

**A STUDY OF THE JOB TRAINING NEEDS OF THE SUPPORT
STAFF IN THE SIX KANSAS BOARD OF REGENTS
UNIVERSITY LIBRARIES**

By

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**B. A., Lanzhou University, P. R. China, 1982
MLS., University of Tennessee, Knoxville, 1988**

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

2004

ABSTRACT

The purpose of this study was to learn the perceived training needs of the support staff in the six Kansas Board of Regents' (KBOR) university libraries. Based on data from field and pilot studies and advice from an expert panel, a survey instrument was designed to assess library support staff's perceptions of their training needs on computer skills, interpersonal skills, supervision/management skills, important library/organizational support, helpful training delivery methods, and training sources. The survey instrument was administered to the entire 167 support staff in the six KBOR university libraries, with a return rate of 83 percent achieved through two mailings and two postcard reminders. Quantitative data from the responses to closed-ended questions were analyzed through descriptive measures and one-way multivariate analysis of variance (MANOVA). Qualitative approaches to code answers from open-ended questions were utilized in order to allow stakeholder themes to emerge.

Quantitative analyses indicated that the respondents viewed the most important training topics for each area of the study to be: database searching and MS Office suites for computer skills; working with difficult people and managing priorities for interpersonal skills; training new employees and supervising student employees for supervision/management skills; being supplied with appropriate software, release time, and technical support were viewed as the most important library support that would help their training. The respondents perceived classroom instruction with a teacher and interactive classroom discussions as being the most helpful delivery methods. The respondents considered in-house trainers, supervisors, and co-workers as being the most

helpful training sources. A series of MANOVA tests were conducted on the six areas of the study. At the $\alpha = .05$ level, statistically significant differences were found in the respondents' perceptions of training needs on computer skills measured by their work units, supervision/management skills measured by their work units and level of job responsibilities, the respondents' perceptions of important library/organizational support measured by their total years in the library field and age range, and the respondents' perceptions of helpful training sources measured by their total years at current positions.

Qualitative analyses provided 314 units of information on 32 themes on additional training topics, library/organizational support, delivery methods, and training sources. The top 10 themes were related to "Software programs," "Windows operating systems," "Release time," "Supervisor/management support," "Relevance/applicable training," "Promotion/opportunities," "Training for motivation," "Classroom with feedback," "Training materials," and "Ono-on-one and in-house training."

Based on the findings, summaries, and conclusions of this study, the researcher made recommendations for further study that focuses on job training needs of support staff at university libraries, including a broader scope of training topics, motivating factors, the perceptions of library administrators on the support staff's training needs, training needs on supervision/management for non-supervision support staff, differing views on library/organizational support, different training delivery methods, etc.

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Major Professor
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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Changes in Higher Education

Technology is a driving force for much of the change taking place in colleges and universities. Shirley Ann Jackson (2004), President of Rensselaer Polytechnic Institute, elaborates in a recent article the challenges caused by technology that have profoundly impacted higher education:

In higher education, the pedagogical, research, and administrative changes necessitated by new technological capabilities and methodologies are profoundly affecting the work and methods of scientists, engineers, and administrators. Colleges and universities *must* evolve to meet the new challenges (p. 11).

Institutions of higher education have entered into a period of significant change as they attempt to respond to new challenges, opportunities, and responsibilities. Duderstadt, Atkins, and Houweling (2002) recognize that the forces driving change are many and varied. These forces include:

The globalization of commerce and culture, the advanced educational needs of citizens in a knowledge-driven global economy, the exponential growth of new knowledge and new disciplines, and the compressed timescales and nonlinear nature of the transfer of knowledge from campus laboratories into commercial products (p. 265).

In providing a framework for the challenges of change in higher education, Duderstadt (1999) includes financial imperatives, continual growth of needs for the services provided by colleges and universities, and the rapid development of information technology, including computers, telecommunications, and networks in the spectrum. With the continual decline in funding to support public institutions, university campuses around the country are called to use public resources more effectively (Hirsch and Weber,

1999). Colleges and universities need to develop ways to respond to the increasingly diverse student body (Zusman, 1999). The rapid evolution of digital technology is creating not only new opportunities for our society, but challenges to it as well. Institutions of every stripe are grappling with responses to these issues by adapting their strategies and activities (National Research Council, 2002).

Technological Changes in University Libraries

In an era of technology-driven higher education, the college or university library has to rethink its role in the changing climate to “increase ease of effectiveness, efficiency, access, coordination, and responsiveness in all aspects of our work - academic, curricular, ancillary, and support” across higher education (Ruben, 2004, p. 355). The library has always been the intellectual heart of the university, acquiring and providing access to the recorded documents that represent the knowledge and wisdom of centuries of civilization. Nonetheless, the impact of technology advancement on the library has been both compelling and challenging. Digital knowledge (in the form of sound and images, multimedia, and virtual reality) and digital information pose “a particular challenge to the library, shifting it from a focus on collecting and archiving knowledge resources (most commonly in written form), to assisting scholars to navigate a vast array of digital knowledge resources scattered through cyberspace” (Duderstadt et al., p. 72).

New technology brought unprecedented changes to university libraries. No other unit on campus has experienced greater impact from these advanced information technologies and telecommunications. Indeed, technology is the primary driving force behind this rapid rate of transformation. One of the examples of this change is that

computer terminals have replaced card catalogues in most libraries (Partee, 2002). Alire (2004) elaborates on the role of academic libraries in this transformation:

Academic libraries have been the driving forces in providing our users with state-of-the-art electronic services and resources, not because it is the cool thing to do, but because we continually look for better ways to serve our users. Our users expect their libraries to be technology rich, especially as our institutions are providing more extended learning opportunities (p. 87).

In this rapidly changing environment, the catch phrase, “do more with less,” has forced library administrators to re-examine how they can maintain and improve staff morale and productivity with insufficient funding. These and other compelling reasons require libraries to place a higher priority on the continual growth and development of library staff.

Notwithstanding the importance of collections and services, the staff remains the library's most important and expensive resource. Training of library staff to grasp the new technology in order to better serve their users has become one of the highest priorities of university libraries. A survey by Philadelphia-based Right Management Consultants (2003) indicates that 76 percent of respondents placed “ongoing training” on the top of the list when they were asked, “What do you want in your next job?” Prior to that, in 1999, only 41 percent of the respondents agreed with that statement. Fritz (2003) further articulates that “business and manufacturing companies would soon be out of business if they tried to get by with untrained staff doing their best to produce a product using unfamiliar tools and with no training” (p. 25). In this rapidly changing climate and the expanding workload faced by the library staff, libraries within the institutions of higher education have to invest more in the training and retooling of existing staff. “A crucial success factor appears to be the ability of staff at all levels to develop their learning skills so that they can be responsive to change” (Allan, 2003, p. 3).

An investment in training programs for library staff repays the institution in many ways, especially in improved library services for its students, faculty, and staff.

Casteleyn (1981) divides the benefits from library staff training into three categories: the employee, the library, and the library patron:

The employee receives greater job satisfaction, greater opportunity, as well as personal development. The library benefits in having a skilled and motivated workforce, less turnover rate of employees, and thus leading to a better reputation for the library as a whole. Because of these factors, library patrons also win in the end because they are provided with better customer service (p.14-15).

Creth (1986) echoes Casteleyn's assessments and lists the following benefits of a staff training program:

1. Increasing the quality and quantity of work;
2. Eliminating the need for close and constant supervision, thus freeing the supervisors to make more effective use of their time;
3. Improving staff morale and job satisfaction by developing independent and competent staff; and
4. Increasing organizational flexibility and stability by creating resourceful and adaptable staff (p. 10).

Well-trained library staff can enhance library services, which in turn benefits library users.

Increasing Work Efficiency in University Libraries

University libraries generally consist of such work units as acquisitions, archives, cataloging, circulation, collection development, database maintenance, digital library, government documents, interlibrary loans, preservation, references, system support, special collections, etc. Through these work units, the library accomplishes the tasks of selecting, acquiring, organizing, processing, providing access to library materials in print, digital, and multimedia formats, assisting users in searching and locating needed resources for their learning and research needs, and preserving recorded knowledge for future generations.

Fritz (2003) uses an industrial model to illustrate that one primary purpose of a library is to

collect resources to meet the educational, informational, and recreational needs of its patrons. The library resources must be organized and made accessible to users. The author lists the following nine steps that a typical library integrates to produce the “accessible resources”:

1. Choose the resources to be added to the collection (Collection Development);
2. Acquire the resources (Acquisitions);
3. Process the resources (Processing);
4. Provide bibliographic information about the resources for the library’s catalog so that patrons can find the resources, especially from off-site locations (Cataloging);
5. Make the resources available (shelve them; mount them on systems, etc.);
6. Check the physical resources out and (hopefully) back in again (if appropriate) (Circulation);
7. Provide support services to help patrons find resources (Access Services);
8. Arrange for resources to be borrowed from and loaned to other libraries (Interlibrary Loan); and
9. Maintain automated system to support all of the above functions (Systems Support) (Fritz, p. 24).

Though each library’s operational procedures may vary, this list provides a framework for understanding library functions.

In the past two decades, various work units within a library implemented technology that has increased efficiency, productivity, and services to library users. For instance, among the work units comprising a university library, acquisitions and cataloging are undergoing the greatest change. Advanced information technology has resulted in a metamorphosis in these units. Myers (1996) notes that:

Technical services departments -- acquisitions, cataloging, serials -- have long been the sites of evolution and revolution in staff duties and responsibilities. A rapid pace of change continues, fostered by technical decision making -- material selection, cataloging, day-to-day supervision -- has been moving down the hierarchy and generally defines what support staff are doing (p. 66).

To accommodate the rapid transformation, each work unit in a university library has

to be at the forefront in creating, coordinating, and implementing staff training programs. For example, when book vendors and journal subscription vendors offer the service of electronic data interfacing (EDI) for such functions as material ordering, invoicing, receiving, and claiming, the acquisitions staff have to learn the new technology and accomplish all of these functions electronically. They have to give up the “paper trail” with which they have been familiar for many years. Likewise, the cataloging staff have to learn how to organize and provide users with adequate access to electronic resources in addition to their conventional methods of cataloging print materials. The interlibrary loan staff have to learn how to place requested materials from other libraries into the web sites for students and faculty to retrieve electronically. The staff of special collections have used scanning technology to provide users with unique collections and images on the web sites that can be accessed remotely. These changes in the daily work of library staff demand regular and continual training for new skills.

Increasing Responsibilities and Professionalism of Library Support Staff

In general, university libraries in the United States employ two groups of people who provide a variety of services to library users: professional librarians with a Master’s degree in library science (MLS) and support staff who are not required to hold an advanced degree for their positions. In many university libraries, the second group of employees is often called “support staff” or “paraprofessionals.” While professional librarians receive their formal training from library and information science programs accredited by the American Library Association (ALA), support staff often obtain their training by working in libraries. In a classic document by Charles C. Williamson on differentiating the concept of professional and clerical duties in libraries, the author states that “library schools should

confine themselves to training of the professional type. Training of the clerical type will be provided through so-called training classes conducted by libraries” (1971, p. 136).

In library literature, several interchangeable terms are used to describe the library’s support staff. For example, “library technician,” “library support staff,” “paraprofessional,” “library technical assistant,” “library assistant,” and “library associate” are a few more common terms. Robinson (1982) describes the parameters of the support staff’s responsibilities:

Non-professional staff consists of those persons who perform duties of a technical, clerical, or routine nature and who are not required to hold advanced degrees in library science or related fields. A more positive term for these staff members, and one used by many academic libraries, is that of ‘support staff’ (p. 3).

The *Statement of Policy Adopted by the Council of the American Library Association*, published on January 23, 2002, defines a library assistant or a support staff as “a person with certain specifically library-related skills – in preliminary bibliographic searching, for example, or utilization of certain mechanical equipment or technology - the performance of whose duties seldom requires a background in general education” (p. 6).

Both professional librarians and support staff in university libraries provide services to their users. Both professional librarians and support staff are needed in libraries to meet the goals of library services (American Library Association, 2002). In many cases, the support staff make up a large percentage of the total employees in a university library. Mort (1992) notices that “a large portion of an academic library’s total employees is comprised of support staff” (p. 5). Kao (1998) estimates that library technicians comprise two-thirds of the total library staff in academic libraries and many of them hold essential responsibilities in the library’s day-to-day operation. Furthermore, in recent years, as a cost-saving

measure, libraries have tended to increase their reliance on support staff. In many cases, they have “replaced librarians, particularly in assigning graduate and undergraduate students” (Kao, p.1).

In a survey conducted by the Association of Colleges and Research Libraries (ACRL) in 2001, the libraries in institutions granting doctoral degrees employed more support staff (M = 44.11) than those institutions granting bachelor’ degrees (M = 34.01). That is, the larger university libraries in the doctoral degree granting institutions tend to employ more support staff than smaller libraries due to budget pressures, heavier workloads, and the large number of users they serve. Table 1 lists the comparison figures of the support staff as percent of total library employees.

Table 1. Support Staff as Percent of Total Library Employees

	Carnegie Code	Mean	Reporting Libraries
Doctoral degree granting institutions	D	44.11	393
Master’s and professional degree granting institutions	M	36.78	472
Bachelor’s degree granting institutions	B	34.01	242

Source: *ACRL 2000 Library Survey*

The percentage of support staff in libraries has increased and this trend will continue in the next several years. The Bureau of Labor Statistics reports that the job outlook for library technicians in the United States will be better than average through 2006. The increasing use of library automation is expected to stimulate job growth in this field (Fast Facts, 2000). Table 2 indicates the trend of increasing numbers of support staff in libraries in the Midwestern and Western regions of the United States. These statistics imply that the

number of library support staff and their responsibilities will continue to grow.

Table 2. Projected Employment for Support Staff from 1996 to 2006

Positions	States			
	Kansas % change	New Mexico % change	Utah % change	Wyoming % change
Technical Assistants	7%	43%	46%	1%
Library Assistants/Bookmobile	14%	22%	23%	-8%
Librarians, Professional	5%	19%	25%	-16%

Source: *Utah Dept. of Workforce Services, State Occupational Projections*

The tasks performed by library support staff have evolved from “limited and often repetitive,” to “many new tasks that have been created by automation and the need to keep up with the change that has been occurring” (Oberg, 1999, p. 12). Oberg (1999) observes that support staff serving at the reference and information desk, doing original cataloging, and performing a variety of systems work are some examples of duties now done by support staff that have traditionally been performed by professional librarians.

Library support staffs have their own professional organizations and journals. One such organization is the Council on Library/Media Technicians (COLT). COLT is a national organization that promotes the continuing education needs of the library support staff and provides them with an opportunity to grow personally and professionally. Another organization concentrating on the support staff’s interests and issues is the American Library Association’s Library Support Staff Interest Round Table (LSSIRT). Its missions are:

1. to provide an arena within ALA for addressing a wide variety of issues of concern to library support staff, including, but not limited to, basic training programs, education, career development, job duties, and responsibilities;
 2. to foster communication and networking among all people working in libraries;
- and

3. to be responsible for the timely dissemination of information to local, regional, state, and national support staff organizations (LSSIRT Mission Statement, 2004).

Library Mosaics is a journal focusing specifically on issues relevant to library support staff.

The authors who contribute to this journal include both professional librarians and support staff.

Third Congress on Professional Education (COPE III)

In 1990, the North Carolina Library Paraprofessional Association called for more training and continuing education courses, seminars, workshops, and conferences for library technicians (Stoddard, 1990). The growing importance of support staff training to libraries is evidenced in the themes that emerged and the recommendations proposed at the third Congress on Professional Education (COPE III): Focus on Library Support Staff, held at College of Du Page, Glen Ellyn, Illinois in May 2003. Sponsored by the American Library Association (ALA), COPE III focused on three main issues: “Support staff career ladders, compensation appropriate to level of education, experience, and responsibilities, and access to continuing education and training opportunities” (*Support Staff to Be Focus of COPE III*, 2003, p. 6). The themes that emerged on support staff training included:

1. Support staff should be encouraged, supported, and funded in their pursuit of continuing education (if they choose to participate).
2. They should be given the opportunity to participate in workshops, seminars, conferences, etc.
3. Promote and support more regional training opportunities for library support staff focusing on specific work areas (technical seminars, readers’ assistance, and circulation seminars).
4. Support staff competence-based national training program committee/task force/unit is created to implement a certification process.

5. If certification is presented, it will include experience and credit for attendance to various continuing education programs and participation in state and national organizations, divided into technical services, circulation, reference, children's services, etc. (COPE III, Small Group Discussion, 2003, p. 10).

The outcomes of the COPE III included some important recommendations from the Steering Committee to the ALA Executive Board. Continuing education and training for support staff are among these recommendations:

- ALA should create and maintain a web-based continuing education clearinghouse.
- ALA should develop guidelines for libraries and parent institutions that include recommended budget expenditure for staff development, funding sources, and ideas for cooperative staff development offerings.
- Networks and consortia for continuing professional development for library workers should be established and funding support should be sought from appropriate sources (COPE III Steering Committee Report, p. 16).

The COPE III delegates asked ALA to take a leadership role “in working with library support staff’s issues and challenges and in recommending to other associations and to libraries and their parent institutions the concrete ways in which these issues and challenges can be addressed” (COPE III Steering Committee Report, p. 12).

Support Staff Dissertations

The researcher conducted searches of online dissertation abstracts that resulted in seven dissertations. These dissertations were related to support staff or a combination of both professional librarian and support staff issues. The topics of these dissertations included the current role and status of paraprofessionals perceived by selected academic and public administrators (Gould, 1974), professional librarians and support staff’s involvement in decision-making (Robinson, 1982), support staff career paths (Clemens, 1983), support staff unions (Kusack, 1983), motivators that support staff valued (Mort, 1992), the effect of automation practices and staff allocation (Kenerson, 1997), and

support staff job satisfaction (Kao, 1998). While these studies offered valuable insight on support staff issues in the academic library, none of them addressed the support staff's specific training needs that are critical in today's rapidly changing work environment in university libraries. The researcher was not aware of studies on the comprehensive training needs of support staff in university libraries, nor has there been any research exploring the differences among support staff training needs and their educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. The need for continual training for the support staff in academic libraries, though frequently mentioned assertion in library literature (Oberg et al., 1992), has seldom been assessed.

The Support Staff Classification System in Kansas

The six Kansas Board of Regents' universities are Emporia State University, Fort Hays State University, Kansas State University, Pittsburg State University, University of Kansas (including the Medical Center), and Wichita State University. In the six university libraries, support staff are classified as "library assistants." The state of Kansas has established three ranks of library support staff: Library Assistant I, Library Assistant II, and Library Assistant III, where Library Assistant III is the highest rank among library assistants and Library Assistant I is the lowest. The minimum requirement for Library Assistant I is job knowledge at an entry level in library support work; for Library Assistant II, job knowledge at an advanced level in library support work; and for Library Assistant III, independent work experience in library support work. The support staff in each specific rank perform specific library tasks. The list of specific tasks is listed in Appendix B.

Statement of the Problem

The libraries within the six Kansas Board of Regents' universities have certain similarities. They are under the same governing board by the Kansas Board of Regents. The support staff at each of the universities' libraries have similar job descriptions, job titles, and similar pay scales within the ranks of Library Assistant I, Library Assistant II, and Library Assistant III. Despite these similarities, there is little or no cooperation and collaboration among the six university libraries in the area of support staff training. Little knowledge is available on what the six libraries are doing in the area of staff training based on library literature and available library reports. Little is known at both the national and state levels about what support staff perceive as important training topics, library/organizational support, helpful delivery methods, and facilitative training sources that will help their job performance.

In the current climate of budget restraint and changing technology, the need to prepare support staff for increased responsibilities without duplicating training in the six university libraries is enormous. Replicating successful practices among the six libraries should be encouraged as logical and justifiable on the basis of cost and efficiency. Economies of scale may also be realized if at least some of the training programs could be jointly planned and shared among the six university libraries.

Purpose of the Study

The purpose of this study was to learn the training needs perceived by support staff to be important for their job performance at the six Kansas Board of Regents' university libraries. Shaughnessy (1988) finds that while conferences and workshops that discuss the current state of affairs of libraries are an important element of overall staff

development, they usually do not impact on everyday functioning of the library, especially when compared to specific training on daily skills. “Programs that focus on specific training needs and specific tasks are more likely to affect the efficiency of the employee” (Shaughnessy, p. 6). This study was undertaken to further this understanding.

This study was driven by the lack of empirical data and assessment of training contents deemed to be useful to support staff in university libraries, in general, and in the six Kansas Board of Regents’ university libraries in particular. When library resources are restricted, an individual with a higher level of specific skills for a position in library work should be considered at the stage of job offering. The findings of this study can be used by training providers for designing programs, and by library administrators who are planning staff training. Shared training programs can create economies of scale, thus preserving scarce library resources.

Significance of the Study

The lack of information about what constitutes important training topics, library/organizational support, helpful delivery methods, and facilitative training sources perceived by the support staff in the six Regents’ libraries is a significant void. At the third Congress on Professional Education (COPE III), a national conference held in May 2003, training and continuing education of support staff was one of the three major issues that resulted in a series discussions, debates, and recommendations. The role of the support staff in university libraries is of growing importance and complexity at the national level, as outlined at COPE III. Because of critical budget problems and technological changes, support staff perform duties that were reserved for professional librarians. Notwithstanding the limited number of dissertations completed on the training

issues of library staff, the researcher was not aware of any dissertation that focused exclusively on the training needs of support staff in university libraries.

This study will contribute previously unidentified data in staff training areas. The findings of the study will aid in training providers in designing training programs, help the library administrators in planning and allocating funding and other supportive resources, and assist professional associations in ascertaining support staff's training needs in other university library settings in which there are, or could be, shared resources for support staff training.

Research Questions and Null Hypotheses

This study focused on the perceived training needs of support staff and explored the differences of their perceived training needs as a function of their general characteristics (i.e., educational attainment, library work experience, work units, level of job responsibilities, rank, and age range). The three main areas of interest were:

1. the identification of training topics that support staff perceived as important to perform their job.
2. the exploration of library/organizational support, helpful delivery methods, and facilitative training sources valued by the support staff for their training.
3. the examination of the differences in perceived training needs as a function of the support staff's general characteristics of educational attainment, library work experience, work units, level of job responsibilities, rank, and age range.

The six research questions and null hypotheses were designed to explore these areas. The research questions and null hypotheses were:

Research Question 1

What kind of training needs on computer skills are perceived as important by support staff for their job performance?

Null Hypotheses

Ho 1-a. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their educational attainment.

Ho 1-b. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their total years working in the library field.

Ho 1-c. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their total years working at their current positions.

Ho 1-d. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their work units.

Ho 1-e. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their level of job responsibilities.

Ho 1-f. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their rank.

Ho 1-g. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their age range.

Research Question 2

What kind of training needs on interpersonal skills are perceived as important by

support staff for their job performance?

Null Hypotheses

Ho 2-a. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their educational attainment.

Ho 2-b. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working in the library field.

Ho 2-c. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working at their current positions.

Ho 2-d. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their work units.

Ho 2-e. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their level of job responsibilities.

Ho 2-f. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their rank.

Ho 2-g. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their age range.

Research Question 3

What kind of training needs on supervision/management skills are perceived as important by support staff for their job performance?

Null Hypotheses

Ho 3-a. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their educational attainment.

Ho 3-b. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working in the library field.

Ho 3-c. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working at their current positions.

Ho 3-d. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their work units.

Ho 3-e. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their level of job responsibilities.

Ho 3-f. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their rank.

Ho 3-g. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their age range.

Research Question 4

What kinds of library/organizational support are perceived as important by support staff to participate in training?

Null Hypotheses

Ho 4-a. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their educational attainment.

Ho 4-b. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their total years working in the library field.

Ho 4-c. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their total years working at their current positions.

Ho 4-d. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their work units.

Ho 4-e. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their level of job responsibilities.

Ho 4-f. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their rank.

Ho 4-g. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their age range.

Research Question 5

What delivery methods are perceived as being helpful by support staff for their training?

Null Hypotheses

Ho 5-a. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their educational attainment.

Ho 5-b. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working in the library field.

Ho 5-c. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working at their current positions.

Ho 5-d. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their work units.

Ho 5-e. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their level of job responsibilities.

Ho 5-f. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their rank.

Ho 5-g. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their age range.

Research Question 6

What internal and external training sources are perceived as being helpful by support staff for their training?

Null Hypotheses

Ho 6-a. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their educational attainment.

Ho 6-b. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working in the library field.

Ho 6-c. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working at their current positions.

Ho 6-d. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their work units.

Ho 6-e. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their level of job responsibilities.

Ho 6-f. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their rank.

Ho 6-g. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their age range.

Treatment

In order to obtain answers to the six research questions, a survey instrument with a 1 to 4 Likert scale was designed for this study, with 1 being "Not at All Important" and 4 being "Very Important." During the process of a field study and a pilot study, the survey instrument was tested and revised several times before it was administered to the entire support staff of 167 in the six university libraries for the final study. After two

mailings and two postcard reminders, 139 completed and useful questionnaires were received with a return rate of 83 percent. The survey instrument collected responses from closed-ended questions and open-ended questions. The responses to closed-ended questions were analyzed through descriptive statistics and a series of one-way multivariate analysis of variance (MANOVA). The answers to open-ended questions were analyzed through a qualitative method where major themes were identified. The findings to the six research questions were reported in chapter 4.

Definition of Terms

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

Access services. Access services in this study refers to such work units in university libraries as circulation, physical stacks management, and reserves. The support staff in these work units are responsible for checking out materials, issuing library cards, maintaining orders of physical stacks, updating reserved materials from teaching faculty, and performing other tasks.

Analysis of Variance (ANOVA). ANOVA asks whether the differences within a category are larger or smaller than those among three or more categories (Nardi, 2003, p. 174).

Cataloging. The purpose of cataloging materials is “to provide a shelf address or location for each book, CD, video, or other item, and to provide specific information for the library holding database” (Fourie and Dowell, 2002, p. 123).

Continuing education. The term of continuing education “is often used interchangeable with adult education. It is simply the idea that education is not something that stops, but continues throughout one’s life” (Corder, 2002, p. 140).

Dependent variable (D.V.). The dependent variable is “a measure of the output side of the input-output relationship. In the social sciences, a dependent variable is usually a response measure” (Sprinthall, 2000, p. 591).

Descriptive statistics. Descriptive statistics refers to statistics that “summarize the characteristics of a sample as opposed to inferential statistics that are used to generalize to the population from which the sample is drawn” (de Vaus, 2002, p. 358).

General characteristics. The general characteristics measured in this study are the respondents’ educational attainment, library work experience, work units, level of job responsibilities, rank, and age range.

Independent variable (I.V.). Independent variable refers to the treatment variable “manipulated by the experimenter in an experiment, or the causal variable which is believed to be responsible for particular effects” (Haslam and McGarty, 2003, p. 51).

Inferential statistics. Inferential statistics are numerical statements that “represent conclusions about populations on the basis of sample data” (Haslam and McGarty, 2003, p. 131).

M.L.S. A Master’s degree in library science offered by library and information science programs accredited by the American Library Association (ALA).

Multivariate Analysis of Variance (MANOVA). MANOVA tests “involve more than one dependent variable. MANOVA tests look at all dependent variables at once, in much the same way that ANOVA looks at all levels of an independent variable at once” (Cronk, 1999, p. 80).

Population. Population refers to the “complete set of events, people or things that a researcher is interested in and from which any sample is taken” (Haslam and McGarty,

2003, p. 42).

Professional librarian. A person who holds an earned Master's degree in a library/information science program accredited by the American Library Association.

Library and Information Studies and Human Resources Utilization, published by American Library Association in 2002, states that:

The title of "librarian" carries with it the connotation of "professional" in the sense that professional tasks are those which require a special background and education on the basis of which library needs are identified, problems are analyzed, goals are set, and original and creative solutions are formulated for them... (p. 4)

Qualitative research. Qualitative research emphasizes natural settings, understanding, verbal narrative, and flexible designs (McMillan, 2004, p. 9).

Quantitative research. Quantitative research describes current conditions, investigates relationships, and studies cause-effect phenomenon (Gay and Airasian, 2003, p. 10).

Staff training. Staff training focuses on the improvement of both the library and the individual. They are closely coordinated with the library's goals and support staff's current job performance needs.

Support staff. Employees working in non-MLS (Master's degree of library science from an American Library Association accredited library school) positions. Examples include: library assistants, library associates, library technicians, etc. (Roney and Fox, 2003, p.14).

Limitations of the Study

Limitations "are uncontrollable events that may interfere with the results of study" as defined by Berg and Latin (1994, p. 33). In this study, the subjects were asked to report

what they perceived as important training topics, library/organizational support, helpful delivery methods, and facilitative training sources. The limitations were acknowledged:

1. Because the respondents were asked to fill out the questionnaire anonymously, the study was limited by the actual responses from the respondents.
2. The respondents may not understand the survey items posted in the questionnaire.
3. The respondents may not have enough knowledge to answer the survey questions.

Delimitations of the Study

The delimitation of the study is pertinent to the population from which the responses were collected:

1. This study was limited to the training needs of support staff in the six Kansas Board of Regents' university libraries because of the respondents' commonalities within the Regents' system.
2. This study did not include clerks or part-time student workers in the six university libraries.
4. While data from this study could provide insight into the job training needs of support staff in other systems in a general way, further extrapolation regarding system-specific training was perforce limited.

CHAPTER II

LITERATURE REVIEW

Chapter Overview

This chapter provides a theoretical framework for the six research questions of the study. The research questions explore the training contents, library/organizational support, delivery methods, and training sources that library support staff need for their training in the six Kansas Board of Regents' university libraries. Though studies have been completed at colleges and universities regarding the exploration of human resource management, training, and development of staff in a broad context, there was no data on the training needs of the support staff in university libraries. Therefore, this chapter reviews the support staff's training issues in the broader context based on research and theory in the areas of adult learning theories, adult learners' characteristics, and their learning environment. This chapter begins with a literature review of adult learning theories and core concepts, followed by a review of the literature on library support staff training elements, examinations of learning environment, and discussions of training methods for support staff. The researcher acquired a greater understanding on the growth and development of the needs for library support staff through this review. Adequate job training prepares the support staff for the delivery of products and services that influence the quality and efficiency of library services provided to users of the university library.

Adult Learning Theories

Though the practice of teaching and educating adults started more than a century ago, a theoretical framework and discussions on adult learning and adult education developed much later, in the middle of the twentieth century. Several figures, for

instance, Knowles, Mezirow, Freire, and Tough, have made substantial contributions to theoretical development in the field of adult learning.

Andragogy

Andragogy and self-directed learning are the two most important elements of the knowledge base of adult learning (Merriam, 2000). Andragogy, defined by Knowles (1996), is “the art and science of helping adults learn” (p. 83). Departing from pedagogy as a method of teaching children, Knowles emphasized that adults should be taught in different ways. Knowles believed that “the main reason why adult education has not achieved the impact on our civilization of which it is capable is that most teachers of adults have only known how to teach adults as if they were children” (p. 82). Jarvis (2001a) echoes that sentiment:

Malcolm Knowles’s formulation of andragogy was the first major attempt in the West to construct a comprehensive theory of adult education... While it was not as comprehensive a theory as he would have perhaps anticipated, he provided a baseline for considerable discussion about the nature of adult education (p. 157).

According to Knowles, “adults are more or less autonomous beings whose learning takes place within a developmental and social context fundamentally different from that of children” (Sawchuk, 2003, p.31). Knowles’s theory contributed to the discussions of facilitation rather than the pedagogy of adult learning. Apart from behaviorism and empiricism dominated learning theory in the 1950s and 1960s, Knowles blended these theories into his own, presenting five key assumptions (self-concept, prior experience, readiness to learn, learning orientation, and motivation to learn) as a proposed program-planning model for designing, implementing, and evaluating educational experience with adults (Pratt, 1993).

Because andragogy acknowledges adults' needs, experience, and self-directed nature, it has become a technology of instruction or a facilitation of learning. Knowles (1980) viewed andragogy as a process design that included seven elements: climate setting, involving learners in mutual planning, involving participants in diagnosing their own needs for learning, involving learners in formulating their learning objectives, involving learners in designing learning plans, helping learners carry out their learning plans, and involving learners in evaluating their learning. Obviously, Knowles's andragogical approaches required a psychological climate of mutual respect, collaboration, trust, support, openness, authenticity, pleasure, and human treatment (Pratt, 1993).

Knowles's andragogy concept has had an enormous impact on adult learning theory. However, his theory did not progress without criticism. Other authors questioned the andragogy theory. Hanson (1996) argued that "simply believing that adults are different from children as learners because they are adults is not sufficient grounds on which to construct a separate theory" (p. 100). Furthermore, Hanson elaborated why the assumption of adults as autonomous and self-directed learners was problematic in relation to cultural control and power structures presented in our educational institutions:

In the context of subject areas increasingly pre-packaged in number of credits, pre-determined levels of achievements and final certificates, the possibility of exercising complete autonomous self-direction is, in many ways, severely curtailed. Any theory of adult learning which advocates the importance of each individual as an individual, but avoids issues of curriculum control and power does little to address the actual learning situation of adults...Without institutional and curriculum reform to stress autonomy, individuality and self-direction, are adults being offered anything other than what was available through schools? (Hanson, 1996, p. 101)

Though Knowles's andragogy theory of adult learning was questioned as to whether it was a theory of learning at all (Draper, 1998), Sawchuk (2003) insisted that Knowles's

work was “important to our understanding of adult learning,” because he was “one of the first North American theorists to seriously problematize conventional notions of pedagogy from the perspective of the adult learner” (p. 32).

Self-directed learning

Allen Tough developed a seminal work, *The adult's learning project* in 1979. In this piece, Tough pointed out that more than two-thirds of all learning activities were planned, implemented, and evaluated by adults themselves. In Tough's documents of informal adults learning activities, adults engaged in a median of eight distinct learning projects and spent an average of 500 hours per year on learning (Sawchuk, 2003). Since that study, replications with diverse samples of adults have largely supported Tough's findings (Brockett and Hiemstra, 1991).

The principal ideas of self-directed learning include: a self-initiated process of learning that stresses the ability of individuals to plan and manage their own learning, an attribute or characteristic of learners with personal autonomy as its hallmark, and a way of organizing instruction in formal settings that allows for greater learner control (Caffarella, 1993). Tough believed that much significant learning was carried out by individual adults in the form of learning objects, largely outside of the influence of formal educational institutions (Tight, 2002).

Like Knowles's andragogy theory of adult learning, Tough's self-directed learning, though regarded as central to adult education practice, was often resisted by adults and has not been adequately addressed from a cultural perspective (Hiemstra and Brockett, 1994). Therefore, Wlodkowski's (1999) view was that “as an instrumental approach, self-directed learning may need to be more often negotiated as an option than mandated” (p. 11).

Brookfield (2000) echoed this viewpoint and asserted that self-directed learning was a politically charged concept:

The case for self-direction as an inherently political concept rests in two arguments. First, that at the heart of self-direction are issues of power and control, particularly regarding the definition acceptable and appropriate learning activities. Who defines the boundaries of intellectual inquiry is always a political question, and self-direction places this decision squarely in the hands of learners. Second, exercising self-direction inevitably requires certain conditions to be in place regarding access to resources, conditions that are essentially political in nature. Claiming the resources needed to conduct self-directed learning can be regarded as a political act (p. 16).

Transformational learning

J. Mezirow was another leading figure in adult learning theory development. He introduced the theory of transformative learning to the framework. Mezirow (1990) defined transformative learning as “the process of the learning through critical self-reflection, which results in reformulation of a meaning perspective to allow more inclusive, discriminating, and integrative understanding of one’s experience” (p. xvi). Mezirow investigated the perspective transformation involved in achieving emancipatory knowledge (Clark, 2002). Because not all learning results in change of some kind, whether of attitudes, skills, knowledge, or beliefs, what is different about changes generated by transformative learning? Clark (1993) offered the following explanations:

Transformational learning produces more far-reaching changes in the learners than does learning in general, and these changes have a significant impact on the learners’ subsequent experiences. In short, the transformative learning shapes people; they are different afterwards, in ways that both they and others can recognize (p. 47).

Transformative learning has become increasingly important in the field of adult education. Nonetheless, Mezirow’s theory of transformation has been criticized by adult educators for ignoring the affective, emotional, and social context aspects of the learning process (Clark and Wilson, 1991; Lucas, 1994; McDonald, Cervero, and Courtenay, 1999;

Taylor, 1994). Recognizing these issues, Mezirow, in his book *Learning as Transformation: Critical Perspectives on a Theory in Progress*, published in 2000, acknowledged their importance in the meaning-making process and acknowledged that social interaction was important in the learning relationship (Baumgartner, 2001).

In promoting transformative learning, Freire's (1971, 1972) emancipatory learning as a learning process offered another lens through which transformative learning theory was explored. Freire saw the purpose of education as social change. When students involved in discussions on relevant life issues, they "recognized the large societal structures that oppressed them, and how they could overcome these barriers" (Baumgartner, 2001, p. 16). Through such process, "learners came to see the world and their place in it differently, empowered in their new perspective, they could act to transform their world" (Baumgartner, p. 16).

One of the terms associated with Freire's work is "conscientization." It was "a process of developing consciousness, but consciousness that is understood to have the power to transform reality" (Taylor, 1993, p. 52). There are many links between Freire's idea of "conscientization" and other contemporary educational concepts (Tight, 2002). Tennant (1997) suggested some broad correlations:

The idea of analyzing one's experiences to achieve liberation from psychological repression or social and political oppression is a recurring theme in adult education. It is most commonly associated with the work of Freire but it is also a feature of some contemporary concepts of self-directed learning, andragogy, action research, models of the learning process and techniques of facilitation (p. 123).

Freire's work extended far beyond the inculcation of basic skills to concern itself with broad themes of individual emancipation and community empowerment (Tight, 2002). Tight offered further elaboration that:

Freire's work and writing is probably the best example in the field of adult education and training of ideas from the developing world coming to have a major influence in the industrialized world. It raises the issue of whether such cultural transfers are either practical or useful, as Freire's methods have been adopted and adapted with mixed success in many countries. More specifically, since Freire wrote in Portuguese, and has been read by most people in translation, it may be that something has been lost in that process (p. 115).

Because Freire's emancipatory learning theory originated from his work in developing countries, Weiler (1996) warned that "Freire's thought needs to be understood in the context of the political and economic situation of the developing world" (p. 130). Sawchuk (2003) also pointed out that the limits of Freire's critical pedagogy remained too rooted in "(1) the moment of critique, and (2) the work of pedagogue... that do little to help us to understand the masking and unmasking practices that go on in the daily lives of the oppressed outside pedagogical relations" (p. 36).

Communities-of-Practice

The concept of communities-of-practice is a recent phenomenon. Wenger (1998) regarded social participation within the community as the key to informal learning. In defining communities-of-practice, Hendry (1996) viewed it as the relationships that people strike up to solve problems:

Within communities-of-practice people share tacit knowledge through which dialogue brings this to the surface; they exchange ideas about work practice and experiment with new methods and ideas; they innovate new problem solving techniques and simultaneously manage and repair the social context. In other words, they engage in experimental learning, develop and refine cognitive structures, and engage in cultural formation. Through linked communities-of-practice, knowledge, rules for action, and culture are spread (p. 628).

In a recent study examining the academic service in a mid-west university, Allen (2003) provided nine functions that the community-of-practice (CoP) carried out within the organization that led to improved individual performance:

- Help CoP members define their roles and responsibilities in relation to one another
- Provide a network through which CoP members exchange resources
- Provide an environment where CoP members can share personal work experience
- Facilitate informal and formal training for CoP members
- Supply a channel for social interaction for CoP members
- Encourage work on major initiatives with other CoP members
- Provide opportunities to engage in professional development activities
- Encourage CoP members to refine and streamline institutional processes
- Provide support for and acknowledge CoP members' work supporting students (p. 139).

Communities-of-practice should be understood in its context. Tight (2002)

suggested that communities-of-practice be seen as “ a kind of middle way for studying adult learning, focusing neither on the individual or organization, but on the group” (p. 117). In recent years, the concept of communities-of-practice was increasingly used by professional associations. Hanna and Associates (2000) viewed it as a “common approach to develop positive learning environments, especially for professionals who need to keep up with current ideas, knowledge, and applications in a field or discipline” (p. 59). Additionally, they advocated that

Within communities of practice all are learners, and all have the opportunity and the ability to contribute to the knowledge of the community and to the learning of its members. Because learning is connected with action, the consequences of successful learning are immediate, real, and powerful (p. 59).

The theoretical base of communities-of-practice drives from constructivist learning theory that regards learning as social in nature; knowledge is integrated in the life of the communities that shares values, beliefs, languages, and ways of doing things (Hanna and Associates, 2000).

Adult Learning Core Concepts

There are several core concepts related to adult learning and education: relationship of learning, education, and training; adult learning assessment; lifelong learning; workplace

learning, and adult learners' characteristics. Reviewing these core concepts enhances the understanding of support staff training in university libraries.

Learning, Education, and Training

Tight (2002) presented several core concepts of adult education: learning, education, and training. The scope of learning is much larger than education, and training is contained within the scope of education as shown in Figure 1.

Learning (outer circle) –

Education (middle circle)--

Training (inner circle)

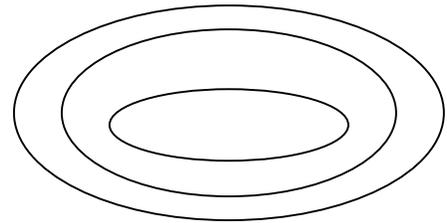


Figure 1.

Source: Tight, M. (2002). *Key concepts in adult education and training*, 2nd ed., p. 13.

Another diagram, Figure 2 shows the overlapping relationship of education and training.

Tight (2002) regarded education as broad, knowledge-based, and general activity while training was narrow, skill-based, and specific event. The author suggested that “while some learning activities may definitely be termed either education or training, in between there is a large or smaller group of activities which might legitimately be called either or both” (p. 13). In recognizing the critics of the simplistic nature of the presentations, Tight insisted that the diagrams “demonstrate differing but widely held views or perceptions” (p. 13).

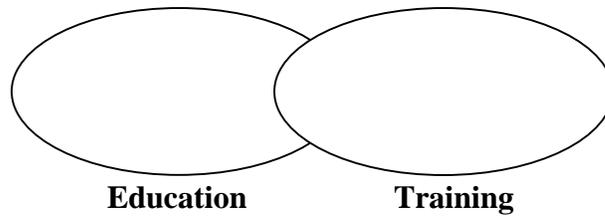


Figure 2.

Alternative diagrammatic representations of core conceptual relations

Source: Tight, M. (2002). *Key Concepts in Adult Education and Training*, 2nd ed., p. 13.

Adult Learning Assessment

Airasian (1997) defined assessment as “the process of collecting, synthesizing, and interpreting information to aid decision making” (p. 3). By emphasizing its value, McMillan (2004) advocated that “assessment that enhances learning is as important as assessment that documents learning” (p. 1). McMillan identified recent trends in classroom assessment. These trends included alternative assessments, assessment integrated with instruction, authenticity, student self-evaluation, public standards and criteria, student involvement with assessment, and formative assessment. Table 3 summarizes these recent trends in classroom assessment.

Table 3. Recent Trends in Classroom Assessment

From	To
Sole emphasis on outcomes	Assessing of progress
Isolated skills	Integrated skills
Isolated facts	Application of knowledge
Paper-and-pencil tasks	Authentic tasks
Decontextualized tasks	Contextualized tasks
A single correct answer	Many correct answers
Secret standards	Public standards
Secret criteria	Public criteria
Individuals	Groups
After instruction	During instruction
Little feedback	Considerable feedback
"Objective" tests	Performance-based tests
Standardized tests	Informal tests
External evaluation	Student self-evaluation
Single assessments	Multiple assessments
Sporadic	Continual
Conclusive	Recursive
Assessment of learning	Assessment for learning
Summative	Formative

Source: McMillan, J. H. (2004). *Classroom Assessment: Principles and Practice*. Boston: Pearson Education, p. 17.

In the adult learning environment, assessment by the instructor has validated adult learners' competence (Wlodkowski, 1999). An Organization for Economic Co-operation and Development (OECD) report (2003) described assessment as both educational and helpful for adult learners:

The individual must also be able to check whether their training is in line with their expectations, notably in terms of content, context, relationships formed, and monitoring. They must also have the benefit of an assessment of his/her results. Rather than being a (cardinal) measure used to judge them, this assessment should be educational and should help them make progress, or even improve their capacity for self-assessment (p. 170).

For assessment to be authentic and effective for adult learning, Wlodkowski (1999)

developed the following assessment strategies for adult educators:

- Provide effective feedback
- Avoid cultural bias in assessment procedures
- Make assessment tasks and criteria known to learners
- Use authentic performance tasks to enable adults to know that they can proficiently apply what they are learning to their real lives
- Provide opportunities for adults to demonstrate their learning in ways that reflect their strengths and multiple sources of knowing
- When using rubrics, make sure they assess essential features of performance and are fair, and sufficiently clear so that learners can accurately self-assess
- Use self-assessment methods to improve learning and to provide learners with the opportunity to construct relevant insights and connection (p. 244-267).

These assessment strategies used with adult learners tend to reflect the recent trends of assessment used in K-12 classrooms. When implemented, they will probably aid adult learners in pursuing their learning goals.

Adult Education and Lifelong Learning

Though “adult education” is still a common term used by practitioners and scholars in the field, the discourse of adult education was replaced in the 1980s by “continuing education” and then “lifelong learning”(Rogers, 2002). Longworth (2003) suggested several reasons why the term “lifelong learning” was particularly appropriate for this period of time: global demographics; pervasive influence of television and the media; environmental imperatives; new development of science and technology; the explosion of information and knowledge; the need for both industry and people to remain innovative and flexible, and increasing individualization. For these reasons, Longworth (2003) stated that lifelong learning “is not only for the educational elites... In the long run lifelong learning excludes no one” (p. 12).

Lifelong learning was a major change within the educational construct. Jarvis (2001a) elaborated this revolutionary approach:

Within a generation we have moved from a world where most people could still expect to undertake little or no education or training after adolescence, to one where such education is a condition of economic survival for most, if not all. [This has] overturned the notion that education and training are solely a preparation for, and separate from life and work (p. 25).

Adult learners acquire a completely different set of skills and attributes through lifelong learning. These higher-order skills, listed by Longworth (2003) for personal survival, including self-management, handling and interpreting information, applying new knowledge into practice, learning to learn, questioning, reasoning, critical thinking, management, communication, adaptability, flexibility, versatility, and teamwork.

Though adult education in the form of lifelong learning has moved to “center stage” as a different learning experience and as educational and political assurance, Rogers (2002) pointed out that much of the current discourse of lifelong learning has moved away from such issues as the encouragement and maximization of learning more than the provision of courses as seen in “adult education;” instead, “lifelong education does not come without a price tag, and it serves the interests of a particular section of society” (p. 5).

Workplace Learning

Workplace learning has received increasing attention in recent years, because “learning at work constitutes a large part of the learning undertaken by adults during their lives,” according to Boud and Middleton (2003, p. 194). One of the contributing factors to increasing interests in workplace learning, identified by Spikes (1995), was that “workplace learning is a multimillion-dollar enterprise in which employees learn new skills designed to help them keep their organizations competitive in an increasingly global

economic environment” (p. 1). While scholarly discussion on learning in the workplace is a relatively recent phenomenon, Watkins (1995) believed that “workplace learning encompasses what learners do rather than focusing solely on what trainers or developers do in organizations” (p. 3). Illeris (2003) believed that the interest from vocational training shifted to the direction of workplace learning or work-based learning because of such terms as “late modernity, globalization, and knowledge society” expressed broadly “in the international and societal development” (p. 167).

