KANSAS ACADEMIC LIBRARIAN PERCEPTIONS OF INFORMATION LITERACY

PROFESSIONAL DEVELOPMENT NEEDS

by

ALYSIA STARKEY

B.S., Fort Hays State University, 2000
MLS, University of North Texas, 2001

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department Of Curriculum and Instruction
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2010

Abstract

The purpose of this study was to assess the professional development needs of academic instruction librarians required to improve information literacy instructional effectiveness in higher education institutions within the state of Kansas. The population in this correlational study was the 84 academic librarians with instruction duties at Kansas's two-year colleges, four-year colleges, and universities. The majority of the population included administrators, staff, and specialized librarians. Most of the participants held a faculty rank, were between the ages of 41 and 55, and had served as academic librarians for less than fifteen years.

Data was collected through twelve closed-ended and twelve open-ended questions on an electronic survey. The data was used to answer the primary research question of this study: "What professional development opportunities are needed in order to improve information literacy instructional effectiveness?" Three sub-questions were included in order to identify professional development needs on the various means by which information literacy is delivered, the content areas addressed during information literacy instructional sessions, and the assessment practices employed to determine the effectiveness of information literacy instruction.

Data analyses for the quantitative measures of the study were conducted through the use of frequency distributions (in order to identify professional development needs of the total population) and chi-square tests (in order to identify professional development needs of the individual sub-populations). Due to the low number of answers to open-ended questions, responses to these questions were analyzed for codes and developed into categories.

Analyses of the data indicated that the sub-populations shared a preference for library instruction delivered via face-to-face means; all institutions represented in this study offered considerably more instruction than what was required by their parent institution; Kansas academic instruction librarians addressed a wide variety of services, resources, search techniques, and information literacy skills during information literacy instructional sessions; and Kansas academic instruction librarians were cognizant of ensuring instruction practices were designed to include content that met the guiding information literacy standards as defined by the American Library Association.

The study found Kansas academic librarians with instruction as a function of their job duties would benefit from professional development opportunities designed to develop proficiency in teaching skills, instructional design skills, assessment and evaluation skills, information literacy integration skills, and presentation skills.

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Major Professor
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CHAPTER 1 - Introduction

Information in the Global Knowledge Economy

In 1935, E.W. McDiarmid warned of the impending "information explosion" in which 8,000 new books would be published annually in the United States. In 2007, Bowker, "the world's leading source for bibliographic information" documented 291,920 new books were published in the United States between January and December in 2006. In a 2008 report entitled 21st Century Skills, Education and Competitiveness, the Partnership for 21st Century Skills noted that the production of information services grew from 36% to 56% of the Gross National Product between 1967 and 1997. This increase supports the notion that "more than 15 years into the information age" (Partnership for 21st Century Skills, 2008, p. 8), the United States' percentage of books published has grown exponentially; between 2006 and 2008 it grew 126% (Bowker, 2009).

The information age has fundamentally changed society. Research indicates that the percentage of individuals logging into the Internet to conduct their own research increased by as much as 305.5% between the years 2000 and 2008 (Internet World Stats.com, 2008). The enormity of information that must be managed in today's society has grown to such an extent that the Information Overload Research Group was formed in 2008, with group members from Stanford, Xerox, IBM, Google, U.C. Irvine, Intel, Basix, and other universities and businesses. Netcraft, an Internet services company based in Bath, England, has been tracking new web sites since August 1995. At that time, 18,000 Web sites were indexed. In May 2004, Netcraft marked the addition of the 50 millionth website. Just over two-years later, in October 2006, Netcraft had doubled its index to 100 million websites. In 2009, the total number of websites had again doubled, with 234 million websites, and 47 million new ones added that year (Pingdom, 2010).

Blogs, social media (Facebook, Twitter), image (Flickr), and video sites (YouTube) have also grown exponentially and are now a part of the fabric of social discourse, information resources, research, and teaching worldwide. According to Pingdom (2010), one of the world's premier web monitoring companies, in 2009 there were 126 million blogs, 350 million people on Facebook, 27.3 million tweets on Twitter, four billion images on Flikr, and one billion videos uploaded to YouTube every day.

The dramatic shifts in the information economy are evident. Wagner (2008) described this era as the new "global knowledge economy." This era was characterized by the "sudden and dramatic shift from information that is limited in terms of amount and availability to information characterized by flux and glut" (p. xxvi). Kim (2003) stated the developing knowledge-based economy was "characterized by the need for continuous learning of both codified information and the competencies to use this information…" (p. 17). If today's college graduates are going to compete in an increasingly flat, transparent, and connected world (Friedman, 2005; Friedman, 2009), college curricula must reallocate pedagogical practices from applied, discipline specific skills to a collaborative, inquiry-based approach designed to develop "the kinds of skills required by the new economy" (Partnership for 21st Century Skills, 2008, p. 6). "The failure to give all students these new skills leaves today's youth—and our country—at an alarming competitive disadvantage" (Wagner, 2008, p. xxi).

The Partnership for 21st Century Skills (2008) specified there was an urgent need for the United States to "do a much better job teaching and measuring advanced, 21st century skills that are indispensable currency for participation, achievement and competitiveness in the global economy" (p. 10). While the No Child Left Behind Act of 2001 demanded fervent assessment of traditional subjects such as reading, mathematics and science, there was no such national standard for the assessment of other essential 21st century skills required to increase graduates' "marketability, employability, and readiness for citizenship" (Partnership for 21st Century Skills, 2008, p. 10). The group presented a framework to guide learning in the 21st century, which included the skills they deemed essential to the 21st century (see Figure 1 below). Information skills are a key component in this framework. The Partnership for 21st Century Skills stated today's students should be well versed in the practice of

> Thinking critically and making judgments about the barrage of information that comes their way every day—on the web, in the media, in homes, workplaces, and everywhere else. Critical thinking empowers Americans to assess the credibility, accuracy and value of information, analyze and evaluate information, make reasoned decisions, and take purposeful action. (2008, p.13)

Figure 1. Framework for 21st Century Literacies
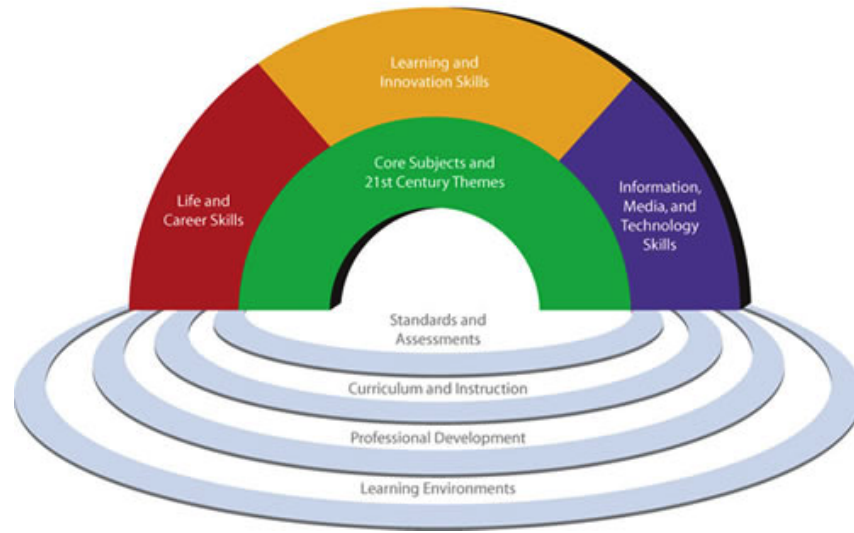
Source: Partnership for 21st Century Skills. (2008). *Twenty-first century skills, education and competitiveness*. Tucson, AZ.

The Association of American Colleges and Universities (AAC&U) also supports the premise that today's graduates are ill prepared for the new global knowledge economy. In 2005, the AAC&U launched the LEAP initiative (Liberal Education and America's Promise). The initiative was developed due to the belief by the AAC&U that "the academy stands at a crossroads" and that "a serious national effort to recalibrate college learning to the needs of the new global century" was essential (2007, p. vii).

In 2007, the initiative produced a report entitled College Learning for the New Global Century, which established "the aims and outcomes of a twenty-first-century college education" (p. 1). In the report, the authors acknowledged, "With college education more important than ever before, both to individual opportunity and to American prosperity, policy attention has turned to a new set of priorities: the expansion of access, the reduction of costs, and accountability for student success" (2007, p. 1). However, the authors also referred to "a dangerous silence": "a near total public and policy silence about what contemporary college graduates need to be able to do" (2007, p. 1). Ignoring the issue amplifies our inability to keep pace with the majority in the global knowledge economy. Bok (2006) reported, "college students are underperforming in virtually every area of academic endeavor, from essential intellectual skills such as critical thinking, writing, and quantitative reasoning to public purposes

such as civic engagement and ethical learning" (p. 32). Change is uncomfortable, but research clearly indicates that for the higher education system, change is necessary. The Partnership for 21st Century Skills proclaim that if unaddressed, the challenges will "curtail our competitiveness and diminish our standing in the world…we can thrive in this century only with informed leadership and concerted action that prepares Americans to compete" (2008, p. 1).

The members of the LEAP initiative support this assertion. Included within their seven principles of excellence is the principle to "teach the art of inquiry and innovation." The justification for the principle is as follows

> In a complex world, there is no way that students can master everything they "need to know." The scope is too broad, and the frontiers of knowledge are expanding far too rapidly. The key to educational excellence, therefore, lies not in the memorization of vast amount of information, but rather in fostering habits of mind that enable students to continue their learning, engage new questions, and reach informed judgments. (AAC&U, 2007, p. 30)

Academic librarians have a long tradition of providing instruction for the patrons. As early as the 1930s, Edith Coulter said that libraries should help students be self-reliant in the library by teaching them how to find information. "Self-directed learning" was defined by Knowles (1975) as "The process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing learning strategies, and evaluating learning outcomes" (p. 18).

Historical Development of Library Instruction

Tuckett and Stoffle (1984) indicate academic librarians' involvement in library instruction can be traced to the early 1800s. Instructing users on the basics of the card catalog and Dewey Decimal System has been a constant in academic libraries since their inception. The first national conference of the American Library Association was held in Philadelphia, PA, in 1876. It was at this conference that Melvin Dewey proclaimed, "the library is a school, and the librarian is, in the highest sense, a teacher" (1876, p. 5). Harvard librarian Justin Winsor (1880) reinforced the comments of Dewey when he wrote an academic librarian "should be a teacher … not with a text book, but with the world of books" (p. 10).

In his 2007 dissertation, Mbabu noted that during the late 1800s and early 1900s, librarians in higher education were characterized as "reference librarians." However, by 1920,

twenty higher education institutions were conducting credit courses in library research; forty others offered noncredit courses (Mbabu, 2007). The librarian's role in higher education adjusted to meet the needs of the changing higher education landscape. The development of graduate programs and elective courses within curricula expanded the role of the academic librarian within the institution. During the 1920s, Swarthmore College librarian Charles Shaw, recognized the need for "specialized instructional librarians who were knowledgeable in the use of books and had the ability to teach" (1928, p. 300).

According to Michael Lorenzen (2001), library instruction was dormant between 1930 and 1960. The 1960s witnessed two bibliographic instruction research projects that have been credited with giving rise to the modern instruction movement. Critchfield's 2005 dissertation presented information on one of the most highly revered academic librarians of this century, Patricia B. Knapp. A librarian at Monteith College, Wayne State University, Knapp firmly believed the academic library was the "center of the college experience" (Critchfield, 2005). In an effort to convince faculty of the value of library instruction, Knapp created problem solving activities to accompany existing course work and teach "critical library competency skills" (Critchfield, 2005).

The second major instruction project of the 1960s was the product of Evan Farber, Thomas Kirk and James Kennedy at Earlham College in Virginia. The Earlham project involved collaboration between teaching faculty and librarians. Library instruction on search strategies and handouts developed by librarians were integrated into specific courses at the college. Library instruction was graduated or sequential in an effort to spread training out over a student's four-years in college. These incremental changes in library instruction, coupled with the increased knowledge output made possible by technological changes in information delivery, paved the way for a new approach to understanding the exponential growth in the amount of information available through the emerging World Wide Web, print, and other media. Academic librarians were faced with the challenge of helping students to retrieve, organize, assimilate, and disseminate an exponentially growing amount of data and information available on a daily, even hourly, basis.

Theoretical Framework – Information Literacy

Information literacy is defined as the "set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA, 1989, p. 1). "Information literacy" was discussed in library literature for over a decade before the American Library Association provided a definition from which a theoretical framework for library instruction would emerge. Paul Zurkowski first introduced the concept of information literacy in 1974. At that time, Zurkowski served as President of the United States Information Industry Association. His following statement is single-handedly responsible for sparking a global educational initiative for information literacy:

> People trained in the application of information resources in their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information-solutions to their problems. (Zurkowski, 1974, p.6)

This concept marked the transition from tool-based, applied library training to the instruction of concepts and higher order thinking processes. Indicative of the huge task of making sense of this vast data, Richard Wurman coined the term "information architecture" in 1975 (Wurman, 1989). This concept represented an attempt to create a discipline to transform this data and information in such as way as to make this data and information service-oriented and purposeful. Further, Wurman defined the information architect as "someone who enables data to be transformed into understandable information" (p. 141).

Robert Taylor (1979) was the first individual to establish information literacy as a library concern. Taylor stated that information literacy included the following elements:

1. Solutions to many (not all) problems can be aided by the acquisition of appropriate facts and information;
2. Knowledge of the variety of information resources available (who and where) is a requisite of this literacy;
3. The information process, which is continual, is as important as the spot information process, which is occasional;
4. Information acquisition strategies (when and how). (Taylor, 1979, p.1875)

In 1986, Demo recognized the ambiguous nature of information literacy: "the meaning of information could be explained from different perspectives, depending on whether librarians, educators, or communication experts define the term" (p. 8). Demo was the first library professional to state the need for requisite attitudes "such as the awareness of need for

information and accurate application of the information" with the research strategy component of information literacy (p. 10).

As word spread of Zurkowski's report, academic libraries quickly shifted definitions in local documents from "library instruction" to "information literacy instruction." In 1985, Patricia Breivik suggested information literacy instruction should include an "integrated set of skills and the knowledge of tools and resources" as well as "a critical, evaluative view of the material found" (p. 723). She distinguished traditional library instruction that took place in institutions of higher education up until these changes from the information literacy instruction that took place thereafter. Breivik indicated the "former focused on teaching 'things' to people" and information literacy "focused on student empowerment to do independent, self-directed research and to contribute positively to society" (p. 723). Frick (1986) supported Breivik and suggested librarian prepared handouts and brochures were no longer enough. Instead, Frick believed users should be taught how to access and discriminate between various information sources.

In 1987, the American Library Association (ALA) recognized information literacy as a quintessential coping mechanism for the Information Age. While libraries were not specifically mentioned in the 1983 A Nation at Risk report, ALA President Margaret Chisholm recognized information literacy's role in the proclamation. A Presidential Committee comprised of highly regarded librarians and educators was charged (1) to define information literacy within the higher illiteracies and its importance to student performance, lifelong learning, and active citizenship; (2) to design one or more models for information literacy development appropriate to formal and informal learning environments throughout people's lifetimes; and (3) to determine implications for the continuing education and development of teachers (ALA, 1989, p. 1).

The American Library Association Presidential Committee on Information Literacy provided the most widely accepted definition of information literacy in their Final Report issued in January 1989. In this report, the committee stated, "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (1989, p. 1). This statement provided the clarification and structure required to expand information literacy from a "concept" to a "theoretical framework." According to Christine Bruce (1995), an accomplished scholar and author on information literacy, the information literacy theoretical framework provides a vision of

- The possible outcomes of information literacy education, through outlining the characteristics of information literate people
- The nature of information literacy education
- The potential roles of stakeholders in helping staff and students to be information literate. (p. 159)

Characteristics of Information Literate People

The American Library Association's 1989 report characterizes information literates as follows: "Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know information is organized, how to find information and how to use information in such a way that others can learn from them" (p. 1). In January 2000, the Association of College and Research Libraries Task Force on Information Literacy Competency Standards and the American Association for Higher Education (AAHE) approved the "Information Literacy Competency Standards for Higher Education." These standards were created to "ensure the development of information smart, lifelong learners who can flourish in a rapidly changing, information rich environment" (Oxnam, 2003, p. 2). The five standards used to characterize students competent in information literacy include

1. The information literate student determines the nature and extent of the information needed.
2. The information literate student accesses needed information effectively and efficiently.
3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally. (ACRL, 2000, p. 1)

The arrival of the Internet in the 1990s resolved those in higher education to the fact that information literacy is more than a library issue; it was a learning issue. The information landscape was changing and so was the role of the academic library within the institution. In an effort to curtail information mismanagement resulting from the instant delivery of information to computer desktops, academic librarians emerged from the stacks to become a visible fixture within the higher education curricula.

Information Literacy in Higher Education

Information literacy was not a new concept to higher education. It did not require incorporating additional information or skill development into already packed curricula. It meant a "restructuring of the learning process…. a learning process based on the information resources available for learning and problem solving throughout people's lifetimes…" (ALA Final Report, 1989, p. 1).

This new approach was recommended for higher education in the Boyer Commission Report in 1996. Boyer recommended a student-centered teaching methodology in an inquiry environment that emphasized problem solving through critical evaluation (Boyer, 1996). This learning environment was characterized by active student involvement in the formulation of questions, exploration of solutions, and communication of results. Thus, curriculum and instructional designers used the information literacy theoretical framework to structure environments in which information literacy served as means through which learning occurred.

Facets of information literacy were already integrated into general education curricula. Communication skills (oral and written), reasoning (critical and analytical), and technological aptitude all fell under the information literacy umbrella (Jacobson & Germain, 2004). The Middle States Commission on Higher Education (2003) suggested that information literacy instruction should extend beyond the general education curriculum. Doing so ensured that students achieved higher-order information literacy skills, such as "thinking more critically about content, pursuing even deeper lines of inquiry with more sophisticated methods, and becoming facile with the tools that enable students to grapple philosophically with the nature of inquiry itself" (p. 3).

As the new field emerged, teacher-focused education was not adequate in the "information age." "Student-centered learning" was necessary to achieve the high degree of critical thinking, information navigation, and higher order skills necessary to organizing and making meaning of the many changes that had been wrought by a society engaged in constant information production (Costantino, 2003; Jacobson & Germain, 2004; Moore, 2005).

Stakeholder Roles in Information Literacy Development

The shift to preparing self-directed, lifelong learners was contrary to the "sage on the stage" tradition in higher education. However, the burden of the transition could be eased

through collaborative, campus-wide partnerships. Cannon paraphrased Rockman et al (2004) as saying, "Information literacy is one of the most important campus-wide issues and is of strategic importance to all higher education stakeholders" (2007, p. 33).

While the information literacy theoretical framework included stakeholders from all areas of academe, the critical stakeholders were academic librarians and discipline faculty. Effective collaboration between these two groups provides the optimum environment for successful information literacy integration. Faculty/librarian partnerships blend the strengths of pedagogical and discipline experts with experts in information and technology. Mbabu (2007) wrote, "Faculty mentor the students and guide them in their exploration; academic librarians lead them through information searching, retrieval and evaluation" (p. 32).

Faculty and librarian partnerships are critical for information literacy integration. The collaborative mentorship yielded from successful relationships mutually assists both groups. Faculty obtain current information retrieval practices, while librarians acquire knowledge and skills in curriculum development, pedagogical techniques, and methods of classroom management; such skills are noticeably absent from librarian pre-professional development.

The Association for College and Research Libraries (ACRL) recognized the changing roles and skill requirements of academic librarians in the information age. To assist with professional development in improving instruction, an Instruction Section Proficiencies Task Force was formed in 2004. A portion of their charge included, "to develop a list of proficiencies required of instruction librarians and other librarians who contribute to instructional services and programs at their institutions, focusing on broad areas of proficiency rather than a comprehensive list of skills" (ACRL, 2007, p. 1).

The ACRL Board approved the proficiencies developed by the Task Force on June 24, 2007. The standards allowed

> academic libraries to begin with a common definition for the scope of responsibilities for instruction librarians and coordinators of instruction programs. As a basic level, they can be used as standards to create professional development opportunities for librarians with teaching responsibilities in order to improve or expand their skills. (ACRL, 2007, p. 2)

The original standards were organized into 12 categories. The categories that applied to information literacy instruction are in Table 1 (assessment and evaluation skills, curriculum knowledge, information literacy integration skills, instructional design skills, presentation skills,

and teaching skills). They form the core knowledge and skills academic librarians active in information literacy instruction should possess.

Table 1. Instruction Librarian Proficiencies
(adapted from Standards for Proficiencies for Instruction Librarians and Coordinators) (ACRL, 2007)

SKILL/KNOWLEDGE SETS	THE EFFECTIVE INSTRUCTION LIBRARIAN:
1. Assessment and Evaluation Skills	**1.1.** Designs effective assessments of student learning and uses the data collected to guide personal teaching and professional development.
2. Curriculum Knowledge	**2.1.** Analyzes the curriculum in assigned subject area(s) to identify courses and programs appropriate for instruction. **2.2.** Keeps aware of student assignments and the role of the library in completing these assignments.
3. Information Literacy Integration Skills	**3.1.** Describes the role of information literacy in academia and the patrons, programs, and departments they serve. **3.2.** Collaborates with classroom faculty to integrate appropriate information literacy competencies, concepts, and skills into library instruction sessions, assignments, and course content. **3.3.** Communicates with classroom faculty and administrators to collaboratively plan and implement the incremental integration of information literacy competencies and concepts within a subject discipline curriculum.
4. Instructional Design Skills	**4.1.** Collaborates with classroom faculty by defining expectations and desired learning outcomes in order to determine appropriate information literacy proficiencies and resources to be introduced in library instruction. **4.2.** Sequences information in a lesson plan to guide the instruction session, course, workshop, or other instructional material. **4.3.** Creates learner-centered course content and incorporates activities directly tied to learning outcomes. **4.4.** Assists learners to assess their own information needs, differentiate among sources of information and help them to develop skills to effectively identify, locate, and evaluate sources. **4.5.** Scales presentation content to the amount of time and space available. **4.6.** Designs instruction to best meet the common learning characteristics of learners, including prior knowledge and experience, motivation to learn, cognitive abilities, and circumstances under which they will be learning. **4.7.** Integrates appropriate technology into instruction to support experiential and collaborative learning as well as to improve student receptiveness, comprehension, and retention of information.
5. Presentation Skills	**5.1**. Makes the best possible use of voice, eye contact, and gestures to keep class lively and students engaged. **5.2.** Presents instructional content in diverse ways (written, oral, visual, online, or using presentation software) and selects appropriate delivery methods according to class needs. **5.3.** Uses classroom instructional technologies and makes smooth transitions between technological tools. **5.4.** Seeks to clarify confusing terminology, avoids excessive jargon, and uses vocabulary appropriate for level of students. **5.5.** Practices or refines instruction content as necessary in order to achieve familiarity and confidence with planned presentation.
6. Teaching Skills	**6.1.** Creates a learner-centered teaching environment by using active, collaborative, and other appropriate learning activities. **6.2.** Modifies teaching methods and delivery to address different learning styles, language abilities, developmental skills, age groups, and the diverse needs of student learners. **6.3.** Participates in constructive student-teacher exchanges by encouraging students to ask and answer questions by allowing adequate time, rephrasing questions, and asking probing or engaging questions. **6.4.** Modifies teaching methods to match the class style and setting. **6.5.** Encourages teaching faculty during the class to participate in discussions, to link library instruction content to course content, and to answer student questions. **6.6.** Reflects on practice in order to improve teaching skills and acquires new knowledge of teaching methods and learning theories. **6.7.** Shares teaching skills and knowledge with other instructional staff.

Instructional Development Curricula in Library Science Schools

A new development in the contemporary academic paradigm has been the desire for academic librarians to become active, equal participants in 21st century curricula.   In this new realm, academic librarians need to become instructional designers, proficient teachers, and assessors. They must also develop marketing and promotional skills to convince academic-stakeholders (students, faculty, and administrators) that while the quantity and expediency of information has increased, all information is not created equal. However, curricula designed to accommodate the pre-service development of academic librarians do not mirror the major job responsibilities present in the 21st century.

Studies have shown that new professionals in the discipline do not feel they were adequately prepared for the instructional aspects of their positions (Mbabu, 2007; Wright, 2007). Few library science schools offer courses specific to library instruction. Rather, they only discuss the concept when it appears as a chapter of a textbook in a general library course. The few library schools that do offer a course in instructional training offer it only as an elective course. Library students tend to shy away from these courses. Library science has a stereotype attached it to as a profession designed for those who want to be involved in academia, but who do not want to teach. Library schools perpetuate this stereotype by ignoring the disconnect that exists between their curricula and the realities of the profession. This results in graduates who must develop the necessary skills through trial and error on the job.

The Role of the Kansas Library Instruction Round Table

Due to the lack of relevant pre-service development, professional organizations are reaching out to assist academic librarians in preparing for these new roles. The Kansas Library Instructional Round Table (K-LIRT) is one such organization. K-LIRT is one of the eight round tables of the Kansas Library Association. The guiding bylaws and standing rules of K-LIRT were approved in March 1992. Since that time, K-LIRT has functioned to

- Provide a forum for discussion of activities, programs, and problems of instruction in the use of all types of libraries
- Contribute to the education and training of librarians for library instruction
- Promote instruction in the use of libraries as an essential library service
- Serve as a channel of communication on instruction in the use of libraries (Kansas Library Instruction Roundtable, 2009, p. 1)

Membership in K-LIRT is open to any current member of the Kansas Library Association for an additional fee of $6.00. K-LIRT sponsors three professional development workshops per year and desires to learn more about how to "tailor" the workshops to not just its membership, but librarians in the state of Kansas. These workshops are not member exclusive; rather, they are designed, marketed, and available to any librarian in the state with an interest in, or need for, library instruction training. These workshops serve two-year college, four-year college, and university librarians.

Statement of the Problem

In an effort to effectively serve its members, K-LIRT recognizes the need to assess the professional development needs of academic instruction librarians within the state of Kansas. While extensive information literacy research exists, there is limited research on the professional development needs of academic librarians (Eloghary, 2003; Wright, 2007). One dissertation was conducted on the perceived professional development needs of academic librarians for their instructional role (Eloghary, 2003). Eloghary explored the needs of Florida librarians. No studies have been conducted on the instructional professional development needs of academic librarians in the state of Kansas.

Purpose of the Study

The purpose of this study was to assess the professional development needs of academic instruction librarians regarding current library instruction practices to improve information literacy instructional effectiveness in Kansas universities, four-year colleges, and two-year colleges.

Significance of the Study

A plethora of literature exists proclaiming the need for information literacy instruction (Jones, 1996; Roth, 1999; Shapiro & Hughes, 1996; Sun, 2002). A void in the literature exists when exploring the professional development of academic librarians in information literacy instruction responsibilities. This was the first study of its kind in Kansas and the first to include online instructional delivery systems. This study established a baseline of academic librarians' instructional duties and abilities, assisted with programming for professional development needs

in library and information literacy instruction within the State of Kansas and added to the literature and discussion on information literacy instruction at the national level.

Research Questions

This study explored the current status of information literacy instruction of Kansas academic librarians. An overview of the profession was required to develop the baseline needed to answer the primary research question of this study: "What professional development opportunities are needed in order to improve information literacy instructional effectiveness?" The following three sub-questions assisted in discovering the professional development needs of instruction librarians in the state of Kansas:

Research Question 1.1. What are the various means by which information literacy instruction is delivered?

Research Question 1.2. What content areas are addressed during information literacy instructional sessions?

Research Question 1.3. What assessment practices are employed to determine the effectiveness of information literacy instruction?

Limitations of the Study

The limitations of this study were

1. The professional associations among librarians within this small population may have lead to limitations with the validity and reliability of responses. Participants could have answered survey questions according to the perceived expectations of their peers, as opposed to responding with an accurate description of instructional activities.

2. A final limitation was the utilization of an online survey and the potential for technical difficulties from the survey host site or from participants' Internet network connections.

Delimitations of the Study

The delimitations of this study were related to the population from which the responses were collected:

1. This study was limited to the professional development needs of academic librarians with instruction duties in Kansas two-year colleges, four-year colleges, and universities.

2. This study did not include academic librarians without instructional duties as a component of their job duties.

3. While data from this study could provide generalizations into the professional development needs of instruction librarians in additional states, further extrapolation regarding specific needs is required.

Definition of Terms

For the purposes of this study, the following operational definitions were used:

Academic Librarian. An individual employed in the library of a higher education institution.

Academic Instruction Librarian. An individual employed in the library of a higher education institution with library instruction as a function of their formal library duties.

Information Literacy. A set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." (ALA, 1989).

Library Instruction. Instruction provided by librarians on the basic research and use of the library. Throughout this study, this term is often interchanged with "information literacy instruction".

