	0	0	0	2	5	6.71
12.	1	3	1	1	0	1	3.14
13.	1	0	1	2	1	2	4.86
14.	1	1	1	2	2	0	4.00
15.	3	3	1	0	0	0	1.71
16.	0	0	0	0	0	7	7.00
17.	2	2	1	1	0	1	3.00
18.	1	1	3	1	0	1	3.43
19.	1	0	2	3	0	1	4.14
20.	0	0	0	1	1	5	6.57

Table F4

Responses to Likert-type Statements—All Ph.D. students or candidates

Statement	Number of Participants						
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean
1.	3	1	3	38	43	25	5.64
2.	7	9	13	23	41	20	5.00
3.	5	11	17	31	30	19	4.83
4.	5	9	13	21	33	32	5.21
5.	11	29	26	18	14	15	3.77
6.	4	1	13	42	41	10	5.14
7.	30	34	16	14	15	2	2.88
8.	2	4	9	36	42	18	5.36
9.	6	10	19	30	24	22	4.78
10.	11	21	41	25	11	2	3.43
11.	3	7	12	26	42	20	5.23
12.	5	14	20	31	19	21	4.63
13.	5	9	16	42	26	12	4.74
14.	10	15	17	41	26	1	4.17
15.	39	39	20	7	3	2	2.22
16.	1	1	3	5	29	70	6.43
17.	12	30	29	24	9	5	3.38
18.	15	29	33	20	6	6	3.21
19.	19	30	31	12	13	4	3.10
20.	1	0	2	13	51	42	6.17

Table F5

Responses to Likert-type Statements—LIS Ph.D. students or candidates

Statement	Number of Participants						
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean
1.	3	1	3	37	41	23	5.61
2.	7	8	13	22	39	19	4.99
3.	5	10	15	30	29	19	4.88
4.	5	9	13	20	31	30	5.17
5.	11	28	25	16	14	14	3.74
6.	4	1	10	42	39	10	5.19
7.	29	32	16	13	14	2	2.87
8.	2	3	8	36	40	17	5.39
9.	6	9	18	29	23	21	4.79
10.	11	19	38	25	11	2	3.47
11.	3	6	10	25	41	20	5.30
12.	5	13	19	30	18	20	4.63
13.	5	9	15	40	25	11	4.71
14.	10	15	16	37	26	1	4.15
15.	37	37	19	7	3	2	2.24
16.	1	1	3	4	28	67	6.43
17.	12	28	27	24	9	4	3.38
18.	14	28	30	20	6	6	3.25
19.	18	29	28	12	13	4	3.13
20.	1	0	2	13	51	37	6.13

Table F6

Responses to Likert-type Statements—Other Ph.D. students or candidates

Statement	Number of Participants						
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean
1.	0	0	0	1	2	2	6.20
2.	0	1	0	1	2	1	5.20
3.	0	1	2	1	1	0	3.80
4.	0	0	0	1	2	2	6.20
5.	0	1	1	2	0	1	4.40
6.	0	0	3	0	2	0	4.20
7.	1	2	0	1	1	0	3.20
8.	0	1	1	0	2	1	4.80
9.	0	1	1	1	1	1	4.60
10.	0	2	3	0	0	0	2.60
11.	0	1	2	1	1	0	3.80
12.	0	1	1	1	1	1	4.60
13.	0	0	1	2	1	1	5.20
14.	0	0	1	4	0	0	4.60
15.	2	2	1	0	0	0	1.80
16.	0	0	0	1	1	3	6.40
17.	0	2	2	0	0	1	3.40
18.	1	1	3	0	0	0	2.40
19.	1	1	3	0	0	0	2.40
20.	0	0	0	0	0	5	7.00

Table F7

Responses to Likert-type Statements—Other Participants

Statement	Number of Participants						
	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree	Response Mean
1.	0	0	0	3	6	4	6.08
2.	0	0	1	2	5	5	6.00
3.	0	0	1	2	6	4	5.92
4.	0	2	3	3	3	2	4.62
5.	2	1	3	2	3	2	4.23
6.	0	0	0	6	3	4	5.85
7.	2	6	0	1	2	2	3.46
8.	0	2	3	2	4	2	4.69
9.	1	1	2	4	4	1	4.62
10.	4	2	1	3	3	0	3.38
11.	0	0	0	2	3	8	6.46
12.	3	2	0	3	2	3	4.23
13.	0	1	0	4	5	3	5.62
14.	2	2	3	4	2	0	3.62
15.	4	6	1	2	0	0	2.23
16.	0	0	0	3	1	9	6.46
17.	3	3	1	5	1	0	3.31
18.	2	5	5	0	1	0	2.54
19.	1	3	4	1	2	2	3.85
20.	0	0	1	2	5	5	6.00

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