Scholars on workplace learning traced its beginning to the early 1900s. Watkins (1995) reviewed Frederick Taylor’s and Lilian and Frank Gilbreth’s time and motion studies in 1900s; Charles R. Allen’s introduction of the “show, tell, do, check” method of on-the-job training to train fifty thousand shipyard workers in World War I; the federal government’s legislations of Comprehensive Employment Training Act, the Job Training Partnership Act, and the Training Within Industry Services of the War Manpower Commission during World War II; the establishment of the American Society of Training Directors in 1942, which was later renamed the American Society for Training and Development (ASTD); training with incorporation of human relations training; employee assistance programs and career development programs in the 1970s; distance learning strategies used in the 1980s; and emergence of differentiated training delivery systems in the 1990s, including management consultant, internal company trainers, external training agencies, community colleges, training centers, partnership between colleges and businesses, etc. The author concluded that “with a shorter and shorter knowledge half-life, many workers will need to be retrained again and again” (p. 9).

As needs for employees’ workplace learning increasing, what are the preparations or

skills needed to instruct the trainers, educators and facilitators of workplace learning programs? Spikes (1995) examined three types of workplace educator: “the coach-to-principal” approach, the “any teacher is better than no teacher” approach, and the approach of workers educated by instructors with advanced degrees at universities. Understanding the weaknesses of each model, Spikes offered a three-phased method to preparing workplace educators:

Phase 1: Initial professional preparation and exploration, consisting of activities related to the initial training and career exploration of workplace educator.

Phase 2: Advanced preparation and career exploration, focusing on the career exploration and advanced preparation of workplace educators.

Phase 3: Professional leadership and career redirection, with workplace educators shifting focus from individual development to the development of their broadly based field of human resource development practice and the implementation of meaningful programs of leadership development of fellow practitioners (p. 58-59).

Spikes’ conclusion was that “ultimately the workplace educator of the twenty-first century is going to need to be someone who is to be professionally adaptive and intellectually creative” (p. 60).

General Characteristics of Adult Learners

Profiling adult learners is a complex task. However, Corder (2002) offered the following characteristics that described who were adult learners:

- They are above the age of compulsory education;
- They have some experience of the world of work;
- They have family responsibilities;
- They have financial responsibilities;
- They are reasonably independent;
- They are able to make their own judgment about the world around them;
- They have some experience of life;
- Their tastes are more sophisticated than they were when they were younger, and most importantly, this is not their first learning experience (p. 5).

Additionally, Rogers (2002) listed seven general characteristics that help better understand adult learners in the context of aiding them to learn:

- The student participants define themselves as adults;
- They are in the middle of a process of growth, not at the start of a process;
- They bring with them a package of experience and values;
- They come to education with intentions;
- They bring expectations about the learning process;
- They have competing interests;
- They already have their own set of patterns of learning (p.71).

Furthermore, Herman and Mandell's (2004) description of adult students' learning needs in relations to other competing commitments of their lives offered enlightenment on how to accommodate their learning needs:

They are busy and pre-occupied with the responsibilities and commitments of adults to their jobs and careers, to their families and their communities. They usually want university degrees to serve their success and prosperity. They want their academic learning to be efficient and convenient: that is, to move quickly but also to flexibly accommodate the other demands on their time and attention (p. 1).

Recognizing the characteristics of adult learners, Fidishun (2000) concluded that "adults learn differently than traditional students and have different needs from institutions of higher education. This becomes especially evident when students interface with technology" (p. 215).

Based on the characteristics of adult learners, conducive climate and coherent policy should be in place, as it stated in the 2003 OECD report:

A coherent policy specifically focused on adults has to take the special needs of adults into consideration as the main objective. It has to take into consideration the fact that adults are most often working or have busy lifestyles, and they need time off from their employment or extra time. This implies flexibility in schedules, in provision and in the recognition of prior learning experience, be it formal or non-formal. Supply should be available in evenings and weekends, or provide time off from work, and the possibility of part-time studies should be allowed (p. 91).

The OECD report (2003) further emphasized attention to adult learners' needs:

To convince adults that learning is worthwhile, education and training must be offered in the context of a project, in the broadest sense, with a clear goal. The educational approach and the entire learning scheme must be suited to adults' needs, the pace at which they work and the many kinds of constraints they face (p. 122).

The characteristics of adult learners are unique. They require a different set of teaching pedagogy and different learning facilities, accommodations, and learning strategies. Understanding these characteristics will help make sound policies to meet the needs of adult learners.

Library Support Staff Learning and Training

Adult learning is different from the learning of children (Rogers, 2002). The OECD report (2003) also pointed out that "an adult nonetheless exhibits special qualities in terms of willingness, maturity, motivation or interest, and it is essential that they are taken into account" (p. 162). Support staff at university libraries share many characteristics with adult learners in the context of learning and training. Their educational attainment varies widely; their job titles are based on the nature of their work and there is no uniform job title among them; many of them have worked in the library field for more than 10 years (Kao, 1998); their salaries are between \$21,677 to \$47,017, according to a 2003 survey (Roney and Fox, 2003); and they have continuing education needs in "Internet searching, computer trouble shooting, reference services, cataloging and classification, supervisory skills, customer service, and other skills" (Kao, 1998, p. 59).

Changing Environment of University Libraries

The need for the training and development of higher education employees is a growing, complex challenge (Brew, 1995). Rapid changes brought forth by new technology

significantly affect employees' roles and responsibilities (Morrell, 1995). These changes are more evident on a college or university campus. Hazemi and Hailes (2002) recommended that "all institutions should, ...review the changing role of staff as a result of communication and information technology, and ensure that staff and students receive appropriate training and support to enable them to realize its full potential" (p. 21). Rapid technological changes at university campus continually challenge library norms. Eaton (1996) listed changes in information technology and telecommunication, the transition from mass production to mass customization, and economic pressures as influencing forces for change in university libraries. Riggs and Zhang (1999) stated that technological change "is occurring faster now than ever before in library history" (p. 789). Li (2001) summarized the impact of these changes upon both professional librarians and support staff: "librarians and library staff are constantly required to learn; they must upgrade their skills and knowledge, as well as adapt to changes just to perform the same function in this new environment" (p. 4). Allen (2003) offered a comprehensive list of changes that would continue to have a major impact on services provided by libraries:

- development in technology – network capacity and the convergence of information and media technologies; increased access to computers and computer networks
- development in publishing – increase in the volume of information; increased importance of digital technologies for the distribution and delivery of materials
- increase in range of services through the development of services involving new technologies and new learning services
- changes in the uses of buildings, e.g., moves from physical to virtual libraries
- changes in the types of users, e.g., a more diverse range of users with increasing demands
- changes in staffing libraries, e.g., moves toward multitask-skilled staff on a variety of permanent and temporary contracts
- increased need for different libraries to collaborate with each other, both within sectors (e.g., higher education) and across sectors (e.g., higher education and public libraries)

- decrease in public-sector funding, e.g., on public and academic libraries, and an increased demand for efficiency savings and improved quality of services (p. 4).

In this new information environment, library support staff assume increasing responsibilities or see their jobs descriptions change as the library administration assign them tasks that were formerly done by professional librarians (St. Lefter, 1996).

Training Needs of Support Staff

The understanding of support staff training in libraries has come a long way. Oberg (1992) wrote that “although support staff constitute the majority of all library workers, interest in them on the part of librarians has never been profound or sustained” (p. 99). In Oberg’s subsequent studies on library support staff in 1997, the author observed that with the rapid technological changes in university libraries, professional librarians had taken on more new responsibilities, such as automating libraries, creating networked services, designing integrated information interfaces, and teaching students and faculty how to use networked resources; thus, many tasks once performed by librarians had shifted to support staff (Oberg, 1997). Wilson and Hermanson (1998) echoed this sentiment; in the past, professional librarians have been given priority when training was offered, but “because support staff are now doing some of the work that used to be done solely by librarians, staff at all levels need to be given the same training, even if the training will be put to different uses” (p. 491).

With the changing role of support staff in university libraries, it is imperative to provide them with needed training so they are able to perform their new tasks. The OECD report (2003) stated that “on the vocational training side, the most obvious benefits are professional mobility, a better job, promotion, more responsibility, initiative or

independence, and recognition of a skill” (p. 121). Nadler and Wiggs (1986) viewed training as techniques “that focus on learning the skills, knowledge, and attitudes required to initially perform a job or task or to improve upon the performance of a current job or task” (p.5). In Kao’s study (1998), the author defined training for the library’s support staff as “a short term, systematic process such as on-the-job training, learning from co-workers; taking continuing education courses, seminars, and workshop locally sponsored by library systems or professional organizations through which library technicians learn specific skills and special knowledge” (p.30). In a study on the contemporary nature of the support staff in research libraries, Eastbrook, Mason, and Suelflow (1992) discovered that nearly 13 percent of the respondents indicated that insufficient training was a source of job stress. At all of the eight site libraries visited by one of the authors, staff complained about not receiving needed training or “not having any training at the time they were using a new system” (p. 236-237). Davidson-Arnott and Kay (1998) studied skill-oriented paraprofessional training programs in Canada. The authors observed that library technicians were not prepared to perform other tasks such as “establishment of policies, selection of materials, and tasks of requiring analysis of complex information” (p. 541).

In addressing the support staff training issues, Younger (1996) made it clear that “the absence of systematic training opportunities to teach complex technical skills to support staff acts as a restraint in developing assigning new responsibilities to staff” (p. 42).

Additionally, a survey in 1997 from the American Library Association (ALA) on support staff’s issues concluded that the top of three issues library technicians faced today were 1.) the blurring of support staff and librarian roles; 2.) access to continuing education and training opportunities, and 3.) keeping up with changing technology(Kao, 1998, p. 15).

Support staff have assumed increasing responsibilities in university libraries. Providing them with adequate training will help them perform new tasks that ultimately improve library services to its users.

Characteristics of Support Staff Training

Mordkowitz and Ginsburg (1987) articulated that when adults were engaged in any type of learning, they paid particular attention to indicators of success. For example, for adults, time is a critical issue because of their many roles and responsibilities. The decision to invest time in a learning activity may be as important as the decision to invest money or other effort (Lowe, 1996). Conner (1992) asserted that trainers must be sensitive to the special needs of adult learners and be able to cope with the class management problems imposed by the considerable variety of levels, experience, and knowledge that would be encountered (p.18).

Adult learning characteristics also apply to library support staff training. Back to 1977, Conroy wrote a monograph on human resources development for library personnel. Conroy recognized that staff development was based on the belief that individual learning and growth were important keys to strengthening an organization. Staff development programs encouraged and guided personnel in acquiring skills and knowledge related to library needs (Conroy, 1977). More than two decades later, this concept still holds true.

Recognizing the unique adult learning styles, Shaughnessy (1988) suggested that both the employee who had participated in a staff development event and his or her home department needed to be prepared and ready to accommodate each other. It is very important that the entire organization – particularly management at all levels – support the library's staff development goals and commit to this effort. Maurer and Tarulli (1994)

acknowledged that employee participation in learning and development activity was gaining recognition as a critical route toward organizational competitiveness and excellence.

Professional Librarians and Faculty Status

In order to better understand the changing role of support staff in university libraries, it is helpful to briefly review the evolving faculty status of professional librarians in university libraries.

University libraries in the United States are generally composed of the two groups of employees: professional librarians and support staff. Professional librarians are those who hold master's degrees in library and information science programs accredited by the American Library Association. The professional librarians are also employed for specific positions at libraries in accordance with their education and specialty that distinguish them from the other group of employees called support staff. Four decades ago, Downs and Delzell (1965) provided the following distinctions of the two groups:

- professional librarians performing duties of an educational and research nature, requiring professional training for competent performance;
- clerical and other non-professional or sub-professional personnel who will be responsible for more elementary, routine, and mechanical tasks (p. 30).

As early as the 1870s, the pioneers such as H. A. Sawtelle (1878) popularized a vision that “the librarianship ought not to be annexed to a professorship, but be itself a professorship” (p. 162). Even so, the emergence of academic librarianship as a profession has been an especially long and sometimes tortuous process (McAnally, 1971). McAnally cited several obstacles that impeded development of academic librarianship as a profession in the early years: including the small size of library collections and personnel, the lower status of the profession itself (i.e., housekeeping nature of library work), the low quality of

training for librarianship itself, and the attitude of the faculty toward librarians, etc. (McAnally, 1971).

Since the late 1940s, the librarians' academic or faculty status gradually gained acceptance by the faculty members in their institutions. As early as 1941, Estes (1941) reported a growing trend toward faculty status for librarians. For example, in the University of Illinois Library, the professional librarians have had academic status since 1944 (Downs and Delzell, 1965). McAnally (1971) listed several forces for such acceptance: the rapidly increasing rate of publications since World War II, the growing size of university library collections, transformation of the library as conservation function to the utilization concept, improved library education (i.e., from a Bachelor's degree to the requirement of a Master's degree in library science, etc.). Most importantly, rapidly increasing graduate study and research in universities (Berelson, 1960) made intensive demands on the library. By the 1970s, "increasingly, the trend has been to recognize librarians on an equal basis with the teaching faculty by according them academic or faculty status and rank" (Schiller, 1970, p. 77).

About a half century ago, McAnally (1957) defined faculty status for librarians "as the possession of all or most of the privileges of the classroom teaching faculty, including faculty rank" (P. 29). In the *Standards for Faculty Status for College and University Librarians*, adopted by the membership of the Association of College and Research Libraries (ACRL) in June 1971, it stated that:

College and university librarians must be recognized as equal partners in the academic enterprise, and they must be extended the rights and privileges which are not only commensurate with their contributions, but are necessary if they are to carry out their responsibilities (Standards, 1971, p. 32).

In 1981, when the ACRL surveyed a pool of 120 college and university libraries, 44 percent of them reported to have full faculty rank, status, and privileges for their librarians (ACRL Survey, 1981). The majority of the university libraries from the survey reported that librarians were equivalent to teaching faculty according to university/library policy in the following areas: “tenure, consulting, university governance, appointment/hiring, promotion, access to funds, leave of absence, sabbaticals, travel funds, academic freedom, salaries, vacations, retirement benefits, and insurance benefits” (ACRL Survey, p. 8). In 1999, ACRL conducted a survey entitled as *Trends in Academic Libraries: Faculty Rank, Status, and Tenure for Librarians*, which reported the similar findings (Cary, 2001).

Nonetheless, faculty status for librarians is not cost-neutral (Kingma and McCombs, 1995); it came with a price tag. With faculty status, professional librarians in colleges and universities are expected to be “active in national, state, and local professional organizations, publish articles, review books, make presentations, host workshops, and are generally learning and contributing” (Cubberley, 1996, p. 1). These expectations of professional librarians demand that support staff assume increasing responsibilities that professional librarians no longer have time to perform. Oberg (1992) elaborated on this point:

As academic librarians busied themselves with their newfound faculty status requirements of teaching, research, and governance, they became more and more dependent upon support staff. Librarians pressed support staff into service in new areas and assigned them tasks they (i.e., professional librarians) no longer had the time to perform or had come to consider routine. As a result, many support staff, although certainly not all, are now regularly assigned duties that once characterized the work of librarians (p. 99).

While professional librarians appear to have achieved their status among university campuses, McAnally (1971) also warned that attention should also be given to support staff when professional librarians have established their identity:

... the organization of library faculty leaves out the support staff, yet they do the most of the work in a library and they outnumber the professional staff considerably. It seems essential that the library administration recognize their needs and interests fully and give far more attention to this group (p. 42).

The faculty status for professions librarians, like their counterparts on university campuses, has been a controversial topic of on-going debates. O'Brien's (1998) conclusions on the evolving process of tenure in American higher education and issues associated with the faculty status were that "tenure is highly controversial, is subject to great pressure for change, and conceptually enshrines the most important central issues for higher education reform: the nature and role of faculty" (p. 31). This discussion also has implications to the faculty status of librarians. Kingma and McCombs (1995) suggested that librarians analyze how well the faculty status model had served their purposes and whether they were comfortable with that of teaching faculty model: "Perhaps it is time to develop a new model that more appropriately serves the patrons' and the librarians' needs in this brave new world of electronic resources and information access" (p. 263).

Support Staff Training Elements

The elements of adult learning and training vary widely. The OECD report (2003) lists the workplace as one of the strongest links to adult learning because such learning was mostly employment-related:

On average, according to most surveys, three out of four people who learn participate in job-related education and training in some form or another. This implies that labor market considerations weight heavily in individual's decisions to undertake learning (p. 45).

In order to acquire job-related skills, Creth (1986) defined three dimensions in each job that an employee must master in order to perform effectively: knowledge, skills, and ability. Greenhaus (1987) listed skills development as one of the career management

strategies to enhance employees' chances of career success. In a study published in *Workforce Economy* (2001), it was discovered that more than 90 percent of companies also provided a range of management, leadership, and communications training to employees. The range included such training topics as "time management, problem solving and decision making, public speaking and presentation skills, managing change, and strategic planning" (*Corporate Training Delivery*, 2001, p. 7). The training elements reflected the needs for well-skilled workers in both technical and managerial aspects of job. Allen (2003) reviewed libraries functioning in rapidly changing and increasingly complex environments. The author concluded that in order to maintain and develop their services in these challenging situations, "libraries must develop their staff. A crucial success factor appears to be the ability of staff at all levels to develop their learning skills so that they can be responsive to change" (p. 3).

In contrast, Chaston (1994) argued that the traditional linear approach to the development of training programs included "the required skills, knowledge, and attitudes (SKA) of the employee, the desired degree of actual performance, and the desired level of upgraded employee performance" (p.11). Chaston identified the drawback of this linear approach: it did not seek the objective of enhancing overall organizational productivity. Chaston's remedies to this approach included adopting a customer-oriented training philosophy based on seeking forms of provision that benefited the organization's internal and external customers. In other words, the training program "must benefit the employees, the employee's superior in the organization, the individuals to whom the employee is providing a tangible or non-tangible output, and the organization's external customers" (1994, p. 12). Marmion (1998) examined competency and skills that the staff in today's

libraries lack and the technological challenges facing the library profession today. Marmion concluded that the biggest technology challenge facing the library profession today was that of preparing our employees to use the technology effectively. To meet this challenge, “libraries must pay much more attention to technology training and computer skills than they traditionally have in the past” (p. 216).

Rutgers University Libraries’ Findings

What aspects of training are essential to help prepare support staff to keep up with rapid changes in ongoing transformation at university libraries? In 2000, the Rutgers University Libraries Steering Committee on Training and Development presented to the library administration a final report entitled *An Investment in Learning: A Proposed Plan for Learning, Training, and Professional Development for the Rutgers University Libraries*. In its executive summary, the proposal stated “the demands of the new workplace call for new sets of ‘soft skills’ – in problem-solving and decision-making, in interpersonal relations, and in working within a team or group environment” (p. 3). The proposal was generated from an in-house survey of 298 professional librarians and support staff, with 210 completed responses. The proposal included training needs for both professional librarians and support staff. In this survey, soft or people skills and selected basic technical skills emerged as being among the highest priorities. The survey revealed the top 25 skills the respondents wanted to “learn more” when training was offered:

- Computer skills, including browsers (Netscape), spreadsheet (Excel), PowerPoint, word processing (Word), basic computer use, e-mail management, using/training/learning websites, sharing documents on the Libraries’ network
- Interpersonal skills, such as working with difficult people, problem solving, stress management, managing change, managing priorities, effective oral/written

- communications, time management, conflict resolution, critical thinking, understanding university priorities
- Supervision/management skills like decision-making, ergonomics, leadership development, emergency procedures, effective meeting, build learning into daily life.

The top skills identified by the Rutgers University Libraries have implications to the training needs of the support staff in the Kansas university libraries since there are commonalities among the university libraries across the country.

Findings from the OCLC Custom Report

Online Computer Library Center (OCLC) issued a custom report in 2002. In this report, training needs were reported in a high number across a variety of topics. The respondents who planned the training for themselves and for someone in their libraries identified the top three training needs in each of the following groups:

- Library standards and practices: creating a digital library, collection development and management, and database searching;
- Management skills: change and innovation, leadership, and marketing the library;
- Computing/information technology: web development and design, library automation, and computers, networks, operating systems (OCLC Custom Report, 2002, p.9).

It is obvious that the training topics on computer/technology skills and management skills from the OCLC Custom Report overlapped with that of the Rutgers University Libraries. This reflects, to some extent, the urgent training needs of today's library support staff in the identified areas.

Learning Environment

Scholars identified that a conducive learning environment helped adult learners to learn. The OECD report (2003) listed some of the elements of such a learning environment:

If adults feel at ease in the learning setting, do not have external constraints

(transport, child caring), feel that what they are learning is accessible and worthwhile, and realize that what they already know is valued and taken into consideration, then the incentive to enroll in a course and to follow it through is much greater (p. 161).

Senge (1990), Redding and Catalanello (1994), and Watkins and Marsick (1993) also emphasized that organizational learning could provide a competitive edge that supported an organization's survival. Commitment to learning for individuals, teams, and the entire organization can help an organization put knowledge to work in creative and powerful ways. Additionally, for an adult learner, "any learning initiative requires a favorable environment, one that is conducive in its socio-historical, economic, political and cultural aspects" (OECD 2003, p. 166).

Favorable learning Environment

Recognizing the uniqueness of the adult learning environment is critical when designing one that is conducive. Knowles (1984) identified several conditions for a conducive adult learning environment, including the physical environment, the human environment, and organizational environment:

- The physical environment requires provision for animal comforts (temperature, ventilation, easy access to refreshments and restroom, comfortable chairs, adequate light, good acoustics, etc.) to avoid blocks to learning (p. 103).
- The human environment in which self-improvement is highly approved (and even better, concretely rewarded), is likely to increase motivation to engage in learning activities (p. 106).
- An organizational climate involves several sets of ideas: policy framework under guiding the human resource development; management philosophy, structure of the organization, financial policies, and reward system (p.108).

In linking the learner's motivation to learning and the learning environment, Noe and Schmitt (1986) found that a favorable learning environment directly influenced the motivation to learn. It included the opportunities to practice skills or use knowledge

acquired in the training program, being able to receive reinforcement and feedback from supervisors and co-workers, and being able to receive technological support. In other words, proper tools, equipment, materials, supplies, monetary support, and support from superiors were needed in a quality training program.

For libraries to remain effective in a rapidly changing technological environment, “they must be learning organizations and must promote, not only the learning of individuals, but more importantly, the collective learning of all members of the entire organization” (Riggs and Zhang, 1999, p. 793). As adult learners, support staff in university libraries should be able to start at their own skill levels when they engage in learning. Eastman (2002) suggested that “in order to group people by level, the training program must include an assessment of skills, e.g., using self-assessment surveys, in-house generated survey, with specific questions to measure the staff’s computer skills” (p. 74).

Organizational Culture

The culture and managerial style of an organization also affect staff development efforts (Shaughnessy, 1988). The author recognized the influence of organizational culture on library staff development efforts. For learning to be effective, the staff who receive training as well as institutional leaders need to be prepared and ready to accommodate each other. Oberg (1992) and other authors conducted a nationwide survey on the role, status, and working conditions of paraprofessionals. The majority of sampled libraries in the study offered the support staff such incentives as new employee orientation, workshops and other in-house training, and released time and funding for attending off-campus meetings at local, state, regional, and national levels. Jones and Jordan (1987) suggested accommodation, equipment, expertise, and funding as general

resource needs in training from organizations. Maurer and Tarulli (1996) agreed that the company's facilitative policies that encouraged employee learning might be significant environmental concerns in development in non-engineering contexts. Additionally, one other study by the authors suggested that support from the supervisor and peer have a large impact on employees' behavior toward training and development activities (Maurer and Tarulli, 1994).

Incentives for Learning

Scholars have recognized that many variables might either facilitate or inhibit interest, motivation, and actual participation in learning and development activities by employees (Fishbein and Stasson, 1990; Kozlowski and Farr, 1988; Noe and Wilk, 1991). A positive learning environment ensures the use of new skills (Noe and Schmitt, 1986). Regular assessment of development and the staff's training needs should come from top administrators. Supervisors should encourage support staff to participate in these programs (Fortunato and Waddell, 1981). Juergens (1979) took one step further by recommending that a full-time training coordinator implement library automation system training at every stage. The individual in this position should accord the needed authority to carry on assigned responsibilities. Connor (1992) emphasized that management must ensure that the training program was carefully and thoroughly planned, taking into account of varying staff needs, providing adequate resources and opportunities for learning, supplying clearly defined objectives, and monitoring progress.

Providing incentives helps support staff training. In a nationwide survey (Oberg et al., 1992), the data collected by the authors indicated that member libraries of Association of Research Libraries (ARL) were more likely than other types of libraries to offer certain staff

development incentives, although the differences from the responses in the survey were not significant. Because most ARL libraries are affiliated with extensive research universities where funding is much better than smaller university libraries, it is not hard to understand why these research libraries were able to provide more staff development incentives than their counterparts could do at the smaller university libraries.

In the past, professional librarians were given priority when training was offered. Because support staff are now doing some of the work that used to be performed solely by librarians, staff at all levels need to be given the same training, “even if the training will be put to different uses” (Wilson and Hermanson, 1998, p. 491). Sheffold (2000), as support staff, drew on her own experience regarding funding from professional development and encouraged library administrators to “budget for support staff development, encourage and motivate your staff to expand their professional views, and provide new training opportunities for those who are interested” (online access). Sheffold’s experience echoes the 2003 OECD report’s conclusion that “low participation rates in adult learning appear to stem mainly from the lack of three things: time, finance, and motivation” (p. 65). Providing adequate training for support staff is not inexpensive and may prohibit on-going training to some degree. However, other factors such as adult learning styles, skill assessments, methods available, and time available need to be taken into consideration, because “all have an impact as great or greater than financial resources” (Eastmond, 2002, p. 73).

Shared Responsibilities

Training is the shared responsibility of a library/organization and each support staff member. Fisher and Fisher (1998) recognized that though effective organizational design does not necessarily mean effective organizational learning, the structure, like leaders’

expectations, is powerful in either inhibiting or facilitating learning processes. Recognizing that “training adults in the workplace is entirely different from training other communities of learners” (Eastman, 2002, p. 73), Eastman offered several steps that help library staff training: selling employees on the benefits of the technology, getting people in the right class based on their skills levels, discovering and evaluating resources, (e.g., staff trainers and online courses are least expensive), and scheduling training with sufficient time.

This shared vision of support staff training is also recognized by professional associations. The final report of the American Library Association/Library Support Staff Interests Round Table, *Task Force on Access to Continuing Education & Training Opportunities* (2000), pointed out that “overwhelmingly, the technological changes and advancements in today’s libraries are of the highest concern to support staff” (p. 4). To address this concern, the task force issued the statement of needs with some specific ways of helping train support staff:

- Library administrators need to be supportive of and willing to give support staff the continuing education and training they need to succeed on the job
- Support staff need opportunities to attend continuing education and training
- Libraries need to set aside funding for support staff to attend events
- Libraries should also provide reimbursement for tuition related to continuing education
- Staff need an avenue for notification of these activities far enough in advance to make arrangements to attend (p. 5).

Furthermore, support staff training is a recurring theme at some recent conferences. At the small group discussions during COPE III held in May 2003, several themes on support staff training emerged from this national conference:

1. Support staff should be encouraged, supported, and funded in their pursuit of continuing education (if they choose to participate).
2. They should be given the opportunity to participate in workshops, seminars, conferences, etc.

3. Promote and support more regional training opportunities for library support staff focusing on specific work areas (technical seminars, readers' assistance, circulation seminars).
4. Support staff competency-based national training program committee
5. If certification is presented, it will include experience and credit for attendance to various continuing education programs and participation in state and national organizations, divided into technical services, circulation, reference, children's services, etc. (COPE III, *Transcription*, June 2003, p. 10).

Training Delivery Methods

A comprehensive approach delivering training contents is essential in ensuring a conducive environment to adult learning. Job training should be structured to consist of both formal and informal activities that address each of these dimensions. The OECD report (2003) elaborated on this approach:

How can the learning and teaching methods be tailored to meet the specific needs of adults? If there is a specific pedagogy that is suitable, what are its key features? Is it possible to create or invent adult learning activities that are really learning-centered? How can education and training be made useful to the participants (p. 34)?

Based on unique characteristics of adult learning, helpful training delivery methods should be applied to aid adult learners to learn.

A Variety of Delivery Methods

Corder (2002) suggested that there were two types of teaching and learning methods: teacher-centered methods and learner-centered methods. The teacher-centered methods were lecture, explanation, talks and presentation, and demonstration. Learner-centered methods included such activities as simulation, role-play, games, discovery learning, experiential learning, tutorials, brainstorming, buzz groups and snowballing, case study and problem solving, flexible learning, open learning, and distance learning, group discussion, seminar, small groups, displays, project, and field trips. Other authors suggested

that effective training methods include lectures and talks, one-on-one interaction with the trainer, use of the computer training file, audio and/or video recording, and a combination of activities and discussion (Connor, 1992, Lantz, 1987, Baerg-Epstein, 1990,). Additional categories of the training method suggested by Jones and Jordan (1987) ranged from written instructions, discussion groups, case studies, role play, simulations, programmed learning, to on-the-job training.

Flavell (1977) pioneered the early understanding of human cognition, especially in the ways humans used their cognition skills in the work environment. An understanding of the cognition skills of support staff and how they use these skills will make the training programs more effective, especially at the stage of design and implementation. The computerized environment has caused training programs to focus more on the trainee's ability to shift from simple and procedural tasks to more complex tasks requiring them to make inferences, diagnoses, and judgments under time pressures (Howell and Cooke, 1989). These authors' observations aptly fit the support staff in university libraries.

Notwithstanding the difference in the educational levels of support staff, much of the training has to be incremental. Fleishman and Mumford (1989) advocated that it was more important for administrators to understand why and how trainees built on earlier learned material so that transfer of learning could positively affect performance of new tasks. More than a decade ago, Knowles (1990) emphasized that the adult learner in the changing work environment needed to view learning as a life-long pursuit. The new applications of technology introduced in university libraries illustrate that skills are constantly becoming outdated.

Designing training programs is of critical importance. The training programs must

be relevant to the trainees' job responsibilities. Self-confidence, discovered via feedback, is important in the learning process of the training program. Sterns and Doverspike (1989) believed that these aforementioned factors were especially important to keep in mind when designing training programs for older workers who may fear failure. In university libraries, the older support staff may have the motivation to learn new tasks, yet lack the self-confidence to implement the new information/skills in the workplace. A supportive environment in which adequate opportunities are available to staff to share experiences and merge new job-related learning promotes a higher level of judicious thought. Diamond and Alcorn (1985) suggested that an environment of this nature depended on staff members sharing their training experiences and management supporting their staff in concert with organizational strategies and goals. The learning environment must accommodate and facilitate learning transfer. The transfer of new learning skills, whether they are obtained locally in the library or externally, is crucial to support staff. Time and distance from the new learning experience and inadequate tools (e.g., outdated computers) within the work environment are primary culprits that handicap the transfer of learning process. The organization should provide the opportunity to experiment with and practice the newly acquired work skills, if learning transfer is to be achieved in the workplace (Perry, 1990).

Technology in Training and Learning

Howell and Cooke (1989) specified how technological advancements have enabled training programs to shift from simple/procedural tasks to more complex, thought-provoking inferences and diagnoses. Others suggested that technology involved desynchronizing the teacher-learner relationship in space and time because “it uses information and communication technologies and allows everyone to work at their own

pace, in their own context”(OECD Report, 2003, p. 120).

Distributed learning has received much attention in recent years. For example, Hanna and Associates (2002) described that “distributed learning consists of educational activities orchestrated via information technology across classroom, workplaces, homes, and community settings. It is based on a mixture of presentational and constructivist (guided inquiry, collaborative learning, and mentoring) pedagogies” (p. 75). The technology frees teachers and learners from constraints of space and time.

Nonetheless, there is continual debate on using the technology for training and learning. Hara and Kling (2002) pointed out that “hype and promotion are often essential to encourage individual and institutional change, but the reality of distance education and distributed learning is not problem-free and will require as much attention as has been given to traditional classroom instructional technique and training” (p. 62). The two authors studied a group of education students who took an online course. Their findings on the disadvantages of using this teaching mode included student distress, working alone at night, overwhelming e-mail messages when e-mail was used as an interactive communication tool, lack of immediate assistance from the instructor, difficult finding information on the Internet, lack of prompt feedback from the instructor, and technological hardware and support problem (Hara and Kling, 2002). In a recent report, “Thwarted Innovation: What Happened to E-learning and Why,” Robert Zemsky, an education professor at the University of Pennsylvania and William F. Massy, a professor emeritus of education and business administration at Stanford University, pointed out that “e-learning was an interesting idea that simply got hyped to the point that it created expectations that could not be met.” According to the two authors, one of the impediments to keeping online learning from

moving into every facet of education “is the lack of a standardized format or software tool for creating online course enhancements” (Carnevale, 2004). Roth’s (1995) words echoed the sentiment that “technology should be insignificant to the learner. The center of attention should be the quality of learning. The technology should merely as a tool that is helping a person in a learning situation” (p. 76). For some, “the classroom remains the most frequent setting for instruction” (OECD Report, 2003, p. 55). It is obvious that there should be a continual improvement process when using technology to deliver training and learning contents.

Chapter Summary

This chapter reviewed the relevant literature on adult learning. Due to the limited amount of published literature on the support staff training, resources in other disciplines were also reviewed in order to gain the necessary research and theoretical depth and breadth, including adult learning theories, adult learning core concepts, library support staff learning and training, professional librarians and faculty status, support staff learning elements, learning environment, and training delivery methods.

Adult Learning Theories

Several important figures, such as Knowles, Mezirow, Freire, and Tough, have made significant contributions to theoretical development in the field of adult learning.

Andragogy and self-directed learning are the two most important elements of knowledge base of adult learning. Knowles defined andragogy as the art and science of helping adults learn. Knowles’s theory contributed to the discussions of facilitation rather than the pedagogy of adult learning. Knowles’s andragogy concept has had great impact on adult learning theory.

Self-directed learning initially came from Tough's seminal work in 1979, *The Adult's Learning Project*. Tough believed that more than two-thirds of all learning activities were planned, implemented, and evaluated by adults themselves; much significant learning was carried out by individual adults in the form of learning objects, largely outside of the influence of formal educational institutions.

J. Mezirow introduced the theory of transformative learning. Mezirow defined transformative as the process of the learning through critical self-reflection that achieved emancipatory knowledge. Freire's emancipatory learning as a learning process offered another lens through which transformative learning theory was explored. Freire's work extended far beyond the inclusion of basic skills to concern itself with broad themes of individual emancipation and community empowerment.

Communities-of-practice is a recent phenomenon. Wenger (1998) viewed social participation with the community as the key to informal learning. Hanna and Associates (2000) viewed it as a common approach to develop positive learning environments, especially for professionals who need help to keep up with current ideas, knowledge, and applications in a field or discipline.

Adult Learning Core Concepts

There are several core concepts related to adult learning and education, including relationship of learning, education, and training. Tight (2002) believed that the scope of learning was much larger than education, and training was contained within the scope of education. Another model suggested by Tight (2002) was that the overlapping area between education and training could be called either or both.

Recent trends on K-12 classroom assessment (McMillan, 2004) included

alternative assessments, assessment integrated with instruction, authenticity, student self-evaluation, public standards and criteria, student involvement with assessment, and formative assessment. The assessment strategies used with adult learners tend to reflect these trends. When implemented properly, they aid adult learners in pursuing their learning goals.

Though “adult education” is still a common term used in the field, “lifelong learning” appeared in 1980s to replace the discourse of adult education. Lifelong learning is driven by global demographics, pervasive influence of television and the media, environmental imperatives, new development of science and technology, explosion of information and knowledge, the need for both industry and people to remain innovative and flexible, and increasing individualization (Longworth, 2003).

Learning at work constitutes a large part of the learning undertaken by adults during their lives (Boud and Middleton, 2003). Workplace learning is a multimillion-dollar enterprise in which employees learn new skills designed to help keep their organizations competitive in an increasingly global economic environment (Spikes, 1995). Workplace educators should be prepared through three phases: initial professional preparation and exploration; advanced preparation and career exploration, and professional leadership and career redirection (Spikes, 1995).

Profiling adult learners is a complex task. Their ages, work and life experiences, educational levels, responsibilities, motivations of learning, learning needs, and learning goals differ from those of traditional learners. Therefore, adult learners require a different set of teaching pedagogy, learning facilities, accommodations, and learning strategies.

Library Support Staff Learning and Training

Support staff at university libraries share many similar characteristics to adult learners in the context of learning and training. Their educational attainment, job responsibilities, work experience, earnings, and learning needs differed from one to the other.

Rapid changes in technology on university campus continually challenge library norms. Changes in information technology and telecommunication, the transition from mass production to mass customization, and economic pressures are the major influencing forces for change in university libraries (Eaton, 1996). In this new environment, library support staff assume increasing responsibilities or have seen their job descriptions changed to include tasks that were formally performed by professional librarians (St. Lefter, 1996).

With the changing role of support staff in university libraries, it is imperative to provide needed training so that they are able to perform their new tasks. This notion was supported by the American Library Association's 1997 survey on support staff that revealed top three issues faced support staff: 1.) the blurring of support staff and professional librarian roles; 2.) access to continuing education and training opportunities; and 3.) keeping up with changing technology (Kao, 1998).

Adult learning characteristics also apply to the library support training. Trainers must be sensitive to the special needs. Staff training was based on the belief that individual learning and growth were important keys to strengthening an organization (Conroy, 1977). Both the employee who has participated in a staff development event and his or her home department needed to be prepared and ready to accommodate each

other. It is very important that the entire organization – particularly management at all levels – support the library’s staff development and training goals and commit to this effort (Shaughnessy, 1988). Additionally, providing recognition and incentive for support staff training are some of the ways that accommodate staff training.

Professional Librarians and Faculty Status

Faculty status of professional librarians has been evolving since 1940s. Professional librarians at university libraries gradually gained acceptance for their faculty status, with an increasing rate of publications, growing size of university library collections, improved professional education, etc. (McAnally, 1971). Some professional librarians at university libraries were equivalent to teaching faculty in the areas of tenure, consulting, university governance, appointment/hiring, promotion, access to funds, leave of absence, sabbaticals, travel funds, academic freedom, salaries, vacations, retirement benefits, and insurance benefits (ACRL Survey, 2001). With faculty status, professional librarians at university libraries are expected to be active in serving on professional organizations, engage in scholarly publications and presentations, and teach a high level of research classes (Cubberley, 1996), in addition to continually exploring and planning new ways of advancing library services. These expectations to professional librarians demand that support staff assume increasing responsibilities that professional librarians no longer have time to perform.

Support Staff Training Elements

Knowledge, skills, and ability are the three dimensions in a job that an employee must master (Creth, 1986). Management, leadership, and communications training to employees are also among the training range for employees (Workforce Economy, 2001).

The findings of training needs for both professional librarians and support staff at the Rutgers University Libraries (2000) revealed that interpersonal skills, basic computer skills, and supervision/management were among the highest priorities. The findings from the OCLC Custom Report (2002) indicated that library standards and practices, management skills, and computing/information technology were the important training topics for library employees.

Learning Environment

A favorable learning environment directly influences the support staff's motivation to learn. The organization's facilitative policies that encourage employees learning are the significant environmental assets. Scholars recognized that many variables might either facilitate or inhibit interest, motivation, and actual participation in learning and development activities by employees (Fishbein & Stasson, 1990, Kozlowski & Farr, 1988, Noe & Wilk, 1991). Ensuring using new skills, regular assessment of training needs, carefully planned training programs, and providing funding and release time are some of the incentives that help support staff training. Training is the shared responsibility of a library and each support staff member.

Training Delivery Methods

Two types of teaching and learning methods are teacher-centered and learner-centered methods (Corder, 2002). Designing a successful training program is of critical importance. The training programs must be relevant to the trainees' job responsibilities. Technology can enhance learning and training experience. Distributed learning consists of educational activities across classroom, workplaces, homes, and community settings (Hanna, 2000). Technology frees teachers and learners from constraints of time and

space.

Academic libraries are experiencing a challenge regarding their efforts at keeping the support staff current with best practices and procedures. The quality of service provided by the university library is directly linked to the knowledge and experience of the support staff. Research reflected in this literature review supports the premise. No other current endeavor is posing a greater challenge for academic libraries than the training and development of support staff. The work of support staff determines the success of current and future students and faculty in their learning, teaching, and research pursuits through the organization of knowledge resources, acquisitions of the right print and nonprint materials to support the curriculum, and articulation of the contents of these resources. Because of these charges and the unprecedented changes created by new technology, the training of a library's support staff is a worthy area of support and study.

CHAPTER III
RESEARCH DESIGN AND METHODOLOGY

Chapter Overview

The purpose of this study was to learn the training needs perceived by support staff as important for their job performance at the six Kansas Board of Regents' university libraries. The conceptual framework in the chapter 2 provided the foundation for the research design and methodology of the study. This chapter presents the population (the subjects) of the study, the research questions, research design, and data collection procedures used in this study. A chapter summary is given at the end of this chapter.

The Population of the Study

The subjects in this study were the 167 support staff members of the six Kansas Board of Regents' university libraries. On the web site of the Kansas Board of Regents (KBOR), it states that "the Kansas Board of Regents governs six state universities" (KBOR, 2004). See Appendix C for list of the six Kansas Board of Regents' universities.

The entire support staff of each of the six university libraries were included in this study. The support staff at these libraries fell into the classification system established and regulated by the state of Kansas. Therefore, the population of the study possessed several commonalities:

1. All libraries within each university are under the same governing body of the Kansas Board of Regents. They follow the uniform policies and guidelines of the state.
2. The support staff in these libraries are under the same classification system in the state of Kansas regarding their rank, specific duties, and pay scales.
3. Among each rank of the classification system, support staff are under similar job descriptions and entrance requirements in their respective

positions.

The commonality of the support staff in the six Kansas Board of Regents' university libraries constituted an important justification for using this study group. All subjects fell under the policies and guidelines established by the state of Kansas. All libraries within the Kansas Board of Regents' universities followed the same hiring requirements of support staff for Library Assistant I, Library Assistant II, and Library Assistant III. The revised position descriptions (Kansas State, 2000) for library assistants in Kansas define each rank of classification with the following languages:

Library Assistant I: This position does specialized, technical and/or archival library work. Work involves assisting in performing a limited scope of library tasks in such areas as circulation, cataloging, acquisitions, serials, inter-library loans, bindery, preservation, storage or related area (Kansas State, 2000, 1998E1).

Library Assistant II: This position does specialized, technical and/or archival library work. Work involves assisting in performing a full-range of library tasks in such areas as collection development, arrangement, preservation and storage. Work may also involve overseeing a library function such as circulation or reserve, or performing various cataloging activities (Kansas State, 2000, 1999E1).

Library Assistant III: This position performs advanced specialized, technical and/or archival library work. Work involves performing complex library activities such as providing advanced technical information to patrons, performing some original cataloging activities, conducting the more difficult bibliographic searches, monitoring assigned library expenditures, conducting tours and overseeing arrangement, preservation and storage of library collection (Kansas State, 2000, 2000E1).

The minimum requirements for hiring a Library Assistant I are job knowledge at an entry level in library support work; Library Assistant II requires job knowledge at an advanced level in library support work; Library Assistant III necessitates independent work experience in library support work. The specifics of each classification, such as definition of work, examples of work performed, and required knowledge, ability, and skills are

described in Appendix B.

Moving up in status, such as from Library Assistant I to Library Assistant II, is not automatic with the state system in Kansas. There is no such parallel system for support staff as that for faculty status from the rank of assistant professor to associate professor or to full professor for faculty members at these universities. In the Kansas Board of Regents' university libraries, support staff move up from a lower rank to a higher rank by having increased responsibilities and handling more complex tasks, and by applying for the higher rank when there is an opening in the library within the system.

Rather than studying a disparate sample of support staff from colleges and universities, the support staff falling under the purview of the Kansas Board of Regents constituted a population that offered more control, greater reliability, and fewer indeterminable variables. The perimeters of this study could be replicated in other similar environments. Therefore, the entire support staff from the six university libraries, who were not appointed in professional librarian positions and who were not in clerical positions, were included in this study. These support staffs perform the tasks and activities defined by Kansas state regulations.

Research Questions

The purpose of this study was to learn the perceived training needs of the support staff in the six Kansas Board of Regents' university libraries. This study will increase the understanding of the differences of the training needs among the support staff in order to cope and thrive with new and complex duties and technologies, since the support staff are doing many of the duties previously performed by professional librarians. The findings of this study will enable library administrators to better understand the importance and nature

of job-related training and to allocate required resources to support the training. The six research questions for this study were:

Research Question 1

What kind of training needs on computer skills are perceived as important by support staff for their job performance?

This question was designed to obtain information from the subjects of their training needs on computer skills for their daily job performance. According to Knowles (1990), knowledge and skills relevant to job performance and to employee career aspirations have a positive influence on the motivation to attend training programs. The nine questionnaire items on the survey addressing this research question were based on the experience of the researcher and reviews of the relevant literature. These questionnaire items in the “computer skills” section were designed to answer the research question 1.

Research Question 2

What kind of training needs on interpersonal skills are perceived as important by support staff for their job performance?

Interpersonal skills are sometimes called “soft skills” - in problem solving, interpersonal relations, and in working within a team environment - they are “essential for success in the new change-based work environment where the tasks are complex and communication critical”(Rutgers University Libraries, p. 7). In a work environment with constant changes in technology, tight budgets for getting help from additional staff and student assistants, and increased expectations from library users, it is very important for support staff to develop good interpersonal skills to cope with the changes in workplace.

The seven questionnaire items in the “interpersonal skills” section were designed to answer the research question 2 in terms of what support staff felt most needed training on interpersonal skills to aid their job performance in a rapidly changing work environment.

Research Question 3

What kind of training needs on supervision/management skills are perceived as important by support staff for their job performance?

Supervision/management skills are not possessed, but learned. In a library-wide staff development survey at the Rutgers University Libraries in 2002, both librarians and support staff identified supervision/management skills as important for working well in the library, though some of them were not in supervision/management positions (Rutgers University Libraries, 2002). At an interview with support staff during the researcher’s field study at a medium-sized university library, the interviewees also commented on the importance of having questionnaire items on supervision/management skills on the survey instrument. The closed-ended questions enabled the researcher to examine the training needs on supervision/management skills that support staff viewed as important for them to be a productive member in their libraries. The nine questionnaire items in the “supervision/management skills” section were designed to answer research the question 3.

Research Question 4

What kinds of library/organizational support are perceived as important by support staff to participate in training?

This research question was intended to discover the perceived library/organizational support by support staff that encouraged them to actively participate in

training for skills, knowledge development, and other educational activities. A conducive organizational environment often plays an important role in staff training. Peterson and Spencer (1991) find that peer and supervisory support of training serve as a motivational factor for staff wanting to improve job performance by engaging in job-related training. The concept of a training session may hinge on a “good but impossible idea” if the necessary training resources are not available. Technology training normally requires the latest brand of equipment; however, online training can save money and is more convenient. In the online training environment, learners proceed at their own pace and may learn better (Barkley and Bianco, 2001). Some training necessitates expensive instructional materials. Released time from regular daily duties may be necessary before one can engage in particular training sessions. Training sessions often occurred at regional/national conferences, but travel funds may not be available for these conferences. Policy and budget issues may have a detrimental effect on training if the library does not have policy of funding travel for support staff to attend training held outside the campus. The answers from responses to the closed-ended questions on this section offered valuable insights into current and future policy issues to university libraries on supporting staff training. The 11 questionnaire items in the “library/organizational support” section provided answers to the research question 4.