CHAPTER 2 - Literature Review

Chapter Overview

The chapter begins with an overview of the perception of the professional identity of academic librarians in higher education. Traditional librarian roles are being redefined by information literacy mandates. For libraries to establish successful information literacy programs, the entire higher education community will need to adjust to these evolving roles. This is followed by a review of the literature on pre-service development and its ability to prepare academic librarians for their teaching roles. The origination of the concept of information literacy is explored, followed by a brief review of how information literacy is treated within higher education. A review of stakeholders (faculty and student) perceptions of information literacy is included. Information literacy is not a core curricula component. Therefore, faculty and student acceptance of the issue is essential for successful integration. Stakeholder perceptions are largely influenced by information literacy's ability to positively impact student learning. A review of studies exploring the evaluation of instructional impact is followed by an analysis of information literacy assessment techniques.

Professional Identity of Academic Librarians

Academic librarians have been debating their "fit" within the higher education community for many years (Jones, 1996; Lorenzen, 2001; Roberts & Blandy, 1989; Troutman, 2000). Librarians interpret their role as having evolved from an orientation of service to one of active instruction. However, this interpretation has not yet transferred to others within the academic community. Changes in librarian roles mirror changes in higher education: as its parent institution flexed to accommodate society at the time, so too did the library. Braun (2000) suggested that the most dramatic changes occurred during the last decade. The expectation that the librarian teach after years of harvesting collections led to an extensive amount of burnout within the profession (Grassian & Kaplowitz, 2001; Johnson & Sager, 1998; Sheesley, 2001). Librarians were forced into roles for which they were untrained. The quality of product they were able to present only served to reinforce existing stereotypes within the academic community.

The negative stereotype often associated with librarians leaves many within the profession defensive of their worth and value (Abbott, 1998; Arant & Benefiel, 2002). Over 40 years ago, Leigh and Sewny (1960) wrote, "Librarians want to be recognized as part of an intellectual profession, but feel that public perception relegates them more often to the role of clerks" (p. 32). Several studies have concluded academic librarians are without a professional identity in higher education and attempts by librarians to define themselves as "teachers" are not fully understood by discipline faculty (Atkins, 1991; Shiflett, 1981; Wilson, 1979). It is possible the disconnect stems from a lack of understanding of what academic librarians do (Divay, Ducas & Michaud-Oystryk, 1987; Ivey, 1994). The higher education community is well versed on the teaching functions associated with discipline faculty. However, librarians are physically separated from other teaching professionals and often maintain offices hidden behind stacks of books. Therefore, many in higher education are not privy to the day-to-day duties of academic librarians. Creth (1995) and Abbott (1998) stated that the increase in library instruction has contributed to an increased acceptance of "teacher librarians" by other members of the higher education community. Academic librarians can build on this momentum by demonstrating their personal effectiveness as a teacher and the instructional impact of information literacy on student learning outcomes.

Pre-Service Development of Academic Librarians

Changes in higher education, the widening scope of available information, and rapidly developing technology all contribute to a need for information literacy instruction in higher education curricula (Dewey, 2001; Haynes, 1996; Kassowitz-Scheer & Pasqualoni, 2002; Raspa & Ward, 2000; Rockman et al, 2004; Shinew & Walter, 2003). Studies show nearly one-half of academic librarian positions advertised in the late 1990s included the instruction of students as a direct job responsibility (Albrecht & Baron, 2002; Lynch & Smith, 2001). The rising demand for information literacy instruction makes it necessary to reflect on the pre-service development that prepares librarians for their future teaching role.

Walter (2005) indicated it might be difficult for many in higher education to understand how much and in what ways librarians teach. Library instruction does not occur via the traditional venues experienced by discipline faculty. Instead, most library instruction occurs via one-hour guest lectures or training workshops. He stated

Many librarians teach. In fact, if you define teaching in such a way as to include participation in staff training projects, lifelong learning programs, or faculty development initiatives <u>most</u> librarians teach. For an increasing number of us employed in college and universities especially, it is a core professional responsibility (Albrecht & Baron, 2002; Creth, 1995; Lynch & Smith, 2001; Task Force on Core Competencies, 2004), and an area of our work that is rapidly changing. (p. 14)

To illustrate his point, Walter provided the following table detailing the amount of library instruction conducted annually at Washington State University. As the table clearly indicates, library instruction reached many students. In order for it to be effective, librarians conducting instructional sessions need to be well trained in various aspects of teaching (Breivik, 2005; Eisenberg, Lowe & Spitzer, 2004; Roberts & Blandy, 1989; Steig, 1992).

Table 2. Annual Library Instruction at Washington State University (Walter, 2005)

Year	Classes Taught	Δ	Students Taught	Δ
1994-95	411	*	5,951	*
1995-96	355	-13.6%	6,232	+4.7%
1996-97	372	+4.8%	7,439	+19.4%
1997-98	516	+38.7%	9,396	+26.3%
1998-99	578	+12%	9,866	+5%
1999-2000	616	+6.6%	15,863	+60.8%
2000-01	684	11%	11,364	-28.4%
2001-02	715	4.5%	11,301	-.6%
2002-03	934	30.6%	13,548	+19.9%

Multiple studies have been conducted examining the inclusion of instructional development in library schools (Brundin, 1985; Hogan, 1980; Larson & Meltzer, 1987; Mandernack, 1990; Sullivan, 1997; Westbrook, 1999). In 1989, Roberts and Blandy examined library school curricula and found only eight schools offered separate courses in library instruction. Almost twenty years later, Wright (2007) performed a content analysis of library school programs located within the Middle States Commission accreditation region. There were

thirteen total library school programs within the Middle States region. Wright examined the mission statements, course descriptions, course syllabi, and professional development opportunities associated with each of these schools. She compared these findings to themes drawn from a focus group interview conducted with practicing academic librarians within the region. A content analysis of library school material revealed the following:

- Six programs offered a course which addressed ACRL information literacy standards
- Eight offered a course that addressed assessment and evaluation
- Four offered a course that addressed faculty/librarian collaboration
- Six offered a course that addressed curriculum development
- Eight offered a course that addressed in information literacy
- Five offered a course that addressed learning theory

In most cases, the subject matter was included as a particular section of a textbook or syllabi and not as a stand-alone credit course. While the content analysis indicated library schools were offering courses preparing librarians for their instructional roles, participants in the focus group interview indicated they did not take these courses. There is little room for elective courses within the existing curriculum, so when an elective was chosen, students selected courses in traditional library values such as cataloging, reference or collection development.

Mbabu's 2007 study was similar in scope to Wright, but he broadened the focus to include all library schools accredited by the American Library Association. Like Wright, Mbabu used the content analysis method for data collection. In lieu of analyzing mission statements and syllabi, he analyzed the textbooks used in courses offered on library instruction. Mbabu identified thirteen out of the 57 accrediting library schools offered a credit course in instruction. In all thirteen cases, these were elective courses.

After targeted courses were identified, a content analysis of their partnering textbooks was conducted. The content analysis explored the following themes: determining the information need; accessing information; critically evaluating and synthesizing retrieved information; integrating and applying knowledge; and understanding the economic, legal, and social implications of information production and dissemination (Mbabu, 2007). The analysis revealed these themes were applied to the K-12 environment more frequently than for higher education. Mbabu postulated this might be due to the ability to tie information literacy to multiple state standards at this level. Due to the absence of instruction relating information

literacy to higher education, Mbabu concluded that library programs did not adequately prepare academic librarians for their future jobs. This is not a surprising conclusion. Literature reveals librarians have been demanding teacher training as part of their pre-service education for approximately thirty years. It is difficult to understand why library schools do not heed these calls for reform. Slow progress is indicated by the inclusion of elective courses in library instruction. However, as the figures in Walter's table indicate, instruction is definitely a central function of academic library work. Courses in instruction should be included as a core requirement in addition to those for reference, cataloging, and collection development.

The lack of pre-service development has new academic librarians scrambling to obtain teaching skills. Several surveys have been completed to explore the various means by which librarians have received this training (Albrecht & Baron, 2002; Clark & Jones, 1986; Herring, 1994; Mandernack, 1990; Shonrock & Mulder, 1993; Walter, 2005). On-the-job training and self-study (through the reading of professional journals and subject specific books) were the two most widely recognized methods of training. Participation in continuing education and attending professional conferences were other development methods mentioned in the literature. Despite the high participation in these activities, the librarians' preferred method of development was traditional coursework included as part of the graduate educational curriculum (Herring, 1994). Therefore, it is pertinent that library schools revamp curricula to assist graduates with meeting the demands of the profession in the 21st century.

Information Literacy

Paul Zurkowski was not promoting the virtue of libraries when he first introduced the concept of information literacy in his 1974 speech. As an intellectual property and copyright attorney, Zurkowski recognized the increasing complexity of the architecture supporting information industry. Zurkowski (1974) wrote that the overabundance of information was of universal concern for three reasons:

- The information seeking procedures of individuals are different at different times for different purposes.
- A multiplicity of access routes and sources have arisen in response to this kaleidoseopic approach people take to fulfilling their information needs. These are poorly understood and vastly underutilized.
- More and more of the events and artifacts of human existence are being dealt with in information equivalents, requiring retraining of the whole population. (p. 1)

Zurkowski contended that the only way to keep the expanding information infrastructure from buckling was to treat quality information as a commodity. He stated, "Information directed at decisions become a part of that decision process and contributes critical value. It is an element of production and, like labor, materials, and capital, it generates wealth" (1990, p. 3). Zurkowski saw libraries as a critical player in the information marketplace. Libraries purchased the information product and passed it along to the consumer. He cautioned against the information industry which he saw on the horizon, an industry where information was no longer a profitably commodity, but instead was given away free of charge. For Zurkowski, "simply giving information away causes deterioration of its value and, in the end, results in a degeneration of quality" (Badke, 2010, p. 49).

The American Library Association gave breadth to the information literacy movement in the early 1990s when the effects of Zurkowski's warning concerning the quality of information began to be realized. The information technologies that were developed during that time allowed information to be freely distributed to consumers while bypassing the editorial and quality controls that were built into the information marketplace. Behrens (1994) suggested that the ALA's Presidential Report in which it publicly embraced information literacy was "the library profession's response to having its role essentially ignored or overlooked in the educational reform process" (p.13). The library, which once served as the heart of the educational experience, was on the cusp of losing its validity, and information literacy was its saving grace.

The ALA's report rejuvenated a stagnant profession and sparked a universal debate in professional literature; literature that Stephen Foster stated "reverberates with a near-missionary zeal with the cause of information literacy" (p. 344). The concept of information literacy is now a recognizable concept in higher education; as Lorie Roth commented, information literacy "promotes the visions of what all universities want, work for, and hope for" (p.43).

Information Literacy in Higher Education

In her 2000 keynote address at the International Lifelong Learning Conference, Patricia Breivik stated "within today's information society, the most important learning outcome for all students is their being able to function as independent lifelong learners. The essential enabler to reaching that goal is information literacy" (p. 1). Information literacy became a central component of conversations within higher education after the technology boom forced the

reform of university general education programs in the early 1990s (Lanham, 1997). The rising need for information literacy required library instruction to shift from a skills-based pedagogy to a concept-based pedagogy that focused on the promotion of critical thinking and evaluation. Institutions of higher education have approached student development of information literacy through a variety of different avenues, such as course-related library instruction sessions (Sonntag & Ohr; 1996, Wright, 2000); online tutorials (Kraemar, Lomardo, & Lepkowski, 2007); as a component of general education programs via freshman year seminars (Boff & Johnson, 2002) or cross-curricular information literacy programs (Orr, Appleton, & Wallin, 2001); and stand-alone courses (Eisenberg, Lowe, & Spitzer, 1998). Bundy (2004) stated "the most effective of these components is the embedding of information literacy through the curriculum" (p. 7).

Stakeholder's Perceptions of Information Literacy

Information literacy is a critical component in the development of self-directed inquiry necessary for lifelong learning (ALA, 1989; ACRL, 2000; Fowler, 1990; Maple, Christensen & Abromeit, 1996; Rader, 1990, 1995; Snavely & Cooper, 1997; Todd, 1998; Walter, 2000). However, stakeholders of information literacy (faculty and students) need to appreciate its benefits in order for meaningful instruction to occur. It is essential for academic librarians to obtain the appropriate teaching skills necessary to impact student learning in a beneficial manner to ensure faculty and student support of information literacy.

Faculty

Students associate information technology with information literacy, and thus often reject the need for instruction. Therefore, librarians depend on faculty to encourage information literacy skill development through its integration into curricula. Faculty perceptions are largely influenced by an ability to support student learning outcomes.

Faculty become competent library users through the scholarship required in graduate education. Maio (1995) investigated the extent to which classroom teachers used these skills to instruct their students in the use of print and electronic library resources. Faculty from three Connecticut institutions were surveyed on their personal use of library resources, the extent to which they instruct students on their use, and their opinion on student research abilities. Results indicated a majority of faculty required undergraduate use of library resources. However, they

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preferred for librarians to conduct instruction. Faculty in business and humanities were more apt to use library resources than their colleagues in the sciences and social sciences. This finding was supported in the research of Leckie and Fullerton (1999) and Canon (1994). Disciplinary differences in research may contribute to differences in library use. Research and scholarship in business and humanities tends to be historical in nature and requires the use of documents, books and electronic resources. Sciences and social sciences take a more applied approach to research and scholarship with most of it being conducted in labs or other controlled environments.

Amstutz and Whitson (1997) explored faculty's personal use of the library at the University of Wyoming. Faculty comfort and confidence in their own ability to use library resources may impact their decision to include research as a critical component in their courses. Findings indicated that faculty used the university library for their individual research needs. However, while personal faculty use was high, only 38 percent of reporting faculty required students to use the library. In fact, ten percent of respondents never mentioned the library in their courses. While almost 95 percent of faculty ranked information skills as essential, 64 percent put the burden of responsibility on the students themselves for attaining these skills. This finding was supported in additional literature as well (Coupe, 1993; Canon, 1994; Jacobson & Mark, 1995; Moore, 1995; Carter and Daugherty, 1998). Amstutz and Whitson's study was limited due to the fact they only surveyed faculty from one institution. In addition, a low response rate of 33 percent made it difficult to generalize findings to the greater educational community.

Research indicates that the library does not play as critical of a role in the educational process as it has in the past. However, while it is possible for faculty and students to obtain information from venues other than the library, it is more important than ever to assess the information being gathered. This has to be a team effort on behalf of faculty and librarians. "The challenge of graduating information-fluent students is significant, and the process of teaching information analysis will require substantial cooperation from teaching faculty who are willing to partner with librarians" (Starkey et al, 2006, p. 13). Continued research on faculty/librarian collaborations is required to assess how to best shape students' information use behavior.

Students

Jackman's 1999 study examined the role information literacy played in the success of the "new majority student" ("women, minorities, displaced workers, career professionals upgrading their skills, and senior citizens enhancing their knowledge") in higher education (p. 32). Jackman found that over 49 percent of those who enrolled in public universities fell within the "new majority." She firmly believed information literacy was necessary to establish a new "habit of mind" within the undergraduate curriculum. This new habit of mind assists in preparing undergraduate students to succeed in the continuously changing information society. Jackman's methodology included collecting 236 questionnaires and conducting thirteen student interviews. Results from questionnaires found 47 percent of undergraduates enjoyed reading, but their material of choice was a magazine. In addition, 87 percent of participants selected the library as their first choice for information. Jackman concluded isolating information literacy from the undergraduate curricula did not assist the new majority student in developing the new habit of mind today's information society requires.

In 2002, Stern completed a study aimed at assessing the digital information literacy skills of incoming freshmen. Stern was particularly interested in the ability of freshmen to effectively search for information and evaluate the credibility of web sites. Stern developed a survey to assess self-reported measures of information literacy skills and used the results to guide the development of instruction at a large public university. The survey was given to incoming freshmen participating in summer registration. Results indicated

- Ninety percent of students used the Internet prior to coming to college
- Ninety-nine percent expected to use the Internet for academic research during college
- Nineteen percent spent over eight hours per week online
- Fifty percent were self-taught in how to use the Internet
- Nineteen percent received formal instruction on the Internet
- Eighty-six percent considered themselves at the intermediate level in search ability
- Thirty-seven percent seldom judged the reliability of sources

It is not difficult to imagine that most of the students did not feel they needed any type of formal library instruction during college. Faculty often ask students if they would like to have the library as a guest lecture in class. When students respond "no," faculty listen and assume they possess the skills necessary to complete assignments. In addition, Jackman's results point

to the majority of incoming students teaching themselves to use Internet resources. While the ability to explore and quickly learn how to search is a function of the generation in question, critical evaluation seems more important.

Costantino's 2003 study explored faculty and student perceptions on the importance of information literacy skills. Separate surveys were developed and distributed to 428 undergraduates and 71 faculty. Results indicated that both groups felt general information literacy skills were extremely important and that it was important to be able to distinguish between the World Wide Web and library online databases. A disparity appeared when faculty assumed that students learned this skill from librarians. Students indicated that these skills were largely self-taught. Results point to the overall assumption that faculty believe students are gaining information literacy skills elsewhere, thereby eliminating the need to include instruction as part of their course.

In 2003, Swain analyzed the research behavior of undergraduates enrolled in one of two English courses at a Kansas Board of Regents university. The two English courses required heavy use of library resources in their assignments. Swain used a qualitative research approach to conduct surveys, interviews, and analyzed the research products of students. Four themes emerged during the analysis stage of the study: attitude, time and effort, technology, and orientation.

Attitude had a tremendous effect in how students approached research assignments. Results indicated that the more confidence a student felt in his/her ability, the more irritated they became at having to use library resources. Swain postulated that the frustration might have been a product of library anxiety. Regardless, a few of the students were so frustrated by the instructor's mandate of using credible resources during the research process that they considered dropping the course.

Results indicated that undergraduates were extremely busy and had to manage their time closely. Respondents reported having mapped out ahead of the research how much time and effort they would put into the project. Students became frustrated when it took more than the desired time in utilizing library resources and often turned to the Internet to speed up the process. Swain found undergraduate students had difficulty orienting themselves to their research project. Students reported spending too much time on topic selection that they did not have enough time to adequately research information.

Cannon's 2007 study assessed the information literacy skills of graduate education students in an effort to determine their readiness to integrate it into their teaching. Cannon used O'Neil's B-TILED (Beile Test of Information Literacy for Education) instrument as means for assessing student knowledge. One half of the graduate students surveyed felt they were not prepared to teach information literacy concepts. This was reflected in their B-TILED scores. Only 46 percent of graduate education students tested at or above the minimally accepted level. Students overwhelmingly agreed information literacy was an important element to integrate into their teaching. However, it would be difficult for them to do so when they themselves do not possess the necessary skills. Students who reported participating in some form of formalized information literacy instruction scored lower on the B-TILED test than those students who had never been exposed to information literacy instruction.

Literature indicates that most incoming freshmen enter college experienced in the use of the Internet and consider themselves to be information literate. However, as the studies above illustrate, the search skills that college students possess are often self-taught. In addition, students report that poor time management skills prevent them from evaluating the credibility and reliability of the information they find. The findings from the literature support the notion that information literacy needs to be an integral part of the undergraduate curriculum if institutions wish to graduate students capable of navigating the complex information infrastructure.

Information Literacy Instruction Delivery Methods

Due to the growing demand of information literacy instruction, many librarians are creating self-paced online tutorials as an alternative method of delivering instruction to students. Several studies have explored the impact of online tutorials on student learning. Germain, Jacobson and Kaczor (2000) developed an information literacy tutorial for students at the University of Albany. They compared pre/post-test measures of skill attainment between 160 students receiving instruction through the online tutorial and 143 students receiving face-to-face instruction. While significant differences were found between pre and post measures for each group (indicating knowledge attainment), there were no significant differences ($p \geq .05$) between response rates of online versus face-to-face instruction. The authors concluded both methods of instruction to be equally effective.

Similar results were reported in Holman's (2000) study at the University of North Carolina in Chapel Hill. Holman also examined the effectiveness of instructional tutorials versus face-to-face instruction via pre and post measures. Results indicated that there were no significant differences ($p \geq .05$) in the post-test response rates between the two groups. As in the Germain, Jacobson and Kaczor study (2000), both groups experienced an increase in pre and post-test scores. However, neither group improved enough to pass the test.

Watson (2007) used pre/post measures to assess the difference between an online tutorial and face-to-face instruction. In an effort to increase the validity of results, Watson added a bibliographic assessment of the research product associated with the instruction. Findings supported those of previous research in that a significant increase was present between pre and post-test scores, but no difference was found between group scores. Watson reported differences in the quality of resources utilized in developing the research product associated with instruction. The online group was found to include more scholarly resources than the face-to-face group. This may have been due in part to the ability to pause, rewind, and replay online tutorials multiple times to reinforce material that is difficult to understand. Face-to-face sessions do not afford this luxury unless students seek out additional help on their own.

Academic librarians are encouraged by the findings indicating online instruction is just as effective as face-to-face. This will not only expand the number of students library instruction can impact, but will also allow librarians to relate to students in an environment in which they are comfortable. This may help to reduce research anxiety. However, as research clearly indicates, librarians need to improve their teaching, instructional design, and technological skills if they are to significantly impact student learning.

Evaluation of Instructional Impact

Dykeman and King (1983) stated the academic library community would be more likely to accept library instruction if librarians could demonstrate its effectiveness. Several studies supported this notion. Sheridan (1990) postulated that library instruction was largely ignored due to librarians focusing instruction around what they believed users need, as opposed to what users want. This is not entirely different than the process employed by discipline faculty: the expert develops the curriculum to be followed. However, participating in library instruction is a choice, not a requirement of a credit bearing discipline course. For the success of information

literacy programs, faculty "buy-in" is essential. If librarians veer from what faculty have requested, they most likely will not request instructional sessions in the future. In addition, if librarians packed instructional sessions with information irrelevant to the student needs of the particular assignment for which instruction has been sought, actual student learning would likely decrease. Verifying the effectiveness of library instruction on student performance will help librarians connect to both faculty and students.

Werking published a literature review in 1980 of published works relating to the effectiveness of library instruction on student learning. Bober, Poulin & Vileno (1995) expanded this review to include additional works published between 1980 and 1993. Two evaluation methodologies emerged from the literature as the most commonly used means for evaluating learning effects. Pre/post-test measurements are often compared for indication of learning effectiveness (Beile & Boote, 2002; Brown & Krumholz, 2002; Daugherty & Carter, 1997; Emmons & Martin, 2002; Fox & Weston, 1993; Franklin & Toifel, 1994; Lawson, 1999; Maughan, 2001; Ren, 2000; Tierno & Lee, 1983; Watson, 2007). This is a rather simple method of evaluation; however, it only captures short-term retention and lacks standardization. Increasing the amount of time between instruction and the post-test would increase the method's reliability as a true measure of effectiveness. The review of student products, often bibliographies, is the second method of instructional effectiveness commonly used in the literature (Ackerson, Howard & Young, 1991; Breivik, 1998; Cameron, 2004; Dykeman & King, 1983; Kohl & Wilson, 1986; Roselle, 1997). Bibliography assessment lends itself to pre/post-instruction evaluation with those created before instructional intervention being compared to those created after instruction. It is also an appropriate means for summative evaluation as it provides an avenue for assessing long term instructional impact. However, the method is fairly subjective and measures of improvement are only as rich as the beliefs of the individual conducting the assessment.

Results yielded from pre/post measurements are inconclusive. Some studies show an increase in learning as an effect of instructional intervention. Wen-Hua Ren (2000) surveyed 85 undergraduates' self-perceived ability to use electronic information prior to and after one library instruction session. Beile and Boote (2002) also explored self-efficacy differences of electronic information use before and after instruction. However, they used a significantly smaller sample size, 49, and surveyed graduate students as opposed to undergraduates. Fox and Weston (1993)

and Daugherty and Carter (1997) explored differences in perceived research ability between undergraduate students who received formal library instruction and those who did not. In all four studies, post-instruction measures of individuals receiving instruction indicated an increase in perceived research ability. While it is important that students felt confident in their information skill ability, increases in self-efficacy do not equate to increases in knowledge.

Several studies have addressed the positive effects of information literacy instruction on measures of self-efficacy (Kuhlthau, 1993; Nahl-Jakobovits & Jakobovits, 1992). Results are somewhat different when exploring the effects of information literacy instruction on student learning outcomes. Maughan (2001) found seniors at the University of California-Berkeley were extremely confident in their research skills, but this confidence was not demonstrated on scores testing ability. Tierno and Lee (1983) used pre/post-tests to explore the effects of course-integrated library instruction on learning. Again, while students' confidence in their research abilities increased, the effectiveness of instruction on assisting students in meeting the student learning outcomes of the course was inconclusive. Very few studies reporting results from pre/post measurements offer any indication their instruments were reviewed for reliability or validity. This may have contributed to the frequency of inconclusive results.

Academic work products are often used as an alternative method for assessing the effectiveness of information literacy programs (Roselle, 1997). "Bibliometrics," or bibliography analysis, examines the selection of resources used in helping students create a research product. Many experts prefer the bibliometric method of assessment to pre/post measures due to its ability to comprehensively examine the search process by means of the resources selected. However, due to its subjective nature, it is often difficult to remove rater bias. Kohl and Wilson (1986) were the first to assign scores to bibliographies as means to assess the impact of library instruction on student learning. Breivik (1998) indicated effects of instruction could be realized via a portfolio including works collected throughout the academic life of the student. This method not only provided a reflection of the student's attainment of various ACRL competencies, but could also be used to assess discipline specific competency's present in the student's field of study.

Dykeman and King (1983) found the quality of resources on bibliographies of students who participated in group library instruction against bibliographies of those who did not. The authors indicated that students participating in group instruction produced a higher quality

product than students who did not receive instruction. Ackerson, Howard, and Young (1991) assessed student bibliographies based on the number of library instruction sessions students attended. The study, which spanned five semesters, resulted in significantly different scores in only one out of the five semesters examined. A similar finding was reported by Cannon (2007) who found no significant difference in bibliography scores between students who took part in an online instructional tool and those who did not.

Academic librarians have used multiple methods to assess instructional effectiveness. Unfortunately, the findings have not always shown positive effects. This further supports the proclamation that librarians need to improve their teaching, instructional design, and technological skills if they are to significantly impact student learning.

Information Literacy Assessment

Regional and professional accrediting organizations are increasing their pressure on academic libraries to assess the impact of information literacy instruction has on student learning. Chapman, Pettway, and White (2001) identified three pressures placed on academic librarians to assess their impact:

- The emergence of new standards for student mastery of information literacy skills.
- The inclusion of information literacy instruction as part of the accreditation requirements both for academic programs and for institutions of higher education.
- The need perceived by library administrators to document the direct contributions of librarians to the instructional mission of the parent institution. (p. 294)

The culture of accountability so prevalent in this age of standardized testing situates assessment as a national trend affecting all educators from PreK – 18. In order to effectively assess instructional activity, academic librarians need to somehow establish a baseline from which improvement can be deduced. Due to the nature of the discipline, academic librarians do not use standardized teaching assessment measures, such as TEVALS and other validated evaluation instruments. Academic librarians are often left to their own devices to establish appropriate means of assessment. Unfortunately, locally created instruments are rarely accepted by accreditation organizations as valid measurements.

Academic libraries have focused so much attention on perfecting the art of evaluating user satisfaction that instructional assessment has been largely ignored (Bober et al., 1995;

Chadley & Gavruck, 1989; Eadie, 1992). Studies point to several barriers preventing academic librarians from evaluating instructional activity. These barriers included a shortage of time (Barclay, 1993; Eadie, 1992), lack of instruction in evaluation techniques (Barclay, 1993; Patterson & Howell, 1990), low institutional support (Barclay, 1993; Eadie, 1992), and difficulty in being able to provide true experimental conditions (random selection, etc.) (Barclay, 1993). Grassian & Kaplowitz (2001) suggest that librarians are prevented from including instructional assessment because it takes away from the amount of material they are allowed to present.

Academic librarians typically receive one hour of contact time per semester with students in which they are expected to provide them with everything they need to know to effectively complete an assignment. Not only is the limited time often impossible to present enough material, but one hour's worth of student contact time is not conducive to a fair assessment of instructional ability (Rabine & Cardwell, 2000). Unfortunately, the majority of instructional assessments are the product of student evaluations. Ragains (1997) conducted an e-mail survey of 44 librarians working in major universities from across the country to investigate methods of evaluation. Respondents indicated student satisfaction as their method of choice. Results provided three primary reasons supporting the use of student evaluations: to provide feedback to individual librarians; to be used in program evaluations; and to provide evidence of instructional effectiveness that could be used as part of a regular performance review (p. 160). However, a national survey sampling only 44 librarians does not adequately represent the entire population, making it difficult to generalize findings. In addition, assessing levels of student satisfaction with the instruction received does not equate to the amount of knowledge obtained. While satisfaction surveys provided valuable critiques to the individual performing the instruction, they should be coupled with an evaluation of the ability to apply the knowledge and skills learned to maximize their effectiveness.