Research Question 5

What delivery methods are perceived as being helpful by support staff for their training?

In recent years, technology advancement has played a major role in the need for additional training. It also is a major enabler in the delivery of job-related training.

Dramatic changes are being made in how training is delivered. Electronic training (or e-training) is gaining much momentum and will surely be used widely in training.

Instructors must capitalize on the opportunities offered by new technology, or lose the ground they have recently gained (Caudron, 2001). Workshops, self-paced courses, online courses, and face-to-face instruction are some techniques for delivering training.

The findings from this study provided information on the utility of various approaches in the spectrum of training delivery methods. The perceived training delivery methods of the support staff could be useful for Kansas' public university libraries to design job-related training. The effectiveness of different training techniques is a significant issue facing university libraries. The seven questionnaire items in the "delivery methods" section provided answers to the research question 5.

Research Question 6

What internal and external training sources are perceived as being helpful by support staff for their training?

The subjects were asked where and how they would like to receive their job-related training. Budget limitations often drive the decisions pertaining to the location of training. Thus, library administrators have to use limited resources judiciously to obtain the maximum results for staff training. The location of the training may have a negative impact on the effectiveness of the training. If expertise is not available locally, but the budget does not allow for travel to an off-campus training session, the staff may receive inferior training from a learning-on-the-job local trainer or receive no training at all.

Spence and Hirsh (1997) observe that there is a major shift from training conducted away from the job as the primary delivery system for staff development to multiple forms of

job-embedded learning. The findings of this study reflected the opinions of support staff on where they preferred to receive training and offered valuable insight in the training sources. The eight questionnaire items in the “training sources” section provided answers to the research question 6.

Null Hypotheses

Along with the above research questions, null hypotheses were developed to discover if there were statistically significant differences in perceived training needs, library/organizational support, helpful delivery methods, and facilitative training sources as functions of the respondents’ general characteristics. Specifically, the null hypotheses from *Ho 1-a* through *Ho 1-g* explored statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their general characteristics, i.e., educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. They were as follows:

Ho 1-a. There are no statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their educational attainment.

Ho 1-b. There are no statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their total years working in the library field.

Ho 1-c. There are no statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their total years working at their current positions.

Ho 1-d. There are no statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their work units.

Ho 1-e. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their level of job responsibilities.

Ho 1-f. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their rank.

Ho 1-g. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their age range.

The null hypotheses from *Ho 2-a* through *Ho 2-g* examined statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their general characteristics. These null hypotheses were:

Ho 2-a. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their educational attainment.

Ho 2-b. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working in the library field.

Ho 2-c. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working at their current positions.

Ho 2-d. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their work units.

Ho 2-e. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their level of job

responsibilities.

Ho 2-f. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their rank.

Ho 2-g. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their age range.

Among the null hypotheses from *Ho 3-a* through *Ho 3-g*, statistically significant differences were calculated in determining the respondents' perceived training needs on interpersonal skills as a function of their general characteristics. These null hypotheses were:

Ho 3-a. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their educational attainment.

Ho 3-b. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working in the library field.

Ho 3-c. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working at their current positions.

Ho 3-d. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their work units.

Ho 3-e. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their level of job responsibilities.

Ho 3-f. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their rank.

Ho 3-g. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their age range.

The null hypotheses from *Ho 4-a* through *Ho 4-g* explored statistically significant differences in the respondents' perceived library/organizational support to their training as a function of their general characteristics. The following were these null hypotheses:

Ho 4-a. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their educational attainment.

Ho 4-b. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their total years working in the library field.

Ho 4-c. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their total years working at their current positions.

Ho 4-d. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their work units.

Ho 4-e. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their level of job responsibilities.

Ho 4-f. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their rank.

Ho 4-g. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their age range.

In determining statistically significant differences in the respondents' perceptions of helpful training delivery methods as a function of their general characteristics, null hypotheses from *Ho 5-a* through *Ho 5-g* were constructed as follows:

Ho 5-a. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their educational attainment.

Ho 5-b. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working in the library field.

Ho 5-c. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working at their current positions.

Ho 5-d. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their work units.

Ho 5-e. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their level of job responsibilities.

Ho 5-f. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their rank.

Ho 5-g. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their age range.

The null hypotheses from *Ho 6-a* through *Ho 6-g* explored statistically significant differences in the respondents' perceptions of helpful training sources that facilitate their

training as a function of their general characteristics. These null hypotheses were:

Ho 6-a. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their educational attainment.

Ho 6-b. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working in the library field.

Ho 6-c. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working at their current positions.

Ho 6-d. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their work units.

Ho 6-e. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their level of job responsibilities.

Ho 6-f. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their rank.

Ho 6-g. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their age range.

In a training needs assessment of the secretarial employees at the University of Illinois at Urbana-Champaign, Jerich (2000) found statistically significant differences in responses based on employees' demographics. Furthermore, Jerich found that the differences were at the levels of education, work unit, and total years of secretarial experience. Because the support staff in the six Kansas university libraries had various levels of educational attainment, years of library work experience, work units, level of

job responsibilities, rank, and age range, their perceptions on the needs of job-related training could differ. Regarding the use of null hypotheses in this study, Gay and Airasian (2003) offer the explanation that “the null hypothesis is the hypothesis of choice when there is little research or theoretical support for a hypothesis” (p. 65). The demographic responses from the last section of the survey instrument of this study in comparison with that of the other questionnaire items provided evidence for use of the null hypotheses.

Research Design

An appropriate research design must be established in order to logically and systematically formulate conclusions of the empirical study. A survey instrument was employed in this study because “a questionnaire gathers large amount of data from many respondents” (Krathwohl, 1998, p. 361). Through an extensive search of literature, this researcher concluded that there was no existing survey instrument that investigated the perceptions of training needs of support staff in university libraries in general, and in Kansas’ four-year public university libraries, in particular. Therefore, the researcher constructed a survey instrument for the study.

Construction of the Survey Instrument

Patton (2002) states that “validity in quantitative research depends on careful instrument construction to ensure that the instrument measures what it is supposed to measure” (p. 14). To ensure validity of the survey instrument, the researcher carefully matched each questionnaire item on the survey with the corresponding research questions so that data or information collected from each questionnaire item provided answers to the six research questions. The survey instrument was designed to obtain the following data and

information from the subjects:

1. perceived training needs on computer skills, interpersonal skills, and supervision/management skills;
2. perceived library/organizational support;
3. perceived helpful training delivery methods; and
4. perceived facilitative training sources.

For the purposes of consistency and ease of understanding, the survey instrument was divided into seven sections:

Section 1. Training needs on computer skills

Section 2. Training needs on interpersonal skills

Section 3. Training needs on supervision/management skills

Section 4. Favorable library/organizational support

Section 5. Helpful training delivery methods

Section 6. Facilitative training sources

Section 7. Information about the subjects' general characteristics

The first three sections were used to collect data on perceived training needs on computer skills, interpersonal skills, and supervision/management skills. The fourth section concentrated on library/organizational support that encourage support staff to participate in training. The fifth and sixth sections asked support staff the preferred training delivery methods and training sources that would help their training. The last section collected the data of the subjects' general characteristics. Maurer and Tarulli (1994) observe that previous research tend to indicate that some demographic variables may influence individual perceptions, thus affecting their interest in continuous learning. Through analyses of these

demographic data, the researcher discovered the influences of the respondents' educational attainment, library work experience, work units, level of job responsibilities, rank, and age range on the perceptions of their training needs, library/organizational support, delivery methods, and training sources.

The first six sections of the survey instrument included a total of 51 questionnaire items. In the first four sections that explored the subjects' perceptions of training needs on computer skills, interpersonal skills, supervision/management skills, and library/organizational support, each item was measured by a Likert rating scale with four choices: "Not at All Important," "Somewhat Important," "Important," and "Very Important." Among the four choices, 1 represented "Not at all Important" and 4 "Very Important." The same measuring scales were also used in the sections 5 and 6, which investigated helpfulness of training delivery methods and training sources perceived by the respondents, with the scales of "Not at All Helpful," "Somewhat Helpful," "Helpful," and "Very Helpful," where 1 represented "Not at All Helpful" and 4 "Very Helpful." The four-point Likert scale of choice was chosen in this study to avoid neutral responses from the respondents and force the subjects to choose in one direction or the other (Miller (1994). McMillan and Schumacher (1997) explain that "Likert-type scales provide great flexibility since the descriptors on the scale can vary to fit the nature of the question or statement" (p. 257). At the end of each section of the closed-ended questionnaire items, ample space for open-ended questions was provided for the subjects to add supplemental comments and opinions related to the six research questions. Gay and Airasian (2003) deem it "desirable to include an open-ended question for respondents to provide additional information" (p. 284).

The last section, questionnaire items from 7 to 14, asked the subjects' demographic

information: level of job responsibilities, rank, major work units, total years of work experience in the library field, total years of library experience at current positions, levels of educational attainment, age range, and gender that represented the general characteristics of the respondents of this study. These data allowed the researcher to study the scale of their influence on the respondents' perceptions of their training needs. At the very end of the survey instrument, additional space was provided for the subjects to write comments on topics not covered sufficiently in the survey or to augment earlier answers.

Dillman (2000) provides a list of strategies to reduce social costs incurred by respondents, including "make questionnaires appear short and easy," because "questionnaires that appear shorter and easy to fill out lessen the perceived costs of responding" (p. 18). The researcher followed Dillman's principles in constructing the survey instrument. The questionnaire items on the survey instrument were short and clear; ample space between the questionnaire items was provided; the consistent layout facilitated easy follow-ups; all questionnaire items were answered by simply circling a number on a 1-through-4 Likert rating scale, and the survey was printed on colored papers to attract the subjects' attention. Using these techniques contributed to a high return rate for this study.

Panel of Experts

In the process of constructing the survey instrument, a panel of experts was invited to comment and critique on the initial draft versions of the instrument in order to strengthen its validity. The researcher sent the survey instrument and the research proposal to the following experts for consultation. These experts are highly respected individuals in the library profession and in the field of education. Their vitae are listed in Appendix D. The names and qualifications of the panel of experts are as follows:

Dr. Camila Alire is the Dean of Library Services at the University of New Mexico and President-elect of the Association of College and Research Libraries (ACRL) in 2004, a division of the American Library Association. Dr. Alire taught courses on library science at the University of Denver and at other universities. She served as a steering committee member for the third Congress on Professional Education (COPE III) in 2003, at which the issues on support staff's compensation, career advancement, and lack of continual education opportunities were the major topics. COPE III was the first national conference at which the training and continuing education issues of the library support staff became the main theme.

Dr. Joseph W. Mau is a professor at the School of Administration, Counseling, Education & Psychology in the College of Education at Wichita State University. Professor Mau teaches research courses for graduate students and has written numerous quantitative and qualitative research articles published in refereed journals.

Dr. Barbara Moran is a professor at the School of Library and Information Science, University of North Carolina Chapel Hill. She has published numerous books on library and information resources management and has substantial experience in chairing dissertation committees and advising doctoral research. Her co-authored book, *Library and Information Center Management* (2002), has become a classic reference for library education programs in the U.S. and has appeared in six editions.

Dr. Donald E. Riggs is a professor and Vice President for Information Services & University Librarian at Nova Southeastern University. Dr. Riggs was Dean of Libraries at the University of Michigan from 1991 to 1997 and was a senior professor at the University of Michigan's library school, where he taught advanced library management courses. Dr. Riggs was editor of *College & Research Libraries*, a primary

research journal in academic librarianship in the U.S., from 1996 to 2002. An author of eight books and nearly 200 journal articles, Dr. Riggs has also taught courses on research methods at the library school of the University of South Florida.

Dr. Tony Schwartz is Associate Director of Libraries at Florida International University. He also held academic positions at the libraries at University of Massachusetts at Boston and Rice University. Dr. Schwartz is author and editor of several books and numerous refereed articles on library organizational development. Most recently, he is the editor of *Publications in Librarianship*, a publication of the Association of College & Research Libraries (ACRL).

Dr. Mark Winston is an Associate Professor at the School of Communication, Information and Library Studies, Rutgers University. He teaches library and information science courses for the Master's and Ph.D. programs. He has published several books and numerous peer-reviewed journal articles on leadership, library staff training, and research methods, in addition to presentations at the national level.

Panel of Experts' Initial Responses

The panel of experts read the lengthy research proposal and enthusiastically offered their opinions on the research project. In general, the panel liked the research topic and overall design of the survey instrument that intended to find answers for the six research questions. Dr. Alire commented:

Your proposal is a strong one; and I must say that, in my opinion, the value of this research has been underestimated. Your topic, even though limited to six academic libraries in Kansas, will be very useful to many of us dealing with the same challenge (C. Alire, personal communication, November 2003).

Dr. Riggs liked the empirical nature of this study:

We definitely need empirical research on this important topic. Librarians often write articles of “how we did it.” Support staff in academic libraries have played an important role. This research will contribute to a better understanding of their training needs (D. E. Riggs, personal communication, June 2, 2003).

Dr. Moran commented that “you have proposed an interesting study” (B. Moran, personal communication, June 23, 2003). Dr. Winston also wrote, “your research will address an important topic in library and information science” (M. Winston, personal communication, July 9, 2003).

Panel of Experts’ Review of the Survey Instrument

The panel was invited to review and comment on the survey instrument to enhance its validity. All of the six individuals have had experience in teaching graduate research courses in library and information science and/or have widely published in research journals using a variety of research methods. The researcher sent the research proposal and the survey instrument to these experts for comments and suggestions. In general, the panel was pleased with the research topic and the instruments. The panel also offered specific improvements on wording, layout, and questionnaire items on the survey instrument. For example:

Dr. Schwartz shared with the researcher a document from his library, “Staff Development Survey: What Would You Like to Learn?” Dr. Schwartz also suggested the addition of questionnaire item on non-supervisors and supervisors to the demographic section, which could be used as an independent variable (T. Schwartz, personal communication, July 29, 2003).

Dr. Moran suggested that a questionnaire item on gender be included in the last section of the survey (B. Moran, personal communication, June 23, 2003).

Dr. Winston made several wording suggestions, such as changing wording from “important” and “very important” to “helpful” and “very helpful” in the sections 5 and 6 that explored the subjects’ perceptions on helpful delivery methods and training sources (M. Winston, personal communication, July 9, 2003).

Dr. Riggs offered numerous editorial enhancements that helped the consistency throughout the entire survey instrument. For instance, he suggested that each questionnaire item contain a single concept or idea. Each questionnaire item should be preceded by a lower-case letter to facilitate the subjects’ smooth eye flow on questions and allow the subjects to mark answers clearly (D. E. Riggs, personal communication, June 29, 2003).

The researcher incorporated comments and suggestions from the panel of experts into the revised survey instrument for improvement. The input, suggestions, and comments from the panel helped strengthen the validity of the instrument.

Data Collection Methods

The data collection of this study followed carefully designed procedures to ensure that all needed data were collected as the study intended. The procedures included a field study, pilot study, and the final study.

Initial Field Study

The survey instrument was first tested in a field study. The researcher sent it to the support staff in a medium-sized university library in the Midwest that was excluded from the population of the study. In order to maintain confidentiality, the name of the library was omitted. The subjects in the field study were asked to fill out the survey and to comment on the clarity of the questionnaire items, their inclusiveness, and readability on a separate sheet. Upon receiving all returned questionnaires, the researcher conducted interviews with

support staff and asked questions regarding the content, layout, and formats of the survey instrument. The researcher recorded comments from the returned questionnaires and from the interviews. The feedback was shared with Professor Rosemary Talab, the researcher's major professor, who provided guidance for improvement. Subsequently, the researcher revised the survey instrument upon feedback and suggestions.

Pilot Study

Based on feedback and findings from the field study, a pilot study was conducted. The revised survey instrument was sent to 75 support staff at a large-sized university library. Again, the name of the library was not listed for the purpose of maintaining confidentiality. The subjects were asked to fill out the closed-ended questionnaire and offer additional open-ended comments in space provided. After two mailings and two postcard reminders, the return rate of the completed questionnaire from the pilot study was 72 percent, with 54 completed and usable responses from 75 subjects. Glass and Hopkins (1996) pointed out that "it is a good practice to estimate and report reliability coefficients for the outcome measures, especially when they are developed by the researcher" (p. 576). The researcher used Statistical Package for Social Sciences (SPSS), version 12.0, the latest version of the package released in November 2003, to analyze the data collected from the pilot study and to perform reliability tests. SPSS 12.0 is "a comprehensive system for analyzing data. SPSS can take data from almost any type of file and use them to generate tabulated reports, charts, and plots of distributions and trends, descriptive statistics, and complex statistical analysis" (SPSS 12.0 Brief Guide, 2003, p. iii).

Reliability, according to Haslam and McGarty (2003), "relates to our confidence that a given empirical finding can be reproduced again and again and is not just a 'freak

or chance occurrence' ” (p. 21). The reliability of the survey instrument developed by the researcher was tested by using Cronbach’s alpha level, because “Cronbach’s alpha is a measure of internal consistency. As such, it is one of many tests of reliability” (Cronk, 1999, p. 102). The overall testing result of the reliability for the instrument was at the alpha level = .8702. The test results of each individual section are listed in Table 4.

Table 4. Reliability Results of the Pilot Study

Sections	Reliability co- efficients	Number of questionnaire items
1. Training needs on computer skills	0.670	9
2. Training needs on interpersonal skills	0.870	7
3. Training needs on supervision/management skills	0.894	9
4. Library/organizational support	0.781	11
5. Helpful delivery methods	0.701	7
6. Facilitative training sources	0.727	8

A recommended reliability coefficient is above .90 for comparisons among people and at least .70 for comparisons among groups (Fraenkel, Sawin, & Wallen 1999). Other textbooks suggest that numbers close to 1.00 are very good, but numbers close to 0.00 represent poor internal consistency (Cronk, 1999). Therefore, there was room to improve the reliability of the survey instrument used for the pilot study.

In addition to recording responses from the returned questionnaires, the researcher interviewed several support staff members and their supervisors for follow-up and comments on the survey instrument. The feedback from returned questionnaires and from records on interviews helped the researcher fine tune the instrument before it was finally administrated to the entire support staff in the six Kansas Board of Regents’

university libraries. The researcher made revisions on the survey instrument based on the feedback from the pilot study group. The final version of the instrument was approved by Professor Rosemary Talab, the researcher's major professor.

Final Study

The final study followed well-planned procedures that guided each step on this research project:

1. The researcher prepared a list of the support staff from the six Kansas university libraries. The list was drawn from each of the libraries' staff directory on their web sites. The list included the subjects' name, phone number, and email address. A numeric code was assigned to each subject in order to follow through non-returned questionnaires. This list also served as a tracking system for the two mailings and the two postcard reminders. When a questionnaire was returned, the entry of the subject was removed from the list.

2. According to the guidelines of the Kansas State University's Committee for Research Involving Human Subjects (IRB), an Application for Approval Form was submitted and was approved by IRB prior to the study. The subjects were informed that all returned questionnaires would be kept only by the researcher. Their identities would be kept confidential. Only the findings in the aggregate form would be presented in the study so that each individual participating library would not be listed separately from any other library. Because the number of the participating libraries in this study was small (only six of them), not listing each individual library helped maintain confidentiality and increase the probability that subjects would respond honestly and openly to all questions. The subjects were also informed that the results of this study would be available to them

at their request by contacting Professor Rosemary Talab at the Kansas State University and that a copy of the final dissertation would be permanently housed in the Kansas State University Library.

3. The finalized survey instrument, along with a postage-paid and self-addressed envelope, was mailed to the 167 individual support staff in the six Kansas Board of Regents' university libraries. In the first mailing package, a personalized letter addressed to each individual participant, a copy of the survey instrument, and a self-addressed and postage-paid envelope were included. The questionnaire items were clearly printed out on colored papers to attract subjects' attention. Professor Rosemary Talab and the researcher co-signed the personal letter that enhanced the legitimacy of the study. In the personal letter it stated that it only took about 15 minutes to complete the questionnaire. A copy of the letter to participants and the survey instrument are included in Appendix A.

In a discussion of how to achieve a high response rate from a mail survey, Dillman (2000) suggests that multiple contacts, such as a four-contact sequence of pre-notice, questionnaire, reminder postcard, and replacement questionnaire, achieve the highest response rate. The researcher used this mailing technique for the study.

4. Following the first mailing, a postcard reminder was sent to those who did not return the questionnaire on the due date. Two weeks later, a second mailing, i.e., a replacement questionnaire, was sent out to the subjects who did not return the questionnaires. The second mailing provided the subjects with a copy of the survey instrument, a reminder letter, and a postage-paid and self-addressed envelope in case the subjects misplaced the questionnaire from the first mailing package. Finally, the researcher mailed the second postcard reminder to those who did not return the

questionnaire. After the two questionnaire mailings with self-addressed and postage-paid envelopes and the two postcard reminders, a total of 147 questionnaires was received. Among the returned questionnaires, five of them were incomplete and useless. Three of them were answered by unclassified staff who were not within the scope of the study. These questionnaires and the incompleting ones were disregarded. The useful responses included 139 completed questionnaires. Therefore, a return rate of 83 percent was achieved, exceeding the researcher's goal of a 75 percent return rate.

5. The quantitative data collected from the 139 questionnaires were coded and entered into a database of SPSS12.0 version. The results/findings of the statistical analyses were tabulated and reported in the chapter 4. Statistically significant differences were also presented in the chapter 4.

6. The researcher performed reliability tests from the responses to the closed-ended questions of the final study. The overall testing results of the reliability for the survey instrument was at the alpha level = .945, higher than that of the pilot study (at the alpha level = .8702). The improvement was also made among the questionnaire items across all sections of the finalized survey instrument. The reliability test results of each individual section were listed in Table 5.

Table 5. Reliability Results of the Final Study

Sections	Reliability co- efficients	Number of question items
1. Training needs on computer skills	0.816	9
2. Training needs on interpersonal skills	0.889	7
3. Training needs on supervision/management skills	0.938	9
4. Library/organizational support	0.881	11
5. Helpful delivery methods	0.750	7
6. Facilitative training sources	0.814	8
Total	0.945	51

7. The qualitative data collected from the open-ended questions on the survey instrument provided additional information and points of views that were not able to be obtained from the closed-ended items, as Lindlof and Taylor (2002) conclude that “one of the principal strengths of qualitative research remains its blend of strategy and unexpected discovery” (p. 210). Lindlof and Taylor (2002) also suggest data management, data reduction, and conceptual development as the three main elements of qualitative data analysis. The researcher processed the qualitative data manually. The comments and suggestions from open-ended questions were first transcribed into MS WORD documents. These comments were listed separately under the sections of training needs on computer skills, training needs on interpersonal skills, training needs on supervision/management skills, library/organizational support, helpful delivery methods, and facilitative training sources. Professor Talab, the researcher’s major professor, worked with the researcher to sort through the comments into major themes. The recurrent words, phrases, sentences, and paragraphs from the MS WORD documents

were first assembled into units. These units were then cut into pieces with a pair of scissors accordingly and finally were posted on several large boards. Through this process, the emerging themes from the posted notes were identified. Lastly, the researcher analyzed and organized these comments according to their themes and color-coded them. The emerging themes and their charts were reported in the qualitative analyses section in the chapter 4.

8. The final chapter of this study summarized the findings of the study and offered conclusions based on the findings. Recommendations for further study were presented on how and why this study should be replicated in other settings, and why consideration should be given to further research on this topic.

Data Analyses

Data analyses in the study included analyzing data collected from the responses to closed-ended questions and from the written comments to open-ended questions. Therefore, both quantitative and qualitative measures were applied in data analyses.

Quantitative Measures

Gay and Airasian (2003) define quantitative research as “the collection of numerical data to explain, predict, and/or control phenomena of interest” (p. 590). Quantitative research requires the study and measurement of variables. For the purposes of this study, the two types of variables were studied: the independent variable and the dependent variable.

Data collected from responses to closed-ended questions were analyzed by descriptive statistics using measures of central tendency to obtain an average of all scores for each questionnaire item. The data were also analyzed by inferential statistics measuring

statistically significant differences on perceived training needs of the respondents based on their general characteristics. For assistance with the interpretation and tabulation of the data, an appropriate computer software of SPSS 12.0 version was used to analyze data. The analyses identified common themes related to the training needs of support staff.

Statistically significant differences among variables were examined. *Independent Variables*

Haslam and McGarty (2003) define an independent variable as “the treatment variable manipulated by the experimenter in an experiment, or the causal variable which is believed to be responsible for particular effects” (p. 51). Independent variables influence the other main variable factors (e.g., dependent variables). They are also known as “causal” or “predictor” variables. Independent variables in this study were: support staff’s educational attainment, library work experience, work units, level of job responsibilities, rank, and age range.

Dependent Variables

A dependent variable is “the measure being predicted and is called criterion variable. In social sciences, the dependent variable is usually a response measure” (Sprinthall, 2000, p.591). Dependent variables are caused or affected by the independent variables. This type of variable is dependent on or influenced by the independent variable. Dependent variables in this study were: the respondents’ perceived training needs on computer skills, interpersonal skills, and supervision/management skills, their perceptions on library/organizational support, helpful training delivery methods, and training sources. The summary of the independent and dependent variables investigated in this study is listed in Table 6.

Table 6. Summary of Independent and Dependent Variables

Independent variables	Data scale	Dependent variables	Data scale
Educational attainment	Nominal	Training needs on computer skills	Interval
Library work experience	Nominal	Training needs on interpersonal skills	Interval
Work units	Nominal	Training needs on supervision/management skills	Interval
Level of job Responsibilities	Nominal	Library/organizational support	Interval
Rank	Nominal	Helpfulness of delivery methods	Interval
Age range	Nominal	Helpfulness of training sources	Interval

Descriptive Statistics

The respondents' demographic data were measured with descriptive statistics in this study. The purpose of the descriptive approach is "to describe systematically the facts and characteristics of a given population or area of interest, factually and accurately... in the literal sense of describing situations" (Issac and Michael, 1981, p. 46). In this study, the data from the questionnaire items 7 to 14 on the support staff's educational attainment, library work experience, work units, level of job responsibilities, rank, age range, and gender were collected and tabulated. These data provided general characteristics about the respondents of the study. The data in this group were on a nominal scale. They were independent of one another. Nonetheless, the use of the nominal data is limited because "the nominal case only gives us information regarding frequency of occurrence with categories" (Sprinthall, 2000, p. 332). The researcher reported the nominal data by their frequencies in the chapter 4.

The answers from the respondents to closed-ended questions were coded into the database of SPSS 12.0. The data were analyzed by using such measures of descriptive

statistics as means and standard deviation for the central tendency measures.

Inferential Statistics

Glass and Hopkins (1996) explain the inferential statistics in this way:

The principal use of statistical inference in empirical research is to obtain knowledge about a large class of persons, or other statistical units, from a relatively small number of persons. Inferential statistical methods employ inductive reasoning—reasoning from the particular to the general and from the observed to the unobserved (p. 223).

Because the subjects in the study represented a total population rather than a simple random sample, the statistically significant differences in the respondents' perceived training needs, organizational climates, delivery methods, and training sources as functions of their general characteristics were reported as true indicators for differences rather than probable differences.

For inferential analyses, first, a series of one-way multivariate analysis of variance (MANOVA) tests were performed. Multivariate tests “are those that involve more than one dependable variables. ... Multivariate tests look at all dependent variables at once, in much the same way that ANOVA looks at all levels of an independent variable at once” (Cronk, 1999, p. 80). For example, if ANOVA tests were to be conducted for each of the nine questionnaire items of training needs on computer skills in the section 1 of the survey instrument, it would have caused a Type I error inflation (Cronk, 1999). That is, at the alpha level = .05, a Type I error inflation would be $9 \times .05 = .45$. To avoid Type I error inflations, a series of MANOVA tests were used to analyze the data on each section. When statistically significant differences were found from MANOVA test results, a series of analysis of variance (ANOVA) tests were conducted to identify values of significance. Sprinthall (2000) listed ANOVA as a quantitative

measure for interval data to obtain differences among two or more measures.

Additionally, ANOVA “avoids the inflation-of-probabilities problem and keeps the Type I error at 5 percent by, in essence, making a single simultaneous test of all means” (Kratwohl, 1998, p. 490). Finally, if values of significance were found at the .05 alpha level from ANOVA test results, then a series of Scheffe post hoc contrasts were followed to determine where the statistical differences occurred. Haslam and McGarty (2003) regard the Scheffe test as “one of the best known” methods of doing multiple comparisons (p. 293).

Qualitative Measures

The information sought in this study was realized from a complex, multidimensional, and dynamic process. Quantitative measures alone were not able to provide in-depth understanding of important support staff training components. Therefore, qualitative measures were also applied to analyze data collected from open-ended questions in order to provide a vehicle to receive a wider range of and detailed data from the subjects.

Patton (2002) defines a qualitative method as “the study of issues in-depth and detail” (p.14). Even though most of the data for this study were collected through quantitative methods, that is, the data were collected through responses to closed-ended questions, the components of the qualitative measures in the questionnaire provided in-depth analysis to supplement the quantitative measures, because “open-ended question probes yield-in-depth responses about people’s experiences, perceptions, opinions, feelings, and knowledge. Data consist of verbatim quotations with sufficient context to be interpretable” (Patton, p. 4). On the survey instrument of this study, ample space for

responses to open-ended questions was provided immediately after each section of closed-ended questions and was also provided at the end of the survey so that the respondents were able to write additional comments that were relevant to their training needs. Specifically, the open-ended questions provided respondents the opportunity to (a) suggest other training elements on their computer skills; (b) provide input pertaining their training needs on interpersonal skills; (c) address training needs on supervision/management skills; (d) offer input on library/organizational support; (e) give recommendations on delivery methods and training sources for improving training; and (f) offer suggestions for other training-for-performance endeavors.

The advantage of using the mail questionnaire to collect qualitative data was that the subjects' anonymity was maintained, enabling free expression of opinions. This is particularly necessary in the academic library community because the number of the subjects is small when compared to the K-12 or higher education communities.

Additionally, certain work units in the university libraries may contain only one or fewer support staff. Therefore, maintaining confidentiality of the subjects and their library affiliates is important. Krathwohl (1998) states that the "mail questionnaire may get past the screening of doorman and secretaries who keep interviewers at bay. Also, you can ensure that the confidentiality of responses if the questionnaire is returned anonymously" (p. 362). The qualitative data collected from the responses to the open-ended questions in this study helped better understand the respondents' perceptions.

For the qualitative data of this study, open-ended comments were recorded and analyzed according to the themes that emerged from the respondents' answers. The researcher created an inductive classification of responses that related to a specific aspect

of support staff (e.g., training). A record was maintained on the number of times a particular word or phrase was used from the responses to open-ended questions. This type of inductive classification scheme was used for coding purposes to identify relationships of interests (e.g., additional training elements). Knox (2002) states that this process of analytic induction from qualitative data helps identify themes not discovered through quantitative measures.

Lindlof and Taylor (2002) suggest two processes of making sense of qualitative data: analysis and interpretation; analysis “is the process of labeling and breaking down (or decontextualizing) raw data and reconstituting them into patterns, themes, concepts, and propositions” (p. 210). In this study, the researcher first went through the responses to the open-ended questions and then analyzed them by using the coding system to identify the major themes from the responses, because through the process, “categories are built, are named, and have attributes ascribed to them” (Lindlof and Taylor, p. 219).

Chapter Summary

This chapter presented the population of the study, research questions and null hypotheses, research design, data collection procedures, and the scopes of the quantitative and qualitative approaches of the study. The 167 support staff in the six Kansas Board of Regents university libraries were the subjects of the study. The population of the study possessed several commonalities: they were under the same governing body of the Kansas Board of Regents, followed the uniform policies and guidelines of the state, and were under the same classification system in their rank, specific duties, pay scales, and job descriptions in their respective positions.

The purpose of this study was to learn perceived training needs of the support staff for their job performance. The six research questions were designed to provide the information:

Research question 1: What kind of training needs on computer skills are perceived as important by support staff to their job performance?

Research question 2: What kind of training needs on interpersonal skills are perceived as important by support staff for their job performance?

Research question 3: What kind of training needs on supervision/management skills are perceived as important by support staff for their job performance?

Research question 4: What kinds of library/organizational support are perceived as important by support staff to participate in training?

Research question 5: What delivery methods are perceived as being helpful by support staff for their training?

Research question 6: What internal and external training sources are perceived as being helpful by support staff for their training?

The researcher constructed a survey instrument with 51 closed-ended questionnaire items. Ample space for open-ended questions was also provided to collect additional comments and opinions from the respondents. The survey instrument was reviewed by a panel of six experts. Their input, suggestions, and comments strengthened the validity of the survey instrument. These experts were: Dr. Camila Alire, the Dean of the University of New Mexico; Dr. Joseph W. Mau, Professor at the College of Education, Wichita State University; Dr. Barbara Moran, Professor at the School of Library and Information Science, University of North Carolina Chapel Hill; Dr. Donald E. Riggs, Professor and Vice

President for Information Services and University Librarian at Nova Southeastern University; Dr. Tony Schwartz, Associate Director of the Florida International University Libraries; and Dr. Mark Winston, Associate Professor at the School of Communication, Information and Library Studies, Rutgers University. To comply with the guidelines of the Kansas State University's IRB, an *Application for Approval Form* was submitted to the Kansas State University's Committee for Research Involving Human Subjects and was approved prior to the study.

The survey instrument was first tested in a field study at a medium-sized university library. The researcher also interviewed support staff and asked questions regarding the content, layout, and format of the instrument. Based on the feedback, the researcher revised the instrument that was subsequently sent to 75 support staff in a large-sized university library for a pilot study. The reliability of the revised survey instrument was tested during the pilot study, with a result of .8907 at the alpha level. The survey instrument was then revised, finalized, and approved by Professor Rosemary Talab before it was administered to 167 support staff in the six Kansas Board of Regents' university libraries. After two mailings and two postcard reminders, a response rate of 83 percent was achieved, with 139 completed and useful returned questionnaires. The researcher used a SPSS version 12.0 (November 2003 release) to analyze quantitative data. The reliability test result for the final survey instrument was at the alpha level = .945, representing an improved score.

The researcher planned to use quantitative measures and qualitative measures to analyze the data from the responses to both closed-ended and open-ended questions. The independent variables of the study were the support staff's educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. The

dependent variables were the respondents' perceived training needs on computer skills, interpersonal skills, supervision/management skills, their perceptions on library/organizational support, helpful training delivery methods, and helpful training sources. The findings of the quantitative analyses were reported in the forms of frequency, measure of central tendency, and test results of MANOVA, ANOVA, and Scheffe post hoc contrasts. The qualitative data were analyzed through an inductive method to allow major themes to emerge. The open-ended responses were recorded and analyzed according to the themes that emerged from the respondents' comments, suggestions, and opinions. A record was maintained on the number of times a particular word or phrase was used from the responses to open-ended questions in order to identify particular themes. Data analysis and findings of the study were presented in the chapter 4.

CHAPTER IV

DATA ANALYSIS AND FINDINGS

Chapter Overview

The purpose of this study was to learn the perceived training needs of the support staff at the six Kansas Board of Regents' university libraries, as ongoing training is crucial to their job performance. Through the use of a survey instrument that was administered to the entire 167 support staff in these libraries, the researcher was able to obtain quantitative and qualitative data from 139 completed and usable responses with a return rate of 83 percent. The data analyses and findings of the study reported in this chapter answered the six research questions and provided evidences to null hypotheses.

This chapter presents the general characteristics of the respondents of this study, then reports the quantitative measures of data analyses, including the presentations of the percentage of responses to the questionnaire on a 1 to 4 Likert rating scale, measures of central tendency, and results of a series of one-way multivariate analysis of variance (MONAVA) tests that provided evidences to the null hypotheses about the influences of the respondents' general characteristics on the perceptions of their training needs. Finally, this chapter reports the qualitative measures of data analyses to present the themes that emerged from the responses to open-ended questions on the questionnaire centered on the six research questions.

General Characteristics of the Respondents

In this study, the information about the general characteristics of the respondents was their educational attainment, library work experience, work units, level of job responsibilities, rank, age ranges, and gender. The respondents' general characteristics

were independent variables of this study. These variables provided valuable insight into the respondents' perceptions of training needs that help them perform the duties in their positions successfully.

Educational Attainment

The questionnaire asked subjects of the study to state the highest educational levels they had attained. Among 139 respondents who completed the questionnaire, the largest number of the respondents (48.2 percent) held Bachelor's degrees in various subject fields, ranging from English, History, and Sociology, to Mathematics, Chemistry, and general sciences. The respondents with high school diplomas or some college courses were the next largest group, accounting for 36 percent. The respondents with advanced degrees, i.e., Master's degrees and Ph.D.s, were the smallest group, as shown in Table 7.

Table 7. Educational Attainment of the Respondents

Independent variables	N	Percentage
High school diplomas or some college courses	50	36.0
Bachelor's degrees	67	48.2
Advanced degrees	22	15.8
Total	139	100.0

Library Work Experience

The respondents' library work experience is illustrated by their total years working in the library field and their total years they had been working at their current positions.

Total Years Working in the Library Field

Table 8 presents data about the respondents' total years working in the library

field. It shows that 48.2 percent of the respondents worked in the library field for 16 or more years, making them the largest group among all respondents. Those who worked in the library field between 6 to 10 years were in the smallest group, about 13 percent.

Table 8. Total Years in the Library Field of the Respondents

Independent variables	N	Percentage
1-5years	28	20.1
6-10 years	18	13.0
11-15 years	26	18.7
16 or more years	67	48.2
Total	139	100.0

Total Years Working at Current Positions

Table 9 displays the respondents' total years working at their current positions. Sixty-eight respondents, or 49 percent, had worked at their current positions between 1 to 5 years. This indicates that almost one half of the respondents in the six Kansas university libraries had been hired within the last five years.

Table 9. Total Years at Current Positions of the Respondents

Independent variables	N	Percentage
1-5years	68	49.0
6-10 years	21	15.1
11-15 years	23	16.6
16 or more years	27	19.4
Total	139	100.0

Work Units

Table 10 reports the work units of the respondents in this study. More respondents were in the Cataloging unit (about 26 percent) than in other units. The

second largest group of the respondents were Circulation and Acquisitions, which accounted for 17 percent and 15 percent respectively. There was only one respondent from each of the smallest units, such as Archives, Database maintenance, and Digital library.

Table 10. Work Units of the Respondents

Independent variables	N	Percentage
Cataloging	36	25.9
Circulation	24	17.3
Acquisitions	21	15.1
Interlibrary loan	16	11.5
Reference	10	7.2
Government documents	9	6.5
Reserves	8	5.8
Special collections	4	2.9
Bindery	4	2.9
Computer support	2	1.4
Collection development	2	1.4
Digital library	1	0.7
Database maintenance	1	0.7
Archives	1	0.7
Total	139	100.0

It is obvious that in some library units only one or two respondents returned the questionnaire, for instance, in Collection development and Archives. In other units, however, such as Cataloging and Circulation, there were more respondents. For the purpose of categorization in the statistical analysis of this study, the researcher re-grouped the 14 work units into four larger work units, according to their library functions:

Acquisitions: The respondents in this group were from the Acquisitions and Bindery, with a total of 25 respondents.

Online cataloging: The respondents from Cataloging, Computer support, Digital library, and Database maintenance were included in this group. The total number of the respondents was 40.

Collections/user services: This group included the respondents from the work units of Reference, Government documents, Special collections, Collection development, and Archives, with a total of 26 respondents.

Access services: This group was comprised of 48 respondents, from the work units of Circulation, Reserve, and Interlibrary loan.

Table 11 lists the four re-grouped work units according to their library functions and the number of the respondents in each group.

Table 11. Work Units by Library Functions of the Respondents

Independent variables	N	Percentage
Acquisitions	25	18.0
Online cataloging	40	29.0
Collections/user services	26	19.0
Access services	48	34.0
Total	139	100.0

Prior to re-grouping the work units, the researcher reviewed the current organizational charts and the library departments posted on the web sites of the six Kansas Board of Regents' university libraries. The researcher also sent the re-grouped work units to the panel of experts for comments. The feedback from the panels was very positive. For instance, Dr. Donald E. Riggs, Professor and Vice President for Information Services and University Librarian at Nova Southeast University, offered the following comments:

The four primary areas you have designated are appropriate. Through the

combination you proposed, common work units are brought together; for example, Acquisitions and Bindery. Online cataloging is appropriate for the primary group focusing on cataloging functions and database maintenance. Collection and user services reflect the interrelationship among the units you identified for this group. Access services is the appropriate area for the inclusion of circulation and reserves. In summary, the four primary areas you suggested are found in university libraries throughout the world (personal communication, D. E. Riggs, June 15, 2004).

Level of Job Responsibilities

Table 12 shows that the respondents' job responsibilities were divided into three categories: those who did not have supervisory duties; those who supervised student employees only, and those who supervised both student employees and staff. The largest number of respondents, about 42.5 percent, supervised student employees. More than 19 percent of the respondents supervised both staff and students.

Table 12. Level of Job Responsibilities of the Respondents

Independent variables	N	Percentage
Non-supervisors	53	38.1
Supervising students	59	42.5
Supervising staff and students	27	19.4
Total	139	100.0

Rank

Table 13 indicates that the respondents of the study fell into three classification categories: Library Assistant I, Library Assistant II, and Library Assistant III, where Library Assistant III is the highest rank. Among all respondents, the largest group, approximately 47 percent, consisted of those who were at the rank of Library Assistant II. The next largest group was Library Assistant III, which accounted for about 34 percent.

Table 13. Rank of the Respondents

Independent variables	N	Percentage
Library Assistant I	27	19.4
Library Assistant II	65	46.8
Library Assistant III	47	33.8
Total	139	100.0

Age Range

Table 14 indicates that 46 percent of the respondents were between the age of 46 to 55. When combined with the two other age groups, i.e., the groups of 56 to 65 years old and 66 or older, about 62 percent of the respondents were 46 or older. The younger groups of the respondents, i.e., the group of 25 or younger and those who were 26 to 35 years old, accounted for only 20.2 percent of all respondents.

Table 14. Age Range of the Respondents

Independent variables	N	Percentage
25 or younger	10	7.2
26-35	18	13.0
36-45	25	18.0
46-55	64	46.0
56-65	20	14.4
66 or older	2	1.4
Total	139	100.0

Gender

Table 15 shows that, among all respondents, 114 respondents, or 82 percent, were female. The female-to-male ratio among the respondents in this study was 4.56:1. Because of the disproportionate numbers of the two groups, the respondents' gender was not used as an independent variable to analyze their perceptions on training needs in this study.

Table 15. Gender of the Respondents

Independent variables	N	Percentage
Female	114	82.0
Male	25	18.0
Total	139	100.0

Summary of the Respondents' General Characteristics

This section reports the general characteristics of the respondents in this study. Among all respondents, about 64 percent of them reported that they had Bachelor's degrees or other advanced degrees in a variety of subject fields. About 67 percent of the respondents had worked 11 or more years in the library field. However, almost one half of the respondents had worked only 1 to 5 years at their current positions. The respondents identified 14 primary work units in which they spent 60 percent of their work time. The largest work unit was Cataloging, with 26 percent of the respondents, followed by Circulation and Acquisitions, with 17 percent and 15 percent, respectively. The smallest work units were Archives, Database maintenance, and Collection development; there were only one or two respondents from these units. A large number of the respondents, about 62 percent, had supervisory duties. They either supervised student employees only or supervised both student employees and staff. Almost one half of the respondents were in

the rank of Library Assistant II, the largest group among all respondents. The reality of aging library support staff was reflected by the fact that about 62 percent of the respondents were 46 or older. The gender of the respondents indicated that the library field was still a female-concentrated profession, as 82 percent of the respondents in this study were female.

Quantitative Measures

The quantitative approach of data analyses in this study was centered around the six research questions and provided evidences for null hypotheses. This section reports the respondents' perceptions of their training needs on computer skills, interpersonal skills, supervision/management skills, the respondents' perceived library/organization support, helpful training delivery methods, and helpful training sources through descriptive counts, measures of central tendency, and results of a series of one-way multivariate analysis of variance (MANOVA) tests for each research question and null hypothesis.

Research Question 1

What kind of training needs on computer skills are perceived as important by support staff for their job performance?

Null Hypotheses

Ho 1-a. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their educational attainment.

Ho 1-b. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their total years working in the library field.

Ho 1-c. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their total years working at their current positions.

Ho 1-d. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their work units.

Ho 1-e. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their level of job responsibilities.

Ho 1-f. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their rank.

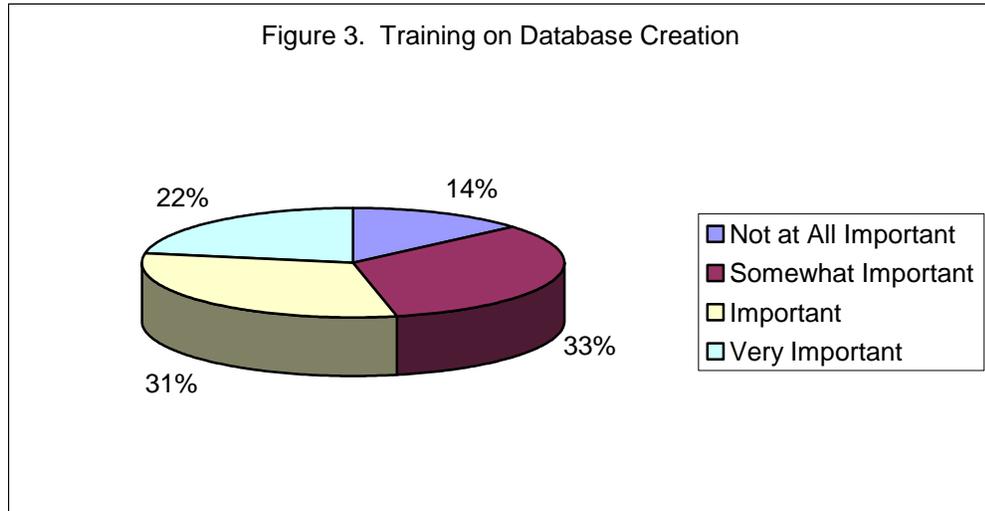
Ho 1-g. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their age range.