The literature is ripe with other means used for assessing a librarian's effectiveness as a teacher. These include mentoring programs for library instructors (Leadley, 1998; Litten, 2002), peer assessment of instruction (Levene & Frank, 1993; Middleton, 2002; Vidmar, 2004), and the use of teaching portfolios among librarians (Arnold & Pearson, 1996; Chapman, Pettway & White, 2001; Tuttle, 2001). As previously mentioned, these are not specifically tied to the acquisition of knowledge. However, the amount and depth of knowledge transferred may

increase with quality instruction. Therefore, assessing and improving individual instructional ability is critical element for successful information literacy instruction.

In addition to evaluating the instructional performances of specific individuals, assessment at the program level is also required of the recently developed information literacy instruction units in higher education. In 1995, Bober et al. surveyed library instruction programs in an effort to determine the various types of assessment being employed at the programmatic level. Components included in program evaluations were appropriateness and quality of content, methodology used, effect on student attitudes, and impact on student learning. Unlike student satisfaction surveys, program assessments provide provisions for assessing learning outcomes.

Academic work products are often used as an alternative method for assessing the effectiveness of information literacy programs (Roselle, 1997). Breivik (1998) posited that the effects of instruction could be realized via a portfolio including works collected throughout the academic life of the student. This method would not only provide reflection on the student's attainment of various ACRL competencies, but could be used to assess discipline specific competencies present in the student's field of study.

While the majority of assessment efforts to date have been localized efforts, several recent studies chronicled the development of information literacy instruments appropriate for universal application (Critchfield, 2005; Oakleaf, 2006; O'Connor et al, 2002; O'Neil, 2005). O'Connor et al (2002) designed an instrument capable of measuring student attainment of ACRL competencies from admission to graduation in the higher education arena. The Project for the Standardized Assessment of Information Literacy Skills (SAILS) explored longitudinal testing in an effort to establish a relationship between information literacy skills and academic achievement (O'Connor, et al., 2002). Item response theory was included in this electronic test. This allowed for varying degrees of difficulty needed to capture the true depth of a student's information literacy abilities.

As the information presented in this section indicates, there is a tremendous need for standardized means for assessment. The longitudinal design of the SAILS instrument provides information literacy programs with the needed ability to track student progress from year to year. In addition, it is entirely possible the SAILS instrument could become the first norm-referenced information literacy assessment tool for higher education. This would allow cross-institutional comparisons and open up a new realm of information literacy assessment possibilities.

O'Neil (2005) took a more specialized approach in the development of an information literacy instrument. Like O'Connor, O'Neil's goal was to develop and validate a universally accepted instrument, designed to assess the information literacy skills of undergraduate education students. O'Neil framed the instrument around ACRL's information literacy standards for higher education. The instrument differed from O'Connor in its incorporation of the International Society for Technology in Education's NETS*S standards as supplementary guidance in the instrument development. O'Neil's study produced interesting results. The mean test scores for freshmen, sophomore, and junior students were fairly equal. Senior scores were significantly higher. This may have been due to seniors increased exposure to library instruction. However, this is merely a hypothesis and further user testing is needed to either accept or reject this assumption. Study results yielded an inverse relationship between the self-reported exposure to library instruction and test scores: as exposure increased, test scores decreased. While perplexing, this phenomenon is supported by additional research as well (Kunkel, Weaver & Cook, 1996; Tunon, 1999). These findings suggest frequency of library instruction exposure has no significant effect on information literacy test scores. Rather, it may be the frequency with which skills presented in library instruction are reinforced through course assignments which contributes to this effect.

Quantitative instruments provide reliable means of assessment, are easy to conduct, and lend themselves to norm-referencing. Oakleaf (2006) explored the viability of a qualitative rubric approach to information literacy assessment. Contrary to O'Connor and O'Neil (who based their instruments on the broad ACRL information literacy standards for higher education), Oakleaf focused assessment on a student's ability to evaluate web site credibility. Inter-rater reliabilities of how groups of librarians, English instructors, and English students scored student learning artifacts were used as means for validation. Oakleaf found multiple raters were able to produce consistent scores when utilizing an assessment rubric. While rubrics provide appropriate means of assessment, they are subject to rater differences in the interpretation of assessment criteria. In addition, Oakleaf drew conclusions based on librarians, English instructors, and English students' abilities to produce consistent scores; three groups who maintain similar viewpoints on issues related to information literacy. Further testing should be conducted which uses a more diverse selection of raters before establishing instrument validity.

The literature illustrates that accrediting bodies are beginning to emphasize the importance of information literacy in their standards and criteria. Academic libraries have traditionally emphasized user satisfaction. Therefore, valid standardized assessment measures are lacking for the discipline. The scarcity of valid measures may be contributed to various issues including insufficient knowledge of assessment practice or a lack institutional support. Institutions who are conducting assessment often use academic work products as means for evaluation.

Chapter Summary

This chapter reviewed relevant literature on information literacy. Due to the extensive amount of literature available, the review was limited to resources impacting the successful integration of information literacy into the higher education curriculum. This is the foundational reason academic librarians are expanding their role to include teaching components.

Successful integration requires the entire higher education community to accept the evolving role of the academic librarian. For this to be accomplished, the stereotypes that have plagued the profession will have to be resolved. In order for this to occur, librarians must prove they can be successful in their teaching role. The integration of information literacy into the higher education curriculum can only be accomplished with the support of faculty and students. Again, in order for this to occur, librarians must prove they can be successful in their teaching role. Finally, the burden of proof for successful integration lies in the various means by which librarians assess their instruction. Development opportunities in pre-service education, workshops, and conferences can assist academic librarians in obtaining the skills required to develop successful evaluation and assessment tools.

CHAPTER 3 - Research Design and Methodology

Chapter Overview

The purpose of this correlational study was to assess the professional development needs of academic instruction librarians regarding current library instruction practices required to improve information literacy instructional effectiveness in Kansas universities, four-year colleges, and two-year colleges. This chapter presents the research methodology used in this study, including research questions, population, research design, methods of data collection, and data analyses.

Research Questions

This study explored the current status of information literacy instruction by Kansas academic librarians. An overview of the profession was required to develop the baseline needed to answer the primary research question of this study: "What professional development opportunities are needed in order to improve information literacy instructional effectiveness?" The following three sub-questions were developed to assist in discovering the professional development needs of instruction librarians in the state of Kansas:

Research Question 1.1. What are the various means by which information literacy instruction is delivered?

Research Question 1.2. What content areas are addressed during information literacy instructional sessions?

Research Question 1.3. What assessment practices are employed to determine the effectiveness of information literacy instruction?

Research Design

This survey collected data through twelve close-ended questions and twelve open-ended questions of a survey. Due to the small population being explored in this study, non-parametric statistics were used to analyze quantitative data. Pearson's chi-square tests were used to explore the associations in frequency distributions between the categorical data collected from the

closed-ended survey questions. A Cramer's V was used to determine the strength of the association. Responses to open-ended questions were analyzed for codes and developed into categories.

Population and Sample

The population in this study included the 84 academic librarians with instruction duties as a function of their job duties. The population was comprised of 22 librarians employed by two-year colleges, fifteen librarians employed by four-year colleges, and 47 librarians employed by universities. This determination was based on the membership base of the Kansas Library Instruction Round Table (K-LIRT), the organization responsible for providing professional development opportunities for academic librarians in the state of Kansas. The researcher had access to all individuals represented in this group, so the entire population was included in this study.   Due to the following, few commonalities existed amongst the population:

- Organizational differences among institutions (public vs. private, college vs. university, two-year vs. four-year, etc.)
- Variations in institutional treatment of academic librarians (status of faculty vs. support staff)
- Size, scope and expertise of library staff
- Rank/status of individual conducting library instruction

However, it was important not to limit the population of the study to that of a particular subset or institution type in order for this dissertation to be of service to K-LIRT. K-LIRT needed access to this information in order to structure professional development opportunities to meet the needs of its entire constituency.

Protection of Human Subjects

In accordance with the guidelines of the Kansas State University's Committee for Research Involving Human Subjects (IRB), an Application for Approval Form was submitted prior to the study. Upon approval by the IRB, subjects were informed that their identities and survey responses would be confidential. Subjects were also informed that results of the study would be available to them upon request.

Data Collection

This study used a closed and open-response electronic survey questionnaire as the means for data collection. An extensive review of the literature produced few details about the current status of information literacy instruction in the state of Kansas. A one-time survey with no effects of variables provided insights into the information literacy instruction practices of Kansas academic instruction librarians and their respective professional development needs.

As a form of descriptive research, surveys adequately address the current state of specific issues through the use of small populations, measures and the percentage distributions of variables (Babbie, 1990). Electronic surveys have eased distribution problems normally associated with surveys. In addition, a recent study of educators found a higher return rate existing among web surveys (95%) as compared to mail surveys (79%) (Kieran et al, 2005). Additional strengths of electronic surveys include

- Reduction of costs associated with survey dissemination and retrieval
- Quicker delivery and return of survey to and from participants
- Increased honesty in responses (Tourangeau, 2004; Skitka and Sargis, 2006).

However, Skitka and Sargis (2006) cautioned that electronic surveys limit responses to those with Internet access, lessen the ability to guarantee anonymity and confidentiality, and increase the possibility of survey disruption due to technical problems.

Survey Preparation

Data was collected using a revised "Survey on Assessment in College Library Instruction Programs," originally prepared by Beth Mark and Lawrie Merz (2002). The existing instrument contained thirty questions divided among eight sections: General Data; Library Instruction: Type and Scope; Library Instruction: Content; Assessment of Student Information Literacy: Type and Scope; Assessment of Student Information Literacy: Content; The ACRL Standards and Library Instruction; and Assessment of Library Instruction Personnel. For the purposes of this study, modifications to the General Data, Library Instruction: Type and Scope, and the ACRL Standards and Library Instruction sections were made to eliminate items irrelevant to the research questions. The Assessment of Student Information Literacy: Content section was removed to reduce redundancy in the survey. The researcher added a section entitled Professional Development Needs for Proficiency in Library Instruction based on the ACRL

Standards for Proficiencies for Instruction Librarians and Coordinators. Space was included following each series of closed-ended questions for open-ended questions designed to allow supplemental comments and opinions. After the necessary revisions, the survey included the following sections:

- Section I: Demographic Information (questions 2 – 8) - obtained required demographic information from participants.
- Section II: Library Instruction Type and Scope (questions 9 – 15) - gathered a general, overall picture of library instruction on each campus, the amount of library instruction students receive, and the amount of academic credit given for instruction.
- Section III: Library Instruction Content (questions 16 - 17) - determined what content is most commonly taught during library instructional sessions.
- Section IV: Incorporation of the ACRL Information Literacy Standards for Higher Education (questions 18 - 19) - determined the extent to which libraries are incorporating the five broad information literacy standards into the content of their library instruction and assessing student competency.
- Section V: Assessment of Student Information Literacy (questions 20 - 22) - determined how student learning of information literacy concepts is formally assessed.
- Section VI: Professional Development Needs for Proficiency in Library Instruction (question 23) - determined the perceived professional development needs of librarians seeking to strengthen their instruction abilities.

Additionally, Table 3 shows the relationship of the survey questions to the research questions of this study and to the Association of College and Research Libraries' (ACRL) Instruction Librarian proficiencies.

Table 3. Relationship of Survey Questions, Research Questions, and ACRL Proficiencies

RESEACH QUESTION 1.1	RELATES TO: • **Information literacy's integration into higher education**
1. Do your duties include formal library instruction at your institution?	• Yes/no branching question to determine library instruction duties
2. Which of the following describes the formal library instruction that you offer?	• Stakeholder perceptions of the importance of information literacy • ACRL Proficiency 4
3. Which of the following describes an institutional requirement made of all students?	• Stakeholder perceptions of the importance of information literacy. • Professional identity of instruction librarians. • ACRL Proficiency 3
4. If credit-bearing instruction is required by your institution, how many credit hours are required?	• Stakeholder perceptions of the importance of information literacy. • Professional identity of instruction librarians. • ACRL Proficiency 3
5. If credit-bearing instruction is offered but not required by your institution, how many credit hours?	• Stakeholder perceptions of the importance of information literacy. • Professional identity of instruction librarians. • ACRL Proficiency 3
RESEARCH QUESTION 1.2	RELATES TO: • **Content addressed in information literacy instructional sessions** • **ACRL information literacy standards for librarian instruction**
6. What content is most commonly taught during library instructional sessions?	• ACRL Proficiency 2
7. Please check each of the five BROAD standards that you attempt to **address** at some point in your information literacy instruction (nature and extent, access, evaluation and incorporation, effective use, and lifelong learning)?	• ACRL Proficiency 2
RESEARCH QUESTION 1.3	• **RELATES TO:** • **ACRL information literacy standards** • **Evaluation of instructional impact**
8. Please check each of the five BROAD standards for which student competency is formally **assessed** (nature and extent, access, evaluation and incorporation, effective use, and lifelong learning)?	• ACRL Proficiency 1
9. Are students' knowledge or understanding formally assessed (such as through quiz, bibliography assessment, survey, etc.) after library instruction?	• ACRL Proficiency 1
10. If so, how is formal student assessment done?	• ACRL Proficiency 1
OVERARCHING RESEARCH QUESTION	RELATES TO: • **Identification of professional development opportunities to improve information literacy instructional effectiveness**
11. On a scale of 1 to 4, where 1 is not at all interested and 4 is very interested; please rate your degree of interest in attending professional development activities for the following proficiencies.	• ACRL Proficiencies 1 - 6 • Pre-Service development of academic instruction librarians • Professional development needs as a function of the position
DEMOGRAPHIC QUESTIONS (2 - 9)	RELATES TO: • **Demographic information**

The survey was transferred from its paper form onto the Axio Online survey system for electronic distribution. Dillman's principles (2000) for designing electronic surveys guided the construction of the online survey. These guidelines were followed:

- Utilize a multiple contact strategy, a property inherent to the Axio Online survey system; personalize all email contacts so that they don't appear to be part of a listserv, also inherent to the Axio Online survey system

- Create a brief cover letter so that the first question is available without having to scroll down page

- Inform participants of the estimated time taken to complete survey

- Begin with an interesting, simple-to-answer question

Expert Panel

In an effort to strengthen instrument validity, an expert panel was established that took and reviewed the online survey before final distribution. The expert panel included national experts in library and information literacy instruction. Members and qualifications of the expert panel were

- Jane Schillie, Associate Dean of Libraries, Kansas State University

- Loanne Snavely, Head of Instructional Services, Pennsylvania State University Library

- Kristin Whitehair, Biomedical Librarian, University of Kansas Medical Center and K-LIRT Chair, 2008 – 2009

The members of the expert panel were invited to read and offer comments on the research proposal and survey instrument. After doing so, the panel members expressed support for the study. Kristin Whitehair commented: "Your research is right on target with the needs of K-LIRT. It will definitely help in designing future training activities. I can't wait to see the results!" Jane Schillie recommended several editorial improvements to the survey, including changing the response options on question 23 from variants of "useful" to "interested" (i.e. "how useful are the following professional development topics" to "please indicate your degree of interest in attending professional development programming on the following topics"). Loanne Snavely shared that she has noticed that the "way people have talked about the amount of information available has changed. The survey instrument does a great job of capturing the best

practices of library instruction." Responses to this survey from the expert panel were used to refine the survey instrument before distribution.

Pilot Study

After the expert panel made their recommendations, a pilot study was conducted. The researcher sent the online survey to fifteen instruction librarians working in academic libraries in Oklahoma. Five librarians from each type of institution (two-year colleges, four-year colleges, and universities) participated in the pilot study. The names of the participating libraries were not listed for the purpose of maintaining confidentiality. The researcher phoned subjects to inform them about the pilot study and asked if they would be willing to participate. E-mail addresses were collected from individuals who agreed to participate and a test e-mail was sent from the researcher to the participant to ensure the address was correct. The participants in the pilot study were provided access to an online survey via the Axio Survey System for two-weeks. An e-mail reminder was sent to the participants after one-week. The pilot study yielded a 100% response rate.

The Statistical Package for Social Sciences (SPSS) was used to determine the Cronbach's alpha level as a measure of the instrument's internal consistency. The overall testing result of the reliability for the instrument was at the alpha level = .897. The test results of questions related to library instruction type and scope, library instruction content, the incorporation or the ACRL Information Literacy Standards for Higher Education, the assessment of student information literacy, and the professional development needs for proficiency in library instruction are listed in Table 4.

Table 4. Reliability Results of the Pilot Study

Sections	Reliability Co-Efficient	Number of Questionnaire Items
Library Instruction Type and Scope	.830	6
Library Instruction Content	.895	2
Incorporation of ACRL Information Literacy Standards	.837	2
Assessment of Student Information Literacy	.871	2
Professional Development Needs	.920	1

Selecting and Contacting the Sample or Population

The researcher consulted the 2008-2009 Kansas Education Directory located on the State Department of Education's website (http://www.ksde.org/Default.aspx?tabid=3140) for a current list of community colleges, technical colleges, Kansas Board of Regents universities, and private colleges and universities within the state (see Appendix E). An Excel spreadsheet was created to store the following information: name of college/university, institution website URL, library phone number, first and last name of instruction librarian(s) and their respective email address(es). The institution's website URL was extracted from the Kansas Education Directory. The website was visited to obtain the phone number of the institution's library. Each library was contacted by the researcher to determine the individual(s) responsible for conducting information literacy instruction for the library. The researcher spoke to each individual, informing him/her about the study, and asking for his/her email address. According to Tomaskovic-Devey, Leiter, and Thompson (1994), this helped to reduce the amount of non-response because "nonresponse [sic] is less likely to occur when the requested respondent clearly has the authority to respond, the capacity to respond, and motive to respond" (p. 444).   A test email from the researcher followed the phone conversations to ensure the address was understood correctly and that a firewall or other impediment did not prevent emails with the "ksu.edu" extension from arriving in participants' email inbox.

Survey Administration

The survey was made available to participants for a four-week period of time. Participants' first names, last names, and email addresses were imported into the Axio Online survey system from the Excel sheet created while contacting potential subjects. The email option was used in lieu of an open survey because of its ability to track responses and send automatic reminders to those who have yet to complete the survey.

Participants were sent two follow-up e-mail messages reminding them about the research study, and a postcard reminder for the final follow-up, in case email may not have reached some of the respondents. Also included in the email and postcard were assurances of confidentiality, an option to opt out of the study, and a link to the survey. The email and postcard informed participants that the results of this study were available at their request from Professor Rosemary

Talab of Kansas State University, and that a copy of the final dissertation is available through K-REX, Kansas State University's electronic thesis and dissertation database.

Data Analysis

Quantitative Measures

A report of results was printed from the Axio survey system after the survey timeline expired. Results were entered by hand into the SPSS statistical software program for disaggregation. Because of the small population being explored in this study, non-parametric statistics were used to analyze quantitative data. Pearson's chi-square tests were used to explore the associations in frequency distributions between the categorical data collected from the closed-ended survey questions. For comparative purposes, results were organized according to institution type (university, four-year college, and two-year college), which created 2x2, 2x3, and 4x3 contingency tables as required. Phi and Cramer's V were used to determine the strength of the association between institution types. The risk of inflating the type one error rate existed due to the variances within the number of participants from each sub-population (22 from two-year colleges, thirteen from four-year colleges, and 47 from universities). However, the researcher took the risk because the population included all academic librarians with instruction as a component of their job duties.

There are two assumptions of the chi-square tests. The first is that each participant contributes data to only one cell. The researcher accounted for this assumption by ensuring that the sum of the cell frequencies equaled the total number of participants in the study. The second assumption is that the expected frequencies should be equal to or greater than five. On occasions when this assumption was violated, a Fisher's Exact Test was performed. Yates continuity correction was utilized to account for cells with a zero value.

Reliability

The researcher performed reliability tests from the responses to the closed-ended questions of the study. The reliability of the survey instrument was tested using Cronbach's alpha level. According to Cronk (1999), reliability coefficients close to 1.00 represent strong internal consistency, while numbers close to 0.00 indicate poor internal consistency. The overall testing result of the reliability for the instrument was at the alpha level = .897.

Validity

The researcher recognized inherent threats to internal and external validity within this static-group comparison. Threats to external validity included

- Selection: younger individuals may be more apt than older individuals to respond to the survey because of their increased interest in professional development opportunities.

- Mortality: drop out rates in the profession may prevent an unequal distribution in the number of years participants have been serving in the profession.

- Maturation: participants will be presented with the study during either a period of high or low instruction. This may skew their perceptions on the need for professional development.

A major threat to internal validity was interaction of selection. Participants may have collaborated on survey answers in institutions where multiple instruction librarians exist. Another threat to internal validity was social response bias. Many librarians are aware of the importance of information literacy instruction. Respondents may have been inclined to overstate their practices because of the professional pressures to actively conduct instruction.

Responses to Open-Ended Questions

Open-ended questions were included in the study in an effort to gather in-depth perspectives on professional development needs. Categories derived from the open-ended survey responses were identified and coded by the researcher and the researcher's major professor. The categories were reviewed by the expert panel for internal and external validity.

Dependability

Dependability was limited to the triangulation of open-ended and closed-ended questions in the survey instrument in which similar concepts and content were presented.

Credibility

The researcher's major professor and the expert panel served as co-raters to ensure the categories derived were appropriate and to protect the credibility of the analysis of the open-ended responses of the survey.

Transferability

Transferability was limited, as this study explored the professional development needs of Kansas academic librarians. However, since the standards used to guide the study were national standards, there may be limited transferability to other states.

Chapter Summary

This chapter presented the research methodology used in this study including research questions, population, research design, methods of data collection, data analysis, validity, reliability, dependability, credibility, and transferability. The 84 academic librarians with instruction as a function of their job duties were the participants of the study. This purpose of this study was to explore the current status of information literacy instruction by Kansas academic librarians. The primary research question of this study: "What professional development opportunities are needed in order to improve information literacy instructional effectiveness?" The following three sub-questions assisted in discovering the professional development needs of instruction librarians in the state of Kansas:

Research Question 1.1. What are the various means by which information literacy instruction is delivered?

Research Question 1.2. What content areas are addressed during information literacy instructional sessions?

Research Question 1.3. What assessment practices are employed to determine the effectiveness of information literacy instruction?

Data was collected using a revised "Survey on Assessment in College Library Instruction Programs" originally prepared by Beth Mark and Lawrie Merz (2002). The survey included both closed-ended and open-ended questions. In an effort to strengthen the validity of the survey, the instrument was reviewed by a panel of three experts: Jane Schillie, Associate Dean of Libraries, Kansas State University; Loanne Snavely, Head of Instructional Services, Pennsylvania State University Library; and Kristin Whitehair, Biomedical Librarian, University of Kansas Medical Center and K-LIRT Chair, 2008 – 2009. The survey was transferred from its paper form onto the Axio Online survey system for electronic distribution. In order to ensure the reliability of the instrument, the researcher conducted a pilot study by sending the survey to 15 academic librarians in the state of Oklahoma (Cronbach's alpha = .897).

Quantitative measures were analyzed through the use of frequency distributions (in order to identify professional development needs of the total population) and via Pearson's chi-square tests to explore the associations in frequency distributions between the categorical data collected from the closed-ended survey questions. For comparative purposes, results were organized according to institution type (university, four-year college, and two-year college), which created a 2x3 contingency table. A Cramer's V was used to determine the strength of the association between institution types. Responses to open-ended questions were analyzed for codes and developed into categories

CHAPTER 4 - Results

Introduction

Data collected from the study were designed to explore the professional development needs of academic instruction librarians in the state of Kansas. Data were collected by means of an electronic survey. Data obtained are presented in 4 sections: information relevant to the process of collecting data (dissemination, response rate, etc.), demographics, analysis of quantitative measures, and results of open-ended questions.

Survey questions were designed to assist in describing the current library instruction practices employed by Kansas's academic librarians. The primary research question explored was: "What professional development opportunities are needed in order to improve information literacy instructional effectiveness?" The following three sub-questions aided in discovering the professional development needs of instruction librarians in the state of Kansas:

Research Question 1.1. What are the various means by which information literacy instruction is delivered?

Research Question 1.2. What content areas are addressed during information literacy instructional sessions?

Research Question 1.3. What assessment practices are employed to determine the effectiveness of information literacy instruction?

Survey Data Collection

Data in this study were collected between February 17, 2009 and March 5, 2009. An electronic link to the Axio Online survey was emailed to participants at 1:00 AM central standard time on February 17, 2009. Each participant received a hyperlink to the survey that was unique to them and could only be utilized once. A follow-up reminder was automatically generated and sent by Axio Online every seven days until the participant had answered the survey or the offering date expired. No data was collected after the survey closed at 11:59:59 PM on March 5, 2009. The survey is provided in Appendix A.

Seventy-three out of the 82 individuals who received an email invitation began to take the survey. Two individuals opted to not finish the survey after reading the welcome and description offered by the researcher, which resulted in an 87 percent return rate. The average time spent

completing the survey was approximately sixteen minutes. Quantitative data was exported into Excel and then entered into SPSS by hand for further analysis. Responses to open-ended questions were analyzed for codes, developed into categories, and displayed via narrative text and graphs.

Demographics

Demographic characteristics of the population for this study were important because they provided a current snapshot of the existing composition of the profession in the state of Kansas. Questions two through nine of the survey instrument collected the demographic data for this study. Demographic data collected included job title, academic rank, age, years serving as an academic librarian, years in current position, type of institution in which currently employed (by funding and curricular offerings), and whether duties included formal library instruction. For reporting purposes, responses to the open-ended questions seeking job title and academic rank were coded according to institution type in order to better ascertain the classifications necessary for professional development. Responses to the open-ended questions seeking age, number of years as an academic librarian, and number of years in current position were coded into categorical year ranges then entered in to SPSS statistical software for frequency count distributions. SPSS statistical software was also utilized to obtain frequency counts for responses to the closed-ended questions within the demographic section of the survey.

Question 8. In which type of higher education institution are you currently employed? This was a multiple-choice question that provided options according to the curricular options available at the institution (two-year college, four-year college, or university). There were 71 total responses provided for this question. As shown in Figure 2, 36 respondents were employed by a university, thirteen by a four-year college, and 22 were employed by a two-year college. This distinction of the three different sub-populations served as the means by which the results to cross-institutional comparisons were presented. Therefore, it was important to report results from this question first in order to provide the reader with the information required to fully understand some of the findings presented in this section.

Figure 2. Type of Institution Employed by Curricular Offering
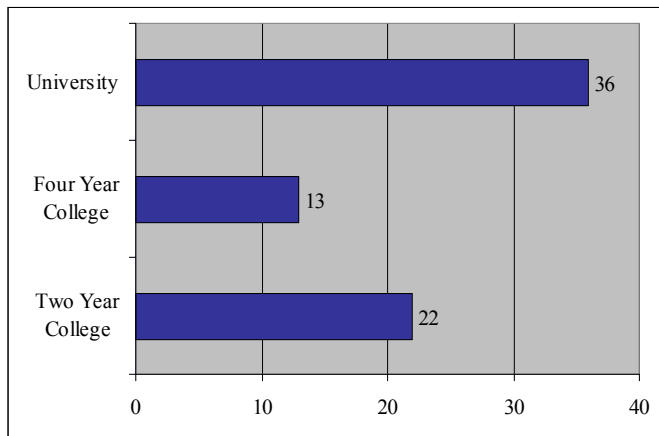
Question 2. What is your job title? This question was important to the study because job titles vary within the state of Kansas. While the Kansas Board of Regents has standard librarian classifications, other two-year and four-year colleges do not. Therefore, in order to ascertain which librarians were doing instruction, it was necessary to code job titles.

Obtaining a better understanding of job titles for librarians who did library instruction could provide information on the level at which librarians in colleges and universities in the state of Kansas teach instruction. For example, individuals who were experts in their disciplines or who were specifically dedicated to instruction offered instruction at a university. Individuals with myriad job responsibilities offered instruction at two-year and four-year colleges.

There were 71 total responses provided for this question. Responses to this open-ended question were coded for each sub-population and then categorized. The 22 responses provided by participants employed by a two-year college were coded into three categories: directors, librarians, and miscellaneous. Sixteen of the responses were placed into the category of "directors." Responses in this category included library director (six responses), director of library services (four responses), director of learning resource center (three responses), library manager (two responses), and coordinator of library services (one responses). The second category ("librarian") included two responses. The "miscellaneous" category included the following four responses: "technical services librarian", "professor librarian", "humanities and interlibrary loan librarian", and "reference librarian."   The data indicated that individuals with administrative responsibilities conducted most library instruction at two-year colleges within the state of Kansas.