Respondents' Perceptions of Training Needs on Computer Skills

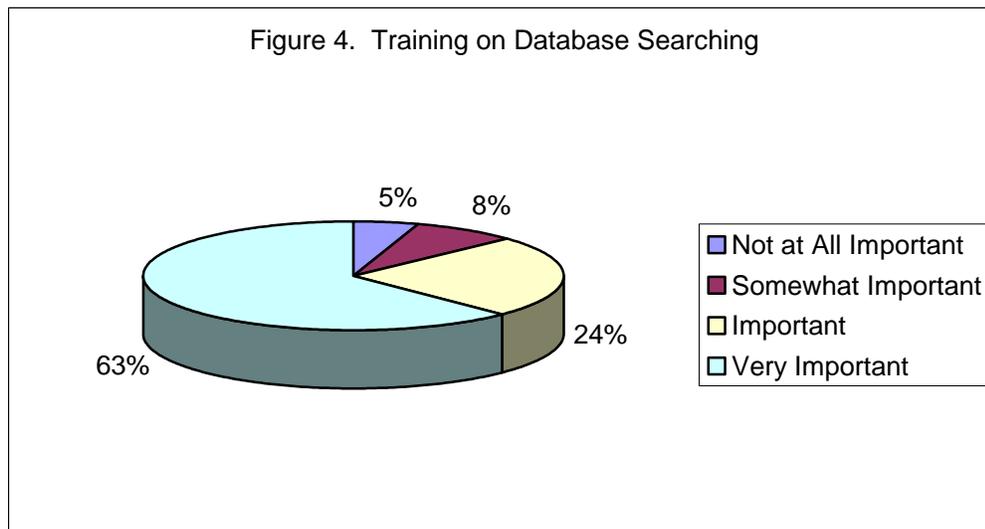
In order to learn the answers to the research question 1, the subjects were asked on the questionnaire to rate the importance of the nine training topics that they viewed as being important to their computer skills. Data reported in this section illustrate the respondents' perceptions about their training needs on computer skills. On the questionnaire, the nine training topics related to computer skills were provided to the respondents on a 1 to 4 Likert rating scale with closed-ended choices:

- Database creation (e.g., MS Access)
- Database searching
- E-mail management
- MS Office suites (e.g., word processing, spreadsheet, etc.)
- Presentation software (e.g., PowerPoint, etc.)
- Scanning techniques
- Web browsers (e.g., Internet Explorer, etc.)
- Web page creation/maintenance
- Windows operating system

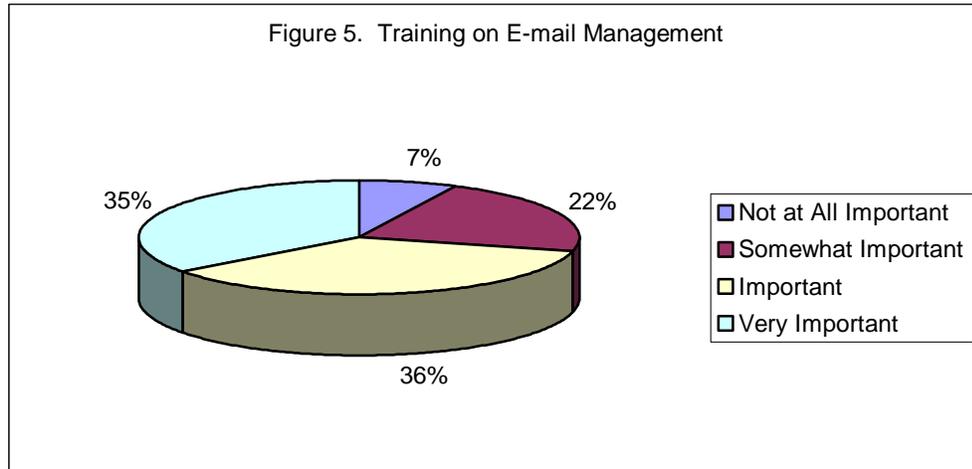
Training on database creation. Figure 3 shows that 31 percent of the respondents rated “Database creation” as being an important and 22 percent rated it as a very important training topic to their computer skills.



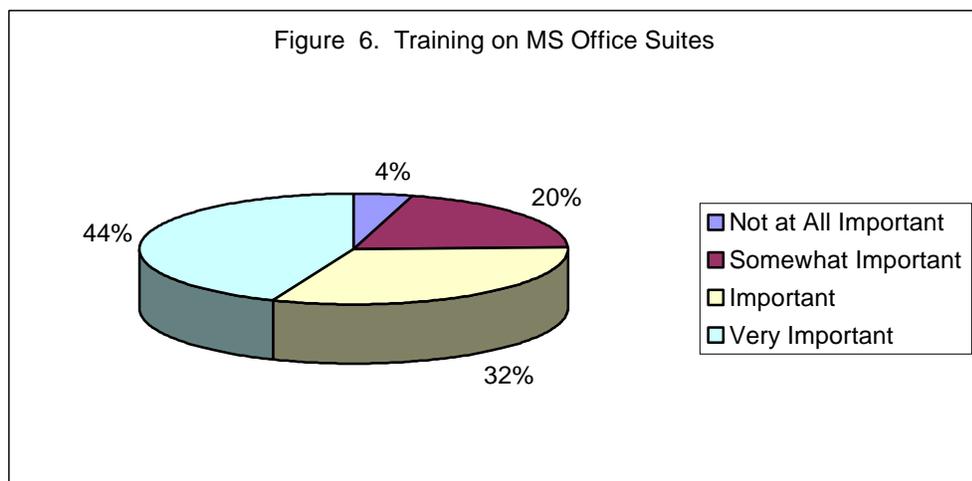
Training on database searching. Figure 4 illustrates that “Database searching” received the highest rating from the respondents in its importance to their training needs on computer skills. Sixty-three percent of the respondents considered it as a very important training topic to their computer skills.



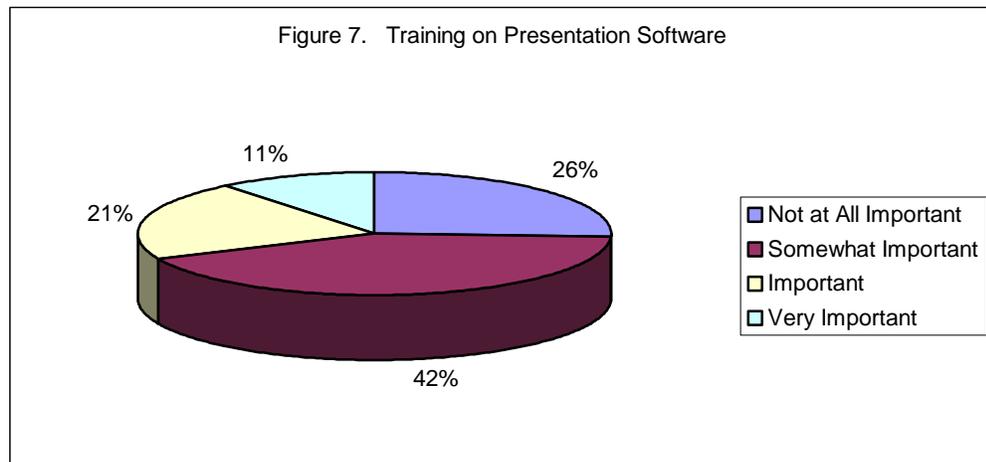
Training on e-mail management. Figure 5 shows that 36 percent of the respondents viewed “E-mail management” as being an important and 35 percent viewed it as a very important training topic to their computer skills.



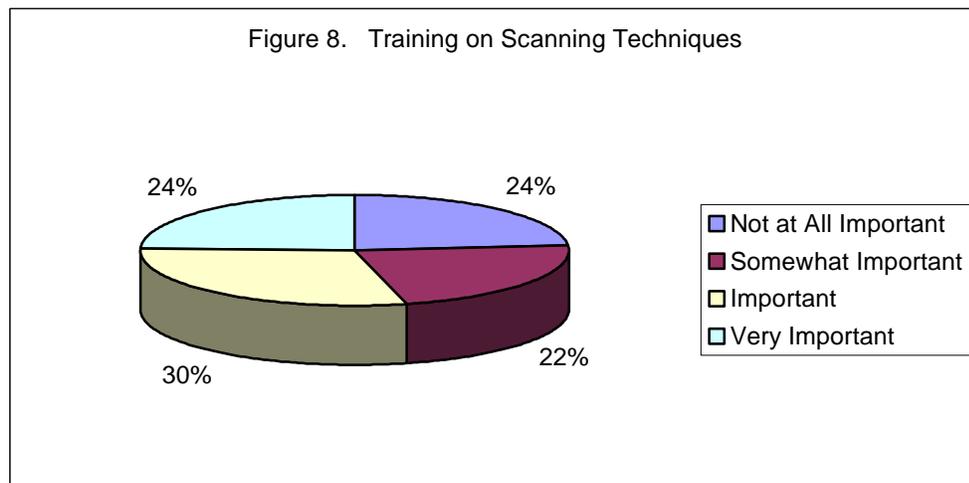
Training on MS Office suites. Figure 6 indicates that a large number of respondents favored a training topic on “MS Office suites.” Thirty-two percent of the respondents rated it as being an important and 44 percent rated it as a very important training topic to their computer skills.



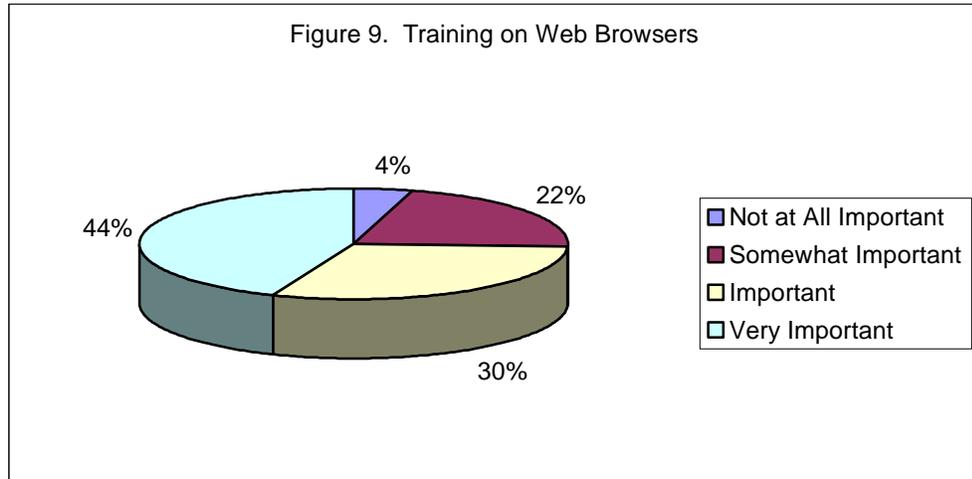
Training on presentation software. Figure 7 presents the respondents' perceptions of training on "Presentation software." Twenty-one percent of the respondents reported this training topic as being important and 11 percent reported it as a very important training topic to their computer skills.



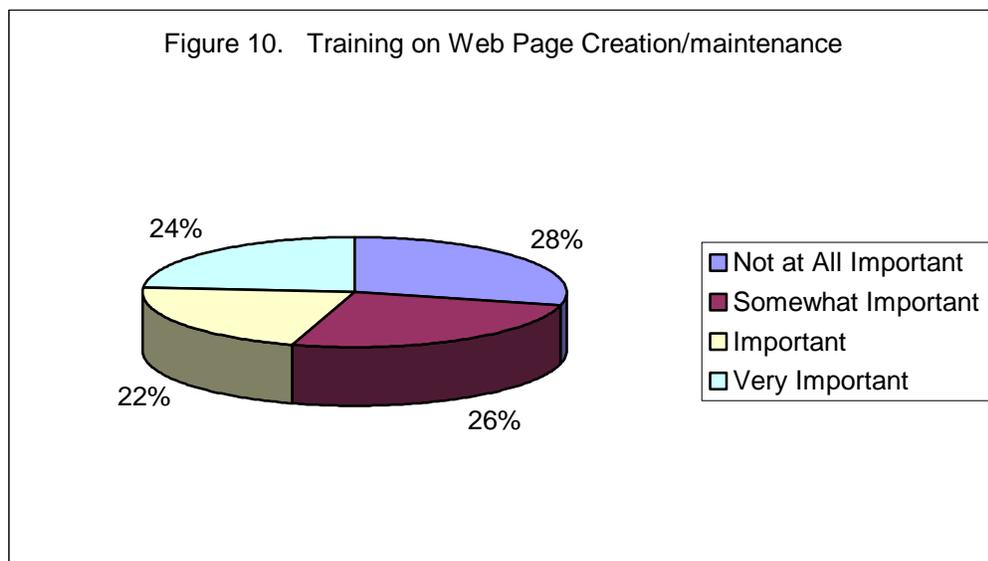
Training on scanning techniques. Figure 8 reports the mixed views of the respondents on training needs toward "scanning techniques." Thirty percent of the respondents considered the techniques to be important and 24 percent considered it as a very important computer skill for which they need training.



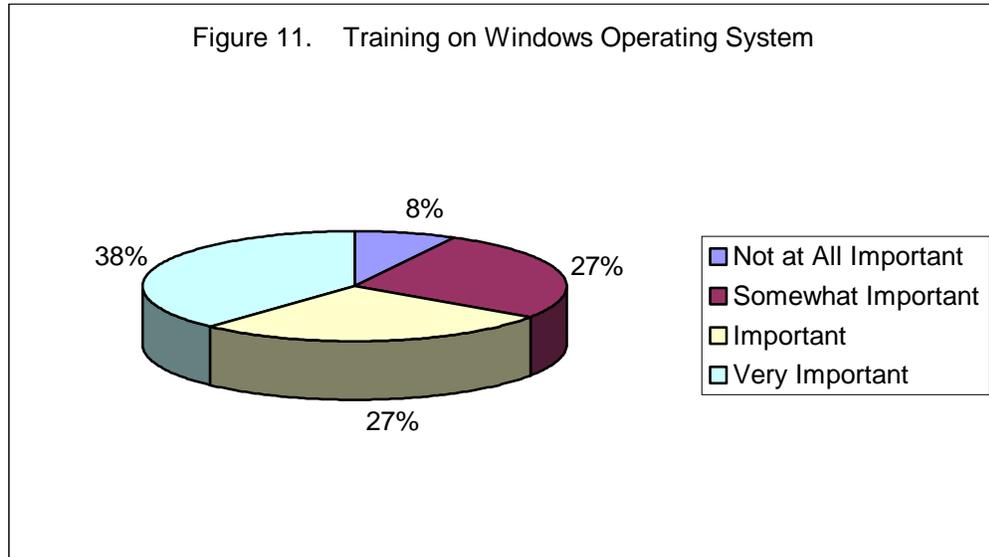
Training on web browsers. Figure 9 demonstrates that 30 percent of the respondents perceived “Web browsers” as being important and 44 percent perceived it as a very important training topic to enhance their computer skills.



Training on web page creation/maintenance. Figure 10 shows that the training needs on “Web page creation/maintenance” was quite divided among all respondents. Twenty-eight percent rated it “Not at All important” to their training needs on computer skills.



Training on windows operating system. Figure 11 indicates that 27 percent of the respondents believed that “Windows operating system” was important and 38 percent reported it as a very important training topic to their computer skills.



Measures of Central Tendency

The measure of central tendency “provides a quick summary of where the responses are clustered” (Nardi, 2003, p. 121). Table 16 summarizes the mean values of the nine questionnaire items on computer skills, with the highest mean on the top of the list. To understand how well a mean value of an item summarizes its distribution, (that is, how far each case is from mean), the values of standard deviation are also presented in the same table. de Vaus (2002) suggests that “the lower (standard deviation) is, the better mean is as a summary measure” (p. 226).

Table 16 presents “Database searching” as a training topic on computer skills with the highest mean (M=3.45). It was followed by training on “MS Office suites”(M=3.15) and “Web browser”(M=3.14). The means of “E-mail management” and “Windows operating system” as training topics on computer skills were very close, with 2.99 and 2.96, respectively.

Table 16. Mean Summaries on Computer Skills

Training topics on computer skills	N	Mini.	Max.	Mean	Std. Deviation
Database searching	139	1	4	3.45	0.84
MS Office suites	139	1	4	3.15	0.89
Web browsers	139	1	4	3.14	0.90
E-mail management	139	1	4	2.99	0.93
Windows operating system	139	1	4	2.96	0.98
Database creation	139	1	4	2.62	0.98
Scanning techniques	139	1	4	2.55	1.10
Web page creation/maintenance	139	1	4	2.40	1.14
Presentation software	139	1	4	2.17	0.94

Measures of central tendency by educational attainment.

Table 17 lists the means and standard deviations on the nine questionnaire items related to computer skills corresponding to the respondents' educational attainment: high school diplomas or some college courses, Bachelor's degrees, and advanced degrees. The means of "Database searching" as a training topic on computer skills were the highest among the respondents in the three groups, at 3.42, 3.42, and 3.59, respectively, followed by the other two training topics, "MS Office suites" and "Web browsers," in their importance to the respondents' computer skills.

Table 17. Means and Standard Deviations by Educational Attainment

Training topics on computer skills	High school's (N=50)		Bachelor's (N=67)		Advanced (N=22)	
	M	SD	M	SD	M	SD
Database creation	2.68	0.96	2.57	1.00	2.64	1.00
Database searching	3.42	0.84	3.42	0.92	3.59	0.59
E-mail management	3.10	0.89	2.94	0.95	2.91	0.97
MS Office suites	3.22	0.82	3.12	0.98	3.09	0.81
Presentation software	2.18	1.00	2.13	0.90	2.23	0.92
Scanning techniques	2.66	1.10	2.49	1.12	2.45	1.10
Web browsers	3.36	0.78	3.04	0.96	2.91	0.92
Web page creation	2.40	1.09	2.33	1.16	2.64	1.22
Windows operating system	3.02	0.87	3.01	1.08	2.64	0.90

Measures of central tendency by the total years working in the library field.

Table 18 presents the mean values of the nine questionnaire items related to computer skills corresponding to the respondents' total years working in the library field in the four groups: 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. The highest means came from "Database searching" as a training topic to the respondents' computer skills, at 3.54, 3.39, 3.35, and 3.46, respectively. The lowest means were on "Presentation software" among the four groups as a training topic on computer skills, at 2.32, 1.94, 1.96, and 2.24, respectively.

Table 18. Means and Standard Deviations by the Total Years in the Library Field

Training topics on computer skills	1 to 5 years (N=28)		6 to 10 years (N=18)		11 to 15 years (N=26)		16 or more years (N=67)	
	M	SD	M	SD	M	SD	M	SD
Database creation	3.04	1.00	2.39	0.85	2.62	0.94	2.51	0.99
Database searching	3.54	0.64	3.39	0.70	3.35	0.85	3.46	0.96
E-mail management	2.89	0.96	2.78	0.94	2.96	1.04	3.1	0.87
MS Office suites	3.07	0.86	3.17	0.86	3.12	0.91	3.19	0.93
Presentation software	2.32	0.95	1.94	0.87	1.96	1.00	2.24	0.92
Scanning techniques	2.46	1.14	2.56	0.98	2.38	1.17	2.64	1.11
Web browsers	2.89	0.96	2.89	0.83	3.19	0.94	3.28	0.87
Web page creation	2.68	1.22	2.00	1.09	2.38	1.13	2.40	1.12
Windows operating system	3.18	0.95	3.06	0.94	2.92	1.06	2.85	0.99

Measures of central tendency by the total years working at current positions.

Table 19 shows the mean values of the nine questionnaire items related to computer skills corresponding to the respondents' total years at their current positions in the four groups: 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. "Database searching" as a training topic to the respondents' computer skills had the highest means of 3.49, 3.61, and 3.48, respectively, among the three groups of the respondents working at their current positions between 1 to 5 years, 11 to 15 years, and 16 or more years. Among the respondents who had worked between 6 to 10 years at their current positions, "MS Office suites" as a training topic to their computer skills had the highest mean at 3.19.

Table 19. Means and Standard Deviations by the Total Years at Current Positions

Training topics on computer skills	1 to 5 years (N=68)		6 to 10 years (N=21)		11 to 15 years (N=23)		16 or more years (N=27)	
	M	SD	M	SD	M	SD	M	SD
Database creation	2.78	0.96	2.62	0.92	2.57	1.04	2.26	0.98
Database searching	3.49	0.78	3.10	0.94	3.61	0.78	3.48	0.94
E-mail management	3.01	0.92	2.76	1.00	3.13	0.92	3.00	0.92
MS Office suites	3.10	0.88	3.19	0.93	3.35	0.71	3.07	1.04
Presentation software	2.19	0.95	2.19	0.87	1.96	0.77	2.26	1.10
Scanning techniques	2.57	1.10	2.38	0.97	2.65	1.19	2.52	1.19
Web browsers	3.04	0.94	2.90	0.94	3.39	0.78	3.33	0.83
Web page creation	2.57	1.19	2.48	0.98	2.04	1.15	2.22	1.09
Windows operating system	2.91	1.03	2.67	0.91	3.30	0.93	3.00	0.92

Measures of central tendency by work units.

Table 20 reports the mean values of the nine questionnaire items on computer skills corresponding to the respondents' work units in the four groups: Acquisitions, Online cataloging, Collections/user services, and Access services. Among the respondents in the Acquisitions unit, "MS Office suites" as a training topic to their computer skills had the highest mean of 3.48, followed by "Database searching" and "E-mail management," with means of 3.44 and 3.36, respectively. Among the other three groups of the respondents in Online cataloging, Collections/user services, and Access services, the means of "Database searching" as a training topic to their computer skills were the highest ones, at 3.27, 3.65, and 3.48, respectively.

Table 20. Means and Standard Deviations by Work Units

Training topics on computer skills	Acquisitions (N=25)		Cataloging (N=40)		Collections (N=26)		Access (N=48)	
	M	SD	M	SD	M	SD	M	SD
Database creation	2.80	0.87	2.38	0.98	3.23	0.86	2.40	0.96
Database searching	3.44	0.82	3.27	0.99	3.65	0.75	3.48	0.77
E-mail management	3.36	0.81	2.95	0.99	2.96	0.96	2.85	0.90
MS Office suites	3.48	0.77	2.85	0.92	3.19	0.85	3.21	0.90
Presentation software	2.32	1.15	1.90	0.90	2.58	0.70	2.08	0.86
Scanning techniques	2.40	1.16	1.98	1.05	3.00	0.98	2.85	0.99
Web browsers	3.28	0.79	3.03	0.89	3.31	0.93	3.06	0.95
Web page creation	2.44	1.12	2.03	1.12	2.96	1.00	2.40	1.14
Windows operating system	3.04	0.94	2.88	1.04	2.77	1.07	3.08	0.92

Measures of central tendency by level of job responsibilities.

Table 21 presents the mean values of the nine questionnaire items on computer skills corresponding to the respondents' level of job responsibilities in three groups: non-supervisors, those who supervised student employees only, and those who supervised both student employees and staff. Among all three groups of the respondents, "Database searching" as a training topic on computer skills came with the highest means of 3.43, 3.47, and 3.41, respectively, followed by the means of "MS Office suites," at 3.06, 3.19, and 3.26 respectively.

Table 21. Means and Standard Deviations by Level of Job Responsibilities

Training topics on computer skills	Non-supervision (N=53)		Supervising students (N=59)		Supervising students and staff (N=27)	
	M	SD	M	SD	M	SD
Database creation	2.47	1.07	2.71	0.93	2.70	0.91
Database searching	3.43	0.93	3.47	0.73	3.41	0.93
E-mail management	3.00	0.94	2.98	1.01	3.00	0.73
MS Office suites	3.06	0.95	3.19	0.86	3.26	0.86
Presentation software	2.11	0.99	2.12	0.81	2.37	1.08
Scanning techniques	2.38	1.20	2.71	1.07	2.52	0.98
Web browsers	3.21	0.84	3.10	0.96	3.07	0.92
Web page creation	2.43	1.28	2.34	1.11	2.48	0.94
Windows operating system	3.02	1.03	2.95	0.96	2.85	0.99

Measures of central tendency by rank.

Table 22 reports the mean values of the nine questionnaire items on computer skills corresponding to the respondents' ranks in the three groups: Library Assistant I, Library Assistant II, and Library Assistant III. Among the respondents in all three groups, "Database searching" as a training topic on computer skills had the highest means of 3.56, 3.46, and 3.36, respectively.

Table 22. Means and Standard Deviations by Rank

Training topics on computer skills	Library Assistant I (N=27)		Library Assistant II (N=65)		Library Assistant III (N=47)	
	M	SD	M	SD	M	SD
Database creation	2.67	1.07	2.52	0.97	2.72	0.95
Database searching	3.56	0.58	3.46	0.85	3.36	0.97
E-mail management	3.07	0.92	3.00	1.03	2.94	0.79
MS Office suites	3.26	0.81	3.08	0.97	3.19	0.83
Presentation software	2.00	1.04	2.12	0.94	2.32	0.86
Scanning techniques	2.67	1.04	2.57	1.17	2.45	1.06
Web browsers	3.22	0.89	3.11	0.95	3.13	0.85
Web page creation	2.41	1.34	2.25	1.12	2.62	1.03
Windows operating system	3.41	0.75	2.92	1.08	2.74	0.90

Measures of central tendency by age range.

The subjects were asked to provide their age range on the questionnaire on the six categories (see Table 14): 25 or younger, 26 to 35 years old, 36 to 45 years old, 46 to 55 years old, 56 to 65 years old, and 66 or older. Among all respondents, ten reported that they were 25 or younger and two stated that they were 66 or older. The total number of the respondents from these two groups were relatively small. For the purpose of categorization in the statistical analysis of this study, the group of the respondents who were 25 or younger was combined with the group of 26 to 35 year-olds to form a new group of 35 or younger. The group of the respondents who were 66 or older was combined with the group of 56 to 65 year-olds to form a new group of 56 or older.

Table 23. Means and Standard Deviations by Age Range

Training topics on computer skills	35 or younger (N=28)		36 to 45 (N=25)		46 to 55 (N=64)		56 or older (N=22)	
	M	SD	M	SD	M	SD	M	SD
Database creation	2.93	1.15	2.48	0.92	2.63	0.92	2.36	0.95
Database searching	3.61	0.50	3.32	0.90	3.47	0.85	3.32	1.09
E-mail management	2.93	0.86	3.04	0.94	2.94	0.97	3.18	0.91
MS Office suites	3.18	0.86	3.16	0.90	3.11	0.96	3.23	0.75
Presentation software	2.21	0.96	2.12	1.01	2.14	0.91	2.23	0.97
Scanning techniques	2.68	1.02	2.44	1.16	2.53	1.10	2.55	1.22
Web browsers	2.93	0.98	2.88	0.83	3.22	0.90	3.45	0.80
Web page creation	2.68	1.34	2.28	1.17	2.34	1.06	2.36	1.09
Windows operating system	3.18	0.86	2.84	1.07	2.89	0.96	3.00	1.11

Table 23 reports the mean values of the nine questionnaire items on computer skills corresponding to the respondents' age range in the four groups: 35 or younger, 36 to 45

years old, 46 to 55 years old, and 56 or older. Among the respondents whose were 35 or younger, 36 to 45 years old, and 46 to 55 years old, “Database searching” as a training topic to their computer skills had the highest means of 3.61, 3.32, and 3.47, respectively. Among the respondents who were 56 or older, the training topic on “Web browser” had the highest mean of 3.45.

One-way Multivariate Analysis of Variance (MANOVA) Tests

In order to determine if there were statistically significant differences in the respondents’ perceived training needs on the nine questionnaire items related to computer skills as a function of their general characteristics, i.e., educational attainment, library work experience, work units, level of job responsibilities, rank, and age range, a series of one-way multivariate analysis of variance (MANOVA) tests were performed first. Cronk (1999) suggests the use of Wilks’ Lambda test results from the MANOVA calculations to report the results. Table 24 provides a summary of the Wilks’ Lambda test results of MANOVA on training needs on computer skills based on the respondents’ general characteristics. When statistically significant differences were found, (for example, the respondents’ work units), a series of analysis of variance (ANOVA) tests were conducted to identify values of significance. Then, follow-up Scheffe post hoc contrasts were performed to determine where statistically significant differences existed.

Table 24. Lambda Test Results of MANOVA on Computer Skills

Independent Variables	Value	F	Hypothesis		
			df	Error df	Sig.
Educational attainment	0.895	0.815	18	256	0.682
Total years in the library field	0.797	1.114	27	372	0.320
Total years at current positions	0.813	1.013	27	372	0.450
Work units	0.601	2.620	27	372	0.000
Level of job responsibilities	0.897	0.791	18	256	0.711
Rank	0.865	1.066	18	256	0.387
Age range	0.841	0.838	27	372	0.701

Test results of null hypotheses.

Ho 1-a. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their educational attainment.

Finding:

One-way MANOVA on the Lambda test results ($\text{Lambda}(18, 256) = .895, p > .05$) did not show a statistically significant difference. Therefore, the respondents' perceptions on the nine training topics of computer skills were not influenced by their educational attainment. The null hypothesis *Ho 1-a* was accepted.

Ho 1-b. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their total years working in the library field.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(27, 372) = .797, p > .05$) did not present a statistically significant difference in the respondents' perceptions on the training needs of the nine topics on computer skills as a function of their total years working

in the library field. The respondents' perceptions of their training needs on computer skills were not influenced by their total years working in the library field. The null hypothesis *Ho 1-b* was accepted.

Ho 1-c. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their total years working at their current positions.

Finding:

One-way MANOVA of the Lambda test results (Lambda (27, 372) = .813, $p > .05$) did not show a statistically significant difference in the respondents' perceptions on the training needs of the nine topics related to computer skills as a function of their total years working at their current positions. The respondents' perceptions of their training needs on computer skills were not influenced by their work experience at current positions. The null hypothesis *Ho 1-c* was accepted.

Ho 1-d. There are no statistically significant differences in the respondents' perceived training needs on computer skills as a function of their work units.

Finding:

One-way MANOVA from the Lambda test results (Lambda (27, 372) = .601, $p < .05$) demonstrated that there was a statistically significant difference in the respondents' perceptions on the training needs of the nine topics related to computer skills as a function of their work units. The significant value of the Lambda MANOVA test was .00 at the alpha = .05 level in Table 24. Therefore, the null hypothesis *Ho 1-d* was rejected. When the significant value of the Lambda MANOVA test was smaller than .05, follow-up ANOVA test results were reported for the values of significance of each training topic. In Table 25,

the significant values for nine training topics on computer skills were listed under the column Sig.

Table 25. Tests of Between-subjects Effects by Work Units

Dependent variables	Type III of squares	df	Mean squares	F	Sig.
a. Database creation	15.32	3	5.11	5.87	0.001
b. Database searching	2.35	3	0.78	1.10	0.352
c. E-mail management	4.39	3	1.46	1.73	0.165
d. MS Office suites	6.53	3	2.18	2.85	0.040
e. Presentation software	8.14	3	2.71	3.24	0.024
f. Scanning techniques	23.49	3	7.83	7.29	0.000
g. Web browsers	2.04	3	0.68	0.83	0.479
h. Web page creation/maintenance	13.86	3	4.62	3.77	0.012
i. Windows operating system	2.12	3	0.71	0.73	0.538

Based on the test results of follow-up ANOVA, the values of significance of the following training topics on computer skills were smaller than .05: “Database searching” (Sig. = .001), “MS Office suites” (Sig. = .040), “Presentation software” (Sig. = .024), “Scanning techniques” (Sig. = .000), and “Web page creation/maintenance” (Sig. = .012).

Follow-up Scheffe post hoc contrasts were performed to determine where the respondents’ perceptions of their training needs on computer skills differed statistically. Table 26 presents a summary of the results of Scheffe post hoc contrasts that identified where the statistically significant differences existed by the respondents’ work units.

Table 26. Scheffe Contrasts by Work Units of the Respondents

Dependent Variables	Acquisitions (A)		Cataloging (B)		Collections (C)		Access (D)		Scheffe contrasts p < .05
	M	SD	M	SD	M	SD	M	SD	
Database creation	2.80	0.87	2.38	0.98	3.23	0.86	2.40	0.96	C > B, D
Database searching	3.44	0.82	3.27	0.99	3.65	0.75	3.50	0.77	n/a
E-mail management	3.36	0.81	2.95	0.99	2.96	0.96	2.90	0.90	n/a
MS Office suites	3.48	0.77	2.85	0.92	3.19	0.85	3.21	0.90	A > B
Presentation software	2.32	1.15	1.90	0.90	2.58	0.70	2.08	0.86	C > B
Scanning techniques	2.40	1.16	1.98	1.05	3.00	0.98	2.85	0.99	C > B
Web browsers	3.28	0.79	3.03	0.89	3.31	0.93	3.10	0.95	n/a
Web page creation	2.44	1.12	2.03	1.12	2.96	1.00	2.40	1.14	C > B
Windows operating system	3.04	0.94	2.88	1.04	2.77	1.07	3.08	0.92	n/a

A=Acquisitions B=Online cataloging C=Collection/user services D=Access services

The results of Follow-up Scheffe post hoc contrasts presented that there were statistically significant differences in the respondents’ perceptions of their training needs on the following training topics related to computer skills as a function of their work units: “Database creation,” “MS Office suites,” “Presentation software,” “Scanning techniques,” and “Web page creation/maintenance.”

Database creation. A follow-up Scheffe test reported that at the alpha = .05 level, there was a statistically significant difference in the respondents’ perceptions of their training needs on “Database creation” as a function of their work units. The test results demonstrated that the statistically significant difference existed among the respondents who worked in Collections/user services, Online cataloging, and Access services. The respondents in Collections/user services considered training on “Database creation” as more important than those in Online cataloging and Access services.

MS Office suites. The results of a follow-up Scheffe test revealed that at the alpha = .05 level, there was a statistically significant difference in the respondents' perceptions of their training needs on "MS Office suites" as a function of their work units. The statistically significant difference existed between the respondents in the Acquisitions and Online cataloging units. The respondents in Acquisitions perceived training on "MS Office suites" as being a more important tool than those working in Online cataloging.

Presentation software. From a follow-up Scheffe test, it was reported that at the alpha = .05 level, there was a statistically significant difference in the respondents' perceptions of their training needs on "Presentation software" as a function of their work units. The statistically significant difference existed between the respondents in the Collections/user services and Online cataloging units. The respondents from Collections/user services viewed training on "Presentation software" as more important than those working in Online cataloging.

Scanning techniques. A follow-up Scheffe test proved that at the alpha = .05 level, there was a statistically significant difference in the respondents' perceptions of their training needs on "Scanning techniques" as a function of their work units. The statistically significant difference existed between the respondents in Collections/user services and Online cataloging. The respondents in Collections/user services considered training on "Scanning techniques" to be more important than those working in Online cataloging.

Web page creation/maintenance. In a follow-up Scheffe test, it was revealed that at the alpha = .05 level, there was a statistically significant difference in the respondents' perceptions of their training needs on "Web page creation/maintenance" as a function of their work units. The statistically significant difference existed between the respondents who

were in Collections/user services and the respondents from Online cataloging. The respondents in Collections/user services viewed training on “Web page creation/maintenance” as more important than those in Online cataloging.

Ho 1-e. There are no statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their level of job responsibilities.

Finding:

One-way MANOVA from the Lambda test results ($\text{Lambda}(18, 256) = .897, p > .05$) did not show a statistically significant difference in the respondents’ perceptions of the training needs on the nine topics related to computer skills as a function of their level of job responsibilities. The respondents’ perceived training needs were not influenced by their level of job responsibilities. The null hypothesis *Ho 1-e* was accepted.

Ho. 1-f. There are no statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their rank.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(18, 256) = .865, p > .05$) did not provide a statistically significant difference in the respondents’ perceptions on the training needs of the nine topics related to computer skills as a function of their rank. The respondents’ rank of Library Assistant I, Library Assistant II, and Library Assistant III did not influence their perceived training needs on computer skills. The null hypothesis *Ho 1-f* was accepted.

Ho 1-g. There are no statistically significant differences in the respondents’ perceived training needs on computer skills as a function of their age range.

One-way MANOVA of the Lambda test results ($\Lambda(27, 372) = .841, p > .05$) did not present a statistically significant difference in the respondents' perceptions of the training needs of the nine topics related to computer skills as a function of their age range. The respondents' age range did not have influences on their perceptions of training needs on computer skills. The null hypothesis *Ho 1-g* was accepted.

Table 27 presents a summary of the null hypotheses. At the $\alpha = .5$ level, there were no statistically significant differences in the respondents' perceptions of training needs on computer skills as a function of their educational attainment, library work experience, level of job responsibilities, rank, and age range. The null hypotheses *Ho 1-a, Ho 1-b, Ho 1-c, Ho 1-e, Ho 1-f,* and *Ho 1-g* were accepted.

The null hypothesis *Ho 1-d* was rejected at the $\alpha = .05$ level for the independent variable of work units. There was a statistically significant difference in the respondents' perceptions of their training needs on computer skills as a function of their work units. The respondents' work units influenced their perceptions of their training needs on computer skills, as shown in Table 27.

Table 27. Null Hypothesis Summaries on Computer Skills

Independent variables	Multivariate tests				Sig. (Alpha = .05)	Reject/accept hypothesis? R/A
	Value	F	Hypothesis df	Error df		
Educational attainment	0.90	0.82	18	256	0.68	A
Total years in the library field	0.80	1.11	27	372	0.32	A
Total years at current positions	0.81	1.01	27	372	0.45	A
Work units	0.60	2.62	27	372	0.00	R
Level of job responsibilities	0.90	0.79	18	256	0.71	A
Rank	0.87	1.07	18	256	0.39	A
Age range	0.84	0.84	27	372	0.70	A

Research Question 1 Summary

Respondents' Perceptions of Training Needs on Computer Skills

The respondents highly rated training on “Database searching,” “MS Office suites,” “Web browsers,” and “E-mail management” as important to improve their computer skills.

Measures of Central Tendency

The summary of the nine training topics on computer skills through measures of central tendency indicated that the training topics such as “Database searching” (M=3.45), “MS Office suites” (M=3.15), “Web browsers” (M=3.14), and “E-mail management” (M=2.99) had high mean values because the respondents needed training on these tools for their computer skills.

One-way Multivariate Analysis of Variance (MANOVA) Tests

A series of one-way MANOVA tests were performed to examine the statistically significant differences in the respondents' perceptions of the training needs on computer skills as a function of their general characteristics. The test results indicated that the respondents' perceptions on their training needs of computer skills were not influenced by their educational attainment, library work experience, level of job responsibilities, rank, and age range. The null hypotheses *Ho 1-a*, *Ho 1-b*, *Ho 1-c*, *Ho 1-e*, *Ho 1-f*, and *Ho 1-g* were accepted.

A statistically significant difference was found in the respondents' perceptions of training needs on computer skills as a function of their work units. The null hypothesis *Ho 1-d* was rejected at the alpha level = .05.

Research Question 2

What kind of training needs on interpersonal skills are perceived as important by support staff for their job performance?

Null Hypotheses

Ho 2-a. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their educational attainment.

Ho 2-b. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working in the library field.

Ho 2-c. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working at their current positions.

Ho 2-d. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their work units.

Ho 2-e. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their level of job responsibilities.

Ho 2-f. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their rank.

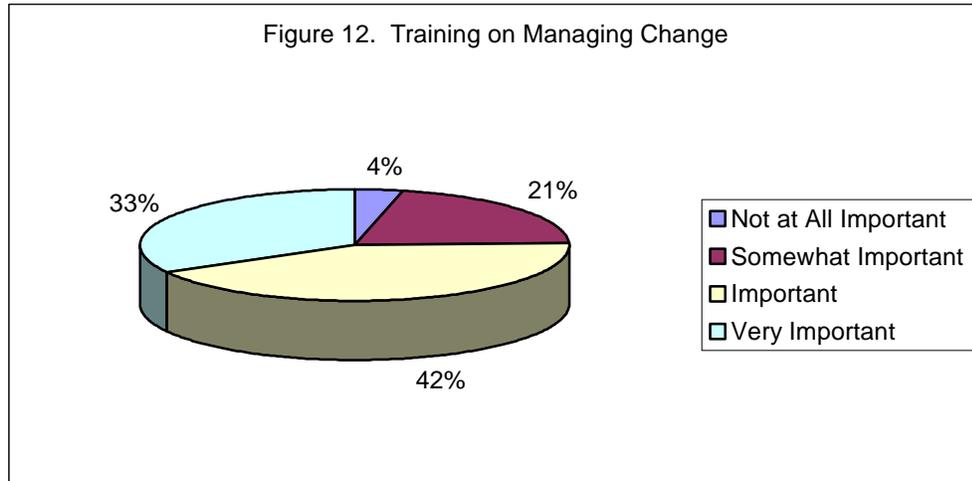
Ho 2-g. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their age range.

Respondents' Perceptions of Training Needs on Interpersonal Skills

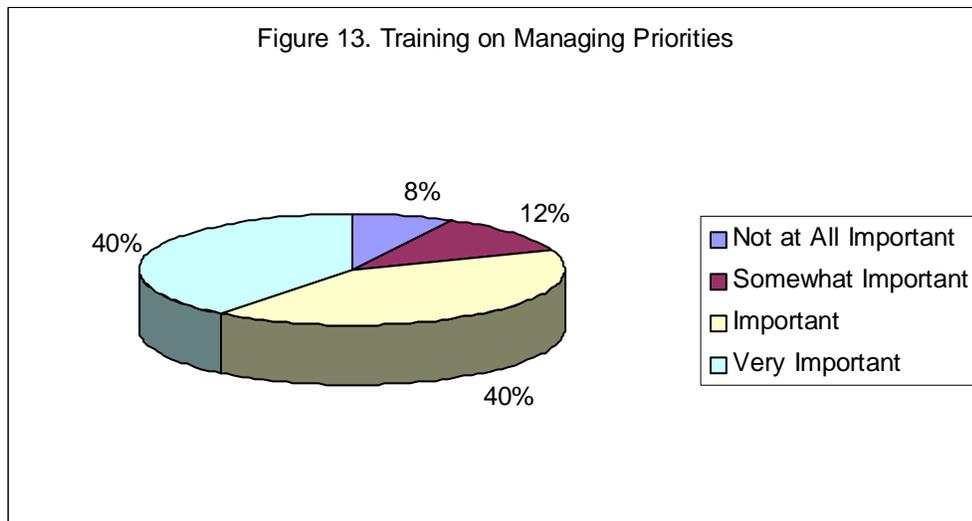
The subjects were asked to rate the importance of the seven training topics that they perceived as being important to their interpersonal skills; These topics are listed below. This section reports the data collected from the questionnaire on a 1 to 4 Likert rating scale that illustrated the respondents' perceptions of their training needs on interpersonal skills. The seven training topics on interpersonal skills were:

- Managing change
- Managing priorities
- Oral/written communication skills
- Presentation skills
- Stress management skills
- Team building skills
- Working with difficult people

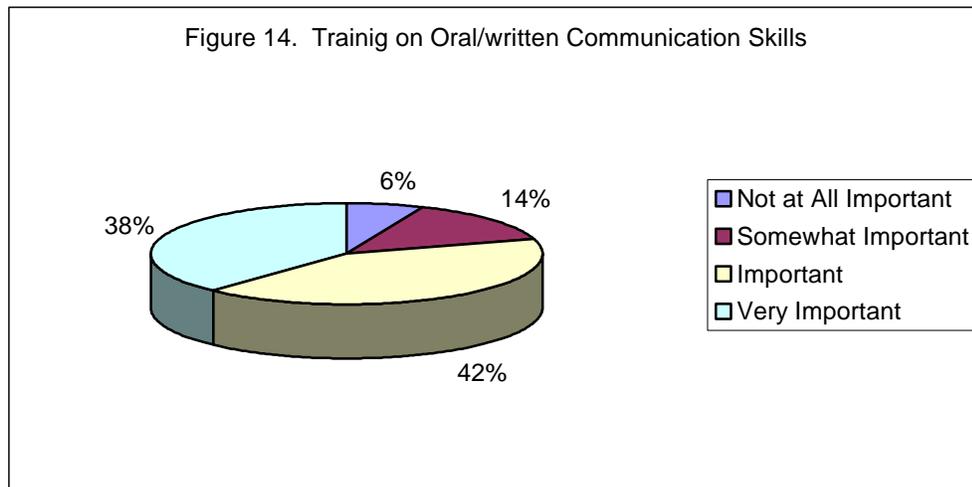
Training on managing change. Figure 12 presents that 42 percent of the respondents viewed “Managing change” as being important and 33 percent viewed it as a very important training topic to enhance their interpersonal skills.



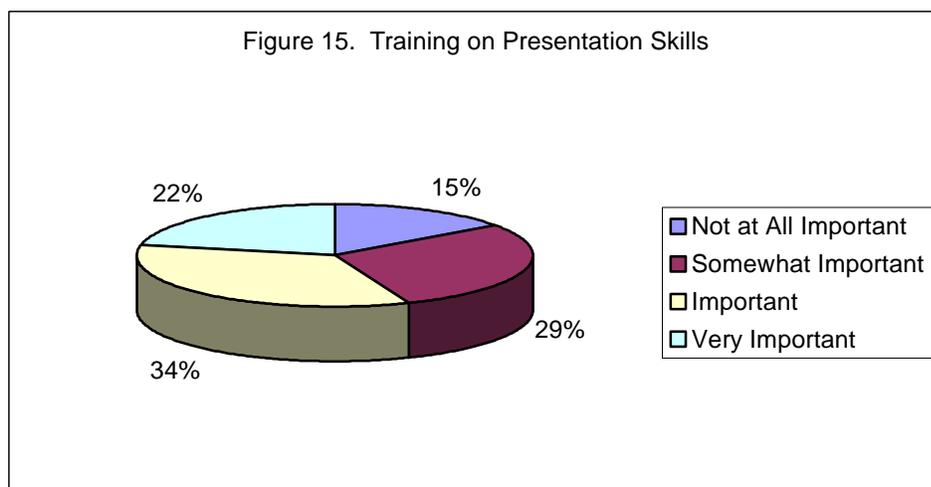
Training on managing priorities. Figure 13 reports that 40 percent of the respondents perceived “Managing priorities” as being important and 40 percent perceived it as a very important training topic to improve their interpersonal skills.



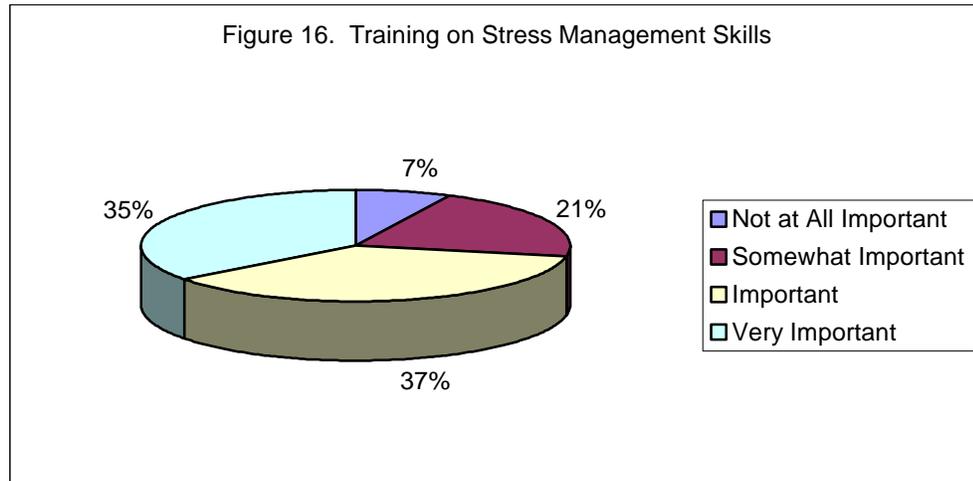
Training on oral/written communication skills. Figure 14 indicates that training on “Oral/written communication skills” was considered by 42 percent of the respondents to be important, and 38 percent believed it to be a very important element of their interpersonal skills.