The thirteen responses provided by participants employed by a four-year college combined into four categories: administrators, college librarians, instruction librarians, and miscellaneous. Seven respondents were categorized as having the job title of "administrators." Four respondents stated library director or director of library services, two respondents stated associate director or associate director of library services, and one respondent provided the response of interim assistant dean of libraries. The second and third categories were college librarians (two responses), and instruction librarians (two responses). The two responses in the miscellaneous category were "coordinator of science and technology council" and "service coordinator". The data indicated that most of the library instruction at four-year colleges within the state of Kansas is conducted by individuals with myriad responsibilities.

The 36 responses provided by participants employed by a university were distributed into three categories. Twenty participants held the title of subject librarian. Sixteen participants fell into an instruction category, including instruction librarian (nine responses), reference and instruction librarian (three responses), instruction and outreach librarian (two responses), and instruction coordinator (two responses). The large number of subject specialists and instruction librarians indicated specialization within the universities.

Question 3. What is your academic rank? Academic ranks vary within the state of Kansas. While the Kansas Board of Regents has standard academic ranks, other two-year and four-year colleges do not. Therefore, in order to ascertain which librarians were doing instruction, it was necessary to code academic ranks.

Obtaining a better understanding of academic ranks for librarians who do library instruction could provide information on the level at which librarians in colleges and universities in the state of Kansas teach instruction. For example, individuals who held a faculty rank offered instruction at the university. Individuals with the rank of "staff" offered instruction at two-year and four-year colleges. There were 71 total responses provided for this question. Responses to this open-ended question were coded for each sub-population and then categorized.

The 22 responses provided by participants employed by a two-year college were coded into five categories. The academic rank of respondents employed by two-year colleges included professors (five responses), staff (five responses), administration or management (four responses), and assistant professors (two responses). Six respondents reported having no academic rank. Four categories emerged from the thirteen responses provided by participants

employed by four-year colleges. The academic rank of respondents employed by four-year colleges included four ranked as faculty, three ranked as associate professor, three ranked as staff (including one "'unclassified professional' a netherworld between staff and faculty"), and two who indicated "no rank". Five categories of academic rank emerged from the 36 responses provided by participants employed by universities: assistant professor or assistant librarian (fourteen responses), associate professor or associate librarian (twelve responses), professor or librarian (six responses), staff (three responses), and no rank (two responses). The responses indicated that individuals with a faculty rank conducted library instruction at two-year colleges, four-year colleges, and universities.

Question 4. What is your current age? There were 71 total responses provided for this question. Figure 3 illustrates that only one of the 22 participants employed by a two-year college was between the ages of 25 and 40. The remaining participants employed by two-year colleges were either between the ages of 41 – 55 (eleven responses) or were 56 years of age or older (ten responses). Six of the thirteen participants employed by four-year colleges were between the ages of 41 – 55, four were 56 years of age or older, and three of the four-year college employees were between the ages of 25 – 40. Universities were the only type of institution that employed participants 25 years of age or younger (two out of the 36 responses). Of the remaining participants employed by universities, eleven were between 25 – 40 years of age, sixteen were between 41 – 55 years of age, and seven were 56 years of age or older. The average academic librarian performing library instruction in the state of Kansas is between the ages of 41 -55.

Figure 3. Age of Academic Instruction Librarians
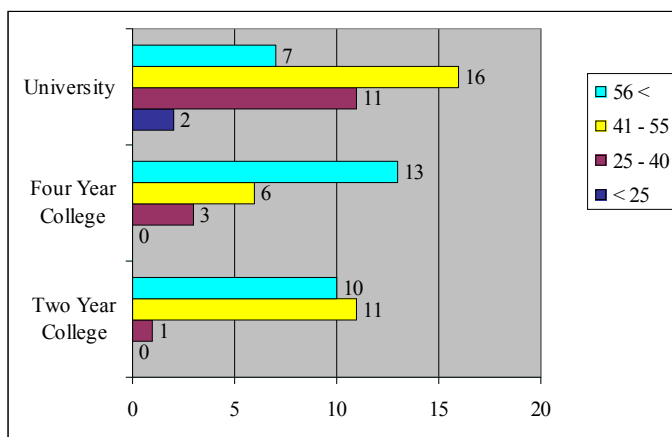
Question 5. How many years have you been serving as an academic librarian? There were 71 total responses provided for this question. Figure 4 indicates that four out of the 22

participants employed by a two-year college had served as an academic librarian for less than five years. Eight had served as an academic librarian between 5 – 15 years, seven had served between 15 – 25 years, and three had served for 26 or more years. Of the thirteen participants employed by a four-year college, two had served as an academic librarian for less than five years, seven had served between 5 – 15 years, one between 16 – 25 years, and three had served for 26 or more years. The responses from the 36 participants employed by a university included nine who had served for less than five years, sixteen who had served between 5 – 15 years, six who had served between 16 – 25 years, and five who had served for 26 or more years. With the exception of the universities, which had the only population who taught library instruction in the initial stages of their careers, most academic instruction librarians had been in the field for 5 – 15 years.

Figure 4. Number of Years Served as Academic Librarian
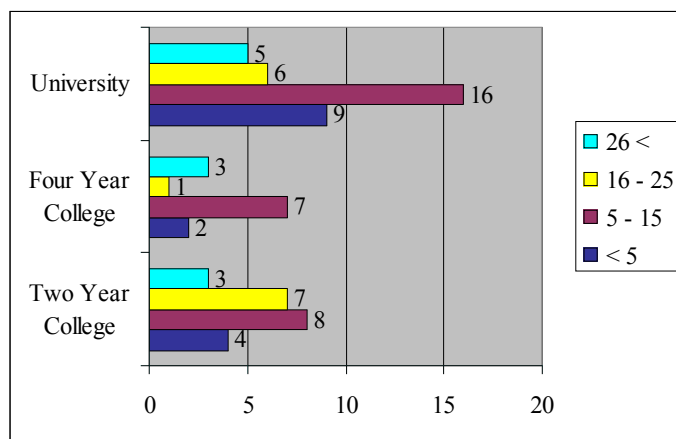
Question 6. How many years have you been serving in your current position? There were 71 total responses provided for this question. Figure 5 shows that seven of the 22 participants employed by a two-year college had served in their current position for less than five years. Of the remaining participants employed by two-year colleges, twelve had been in their current position between 5 – 15 years, one between 16 – 25 years, and two had served in their current position for 26 or more years. Five of the thirteen participants employed by a four-year college had served in their current position for less than five years and six reported serving in the current position between 5 – 15 years. One individual employed by a four-year college had served in their position between 16 – 25 years and one four-year college participant had reportedly been serving in their current position for over 26 years. The majority of participants employed by universities had served in their current position for less than five years (20 of 36 responses). Of

the remaining participants employed by universities, twelve had served in their current position between 5 – 15 years, two had served between 16 –25 years, and two had spent 26 or more years in their current position. Most of instruction in universities is conducted by individuals who had been in their current positions for less than five years and two-year and four-year by those who had been in their current position between 5 – 15 years.

Figure 5. Years Served In Current Position
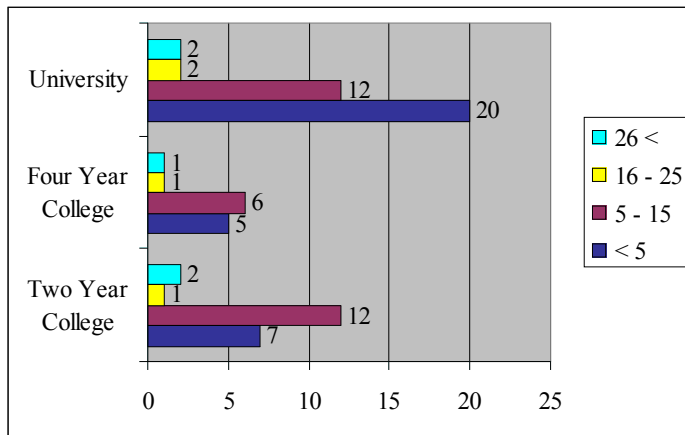
Question 7. In which type of higher education institution are you currently employed (institutional funding)? There were 71 total responses provided for this question. The majority of participants (52 out of 71) were employed by publicly funded institutions (see Figure 6). Of the 22 participants employed by a two-year college, publicly funded institutions employed nineteen, while privately funded institutions employed three participants. Publicly funded institutions employed thirty of the 36 participants employed by a university and privately funded institutions employed six participants. Four-year colleges were the only type of institution in which more participants reported being employed by privately funded institutions (ten out of thirteen responses), as opposed to publicly funded institutions (three responses).

Figure 6. Type Of Institution By Funding
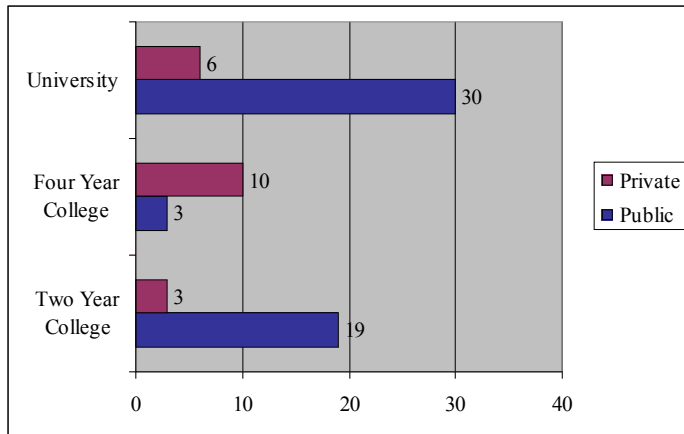
Question 9. Do your duties include formal library instruction at your institution? There were 71 total responses provided for this question. Figure 7 illustrates that 33 out of the 36 participants employed by a university, eleven out of the thirteen participants employed by a four-year college, and eighteen out of the 22 participants employed by a two-year college had formal library instruction included as function of their job duties.

Figure 7. Formal Library Instruction Duties
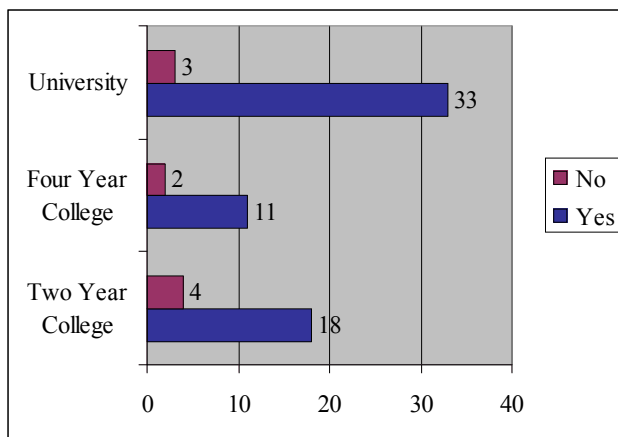
Quantitative Measures

The quantitative measures in this study were provided by the data collected from the twelve closed-ended questions of the survey. Frequency distributions provided information toward the professional development needs of the total population. It was also important to explore individual professional development needs within each of the specific sub-populations. Pearson's chi-square tests were used to determine whether there was a significant association

between the sub-populations (universities, four-year colleges, and two-year colleges). A Cramer's V was used to determine the strength of the association between the differences in the sub-populations.

Research Question 1.1.

   Survey questions ten and twelve were designed to explore the current means by which information literacy instruction was being delivered by academic librarians in the state of Kansas. These questions were important to the study because they provided information related to the stakeholders' perceptions of the importance of information literacy, the professional identity of instruction librarians, and to proficiency three (information literacy integration skills) and proficiency four (instructional design skills) of ACRL's Standards for Instruction Librarians (see Table 3 on page 40).

   <u>Question 10. Which of the following formal library instruction components do you offer?</u> This question explored the various means by which *offered* library instruction was delivered. Offered library instruction includes formal sessions conducted at faculty request or formal instruction provided as a general service by libraries that patrons attend on an optional or volunteer basis. There were twelve statements within question ten that explored the various means by which offered library instruction was delivered. Each statement had two answer options: yes or no. The frequency distribution of responses is provided in Table 5. Figure 8 illustrates the percentages of the total population who answered "yes" to each of the statements within the question.

Table 5. Frequency Distributions: Offered Library Instruction

Statement	Yes		No	
	Number	Percentage	Number	Percentage
10.1. Library instruction sessions less than a full class period in duration	53	75%	18	25%
10.2. One-class, course-related library instruction session (the "one-shot lecture)	60	85%	11	15%
10.3. One-class, NON-course-related library instruction session (the "one-shot" lecture)	41	58%	30	42%
10.4. Orientation/tour	62	87%	9	13%
10.5. Multiple sessions (e.g., 2-3 class sessions) but not a credit course	35	49%	36	51%
10.6. Credit course taught by a librarian	19	27%	52	73%
10.7. Credit course team taught by a librarian and a disciplinary faculty member	8	11%	63	89%
10.8. Self-directed web-based tutorial	23	32%	48	68%
10.9. Online non-credit course	3	4%	68	96%
10.10. Online credit course	12	15%	61	85%
10.11. Participation in discipline based online course	12	15%	61	85%
10.12. No formal library instruction is offered	4	6%	67	94%

Figure 8. "Yes" Responses to Statements in Question 10

Percentage of "Yes" Responses to Statements in Question 10

10.1.	75%
10.2.	85%
10.3.	58%
10.4.	87%
10.5.	49%
10.6.	27%
10.7.	11%
10.8.	32%
10.9.	4%
10.10.	15%
10.11.	15%
10.12.	6%

0%   25%   50%   75%   100%
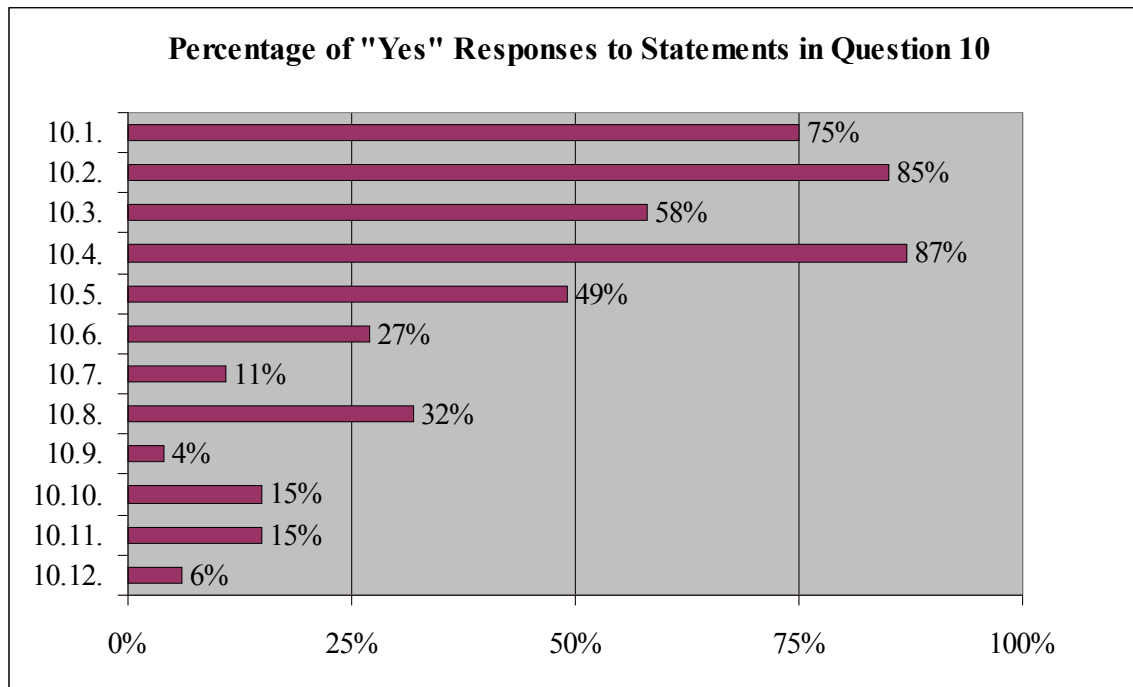
Table 5 and Figure 8 illustrate that there were four statements within question ten that the majority of respondents indicated were included in existing instruction practices and should be discussed with K-LIRT as priorities for professional development. These statements were

- 10.1. Library instruction sessions less than a full class period in duration
- 10.2. One-class, course-related library instruction session (the "one-shot lecture)
- 10.3. One-class, NON-course-related library instruction session (the "one-shot" lecture)
- 10.4. Orientation/tour

In addition, statement 10.5, multiple sessions (e.g., 2-3 class sessions) but not a credit course, had a response rate of 49 percent, and could also be included as a possible professional development need for the total population.

Chi-square tests and Cramer's V measures were utilized to examine associations between the sub-populations on each of the statements within question ten. According to the results, two of the statements had significant associations (see Appendix C for a complete table of chi-square results and Cramer's V measures). As shown in Table 6, there was a significant association between the sub-populations and offered information literacy instruction delivered via

- Multiple sessions (e.g., 2-3 class sessions) but not a credit course (χ^2 (2) = 6.387, p < .05, Cramer's V = .300)
- An online credit course (χ^2 (2) = 8.833, p < .05, Cramer's V = .353).

Table 6. Chi-Square and Cramer's V Measures: Offered Library Instruction

Item	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
10.5. Multiple sessions (e.g., 2 -3 class sessions) but not a credit course	6.387	2	.041	.300
10.10. Online credit course	8.833	2	.012	.353

The association between the three sub-populations indicated there were differences in their instructional practices. Further analysis was conducted to determine if professional development was required of the total population or if it should be targeted to specific sub-populations.

Multiple sessions (e.g., 2-3 class sessions) but not a credit course. To further explore the association between the sub-populations and their offering of multiple class sessions for no credit, three follow-up chi-square tests were run to examine associations between

- Universities and four-year colleges
- Universities and two-year colleges
- Four-year colleges and two-year colleges

Figure 9 illustrates that the greatest variation in responses to this statement existed within the responses from participants employed by a two-year college. The results from the three follow-up chi-square tests indicated that there was not a significant association between universities and four-year colleges ($\chi^2(1) = .209$, $p > .017$; Phi = .065) or between four-year colleges and two-year colleges ($\chi^2(1) = 2.472$, $p > .017$; Phi = .266). A significant association was found between universities and two-year colleges, ($\chi^2(1) = 6.262$, $p < .017$). A Phi value of .329 indicated a moderate association existed between universities and two-year colleges.

Figure 9. Chi-Square: Multiple Sessions/No Credit
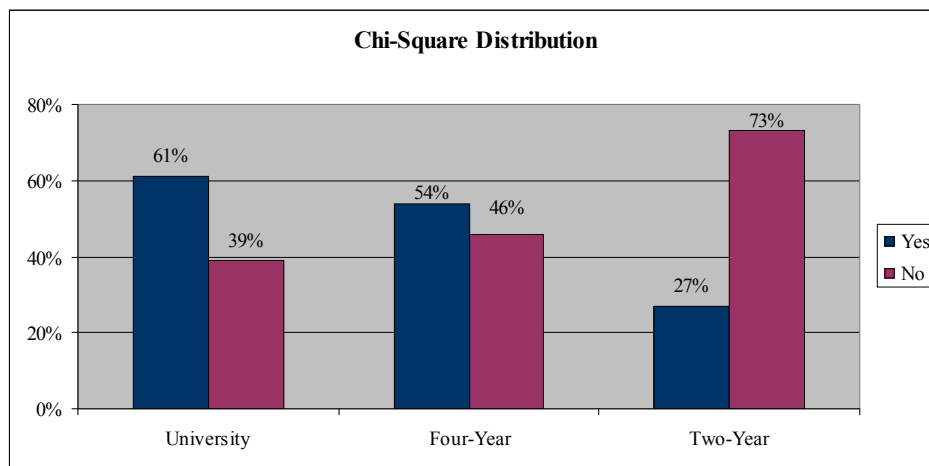
Online credit course. To further explore the association between the sub-populations and their offering of multiple class sessions for no credit, three follow-up chi-square tests were run to examine associations between

- Universities and four-year colleges
- Universities and two-year colleges
- Four-year colleges and two-year colleges

Figure 10 illustrates that the greatest variation in responses to this statement existed within the responses from participants employed by a two-year college. The results from the

three follow-up chi-square tests indicated that there was not a significant association between universities and four-year colleges ($\chi^2(1)$ = .160, p > .017; Phi = .153) or between universities and two-year colleges ($\chi^2(1)$ = 4.278, p > .017; Phi = .202). A significant association was found between four-year colleges and two-year colleges, ($\chi^2(1)$ = 5.170, p < .017). A Phi value of .384 indicated a moderate association existed between universities and two-year colleges.

Figure 10. Chi-Square: Online Credit Course
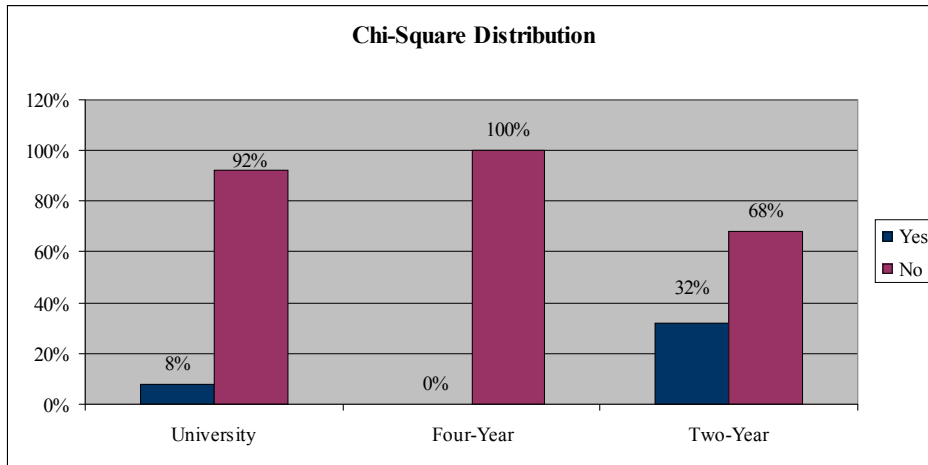
Question 12. Which of the following formal instructional components are an institutional requirement (e.g. curricular) made of all students? This question explored the various means by which *required* library instruction was delivered. Required library instruction includes formal instruction sessions that are an institutional requirement of all students. Participants were presented with the same twelve statements that were presented in question ten. Each statement had two answer options: yes or no. The frequency distribution of responses is provided in Table 7. Figure 11 illustrates the percentages of the total population who answered "yes" to each of the statements within the question.

Table 7. Frequency Distribution: Required Library Instruction

	Yes		No	
Statement	Number	Percentage	Number	Percentage
12.1. Library instruction sessions less than a full class period in duration	4	6%	67	94%
12.2. One-class, course-related library instruction session (the "one-shot lecture)	9	13%	62	87%
12.3. One-class, NON-course-related library instruction session (the "one-shot" lecture)	5	7%	66	93%
12.4. Orientation/tour	9	13%	62	87%
12.5. Multiple sessions (e.g., 2-3 class sessions) but not a credit course	3	4%	68	96%
12.6. Credit course taught by a librarian	2	3%	69	97%
12.7. Credit course team taught by a librarian and a disciplinary faculty member	3	4%	68	96%
12.8. Self-directed web-based tutorial	2	3%	69	97%
12.9. Online non-credit course	1	1%	70	99%
12.10. Online credit course	1	1%	70	99%
12.11. Participation in discipline based online course	1	1%	70	99%
12.12. No formal library instruction is offered	15	21%	56	79%

Figure 11. "Yes" Responses to Statements in Question 12
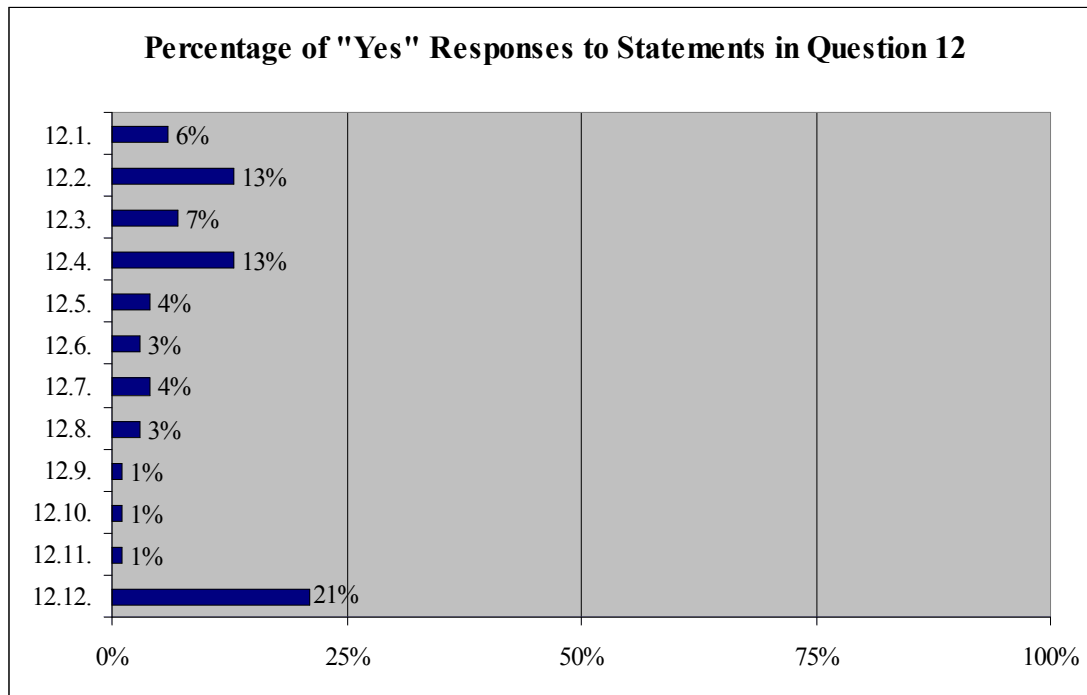
Table 7 and Figure 11 illustrate that there were no statements within question twelve that the majority of respondents indicated were included in existing instruction practices. The distinct lack of required instructional activity within the total population is an area of concern and should be discussed with K-LIRT in terms of the need for the total population to become

more proficient in information literacy integration skills (ACRL's instruction proficiency number three).

Chi-square test and Cramer's V measures were utilized to examine associations between the sub-populations on each of the statements within question twelve. According to the results, no statements had significant associations between the sub-populations and the delivery methods employed for required library instruction (see Appendix C for a complete table of chi-square results and Cramer's V measures). As with the findings from the total population, the lack of associations between the sub-populations is worthy of further discussion because few institutions require library instruction be provided to their students.

Quantitative Findings: Research Question 1.1.

This section reported the findings from the quantitative measures of this study designed to explore sub-question 1.1: what are the various means by which information literacy instruction was delivered? The two survey questions analyzed in this section were utilized to distinguish between potential professional development needs designed to assist in the delivery of offered library instruction (provided at the request of discipline faculty or as a general service that patrons attend on an optional or volunteer basis) and required instruction (provided at the institutional level).

The findings derived from the frequency distributions of the total population indicated that the sub-populations shared a preference for offered library instruction delivered via face-to-face means such as

- 10.1. Library instruction sessions less than a full class period in duration
- 10.2. One-class, course-related library instruction session (the "one-shot lecture)
- 10.3. One-class, NON-course-related library instruction session (the "one-shot" lecture)
- 10.4. Orientation/tour

The majority of the total population offered library instruction delivered through these modes. However, the findings also indicated that the sub-populations shared indifference toward the delivery of offered library instruction via electronic means such as

- 10.8. Self-directed web-based tutorial
- 10.9. Online non-credit course
- 10.10. Online credit course,

- 10.11. Participation in a discipline based online course

Chi-square test and Cramer's V measures were utilized to examine associations between the sub-populations on each of the statements within question ten and twelve. A significant association was found between the sub-populations and their offering of the following two modes of delivery:

- Multiple sessions (e.g., 2-3 class sessions) but not a credit course, (χ^2 (2) = 6.387, p < .05, Cramer's V = .300). Follow-up tests revealed the significant association existed between universities and two-year colleges (χ^2 (1) = 6.262, p < .017, Phi = .329).
- Online credit course, (χ^2 (2) = 8.833, p < .05, Cramer's V = .353). Follow-up tests revealed the significant association existed between four-year colleges and two-year colleges (χ^2 (1) = 5.170, p < .017, Phi = 384).

Research Question 1.2.

Survey questions sixteen and eighteen were designed to explore the content areas addressed during information literacy instructional sessions delivered by academic librarians in the state of Kansas. These questions were important to the study because they provided information related to proficiency two (information literacy curriculum knowledge) and proficiency four (instructional design skills) of ACRL's Standards for Instruction Librarians (see Table 3 on page 40).