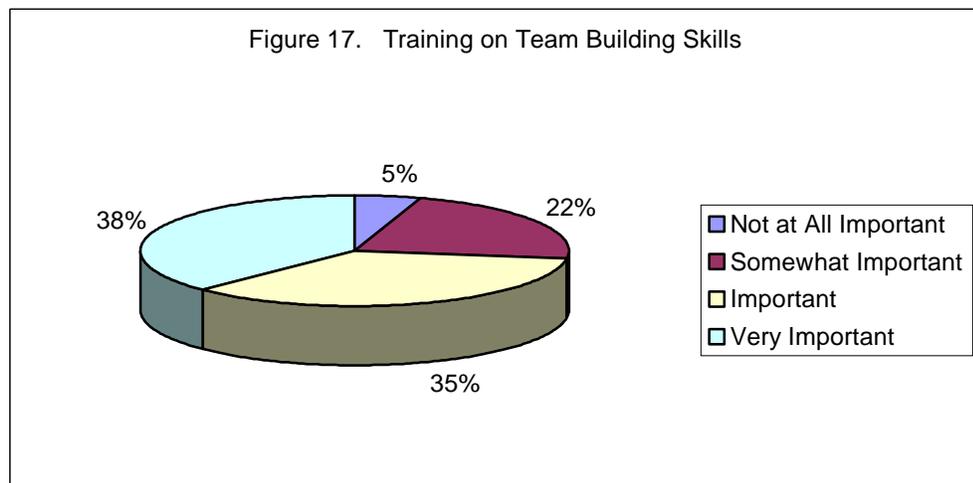
Training on presentation skills. Figure 15 reports that 34 percent of the respondents considered “Presentation skills” to be important and 22 percent considered it a very important training topic to augment their interpersonal skills.



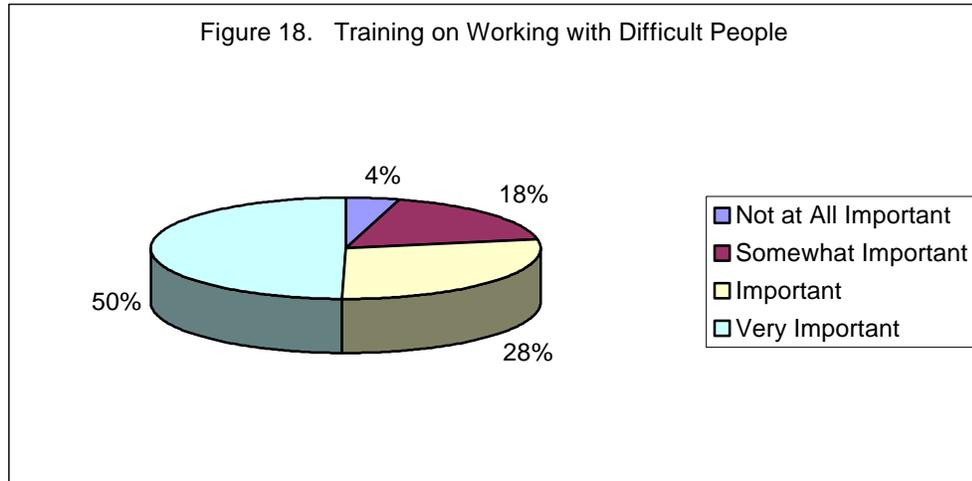
Training on stress management skills. Figures 16 indicates that “Stress management” training was viewed by 37 percent of the respondents to be important and 35 percent viewed it as a very important element of their interpersonal skills.



Training on team building skills. Figure 17 shows that 35 percent of the respondents considered “Team building skills” as important and 38 percent considered it a very important training area to boost their interpersonal skills.



Training on working with difficult people. Figure 18 reports that 28 percent of the respondents believed “Working with difficult people” as being important and 50 percent perceived it to be a very important training topic.



Measures of Central Tendency

Table 28 presents the mean values of the seven questionnaire items that the respondents believed to be important training topics to enhance their interpersonal skills, with the highest mean at the top of the list. The training on “Working with difficult people” had the highest mean of 3.23 among all other training topics on interpersonal skills, on a 1 to 4 Likert rating scale. This training topic was followed by topics on “Managing priorities” and “Oral/written communication skills,” both with means of 3.12 and 3.12, respectively. Though training on “Presentation skills” received the lowest mean, with 2.63 among all training topics related to interpersonal skills, it received an above average score on a 1 to 4 Likert rating scale,

Table 28. Mean Summaries on Interpersonal Skills

Training topics on interpersonal skills	N	Mini.	Max.	Mean	Std. Deviation
Working with difficult people	139	1	4	3.23	0.895
Managing priorities	139	1	4	3.12	0.905
Oral/written communication	139	1	4	3.12	0.877
Managing change	139	1	4	3.05	0.828
Team building skills	139	1	4	3.05	0.895
Stress management	139	1	4	3.00	0.925
Presentation skills	139	1	4	2.63	0.987

Measures of central tendency by educational attainment.

Table 29 summarizes the mean values of the seven training topics on interpersonal skills corresponding to the respondents' educational attainment in the three groups: high school diplomas or some college courses, Bachelor's degrees, and advanced degrees. Among all respondents, the training on "Working with difficult people" had the highest means from the group with high school diplomas or some college courses and from the group with advanced degrees, at 3.34 and 3.36, respectively. The mean of "Oral/communication skills" was the highest from the respondents with Bachelor's degrees, at 3.13.

Table 29. Means and Standard Deviations by Educational Attainment

Training topics on interpersonal skills	High school's (N=50)		Bachelor's (N=67)		Advanced (N=22)	
	M	SD	M	SD	M	SD
Managing change	3.10	0.76	3.07	0.91	2.86	0.71
Managing priorities	3.16	0.82	3.10	1.00	3.09	0.81
Oral/written communication	3.08	0.85	3.13	0.97	3.14	0.64
Presentation skills	2.62	0.99	2.61	1.06	2.68	0.78
Stress management	3.16	0.79	2.88	1.02	3.00	0.87
Team building skills	3.12	0.92	3.01	0.91	3.00	0.82
Working with difficult people	3.34	0.82	3.10	0.97	3.36	0.79

Measures of central tendency by total years in the library field.

Table 30 presents the mean values of the seven training topics on interpersonal skills corresponding to the respondents' total years working in the library field in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. Among all training topics on interpersonal skills, the highest mean of 3.30 was on training to enhance "Oral/communication skills," from the respondents who worked in the library field between 1 to 5 years. Training on "Working with difficult people" had the highest means of 3.17, 3.19, and 3.28, respectively, from the three other groups of respondents who worked in the library field between 6 to 10 years, 11 to 15 years, and 16 or more years,

Table 30. Means and Standard Deviations by the Total Years in the Library Field

Training topics on interpersonal skills	1 to 5 years (N=28)		6 to 10 years (N=18)		11 to 15 years (N=26)		16 or more years (N=67)	
	M	SD	M	SD	M	SD	M	SD
Managing change	2.96	0.88	2.67	0.84	3.04	0.77	3.19	0.80
Managing priorities	3.21	0.92	2.78	0.88	3.00	0.98	3.22	0.87
Oral/written communication	3.39	0.83	2.72	0.90	3.08	0.89	3.12	0.86
Presentation skills	2.86	1.01	2.11	0.90	2.58	1.07	2.69	0.94
Stress management	2.82	0.98	2.61	0.85	2.81	1.02	3.25	0.82
Team building skills	3.00	0.90	2.72	0.96	3.00	0.89	3.18	0.87
Working with difficult people	3.18	0.95	3.17	0.92	3.19	0.94	3.28	0.87

Measures of central tendency by total years at current positions.

Table 31 reports the mean values of the seven training topics on interpersonal skills corresponding to the respondents' total years working at their current positions in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. The highest means of 3.24 and 3.43 represented the importance of training for "Working with difficult people" among the two groups of the respondents who worked at their current positions between 1 to 5 years and between 6 and 10 years, respectively. The respondents who were at their current positions between 11 to 15 years reported the highest mean of 3.30 on training of "Managing priorities." Training on "Managing change" and "Managing priorities" had the same means of 3.37 from the group of the respondents who worked 16 or more years at their current positions.

Table 31. Means and Standard Deviations by Years at Current Positions

Training topics on interpersonal skills	1 to 5 years (N=68)		6 to 10 years (N=21)		11 to 15 years (N=23)		16 or more years (N=27)	
	M	SD	M	SD	M	SD	M	SD
Managing change	2.90	0.88	3.00	0.71	3.17	0.72	3.37	0.79
Managing priorities	2.97	0.98	3.10	0.94	3.30	0.77	3.37	0.74
Oral/written communication	3.06	0.99	3.00	0.89	3.26	0.69	3.22	0.70
Presentation skills	2.62	1.05	2.62	0.97	2.70	0.93	2.59	0.93
Stress management	2.90	1.01	3.10	0.83	3.09	0.85	3.11	0.85
Team building skills	2.97	0.98	2.95	0.92	3.13	0.69	3.26	0.81
Working with difficult people	3.24	0.88	3.43	0.87	3.22	0.90	3.07	0.96

Measures of central tendency by work units.

Table 32 provides the mean values of the seven training topics on interpersonal skill corresponding to the respondents' work units in the four groups: Acquisitions, Online cataloging, Collections/user services, and Access services. Among all training topics on interpersonal skills, training on "Managing priorities" had means of 3.32 and 3.23, respectively, from the respondents in Acquisitions and Online cataloging. Training on "Team building skills" had the highest mean of 3.42 from the respondents in Collections/user services. Training on "Working with difficult people" was rated highest, with a mean of 3.29, among the respondents in Access services.

Table 32. Means and Standard Deviations by Work Units

Training topics on interpersonal skills	Acquisitions (N=25)		Cataloging (N=40)		Collections (N=26)		Access (N=48)	
	M	SD	M	SD	M	SD	M	SD
Managing change	3.12	0.87	3.10	0.81	3.00	0.69	3.00	0.95
Managing priorities	3.32	0.85	3.23	0.86	3.12	0.86	2.94	0.98
Oral/written communication	3.00	0.87	3.13	0.82	3.12	0.82	3.17	0.98
Presentation skills	2.92	0.86	2.38	1.03	2.88	0.77	2.54	1.07
Stress management	2.88	0.88	3.13	0.88	3.08	0.89	2.92	1.01
Team building skills	2.92	0.95	3.08	0.89	3.42	0.64	2.90	0.95
Working with difficult people	3.08	0.91	3.18	0.87	3.35	0.80	3.29	0.97

Measures of central tendency by level of job responsibilities.

Table 33 displays the mean values of the seven training topics related to interpersonal skills corresponding to the respondents' level of job responsibilities in the three groups: those who were non-supervisors, those who supervised student employees only, and those who supervised both student employees and staff. Training on "Working with difficult people" was rated highest, with means of 3.15 and 3.27, respectively, among those who were non-supervisors and those who supervised student employees only. Among the respondents who supervised both student employees and staff, training on "Oral/written communication skills" and "Team building skills" had the same means of 3.37.

Table 33. Means and Standard Deviations by Level of Job Responsibilities

Training topics on interpersonal skills	Non-supervision (N=53)		Supervising students (N=59)		Supervising students and staff (N=27)	
	M	SD	M	SD	M	SD
Managing change	3.04	0.73	2.93	0.94	3.33	0.68
Managing priorities	3.11	0.82	3.03	1.03	3.33	0.73
Oral/written communication	3.02	0.80	3.08	1.01	3.37	0.69
Presentation skills	2.64	1.02	2.56	0.99	2.74	0.94
Stress management	3.02	0.82	2.93	1.00	3.11	0.97
Team building skills	3.04	0.85	2.92	0.97	3.37	0.74
Working with difficult people	3.15	0.89	3.27	0.93	3.30	0.87

Measures of central tendency by rank.

Table 34 summarizes the mean values of the seven training topics on interpersonal skills corresponding to the respondents' rank in the three groups: Library Assistant I, Library Assistant II, and Library Assistant III. Among the respondents of Library Assistant I and Library Assistant II, training on "Working with difficult people" had the highest means of 3.30 and 3.22, respectively. With the respondents at the rank of Library Assistant III, training on "Team building skills" had the highest mean of 3.26.

Table 34. Means and Standard Deviations by Rank

Training topics on interpersonal skills	Library Assistant I (N=27)		Library Assistant II (N=65)		Library Assistant III (N=47)	
	M	SD	M	SD	M	SD
Managing change	2.70	0.82	3.08	0.89	3.21	0.69
Managing priorities	2.81	0.96	3.17	0.98	3.23	0.73
Oral/written communication	2.96	0.98	3.11	0.90	3.21	0.78
Presentation skills	2.48	1.05	2.57	1.03	2.79	0.88
Stress management	2.89	1.01	3.02	0.94	3.04	0.86
Team building skills	2.81	0.92	3.00	0.95	3.26	0.77
Working with difficult people	3.30	0.87	3.22	0.96	3.21	0.83

Measures of central tendency by age range.

Table 35 reports the mean values of the seven training topics on interpersonal skills according to the respondents' age range in the four groups: 35 or younger, 36 to 45 years old, 46 to 55 years old, and 56 or older. Among the respondents who were 35 or younger and who were 36 to 45 years old, training on "Working with difficult people" was rated highest, with means of 3.21 and 3.20, respectively. Training on "Managing priorities" and "Stress management" had the same means of 3.25 from the respondents who were 46 to 55 years old. For the respondents who were 56 or older, training on "Managing change" and "Working with difficult people" had the same mean of 3.27.

Table 35. Means and Standard Deviations by Age Range

Training topics on interpersonal skills	35 or younger (N=28)		36 to 45 (N=25)		46 to 55 (N=64)		56 or older (N=22)	
	M	SD	M	SD	M	SD	M	SD
Managing change	2.79	0.88	2.76	0.83	3.20	0.80	3.27	0.70
Managing priorities	2.93	1.02	2.96	0.89	3.25	0.84	3.18	0.96
Oral/written communication	3.18	1.02	3.00	0.71	3.17	0.87	3.00	0.93
Presentation skills	2.75	1.04	2.32	1.03	2.64	0.90	2.77	1.11
Stress management	2.71	1.01	2.60	1.00	3.25	0.80	3.09	0.87
Team building skills	3.00	0.90	2.80	0.96	3.11	0.86	3.23	0.92
Working with difficult people	3.21	0.83	3.20	0.96	3.23	0.90	3.27	0.94

One-way Multivariate Analysis of Variance (MANOVA) Tests

A series of one-way MANOVA tests were conducted to examine if there were statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of the respondents' general characteristics, i.e., their educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. When there were no statistically significant differences from the MANOVA tests, no follow-up ANOVA tests and Scheffe post hoc contrasts were conducted. Only test results from the MANOVA were reported. Table 36 summarizes the Wilks' Lambda test results of MANOVA on training needs on interpersonal skills according to the respondents' general characteristics.

Table 36. Lambda Test Results of MANOVA on Interpersonal Skills

Independent Variables	Value	F	Hypothesis		Sig.
			df	Error df	
Educational attainment	0.927	0.717	14	260	0.757
Total years in the library field	0.808	1.361	21	371	0.134
Total years at current positions	0.856	0.982	21	371	0.458
Work units	0.730	2.044	21	371	0.005
Level of job responsibilities	0.908	0.919	14	260	0.539
Rank	0.887	1.151	14	260	0.314
Age range	0.782	1.582	21	371	0.051

Test results of null hypotheses.

Ho 2-a. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their educational attainment.

Finding:

No statistically significant difference was found from the one-way MANOVA of the Lambda test results ($\text{Lambda}(14, 260) = .927, p > .05$). The respondents' perceptions of the seven training topics on interpersonal skills were not influenced by their educational attainment. The null hypothesis *Ho 2-a* was accepted.

Ho 2-b. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working in the library field.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(21, 371) = .808, p > .05$) did not show a statistically significant difference in the respondents' perceptions of the training needs of the seven topics related to interpersonal skills as a function of their total years working in the library field. The respondents' perceptions of their training needs on interpersonal skills were not influenced by their total years of working in the library field. The null hypothesis *Ho 2-b* was accepted.

Ho 2-c. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their total years working at current positions.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(21, 371) = .856, p > .05$) presented no statistically significant difference in the respondents' perceptions of the training needs of the seven topics related to interpersonal skills as a function of their total years working at their current positions. This independent variable did not influence the

respondents' perceptions of training needs on interpersonal skills. The null hypothesis *Ho 2-c* was accepted.

Ho 2-d. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their work units.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(21, 371) = .730, p = .05$) did not present a statistically significant difference in the respondents' perceptions of the training needs of the seven topics on interpersonal skills as a function of their work units. The respondents' perceptions of their training needs on interpersonal skills were not influenced by their work units. The significant value of the Lambda test results was at .05. However, it did not produce a statistically significant difference.

Ho 2-e. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their level of job responsibilities.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(14, 260) = .908, p > .05$) did not present a statistically significant difference in the respondents' perceptions on the training needs of the seven topics on interpersonal skills as a function of their responsibilities. The respondents' perceived training needs on interpersonal skills were not influenced by their level of job responsibilities. The null hypothesis *Ho 2-e* was accepted.

Ho 2-f. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their rank.

Finding:

One-way MANOVA of the Lambda test results (Lambda (14, 260) = .887, $p > .5$) did not report a statistically significant difference in the respondents' perceptions of training needs of the seven topics on interpersonal skills as a function of their rank. The respondents' perceptions of their training needs on interpersonal skills were not influenced by their rank. The null hypothesis *Ho 2-f* was accepted.

Ho 2-g. There are no statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their age range.

Finding:

One-way MANOVA of the Lambda test results (Lambda (21, 371) = .782, $p > .05$) did not show a statistically significant difference in the respondents' perceptions of the training needs of the seven topics related to interpersonal skills as a function of their age range; thus, the respondents' perceived training needs on interpersonal skills were not influenced by their age range. The null hypothesis *Ho 2-g* was accepted.

Table 37 presents a summary of the null hypotheses. At the $\alpha = .05$ level, there were no statistically significant differences in the respondents' perceptions of training needs on interpersonal skills as a function of their general characteristics. The null hypotheses *Ho 2-a*, *Ho 2-b*, *Ho 2-c*, *Ho 2-d*, *Ho 2-e*, *Ho 2-f*, and *Ho 2-g* were accepted.

Table 37. Null Hypothesis Summaries on Interpersonal Skills

Independent variables	Multivariate tests					Reject/accept hypothesis?
	Value	F	Hypothesis df	Error df	Sig. (Alpha = .05)	R/A
Educational attainment	0.93	0.72	14	262	0.76	A
Total years in the library field	0.81	1.36	21	370	0.13	A
Total years in current positions	0.86	0.98	21	370	0.49	A
Work units	0.73	2.04	21	370	0.05	A
Responsibilities	0.91	0.92	14	260	0.54	A
Rank	0.89	1.15	14	260	0.31	A
Age range	0.78	1.58	21	371	0.05	A

Research Question 2 Summary

Respondents' Perceptions of Training Needs on Interpersonal Skills

The respondents rated training on “Working with difficult people” as an important aspect of their skills training. Fifty percent of the respondents rated it as “Very Important” to their interpersonal skills, on a 1 to 4 Likert rating scale. This area was followed by training on “Managing priorities,” with 40 percent of the respondents rating it as “Very Important.”

Measures of Central Tendency

The summarized mean values of the seven training topics on interpersonal skills indicated that training on “Working with difficult people” (M=3.23), “Managing priorities” (M=3.12), and “Oral/written communication skills” (M=3.12) received high means from the respondents.

One-way Multivariate Analysis of Variance (MANOVA) Tests

A series of one-way multivariate analysis of variance (MANOVA) test results did

not present statistically significant differences in the respondents' perceived training needs on interpersonal skills as a function of their general characteristics. The respondents' perceptions of training needs on interpersonal skills were not influenced by their general characteristics. The null hypotheses *Ho 2-a*, *Ho 2-b*, *Ho 2-c*, *Ho 2-d*, *Ho 2-e*, *Ho 2-f*, and *Ho 2-g* were accepted at the $\alpha = .05$ level.

Research Question 3

What kind of training needs on supervision/management skills are perceived as important by support staff for their job performance?

Null Hypotheses

Ho 3-a. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their educational attainment.

Ho 3-b. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working in the library field.

Ho 3-c. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working at their current positions.

Ho 3-d. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their work units.

Ho 3-e. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their level of job responsibilities.

Ho 3-f. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their rank.

Ho 3-g. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their age

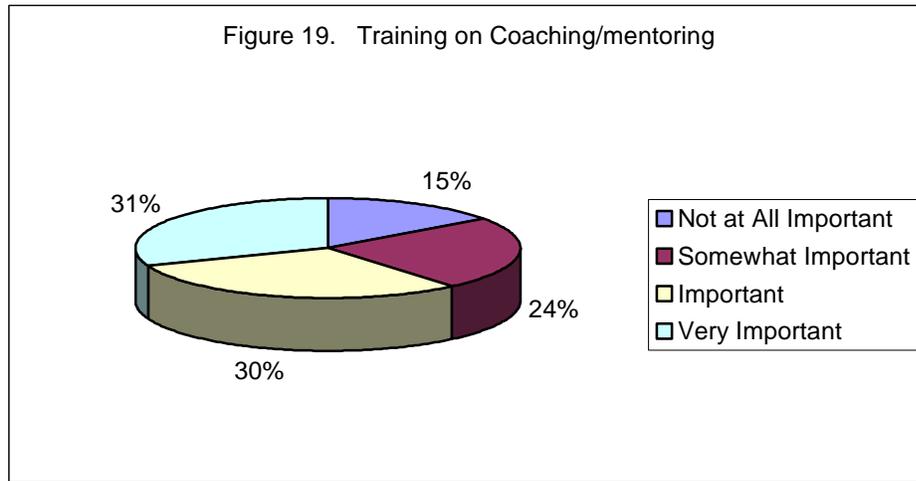
range.

Respondents' Perceptions of Training Needs on Supervision/management Skills

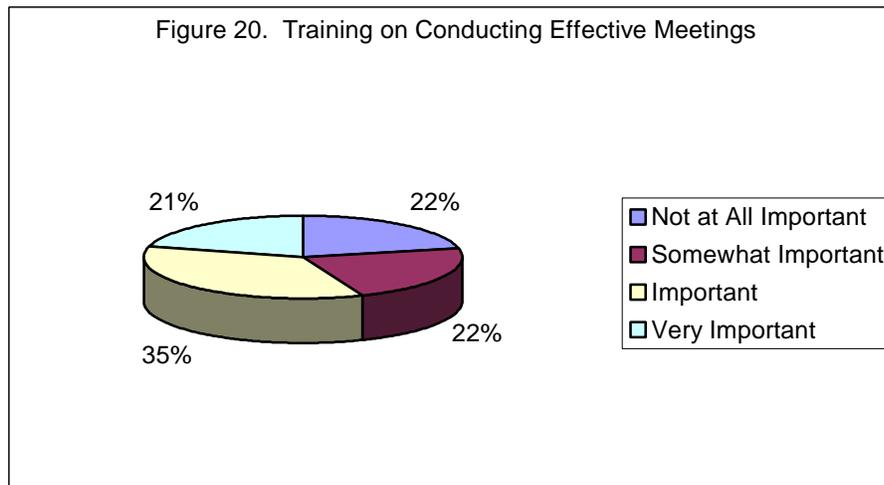
The subjects were asked to rate on the 1 to 4 Likert rating scale the importance of the nine training topics related to supervision/management skills that they considered important. These training topics were:

- Coaching/mentoring
- Conducting effective meetings
- Departmental coordination
- Interviewing skills
- Project management
- Staff appraisal/evaluation
- Supervising student employees
- Training new employees
- Work flow design

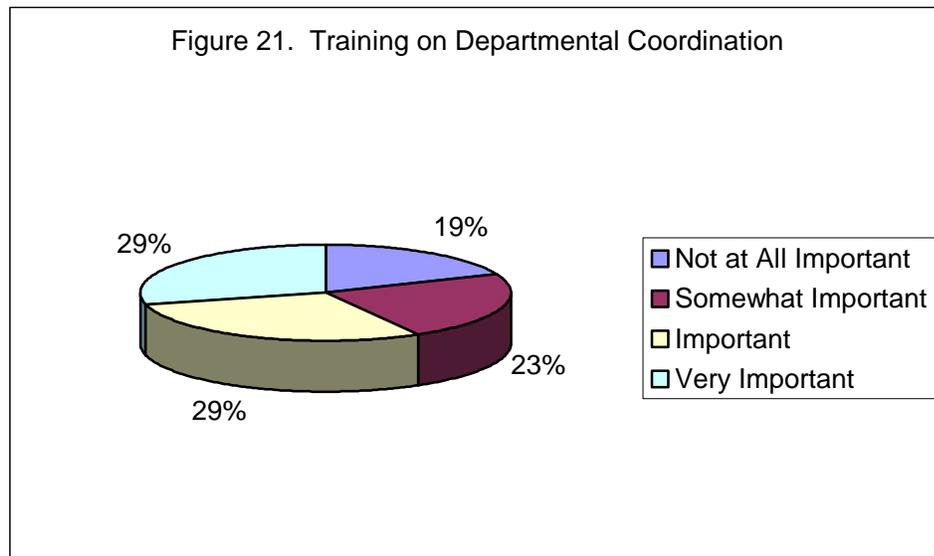
Training on coaching/mentoring. Figure 19 reports that 30 percent of the respondents considered training on “Coaching/mentoring” as being important and 31 percent considered it to be very important to improve their supervision/management skills.



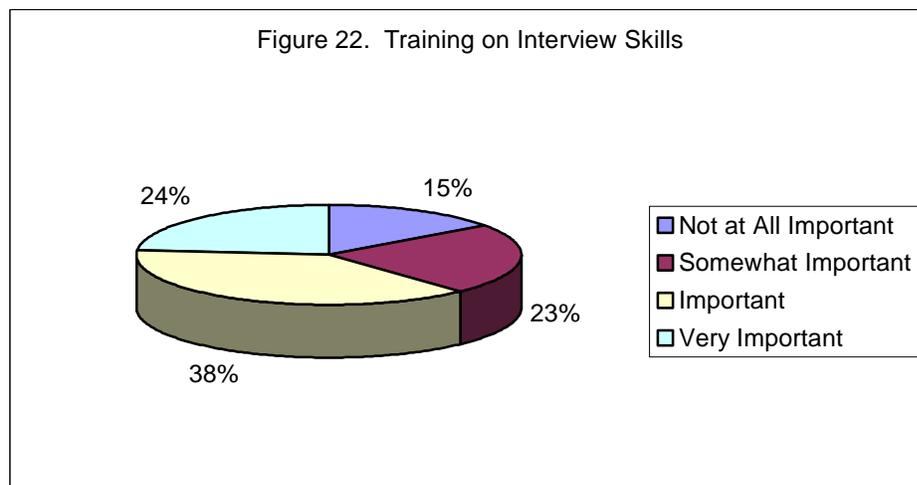
Training on conducting effective meetings. Figure 20 shows that 35 percent of the respondents believed that “Conducting effective meetings” was important and 21 percent perceived it as a very important training topic to enhance their supervision/management skills.



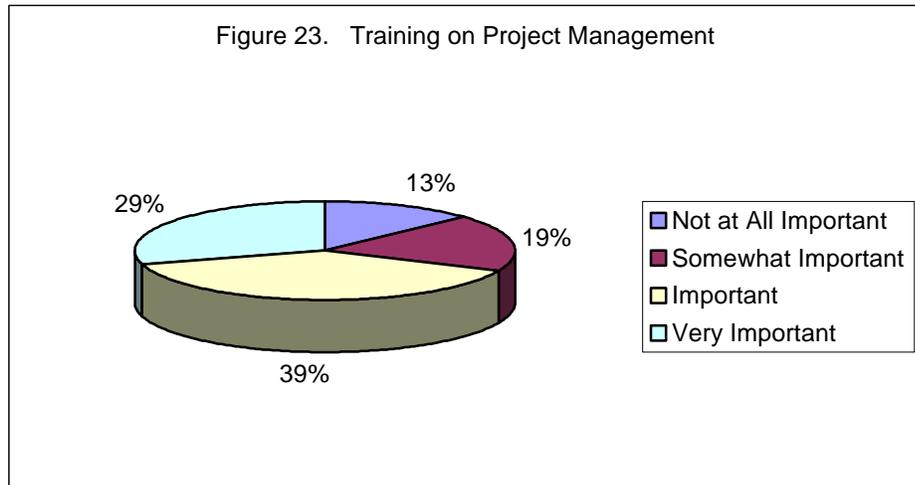
Training on departmental coordination. Figure 21 shows that 29 percent of the respondents viewed “Departmental coordination” as important and the same percentage of the respondents viewed it as a very important training topic to improve their supervision/management skills. .



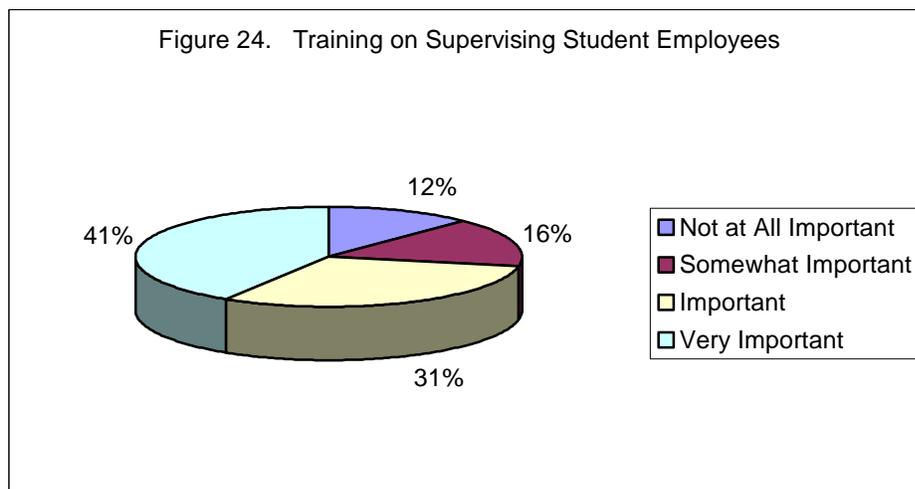
Training on interview skills. Figure 22 demonstrates that 38 percent of the respondents viewed learning “Interview skills” as being important to augment their supervision/management skills and 24 percent viewed it as very important.



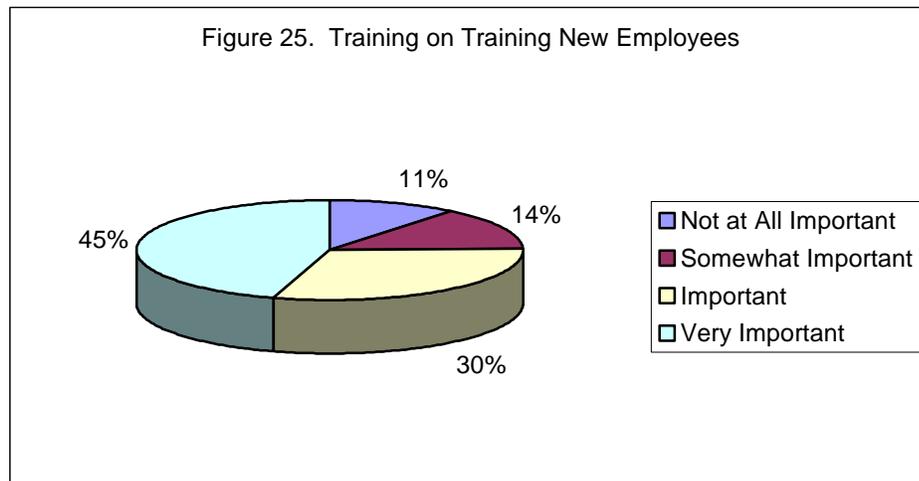
Training on project management. Figure 23 indicates that 39 percent of the respondents perceived “Project management” as being important and 29 percent perceived it as a very important training topic to develop their supervision/management skills.



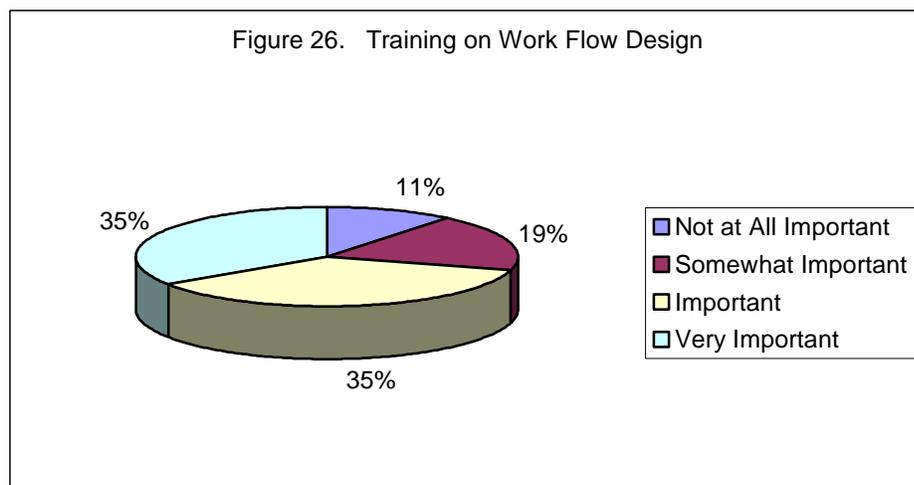
Training on supervising student employees. Figure 24 shows that 31 percent of the respondents viewed “Supervising student employees” as being important and 41 percent considered it to be a very important training topic to improve their supervision/management skills.



Training on training new employees. As shown in Figure 25, 30 percent of the respondents considered training on “Training new employees” as being important and 45 percent considered it to be a very important aspect of their supervision/management skills..



Training on work flow design. In Figure 26, 35 percent of the respondents were shown to have rated training on “Work flow design” to be important, and the same percentage rated it as being very important to their supervision/management skills.



Measures of Central Tendency

Table 38 presents the mean values of the nine training topics on supervision/management skills, with the highest mean listed at the top. The training topic of “Training new employees” had the highest mean of 3.10 on a 1 to 4 Likert rating scale, followed by other training topics such as “Supervising student employees” and “Work flow design,” with means of 3.01 and 2.94, respectively. Though the rating on the training topic of “Conducting effective meetings” had the lowest mean of 2.55 among all training topics, it received an above-average score.

Table 38. Mean Summaries on Supervision/management Skills

Training topics on supervision/management skills	N	Mini.	Max.	Mean	Std. Deviation
Training new employees	139	1	4	3.10	1.01
Supervising student employees	139	1	4	3.01	1.03
Work flow design	139	1	4	2.94	0.98
Project management	139	1	4	2.85	0.99
Coaching/mentoring	139	1	4	2.77	1.05
Staff appraisal/evaluation	139	1	4	2.76	1.07
Interviewing skills	139	1	4	2.71	1.00
Departmental coordination	139	1	4	2.68	1.08
Conducting effective meetings	139	1	4	2.55	1.05

Measures of central tendency by educational attainment.

Table 39 summarizes the mean values of the nine training topics on supervision/management skills corresponding to the respondents' educational attainment in the three groups: high school diplomas or some college courses, Bachelor's degrees, and advanced degrees. Among the respondents in all three groups, training on "Training new employees" had the highest means of 3.16, 3.00, and 3.27, respectively, followed by training on "Supervising student employees," with means of 3.02, 2.94, and 3.18, respectively, in the three groups.

Table 39. Means and Standard Deviations by Educational Attainment

Training topics on supervision/management skills	High school's (N=50)		Bachelor's (N=67)		Advanced (N=22)	
	M	SD	M	SD	M	SD
Coaching/mentoring	2.90	1.06	2.69	1.05	2.73	1.08
Conducting effective meetings	2.70	1.09	2.48	1.05	2.45	0.96
Departmental coordination	2.74	1.05	2.69	1.17	2.55	0.91
Interviewing skills	2.68	0.96	2.64	1.04	2.95	0.95
Project management	2.90	0.95	2.79	1.01	2.91	1.07
Staff appraisal/evaluation	2.88	1.08	2.73	1.10	2.59	1.01
Supervising student employees	3.02	1.00	2.94	1.06	3.18	1.05
Training new employees	3.16	0.96	3.00	1.09	3.27	0.88
Workflow design	2.98	1.04	2.91	0.98	2.95	0.90

Measures of central tendency by the total years working in the library field.

Table 40 illustrates the mean values of the nine training topics related to supervision/management skills corresponding to the respondents' total years working in the library field in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. Among the respondents who worked in the library field between 1 to 5 years, 11 to 15 years, and 16 or more years, training on "Training new employees" had the highest means of 2.96, 3.27, and 3.07, respectively. With the respondents who worked in the library field between 6 to 10 years, training on "Supervising student employees" had the highest mean of 3.22.

Table 40. Means and Standard Deviations by the Total Years in the Library Field

Training topics on supervision/management skills	1 to 5 years (N=28)		6 to 10 years (N=18)		11 to 15 years (N=26)		16 or more years (N=67)	
	M	SD	M	SD	M	SD	M	SD
Coaching/mentoring	2.68	1.19	2.67	0.97	2.81	1.02	2.82	1.04
Conducting effective meetings	2.68	0.98	2.17	0.99	2.42	1.07	2.66	1.08
Departmental coordination	2.68	1.16	2.50	0.99	2.65	1.06	2.75	1.11
Interviewing skills	2.57	1.20	2.72	0.75	2.81	1.02	2.72	0.97
Project management	2.89	1.07	2.61	0.78	2.81	1.06	2.91	1.00
Staff appraisal/evaluation	2.86	1.15	2.50	0.92	2.85	1.05	2.76	1.10
Supervising student employees	2.93	1.12	3.22	0.81	3.12	0.95	2.94	1.09
Training new employees	2.96	1.23	3.17	0.86	3.27	0.96	3.07	0.97
Workflow design	2.93	0.94	2.72	0.83	2.88	1.11	3.03	1.00

Measures of central tendency by the total years at current positions.

Table 41 reports the mean values of the nine training topics on supervision/management skills corresponding to the respondents' total years at their current positions in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. For the respondents who had worked between 1 to 5 years and between 11 to 15 years at their current positions, training on "Training new employees" had the highest means of 3.03 and 3.17, respectively. Among the respondents with 6 to 10 years at their current positions, the highest mean of 3.29 was on "Supervising student employees" as a training topic to their supervision/management skills. Training on "Training new employees" and "Work flow design" had the same means of 3.11 from the respondents who had worked at their current positions for 16 or more years.

Table 41. Means and Standard Deviations by the Total Years at Current Positions

Training topics on supervision/management skills	1 to 5 years (N=68)		6 to 10 years (N=21)		11 to 15 years (N=23)		16 or more years (N=27)	
	M	SD	M	SD	M	SD	M	SD
Coaching/mentoring	2.66	1.10	2.76	1.04	2.87	1.10	2.96	0.90
Conducting effective meetings	2.57	1.07	2.38	0.97	2.43	1.12	2.74	1.02
Departmental coordination	2.62	1.12	2.67	0.91	2.78	1.17	2.78	1.09
Interviewing skills	2.71	1.07	2.71	0.85	2.65	1.07	2.74	0.90
Project management	2.90	0.96	2.67	1.07	2.83	1.15	2.89	0.89
Staff appraisal/evaluation	2.82	1.09	2.62	0.92	2.65	1.27	2.81	1.00
Supervising student employees	2.96	1.04	3.29	0.96	3.09	1.00	2.85	1.10
Training new employees	3.03	1.08	3.24	1.04	3.17	0.98	3.11	0.85
Workflow design	2.96	0.97	2.71	1.01	2.91	1.16	3.11	0.85

Measures of central tendency by work units.

Table 42 reports the mean values of the nine training topics on supervision /management skills corresponding to the respondents' work units in the four groups: Acquisitions, Online cataloging, Collections/user services, and Access services. Training on "Training new employees" and "Work flow design" had the same means of 2.76 from the respondents in Acquisitions. For the respondents who worked in Online cataloging, training on "Work flow design" had the highest mean of 3.07. Among the respondents in the Collections/user services and Access services units, training on "Training new employees" had the highest means of 3.38 and 3.31, respectively.

Table 42. Means and Standard Deviations by Work Units

Training topics on supervision/management skills	Acquisitions (N=25)		Cataloging (N=40)		Collections (N=26)		Access (N=48)	
	M	SD	M	SD	M	SD	M	SD
Coaching/mentoring	2.48	1.05	2.58	1.06	3.08	0.98	2.92	1.05
Conducting effective meetings	2.36	1.04	2.42	1.08	3.04	0.82	2.50	1.09
Departmental coordination	2.40	1.00	2.53	1.18	3.00	0.98	2.79	1.07
Interviewing skills	2.40	1.04	2.52	1.04	2.77	0.65	2.98	1.04
Project management	2.68	0.99	2.90	1.01	2.96	0.92	2.83	1.04
Staff appraisal/evaluation	2.56	1.19	2.75	1.10	2.88	0.86	2.81	1.10
Supervising student employees	2.64	1.04	2.85	1.12	3.23	0.86	3.21	0.99
Training new employees	2.76	0.97	2.88	1.07	3.38	0.90	3.31	0.97
Workflow design	2.76	1.50	3.07	1.00	3.08	0.80	2.85	1.03

Measures of central tendency by level of job responsibilities.

Table 43 presents the mean values of the nine training topics on supervision /management skills corresponding to the respondents' level of job responsibilities in the three groups: those who had non-supervisory duties, those who supervised student employees only, and those who supervised both student employees and staff. For the respondents who did not have supervisory duties, training on "Training new employees" and "Work flow design" had the same means of 2.70. Among the respondents who supervised student employees only, training on "Supervising student employees" was rated highly, with a mean of 3.51. Training on "Staff appraisal/evaluation" and "Training new employees" had the same means of 3.30 from the respondents who supervised both student employees and staff.

Table 43. Means and Standard Deviations by Level of Job Responsibilities

Training topics on supervision/management skills	Non-supervision (N=53)		Supervising students (N=59)		Supervising students and staff (N=27)	
	M	SD	M	SD	M	SD
Coaching/mentoring	2.47	1.09	2.92	1.02	3.04	0.94
Conducting effective meetings	2.34	1.11	2.56	1.07	2.96	0.76
Departmental coordination	2.30	1.12	2.88	1.05	3.00	0.88
Interviewing skills	2.30	1.03	2.93	0.93	3.00	0.83
Project management	2.55	1.07	3.02	1.01	3.07	0.62
Staff appraisal/evaluation	2.34	1.18	2.90	1.00	3.30	0.67
Supervising student employees	2.40	1.12	3.51	0.75	3.11	0.75
Training new employees	2.70	1.10	3.37	0.95	3.30	0.67
Workflow design	2.70	1.05	3.08	0.95	3.11	0.85

Measures of central tendency by rank.

Table 44 reports the mean values of the nine training topics on supervision /management skills corresponding to the respondent’s rank in the three groups: Library Assistant I, Library Assistant II, and Library Assistant III. Among the respondents in all of the three groups, training on “Training new employees” had the highest means of 2.85, 3.09, and 3.26, respectively. For the respondents with a rank of Library Assistant II, training on “Supervising student employees” had the same mean of 3.09 with that of training on “Training new employees.”

Table 44. Means and Standard Deviations by Rank

Training topics on supervision/management skills	Library Assistant I (N=27)		Library Assistant II (N=65)		Library Assistant III (N=47)	
	M	SD	M	SD	M	SD
Coaching/mentoring	2.41	1.15	2.71	1.04	3.06	0.94
Conducting effective meetings	2.22	1.12	2.51	1.16	2.81	0.77
Departmental coordination	2.48	1.16	2.69	1.15	2.79	0.95
Interviewing skills	2.41	1.12	2.74	1.00	2.83	0.89
Project management	2.70	1.03	2.74	1.11	3.09	0.75
Staff appraisal/evaluation	2.52	1.28	2.65	1.11	3.06	0.82
Supervising student employees	2.70	1.20	3.09	1.04	3.06	0.90
Training new employees	2.85	1.17	3.09	1.06	3.26	0.82
Workflow design	2.78	0.97	2.89	1.08	3.11	0.84

Measures of central tendency by age range.

Table 45 presents the mean values of the nine training topics related to supervision/management skills according to the respondents' age range in the four groups: 35 or younger, 36 to 45 years old, 46 to 55 years old, and 56 or older. Among the respondents in all four age groups, training on "Training new employees" had the highest means of 3.18, 3.00, 3.11, and 3.09, respectively.

Table 45. Means and Standard Deviations by Age Range

Training topics on supervision/management skills	35 or younger (N=28)		36 to 45 (N=25)		46 to 55 (N=64)		56 or older (N=22)	
	M	SD	M	SD	M	SD	M	SD
Coaching/mentoring	2.75	1.11	2.56	1.00	2.87	1.02	2.73	1.16
Conducting effective meetings	2.57	0.96	2.40	1.12	2.63	1.02	2.50	1.23
Departmental coordination	2.64	1.13	2.56	0.96	2.78	1.08	2.59	1.22
Interviewing skills	2.61	1.07	2.84	0.90	2.70	0.99	2.68	1.09
Project management	2.89	0.96	2.76	1.01	2.95	0.95	2.59	1.14
Staff appraisal/evaluation	2.79	1.13	2.64	1.00	2.81	0.99	2.73	1.35
Supervising student employees	3.07	1.09	2.96	0.98	3.05	0.98	2.86	1.21
Training new employees	3.18	1.12	3.00	0.96	3.11	0.95	3.09	1.15
Workflow design	2.96	0.88	2.72	1.02	3.06	0.96	2.82	1.14

One-way Multivariate Analysis of Variance(MANOVA) Tests

A series of one-way MANOVA tests were performed to examine if there were statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their general characteristics, i.e., the respondents' educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. Table 46 provides a summary of the Wilks' Lambda test results of MANOVA on training needs of supervision/management skills based on the respondents general characteristics. When statistically significant differences were found, (for example, in the respondents' work units and level of job responsibilities), a series of analysis of variance (ANOVA) tests were conducted to identify values of significance. Then, follow-up Scheffe contrasts were performed to determine where the statistically significant differences existed.

Table 46. Lambda Test Results of MANOVA on Supervision/management Skills

Independent Variables	Value	F	Hypothesis df	Error df	Sig.
Educational attainment	0.894	0.817	18	256	0.680
Total years in the library field	0.856	0.752	27	372	0.812
Total years at current positions	0.862	0.716	27	372	0.852
Work units	0.721	1.629	27	372	0.027
Level of job responsibilities	0.665	3.219	18	256	0.000
Rank	0.853	1.177	18	256	0.280
Age range	0.900	0.504	27	372	0.983

Test results of null hypotheses.

Ho 3-a. There are no statistically significant differences in the respondents'

perceived training needs on supervision/management skills as a function of their educational attainment.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(18, 256) = .894, p > .05$) did not present a statistically significant difference. The respondents' perceptions of their training needs on supervision/management skills were not influenced by their educational attainment. The null hypothesis *Ho 3-a* was accepted.

Ho 3-b. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working in the library field.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(27, 372) = .856, p > .05$) did not provide a statistically significant difference; thus, the respondents' perceptions of their training needs on supervision/management skills were not influenced by their total years working in the library field. The null hypothesis *Ho 3-b* was accepted.

Ho 3-c. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their total years working at their current positions.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(27, 372) = .862, p > .05$) did not report a statistically significant difference. The respondents' perceptions of their training needs on supervision/management skills were not influenced by the length of their

working experience at their current positions. The null hypothesis *Ho 3-c* was accepted.

Ho 3-d. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their work units.

One-way MANOVA of the Lambda test results ($\text{Lambda}(27, 372) = .721, p < .05$) revealed a statistically significant difference in the respondents' perceptions of their training needs on supervision/management skills as a function of their work units. The significant value of the MANOVA test was .027, as shown in Table 46, smaller than .05 at the alpha = .05 level. Therefore, the null hypothesis *Ho 3-d* was rejected. A follow-up ANOVA test was performed to find the significant values of the nine training topics. Table 47 lists the values of significance for the nine training topics under the column of Sig. The significant value on the training topic of "Training new employees" was .03, smaller than .05 at the alpha = .05 level as shown in Table 47.

Table 47. Tests of Between-subjects Effects by Work Units

Dependent variables	Type III sum of squares	df	Mean square	F	Sig.
a. Coaching/mentoring	7.11	3	2.37	2.20	0.09
b. Conducting effective meetings	7.85	3	2.62	2.44	0.07
c. Departmental coordination	6.18	3	2.06	1.78	0.15
d. Interviewing skills	7.34	3	2.45	2.55	0.06
e. Project management	1.16	3	0.39	0.39	0.76
f. Staff appraisal/evaluation	1.54	3	0.51	0.44	0.73
g. Supervising student employees	7.60	3	2.53	2.45	0.07
h. Training new employees	9.19	3	3.06	3.15	0.03
I. Work flow design	2.38	3	0.79	0.82	0.49

Follow-up Scheffe post hoc contrasts were performed to determine where the statistically significant differences might exist among the four groups of the respondents. However, the test results were not statistically different. Because the Scheffe post hoc test is a conservative one used for this study, it did not present how the four groups of respondents' perceptions of their training needs on "Training new employees" might differ statistically.

Ho 3-e. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their level of job responsibilities.

Finding:

One-way MANOVA from the Lambda test results ($\text{Lambda}(18, 256) = .665, p < .05$) presented a statistically significant difference in the respondents' perceived training needs on supervision/management skills as a function of their responsibilities. The significant value of the one-way MANOVA test results was .00, smaller than .05 at the alpha = .05 level as shown in Table 46. Therefore, the null hypothesis *Ho 3-e* was rejected.

Follow-up ANOVA tests were performed to determine the significant values of the nine training topics on supervision/management skills on which the respondents' perceptions could differ. Table 48 presents the significant values of the nine training topics on supervision/management from the ANOVA tests. The significant values of the test results are listed under the column of Sig. in Table 48. Based on the test results of follow-up ANOVA, the values of significance of the following training topics on supervision/management skills were smaller than .05 at the alpha level:

"Coaching/mentoring" (Sig. = .027), "Conducting effective meetings" (Sig. = .042), "Departmental coordination" (Sig. = .004), "Interviewing skills" (Sig. = .001), "Project

management” (Sig. = .017), “Staff appraisal/evaluation” (Sig. = .000), “Supervising student employees” (Sig. = .000), and “Training new employees” (Sig. = .001).

Table 48. Tests of Between-subjects Effects by Level of Job Responsibilities

Dependent variables	Type III sum of squares	df	Mean square	F	Sig.
a. Coaching/mentoring	7.89	2	3.94	3.71	0.027
b. Conducting effective meetings	6.95	2	3.48	3.25	0.042
c. Departmental coordination	12.73	2	6.37	5.80	0.004
d. Interviewing skills	14.01	2	7.00	7.75	0.001
e. Project management	7.86	2	3.93	4.18	0.017
f. Staff appraisal/evaluation	18.26	2	9.13	8.81	0.000
g. Supervising student employees	34.90	2	17.45	21.17	0.000
h. Training new employees	13.99	2	7.00	7.52	0.001
i. Work flow design	5.13	2	2.56	2.72	0.070

Follow-up Scheffe post hoc contrasts were performed to determine where the statistically significant differences existed among the three groups of the respondents: those who were non-supervisors, those who supervised student employees only, and those who supervised both student employees and staff. Table 49 provides summaries of the respondents’ perceptions of their training needs on supervision/management according to their level of job responsibilities. As shown in Table 49, the means, standard deviations, and the results of the Scheffe contrasts are listed to show where the statistically significant differences existed among the four groups of respondents.

Table 49. Scheffe Contrasts by Level of Job Responsibilities

Supervision/management skills	Non-supervisors (A)		Supervising students (B)		Supervising students and staff (C)		Scheffe contrasts p < .05
	M	SD	M	SD	M	SD	
Coaching/mentoring	2.47	1.09	2.92	1.02	3.04	0.94	C > A
Conducting effective meetings	2.34	1.11	2.56	1.07	2.96	0.76	C > A
Departmental coordination	2.30	1.12	2.88	1.05	3.00	0.88	C, B > A
Interviewing skills	2.30	1.03	2.93	0.93	3.00	0.83	C, B > A
Project management	2.55	1.07	3.02	1.01	3.07	0.62	n/a
Staff appraisal/evaluation	2.34	1.18	2.90	1.00	3.30	0.67	C, B > A
Supervising student employees	2.40	1.12	3.51	0.75	3.11	0.75	C, B > A
Training new employees	2.70	1.10	3.37	0.95	3.30	0.67	C, B > A
Work flow design	2.70	1.05	3.08	0.95	3.11	0.85	n/a

A=Respondents who were not supervisors.

B=Respondents who supervised student employees.

C=Respondents who supervised both student employees and staff.

The results of follow-up Scheffe post hoc contrasts presented that there were statistically significant differences in the respondents' perceptions of their training needs on the following training topics related to supervision/management skills as a function of their level of job responsibilities: "Coaching/mentoring," "Conducting effective meetings," "Departmental coordination," "Interviewing skills," "Project management," "Staff appraisal/evaluation," "Supervising student employees," and "Training new employees."

Coaching/mentoring. There was a statistically significant difference in the respondents' perceptions of their training needs on "Coaching/mentoring" as a function of their level of job responsibilities. The Scheffe post hoc test results showed that at the alpha = .05 level, the respondents' perceptions on their training needs of "Coaching/mentoring" differed statistically between those who did not have supervisory duties and those who supervised both student employees and staff. The respondents who supervised both student

employees and staff perceived training on “Coaching/mentoring” to be more important to their supervision/management skills than that of the respondents with non-supervisory duties.

Conducting effective meetings. A statistically significant difference was found in the respondents’ perceptions of their training needs on “Conducting effective meetings” as a function of their level of job responsibilities. The Scheffe test results proved that at the $\alpha = .05$ level, the respondents’ perceptions of their training needs on “Conducting effective meetings” differed statistically between those who did not have supervisory duties and those who supervised both student employees and staff. The respondents who supervised both student employees and staff perceived training on “Coaching/mentoring” to be more important to their supervision/management skills than the respondents with non-supervisory duties.

Department coordination. The Scheffe test results showed a statistically significant difference in the respondents’ perceived training needs on “Department coordination” as a function of their level of job responsibilities. At the $\alpha = .05$ level, the respondents’ perceptions on their training needs of “Department coordination” differed statistically among the three groups of the respondents: those who did not have supervisory duties, those who supervised student employees only, and those who supervised both student employees and staff. The Scheffe test results showed that the respondents who supervised student employees only and who supervised both student employees and staff perceived training on “Department coordination” to be more important to their supervision/management skills than the respondents with non-supervisory duties.

Interviewing skills. There was a statistically significant difference in the respondents' perceptions of their training needs on "Interviewing skills" as a function of their level of job responsibilities. The Scheffe test results presented that at the alpha = .05 level, the respondents' perceptions of their training needs on "Interviewing skills" differed statistically among the three groups of the respondents. The Scheffe test results reported that the respondents who supervised student employees only and who supervised both student employees and staff believed that training on "Interviewing skills" was more important to their supervision/management skills than the respondents with non-supervisory duties.

Project management. Though the significant value for the training topic on "Project management" was .017 at the alpha level from the follow-up ANOVA test, the follow-up Scheffe test results did not provide a statistically significant difference. That is, the respondents' perceptions of their training needs on "Project management" did not differ statistically.

Staff appraisal/evaluation. The results of the Scheffe test reported that there was a statistically significant difference in the respondents' perceptions of their training needs on "Staff appraisal/evaluation" as a function of their level of job responsibilities. At the alpha = .05 level, the Scheffe test results showed that the respondents' perceptions of their training needs on "Staff appraisal/evaluation" differed statistically among the three groups of the respondents. The respondents who supervised student employees only and who supervised both student employees and staff considered training on "Staff appraisal/evaluation" to be more important to their supervision/management skills than to the respondents with non-supervisory duties.

Supervising student employees. There was a statistically significant difference in the respondents' perceptions of their training needs on "Supervising student employees" as a function of their level of job responsibilities. At the $\alpha = .05$ level, the Scheffe test results showed that the respondents' perceptions of their training needs on "Supervising student employees" differed statistically among the three groups of the respondents. The respondents who supervised both student employees and staff and the respondents who supervised student employees only viewed training on "Supervising student employees" to be more important to upgrade their supervision/management skills than the respondents with non-supervisory duties.

Training new employees. A statistically significant difference was found in the respondents' perceptions of their training needs on "Training new employees" as a function of their level of job responsibilities. The Scheffe test results presented that at the $\alpha = .05$ level, the respondents' perceptions of their training needs on "Training new employees" differed statistically among the three groups of the respondents. The respondents who supervised both student employees and staff and who supervised student employees only perceived training on "Training new employees" to be more important to their supervision/management skills than the respondents with non-supervisory duties.

Ho 3-f. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their rank.

Finding:

One-way MANOVA from the Lambda test results ($18, 256$) = .853, $p > .05$) reported that there was no statistically significant difference. The respondents'

perceptions of their training needs on supervision/management skills were not influenced by their ranks of Library Assistant I, Library Assistant II, and Library Assistant III. The null hypothesis *Ho 3-f* was accepted.

Ho 3-g. There are no statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their age range.

Finding:

One-way MANOVA from the Lambda test results (Lambda (27, 372) = .504, $p > .05$) did not present a statistically significant difference. The respondents' perceptions of their training needs on supervision/management skills were not influenced by their age range. The null hypothesis *Ho 3-g* was accepted.

Table 50 presents a summary of null hypotheses. At the alpha = .05 level, there were no statistically significant differences in the respondents' perceptions of training needs on supervision/management skills as a function of their educational attainments, library work experience, rank, and age range. The null hypotheses *Ho 3-a*, *Ho 3-b*, *Ho 3-c*, *Ho 3-f*, and *Ho 3-g* were accepted.

The hypotheses *Ho 3-d* and *Ho 3-e* were rejected at the alpha = .05 level for the two independent variables: the respondents' work units and the level of job responsibilities. The respondents' perceptions of their training needs on supervision/management differed statistically among the respondents in the four work units. A statistically significant difference also existed among the respondents who were non-supervisors, who supervised student employees only, and who supervised both student employees and staff. Apparently, the respondents' work units and level of job

responsibilities influenced their perceptions of the training needs on supervision/management skills.

Table 50. Null Hypothesis Summaries on Supervision/management Skills

Independent variables	Multivariate tests				Sig. (Alpha = .05)	Reject/accept hypothesis?
	Value	F	Hypothesis df	Error df		Y/N
Educational attainment	0.89	0.82	18	256	0.68	A
Total years in the library field	0.86	0.75	27	372	0.81	A
Total years in current positions	0.86	0.72	27	372	0.85	A
Work units	0.72	1.63	27	371	0.27	R
Responsibilities	0.67	3.22	18	256	0.00	R
Rank	0.85	1.18	18	256	0.28	A
Age range	0.90	0.50	27	372	0.98	A

Research Question 3 Summary

Respondents' Perceptions of Training Needs on Supervision/management Skills

The respondents gave a high rating on the importance on of the training on “Training new employees.” Forty-five percent of the respondents rated it as “Very Important” to their supervision/management skills. Next in importance was “Supervising student employees,” with 41 percent of the respondents rating it as “Very Important” to their supervision/management skills.

Measures of Central Tendency

The data collected from the responses were analyzed through measures of central tendency that summarized the mean values of the nine training topics on supervision /management skills. Training on “Training new employees” (M = 3.10), “Supervising student employees” (M = 3.01), and “Work flow design” (M = 2.94) had high means rated by the respondents to their supervision/management skills.

One-way Multivariate Analysis of Variance (MANOVA) Tests

A series of MANOVA tests were conducted to examine the statistically significant differences in the respondents' perceptions of their training needs on supervision/management skills as a function of their general characteristics. The respondents' training needs of supervision/management skills were not influenced by their educational attainment, library work experience, rank, or age range. The null hypotheses *Ho 3-a*, *Ho 3-b*, *Ho 3-c*, *Ho 3-f*, and *Ho 3-g* were accepted.

When the statistically significant differences were found in the respondents' training needs on supervision/management skills as functions of their work units and as a function of their level of job responsibilities, the hypotheses *Ho 3-d* and *Ho 3-e* were rejected at the alpha =.05 level. Follow-up ANOVA tests were conducted to identify the significant values of the nine training topics. Scheffe post hoc contrasts were used to determine where the statistical differences existed. The Scheffe test results did not show where the statistically significant differences existed among the respondents in the four work units. However, the Scheffe test results indicated that the perceptions of the respondents' training needs on supervision/management differed statistically based on their level of job responsibilities. Those who had supervisory duties viewed training on supervision/ management skills to be more important than those who did not have supervisory duties.

Research Question 4

What kinds of library and organizational support are perceived as important by support staff to participate in training?

Null Hypotheses

Ho 4-a. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their educational attainment.

Ho 4-b. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their total years working in the library field.

Ho 4-c. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their total years working at their current position.

Ho 4-d. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their work units.

Ho 4-e. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their level of job responsibilities.

Ho 4-f. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their rank.

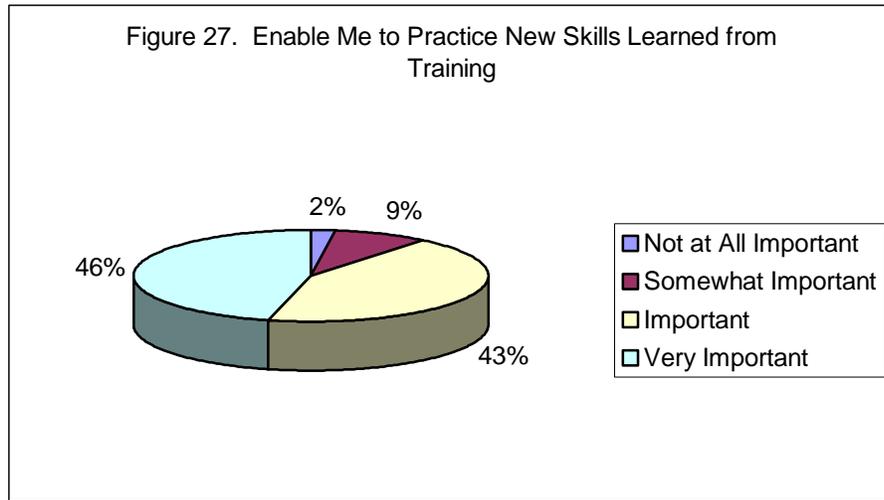
Ho 4-g. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their age range.

Respondents' Perceptions on Library/organizational Support

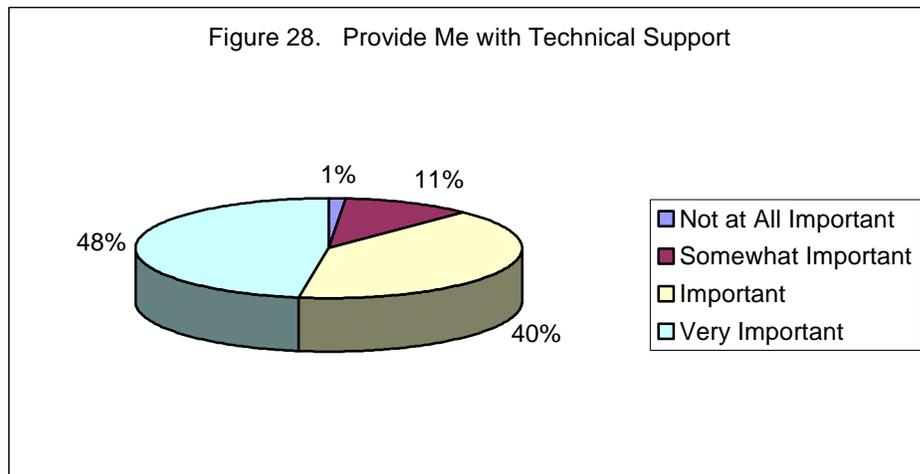
The subjects of this study were asked to rate the importance of the 11 questionnaire items on library/organizational support that they viewed to be important for their training. This section reports data from the respondent's answers to closed-ended questions on a 1 to 4 Likert rating scale that illustrate the respondents' perceptions on the importance of library/organizational support for their training. The 11 questionnaire items related to library/organizational support were:

- Enable me to practice new skills learned from training
- Provide me with technical support
- Offer in-house expertise when I need it
- Link my training to a pay increase
- Acknowledge my training on my evaluation
- Provide me with release time for training
- Allocate funding for my training goals
- Provide me with training materials
- Supply me with appropriate software
- Arrange on-site training sessions
- Suggest relevant training topics to me

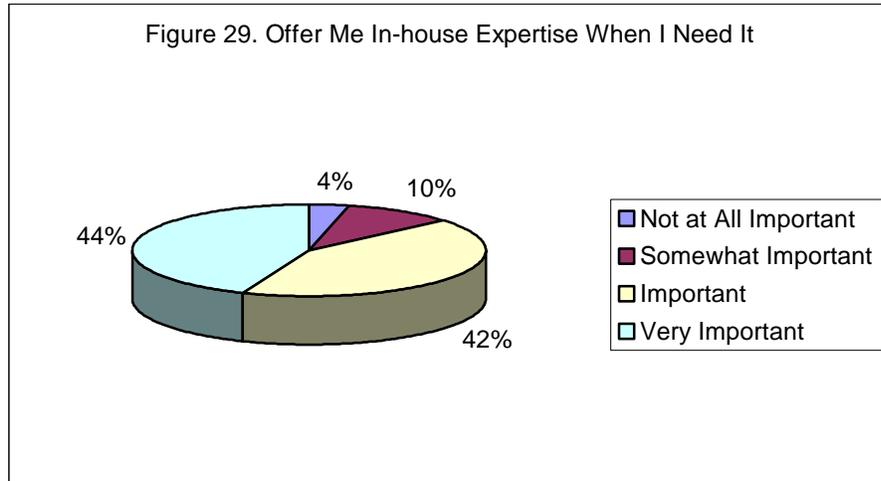
Enable me to practice new skills learned from training. Figure 27 reports that 43 percent of the respondents believed that being able to practice newly learned skills from training was important and 46 percent viewed it as a very important library/organizational support for their training.



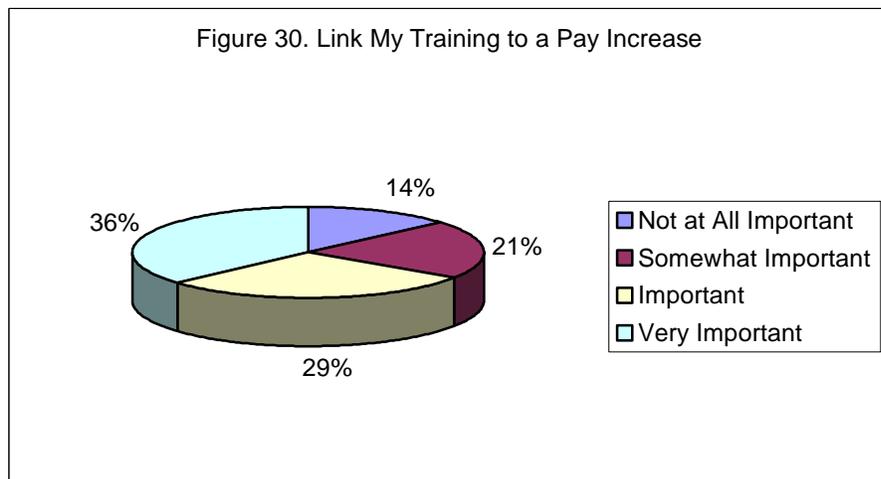
Provide me with technical support. Figure 28 shows that 40 percent of the respondents rated the provisions of technical support as important and 48 percent rated it as very important library/organizational support for their training.



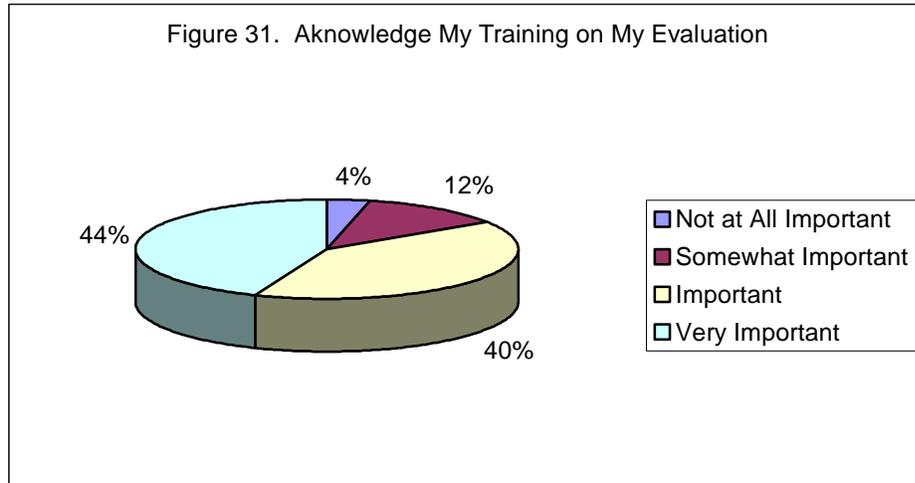
Offer me in-house expertise when I need it. In Figure 29, 42 percent of the respondents are shown to believe that having in-house expertise was important and 44 percent perceived it as a very important library/organizational support tool.



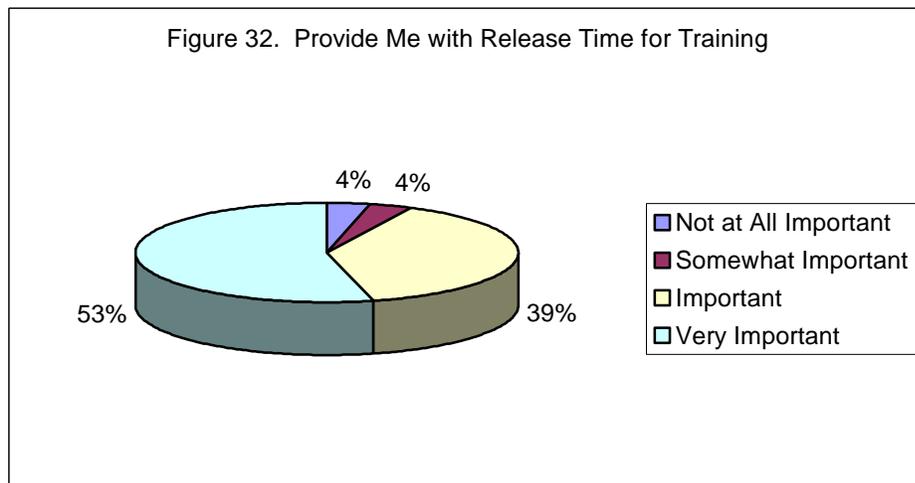
Link my training to a pay increase. Figure 30 indicates that 29 percent of the respondents reported linking training to a pay increase as being important and 36 percent reported it as being very important library/organizational support.



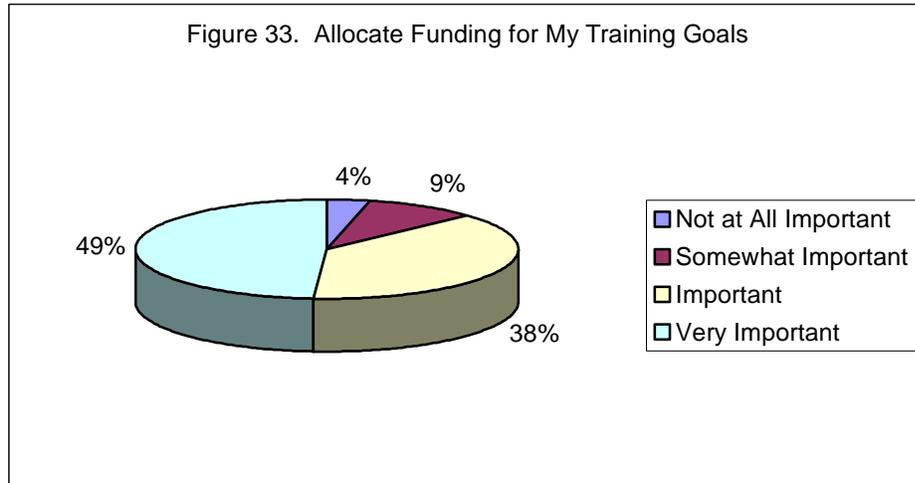
Acknowledge my training on my evaluation. Figure 31 reveals that 40 percent of the respondents thought that acknowledging training on evaluations was important and 44 percent viewed it as very important.



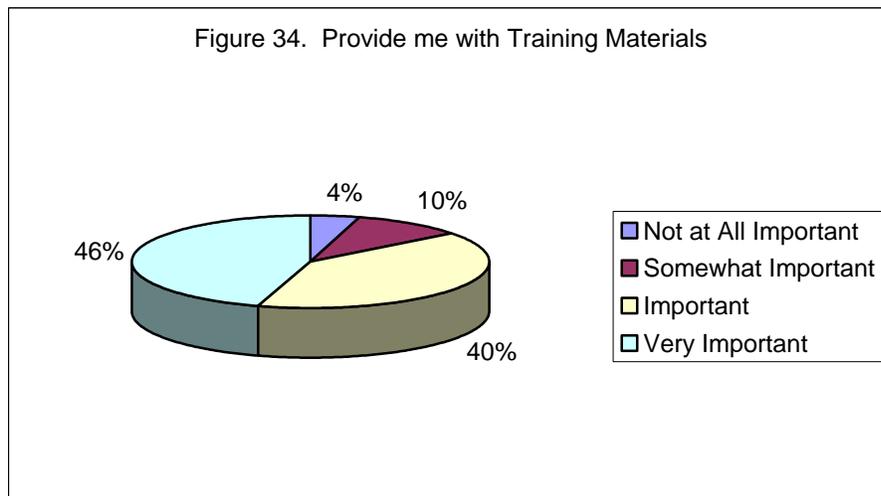
Provide me with release time for training. Figure 32 reports that 39 percent of the respondents indicated that having release time was an important component of training, and 53 percent believed it to be very important.



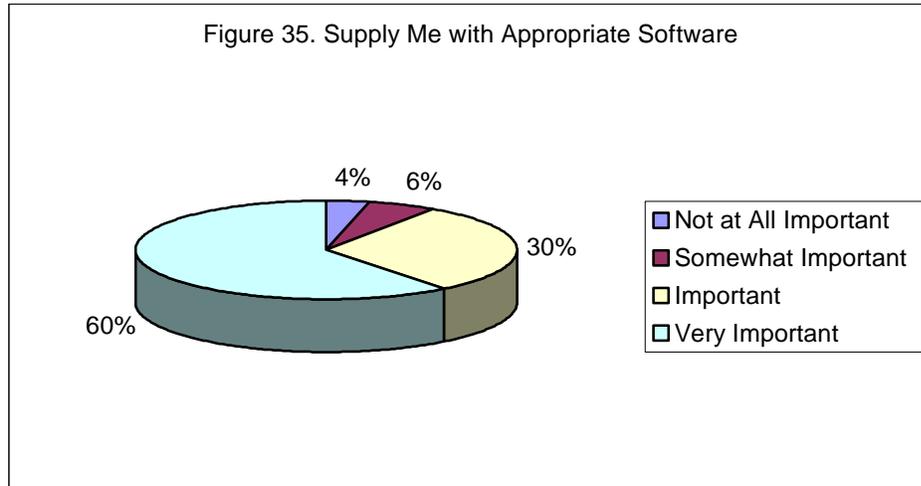
Allocate funding for my training goals. Figure 33 shows that 38 percent of the respondents reported that having available funding for training was important and 49 percent reported it as very important library/organizational support for training.



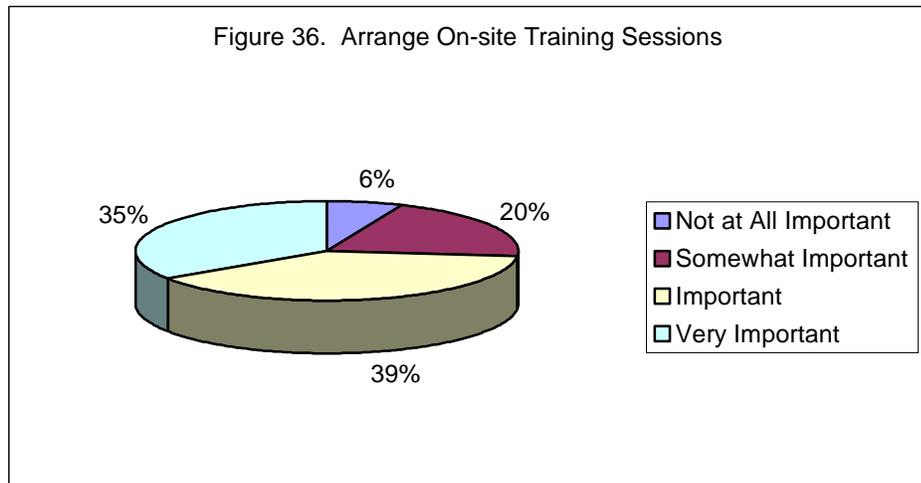
Provide me with training materials. Figure 34 illustrates that 40 percent of the respondents rated having training materials as being important and 46 percent rated it as a very important library/organizational support tool for training.



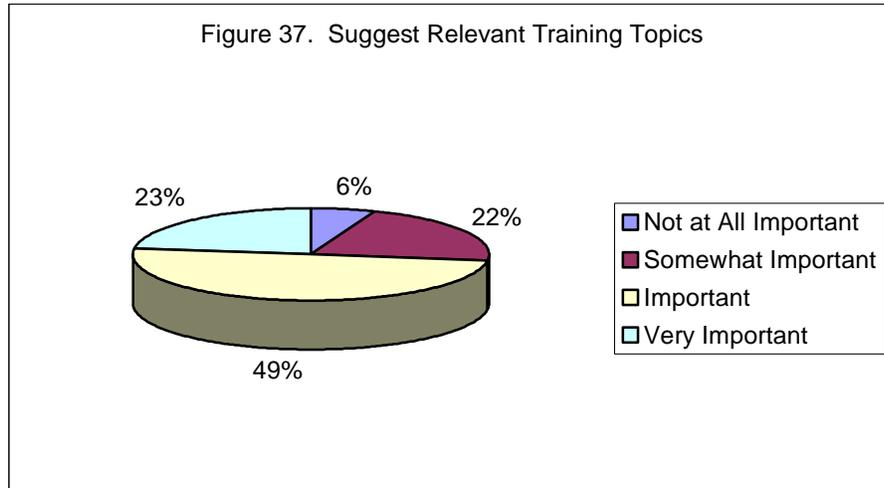
Supply me with appropriate software. Figure 35 reports that 30 percent of the respondents viewed having appropriate software as being important and 60 percent viewed it as a very important library/organizational support for training.



Arrange on-site training sessions. Figure 36 shows that 39 percent of the respondents reported on-site training arrangement to be important, while 35 percent reported it as a very important element for training.



Suggest relevant training topics. Figure 37 indicates that 49 percent of the respondents perceived suggesting relevant training topics to them to be important and 23 percent believed it as a very important library/organizational support for their training.



Measures of Central Tendency

Table 51 summarizes the mean values of the 11 questionnaire items on library/organizational support that the respondents perceived to be important for their training, with the highest mean on the top of the list. On this list, “Supply me with appropriate software” earned the highest mean of 3.47 on a 1 to 4 Likert rating scale as an important library/organizational support that would help the respondents’ training. In addition, “Provide me with release time for training” and “Provide me with technical support” were also rated highly by the respondents, with means of 3.43 and 3.34, respectively. Though “Link my training to a pay increase” had the lowest mean (M=2.88) out of all 11 questionnaire items on the list, it was an above-average score.

Table 51. Mean Summaries on Library/organizational Support

Library/organizational support	N	Mini.	Max.	Mean	Std. Deviation
Supply me with appropriate software	139	1	4	3.47	0.77
Provide me with release time	139	1	4	3.43	0.73
Provide me with technical support	139	1	4	3.34	0.73
Enable me to practice new skills	139	1	4	3.33	0.73
Allocate funding for training	139	1	4	3.32	0.79
Provide me with training materials	139	1	4	3.27	0.81
Offer in-house expertise	139	1	4	3.27	0.79
Acknowledge my training	139	1	4	3.24	0.81
Arrange on-site training sessions	139	1	4	3.01	0.90
Suggest relevant training topics	139	1	4	2.90	0.82
Link my training to a pay increase	139	1	4	2.88	1.06

Measures of central tendency by educational attainment.

Table 52 presents the mean values of the 11 questionnaire items on library/organizational support perceived by the respondents with the three levels of educational attainment: high school diplomas or some college courses, Bachelor’s degrees, and advanced degrees. Among the two groups of the respondents, the one with high school diplomas or some college courses and the one with Bachelor’s degrees, “Supply me with appropriate software” had the highest means of 3.44 and 3.54, respectively, as an important library/organizational support for their training. The respondents with advanced degrees believed that “Enable me to practice new skills learned from training” was the most important support tool for their training, with a mean of 3.50.

Table 52. Means and Standard Deviations by Educational Attainment

Library/organizational support	High school's (N=50)		Bachelor's (N=67)		Advanced (N=22)	
	M	SD	M	SD	M	SD
Enable me to practice new skills	3.38	0.60	3.24	0.85	3.50	0.51
Provide me with technical support	3.22	0.79	3.42	0.74	3.36	0.49
Offer in-house expertise	3.10	0.89	3.39	0.76	3.27	0.55
Link my training to a pay increase	2.94	1.02	2.88	1.08	2.77	1.11
Acknowledge my training	3.22	0.79	3.24	0.80	3.32	0.89
Provide me with release time	3.38	0.73	3.51	0.70	3.32	0.84
Allocate funding training	3.28	0.76	3.42	0.74	3.14	0.99
Provide me with training materials	3.16	0.89	3.33	0.79	3.32	0.72
Supply me with appropriate software	3.44	0.81	3.54	0.75	3.36	0.73
Arrange on-site training sessions	3.04	0.88	3.06	0.90	2.82	0.96
Suggest relevant training topics	2.86	0.81	2.97	0.82	2.77	0.87

Measure of central tendency by the total years in the library field.

Table 53 reports the mean values of the 11 questionnaire items on library/organizational support perceived by the respondents corresponding to their total years working in the library field in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. Among the respondents who worked in the library field between 1 to 5 years and between 11 to 15 years, “Provide me with release time for training” had the same high mean of 3.54, indicating that it was an important library/organizational support for their training. For the respondents who had worked in the library field between 6 to 10 years and 16 or more years, “Supply me with appropriate software” had the highest means of 3.06 and 3.60, respectively.

Table 53. Means and Standard Deviations by the Total Years in the Library Field

Library/organizational support	1 to 5 years (N=28)		6 to 10 years (N=18)		11 to 15 years (N=26)		16 or more years (N=67)	
	M	SD	M	SD	M	SD	M	SD
Enable me to practice new skills	3.46	0.69	2.72	1.07	3.35	0.56	3.43	0.61
Provide me with technical support	3.39	0.69	2.89	0.83	3.15	0.88	3.51	0.59
Offer in-house expertise	3.36	0.69	3.00	0.77	3.08	0.98	3.37	0.74
Link my training to a pay increase	2.93	0.98	2.56	1.10	2.77	1.18	3.00	1.03
Acknowledge my training	3.39	0.79	3.00	0.69	3.23	0.91	3.25	0.80
Provide me with release time	3.54	0.58	3.00	0.97	3.54	0.71	3.46	0.70
Allocate funding for my training	3.39	0.63	2.78	0.88	3.27	0.92	3.46	0.73
Provide me with training materials	3.25	0.80	2.78	0.88	3.31	0.93	3.39	0.72
Supply me with appropriate software	3.50	0.69	3.06	1.06	3.42	0.86	3.60	0.63
Arrange on-site training sessions	3.07	0.81	2.44	1.04	3.04	1.00	3.13	0.82
Suggest relevant training topics	3.14	0.80	2.50	0.79	3.04	0.77	2.85	0.82

Measures of central tendency by the total years at current positions.

Table 54 summarizes the mean values of the 11 questionnaire items on library/organizational support corresponding to the respondents' total years working at their current positions. For the respondents who were at their current positions between 1 to 5 years, both "Provide me with release time fro training" and "Supply me with appropriate software" had the same high means of 3.43 as an important support to their training. With the respondents who worked between 6 to 10 years at their current positions, "Provide me with technical support" was the most important, scoring the highest mean of 3.33. Among the respondents who had worked at their current positions between 11 to 15 years and the respondents who had worked 16 or more years, "Supply me with appropriate software" had the highest means of 3.74 and 3.52, respectively.

Table 54. Means and Standard Deviations by the Total Years at Current Positions

Library/organizational support	1 to 5 years (N=68)		6 to 10 years (N=21)		11 to 15 years (N=23)		16 or more years (N=27)	
	M	SD	M	SD	M	SD	M	SD
Enable me to practice new skills	3.34	0.78	3.29	0.90	3.35	0.49	3.33	0.62
Provide me with technical support	3.26	0.68	3.33	0.91	3.43	0.84	3.44	0.58
Offer in-house expertise	3.18	0.77	3.29	0.90	3.35	0.94	3.41	0.57
Link my training to a pay increase	2.97	0.99	2.67	1.11	2.74	1.14	2.96	1.13
Acknowledge my training	3.26	0.82	3.05	0.81	3.39	0.72	3.22	0.85
Provide me with release time	3.43	0.65	3.19	1.03	3.65	0.65	3.44	0.70
Allocate funding for training	3.28	0.73	3.19	1.08	3.43	0.73	3.44	0.75
Provide me with training materials	3.12	0.82	3.14	0.96	3.57	0.59	3.37	0.79
Supply me with appropriate software	3.43	0.80	3.29	1.06	3.74	0.45	3.52	0.58
Arrange on-site training sessions	2.91	0.94	2.57	0.98	3.35	0.71	3.33	0.68
Suggest relevant training topics	2.88	0.87	2.62	0.74	3.26	0.54	2.85	0.86

Measures of central tendency by work units.

Table 55 presents the mean values of the 11 questionnaire items on library/organizational support corresponding to the respondents' work units in the four groups: Acquisitions, Online cataloging, Collections/user services, and Access services. "Supply me with appropriate software" had the highest means of 3.48 and 3.69, respectively, among the respondents in Acquisitions and Collection/user services. For the respondents from the Online cataloging and Access services units, "Provide me with release time for training" scored the highest means of 3.40 and 3.48, respectively, as the most important library/organizational support tools.

Table 55. Means and Standard Deviations by Work Units

Library/organizational support	Acquisitions (N=25)		Cataloging (N=40)		Collections (N=26)		Access (N=48)	
	M	SD	M	SD	M	SD	M	SD
Enable me to practice new skills	3.44	0.71	3.37	0.59	3.54	0.58	3.13	0.87
Provide me with technical support	3.40	0.76	3.30	0.65	3.50	0.65	3.25	0.81
Offer in-house expertise	3.36	0.76	3.35	0.80	3.27	0.78	3.15	0.80
Link my training to a pay increase	2.76	1.05	2.90	1.15	3.04	0.92	2.85	1.07
Acknowledge my training	3.12	0.88	3.27	0.91	3.38	0.57	3.21	0.80
Provide me with release time	3.36	0.81	3.40	0.67	3.46	0.71	3.48	0.77
Allocate funding for training	3.20	0.91	3.25	0.81	3.54	0.58	3.33	0.81
Provide me with training materials	3.24	0.97	3.25	0.74	3.35	0.69	3.25	0.86
Supply me with appropriate software	3.48	0.87	3.38	0.74	3.69	0.55	3.44	0.82
Arrange on-site training sessions	3.20	0.71	3.03	0.89	2.81	0.94	3.02	0.98
Suggest relevant training topics	2.92	0.86	2.92	0.92	2.81	0.69	2.92	0.79

Measures of central tendency by level of job responsibilities.

Table 56 reports the mean values of the 11 questionnaire items on library/organizational support corresponding to the respondents' level of job responsibilities in the three groups: those who had non-supervisory duties, those who supervised student employees only, and those who supervised both student employees and staff. To the respondents who had non-supervisory duties and who supervised both student employees and staff, "Supply me with appropriate software" had the highest means of 3.49 and 3.52, respectively. Among the respondents who supervised student employees only, the questionnaire item of "Provide me with release time for training " had the highest mean of 3.51.

Table 56. Means and Standard Deviations by Level of Job Responsibilities

Library/organizational support	Non-supervision (N=53)		Supervising students (N=59)		Supervising students and staff (N=27)	
	M	SD	M	SD	M	SD
Enable me to practice new skills	3.34	0.55	3.29	0.85	3.41	0.75
Provide me with technical support	3.34	0.71	3.36	0.71	3.30	0.82
Offer in-house expertise	3.13	0.81	3.41	0.67	3.22	0.93
Link my training to a pay increase	2.79	1.12	3.08	1.02	2.63	0.97
Acknowledge my training	3.21	0.82	3.39	0.70	3.00	0.96
Provide me with release time	3.42	0.60	3.51	0.77	3.30	0.87
Allocate funding training	3.17	0.80	3.46	0.77	3.33	0.78
Provide me with training materials	3.23	0.75	3.32	0.84	3.22	0.89
Supply me with appropriate software	3.49	0.64	3.44	0.88	3.52	0.75
Arrange on-site training sessions	3.06	0.77	3.12	0.97	2.70	0.95
Suggest relevant training topics	2.94	0.75	2.95	0.84	2.70	0.91

Measures of central tendency by rank.

Table 57 reports the mean values of the 11 questionnaire items on library/organizational support corresponding to the respondents' rank in the three groups: Library Assistant I, Library Assistant II, and Library Assistant III. To the respondents with a rank of Library Assistant I, "Provide me with release time for training" had the highest mean of 3.56. "Provided me with release time for training" and "Supply me with appropriate software" earned the same high mean of 3.49 from the respondents at the rank of Library Assistant II. For the respondents with the rank of Library Assistant III, "Supply me with appropriate software" had the highest mean of 3.45 as an important library/organizational support.

Table 57. Means and Standard Deviations by Rank

Library/organizational support	Library Assistant I (N=27)		Library Assistant II (N=65)		Library Assistant III (N=47)	
	M	SD	M	SD	M	SD
Enable me to practice new skills	3.30	0.82	3.32	0.69	3.36	0.74
Provide me with technical support	3.11	0.75	3.4	0.70	3.38	0.74
Offer in-house expertise	3.19	0.79	3.29	0.77	3.28	0.83
Link my training to a pay increase	3.07	1.07	2.86	1.10	2.81	0.99
Acknowledge my training	3.48	0.58	3.25	0.85	3.11	0.84
Provide me with release time	3.56	0.51	3.49	0.77	3.28	0.77
Allocate funding training	3.41	0.64	3.29	0.91	3.32	0.70
Provide me with training materials	3.37	0.69	3.38	0.86	3.04	0.78
Supply me with appropriate software	3.48	0.70	3.49	0.81	3.45	0.75
Arrange on-site training sessions	3.26	0.71	3.05	0.96	2.83	0.89
Suggest relevant training topics	3.15	0.60	2.92	0.84	2.72	0.88

Measures of central tendency by age range.

Table 58 presents the mean values of the 11 questionnaire items on library/organizational support corresponding to the respondents' age range in the four groups: 35 or younger, 36 to 45 years old, 46 to 55 years old, and 56 or older. For the respondents who were 35 or younger, "Provide me with release time for training" had the highest mean of 3.64. "Supply me with appropriate software" received the highest means of 3.16 and 3.61, respectively, from the respondents who were 36 to 45 years old and 46 to 55 years old. To the respondents in the age range of 56 or older, "Provide me with technical support" was the most important support, with a mean of 3.59.

Table 58. Means and Standard Deviations by Age Range

Library/organizational support	35 or younger (N=28)		36 to 45 (N=25)		46 to 55 (N=64)		56 or older (N=22)	
	M	SD	M	SD	M	SD	M	SD
Enable me to practice new skills	3.29	0.90	3.04	0.84	3.48	0.59	3.27	0.63
Provide me with technical support	3.25	0.75	3.08	0.86	3.39	0.68	3.59	0.59
Offer in-house expertise	3.21	0.74	2.96	0.98	3.39	0.68	3.32	0.84
Link my training to a pay increase	3.14	1.01	2.44	1.12	2.89	1.04	3.05	1.00
Acknowledge my training	3.46	0.64	2.88	0.88	3.31	0.77	3.18	0.91
Provide me with release time	3.64	0.56	3.04	0.94	3.50	0.67	3.41	0.73
Allocate funding for training	3.46	0.58	2.88	0.97	3.48	0.71	3.18	0.85
Provide me with training materials	3.32	0.82	2.96	0.79	3.39	0.79	3.18	0.85
Supply me with appropriate software	3.54	0.74	3.16	0.90	3.61	0.68	3.36	0.79
Arrange on-site training sessions	2.79	0.96	2.52	0.87	3.23	0.79	3.23	0.92
Suggest relevant training topics	2.93	0.81	2.76	0.88	2.98	0.83	2.77	0.75

One-way Multivariate Analysis of Variance (MANOVA) Tests

In order to determine if there were statistically significant differences in the respondents' perceptions on important library/organizational support for their training as a function of the respondents' general characteristics, i.e., educational attainment, library work experience, work units, level of job responsibilities, rank, and age range, a series of one-way MANOVA tests were performed. When the MANOVA test results showed statistically significant differences (for example, the respondents' total years working in the library field and the respondents' age range), a series of analysis of variance (ANOVA) tests were conducted to identify values of significance. Then follow-up Scheffe post hoc contrasts were performed to determine where statistically significant differences existed. Table 59 presents summaries of the Wilk's Lambda test results of MANOVA on library/organizational support.

Table 59. Lambda Test Results of MANOVA on Library/organizational Support

Independent Variables	Value	F	Hypothesis df	Error df	Sig.
Educational attainment	0.806	1.303	22	252	0.169
Total years in the library field	0.691	1.492	33	369	0.043
Total years at current positions	0.791	0.926	33	369	0.588
Work units	0.806	0.847	33	369	0.712
Level of job responsibilities	0.818	1.214	22	252	0.236
Rank	0.774	1.567	22	252	0.054
Age range	0.680	1.565	33	369	0.027

Test results of null hypotheses.

Ho 4-a. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their educational attainment.

Finding:

One-way MANOVA from the Lambda test results (Lambda (22, 252) = .806, $p > .05$) did not show a statistically significant difference; thus, the respondents' perceptions on library/organizational support for their training were not influenced by their educational attainment. As a result, the null hypothesis *Ho 4-a* was accepted.

Ho 4-b. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their total years working in the library field.

Finding:

One-way MANOVA of the Lambda test results (Lambda (33, 369) = .691, $p < .05$) established that there was a statistically significant difference in the respondents' perceived favorable library/organizational support for training as a function of their total years working in the library field. The significant value of the Lambda test results was .043, smaller than .05 at the alpha level. Therefore, the null hypothesis *Ho 4-b* was rejected. Table 60 reports the follow-up ANOVA test results that present the values of significance of the following questionnaire items on library/organizational support: "Enable me to practice new skills learned from training" (Sig. = .001); "Provide me with technical support" (Sig. = .005); "Allocate funding for my training goals" (Sig. = .011); "Provide me with training materials" (Sig. = .042); "Arrange on-site training sessions"

(Sig. = .034), and “Suggest relevant training topics to me” (Sig. = .050). Table 60 lists the values of the significance under the column “Sig.”