Question 16. Which of the following content areas do you address during formal library instruction sessions? This question explored the skills-based content areas addressed during library instruction sessions. Participants were presented with 24 statements and asked to identify whether or not the specific skill was addressed during instruction. Each statement had two answer options: yes or no. The frequency distribution of responses is provided in Table 8. Figure 12 illustrates the percentages of the total population who answered "yes" to each of the statements within the question.

Table 8. Frequency Distributions: Content Addressed During Instruction

Statement	Yes Number	Yes Percentage	No Number	No Percentage
16.1. Research process	59	83%	12	17%
16.2. Knowledge of library research terminology	56	79%	15	21%
16.3. Library services (e.g. reserves) and locations	64	90%	7	10%
16.4. Selecting appropriate tools (e.g. indexes)	62	87%	9	13%
16.5. Selecting appropriate resources (e.g. format, date)	63	89%	8	11%
16.6. Distinction between scholarly and popular sources	62	87%	9	13%
16.7. Primary and secondary sources	48	68%	23	32%
16.8. Selecting terms and keywords	64	90%	7	10%
16.9. Keyword vs. subject heading	57	80%	14	20%
16.10. Boolean operators	58	82%	13	18%
16.11. Truncation, wildcard, proximity	43	61%	28	39%
16.12. Use of/searching in library catalog	65	92%	6	8%
16.13. Use of/searching in paper indexes	20	28%	51	72%
16.14. Use of/searching in online indexes	58	82%	13	18%
16.15. Use of/searching in other reference or research tools (online and/or paper)	53	75%	18	25%
16.16. Use of searching on the Internet	57	80%	14	20%
16.17. Web site evaluation	54	76%	17	24%
16.18. Call numbers	48	68%	23	32%
16.19. Physically locating materials in library	48	68%	23	32%
16.20. Citations: reading/deciphering bibliographic information in indexes/catalogs, etc.	41	58%	30	42%
16.21. Citations: accurately citing using standard style guides (e.g. APA, MLA)	44	62%	27	38%
16.22. Economic implications of information (e.g. plagiarism)	27	38%	44	62%
16.23. Ethical implications of information (plagiarism)	39	55%	32	45%
16.24. Nature and process of scholarly publication	38	54%	33	46%

Figure 12. "Yes" Responses to Statements in Question 16

Percentage of "Yes" Responses to Statements in Question 16

Statement	Percentage
16.1.	83%
16.2.	79%
16.3.	90%
16.4.	87%
16.5.	89%
16.6.	87%
16.7.	68%
16.8.	90%
16.9.	80%
16.10.	82%
16.11.	61%
16.12.	92%
16.13.	28%
16.14.	82%
16.15.	75%
16.16.	80%
16.17.	76%
16.18.	68%
16.19.	68%
16.20.	58%
16.21.	62%
16.22.	38%
16.23.	55%
16.24.	54%
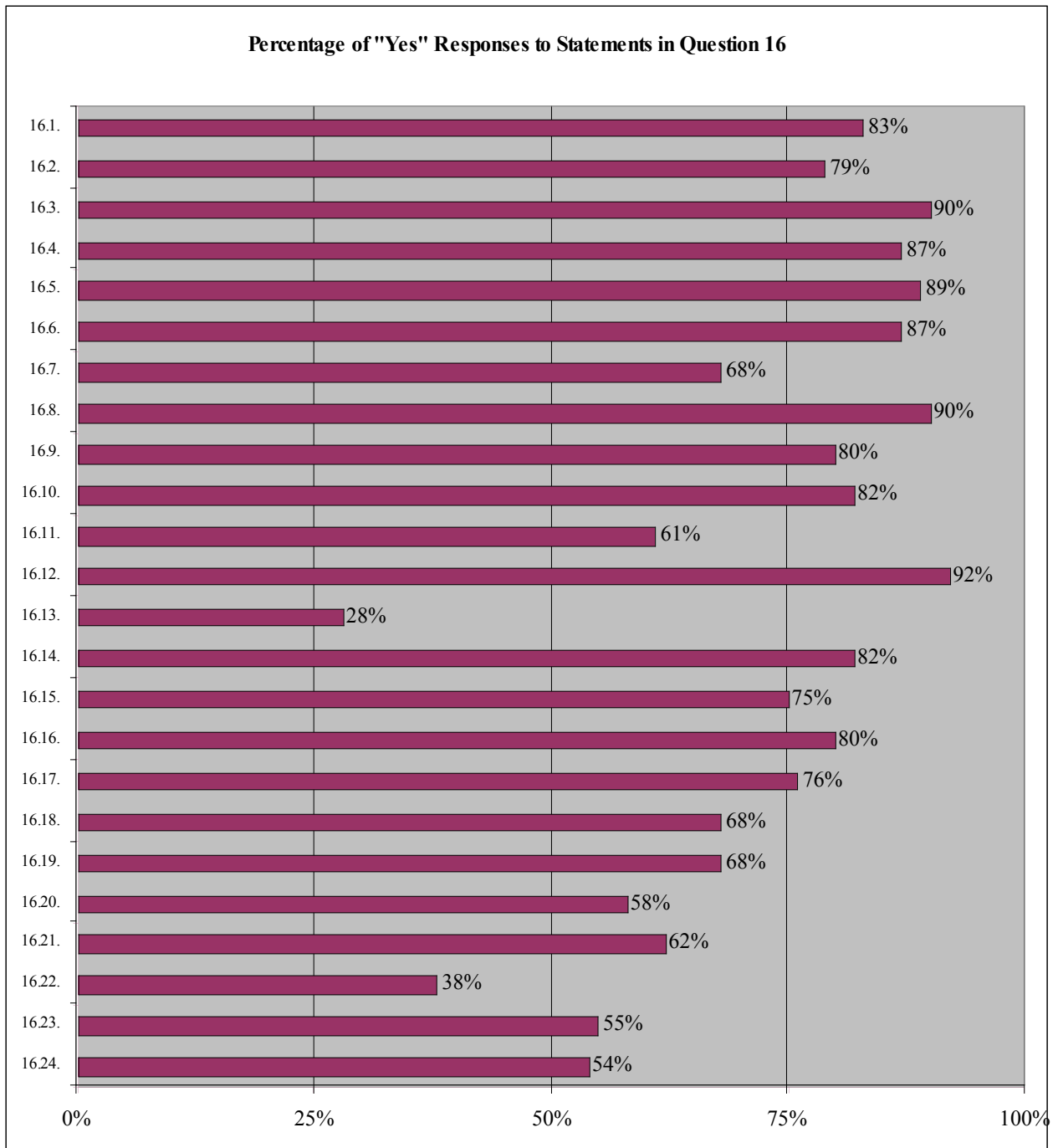
Table 8 and Figure 12 illustrate that the majority of respondents addressed 22 out of the 24 content area statements within question sixteen during existing library instruction practices. This finding indicated that Kansas's academic librarians seemed to be successful at keeping

"aware of student assignments and the role of the library in completing these assignments" (ACRL's instruction proficiency number two).

Chi-square test and Cramer's V measures were utilized to examine associations between the sub-populations on each of the statements within question sixteen. According to the results, four of the statements had significant associations (see Appendix C for a complete table of chi-square results and Cramer's V measures). As shown in Table 9, there was a significant association between the sub-populations and whether or not the following content areas were addressed during library instruction:

- Library services (e.g. reserves) and location ($\chi^2 (2) = 8.208$, p <.05, Cramer's V = .340)
- Selecting appropriate tools (e.g. indexes), ($\chi^2 (2) = 11.013$, p < .05, Cramer's V = .394)
- Use of/searching in other reference or research tools (online and/or paper), ($\chi^2 (2) = 7.092$, p < .05, Cramer's V = .316)
- Call numbers, ($\chi^2 (2) = 11.013$, p < .05, Cramer's V = .394)

Table 9. Chi-Square and Cramer's V Measures: Content Area Addressed

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
16.3. Library services (e.g. reserves) and locations	8.208	2	.017	.340
16.4. Selecting appropriate tools (e.g. indexes)	11.013	2	.004	.394
16.15. Use of/searching in other reference or research tools (online and/or paper)	7.092	2	.029	.316
16.18. Call numbers	6.331	2	.042	.299

The association between the three sub-populations indicated there were differences between the sub-populations and the content addressed in their instructional practices. Further analysis was conducted to determine if professional development was required of the total population or if it should be targeted to specific sub-populations.

Library services (e.g. reserves) and locations. To further explore the association between the sub-populations and the inclusion of content related to library services and locations, three follow-up chi-square tests were run to examine associations between

- Universities and four-year colleges
- Universities and two-year colleges
- Four-year colleges and two-year colleges

Figure 13 illustrates that the greatest variation in responses to this statement existed within the responses from participants employed by a university. The results from the three follow-up chi-square tests indicated that there was not a significant association between universities and two-year colleges ($\chi^2(1) = 4.484$, $p > .017$; Phi = .348) or between four-year colleges and two-year colleges ($\chi^2(1) = .122$, $p > .017$; Phi = .059). A significant association was found between universities and four-year colleges, ($\chi^2(1) = 8.849$, $p < .017$). A Phi value of .425 indicated a moderate association existed between universities and four-year colleges.

Figure 13. Chi-Square: Library Services and Locations
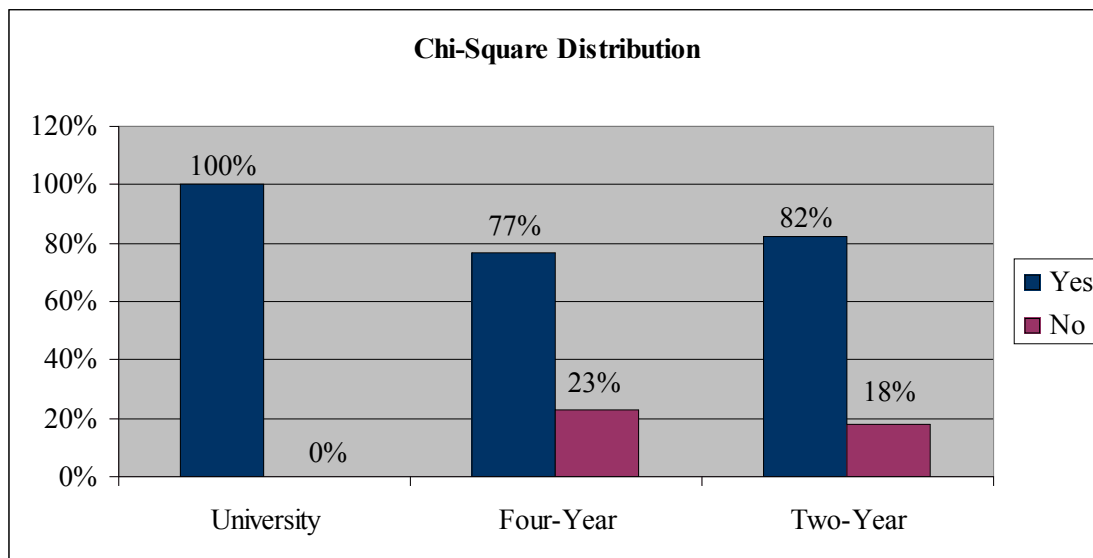
Selecting appropriate tools (e.g. indexes). To further explore the association between the sub-populations and the inclusion of content related to the selection of appropriate tools, three follow-up chi-square tests were run to examine associations between

- Universities and four-year colleges
- Universities and two-year colleges
- Four-year colleges and two-year colleges

Figure 14 illustrates that the greatest variation in responses to this statement existed within the responses from participants employed by a university. The results from the three follow-up chi-square tests indicated that there was not a significant association between universities and two-year colleges ($\chi^2(1) = 2.508$, p > .017; Phi = .208) or between four-year colleges and two-year colleges ($\chi^2(1) = 2.856$, p > .017; Phi = .286). A significant association was found between universities and four-year colleges, ($\chi^2(1) = 11.318$, p < .017). A Phi value of .481 indicated a strong association existed between universities and four-year colleges.

Figure 14. Chi-Square: Selecting Appropriate Tools
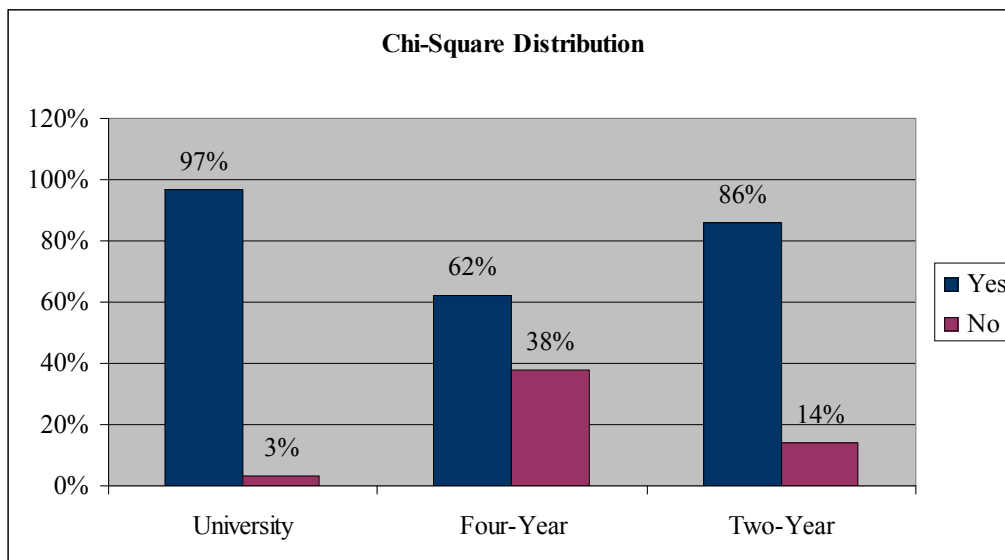
Use of/searching in other reference or research tools (online and/or paper). To further explore the association between the sub-populations and the inclusion of content related to the use of other reference and research tools, three follow-up chi-square tests were run to examine associations between

- Universities and four-year colleges
- Universities and two-year colleges
- Four-year colleges and two-year colleges

Figure 15 illustrates that the greatest variation in responses to this statement existed within the responses from participants employed by a four-year college. The results from the three follow-up chi-square tests indicated that there was not a significant association between universities and two-year colleges ($\chi^2(1) = .326$, p > .017; Phi = .075) or between four-year colleges and two-year colleges ($\chi^2(1) = 3.512$, p > .017; Phi = .317). A significant association

was found between universities and four-year colleges, (χ^2 (1) = 6.773, p < .017). A Phi value of .372 indicated a moderate association existed between universities and four-year colleges.

Figure 15. Chi-Square: Other Reference Tools
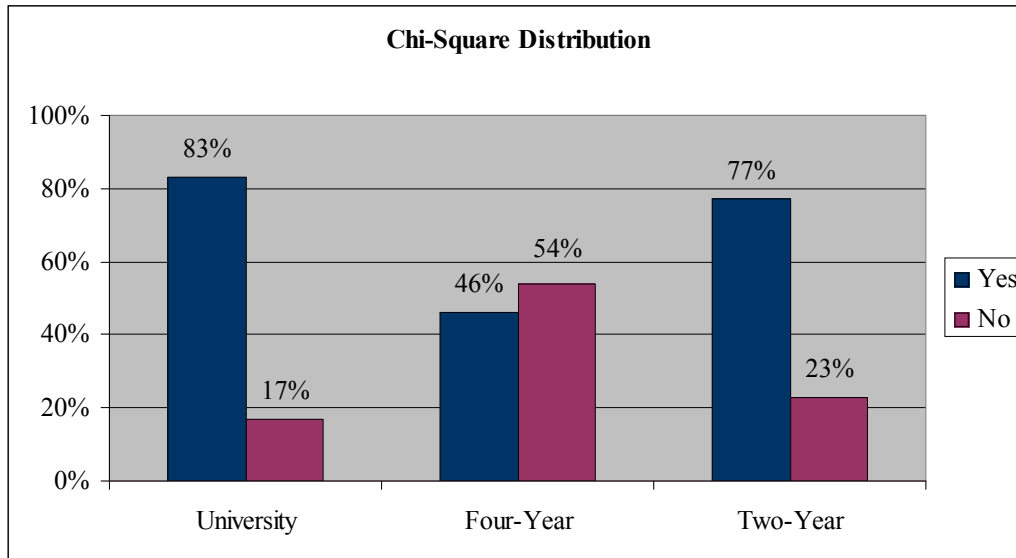
Call numbers. To further explore the association between the sub-populations and the inclusion of content related to call numbers, three follow-up chi-square tests were run to examine associations between

- Universities and four-year colleges
- Universities and two-year colleges
- Four-year colleges and two-year colleges

Figure 16 illustrates that the greatest variation in responses to this statement existed within the responses from participants employed by a four-year college. The results from the three follow-up chi-square tests indicated that there was not a significant association between universities and two-year colleges (χ^2 (1) = .182, p > .017; Phi = .056) or between universities and two-year colleges (χ^2 (1) = 4.284, p > .017; Phi = .309). A significant association was found between two-year colleges and four-year colleges, (χ^2 (1) = 5.272, p < .017). A Phi value of .388 indicated a moderate association existed between universities and four-year colleges.

Figure 16. Chi-Square: Call Numbers

Chi-Square Distribution
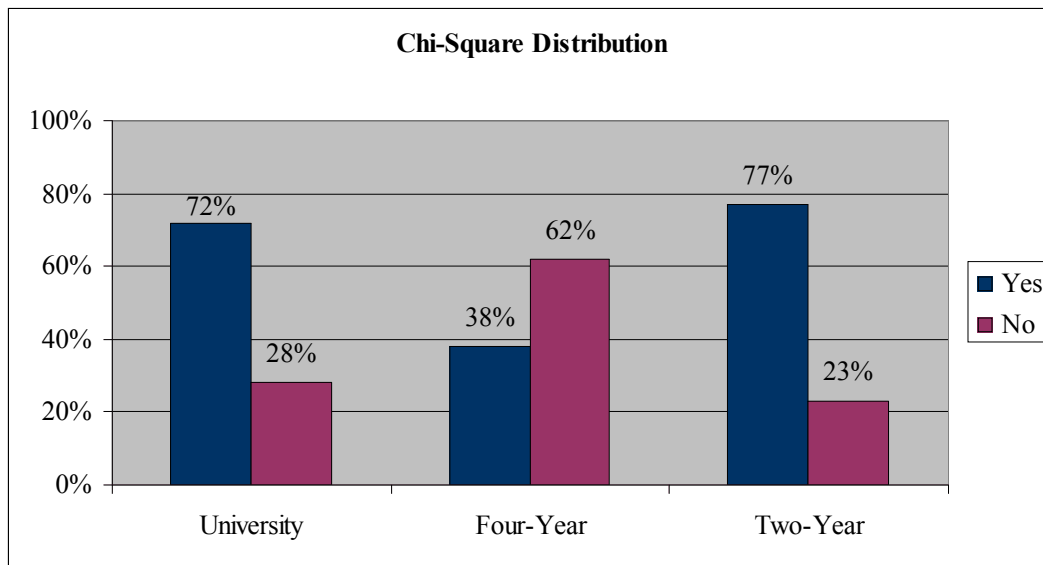
Question 18. Which of the five broad standards do you address during information literacy instruction? This question explored the extent to which respondents addressed the five broad information literacy standards as defined by the American Library Association during instructional sessions. Each of the five statements within this question had two answer options: yes or no. The frequency distribution of responses is provided in Table 10. Figure 17 illustrates the percentages of the total population who answered "yes" to each of the statements within the question.

Table 10. Frequency Distribution: ALA Standards Addressed

Statement	Yes		No	
	Number	Percentage	Number	Percentage
18.1. Student determines the nature and extent of the information needed	58	82%	13	18%
18.2. Student accesses needed information effectively and efficiently	63	89%	8	11%
18.3. Student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system	56	79%	15	21%
18.4. Student, individually or as a members of a group, uses information effectively to accomplish a specific purpose	52	73%	19	27%
18.5. Student understands that information literacy is an ongoing process and an important component of lifelong learning and recognizes the need to keep current regarding new developments in his or her field	47	67%	24	33%

Figure 17. "Yes" Responses to Question 18

Percentage of "Yes" Responses to Question 18

Statement	Percentage
18.1.	82%
18.2.	89%
18.3.	79%
18.4.	73%
18.5.	67%
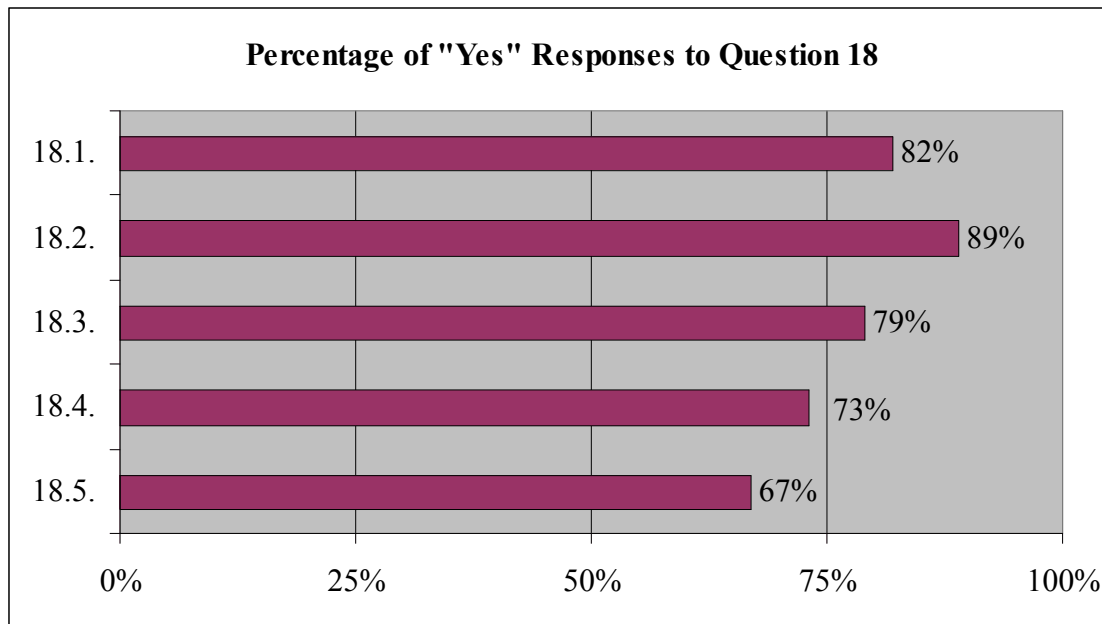
Table 10 and Figure 17 show that the majority of respondents addressed all five of ALA's broad information literacy standards during existing library instruction practices. This finding indicated that Kansas's academic librarians were conscious of designing library instruction that satisfied information literacy standards set by a guiding professional organization.

Chi-square test and Cramer's V measures were utilized to examine associations between the sub-populations on each of the statements within question twelve. According to the results, no statements had significant associations (see Appendix C for a complete table of chi-square results and Cramer's V measures).

Quantitative Findings: Research Question 1.2.

This section reported the findings from the quantitative measures of this study designed to explore sub-question 1.2.: what content areas are addressed during information literacy instructional sessions? The two survey questions analyzed in this section were utilized to distinguish between potential professional development needs designed to assist in the delivery of various skills-based content areas and ALA's five broad information literacy standards.

The findings derived from the frequency distributions of the total population illustrated that Kansas academic librarians seem to be proficient at core skill 4.2.identified under ACRL's Standards for Proficiency in Instruction: "keeps aware of student assignments and the role of the

library in completing these assignments". The findings also suggested that Kansas academic librarians were cognizant of ensuring instruction practices were designed to meet the guiding information literacy standards as defined by the American Library Association.

Chi-square test and Cramer's V measures were utilized to examine associations between the sub-populations on each of the statements within questions sixteen and eighteen. A significant association was found between the sub-populations and whether of not the following content areas were addressed during library instruction:

- Library services (e.g. reserves) and location (χ^2 (2) = 8.208, p <.05, Cramer's V = .340). Follow-up tests revealed the significant association existed between universities and four-year colleges (χ^2 (1) = 8.849, p < .017, Phi = .425).

- Appropriate tools selection (e.g. indexes), (χ^2 (2) = 11.013, p < .05, Cramer's V = .394). Follow-up tests revealed the significant association existed between universities and four-year colleges (χ^2 (1) = 11.318, p < .017, Phi = .481).

- Use of/searching in other reference or research tools (online and/or paper), (χ^2 (2) = 7.092, p < .05, Cramer's V = .316). Follow-up tests revealed the significant association existed between universities and four-year colleges (χ^2 (1) = 6.773, p < .017, Phi = .372)

- Call numbers, (χ^2 (2) = 11.013, p < .05, Cramer's V = .394). Follow-up tests revealed the significant association existed between two-year colleges and four-year colleges (χ^2 (1) = 5.272, p < .017, Phi = .388).

Research Question 1.3.

Survey questions 19 – 21 were designed to explore the current assessment practices employed by academic librarians in the state of Kansas to determine the effectiveness of information literacy instruction. These questions were important to the study because they provided information related to proficiency one (assessment and evaluation skills) of ACRL's Standards for Instruction Librarians (see Table 3 on page 40).

Question 20. Is student knowledge of information literacy concepts formally assessed after library instruction? Table 11 shows that only thirty percent of the total population reported formally assessing information literacy concepts after library instruction. The literature indicated that the ability to successfully demonstrate the effectiveness of information literacy instruction

was critical to achieving positive perceptions of the importance of information literacy within the various stakeholders present in higher education. The finding that less than one-third of the total population formally assessed library instruction was disconcerting to the researcher.

Table 11. Frequency Distribution: Information Literacy Assessed

Statement	Yes		No	
	Number	Percentage	Number	Percentage
20. Is student understanding of information literacy concepts formally assessed?	21	30%	50	70%

Chi-square test and Cramer's V measures were utilized to examine the association between the sub-populations and whether or not library instruction was formally assessed. According to the results, there was not a significant association between the sub-populations and the formal assessment of library instruction, $\chi^2 (2) = 4.667$, $p > .05$. A Cramer's V of .256 indicated a weak association between the sub-populations and the formal assessment of library instruction (see Appendix C for a complete table of chi-square results and Cramer's V measures).

Question 19. Which of the five broad standards do you assess? This question explored the extent to which the 21 respondents who indicated they formally assessed information literacy assessed the five broad information literacy standards as defined by the American Library Association. Each statement within question nineteen had two answer options: yes or no. The frequency distribution of responses is provided in Table 12. Figure 18 illustrates the percentages of the total population who answered "yes" to each of the statements within the question.

Table 12. Frequency Distribution: Information Literacy Standards Assessed

| | Yes | | No | |
Statement	Number	Percentage	Number	Percentage
19.1. Student determines the nature and extent of the information needed	58	82%	13	18%
19.2. Student accesses needed information effectively and efficiently	63	89%	8	11%
19.3. Student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system	56	79%	15	21%
19.4. Student, individually or as a members of a group, uses information effectively to accomplish a specific purpose	52	73%	19	27%
19.5. Student understands that information literacy is an ongoing process and an important component of lifelong learning and recognizes the need to keep current regarding new developments in his or her field	47	67%	24	33%

Figure 18. "Yes" Responses to Question 19

Percentage of "Yes" Responses to Question 19

Category	Percentage
19.1.	67%
19.2.	73%
19.3.	79%
19.4.	89%
19.5.	82%
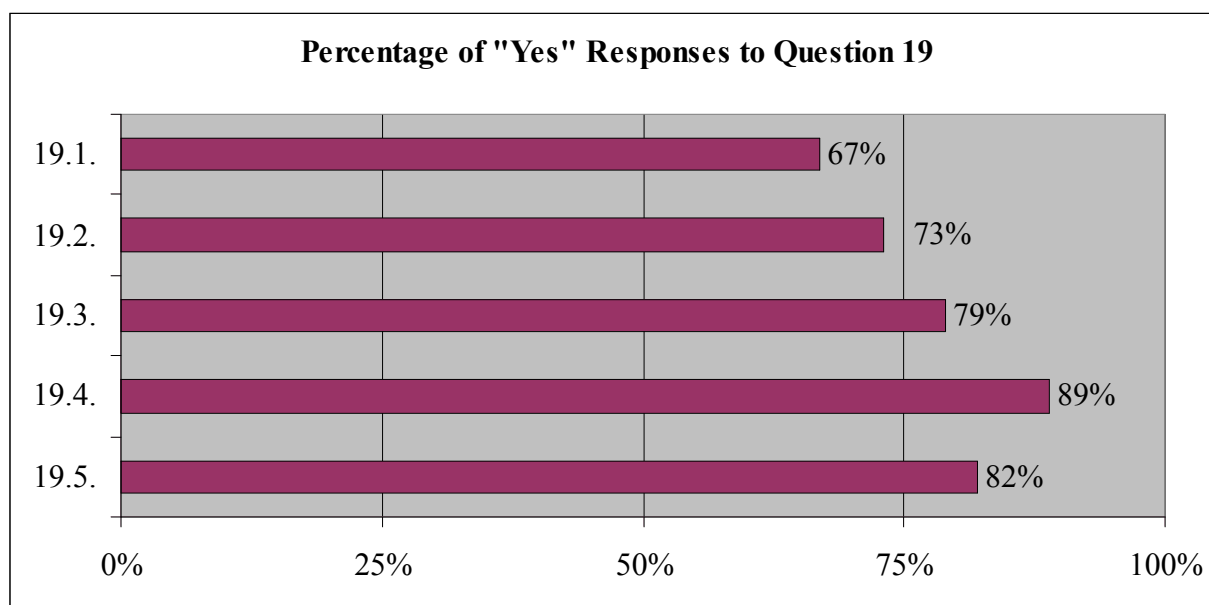
Table 12 and Figure 18 show that the majority of the 21 respondents who indicated they formally assessed the effectiveness of the library instruction assessed all five of ALA's broad information literacy standards. This finding confirmed the findings for question 18 in that Kansas's academic librarians were conscious of designing library instruction that satisfied information literacy standards set by a guiding professional organization.