Table 60. Tests of Between-subjects Effects by Total Years in the Library Field

Dependent variables	Type III of squares	df	Mean squares	F	Sig.
a. Enable me to practice new skills	7.87	3	2.62	5.46	0.001
b. Provide me with technical support	6.52	3	2.17	4.41	0.005
c. Offer in-house expertise	3.21	3	1.07	1.76	0.158
d. Link my training to a pay increase	3.24	3	1.08	0.97	0.411
e. Acknowledge my training	1.70	3	0.57	0.87	0.458
f. Provide me with release time	4.02	3	1.34	2.58	0.056
g. Allocate funding for training	6.87	3	2.29	3.89	0.011
h. Provide me with training materials	5.34	3	1.78	2.80	0.042
i. Supply me with appropriate software	4.25	3	1.42	2.50	0.062
j. Arrange on-site training sessions	6.92	3	2.31	2.96	0.034
k. Suggest relevant training topics	5.19	3	1.73	2.67	0.050

Follow-up Scheffe post hoc contrasts were performed to determine where the statistically significant differences existed among the four groups of the respondents who had worked in the library field between 1 to 5 years, 6 to 10 years, 11 to 15 years and 16 or more years. Table 61 presents a summary of the Scheffe test results that identified where the respondents’ perceptions differed statistically according to their total years working in the library field.

Table 61. Scheffe Contrasts by the Total Years in the Library Field

	1 to 5 years (A)		6 to 10 years (B)		11 to 15 years (C)		16 or more years (D)		Scheffe contrasts p < .05
	M	SD	M	SD	M	SD	M	SD	
Library/organizational support									
Enable me to practice new skills	3.46	0.69	2.72	1.07	3.35	0.56	3.43	0.61	A, D, C > B
Provide me with technical support	3.39	0.69	2.89	0.83	3.15	0.88	3.51	0.59	D > B
Offer in-house expertise	3.36	0.69	3.00	0.77	3.08	0.98	3.37	0.74	n/a
Link my training to a pay increase	2.93	0.98	2.56	1.10	2.77	1.18	3.00	1.03	n/a
Acknowledge my training	3.39	0.79	3.00	0.69	3.23	0.91	3.25	0.80	n/a
Provide me with release time	3.54	0.58	3.00	0.97	3.54	0.71	3.46	0.70	n/a
Allocate funding for training	3.39	0.63	2.78	0.88	3.27	0.92	3.46	0.73	D, A > B
Provide me with training materials	3.25	0.80	2.78	0.88	3.31	0.93	3.39	0.72	D > B
Supply me with appropriate software	3.50	0.69	3.06	1.06	3.42	0.86	3.60	0.63	n/a
Arrange on-site training sessions	3.07	0.81	2.44	1.04	3.04	1.00	3.13	0.82	D > B
Suggest relevant training topics	3.14	0.80	2.50	0.79	3.04	0.77	2.85	0.82	A > B

A= Respondents worked between 1 to 5 years in the library field.

B= Respondents worked between 6 to 10 years in the library field.

C= Respondents worked between 11 to 15 years in the library field.

D= Respondents worked 16 or more years in the library field.

Enable me to practice new skills learned from training. A follow-up Scheffe test reported that at the alpha = .05 level, there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their total years working in the library field. The statistical difference existed between the respondents who worked in the library field between 6 to 10 years and the other three groups of the respondents. The respondents who had worked 1 to 5 years, 11 to 15 years, and 16 or more years in the library field viewed this type of library/organizational support as being more important for their training than the respondents who had worked between

6 to 10 years in the library field.

Provide me with technical support. A follow-up Scheffe test showed that there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their total years working in the library field. At the $\alpha = .05$ level, the respondents' perceptions on "Provide me with technical support" as a library/organizational support were influenced by their total years working in the library field. The statistical difference existed between the respondents who had worked in the library field between 6 to 10 years and the respondents who had 16 or more years of experience in the library field. The respondents with 16 or more years in the library field considered technical support being more important for their training than those who had worked 6 to 10 years in the library field.

Allocate funding for my training goals. A follow-up Scheffe test indicated that there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their total years in the library field. At the $\alpha = .05$ level, the respondents' perceptions on "Allocate funding for my training goals" as a library/organizational support were influenced by their total years in the library field. The statistical difference existed between the respondents who had worked in the library field between 6 to 10 years and the other two groups of the respondents (those who had worked 1 to 5 years and those who had worked for 16 or more years in the library field). These two groups of respondents viewed having funding for training as being more important for their training than those who had worked between 6 to 10 years in the library field.

Provide me with training materials. A follow-up Scheffe test showed that there

was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their total years in the library field. At the alpha = .05 level, the respondents' perceptions on "Provide me with training materials" as a library/organizational support were influenced by their total years in the library field. The statistical difference existed between the respondents who had worked between 6 to 10 years and the respondents who had worked 16 or more years in the library field. The respondents with 16 or more years of experience in the library field viewed having training materials as being a more important library/organizational support tool than those who had worked 6 to 10 years in the library field.

Arrange on-site training sessions. A follow-up Scheffe test showed that there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their total years in the library field. At the alpha = .05 level, the respondents' perceptions on "Arrange on-site training sessions" as library/organizational support were influenced by their total years working in the library field. The statistical difference existed between the respondents who had worked between 6 to 10 years and those who had worked 16 or more years in the library field. The respondents with 16 or more years of experience in the library field viewed on-site training sessions being more important for their training than those who worked between 6 to 10 years in the library field.

Suggest relevant training topics to me. A follow-up Scheffe test indicated that there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their total years in the library field. At the alpha = .05 level, the respondents' perceptions on "Suggest relevant training topics to

me” as a library/organizational support were influenced by their total years in the library field. The statistical difference existed between the respondents who had worked between 1 to 5 years and the respondents who had worked between 6 to 10 years in the library field. The respondents who had worked between 1 to 5 years in the library field viewed “Suggest relevant training topics to me” as being more important support for their training than those who had worked between 6 to 10 years in the library field.

Ho 4-c. There are no statistically significant differences in the respondents’ perceptions of favorable library/organizational support as a function of their total years working at their current positions.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(33, 369) = .791, p > .05$) did not show a statistically significant difference in the respondents’ perceptions of library/organizational support for their training as a function of their total years working at their current positions, so the respondents’ total years working at the current positions did not influence their perceptions on library/organization support. In consequence, the null hypothesis *Ho 4-c* was accepted.

Ho 4-d. There are no statistically significant differences in the respondents’ perceptions of favorable library/organizational support as a function of their work units.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(33, 369) = .806, p > .05$) did not provide a statistically significant difference in the respondents’ perceptions on library/organizational support for their training as a function of their work units; therefore, the respondents’ perceptions of the library/organizational support were not

influenced by the nature of their work in libraries. The null hypothesis *Ho 4-d* was accepted.

Ho 4-e. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their level of job responsibilities.

Finding:

One-way MANOVA of the Lambda test results (Lambda (22, 252) = .818, $p > .05$) did not present a statistically significant difference in the respondents' perceptions on library/organizational support for their training as a function of their level of job responsibilities, indicating that the respondents' perceptions on library/organizational support were not influenced by their level of job responsibilities. As a result, the null hypothesis *Ho 4-e* was accepted.

Ho 4-f. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their rank.

Finding:

One-way MANOVA from the Lambda test results (Lambda (22, 252) = .774, $p > .05$) did not report a statistically significant difference in the respondents' perceptions on library/organizational support for their training as a function of their rank. The respondents' perceptions of library/organizational support were not influenced by their rank. The null hypothesis *Ho 4-f* was therefore accepted.

Ho 4-g. There are no statistically significant differences in the respondents' perceptions of favorable library/organizational support as a function of their age range.

Finding:

One-way MANOVA from the Lambda test results (Lambda (33, 369) = .68, $p < .05$) reported that there was a statistically significant difference in the respondents' perceived library/organizational support for their training as a function of their age range. The significant value of the Lambda MANOVA test was .027, smaller than .05 at the alpha level. Therefore, null hypothesis $H_0 4-g$ was rejected. Based on follow-up ANOVA test results, Table 62 lists significant values of the following questionnaire items on library/organizational support under the column of "Sig.": "Acknowledge my training on my evaluation" (Sig. = .049), "Provide me with release time for training" (Sig. = .017), "Allocate funding for my training goals" (Sig. = .006), and "Arrange on-site training sessions" (Sig. = .002).

Table 62. Tests of Between-subjects Effects by Age Range

Dependent variables	Type III of squares	df	Mean squares	F	Sig.
a. Enable me to practice new skills	3.76	3	1.25	2.45	0.066
b. Provide me with technical support	3.47	3	1.16	2.24	0.087
c. Offer in-house expertise	3.47	3	1.16	1.91	0.131
d. Link my training to a pay increase	7.38	3	2.46	2.26	0.084
e. Acknowledge my training	5.51	3	1.69	2.69	0.049
f. Provide me with release time	5.39	3	1.80	3.53	0.017
g. Allocate funding for training	7.57	3	2.52	4.32	0.006
h. Provide me with training materials	3.58	3	1.19	1.84	0.143
i. Supply me with appropriate software	4.01	3	1.34	2.36	0.075
j. Arrange on-site training sessions	11.67	3	3.89	5.24	0.002
k. Suggest relevant training topics	1.33	3	0.44	0.65	0.582

Follow-up Scheffe post hoc contrasts were performed to determine where the statistically significant differences existed. Table 63 presents a summary of the Scheffe test results that identified where the respondents' perceptions differed statistically according to their age range.

Table 63. Scheffe Contrasts by Age Range of the Respondents

	35 or younger (A)		36 to 45 (B)		46 to 55 (C)		56 or older (D)		Scheffe contrasts p < .05
	M	SD	M	SD	M	SD	M	SD	
Library/organizational support									
Enable me to practice new skills	3.29	0.90	3.04	0.84	3.48	0.59	3.27	0.63	n/a
Provide me with technical support	3.25	0.75	3.08	0.86	3.39	0.68	3.59	0.59	n/a
Offer in-house expertise	3.21	0.74	2.96	0.98	3.39	0.68	3.32	0.84	n/a
Link my training to a pay increase	3.14	1.01	2.44	1.12	2.89	1.04	3.05	1.00	n/a
Acknowledge my training	3.46	0.64	2.88	0.88	3.31	0.77	3.18	0.91	n/a
Provide me with release time	3.64	0.56	3.04	0.94	3.50	0.67	3.41	0.73	A > B
Allocate funding for training	3.46	0.58	2.88	0.97	3.48	0.71	3.18	0.85	C > B
Provide me with training materials	3.32	0.82	2.96	0.79	3.39	0.79	3.18	0.85	n/a
Supply me with appropriate software	3.54	0.74	3.16	0.90	3.61	0.68	3.36	0.79	n/a
Arrange on-site training sessions	2.79	0.96	2.52	0.87	3.23	0.79	3.23	0.92	C > B
Suggest relevant training topics	2.93	0.81	2.76	0.88	2.98	0.83	2.77	0.75	n/a

A=The respondents who were 35 or younger.

B=The respondents who were between 36 to 45 years old.

C=The respondents who were between 46 and 55 years old.

D=The respondents who were 56 or older.

Acknowledge my training on my evaluation. Though the significant value for this questionnaire item was smaller than .05 according to the follow-up ANOVA test in Table 62, the results of Scheffe contrasts did not present a statistically significant difference.

The respondents' perceptions on "Acknowledge my training on my evaluation" as a

library/organizational support did not differ statistically within the four age range groups.

Provide me with release time for training. A follow-up Scheffe test reported that there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their age range. At the alpha = .05 level, the respondents' perceptions on "Provide me with release time for training" as library/organizational support were influenced by their age range. The statistical difference existed between the respondents who were 35 or younger and who were 36 to 45 years old. The respondents who were 35 or younger viewed having release time for training as being more important than those who were in the age range of 36 to 45 years old.

Allocate funding for my training goals. A follow-up Scheffe test showed that there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their age range. At the alpha = .05 level, the respondents' perceptions on "Allocate funding for my training goals" were influenced by their age range. The statistical difference existed between the respondents who were 36 to 45 years old and the respondents who were 46 to 55 years old. The respondents who were between 46 to 55 years old viewed having funding for training as being more important than those who were in the age range of 36 to 45 years old.

Arrange on-site training sessions. A follow-up Scheffe test reported that there was a statistically significant difference in the respondents' perceptions of library/organizational support as a function of their age range. At the alpha = .05 level, the respondents' perceptions on "Arrange on-site training sessions" were influenced by their age range. The statistical difference existed between the respondents who were 36 to

45 years old and the respondents who were 46 to 55 years old. The respondents who were 46 to 55 years old viewed “Arrange on-site training sessions” as being more important for their training than those who were in the age range of 36 to 45 years old.

Table 64 provides a summary of null hypotheses on library/organizational support corresponding to the respondents’ general characteristics. At the alpha = .05 level, the respondents’ perceptions on library/organizational support for their training were not influenced by their educational attainment, total years at current positions, work units, level of job responsibilities, and rank. The null hypotheses *Ho 4-a*, *Ho 4-c*, *Ho 4-d*, *Ho 4-e*, and *Ho 4-f* were accepted.

The hypotheses *Ho 4-b* and *Ho 4-g* were rejected at the alpha = .05 level. The respondents’ perceptions on library/organizational support for their training were influenced by their total years working in the library field. The respondents’ age range also influenced their perceptions of library/organizational support for their training.

Table 64. Null Hypothesis Summaries on Library/organizational Support

Independent variables	Value	Multivariate tests			Sig. (Alpha = .05)	Reject/accept hypothesis? R/A
		F	Hypothesis df	Error df		
Educational attainment	0.81	1.30	22	252	0.17	A
Total years in the library field	0.69	1.49	33	369	0.04	R
Total years at current positions	0.79	0.93	33	369	0.59	A
Work units	0.86	0.85	33	369	0.712	A
Responsibilities	0.82	1.21	22	252	0.24	A
Rank	0.77	1.57	22	252	0.54	A
Age range	0.68	1.57	33	369	0.03	R

Research Question 4 Summary

Respondents' Perceptions on Library/organizational Support

The respondents rated highly all 11 questionnaire items related to library/organizational support that would help their training. For example, 60 percent of the respondents rated “Supply me with appropriate software” as a “Very Important” library/organizational support for their training, followed by “Provide me with release time for training,” with 53 percent of the respondents rating it “Very Important.”

Measures of Central Tendency

The data collected from the returned questionnaires were analyzed through measures of central tendency that summarized the mean values of the 11 questionnaire items on library/organizational support. On a 1 to 4 Likert rating scale, “Supply me with appropriate software” had the highest mean of 3.47, followed by “Provide me with release time for training” and “Provide me with technical support,” with means of 3.43 and 3.34, respectively. The measures of central tendency were also presented by the respondents' general characteristics.

One-way Multivariate Analysis of Variance (MANOVA) Tests

A series of one-way multivariate analysis of variance (MANOVA) tests were performed to determine the statistically significant differences in the respondents' perceptions of library/organizational support as a function of the respondents' general characteristics. The test results revealed that there were no statistically significant differences in the respondents' perceptions of library/organizational support as a function of their educational attainment, total years at their current positions, work units, level of job responsibilities, and rank. The null hypotheses *Ho 4-a*, *Ho 4-c*, *Ho 4-d*, *Ho 4-e*, and

Ho 4-f were accepted. Statistically significant differences were discovered in the respondents' perceptions of library/organizational support as a function of their total years of working in the library field and as a function of their age range. The respondents who had worked in the library field for 16 or more years viewed library/organizational support as being more important than those who had worked in the library field between 6 to 10 years. Within the four age-range groups, the respondents who were 35 or younger viewed "Provide me with release time for training" as being more important than other age range groups. Those who were 46 to 55 years old considered "Allocate funding for my training goals" and "Suggest relevant training topics to me" as being more important support for their training than other age range groups. The hypotheses *Ho 4-b* and *Ho 4-g* were rejected.

Research Question 5

What delivery methods are perceived as being helpful by support staff for their training?

Null Hypotheses

Ho 5-a. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their educational attainment.

Ho 5-b. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working in the library field.

Ho 5-c. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working at their current positions.

Ho 5-d. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their work units.

Ho 5-e. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their level of job responsibilities.

Ho 5-f. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their rank.

Ho 5-g. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their age range.

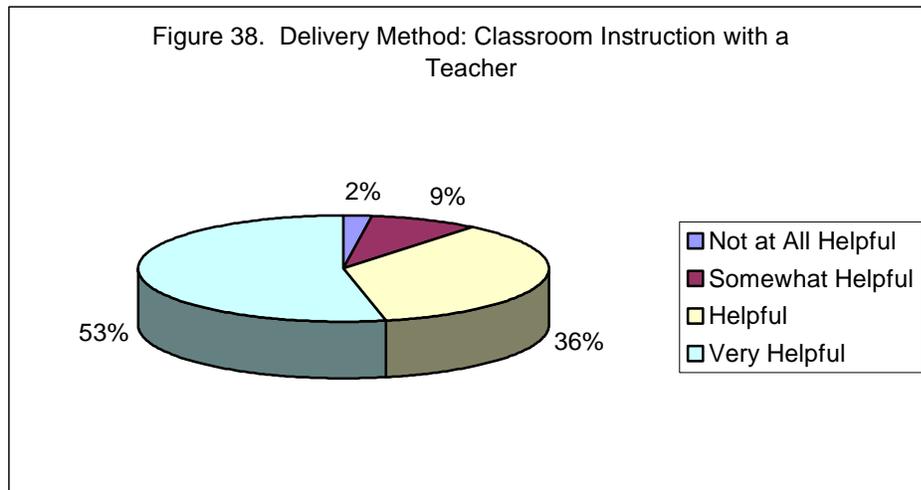
Respondents' Perceptions on Training Delivery Methods

The subjects were asked to rate the seven training delivery methods that they considered helpful to their training. This section reports data collected from closed-

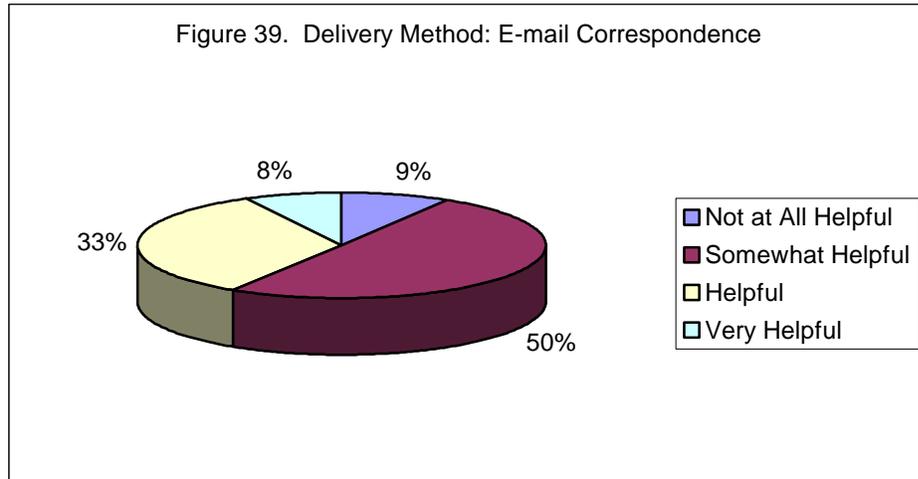
ended questions on a 1 to 4 Likert rating scale. The seven delivery methods were:

- Classroom instruction with a teacher
- E-mail correspondence
- Interactive classroom discussions
- Online learning tutorials
- Self-paced hands-on courses
- Self-paced online courses
- Videoconferences

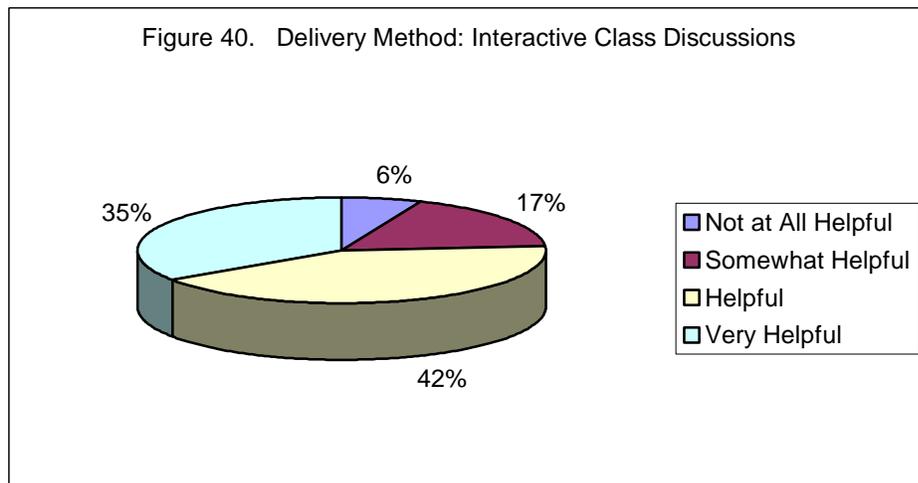
Classroom instruction with a teacher. Figure 38 shows that 36 percent of the respondents viewed having “Classroom instruction with a teacher” to be helpful and 53 percent viewed it as a very helpful delivery method for their training.



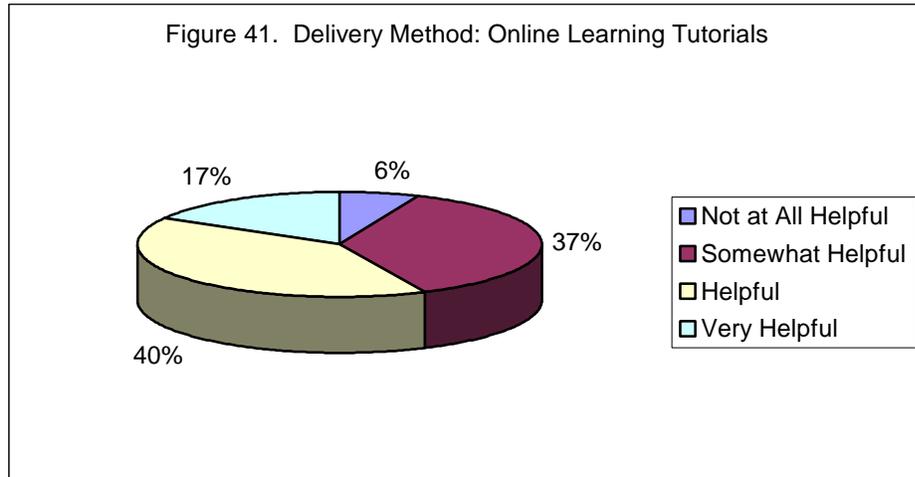
E-mail correspondence. Figure 39 indicates that 33 percent of the respondents rated “E-mail correspondence” as being helpful, but only 8 percent rated it as a very helpful delivery method for their training.



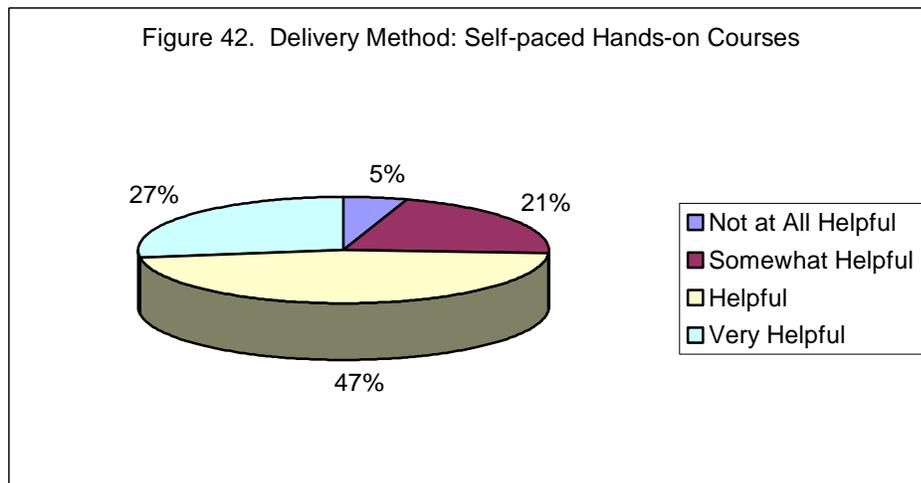
Interactive classroom discussions. In Figure 40, 42 percent of the respondents are shown that having “Interactive class discussions” was helpful and 35 percent considered it as a very helpful training delivery method for their training.



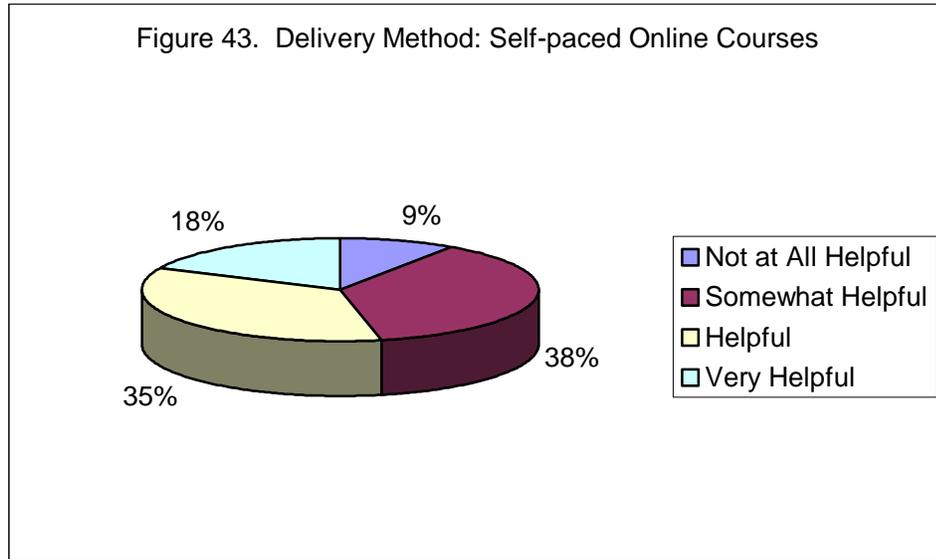
Online learning tutorials. Figure 41 reports that 40 percent of the respondents perceived “Online learning tutorials” as being helpful and 17 percent perceived it to be a very helpful delivery method.



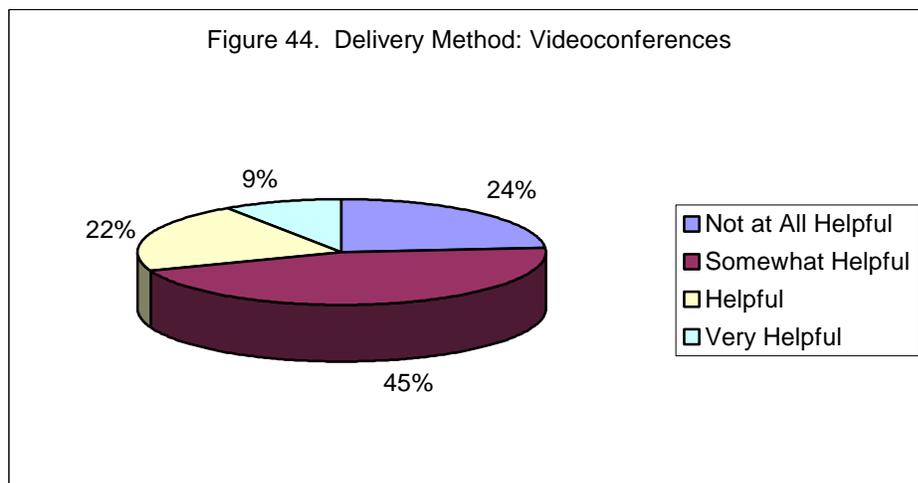
Self-paced hands-on courses. Figure 42 shows that 47 percent of the respondents viewed “Self-paced hands-on courses” as being helpful and 27 percent viewed it as a very helpful training delivery method.



Self-paced online courses. Figure 43 presents that 35 percent of the respondents considered “Self-paced online courses” to be helpful and 18 percent thought that they were very helpful delivery methods.



Videoconferences. As shown in Figure 44, 45 percent of the respondents considered “Videoconferences” helpful and 22 percent considered them to be a very helpful training delivery method, though 24 percent of them viewed this delivery method as “Not at All Helpful.”



Measures of Central Tendency

Table 65 presents the mean values of the seven delivery methods perceived by the respondents to be helpful for their training, with the highest mean on the top of the list.

On a 1 to 4 Likert rating scale, a training delivery method of “Classroom instruction with a teacher” had the highest mean of 3.40, followed by “Interactive classroom discussions” and “Self-paced hands-on courses,” with means of 3.04 and 2.96, respectively.

“Videoconferences” scored lowest as a means of training delivery method, with a mean of 2.17.

Table 65. Mean Summaries on Delivery Methods

Delivery methods	N	Mini.	Max.	Mean	Std. Deviation
Classroom instruction with a teacher	139	1	4	3.40	0.74
Interactive classroom discussions	139	1	4	3.04	0.88
Self-paced hands-on courses	139	1	4	2.96	0.83
Online learning tutorial	139	1	4	2.67	0.83
Self-paced online courses	139	1	4	2.62	0.89
E-mail correspondence	139	1	4	2.40	0.76
Videoconferences	139	1	4	2.17	0.90

Measures of central tendency by educational attainment.

Table 66 summarizes the mean values of the seven training delivery methods corresponding to the respondents' educational attainment in the three groups: high school diplomas or some college courses, Bachelor's degrees, and advanced degrees. Among the three groups of the respondents, "Classroom instruction with a teacher" scored highest, with means of 3.36, 3.46, and 3.32, respectively, as a helpful training delivery method. Among the same three groups of the respondents, "Videoconferences" earned the lowest means of 2.28, 2.13, and 2.00, respectively.

Table 66. Means and Standard Deviations by Educational Attainment

Delivery methods	High school's (N=50)		Bachelor's (N=67)		Advanced (N=22)	
	M	SD	M	SD	M	SD
Classroom instruction	3.36	0.80	3.46	0.68	3.32	0.78
E-mail correspondence	2.52	0.81	2.45	0.70	2.00	0.69
Interactive classroom discussions	3.04	0.90	3.09	0.88	2.91	0.87
Online learning tutorials	2.90	0.81	2.6	0.76	2.36	0.95
Self-paced hands-on courses	3.06	0.87	2.93	0.84	2.86	0.71
Self-paced online courses	2.76	0.96	2.52	0.80	2.59	0.96
Videoconferences	2.28	0.99	2.13	0.83	2.00	0.87

Measures of central tendency by the total years in the library field.

Table 67 presents the mean values of the seven training delivery methods corresponding to the respondents' total years working in the library field in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. Among the four groups, "Classroom instruction with a teacher" scored the highest means of 3.46, 3.22, 3.42, and 3.42, respectively. "Videoconferences" earned the lowest means of 2.07, 2.11, 2.15, and 2.22, respectively, in all four groups.

Table 67. Means and Standard Deviations by the Total Years in the Library Field

Delivery methods	1 to 5 years (N=28)		6 to 10 years (N=18)		11 to 15 years (N=26)		16 or more years (N=67)	
	M	SD	M	SD	M	SD	M	SD
Classroom instruction	3.46	0.64	3.22	0.81	3.42	0.86	3.42	0.72
E-mail correspondence	2.5	0.84	2.11	0.47	2.42	0.64	2.43	0.82
Interactive classroom discussions	3.11	0.83	2.83	0.99	2.88	0.95	3.13	0.85
Online learning tutorials	2.71	0.76	2.39	0.92	2.92	0.80	2.63	0.83
Self-paced hands-on courses	3.07	0.72	2.83	0.79	3.15	0.88	2.88	0.86
Self-paced online courses	2.82	0.86	2.39	0.78	2.77	0.91	2.54	0.91
Videoconferences	2.07	0.90	2.11	0.90	2.15	1.01	2.22	0.87

Measures of central tendency by the total years at current positions.

Table 68 reports the mean values of the seven training delivery methods corresponding to the respondents' total years working at their current positions in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. For the four groups of the respondents, "Classroom instruction with a teacher" had the highest means of 3.43, 3.38, 3.48, and 3.30, respectively, as a helpful training delivery method. "Videoconferences" was rated with the lowest means of 2.09, 2.19, 2.43, and 2.11, respectively, in all four groups.

Table 68. Means and Standard Deviations by the Total Years at Current Positions

Delivery methods	1 to 5 years (N=68)		6 to 10 years (N=21)		11 to 15 years (N=23)		16 or more years (N=27)	
	M	SD	M	SD	M	SD	M	SD
Classroom instruction	3.43	0.68	3.38	0.81	3.48	0.67	3.30	0.91
E-mail correspondence	2.34	0.75	2.57	0.68	2.65	0.65	2.22	0.89
Interactive classroom discussions	3.13	0.85	2.81	0.98	3.04	0.93	3.00	0.88
Online learning tutorials	2.66	0.89	2.62	0.74	2.96	0.71	2.48	0.80
Self-paced hands-on courses	2.96	0.95	2.95	0.50	3.26	0.75	2.74	0.71
Self-paced online courses	2.57	0.97	2.71	0.56	3.04	0.83	2.30	0.82
Videoconferences	2.09	0.86	2.19	0.87	2.43	0.95	2.11	0.97

Measures of central tendency by work units.

Table 69 shows the mean values of the seven training delivery methods corresponding to the respondents' work units in the four groups: Acquisitions, Online cataloging, Collection/user services, and Access services. From the four groups of the respondents, "Classroom instruction with a teacher" had the highest means of 3.60, 3.40, 3.38, and 3.31, respectively, as a helpful training delivery method. "Videoconferences" was rated the lowest, with means of 2.28, 2.13, 2.04, and 2.21, respectively, in all four groups. .

Table 69. Means and Standard Deviations by Work Units

Delivery methods	Acquisitions (N=25)		Cataloging (N=40)		Collections (N=26)		Access (N=28)	
	M	SD	M	SD	M	SD	M	SD
Classroom instruction	3.60	0.71	3.40	0.67	3.38	0.75	3.31	0.80
E-mail correspondence	2.44	0.92	2.47	0.85	2.46	0.71	2.29	0.62
Interactive classroom discussions	3.12	0.83	3.17	0.78	3.08	0.85	2.88	1.00
Online learning tutorials	2.60	0.82	2.75	0.87	2.65	0.69	2.65	0.89
Self-paced hands-on courses	2.80	0.91	3.05	0.88	2.88	0.65	3.02	0.84
Self-paced online courses	2.48	0.82	2.62	0.98	2.69	0.74	2.65	0.93
Videoconferences	2.28	0.98	2.13	0.94	2.04	0.72	2.21	0.92

Measures of central tendency by level of job responsibilities.

Table 70 provides the mean values of the seven training delivery methods corresponding to the respondents' level of job responsibilities in the three groups: those who had non-supervisory duties, those who supervised student employees only, and those who supervised both student employees and staff. From the respondents in all three groups, "Classroom instruction with a teacher" earned the highest means of 3.42, 3.44, and 3.30, respectively, as a helpful training delivery method. "Videoconferences" was rated the lowest, with means of 2.15, 2.14, and 2.26, respectively, in all three groups.

Table 70. Means and Standard Deviations by Level of Job Responsibilities

Delivery methods	Non-supervision (N=53)		Supervising students (N=59)		Supervising students and staff (N=27)	
	M	SD	M	SD	M	SD
Classroom instruction	3.42	0.75	3.44	0.73	3.30	0.78
E-mail correspondence	2.36	0.83	2.42	0.70	2.44	0.75
Interactive classroom discussions	3.02	0.87	3.05	0.92	3.07	0.87
Online learning tutorials	2.58	0.89	2.64	0.83	2.89	0.70
Self-paced hands-on courses	9.26	0.88	2.92	0.86	3.07	0.68
Self-paced online courses	2.53	0.93	2.63	0.91	2.78	0.75
Videoconferences	2.15	0.97	2.14	0.92	2.26	0.71

Measures of central tendency by rank.

Table 71 outlines the mean values of the seven training delivery methods corresponding to the respondents' rank in the three groups: Library Assistant I, Library Assistant II, and Library Assistant III. For the respondents in the three groups, "Classroom instruction with a teacher" had the highest means of 3.52, 3.45, and 3.28, respectively, as a helpful delivery method for their training. Unsurprisingly, "Videoconferences" received the lowest means scores of 2.33, 2.14, and 2.11, respectively, in all three groups.

Table 71. Means and Standard Deviations by Rank

Delivery methods	Library Assistant I (N=27)		Library Assistant II (N=65)		Library Assistant III (N=47)	
	M	SD	M	SD	M	SD
Classroom instruction	3.52	0.94	3.45	0.79	3.28	0.71
E-mail correspondence	2.41	0.69	2.37	0.86	2.45	0.65
Interactive classroom discussions	3.26	0.81	2.95	0.98	3.04	0.78
Online learning tutorials	2.56	0.80	2.66	0.85	2.74	0.82
Self-paced hands-on courses	2.85	0.91	3.00	0.85	2.98	0.77
Self-paced online courses	2.44	0.93	2.57	0.92	2.79	0.81
Videoconferences	2.33	1.04	2.14	0.98	2.11	0.67

Measures of central tendency by age range.

Table 72 presents the mean values of the seven delivery methods corresponding to the respondents' age range in the four groups: 35 or younger, 36 to 45 years old, 46 to 55 years old, and 56 or older. Among the respondents in all four groups, "Classroom instruction with a teacher" was rated with the highest means of 3.46, 3.40, 3.39, and 3.36, respectively. "Videoconferences" came in with the lowest means of 1.96, 2.32, 2.16, and 2.27, respectively, in all four groups.

Table 72. Means and Standard Deviations by Age Range

Delivery methods	35 or younger (N=28)		36 to 45 (N=25)		46 to 55 (N=64)		56 or older (N=22)	
	M	SD	M	SD	M	SD	M	SD
Classroom instruction	3.46	0.58	3.40	0.82	3.39	0.79	3.36	0.73
E-mail correspondence	2.32	0.72	2.40	0.76	2.44	0.75	2.41	0.85
Interactive classroom discussions	3.18	0.86	2.88	0.88	3.11	0.89	2.86	0.89
Online learning tutorials	2.54	0.74	2.88	0.88	2.73	0.82	2.41	0.85
Self-paced hands-on courses	3.04	0.79	3.00	0.71	2.98	0.90	2.77	0.81
Self-paced online courses	2.64	0.87	2.80	0.87	2.63	0.90	2.36	0.90
Videoconferences	1.96	0.79	2.32	1.11	2.16	0.82	2.27	0.99

One-way Multivariate Analysis of Variance (MANOVA) Tests

This section reports the results from one-way multivariate analysis of variance (MANOVA) tests to discover if there were statistically significant differences in the respondents' perceptions on helpful delivery methods for their training as a function of the respondents' general characteristics, i.e., educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. When there were no statistically significant differences from the MANOVA tests, no follow-up ANOVA tests and Scheffe post hoc contrasts were conducted. Only test results from the MANOVA were reported. Table 73 summarizes the Wilks' Lambda test results of MANOVA on training delivery methods according to the respondents' general characteristics.

Table 73. Lambda Test Results of MANOVA on Training Delivery Methods

Independent Variables	Value	F	Hypothesis df	Error df	Sig.
Educational attainment	0.865	1.402	14	260	0.152
Total years in the library field	0.890	0.730	21	371	0.802
Total years at current positions	0.870	0.881	21	371	0.616
Work units	0.897	0.685	21	371	0.849
Level of job responsibilities	0.959	0.389	14	260	0.997
Rank	0.914	0.858	14	260	0.605
Age range	0.876	0.834	21	371	0.677

Test results of null hypotheses.

Ho 5-a. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their educational attainment.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(14, 260) = .865, p > .05$) did not present a statistically significant difference in the respondents' perceptions on helpfulness of delivery methods for their training as a function of their educational attainment; clearly, the respondents' perceptions on helpfulness of delivery methods were not influenced by their educational attainment. As a result, the null hypothesis *Ho 5-a* was accepted.

Ho 5-b. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working in the library field.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(21, 371) = .890, p > .05$) did not show a statistically significant difference in the respondents' perceptions on helpful delivery methods as a function of their total years working in the library field; thus, the respondents' perceptions were not influenced by their total years working in the library field. The null hypothesis *Ho 5-b* was accepted.

Ho 5-c. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their total years working at their current positions.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(21, 371) = .870, p > .05$) did not provide a statistically significant difference in the respondents' perceptions

on helpful delivery methods as a function of their total years working at their current positions. The respondents' perceptions were not influenced by their total years working at their current positions. The null hypothesis *Ho 5-c* was accepted.

Ho 5-d. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their work units.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(21, 371) = .897, p > .05$) did not report a statistically significant difference in the respondents' perceptions on helpfulness of delivery methods for their training as a function of their work units. The nature of library work of the respondents did not influence their perceptions on training delivery methods. The null hypothesis *Ho 5-d* was accepted as a result of this finding.

Ho 5-e. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their level of job responsibilities.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(14, 260) = .959, p > .05$) did not show a statistically significant difference in the respondents' perceptions on helpful delivery methods as a function of their level of job responsibilities. Therefore, the respondents' perceptions on helpfulness of delivery methods were not influenced by this variable. Thus, the null hypothesis *Ho 5-e* was accepted.

Ho 5-f. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their rank.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(14,260) = .914, p > .05$)

did not provide a statistically significant difference in the respondents' perceptions on helpful delivery methods as a function of their rank. The respondents' perceptions on helpfulness of delivery methods were not influenced by their rank. The null hypothesis *Ho 5-f* was accepted.

Ho 5-g. There are no statistically significant differences in the respondents' perceptions of helpful delivery methods as a function of their age range.

Finding:

One-way MANOVA of Lambda test results (Lambda (21, 371) = .876, $p > .05$) did not report a statistically significant difference in the respondents' perceptions on helpful delivery methods as a function of their age range, demonstrating that age did not influence the respondents' perceptions on helpfulness of training delivery methods. The null hypothesis *Ho 5-g* was accepted.

Table 74 presents a summary of the null hypotheses on helpful training delivery methods corresponding to the respondents' general characteristics. At the $\alpha = .05$ level, there were no statistically significant differences in the respondents' perceptions of helpful training delivery methods as a function of their educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. The null hypotheses *Ho 5-a*, *Ho 5-b*, *Ho 5-c*, *Ho 5-d*, *Ho 5-e*, *Ho 5-f*, and *Ho 5-g* were accepted.

Table 74. Null Hypothesis Summaries on Training Delivery Methods

Independent variables	Multivariate tests				Reject/accept hypothesis?
	Value	F	Hypothesis df	Error df	Sig. (Alpha = .05) R/A
Education attainment	0.87	1.40	14	260	0.15 A
Total years in the library field	0.89	0.73	21	371	0.80 A
Total years in current positions	0.87	0.88	21	371	0.62 A
Work units	0.88	0.69	21	371	0.85 A
Responsibilities	0.96	0.39	14	260	0.98 A
Rank	0.91	0.86	14	260	0.61 A
Age range	0.88	0.83	21	371	0.68 A

Research Question 5 Summary

Respondents’ Perceptions on Training Delivery Methods

Among the seven training delivery methods in closed-ended choices, 53 percent of the respondents rated “Classroom instruction with a teacher” as a “Very Helpful” training delivery method. This delivery method was followed by “Interactive classroom discussions” and “Self-paced hands-on courses,” as 35 percent and 27 percent of the respondents, respectively, viewed them as “Very Important.” .

Measures of Central Tendency

On a 1 to 4 Likert rating scale, “Classroom instruction with a teacher” was rated highest, with a mean of 3.40 as a helpful delivery method, followed by “Interactive classroom discussions” (M=3.04) and “Self-paced hands-on courses” (M=2.96).

One-way Multivariate Analysis of Variance (MANOVA) Tests

A series of one-way multivariate analysis of variance (MANOVA) test results

indicated that the respondents' perceptions of helpful training delivery methods were not influenced by their general characteristics, i.e., educational attainment, library work experience, work units, level of job responsibilities, rank, or age range. At the $\alpha = .05$ level, there were no statistically significant differences in the respondents' perceptions of helpful training delivery methods as a function of their general characteristics.

Consequently, the null hypotheses *Ho 5-a*, *Ho 5-b*, *Ho 5-c*, *Ho 5-d*, *Ho 5-e*, *Ho 5-f*, and *Ho 5-g* were accepted.

Research Question 6

What internal and external training sources are perceived as being helpful by support staff for their training?

Null Hypotheses

Ho 6-a. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their educational attainment.

Ho 6-b. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working in the library field.

Ho 6-c. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working at their current positions.

Ho 6-d. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their work units.

Ho 6-e. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their level of job responsibilities.

Ho 6-f. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their rank.

Ho 6-g. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their age range.

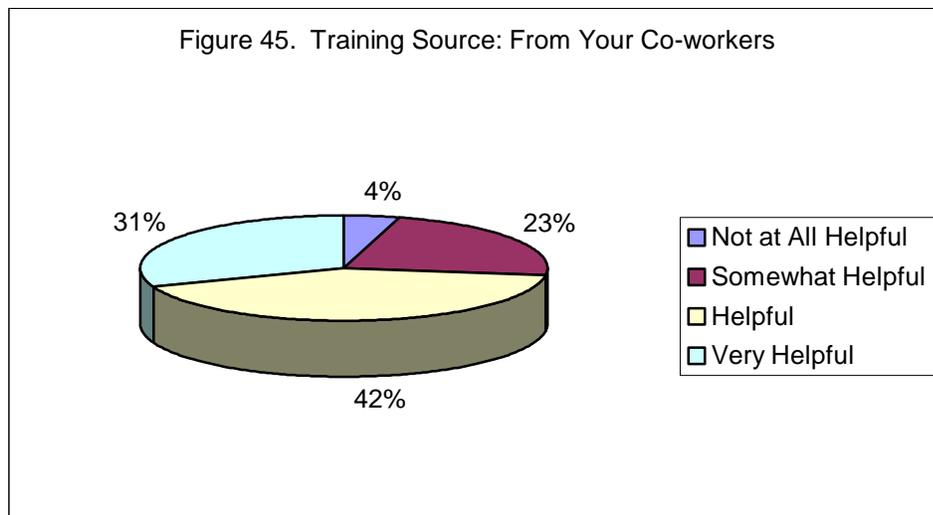
Respondents' Perceptions on Helpful Training Sources

The subjects were asked to rate the helpfulness of the eight training sources that they considered beneficial to their training on a 1 to 4 Likert rating scale. This section

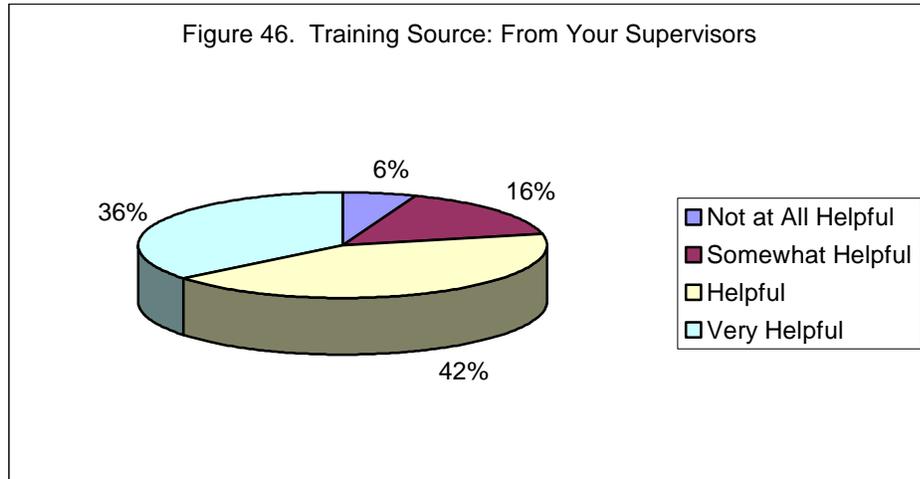
reports the data collected from closed-ended questions regarding the helpfulness of training sources. The eight training sources were:

- From your co-workers
- From your supervisors
- From in-house trainers
- From nearby library schools
- From campus workshop
- From state conferences
- From regional networks
- From library vendors

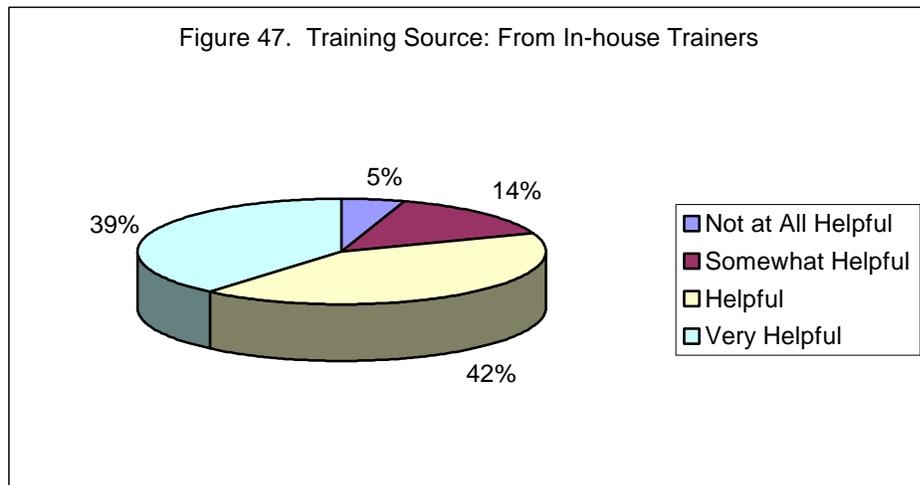
From your co-workers. Figure 45 shows that 42 percent of the respondents considered co-workers helpful, and 31 percent considered them to be a very helpful training source.