Chi-square tests and Cramer's V measures were utilized to examine the association between the sub-populations and whether or not the five broad information literacy standards were formally assessed. There were no significant associations between the sub-populations and the formal assessment of five broad information literacy standards after library instruction (see Appendix C for a complete table of chi-square results and Cramer's V measures).

Question 21. How is information literacy assessed? This question explored the various methods utilized by the Kansas academic librarians in order to assess formal library instruction. The twenty-one survey participants who indicated they assessed instructional effectiveness were presented with a list of ten potential assessment activities and asked to select whether or not they utilized each activity. Each statement within question 21 had two answer options: yes or no. The frequency distribution of responses is provided in Table 13. Figure 19 illustrates the percentages of the total population who answered "yes" to each of the statements within the question.

Table 13. Frequency Distribution: Methods of Assessment

Statement	Yes		No	
	Number	Percentage	Number	Percentage
21.1. Multiple choice/short answer quiz or exam	10	48%	11	52%
21.2. Essay/quiz or exam	3	14%	18	86%
21.3. Included in course professor's quiz or exam	7	33%	14	67%
21.4. Face to face interview (oral exam)	7	33%	14	67%
21.5. Record of research process (e.g. research log, reflective writing on process)	10	48%	11	52%
21.6. Assessment of bibliography used in paper	12	57%	9	43%
21.7. Assessment of complete paper and bibliography	5	24%	16	76%
21.8. Assignments other than papers	14	67%	7	33%
21.9. Attitudinal assessment: as part of a general survey of library users' attitudes	5	24%	16	76%
21.10. Attitudinal assessment: separate survey pertaining to library instruction	13	62%	8	38%

Figure 19. "Yes" Responses to Question 21
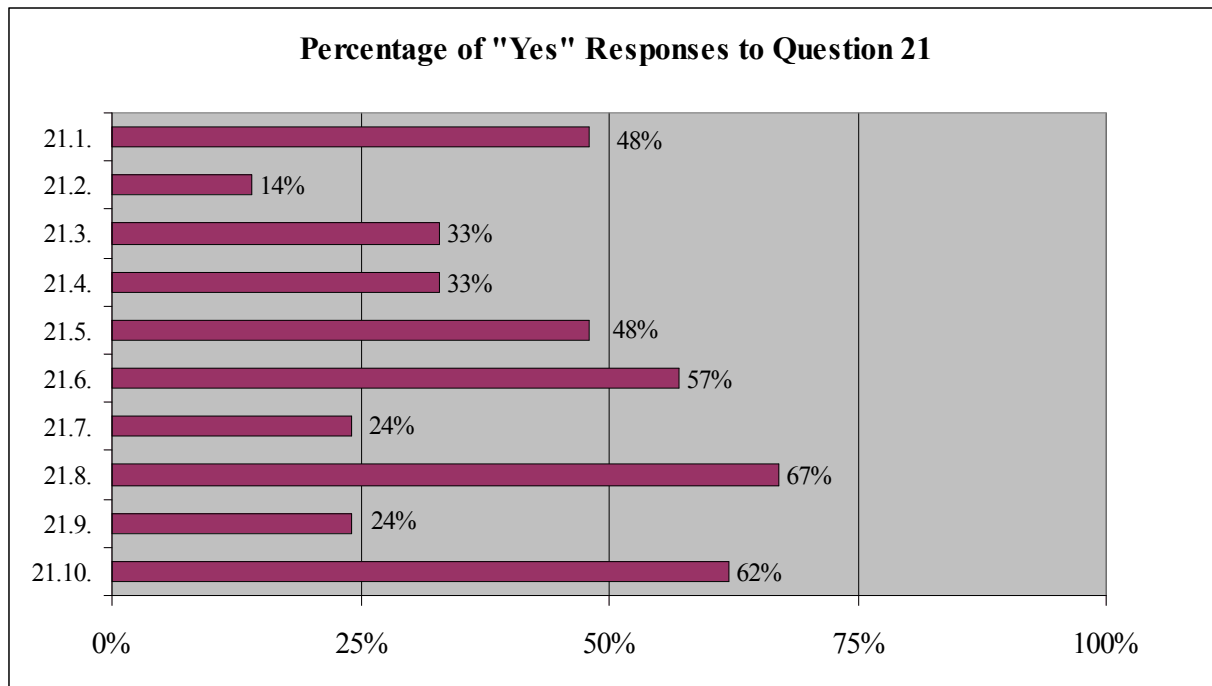
Table 13 and Figure 19 illustrate that the majority of respondents utilized three out of the ten assessment methods presented as statements within question 21 during existing library instruction practices. This finding indicated that Kansas's academic librarians have a preference for the following assessment methods:

- Assessment of bibliography used in paper
- Assignments other than papers
- Attitudinal assessment: separate survey pertaining to library instruction

Chi-square tests and Cramer's V measures were utilized to explore the association between the sub-populations and the assessment methods employed to examine the effectiveness of library instruction. As shown in Table 13, there were no significant associations between the sub-populations and the ten statements listing methods utilized for formal assessment purposes (see Appendix C for a complete table of chi-square results and Cramer's V measures).

Quantitative Findings: Research Question 1.3.

This section reported the findings from the quantitative measures of this study designed to explore sub-question 1.3.: what assessment practices are employed to determine the effectiveness of information literacy instruction? The three survey questions analyzed in this

section were utilized to explore the current assessment practices employed by academic librarians in the state of Kansas in an effort to determine the effectiveness of information literacy instruction. These questions were important to the study because they provided information related to proficiency one (assessment and evaluation skills) of ACRL's Standards for Instruction Librarians (see Table 3 on page 40).

The findings derived from the frequency distributions of the total population illustrated that only thirty percent of the total population assessed the effectiveness of information literacy instruction. The findings from the chi-square tests and Cramer's V measures suggested that future professional development opportunities in the assessment and evaluation skills should be designed to support the needs of the total population as no significant associations between the sub-populations on this measure were found.

Perceptions of Professional Development Needs

Question 23 asked participants to self-identify professional development activities they would be interested in attending. This question was important to the study because it allowed the respondents to indicate the types of professional development activities they would be willing to invest time and energy in attending. Respondents were asked to indicate on the one to four Likert rating scale their degree of interest in attending programming on the following topics: assessment and evaluation skills, information literacy curriculum knowledge, information literacy integration skills, instructional design skills, presentation skills, and teaching skills. The frequency distribution of responses is provided in Table 14. Figure 20 illustrates the percentages of the total population who answered "somewhat interested", "interested", or "very interested" to each of the statements within the question.

Table 14. Frequency Distribution: Self-Perceived Professional Development Interest

Statement	Not At All Interested		Somewhat Interested		Interested		Very Interested	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
23.1. Assessment and evaluation skills	5	7%	16	23%	20	28%	30	42%
23.2. Information literacy curriculum knowledge	6	8%	19	27%	24	34%	22	31%
23.3. Information literacy integration skills	7	10%	14	20%	21	30%	29	41%
23.4. Instructional design skills	5	7%	10	14%	16	23%	40	56%
23.5. Presentation skills	9	13%	13	18%	22	31%	27	38%
23.6. Teaching skills	8	11%	13	18%	24	34%	37	26%

Figure 20. Cumulative Percent Interested in Professional Development

Figure 20. Cumulative Percent Interested in Professional Development
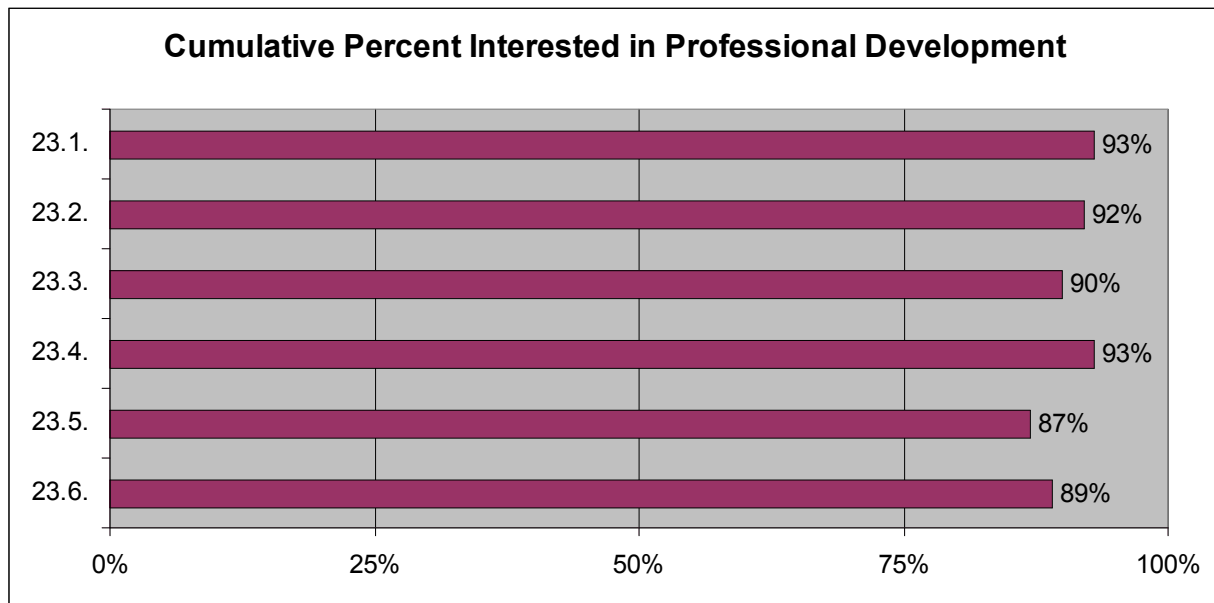
Table 14 and Figure 20 show that the majority of the total population was interested in professional development opportunities designed to strengthen individual abilities in each of the six ACRL instruction proficiencies listed in question 23. This finding should assist K-LIRT in designing future professional development opportunities.

Chi-square tests and Cramer's V measures were utilized to examine the associations between the sub-populations and their preference for professional development on the instruction

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proficiencies. According to the results, no significant associations were found between the sub-populations and their self-perceived professional development needs (see Appendix C for a complete table of chi-square results and Cramer's V measures).

Quantitative findings: perceptions of professional development needs.

This section reported the findings from the quantitative measures of this study designed to explore respondents' self-perceived professional development needs on each ACRL's instruction proficiencies. The findings indicated that no differences were found between the preferences of the sub-populations. The findings also indicated that the majority of the total population indicated interested in future professional development opportunities in all six proficiencies. These two findings coupled with the findings presented in the previous sections should assist K-LIRT in setting priorities for future professional development trainings and workshops.

Results of Open-Ended Questions

This section presents data generated from written responses to seven open-ended questions on the survey. Ample space was provided for respondents to clarify or expand on their selections from the multiple-choice portion of the questionnaire. Due to the limited amount of information provided within responses given by the various sub-populations in this study, the answers to open-ended questions were analyzed with respect to the needs of the total population. Responses to the open-ended questions were analyzed for codes and developed into categories. Data was displayed via condensed narrative text of key findings and supported by visual display of information in the form of graphs where appropriate.

Research Question 1.1.

Survey questions eleven, thirteen, fourteen, and fifteen were designed to explore the current means by which *offered* and *required* information literacy instruction was being delivered by academic librarians in the state of Kansas. These questions were important to the study because they provided information related to stakeholders' perceptions of the importance of information literacy, the professional identity of instruction librarians, and to proficiency three (information literacy integration skills) and proficiency four (instructional design skills) of ACRL's Standards for Instruction Librarians (see Table 3 on page 40).

Question 11: What other methods of formal library instruction do you offer that is not mentioned in the selections above? Please describe any additional offerings in the space provided below. A total of forty responses were provided for this question. Four categories emerged from the open-ended responses provided to describe additional delivery methods of offered library instruction that were not provided in the list of statements in question ten. The four categories are displayed in Figure 21.

Figure 21. Offered Library Instruction Categories
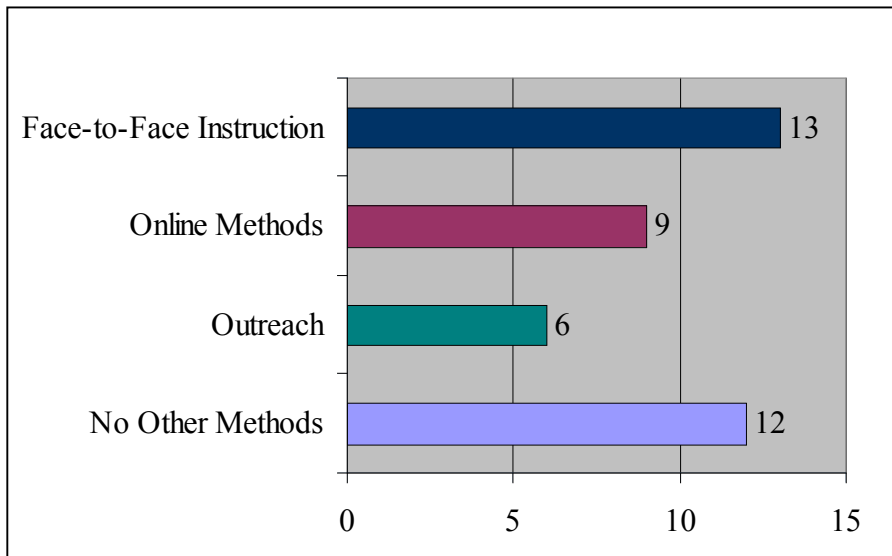
Face-to-face instruction. Thirteen responses were included in this category. The additional delivery methods for offered library instruction presented in this category included formal face-to-face group workshops such as "brown bag lectures on electronic resources" and "faculty professional development workshops" and informal one-on-one instruction available on a "drop in" or "as needed" basis. The formal group workshops loosely correlate with statements 10.1. library instruction sessions less than a full class period in duration, 10.2. one-class, course-related library instruction session (the "one-shot lecture), and 10.3.one-class, non-course-related library instruction session (the "one-shot" lecture). However, the differences between the group workshops and the statements in question ten appear to be in the location in which the instruction was provided (library versus classroom). This was an important distinction for K-LIRT as the physical space available may prevent some libraries from having a dedicated area for instruction. Professional development intended to strengthen instructional design of activities and teaching skills for areas without the instructional tools present within a traditional classroom may be beneficial for K-LIRT's target population.

The informal one-on-one instruction responses provided for this question related to traditional reference services provided within academic libraries. Individualized services are a hallmark of the library profession and mirror tutoring services provided within other areas of academe. Professional development workshops designed to reinforce tutoring techniques and pedagogy warrants discussion with K-LIRT, since the positive and negative experiences during individualized instruction play a critical role toward developing "buy in" from stakeholders such as faculty and students.

Online methods. Nine responses were included in this category. The majority of responses included informal library instruction available to students on an as-needed basis. Such responses included instruction modules offered via "LibGuide bibliographies, as "short instructional modules on Facebook, as posts, that the 'fans' our of library page receive", and as online instruction sessions "hosted on Wimba". Other respondents indicated online instruction was offered through the use of tools including Blackboard message boards, IM (instant messaging), email, and online video tutorials. These are important delivery methods for K-LIRT to recognize because the quantitative responses to question ten illustrated that very few libraries were providing instruction via electronic modes of delivery. The responses provided within this question provide K-LIRT with guidance on where to focus future professional development workshops on online instruction

Outreach. Six responses provided by participants indicated institutions offered outreach to K-12 schools or to "neighboring cities within the county." This category provided valuable information for K-LIRT. It illustrated that academic libraries within the state of Kansas fulfill multiple roles within the communities and serve a variety of constituents. The instructional needs of K-12 students and of community patrons differ from the needs of those with the academic community and K-LIRT should consider whether professional development is needed to strengthen the instructional potential within outreach.

No other methods. There were twelve responses that indicated no other methods of library instruction delivery were offered by respondents in addition to those mentioned in the statements of question ten. One respondent offered the following qualification to his/her response: "We do not offer any others, but are planning a for-credit course that will eventually be online. We are also planning self-paced online tutorials."

Question 13: What other institutional requirements of formal library instruction does your institution have that is not mentioned in the selections above? Please describe any additional offerings in the space provided below. A total of 26 responses were provided for this question. No categories emerged from open-ended responses provided to describe additional delivery methods of required library instruction that was not provided in the list of statements in question twelve. Only four of the respondents provided a clarifying statement to their response. The clarifications were

- A one-shot instructional session is required in a college orientation course that all full-time, first-time college freshmen have to take. Unfortunately, the non-traditional students or part-time students aren't required to take this class.

- At this point, there are no requirements of formal library instruction, except for what I set up with the teachers of the composition classes. There is some talk of moving toward a mandatory, one-credit "college skills" class, which would include a research instruction component.

- Information literacy is defined and listed among the student learning outcomes in the general education program. This program will be piloted next fall and should be instituted after that. Exactly how we accomplish the aims of the program are still being worked out.

- We are currently in the process of reviewing our general education requirements and information literacy is a component of that process (as agreed to by the entire faculty).

The quantitative responses to question twelve of the survey illustrated that required library instruction did not appear to be an institutional priority for many higher education institutions at this point in time. However, the responses to this question indicated that initial discussions might be taking place in some institutions. This signified an area in which K-LIRT might monitor future development of discuss the need for further exploration.

Question 14: If credit-bearing library instruction is required by your institution, how many credit hours? The responses to this open-ended question asked respondents to identify the number of credit hours attached to required courses if they were available at their institution. A total of 23 responses were provided for this question. Three respondents indicated a one credit hour course was required by their institution, one respondent indicated that a six credit hour course in "lawyering" was required by their institution, two respondents indicated a three credit hour course was required by their institution, and one respondent indicated that a required, two

hour credit course was currently "in proposal" at their institution. The remaining sixteen responses were categorized as "no credit hours required".

Question 15: If credit-bearing library instruction is offered but not required by your institution, how many credit hours? Thirty-three responses were provided for this question. Two categories emerged from the responses. They were credit hour courses offered (thirteen responses) and no credit hour course offered (twelve responses). The responses for the number of credit hours available for an offered course included: thirteen responses for a one credit hour course, three responses for a two credit hour course, and three responses for a three credit hour course. Twelve respondents indicated that no credit courses were offered at their institutions.

Two responses were categorized as "unspecified" due to the following responses: "some of our librarians do offer credit classes but the number of credit varies as does the special focus of the class and target audience" and "it is not required by the institution, it is offered as an optional course that can be taken at any time for any program if needed."

Research Question 1.2.

Survey question seventeen was designed to further explore the content area addressed during information literacy instruction sessions offered by academic librarians in the state of Kansas. This question was important to the study because it provided information related to proficiency two (information literacy curriculum knowledge) and proficiency four (instructional design skills) of ACRL's Standards for Instruction Librarians (see Table 3 on page 54).

Question 17: What other content do you teach during formal library instruction that is not mentioned in the selections above? Please describe any additional offering in the space provided below. A total of 43 responses were provided for this question. Three categories emerged from open-ended responses provided to describe additional content areas addressed during library instruction that were not provided in the list of statements in question sixteen. The three categories are displayed in Figure 22.

Figure 22. Additional Content Areas in Library Instruction
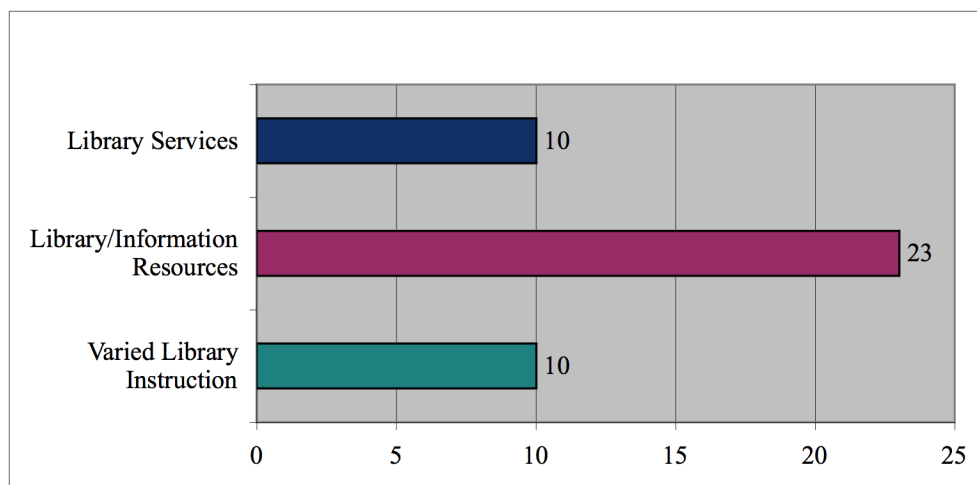
Library services. Although the statements for question sixteen on the closed-ended portion of the survey included "library services" as an option for content areas included in library instruction, there were ten responses provided to this question that clarified the types of services that were included during instruction sessions. The responses in this category included instruction in services such as interlibrary loan, library policies and procedures, and instruction on the use of various technological tools provided as a general service to library patrons such as scanners, printers, and computers. These responses provided information to discuss with K-LIRT because there is a tendency to ignore basic library services during instruction and focus specifically on the use of specific resources. However, as these statements illustrated, even basic library services are important to address to assist those patrons who are not yet familiar with existing services.

Library/information resources. Various types of library/information resources were provided in the statements for question sixteen on the closed-ended portion of the survey. The 23 responses to this question provided an in-depth view into what specific resources are being taught in library instruction sessions. The categories included library resources, Internet resources, and discipline specific resources. Responses within the "library resources" category included instructional content on the Kansas Library Catalog, WorldCat, the library's web page, and on library sponsored bibliographic management software such as RefWorks, Cite it Right, and EndNote. The "Internet resources" category indicated library instruction was provided on content areas such as Google books, Google scholar, and on general Internet search and

evaluation techniques. The category "discipline specific resources" included library and Internet resources that focused on the "organization", "value-assignment", and "information patterns" of specific disciplines.

The responses provided within the "library/information resources" category will present K-LIRT with better understanding of how to focus future professional development workshops designed to assist in the instruction of popular library and information resources.

Varied library instruction. There were ten responses provided that, when combined, formed a category indicative of varied library instruction. Responses for this category included content areas such as "the life cycle of information", "the history of the transmission of knowledge", "the taxonomies of information in various seminars", and "Ohh, you name it and I'll teach it". These responses illustrated that the content areas addressed during library instruction widely varied and were often difficult to capture in a standardized list or form.

Research Question 1.3.

Survey question 22 was an open-ended question that asked participants to list any additional assessment methods utilized that were not included in the statements provided in question 21. This question was important to the study because it provided information related to proficiency two (assessment and evaluation skills) of ACRL's Standards for Instruction Librarians (see Table 3 on page 40).

Question 22: What other assessment methods of formal library instruction do you utilize that is not mentioned in the selections above? Please describe any additional offering the space provided below. A total of sixteen responses were provided for this question. Two categories emerged from open-ended responses provided to describe additional assessment methods utilized to evaluate the effectiveness of library instruction that were not provided in the list of statements in question 21. The two categories are displayed in Figure 23.

Figure 23. Additional Assessment Methods

Additional Assessment Methods
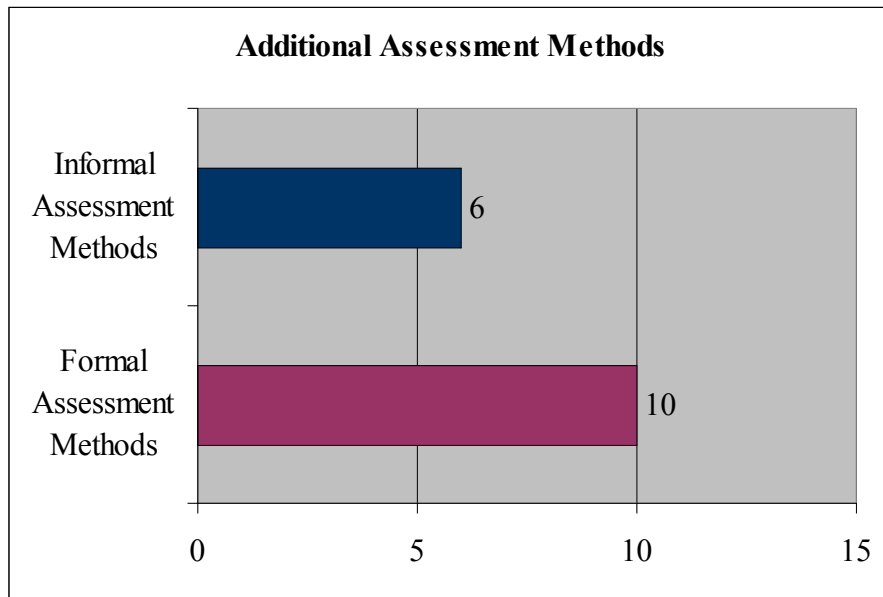
Informal assessment methods. The informal assessment methods category included six
responses. The respondents included a research log, instructor feedback, use of personal
response systems during class, online gaming, and a one-minute paper during class that asked
such questions as "what did you learn that was new, what will you use immediately, and "what
do you want to know more about" as examples of informal assessment methods.

Formal assessment methods. Ten responses were provided for the category "formal
assessment methods." This category included responses such as the utilization of required
disciplinary work products such as worksheets and papers, pre- and post-tests, the use of rubrics,
and formal assessment collected through "student feedback generated from a college graduate
exit survey, college specific question included in CCSSE surveys, and questions included in
Noel Levitz survey."

Self-Perceived Professional Development Needs

Survey question 24 was an open-ended question that asked participants to identify any
additional professional development needs that were not included in the options provided in
question 23. This question was important to the study because it allowed the respondents to
indicate the types of professional development activities they would be willing to invest time and
energy in attending.

Question 24: What other professional development needs are you interested in that are not mentioned in the selections above? Please describe any additional offerings in the space provided below. A total of seven responses were provided for this question. The information provided in response this question clarified specific areas in which the respondents' perceived a need for professional development in order to improve the effectiveness of library instruction. One participant requested professional development opportunities in the area of cataloging, with emphasis placed on "media/DVDs". Other participants requested training on "library resources", "pedagogical skills", "methods for promoting active learning", "creating learning objects used during instruction sessions", and on "how to create a for-credit course". The final response for this question included the following statement that should be discussed with K-LIRT in terms of creating future networking and colleague-to-colleague opportunities:

> My professional development time and money (which is limited due to the current economic situation) is spent on opportunities directly related to my position. We rely on our colleagues to bring back what they learn from conferences. So in the future, the instruction librarian will be responsible for sharing this information with us.

Findings of open-ended questions

The responses to open-ended questions on the survey were analyzed for codes and developed into categories. One hundred and eighty-one responses yielded nine categories, which were provided in the respondents' answers to the questions on this portion of the survey. The overall categories and their total responses are presented in Figure 24.

Figure 24. Overall Emerging Categories
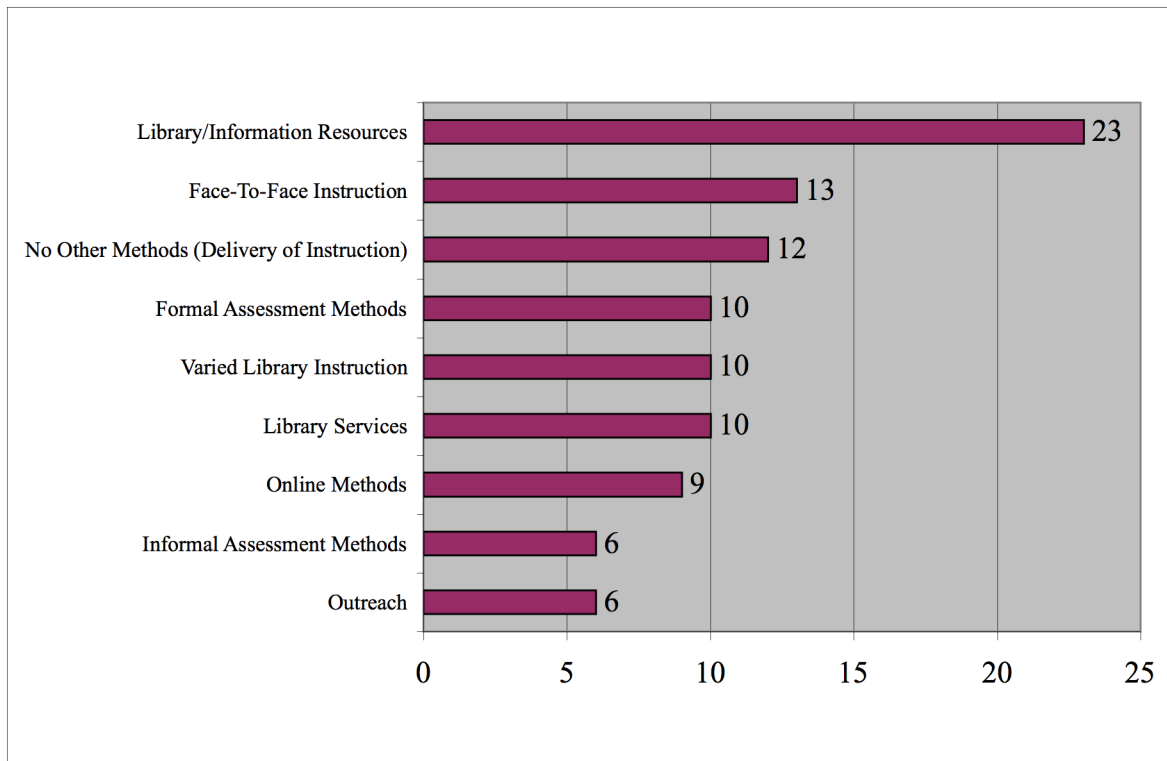
The findings derived from the open-ended questions of the survey can be utilized during discussions with K-LIRT to clarify the existing practices and the professional development needs of the total population with respect to the three sub-research questions of this study: the various means by which information literacy instruction was delivered, the specific content areas addressed during information literacy instruction sessions, and the assessment practices employed to determine the effectiveness of information literacy instruction.

Research question 1.1. Four categories emerged from the open-ended questions designed to explore the various means by which information literacy instruction was delivered: face-to-face, online instruction, outreach, and no other methods. The finding that face-to-face is a common delivery method is supported within the findings of the quantitative portion of the survey. However, responses to the open-ended questions further illustrated that face-to-face library instruction does not always occur within the confines of a traditional classroom setting. This was an important distinction and is something for K-LIRT to consider when developing future professional development workshops.

The findings from this section also suggested that online library instruction might be occurring more frequently than the quantitative portion of the survey portrayed. The responses

indicated a variety of online tools such as instant messaging, course management software, and facebook were utilized for instruction purposes. These types of tools were not available within the statements provided on the quantitative portion of the survey and they offered K-LIRT with additional opportunities for professional development workshops.

The inclusion of outreach as an instructional delivery method was an important finding. K-LIRT has generally focused its training on items specific to the higher education environment. However, the inclusion of outreach as an instructional delivery method on this portion of the survey indicated that it might benefit K-LIRT to include this topic in further discussions on professional development needs.

Research question 1.2. Three categories emerged from the findings derived from the question designed to explore additional content areas included during library instruction practices: library services, library resources, and varied library instruction. The categories that emerged provided an in-depth look into the specific services and resources that were being included as a component during instruction sessions. The findings included reinforcement as to the need to provide instruction on basic library services that are sometimes taken for granted. The responses to this question also found that specific library/information resources such as Google scholar and bibliographic management software and are commonly addressed and may serve as an interest area for future training.

Research Question 1.3. Two categories emerged from the findings derived from the question designed to explore any additional assessment methods utilized to determine the effectiveness of information literacy instruction. The categories indicated informal and formal assessment methods were used for assessment purposes. The quantitative portion of the survey indicated that very few institutions performed assessment. The examples provided as responses to the question can be utilized by K-LIRT to development professional development that illustrates some of the various ways that assessment can be accomplished.

Self-perceived professional development needs. No categories emerged from the responses provided to ascertain self-perceived professional development needs, which were similar to finding in the quantitative portions of the survey. Most of the comments suggested that professional development designed to increase proficiency in instructional design skills were of great interest to respondents. This finding should be included in discussions with K-LIRT when assessing future professional development priorities.

Chapter Summary

This chapter presented the quantitative analyses, analyses of the responses to the open-ended questions, and the findings for this study. Data was collected from the responses to closed-ended and open-ended questions of an electronic survey. The data in this study was obtained from 71 Kansas academic librarians with instruction as a function of their job duties.

The demographic data indicated that a two-year college employed 22 respondents, a four-year college employed thirteen respondents, and a university employed 36 respondents. Most of the respondents employed by a two-year college were categorized as holding the job title of director and held an academic rank of professor or staff. Most of the respondents employed by a four-year college were categorized as holding the job title of administrator and held an academic rank of faculty. The majority of respondents employed by a university were categorized as holding the job title of subject librarian and were ranked as assistant professors/assistant librarians. All but one of the respondents employed by a two-year college were 41 years of age or older. Most of the respondents employed by a four-year college were over the age of 56 and most of those employed by a university were between the ages of 41 – 55. The majority of respondents within two-year colleges, four-year colleges, and universities had served as an academic librarian between 5 – 15 years. Most of the respondents employed by a two-year or four-year college have served in their current position between 5 – 15 years, while most of the respondents employed by a university have been employed in the current position for less than 5 years.

The quantitative measures in this study were provided by the categorical data collected from the twelve closed-ended questions of the survey. Frequency distributions provided information toward the professional development needs of the total population. Pearson's chi-square tests were used to determine whether there was a significant association between the sub-populations (universities, four-year colleges, and two-year colleges). A Cramer's V was used to determine the strength of the association between the differences in the sub-populations. The findings indicated that future K-LIRT discussions on professional development needs for the total population might include opportunities to improve existing library instruction provided via face-to-face and electronic delivery means, to improve instructional design skills that assist to create an instructional session capable of addressing a wide variety of content, and to increase the utilization of assessment as means to examine instructional effectiveness. Chi-square tests

indicated significant associations existed between the sub-populations and information literacy instruction delivered via multiple sessions but not a credit course (χ^2 (2) = 6.387, p < .05) and as an online credit course (χ^2 (2) = 8.833, p < .05). Significant associations were also found between the sub-populations and the extent to which they addressed library services and locations (χ^2 (2) = 8.208, p < .05), selecting appropriate tools (χ^2 (2) = 11.013, p < .05), the use of/searching in other reference or research tools (χ^2 (2) = 11.013, p < .05), and call numbers (χ^2 (2) = 11.013, p < .05).

Responses to the open-ended questions of the survey were analyzed for codes and developed into categories. One hundred and eighty-one responses yielded nine categories, which were provided in the respondents' answers to the questions on this portion of the survey. The categories that emerged provided clarification toward the professional development needs of the total population. The categories illustrated potential needs in library/information resources (23 responses), face-to-face instruction methods (thirteen responses), formal assessment methods (ten responses), library services (ten responses), online instruction methods (nine responses), informal assessment methods (six responses), and outreach (six responses).

CHAPTER 5 - Summary, Conclusions, Discussion, and Recommendation for Future Studies

Chapter Overview

The purpose of this study was to assess the professional development needs of academic instruction librarians regarding current library instruction practices required to improve information literacy instructional effectiveness in Kansas universities, four-year colleges, and two-year colleges. The primary research question explored was: "What professional development opportunities are needed in order to improve information literacy instructional effectiveness?" The following three sub-questions aided in discovering the professional development needs of instruction librarians in the state of Kansas:

Research Question 1.1. What are the various means by which information literacy instruction is delivered?

Research Question 1.2. What content areas are addressed during information literacy instructional sessions?

Research Question 1.3. What assessment practices are employed to determine the effectiveness of information literacy instruction?

This chapter includes a summary of the research findings for the demographic data, quantitative data, and responses to the open-ended questions of the study. Demographic data is presented for respondents' job title, academic rank, age, years serving as an academic librarian, years in serving in current position, type of institution employed (by curricular and funding), and whether or not their duties included formal library instruction. Data analyses for the quantitative measures of the study were conducted through the use of frequency distributions (in order to identify professional development needs of the total population) and chi-square tests (in order to identify professional development needs of the individual sub-populations). Responses to the open-ended survey questions were analyzed for codes and developed into categories. Conclusions and a discussion drawn from the findings are presented in this chapter. Finally, recommendations for future studies on library instruction practices are presented.

Summary of Findings

Demographics

Demographic information obtained for the purposes of this study included job title, academic rank, age, years serving as an academic librarian, years in current position, type of institution employed (by funding and curricular offerings), and whether their duties included formal library instruction.

Job title. Of the 22 responses offered by respondents employed by two-year colleges, sixteen were categorized as holding the job title of director. Most of the responses from respondents employed by a four-year college were categorized with a job title of administrator (seven responses). Respondents employed a university were categorized as holding the job title of subject librarian (twenty responses) and instruction librarian (sixteen responses).

Academic rank. The academic rank of the majority of respondents employed by two-year colleges included professors (five responses), and staff (five responses). Most of the respondents employed by a four-year college held an academic rank of faculty (four responses). The majority of respondents employed by a university held the academic rank of assistant professor or assistant librarian (fourteen responses).

Age. Most of the respondents employed by two-year colleges were either between the ages of 41 – 55 (eleven responses) or were 56 years of age or older (ten responses). Most of the respondents employed by a four-year college were between the ages of 41 – 55 (six responses). Universities were the only type of institution that employed respondents who were 25 years of age or younger (two responses). Most of the remaining respondents employed by a university were between the ages of 41 – 55 (sixteen responses).

Years serving as an academic librarian. Of the 22 respondents employed by a two-year college, four had served as an academic librarian for less than two-years, eight had served between 5 – 15 years, seven between 15 – 25 years, and three had served for 26 or more years. Respondents employed by a four-year college indicated that two had served as an academic librarian for less than five years, seven between 5 – 15 years, one between 16 – 25 years, and three had served for 26 or more years. For respondents employed by a university, nine had served as an academic librarian for less than five years, sixteen between 5 – 15 years, six between 16 – 25 years, and five had served for 26 or more years.

Years serving in current position. For the respondents employed by a two-year college, seven had served in the current position for less than five years, twelve between 5 – 15 years, one between 16 – 25 years, and two had served in their position for 26 or more years. Respondents employed by a four-year college indicated that five had served in their current position for less than five years, six between 5 – 15 years, one between 16 – 25 years, and one had served for 26 or more years. For respondents employed by a university, twenty had served in their current position for less than five years, twelve between 5 – 15 years, two between 16 – 25 years, and two had served for 26 or more years.

Type of institution employed (funding). Of the respondents employed by a two-year college, publicly funded institutions employed nineteen respondents and privately funded institutions employed three respondents. A privately funded institution employed ten of the thirteen respondents employed by a four-year college and a privately funded institution employed three respondents. Publicly funded institutions employed thirty of the university respondents and privately funded institutions employed six respondents.

Formal instruction duties. Eighteen two-year college respondents, eleven four-year college respondents, and 33 university respondents had formal instruction duties as a function of their job duties.

Quantitative Measures

Research Question 1.1.

The findings derived from the frequency distributions of the total population indicated that the sub-populations shared a preference for offered library instruction delivered via face-to-face means. The findings also indicated that all institutions represented in this study offered considerably more instruction than what was required by their parent institution. Chi-square tests indicated a significant association was found between the sub-populations and their offering of the following two modes of delivery: multiple sessions (e.g., 2-3 class sessions) but not a credit course, (χ^2 (2) = 6.387, p < .05) and an online credit course, (χ^2 (2) = 8.833, p < .05).

Research Question 1.2.

The findings indicated that Kansas's academic instruction librarians addressed a wide variety of services, resources, search techniques, and information literacy skills during information literacy instructional sessions. The findings also suggested that Kansas academic librarians were cognizant of ensuring instruction practices were designed to include content that met the guiding information literacy standards as defined by the American Library Association. Chi-square tests indicated significant associations existed between the sub-populations and the extent to which they addressed library services and locations (χ^2 (2) = 8.208, p <.05), selecting appropriate tools (χ^2 (2) = 11.013, p < .05), the use of/searching in other reference or research tools (χ^2 (2) = 11.013, p < .05), and call numbers (χ^2 (2) = 11.013, p < .05).

Research Question 1.3.

The findings indicated that less than thirty percent of the total population was assessing the effectiveness of information literacy instruction. The most popular assessment method utilized by those who assess were examining the bibliography used in paper, assignments other than papers, and as an attitudinal survey pertaining to library instruction. Chi-square tests and found no significant associations between the sub-populations on this measure.

Responses to Open-Ended Questions

Research Question 1.1.

The forty responses yielded four categories in answers provided toward research question 1.1. The four categories were: face-to-face instruction (thirteen responses), online instruction (nine responses), outreach (six responses), and no other methods (twelve responses). This finding should be included in future K-LIRT discussions that include professional development opportunities on the design and delivery of library instruction.

Research Question 1.2.

The 43 responses generated three categories in answers provided toward research question 1.2. The three categories were: library services (ten responses), library/information resources (23 responses), and varied library instruction (ten responses). This finding should be included in future K-LIRT discussions professional development opportunities on how to

effectively design and deliver library instruction focused on educating about services and resources.

Research Question 1.3.

The sixteen responses yielded two categories in answers provided toward research question 1.3. The two categories were: formal assessment methods (ten responses) and informal assessment methods (six responses). This finding should be included in future K-LIRT discussions for professional development opportunities designed to improve on and increase the use of assessment practices within the total population.

Conclusions

The following conclusions are provided as an answer to the primary research question of this study: "What professional development opportunities are needed in order to improve information literacy instructional effectiveness?" They were drawn from the quantitative findings and findings derived from the open-ended responses for the sub-research questions of this study, correlated with the ACRL Standards for Proficiencies for Instruction Librarians (see Table 1 page 12), and supported by existing literature. The conclusions are presented as a prioritized list of recommendations for K-LIRT to explore in future discussions and planning sessions on professional development training opportunities and workshops.

1. <u>Kansas academic librarians with instruction as a function of their job duties would benefit from professional development opportunities designed to develop proficiency in teaching skills (ACRL proficiency number six).</u> Proficiency in this skill was essential to the purpose of this study. Teaching skills play an integral role in determining the effectiveness of information literacy instruction. The effectiveness of information literacy instruction plays a critical role in determining the extent to which information literacy is accepted by stakeholders and integrated into course and university curricula (Dykeman & King, 1983; Bober, Poulin, & Vileno, 1995). Therefore, professional development focused on this skill should be designed to address all core skills identified within this proficiency. Thus, it would include:

   6.1. Creates a learner-centered teaching environment by using active, collaborative, and other appropriate learning activities.

6.2. Modifies teaching methods and delivery to address different learning styles, language abilities, developmental skills, age groups, and the diverse needs of student learners.

6.3. Participates in constructive student-teacher exchanges by encouraging students to ask and answer questions by allowing adequate time, rephrasing questions, and asking probing or engaging questions.

6.4. Modifies teaching methods to match the class style and setting.

6.5. Encourages teaching faculty during the class to participate in discussions, to link library instruction content to course content, and to answer student questions.

6.6. Reflects on practice in order to improve teaching skills and acquires new knowledge of teaching methods and learning theories.

6.7. Shares teaching skills and knowledge with other instructional staff.

This conclusion is supported by the quantitative findings that professional development designed to differentiate between and improve upon pedagogical skills for face-to-face and electronic instruction would benefit the total population of this study. The responses to the open-ended questions also demonstrated a need for training on tutoring pedagogy designed to improve the effectiveness of one-on-one instruction. In addition, various statements within the open-ended responses point to current or future development of for-credit courses. Professional development designed to improve proficiency in teaching skills would assist academic librarians to be successful in teaching these courses.

2. Kansas academic librarians with instruction as a function of their job duties would benefit from professional development opportunities focused on developing instructional design skills (ACRL proficiency number four). Ninety-three percent of the total population indicated interest in professional development designed to improve proficiency in this skill. This demonstrates respondents would be willing to commit time and energy for training if provided.

The quantitative findings and responses to the open-ended questions of this study indicated that respondents would benefit from professional development that encompasses all of the core skills within this proficiency. The core skills are:

4.1. Collaborates with classroom faculty by defining expectations and desired learning outcomes in order to determine appropriate information literacy proficiencies and resources to be introduced in library instruction.

4.2. Sequences information in a lesson plan to guide the instruction session, course, workshop, or other instructional material.

4.3. Creates learner-centered course content and incorporates activities directly tied to learning outcomes.

4.4. Assists learners to assess their own information needs, differentiate among sources of information and help them to develop skills to effectively identify, locate, and evaluate sources.

4.5. Scales presentation content to the amount of time and space available.

4.6. Designs instruction to best meet the common learning characteristics of learners, including prior knowledge and experience, motivation to learn, cognitive abilities, and circumstances under which they will be learning.

4.7. Integrates appropriate technology into instruction to support experiential and collaborative learning as well as to improve student receptiveness, comprehension, and retention of information.

Findings from the quantitative analyses indicated academic librarians included information on multiple content areas during instruction. Training on how to effectively condense a lot of information into a "one-shot" instruction session would help the total population. The findings derived from the open-ended responses illustrated that respondents would benefit from professional development intended to improve the design of library instruction offered in non-traditional locations. Other comments included the desire to learn "methods for promoting active learning"; to gather knowledge needed for "creating learning objects used during instruction sessions"; and "how to create a for-credit course".

The quantitative findings of this study indicated that few institutions used electronic modes to deliver library instruction. However, the open-ended responses found that participants of this study used communication tools such as email, Facebook, and instant messaging for informal instruction purposes. The total population would benefit from professional development intended to explore how to effectively design instructional sessions that incorporate these communication tools.

Research has shown self-paced, web-based tutorials are an effective and far reaching instructional method (Germain, Jacobson, & Kaczor, 2000; Holman 2000). Self-paced, web-based tutorials were under-utilized by participants in this study; only 32 percent of respondents reported its use. Watson's 2007 study found that students who used web-based tutorials were

more likely to utilize scholarly resources to complete a research assignment than students who did not view a web-based tutorial. Watson's finding indicated that this instructional method helped to "improve student receptiveness, comprehension, and retention of information" (as noted to be an important outcome in proficiency 4.7.) and should be utilized by more institutions as means for instructional delivery. This further supports the need for professional development designed to improve proficiency in this area.

3. <u>Kansas academic librarians with instruction as a function of their job duties would benefit from professional development opportunities designed to develop proficiency in assessment and evaluation skills.</u> The core skill included in proficiency one of ACRL's instruction proficiencies indicates that the proficient instruction librarian "designs effective assessments of student learning and uses the data collected to guide personal teaching and professional development." Only thirty percent of the total population in this study indicated they formally assessed the effectiveness of information literacy instruction. The chi-square test did not find a significant association between the sub-populations, which indicated that the lack of assessment spanned the total population and was not concentrated in one particular sub-population. Ninety-three percent of the total population indicated interest in professional development designed to improve proficiency in this skill. This demonstrates respondents would be willing to commit time and energy for training if provided.

Dykeman and King (1983) postulated that the academic community would be more likely to accept library instruction if librarians demonstrated its effectiveness. However, only 21 of the 71 participants in this study indicated that they formally assessed student understanding of information literacy concepts and skills. Of the 21 participants who did perform assessment, most used work products such as bibliographies (57 percent) and course assignments (67 percent) to do so. The review of student work products for assessment purposes was supported as a viable method in literature (Ackerson, Howard, & Young, 1991; Brevik, 1998; Cameron, 2004; Dykeman & King, 1983; Kohl & Wilson, 1986; Roselle, 1997). Professional development designed to improve the effectiveness of this assessment method would benefit the total population.

Rabine and Cardwell (2000) indicated that it was difficult to evaluate instructional ability and assess the potential impact of information literacy instruction on student learning outcomes when instruction was limited to "one-shot" delivery. This difficulty may contribute to the low

use of assessment among Kansas academic librarians. However, as Creth (1995) and Abbott (1998) stated, it will remain difficult for the higher education community to integrate information literacy instruction into curricula if librarians don't find a way to demonstrate personal effectiveness as a teacher and to assess the impact of information literacy instruction on student learning outcomes.

4. <u>Kansas academic librarians with instruction as a function of their job duties would benefit from professional development opportunities designed to develop proficiency in information literacy integration skills (ACRL proficiency number three).</u> Eighty-seven percent of the total population indicated interest in professional development designed to improve proficiency in this skill. This demonstrated respondents would be willing to commit time and energy for training if provided.

The data collected in this study indicated that academic librarians were proficient in "collaborating with classroom faculty to integrate appropriate information literacy competencies, concepts, and skills into library instruction sessions, assignments, and course content" (core skill 3.2. of ACRL's instruction proficiencies) and "communicating with classroom faculty and administrators to collaboratively plan and implement the incremental integration of information literacy competencies and concepts within a subject discipline curriculum" (core skill 3.3.), but would benefit from professional development focused on "describing the role of information literacy in academia to the patrons, programs, and departments they serve" (core skill 3.1). This conclusion was based on the disparity presented in the data between the amount of information literacy instruction *offered* by institutions of higher education in the state of Kansas and the amount of library information literacy instruction *required* by institutions of higher education in the state of Kansas. The researcher concluded this disparity illustrated information literacy is not integrated into the higher education curricula in Kansas institutions of higher education. The extent to which information literacy instruction was offered via one class, course-related delivery indicated that it may be integrated at the course level (thus the exclusion of core skill 3.2. and 3.3. from the professional development need statement), but the disparity indicated that information literacy instruction was not integrated at the institution level. However, open-ended responses indicated that several institutions had future plans to develop for-credit courses and that information literacy was included as a student learning outcome of their institution's general

education program. This further supports the need for professional development designed to improve proficiency in this area.

5. <u>Kansas academic librarians with instruction as a function of their job duties would benefit from professional development opportunities designed to develop proficiency in presentation skills (ACRL proficiency number five).</u> As with teaching skills, presentation skills also played a critical role in determining the effectiveness of information literacy instruction. Effective information literacy instruction was a central factor in determining the extent to which information literacy was accepted by stakeholders and integrated into course and university curricula. Therefore, professional development focused on this skill should be designed to address all of the core skills identified within this proficiency. The core skills are:

5.1. Makes the best possible use of voice, eye contact, and gestures to keep class lively and students engaged.

5.2. Presents instructional content in diverse ways (written, oral, visual, online, or using presentation software) and selects appropriate delivery methods according to class needs.

5.3. Uses classroom instructional technologies and makes smooth transitions between technological tools.

5.4. Seeks to clarify confusing terminology, avoids excessive jargon, and uses vocabulary appropriate for level of students.

5.5. Practices or refines instruction content as necessary in order to achieve familiarity and confidence with planned presentation.

The finding that face-to-face delivery of information literacy instruction was strongly preferred over electronic delivery supports the need for professional development opportunities in this area. The demographic findings show that almost half, 32 of the 71 respondents were employed in their current position for less than five years. The lack of pre-professional training provided on instruction does not permit much opportunity for academic librarians to practice presentation skills before they enter the profession. Proficiency in this skill is often taken for granted, but the fact that 92 percent of the respondents indicated interest in training opportunities further supports the need for professional development designed to improve proficiency in this area.

Discussion

Research Question 1.1.

The findings in this study indicated a clear preference for face-to-face instructional delivery over electronic delivery. Therefore, discussions with K-LIRT about possible professional development needs for the total population should include conversations with respect to workshops designed to improve the effectiveness of library instruction delivered through face-to-face means as well as conversations about the need to explore the potential for workshops in the design and delivery of online library instruction. The increased use of electronic instruction delivery would expand the potential for libraries to reach students who may never have the opportunity for face-to-face instruction. This would provide real-time service, at the point of need for students struggling to utilize library resources. Electronic delivery would also provide discipline-based faculty who do not have excess capacity in their existing curriculum an alternative to the "one-shot" session that takes away from class time.

The findings indicated that all institutions represented in this study offered considerably more instruction than what was required by their parent institution. For example, one class, course-related instruction and an orientation/tour held the two highest grossing percentages amongst the offered and required delivery means presented as an option on these survey questions. Eighty-five percent of institutions offered one class, course-related instruction and 87 percent of institutions offered an orientation/tour. However, only thirteen percent of institutions *required* information literacy instruction delivered via these means. This lack of required library instruction on behalf of the total population is an issue for discussion for K-LIRT as it may point to professional develop needs designed to assist librarians develop the stakeholder's perceptions of the importance of information literacy, increase the professional identity of instruction librarians, and to strengthen skills in ACRL's instruction proficiency number three (information literacy integration skills).

The findings derived from chi-square tests indicated slight variances existed between how the sub-populations delivered library instruction. While moderate associations existed between universities and two-year colleges on the delivery of multiple course sessions and between four-year colleges and two-year colleges on the delivery of an online credit course, discussions with K-LIRT would be required to determine if the associations were reason enough

to cater to the needs of a specific sub-population or to develop opportunities that would assist the total population.

Research Question 1.2.

The findings from this study illustrated that Kansas academic librarians were proficient at core skill 4.2.identified under ACRL's Standards for Proficiency in Instruction: "keeps aware of student assignments and the role of the library in completing these assignments". Therefore, discussions with K-LIRT on professional development needs should emphasize priority toward improving the effectiveness of core skills required of instruction librarians found in proficiency four (instructional design skills), as well as improving the core skills found in proficiency two.

The findings also suggested that Kansas academic librarians were cognizant of ensuring instruction practices were designed to meet the guiding information literacy standards as defined by the American Library Association. The findings for proficiency and success indicated that future professional development discussions with K-LIRT should focus on achieving excellence in the design and delivery of existing instructional practices. This may increase stockholders' perceptions of the importance of information literacy and the professional identity of instruction librarians within academe.

The findings derived from chi-square tests indicated slight variances existed between the content addressed by the sub-populations during library instruction. While moderate associations existed between universities and two-year colleges on the delivery of multiple course sessions and between four-year colleges and two-year colleges on the delivery of an online credit course, discussions with K-LIRT would be required to determine if the associations were reason enough to cater to the needs of a specific sub-population or to develop opportunities that would assist the total population.

Research Question 1.3.

The findings from this study indicated that only thirty percent of the total population reported formally assessing information literacy concepts after library instruction. The literature indicated that the ability to successfully demonstrate the effectiveness of information literacy instruction was critical to achieving positive perceptions of the importance of information literacy within the various stakeholders present in higher education. The universal lack of

assessment that existed within the total population warrants further discussion with K-LIRT in order to ascertain their view on the importance of this activity with the instructional process.

The findings indicated that Kansas's academic librarians have a preference for the following assessment methods:

- Assessment of bibliography used in paper
- Assignments other than papers
- Attitudinal assessment: separate survey pertaining to library instruction

Therefore, workshops and activities should focus on improving the design and use of these three preferred assessment methods.

Recommendations for Future Studies

1. A similar study designed to explore faculty perceptions of the professional development needs of Kansas's academic instruction librarians would provide baseline data toward the *quality* of instruction provided.

2. A similar study designed to explore student perceptions of the professional development needs of Kansas's academic instruction librarians would provide baseline data toward the *quality* of instruction provided.

3. A qualitative study should be conducted to examine the pre-service training received by Kansas academic instruction librarians. Knowledge of previous college coursework on instruction related activities would help clarify the depth at which future professional development opportunities should be delivered.

4. A qualitative study designed to investigate the specific skills required to increase the use of assessment and evaluation by Kansas academic instruction librarians would assist K-LIRT with future workshop planning.

5. A qualitative study should be conducted to explore the lack of information literacy instruction offered via electronic means. Information that details the extent to which online instruction is offered by higher education institutions within the state of Kansas would clarify the professional development needed for academic instruction librarians to effectively serve distance students.

6. A longitudinal study should be designed to assess the impact of K-LIRT's professional development training on the library instruction practices of academic librarians in the state of Kansas.

7. A national study should be conducted to ascertain the number of library school courses on library instruction that address topics such as instructional design, instructional effectiveness measures, and assessment.

8. A national study should be conducted of faculty and student perceptions of university library instruction practices, programs, and relevance.

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Appendix A - Survey of Information Literacy Library Instruction

1. I have read the survey description and understand that all returned surveys will be kept by the researcher. I understand that my identity will be kept confidential. The results of this study are available per my request by contacting Professor Rosemary Talab or Kansas State University at talab@ksu.edu. A copy of the final dissertation will be available on K-REX, Kansas State University's electronic thesis and dissertation repository.

Section I. – Demographic Information
This section obtains required demographic information from participants.

2. What is your job title? _____

3. What is your academic rank? _____

4. What is your current age? _____

5. How many years have you been serving as an academic librarian? _____

6. How many years have you been serving in your current position? _____

7. In which type of higher education institution are you currently employed? _____ Public _____ Private

8. In which type of higher education institution are you currently employed? _____ University _____ Four- Year College _____ Two-Year College

Section II. – Library Instruction Type and Scope
This section gathers a general, overall picture of library instruction on your campus, the amount of library instruction students receive, and academic credit given.

9. Do your duties include formal library instruction at your institution?

   Yes   No

10. Which of the following formal library instruction components do you offer? (*check all that apply*)

   _____   a) Library instruction session less than full class period in duration
   _____   b) One-class, course-related library instruction session (the "one-shot" lecture)
   _____   c) One-class, NON-course-related library instruction session (the "one shot" lecture)
   _____   d) Orientation/tour
   _____   e) Multiple sessions (e.g., 2-3 class sessions) but not a credit course
   _____   f) Credit course taught by librarian
   _____   g) Credit course team taught by a librarian and a disciplinary faculty member
   _____   h) Self-directed web-based tutorial
   _____   i) Online non-credit course
   _____   j) Online credit course

_____   k) Participation in discipline based online course
_____   l) No formal library instruction is offered

11. What other methods of formal library instruction do you offer that is not mentioned in the selections above? Please describe any additional offerings in the space provided below.

12. Which of the following formal library instruction components are an INSTITUTIONAL REQUIREMENT (e.g. curricular) made of all students? (*check all that apply*)

_____   a) Library instruction session less than full class period in duration
_____   b) One-class, course-related library instruction session (the "one-shot" lecture)
_____   c) One-class, NON-course-related library instruction session (the "one shot" lecture)
_____   d) Orientation/tour
_____   e) Multiple sessions (e.g., 2-3 class sessions) but not a credit course
_____   f) Credit course taught by librarian
_____   g) Credit course team taught by a librarian and a disciplinary faculty member
_____   h) Self-directed web-based tutorial
_____   i) Online non-credit course
_____   j) Online credit course
_____   k) Participation in discipline based online course
_____   l) No formal library instruction is offered

13. What other institutional requirements of formal library instruction does your institution have that is not mentioned in the selections above? Please describe any additional offerings in the space provided below.

14. If credit-bearing library instruction is *required* by your institution, how many credit hours? _____

15. If credit-bearing library instruction is *offered but not required by your* institution, how many credit hours?

_____

Section III. -- Library Instruction Content
This section gathers information required to determine what content is most commonly taught during library instruction sessions.

16. Which of the following content areas do you address during formal library instruction sessions?

_____   a) research process
_____   b) knowledge of library and research terminology
_____   c) library services (e.g., reserves) and locations
_____   d) selecting: appropriate tools (e.g., indexes)
_____   e) selecting: appropriate resources (e.g., format, date)
_____   f) distinction between scholarly and popular sources
_____   g) primary and secondary sources
_____   h) selecting terms and keywords
_____   i) keyword vs. subject headings
_____   j) boolean operators

_____   k) trucation, wildcard, proximity
        _____   l) use of/searching in: library catalog
        _____   m) use of/searching in: paper indexes
        _____   n) use of/searching in: online indexes
        _____   o) use of/searching in: other ref. or research tools (online and/or paper)
        _____   p) use of/searching in: web
        _____   q) web site evaluation
        _____   r) call numbers
        _____   s) physically locating materials in library
        _____   t) citations: reading/deciphering bibliographic information in indexes,
                       catalogs, etc.
        _____   u) citations: accurately citing using standard style guides (e.g., APA,
                       MLA)
        _____   v) economic implications of information (e.g., plagiarism)
        _____   w) ethical implications of information (e.g., plagiarism)
        _____   x) nature and process of scholarly publication

17. What other content do you teach during formal library instruction that is not mentioned in the
selections above? Please describe any additional offerings in the space provided below.

Section IV. -- Incorporation of the ACRL Information Literacy Standards for Higher Education

ACRL's *Information Literacy Standards for Higher Education* (2000) provides "a framework for
assessing the information literate individual." This section gathers information necessary in determining
the extent to which libraries incorporate the five broad information literacy standards in the content of
their library instruction and assign student competency.

18. Which of the five BROAD standards do you address during information literacy instruction?

        _____   a) Student determines the nature and extent of the information needed.
        _____   b) Student accesses needed information effectively and efficiently.
        _____   c) Student evaluates information and its sources critically and
                       incorporates selected information into his or her knowledge base and value
                       system.
        _____   d) Student, individually or as a member of a group, uses information
                       effectively to accomplish a specific purpose.
        _____   e) Understands that information literacy is an ongoing process and an important
                       component of lifelong learning and recognizes the need to keep current
                       regarding new developments in his or her field.

19. Which of the five BROAD standards do you formally assess?

        _____   a) Student determines the nature and extent of the information needed.
        _____   b) Student accesses needed information effectively and efficiently.
        _____   c) Student evaluates information and its sources critically and
                       incorporates selected information into his or her knowledge base and value
                       system.
        _____   d) Student, individually or as a member of a group, uses information
                       effectively to accomplish a specific purpose.

_____ e) Understands that information literacy is an ongoing process and an important component of lifelong learning and recognizes the need to keep current regarding new developments in his or her field.

Section V. -- Assessment of Student Information Literacy
This section gathers information necessary in determining how student learning of information literacy concepts is formally assessed.

20. Is student knowledge or understanding of information literacy concepts formally assessed after library instruction?

      Yes   No

21. If so, how is formal student assessment done? *(check all that apply)*

     _____ a) Multiple choice/short answer quiz or exam
     _____ b) Essay quiz or exam
     _____ c) Included in course professor's quiz/exam
     _____ d) Face to face interview (or oral exam)
     _____ e) Record of research process (e.g., research log, reflective writing on process)
     _____ f) Assessment of bibliography used in paper
     _____ g) Assessment of complete paper and bibliography
     _____ h) Assignments other than papers
     _____ i) Attitudinal assessment: *as part of general survey* of library users' attitudes
     _____ j) Attitudinal assessment: *separate survey* pertaining to library instruction

22. What other assessment methods of formal library instruction do you utilize that is not mentioned in the selections above? Please describe any additional offerings in the space provided below.

Section VI. -- Professional Development Needs for Proficiency in Library Instruction
ACRL's Standards for Proficiencies for Instruction Librarians and Coordinators (2007) are utilized to identify "professional development opportunities for librarians with teaching responsibilities in order to improve or expand their skills." This section gathers information necessary in determining the perceived professional development needs of librarians seeking to strengthen their instruction abilities.

23. On a scale from 1 to 4, where 1 is not at all interested and 4 is very interested, please rate your degree of interest in attending professional development activities for the following proficiencies.

	Not at all Interested	Somewhat Interested	Interested	Very Interested
a. Asssessment and Evaluation Skills 1	2	3	4
b. Information Literacy Curriculum Knowledge 1	2	3	4
c. Information Literacy Integration Skills 1	2	3	4
d. Instructional Design Skills 1	2	3	4
e. Presentation Skills 1	2	3	4
f. Teaching Skills 1	2	3	4

24. What other professional development needs are you interested in that is not mentioned in the selections above? Please describe any additional offerings in the space provided below.

Appendix B - Mark and Merz Permission To Use Survey

From: "Beth Mark" <bmark@messiah.edu>
Date: October 14, 2008 9:07:49 AM CDT
To: "Alysia Starkey" <astarkey@salina.k-state.edu>
Cc: "Lawrie Merz" <LMerz@messiah.edu>
Subject: Re: Permission to Use Survey

Hi Alysia,

Lawrie Merz & I have discussed your request to use, with modifications, our survey.
We grant you permission with the stipulation that you acknowledge us as the creators of the
original survey.

Secondly, please let us know when you have completed your dissertation! We would like to at
least see a summary of your findings, as a matter of personal & professional interest.
Best wishes with your research.

Beth Mark & Lawrie Merz

Beth L. Mark
Instruction Coordinator
Murray Library
Messiah College
Grantham, PA 17027
bmark@messiah.edu
717-691-6006 Ext. 3590

>>> Alysia Starkey <astarkey@salina.k-state.edu> 10/13/2008 4:47 PM >>>

Dear Ms. Merz and Ms. Mark,

My name is Alysia Starkey and I am currently a Ph.D. student at Kansas
State University. I am writing to inquire about permission to use and
modify your survey that was published in "CLIP NOTE #32, Assessment in
College Library Instruction Programs" for my dissertation. I am
looking to assess the current status of library instruction as well as
the professional development needs of instruction librarians within
the state of Kansas. With a few modifications, the survey you have
already developed matches my intentions.

Thank you for your consideration,

Alysia Starkey

Appendix C - Chi-Square, Cramer's V, and Phi Results

Table C.1. Chi-Square and Cramer's V Measures: Question 10

Item	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
10.1. Library instruction less than a full class period in duration	1.447	2	.485	.143
10.2. One class, course-related instruction	1.407	2	.495	.141
10.3. One class, NON-course-related instruction	2.617	2	.270	.192
10.4. Orientation/tour	1.606	2	.448	.150
10.5. Multiple sessions (e.g., 2 -3 class sessions) but not a credit course	6.387	2	.041	.300
10.6. Credit course taught by a librarian	3.484	2	.175	.222
10.7. Credit course team taught by a librarian and a disciplinary faculty member	2.809	2	.246	.199
10.8. Self-directed, web-based tutorial	2.414	2	.299	.184
10.9. Online, non-credit course	2.047	2	.359	.170
10.10. Online credit course	8.833	2	.012	.353
10.11. Participation in discipline based online course	.641	2	.726	.095
10.12. No formal library instruction offered	3.979	2	.137	.237

Table C.2. Chi-Square and Phi Measures: Question 10 Follow-Up Tests

Item	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Phi
10.5. Multiple sessions (e.g., 2-3 class sessions) but not a credit course – Universities and Four-Year Colleges	.209	1	.648	.065
10.5. Multiple sessions (e.g., 2-3 class sessions) but not a credit course – Four-Year Colleges and Two-Year Colleges	2.472	1	.116	.266
10.5. Multiple sessions (e.g., 2-3 class sessions) but not a credit course – Universities and Two-Year Colleges	6.262	1	.012	.329
10.10. Online credit course– Universities and Four-Year Colleges	.160	1	.690	.153
10.10. Online credit course– Universities and Two-Year Colleges	4.278	1	.022	.302
10.10. Online credit course– Four-Year Colleges and Two-Year Colleges	5.170	1	.016	.384

Table C.3. Chi-Square Tests and Cramer's V Measures: Question 12

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
12.1. Library instruction less than a full class period in duration	.153	2	.926	.046
12.2. One class, course-related instruction	.184	2	.912	.051
12.3. One class, NON-course-related instruction	.310	2	.857	.066
12.4. Orientation/tour	1.302	2	.522	.135
12.5. Multiple sessions (e.g., 2 -3 class sessions) but not a credit course	.737	2	.692	.102
12.6. Credit course taught by a librarian	2.001	2	.368	.168
12.7. Credit course team taught by a librarian and a disciplinary faculty member	3.045	2	.218	.207
12.8. Self-directed, web-based tutorial	.737	2	.692	.102
12.9. Online, non-credit course	.617	2	.734	.093
12.10. Online credit course	.986	2	.611	.118
12.11. Participation in discipline based online course	.986	2	.611	.118
12.12. No formal library instruction offered	1.954	2	.377	.166

Table C.4. Chi-Square and Cramer's V Measures: Question 16

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
16.1. Research process	1.744	2	.418	.157
16.2. Knowledge of library research terminology	2.671	2	.263	.194
16.3. Library services (e.g. reserves) and locations	8.208	2	.017	.340
16.4. Selecting appropriate tools (e.g. indexes)	11.013	2	.004	.394
16.5. Selecting appropriate resources (e.g. format, date)	2.228	2	.328	.177
16.6. Distinction between scholarly and popular sources	.389	2	.823	.074
16.7. Primary and secondary sources	.277	2	.870	.063
16.8. Selecting terms and keywords	1.550	2	.461	.148
16.9. Keyword vs. subject heading	.127	2	.938	.042
16.10. Boolean operators	4.006	2	.135	.238
16.11. Truncation, wildcard, proximity	1.594	2	.451	.150
16.12. Use of/searching in library catalog	1.210	2	.546	.131
16.13. Use of/searching in paper indexes	5.060	2	.080	.267
16.14. Use of/searching in online indexes	2.884	2	.237	.202
16.15. Use of /searching in other reference or research tools (online and/or paper)	7.092	2	.029	.316
16.16. Use of searching on the internet	.430	2	.806	.078
16.17. Web site evaluation	.198	2	.906	.053
16.18. Call numbers	6.331	2	.042	.299
16.19. Physically locating materials in library	1.384	2	.500	.140
16.20. Citations: reading/deciphering bibliographic information in indexes/catalogs, etc.	.899	2	.638	.113
16.21. Citations: accurately citing using standard style guides	.135	2	.935	.044
16.22. Economic implications of information (e.g. plagiarism)	.379	2	.827	.073
16.23. Ethical implications of information (plagiarism)	1.357	2	.507	.138
16.24. Nature and process of scholarly publication	1.693	2	.429	.154

Table C.5. Chi-Square and Phi Measures: Question 16 Follow-Up Tests

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Phi
16.3. Library services (e.g. reserves) and locations – Universities and Four-Year Colleges	8.849	1	.003	.425
16.3. Library services (e.g. reserves) and locations – Universities and Two-Year Colleges	4.484	1	.034	.348
16.3. Library services (e.g. reserves) and locations – Two-year Colleges and Four-Year Colleges	.122	1	.726	.059
16.4. Selecting appropriate tools (e.g. indexes) – Universities and Four-Year Colleges	11.318	1	.003	.481
16.4. Selecting appropriate tools (e.g. indexes) – Universities and Two-Year Colleges	2.508	1	.148	.208
16.4. Selecting appropriate tools (e.g. indexes) – Two-Year Colleges and Four-Year Colleges	2.856	1	.116	.286
16.15. Use of /searching in other reference or research tools (online and/or paper) – Universities and Four-Year Colleges	6.773	1	.009	.372
16.15. Use of /searching in other reference or research tools (online and/or paper) – Universities and Two-Year Colleges	.326	1	.568	.075
16.15. Use of /searching in other reference or research tools (online and/or paper) – Two-Year Colleges and Four-Year Colleges	3.512	1	.061	.317
16.18. Call numbers – Universities and Four-Year Colleges	4.284	1	.030	.309
16.18. Call numbers – Universities and Two-Year Colleges	.182	1	.670	.056
16.18. Call numbers – Two-Year Colleges and Four-Year Colleges	5.272	1	.016	.388

Table C.6. Chi-Square and Cramer's V Measures: Question 18

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
18.1. Student determines the nature and extent of the information needed	.764	2	.682	.104
18.2. Student accesses needed information effectively and efficiently	.291	2	.865	.064
18.3. Student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.	.958	2	.619	.116
18.4. Student, individually or as a member of a group, uses information effectively to accomplish a specific purpose	.166	2	.920	.048
18.5. Student understands that information literacy is an ongoing process and an important component of lifelong learning and recognizes the need to keep current regarding new developments in his or her field.	.360	2	.835	.071

Table C.7. Chi-Square and Cramer's V Measures: Question 19

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
19.1. Student determines the nature and extent of the information needed	.117	2	.943	.075
19.2. Student accesses needed information effectively and efficiently	2.928	2	.231	.373
19.3. Student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.	.536	2	.765	.160
19.4. Student, individually or as a member of a group, uses information effectively to accomplish a specific purpose	2.410	2	.300	.339
19.5. Student understands that information literacy is an ongoing process and an important component of lifelong learning and recognizes the need to keep current regarding new developments in his or her field.	1.345	2	.510	.253

Table C.8. Chi-Square and Cramer's V Measures: Question 20

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
20. Is student understanding of information literacy concepts formally assessed?	4.667	2	.097	.256

Table C.9. Chi-Square and Cramer's V Measures: Question 21

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
21.1. Multiple choice/short answer quiz or exam	1.265	2	.531	.245
21.2. Essay quiz or exam	1.750	2	.417	.289
21.3. Included in course professor's quiz or exam	.134	2	.935	.080
21.4. Face to face interview (oral exam)	1.098	2	.577	.577
21.5. Record of research process (e.g. research log, reflective writing on process)	.095	2	.953	.067
21.6. Assessment of bibliography used in paper	2.431	2	.297	.340
21.7. Assessment of complete paper and bibliography	3.281	2	.194	.395
21.8. Assignments other than papers	2.786	2	.248	.364
21.9. Attitudinal assessment: as part of a general survey of library users' attitudes	2.133	2	.344	.319
21.10. Attitudinal assessment: separate survey pertaining to library instruction	3.660	2	.160	.417

Table C.10. Chi-Square and Cramer's V Measures: Question 23

Question	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)	Cramer's V
23.1. Assessment and evaluation skills	11.441	8	.178	.290
23.2. Information literacy curriculum knowledge	11.929	8	.154	.296
23.3. Information literacy integration	11.074	8	.198	.285
23.4. Instructional design skills	8.686	8	.369	.253
23.5. Presentation skills	6.552	8	.586	.219
23.6. Teaching skills	8.030	8	.431	.243

Appendix D - Expert Panel Vitaes

Jane Schillie

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Experience

K-State Libraries, Kansas State University, Manhattan, KS
- Associate Dean of Libraries, February 2007 – present

University of Miami Libraries, University of Miami, Coral Gables, Florida
- Director of Marketing and External Relations, January 2005 – January 2007
- Director of Education, Outreach, and Research Services, January 2004 – December 2004
- Head of Research and Educational Services, August 2001 – December 2003
- Head of Reference and Instructional Services, November 2000 – July 2001

University Libraries, Virginia Tech, Blacksburg, Virginia
- College Librarian for the College of Arts and Sciences, Social Sciences, January 1998 – October 2000

McConnell Library, Radford University, Radford, Virginia
- Reference/Instruction Librarian, September 1995 – December 1997

Ellis Library, University of Missouri-Columbia, Columbia, Missouri
- Library Skills Teaching Assistant, August 1994 – August 1995

Ervin Junior High School, Hickman Mills CSD#1, Kansas City, Missouri
- Social Studies and Language Arts Teacher, August 1987 – June 1994

SELECTED PRESENTATIONS

- Presenter, "Community Assessment: An Essential Part of the Reference Librarian's Toolkit," World Library and Information Congress: 70th IFLA General Conference and Council, Buenos Aires, August 2004
- Invited speaker, "Marketing Your Academic or Research Library: The Good, the Bad, and the Useful," American Library Association Annual Conference, Orlando, June 2004
- Invited speaker, "Marketing Matters @ your library®," Florida Library Association Annual Conference, Daytona Beach, March 2004

- Presenter, "Extending the Services of the University Libraries: The College Librarian Program at Virginia Tech and Western Washington Universities," ACRL 9th National Conference, Detroit, April 1999
- Presenter, "Teachable Moments in Untenable Spaces: Recipes for Success," Virginia Library Association Annual Conference, Virginia Beach, October 1998
- Presenter, "VIVA Resource Management Teams: A Model for VIVA Decision Making," VIVA seminar, University of Richmond, March 1998
- Presenter, "Teaching in the Electronic Environment," VIVA/VLA Library Instruction Forum workshop, George Mason University, May 1997
- Invited speaker, "Library Without Walls: Computer Data Searches," Virginia Dietetic Association Annual Conference, Radford University, April 1997

PUBLICATIONS

- Editor, *Internet Reference Services Quarterly: a journal of innovative information practice, technologies & resources*, Haworth Press, Inc., 2004 - 2005
- Editor, *Public Services Quarterly*, Haworth Press, Inc., 2003
- Hiller, Steve, Jim Self, and Jane Schillie. "Community Assessment: An Essential Part of the Reference Librarian's Toolkit." *http://www.ifla.org/IV/ifla70/papers/029e-Hiller_Schillie_Self.pdf.* (25 Aug. 2004).
- Schillie, Jane. "Marketing Academic and Research Libraries." *College & Research Libraries News* 65:8 (2004): 431.
- Schillie, Jane E., et al. "Outreach Through the College Librarian Program at Virginia Tech." *The Reference Librarian* 71 (2000): 71-78.
- Schillie, Jane. "The Thirty-Second Lesson." *Virginia Libraries* 45:1 (1999): 21-22.
- Brainard, Blair and Jane Schillie. "An Introduction to McConnell Library." *Getting to Know You and RU.* Ed. Molly McGuire. New York: McGraw-Hill, 1996. 153-167.

SELECTED PROFESSIONAL COMMITTEE SERVICE

Association of College and Research Libraries
- Chair, ACRL Scholarships Committee, 2009 – 2011
- Chair, ACRL President's Program 2009 – 2010
- Chair, Friends Fund Disbursement Subcommittee, 2008 – 2010
- Member, ACRL National Scholarships Committee 2007 -- 2009
- Member, Friends Fund Disbursement Subcommittee, 2007 – 2008
- Mentor, New Members Round Table Career Mentoring Program, 2006 – 2007
- Member, Marketing Academic and Research Libraries Committee, 2003 – 2005
- Member, ACRL National Conference 2005 Workshop Selection Committee, 2003 – 2005
- Member, Management of Instruction Services Committee, 2001 – 2003

HONORS AND AWARDS

- Frye Leadership Institute Fellow, 2005
- Instructional Advancement Center Grant, University of Miami, 2003
- Faculty Professional and Instructional Development Grant, Radford University, 1997
- Donald K. Anderson Graduate Student Teaching Award, University of Missouri-Columbia, 1995
- School of Education Achievement Award, University of Missouri-Kansas City, 1990
- Phi Kappa Phi, honor society recognizing academic excellence in graduate studies, University of Missouri-Kansas City, 1989
- Pi Lambda Theta, international honor society and professional association in education, University of Missouri-Kansas City, 1986
- Phi Alpha Theta, international honor society in history, University of Kansas, 1980

Kristin J. Whitehair

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Lawrence, KS 66047   Kristin.Whitehair@gmail.com

Education	**Kansas State University (2003)** • Bachelor of Art, history, summa cum laude (GPA: 3.96) **Louisiana State University (2004)** • Master of Library and Information Science (GPA: 4.0) **University of Kansas (anticipated graduation 2012)** • Master of Public Administration
Employment History	**Biomedical Librarian/School of Nursing Liaison** (July 2007-present) Dykes Library, University of Kansas Medical Center ▪ Provide leadership for the library instruction team ▪ Create and deliver in-person and electronic library instruction for students and faculty ▪ Design instruction classes for faculty and researchers focusing on new and emerging trends in literature searching including effective use of web resources for medical research ▪ Collaborate with faculty to identify appropriate resources for School of Nursing courses and research ▪ Collaborate with faculty on special projects and grants ▪ Identify appropriate resources for nursing collection development ▪ Serve on the library digital initiatives work group **Resident Instruction Librarian** (September 2005-July 2007, 2 year contract) Hale Library, K-State University ▪ Served on the instruction team including creating library instruction sessions for students, faculty, and community members ▪ Taught approximately 65 library instruction sessions annually ▪ Assisted with content development for the K-State Libraries assignment planner ▪ Served as library liaison for the PILOTS tutoring program and Residential Life ▪ Established and served as faculty advisor for the K-State Library Student Ambassador program ▪ Promoted K-12 library services and provided instruction sessions for school visits ▪ Co-chaired the K-State Libraries Information Literacy Task Force working to create a digital assignment repository using D-Space ▪ Provided in-person and electronic reference service at the Dow Chemical Multicultural Resource Center, science, and general help desks ▪ Completed collection development and deselection projects for the psychology and juvenile literature collections **Graham Library Director** (January 2005-September 2005) Coffeyville Community College ▪ Developed and provided library instruction to students, staff, and community members

	- Implemented an E-struction information literacy program including an assessment tool - Managed Graham Library's collection development including deselection evaluation - Implemented comprehensive initiative to serve distance students including off-campus database access and online reference services - Supervised five library and media center employees - Drafted budget proposal and managed expenditures for the library and media center **Google Quality Rater** (March 2005-April 2005, temporary project) Payrolling.com employee selected by Google for temporary project - Evaluated websites' relevant to specific queries - Classified queries by type of information sought - Identified spam and malicious websites
Selected Professional Committees and Memberships	**National Juries and Committees** American Library Association – EBSCO Award chair, 2006-present; Juror, 2005-2006 *American Library Association New Members Round Table* Student and Student Chapter Outreach Committee, 2008-2009 Chair, 2007-2008 Member Association of College and Research Libraries Peer-Reviewed Instructional Materials Online (PRIMO) 2009-present **State Committees and Boards** Kansas Library Association Library Instruction Round Table, Chair 2008-present; Vice Chair/Chair elect 2007-2008, Secretary/Treasurer 2006-2007 College and University Libraries Secretary/Treasurer 2009-2011; Section Nominating Committee Member, 2007-2008 **University of Kansas Medical Center Library Committees** Library Instruction Team Chair, 2007-present Library Presence in Second Life Chair, 2009-present Digital Initiatives Team Member, 2007-present School of Nursing Case Study Development Task Force, 2007-present Health Information Technology Scholars Program Planning Committee, 2007-2008 **K-State University Libraries Committees** Information Literacy Task Force Chair, 2006-2007 Strategic Initiatives Task Force – Evidence-Based Decision-Making, 2006 Library Interfaces Team, 2005- 2007
Selected Presentations	Whitehair, K.J., Coleman, J. & Theiss-White, D. (2008, June). *Reference Transactions to the Rescue: Using Libstats to Enhance Library Instruction, Direct Staff Continuing Education, and Make Effective Management Decisions*. Poster session presented at the annual American Library Association conference, Anaheim, CA. Whitehair, K.J., Coleman, J., & Sodt, J. (2008, April). *Creating the Library 2.0 Instruction Experience*. Presented at Kansas Library Conference, Wichita, KS.

	Whitehair, K.J. (2008, April). *The Fast Pace of Health Informatics Innovation Building a Toolkit and Strategy to Stay Up to Date*. Presented at Health Information Technology Scholars Workshop, Kansas City, KS. Whitehair, K.J., Theiss-White, D., Askey, D., & Coleman, J. (2008, April). *Introduction to Libstats*. Presented as a Kansas City Metro Library & Information Network Workshop, Kansas City, KS. Whitehair, K.J. (2007, November). *Outsourcing Outreach: Developing a Student Ambassador Program*. Presented at Brick & Click Libraries Symposium, Maryville, MO. Whitehair, K.J., Theiss-White, D., & Coleman, J. (2007, October). *Reference Transactions to the Rescue: Using a Web-Based tracking system for evidence-based decision making*. Presented at College and University Section Fall Conference, Wichita, KS. Whitehair, K.J., Coleman, T., Pape, C., Coleman, J. (2006, April) *K-State Libraries Instructional Outreach for Grades K-12*. Presented at Tri-Conference, Wichita, KS.
Publications	Theiss-White, D., Coleman, J., & Whitehair, K.J. (2010). Moving Beyond the Hash Mark: capturing the Whole Reference Transaction for Effective Decision Making. In Darby Orcutt (Ed.), *Library Data: Empowering Practice and Persuasion*. Westport, CT.: Libraries Unlimited. Whitehair, K.J. (2007) Outsourcing Outreach: Developing a Student Ambassador Program. In Connie Jo Jury, Frank Baudino, and Sara G. Park (Eds.), *Brick & Click Libraries: Proceedings of an Academic Library Symposium*. (pp.31-34). Maryville, MO.
Honors	Beta Phi Mu National Honor Society. Inducted 2005. Phi Beta Kappa Liberal Arts and Sciences Honorary. Inducted 2002.

Appendix E - List of Kansas Higher Education Institutions

Table E.1. Kansas Institutions Offering Library Instruction

Universities	Four-Year Colleges	Two-Year Colleges
Baker University	Barclay College	Allen County Community College
Emporia State University	Benedictine College	Barton County Community College
Fort Hays State University	Bethany College	Butler County Community College
Haskell Indian Nations University	Bethel College	Cloud County Community College
Kansas State University	Central Baptist Theological Seminary	Coffeyville Community College
Kansas Wesleyan University	Central Christian College	Colby Community College
MidAmerica Nazarene University	Donnelly College	Cowley County Community College
Newman University	Friends University	Dodge City Community College
Ottawa University	Hesston College	Flint Hills Technical College
Pittsburg State University	Kansas State University at Salina	Fort Scott Community College
University of Kansas	Manhattan Christian College	Garden City Community College
University of Saint Mary	McPherson College	Highland Community College
Washburn University	Southwestern College	Hutchinson Community College
Wichita State University	Sterling College	Independence Community College
	Tabor College	Johnson County Community College
		Kansas City Kansas Community College
		Labette County College
		Manhattan Area Technical College
		Neosho Community College
		Pratt Community College
		Seward County Community College
		Wichita Area Technical College