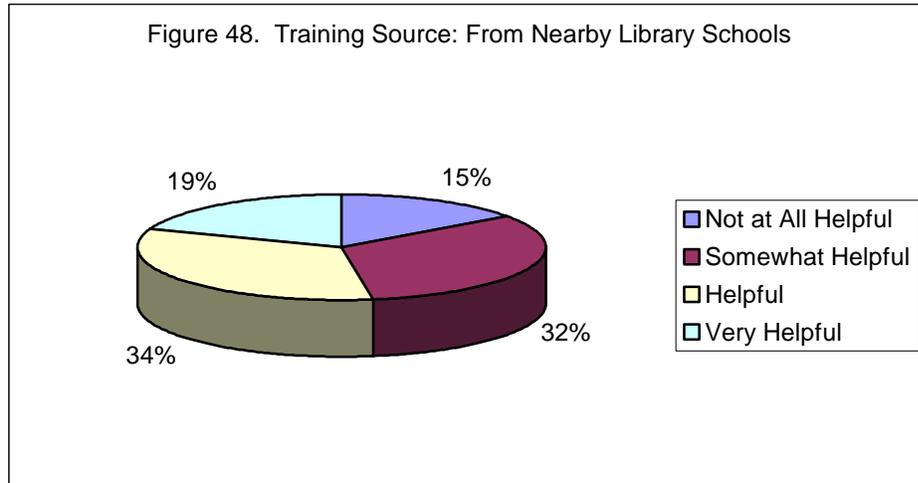
From your supervisors. Figure 46 indicates that 42 percent of the respondents regarded their supervisors as being helpful and 36 percent believed them to be a very helpful training source.



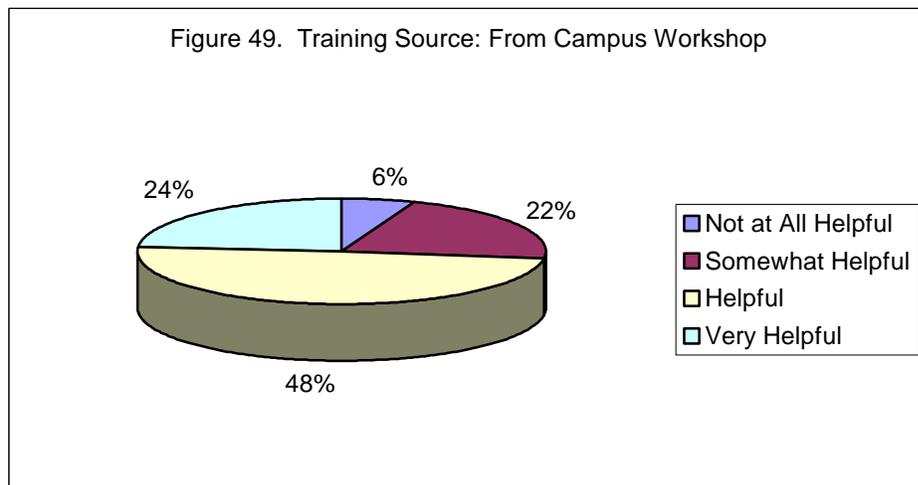
From in-house trainers. Figure 47 reports that 42 percent of the respondents perceived in-house trainers as being helpful and 39 percent perceived them to be very helpful.



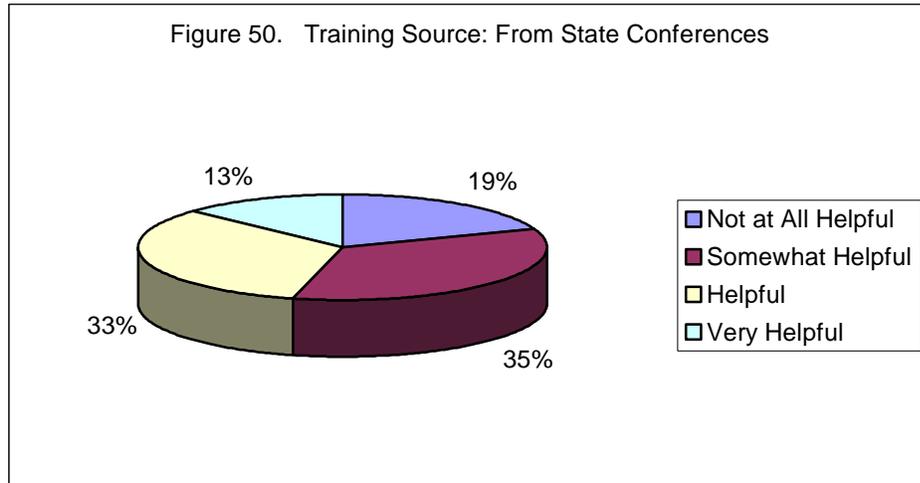
From nearby library schools. In Figure 48, 34 percent of the respondents are shown to believe that nearby library schools were helpful and 19 percent viewed them as a very helpful training source.



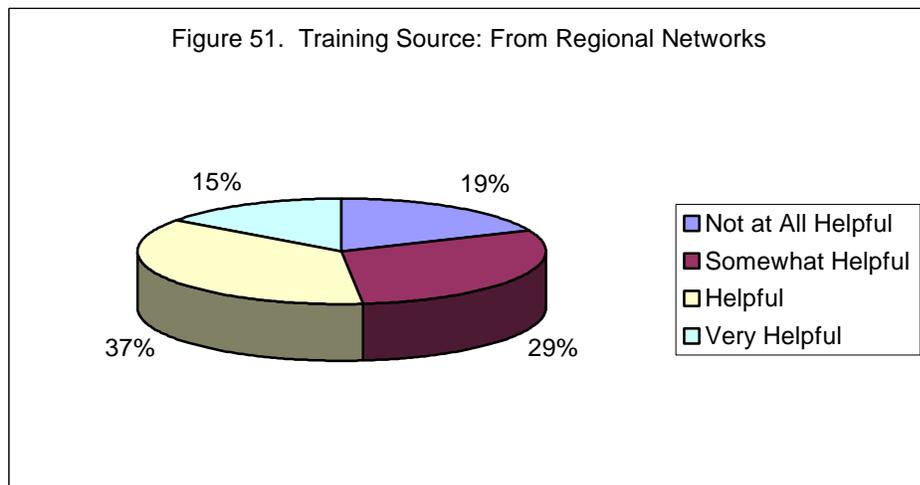
From campus workshop. Figure 49 clearly shows that 48 percent of the respondents considered campus workshop to be helpful and 24 percent considered them very helpful.



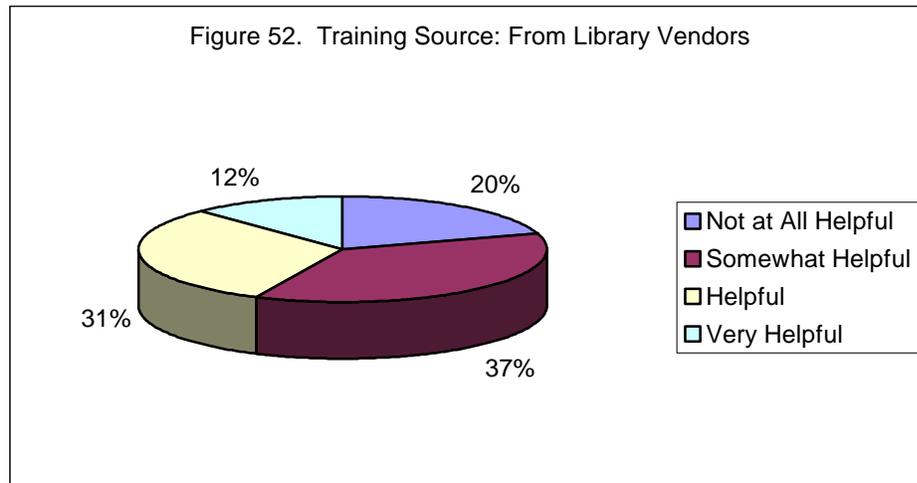
From state conferences. In Figure 50, 33 percent of the respondents believed that state conferences were helpful and 13 percent deemed them a very helpful training source.



From regional networks. Figure 51 indicates that 37 percent of the respondents perceived regional networks as being helpful and 15 percent perceived them to be a very helpful training source.



From library vendors. Figure 52 illustrates that 31 percent of the respondents considered library vendors to be helpful and 12 percent believed them as a very helpful training source.



Measures of Central Tendency

Table 75 presents the mean values of the eight training sources rated by the respondents, with the highest mean at the top of the list. “From in-house trainers ” was rated as the best training source, with the highest mean of 3.14. That result was followed by “From your supervisors” (M=3.09) and “From your co-workers” (M=2.99) as helpful training sources. “Library vendors” scored the lowest, with a mean of 2.35 on a 1 to 4 Likert rating scale.

Table 75. Mean Summaries of Training Sources

Training sources	N	Mini.	Max.	Mean	Std. Deviation
From in-house trainers	139	1	4	3.14	0.85
From your supervisors	139	1	4	3.09	0.86
From your co-workers	139	1	4	2.99	0.85
From campus workshop	139	1	4	2.91	0.82
From nearby library schools	139	1	4	2.57	0.97
From regional networks	139	1	4	2.48	0.97
From state conferences	139	1	4	2.40	0.95
From library vendors	139	1	4	2.35	0.94

Measures of central tendency by educational attainment.

Table 76 summarizes the mean values of the eight training sources corresponding to the respondent’s educational attainment in the three groups: high school diplomas or some college courses, Bachelor’s degrees, and advanced degrees. Among the respondents who had high school diplomas or some college courses and who had advanced degrees, training received from supervisors had the highest means of 3.14 and 3.09, respectively. For the respondents with Bachelor’s degrees, in-house trainers received the highest mean of 3.27. In all three groups, training from library vendors was rated with the lowest means of 2.32, 2.40, and 2.27, respectively.

Table 76. Means and Standard Deviations by Educational Attainment

Training sources	High school's (N=50)		Bachelor's degrees(N=67)		Advanced degrees(N=22)	
	M	SD	M	SD	M	SD
From your co-workers	2.98	0.87	3.04	0.81	2.86	0.94
From your supervisors	3.14	0.88	3.04	0.86	3.09	0.87
From in-house trainers	3.08	0.83	3.27	0.85	2.91	0.87
From nearby library schools	2.70	0.91	2.52	1.02	2.41	0.96
From campus workshop	2.86	0.83	2.91	0.85	3.00	0.76
From state conferences	2.36	0.90	2.43	0.99	2.36	0.95
From regional networks	2.46	1.01	2.49	0.93	2.50	1.01
From library vendors	2.32	1.02	2.40	0.89	2.27	0.94

Measures of central tendency by the total year in the library field.

Table 77 describes the mean values of the eight training sources corresponding to the respondents' total years working in the library field in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. Among the respondents who had worked in the library field between 1 to 5 years and between 11 to 15 years, receiving training from supervisors came in with the highest means of 3.43 and 3.12, respectively. For those who had worked in the library field between 6 to 10 years and 16 or more years, "from in-house trainers" had the highest means of 3.00 and 3.16, respectively. All four groups rated "from library vendors" as the lowest, with means of 2.36, 2.22, 2.27, and 2.42, respectively.

Table 77. Means and Standard deviations by Total Years in the Library Field

Training sources	1 to 5 years (N=28)		6 to 10 years (N=18)		11 to 15 years (N=26)		16 or more years (N=67)	
	M	SD	M	SD	M	SD	M	SD
From your co-workers	3.00	0.86	2.89	0.83	2.88	0.95	3.06	0.81
From your supervisors	3.43	0.74	2.89	0.96	3.12	0.86	2.99	0.86
From in-house trainers	3.32	0.77	3.00	0.97	3.00	0.85	3.16	0.85
From nearby library schools	2.86	0.89	2.50	0.99	2.62	1.02	2.45	0.97
From campus workshop	2.89	0.74	2.89	0.83	2.96	0.82	2.90	0.87
From state conferences	2.39	0.96	2.22	0.88	2.42	1.03	2.43	0.94
From regional networks	2.61	1.07	2.33	0.91	2.31	1.01	2.54	0.93
From library vendors	2.36	0.87	2.22	1.00	2.27	1.04	2.42	0.92

Measures of central tendency by the total years at current positions.

Table 78 presents the mean values of the eight training sources corresponding to the respondents' total years working at their current positions in the four groups: between 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 or more years. Among the respondents who were at their current positions between 1 to 5 years and between 11 to 15 years, training "from in-house trainers" was rated as being most helpful, with the highest means of 3.13 and 3.43, respectively. With the respondents who had worked between 6 to 10 years and 16 or more years at their current positions, training "from your co-workers" had the highest means of 3.29 and 3.04, respectively.

Table 78. Means and Standard Deviations by Total Years at Current Positions

Training sources	1 to 5 years (N=68)		6 to 10 years (N=21)		11 to 15 years (N=23)		16 or more years (N=27)	
	M	SD	M	SD	M	SD	M	SD
From your co-workers	2.82	0.85	3.29	0.72	3.17	0.78	3.04	0.94
From your supervisors	3.12	0.89	3.19	0.87	3.22	0.80	2.81	0.83
From in-house trainers	3.13	0.88	3.14	0.91	3.43	0.59	2.93	0.87
From nearby library schools	2.68	0.91	2.38	1.07	2.96	0.88	2.11	0.97
From campus workshop	2.88	0.80	3.19	0.98	3.04	0.71	2.63	0.79
From state conferences	2.43	1.00	2.48	0.93	2.52	0.90	2.15	0.86
From regional networks	2.54	0.95	2.48	1.08	2.48	0.99	2.33	0.92
From library vendors	2.34	0.86	2.67	1.24	2.45	0.95	2.04	0.81

Measures of central tendency by work units.

Table 79 shows the mean values of the eight training sources corresponding to the respondents' work units in the four groups: Acquisitions, Online cataloging, Collections/user services, and Access services. To the respondents from Acquisitions, both co-workers and supervisors were rated with same high means of 3.16 as being helpful training sources. The respondents in Online cataloging rated training from supervisors highest, with a mean of 3.22. The respondents from Collection/user services and Access services reported in-house trainers as being a helpful training source, with the highest means of 3.12 and 3.15, respectively.

Table 79. Means and Standard Deviations by Work Units

Training sources	Acquisitions (N=25)		Cataloging (N=40)		Collections (N=26)		Access (N=48)	
	M	SD	M	SD	M	SD	M	SD
From your co-workers	3.16	0.62	2.90	0.81	3.08	0.94	2.94	0.93
From your supervisors	3.16	0.85	3.22	0.83	3.04	0.96	2.96	0.85
From in-house trainers	3.08	0.86	3.20	0.88	3.12	0.82	3.15	0.85
From nearby library schools	2.48	1.05	2.58	0.96	2.65	0.85	2.56	0.10
From campus workshop	2.84	0.85	2.97	0.77	3.04	0.66	2.81	0.94
From state conferences	2.32	1.03	2.38	0.87	2.81	0.90	2.23	0.95
From regional networks	2.40	1.12	2.50	0.88	2.92	0.89	2.27	0.94
From library vendors	2.60	1.00	2.28	0.88	2.65	0.94	2.12	0.91

Measures of central tendency by level of job responsibilities.

Table 80 reports the mean values of the eight training sources corresponding to the respondents' level of job responsibilities in the three groups: those who were non-supervisors; those who supervised student employees only, and those who supervised both student employees and staff. To the respondents with non-supervisory duties, training from supervisors had the highest mean of 3.21. From the respondents who supervised student employees only, "From in-house trainers" was rated with the highest mean of 3.17. Finally, for those who supervised both student employees and staff, campus workshop were the most helpful training source, receiving with the highest mean of 3.07.

Table 80. Means and Standard Deviations by Level of Job Responsibilities

Training sources	Non-supervision (N=53)		Supervising students (N=59)		Supervising students and staff (N=27)	
	M	SD	M	SD	M	SD
From your co-workers	3.02	0.69	3.02	0.92	2.89	0.97
From your supervisors	3.21	0.74	3.10	0.90	2.81	0.96
From in-house trainers	3.17	0.78	3.17	0.81	3.04	1.06
From nearby library schools	2.70	0.95	2.61	1.00	2.22	0.89
From campus workshop	2.81	0.90	2.92	0.82	3.07	0.68
From state conferences	2.42	0.99	2.46	0.95	2.22	0.85
From regional networks	2.43	0.97	2.56	0.99	2.41	0.93
From library vendors	2.25	0.94	2.49	0.94	2.26	0.94

Measures of central tendency by rank.

Table 81 reports the mean values of the eight training sources corresponding to the respondent's rank in the three groups: Library Assistant I, Library Assistant II, and Library Assistant III. In-house trainers earned the highest means of 3.30 and 3.13, respectively, from the respondents who were at the ranks of Library Assistant I and Library Assistant III. Respondents with a rank of Library Assistant II, the highest mean of 3.17 went to training from supervisors.

Table 81. Means and Standard Deviations by Rank

Training sources	Library Assistant I (N=27)		Library Assistant II (N=65)		Library Assistant III (N=47)	
	M	SD	M	SD	M	SD
From your co-workers	2.78	0.93	3.14	0.77	2.91	0.88
From your supervisors	3.15	0.86	3.17	0.62	2.94	0.92
From in-house trainers	3.30	0.78	3.09	0.81	3.13	0.95
From nearby library schools	2.67	0.96	2.52	1.02	2.57	0.93
From campus workshop	2.85	0.82	2.88	0.89	2.98	0.74
From state conferences	2.41	0.97	2.34	0.97	2.47	0.91
From regional networks	2.44	1.01	2.48	1.00	2.51	0.91
From library vendors	2.44	0.89	2.40	0.93	2.23	0.98

Measures of central tendency by age range.

Table 82 summarizes the mean values of the eight training sources corresponding to the respondents' age range in the four groups: 35 or younger, 36 to 45 years old, 46 to 55 years old, and 56 or older. Among the respondents who were 35 or younger, 46 to 55 years old, and 56 or older, in-house trainers had the highest means of 3.32, 3.17, and 3.23, respectively. The respondents who were in the age range of 36 to 45 years old preferred training "from campus workshop," giving the highest mean of 3.08.

Table 82. Means and Standard Deviations by Age Range

Training sources	35 or younger (N=28)		36 to 45 (N=25)		46 to 55 (N=64)		56 or older (N=22)	
	M	SD	M	SD	M	SD	M	SD
From your co-workers	2.93	0.90	2.72	0.79	3.14	0.85	2.95	0.79
From your supervisors	3.21	0.92	2.80	0.87	3.14	0.83	3.09	0.87
From in-house trainers	3.32	0.82	2.80	0.87	3.17	0.87	3.23	0.75
From nearby library schools	2.75	1.01	2.68	0.85	2.42	1.02	2.64	0.90
From campus workshop	2.89	0.83	3.08	0.64	2.87	0.79	2.82	1.10
From state conferences	2.57	1.07	2.32	0.90	2.31	0.89	2.5	1.01
From regional networks	2.71	1.15	2.44	0.82	2.44	0.92	2.36	1.00
From library vendors	2.29	0.94	2.48	0.92	2.31	0.91	2.41	1.10

One-way Multivariate Analysis of Variance (MANOVA) Tests

This section reports the results from a series of MANOVA tests that examined if there were statistically significant differences in the respondents' perceptions on helpful training sources as a function of their general characteristics, i.e., educational attainment, library work experience, work units, level of job responsibilities, rank, and age range.

Table 83 provides a summary of the Wilks' Lambda test results of MANOVA on training sources based on the respondents general characteristics. When statistically significant differences were found, (for example, the respondents' total years working at their current positions), a series of analysis of variance (ANOVA) tests were conducted to identify values of significance. Follow-up Scheffe post hoc contrasts were performed to determine where statistically significant differences existed.

Table 83. Lambda Test Results of MANOVA on Training Sources

Independent Variables	Value	F	Hypothesis df	Error df	Sig.
Educational attainment	0.892	0.953	16	258	0.509
Total years in the library field	0.817	1.115	24	372	0.323
Total years at current positions	0.755	1.580	24	372	0.042
Work units	0.820	1.095	24	372	0.346
Level of job responsibilities	0.849	1.380	16	258	0.151
Rank	0.886	1.004	16	258	0.452
Age range	0.796	1.269	24	372	0.181

Test results of null hypotheses.

Ho 6-a. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their educational attainment.

Finding:

One-way MANOVA from the Lambda test results ($\text{Lambda}(16, 258) = .892, p > .05$) did not present a statistically significant difference, so the respondents' perceptions on helpful training sources were not influenced by their educational attainment. As a result, the null hypothesis *Ho 6-a* was accepted.

Ho 6-b. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working in the library field.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(24, 372) = .817, p > .05$) did not show a statistically significant difference; therefore, the respondents' perceptions were not influenced by their total years working in the library field. Consequently, the null hypothesis *Ho 6-b* was accepted.

Ho 6-c. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their total years working at their current positions.

Finding:

One-way MANOVA from the Lambda test results ($\text{Lambda}(24, 372) = .755, p < .05$) demonstrated that there was a statistically significant difference in the respondents' perceptions on helpful training sources as a function of their total years working at their current positions. The significant value of the MANOVA test was .047 at the $\alpha = .05$ level, smaller than .05. Therefore, the null hypothesis *Ho 6-c* was rejected.

As a result of the MANOVA from the Lambda test, follow-up ANOVA tests

were conducted that identified the values of significance of each training source. In Table 84, the significant value on “From your nearby library schools” was .009 at the alpha = .05 level. The significant values of all eight training sources are also listed under the column of “Sig.” in Table 84.

Table 84. Tests of Between-subjects Effects by Years at Current Positions

Dependent variables	Type III of squares	df	Mean square	F	Sig.
a. From your co-workers	4.56	3	1.52	2.17	0.094
b. From your supervisors	2.68	3	0.89	1.20	0.311
c. From in-house trainers	3.24	3	1.08	1.52	0.212
d. From nearby library schools	10.64	3	3.55	4.01	0.009
e. From campus workshop	4.23	3	1.41	2.13	0.100
f. From state conferences	2.22	3	0.74	0.83	0.482
g. From regional networks	0.86	3	0.29	0.30	0.823
h. From library vendors	5.14	3	1.71	1.98	0.120

Follow-up Scheffe post hoc tests were performed to determine how the respondents’ perceptions on the training source “From nearby library schools” differed statistically among the four groups. The summaries of the Scheffe contrasts are listed in Table 85. The statistically significant difference existed between the respondents who worked at their current positions between 10 to 15 years and those who worked 16 or more years at their current positions.

Table 85. Scheffe Contrasts by the Total Years at Current Positions

Training sources	1 to 5 years (A)		6 to 10 years (B)		11 to 15 years (C)		16 or more years (D)		Scheffe contrasts
	M	SD	M	SD	M	SD	M	SD	p < .05
From your co-workers	2.82	0.85	3.29	0.72	3.17	0.78	3.04	0.94	n/a
From your supervisors	3.12	0.89	3.19	0.87	3.22	0.80	2.81	0.83	n/a
From in-house trainers	3.13	0.88	3.14	0.91	3.43	0.59	2.93	0.87	n/a
From nearby library schools	2.68	0.91	2.38	1.07	2.96	0.88	2.11	0.97	C > D
From campus workshop	2.88	0.80	3.19	0.98	3.04	0.71	2.63	0.79	n/a
From state conferences	2.43	1.00	2.48	0.93	2.52	0.90	2.15	0.86	n/a
From regional networks	2.54	0.95	2.48	1.71	2.48	0.99	2.33	0.92	n/a
From library vendors	2.34	0.86	2.67	1.24	2.48	0.95	2.04	0.81	n/a

A = The respondents who worked at their current positions between 1 to 5 years

B = The respondents who worked at their current positions between 6 to 10 years

C = The respondents who worked at their current positions between 11 to 15 years

D = The respondents who worked at their current positions between 16 or more years

From nearby library schools. Follow-up Scheffe tests proved that there was a statistically significant difference in the respondents' perceptions on helpful training sources as a function of their total years working at their current positions. At the alpha = .05 level, the statistically significant difference existed between the respondents who had worked between 11 to 15 years at their current positions and the respondents who were at their current positions for 16 or more years. The respondents who were at their current positions for between 11 to 15 years considered nearby library schools to be a more helpful training source than those who worked at their current positions 16 or more years.

Ho 6-d. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their work units.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(24, 372) = .820, p > .05$) did not present a statistically significant difference in the respondents' perceptions on helpful training sources as a function of their work units, so the nature of the respondents' work in libraries did not influence their perceptions on the helpfulness of training sources. The null hypothesis *Ho 6-d* was accepted as a result of this finding.

Ho 6-e. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their level of job responsibilities.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(16, 258) = .849, p > .05$) did not show a statistically significant difference in the respondents' perceptions of helpful training sources as a function of their level of job responsibilities; thus, the respondents' level of job responsibilities did not influence their perceptions. The null hypothesis *Ho 6-e* was accepted.

Ho 6-f. There are no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their rank.

Finding:

One-way MANOVA of the Lambda test results ($\text{Lambda}(16, 258) = .886, p > .05$) did not demonstrate a statistically significant difference in the respondents' perceptions of helpful training sources as a function of their rank. Therefore, the respondents' rank at work did not influence their perceptions on the helpfulness of training sources. The null hypothesis *Ho 6-f* was accepted.

Ho 6-g. There are no statistically significant differences in the respondents'

perceptions of helpful training sources as a function of their age range.

Finding:

One-way MANOVA from the Lambda test results ($\text{Lambda}(24, 371) = .796, p > .05$) did not report a statistically significant difference in the respondents' perceptions of helpful training sources as a function of their age range, so the respondents' age range did not influence their perceptions on the helpfulness of training sources. The null hypothesis *Ho 6-g* was accepted.

Table 86 presents a summary of the null hypotheses on training sources corresponding to the respondents' general characteristics. At the $\alpha = .5$ level, there were no statistically significant differences in the respondents' perceptions of helpful training sources as a function of their educational attainment, total years working in the library field, work units, level of job responsibilities, rank, or age range. The null hypotheses *Ho 6-a*, *Ho 6-b*, *Ho 6-d*, *Ho 6-e*, *Ho 6-f*, and *Ho 6-g* were accepted.

The null hypothesis *Ho 6-c* was rejected at the $\alpha = .05$ level. The respondents' total years working at their current positions influenced their perceptions of helpful training sources.

Table 86. Null Hypothesis Summaries on Helpful Training Sources

Independent variables	Multivariate tests				Reject/accept hypothesis? R/A	
	Value	F	Hypothesis df	Error df	Sig. (Alpha = .05)	
Educational attainment	0.89	0.95	16	258	0.51	A
Total years in the library field	0.82	1.12	24	372	0.32	A
Total years in current positions	0.76	1.58	24	372	0.04	R
Work units	0.08	1.01	24	372	0.35	A
Level of job responsibilities	0.84	1.38	16	258	0.15	A
Rank	0.89	1.00	16	258	0.45	A
Age range	0.80	1.27	24	372	0.18	A

Research Question 6 Summary

Respondents’ Perceptions on Helpful Training Sources

Training “from in-house trainers” was rated as “Very Helpful” by 39 percent of the respondents, followed by training “from your supervisors” at 36 percent and “from your co-workers” with 31 percent.

Measure of Central Tendency

Measures of central tendency summarized the mean values of the eight training sources. On a 1 to 4 Likert rating scale, in-house trainers were rated with the highest mean of 3.14 as being a helpful training source, followed by supervisors (M=3.09) and co-workers (M=2.99) as being helpful training sources.

One-way Multivariate Analysis of Variance (MANOVA) Tests

A series of multivariate analysis of variance (MANOVA) testes were conducted to determine if there were statistically significant differences in the respondents’ perceptions on helpful training sources as a function of the respondents’ educational

attainment, library work experience, work units, level of job responsibilities, rank, and age range. There were no statistically significant differences in the respondents' perceptions as a function of their educational attainment, total years working in the library field, level of job responsibilities, rank, and age range. The null hypotheses *Ho 6-a*, *Ho 6-b*, *Ho 6-d*, *Ho 6-e*, *Ho 6-f*, and *Ho 6-g* were accepted. A statistically significant difference was found in the respondents' perceptions on helpful training sources as a function of the total years working at their current positions. The respondents who had worked at their current positions between 11 to 15 years regarded nearby library schools as being a more helpful training source than those who had been at their current positions for 16 or more years. The hypothesis *Ho 6-c* was rejected at the alpha = .05 level.

Qualitative Measures

This section presents data generated from written responses to open-ended questions and additional comments on the questionnaire from the respondents of this study. de Vaus (2002) describes an open-ended question as “a question response format in which respondents formulate their own responses rather than selecting from a set of predetermined responses” (p. 362). Because ample space was provided on the questionnaire of this study to facilitate written responses, the researcher was able to collect highly informative and revealing comments and suggestions on the respondents’ perceptions that helped answer the six research questions. The qualitative data also clarified the respondents’ perceptions of their additional training needs on computer skills, interpersonal skills, supervision/management skills, library/organizational support, helpful delivery methods, and training sources. These data are of critical value in understanding the issues on the training needs of the support staff in the six Kansas Board of Regents’ university libraries.

The qualitative responses from the respondents revealed that they were, in general, very positive toward the study because it was specifically designed to learn their training needs. Some of the comments in general support of this study were:

- “Please continue to share new information on new technology that we have available as often as can be done.”
- “Thank you for your research in this area. Work in this area in my opinion is drastically needed, especially in the library profession.”

Another respondent took time to offer the following comments that elaborated on the concept of training as a motivational tool:

- “I am on my library’s staff development committee and we are currently looking at these issues – so this was a very relevant survey to us/me. We are trying to come up with a curriculum on “track” system for library staff

to continue their training. My personal feeling is that everyone should be encouraged to attend training even it is not strictly job related. If it raises one's level of expertise in one area, it is bound to have a positive influence in other area – and a happier staff person is more likely to be an effective one.”

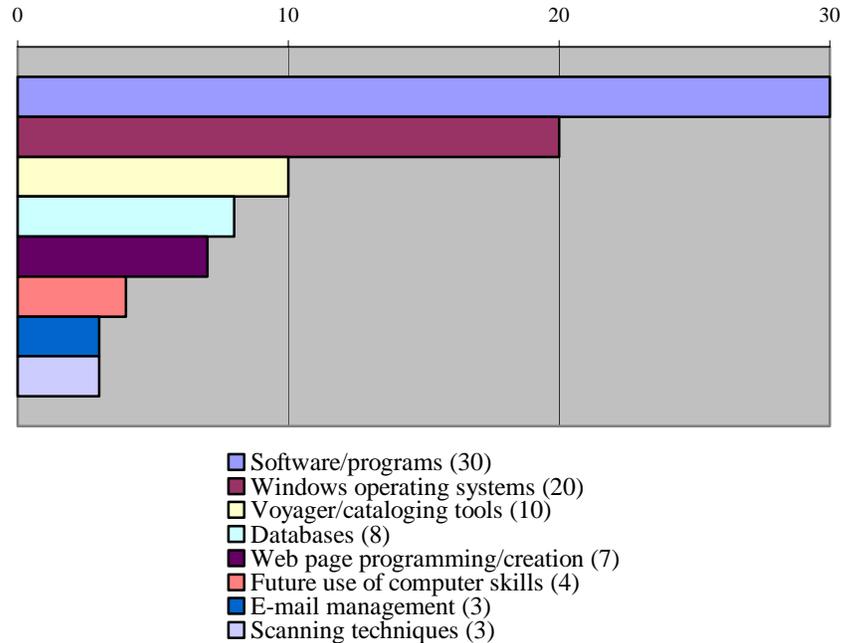
The open-ended responses provided a total of 32 themes and 314 units of information from the respondents. These responses offered in-depth data that were not collected through closed-ended questions because an open-ended question “is one for which respondents formulate their own answers” (de Vaus, 2002, p. 99). In this section, open-ended data were reported according to emerging themes that provided answers to the six research questions: the perceptions of the respondents' additional training needs on computer skills, interpersonal skills, supervision/management skills, library/ organizational support, helpful delivery methods, and training sources. More data were collected from the open-ended responses in reference to additional training topics on computer skills than were found on interpersonal skills, supervision/management skills, library/organizational support, helpful delivery methods, and training sources.

Additional Training Needs on Computer Skills

Nine themes emerged from open-ended responses to describe the additional computer skills that the respondents would like to have for their training that were not provided as a choice form on the closed-ended questionnaire. A total of 85 units of information were identified that provided answers to research question 1. Though the respondents answered closed-ended questions on several training topics related to computer skills such as “Windows operating system,” “Scanning techniques,” and “E-mail management,” they also listed these topics on the open-ended answers to emphasize the importance of training on these computer skill topics. The nine themes of training topics on

computer skills are listed in Figure 53.

Figure 53. Additional Training Topics on Computer Skills



Theme 1: Software/programs (30 units)

In addition to the nine questionnaire items related to computer skills on the closed-ended questions, the respondents provided additional training topics on software/programs that they considered important for improved job performance. These additional training topics were: MS Office, Dreamweaver, Hypersnap, DVD players, Adobe software, Windows media, Photoshop, CD-burning techniques, FTP techniques, digital photography, digital video editing, Macro-Express, etc.

One of the respondents marked a scale of 3 on such closed-ended questions as “Database creation,” “Database searching,” “E-mail management,” “MS Office suites,” “Scanning techniques,” “Web page creation/maintenance,” and “Windows operating system,” and wrote that “all these are important topics. The 3’s are the ones I would

welcome additional training in.” The other respondent made it very clear that he/she needed training on MS Access: “MS Access has become very important to my work routine because my corporate-name heading reports are now in a shared file or one of the drives here.” Another respondent stated that “use of programs such as Real-one player, DVD player, Adobe reader, Windows media, and fundamental use techniques would be of aid in the functioning of my position.”

Theme 2: Windows Operating Systems (20 units)

On the closed-ended questionnaire, “Windows operating system” was one of the nine choices of training topics on computer skills. Sixty-five percent of the respondents marked it as either important or very important to enhance their computer skills. Through open-ended responses, the respondents voiced their training needs on this topic, specifically requesting training on how to install software/programs, how to do upgrades, how to understand network structures, system set-ups, file creation and storage, disk cleanups, troubleshooting, setup defaults, and maintaining their workstations. The urgent training needs on this topic were reflected in one respondent’s comments:

We are required to provide tech support to students using library computers. None of us are computer experts, and yet the library has become a computer lab where we are expected to be the in-house techs and know how to make everything work and train people to scan and use the programs.

Other respondents commented that “understanding how our network is structured and how it works in lay terms would be important to me,” and “skills training in disk cleanup and file creation would enhance workflow and maintaining stored information.”

Theme 3: Voyager/cataloging Tools (10 units)

Because several university libraries in this study use the Endeavors Information

Systems' online library catalog called Voyager, the respondents specifically stated the training needs on the Voyager online cataloging system and its related modules in acquisitions, authority control, circulation, and reporting systems, in addition to accessing a national and international bibliographic online database from the Online Computer Library Center (OCLC). These online catalog modules are being used daily by the support staff at these libraries in departments such as acquisitions, cataloging, circulation, and system/database maintenance. One respondent wrote, "I would like more training in the Voyager programs I use everyday [sic]." The other respondent expressed similar training needs on Voyager, "[which is] where I have been able to put my cataloging skills to use."

Theme 4: Databases (8 units)

The theme of databases generated eight units of information. The respondents cited database creation, searching, management, and fundamentals as needed training topics. One respondent stated that "it is hard to use and manipulate a database if you cannot 'visualize' what you are working with."

Theme 5: Web Page Programming/creation (7 units)

Seven units of information were provided on the theme of web page programming/creation. The additional training topics from the respondents included web page creation with XML, web programming, web search engines, and Internet integration.

Theme 6: Future Use of Computer Skills (4 units)

This emerging theme provided four units of data. The respondents offered comments such as: "being trained for certain things we or I am not using, [are] still

important because of future use. Scanners are not part of our routines now, but may be in the future. In fact, things change so rapidly.” One respondent took time to elaborate these areas of interest:

I would like to clarify that many of these computer skills are more important to my future than to my present. Moreover, (a.) database creation, (d.) MS Office suites, (e.) presentation software, and (h.) web page creation/maintenance are not part of my routines now, but may be in the future.

Theme 7: E-mail Management (3 units)

The responses from the closed-ended question on “E-mail management” revealed that a combined total of 71 percent of the respondents viewed it as an important or very important training topic to improve their computer skills, though the open-ended answers provided only three units of information. The respondents suggested a training topic on a specific e-mail software such as Lotus Notes, which several university libraries in the study use as their campus e-mail system, making training on this specific e-mail program relevant to the support staff at these university libraries.

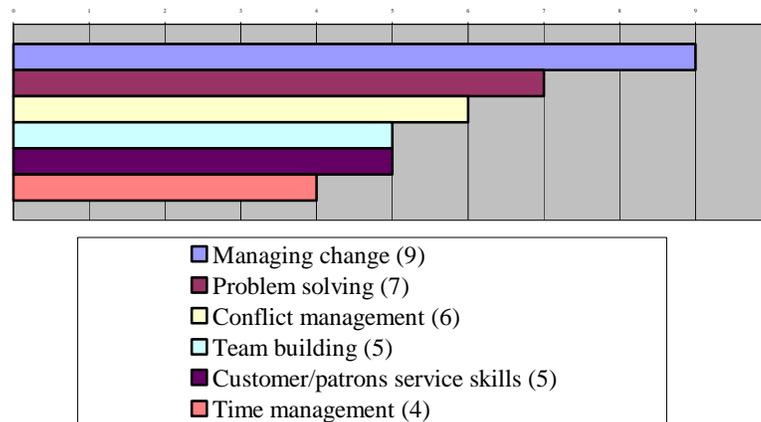
Theme 8: Scanning Techniques (3 units)

Fifty-four percent of the respondents indicated on the closed-ended questions that “scanning techniques” to be an important or very important training topic to boost their computer skills. There were three units of information on the theme of training needs on scanning techniques revealed by the open-ended answers. The respondents expressed the need to learn how to scan documents and how to teach users to scan documents. One respondent wrote, “we often do not get any training before we are helping patrons with these (programs). Most of our training is on the job.”

Additional Training Needs on Interpersonal Skills

On the open-ended questions, the respondents were asked to suggest additional training topics to improve their interpersonal skills. Data collected from the answers by respondents to open-ended questions in this section revealed 36 units of information and six emerging themes. These themes were: “Managing change,” “Problem solving,” “Conflict management,” “Team building,” “Customer/patrons service skills,” and “Time management.” Both “Managing change” and “Team building skills” were also closed-ended choices on the questionnaire. Figure 54 presents the themes that emerged from the open-ended questions related to respondents’ training needs on interpersonal skills.

Figure 54. Additional Training Topics on Interpersonal Skills



Theme 1: Managing Change (9 units)

The support staff at the six university libraries of this study have experienced many changes that require solid management skills. Change can also cause fears and stress if not managed efficiently. From the answers to the closed-ended question on “Managing change,” a combined total of 75 percent of the respondents considered it to be important or very important to their training. The nine units of information collected

from open-ended answers on this theme reflected the needed training that would help support staff go through the process of change and also help them manage change. A statement from one respondent represented this general need: “we are all creatures of habit and it is hard to teach someone how to manage change because with change comes fears of the unknown.” Though change is unavoidable, one respondent offered a practical way to manage change: “a discussion needs to start taking place about how [dealing with change] is going to happen on a realistic daily basis.” The respondents also listed techniques on how to reduce stress from the constant use of computers and the related training. One respondent stated that they needed “techniques to reduce stress/strain from computer overuse” to combat the problem.

Theme 2: Problem Solving (7 units)

There were seven units of information under the theme of “Problem solving.” This indicated that support staff at university libraries had become increasingly involved in the activities of managing projects, solving problems, and finding creative ways of dealing with issues that they were facing, in addition to their routine tasks. One respondent stated that “I feel that there is a need to change from task oriented routines to develop individual creative thinking.” Another respondent echoed the same sentiment by emphasizing the importance of having support staff “who can be creative in designing workflow and priorities.” Another respondent also explained that “with budget and staffing reductions, there is a need for multi-talented staff.”

Theme 3: Conflict Management (6 units)

The theme of “conflict management” generated six units of information. The respondents felt that conflict management was a much needed training topic in interpersonal

skills. For instance, one respondent wrote that “confrontation is a very neglected topic and [training in this area] is needed a lot.” Several other respondents asked for an increased “role of management in dealing with peer-to-peer disputes.” One respondent regarded training on “ethical behavior in the workplace” as another way to deal with difficult people. Another respondent felt hopeless, demonstrating the need for more training or supervisor intervention in this area: “What can be done when nothing works to tone down a difficult situation with a difficult peer?”

Theme 4: Team Building (5 units)

“Team building skills” was one of the training topics related to interpersonal skills listed on the closed-ended questionnaire. Seventy-two percent of the respondents rated it as being either an important or a very important training topic for augmenting their interpersonal skills. Six units of information, including suggestions, on “team building” were extrapolated from the respondents’ comments. Respondents mentioned topics such as “Team work,” “committee work,” and “success techniques” in their responses. One respondent stated that “sometimes people are regarded as difficult because of lack of team building.” Therefore, training on team building and teamwork would help improve the situation since one respondent asked for “more emphasis on interpersonal skills and team work instead of just computer technical production – people should not be treated like robots.”

Theme 5: Customer/patrons Service Skills (5 units)

Some support staff at university libraries, especially those who worked in access services and collection/user services, interacted directly with the public (faculty, students, staff, and other patrons). From open-ended responses, the respondents provided suggestions

and comments on training needs to improve their customer/patron service. Five units of information were collected under this theme. One respondent stated that training with a “consistent approach to give patron assurance of quality of service provided” is much needed. Another respondent wrote that “in-service training...should be routine.”

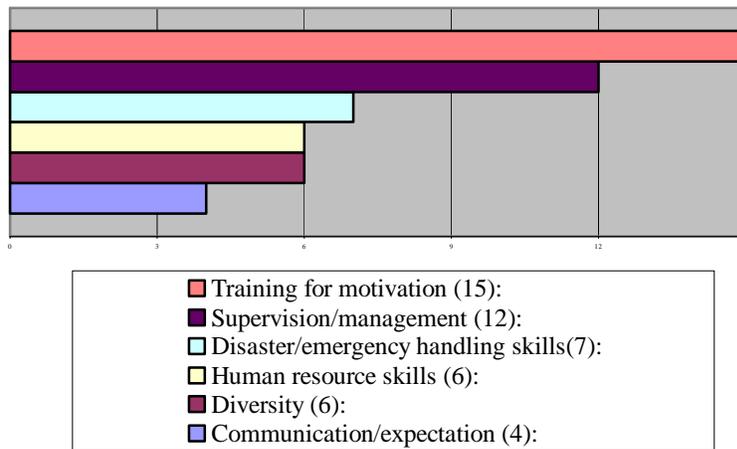
Theme 6: Time Management (4 units)

Though the theme of time management generated only four units of information, it represented two different viewpoints perceiving the support staff’s training needs. One group of the respondents indicated that training on this topic was very important. Several other respondents saw it differently: “the other training classes that had to do with learning how to manage your time better, for example, are a complete waste of my time.” However, this respondent recognized that “I know I am in the minority on this subject.”

Additional Training Needs on Supervision/management Skills

In addition to responding to closed-ended questions on training needs on supervision/management skills, the respondents provided written comments and suggestions on the training needs related to those skills. Six themes emerged from these 50 units of information. These themes were: “Training for motivation,” “Supervision/management,” “Disaster/emergency handling skills,” “Diversity,” “Human resource skills,” and “Communication/expectations.” Figure 55 presents the six emerging themes on additional training topics of supervision/management skills.

Figure 55. Additional Training Topics on Supervision/Management.



Theme 1: Training for Motivation (15 units)

The respondents offered 15 units of information on the theme of “Training for motivation”; in other words, using training as a tool for motivating support staff. For instance, one respondent wrote: “Training is an individual issue. It can be used to motivate and facilitate growth.” Another respondent further explained this point of view: “In view of the lack of pay raises – a vigorous training program for promotion would motivate employees. Have workshops and send for training from accredited sources.”

The respondents’ comments and suggestions on using training programs to motivate staff also touched on the scope of training that would help motivate staff. For instance, one respondent stated that “at the staff level, many of the training opportunities are extraneous to the positions, however [sic] it is important to allow growth in a diverse range in order to motivate and reward the individual.” The respondents indicated that well-trained staff could be valuable assets to the organization. One respondent took pride in what a well-trained staff could do for the library:

Staff who can cover other work areas; staff who can think and continue with little or no supervision and staff who feel a part of the overall operation; a vital member who feels ownership and puts out more than minimal effort. Staff that helps develop the mission rather than just maintain it [are important].

Theme 2: Supervision/management (12 units)

The theme of “Supervision/management” offered 12 units of information.

Among all 139 respondents who completed the questionnaire of this study, 59 of them supervised student employees working in the six university libraries and 27 respondents supervised both student employees and staff. Though 53 respondents reported that they did not have supervisory duties, some of them felt that training on supervision/management skills could be very helpful. One respondent wrote: “although some of these topics, such as ‘Staff appraisal/evaluation’ (a closed-ended choice on the questionnaire) do not apply to me currently, it is something that would be helpful.” A second respondent stated: “I am not in a management position, but marked my views from my perspective of what I would like from my management.”

On this theme, respondents also communicated their expectations to supervisors who played a vital role in helping train support staff. For instance, one respondent explained his or her expectations:

After all these many years being a supervisor and being supervised, I believe the single most critical component of a successful work experience is to have and be a good, well-trained supervisor. I would even go so far as to suggest that each time someone is (or a group of people are) hired, that person and his or her supervisor should attend a training course together so that they are both on the same page on what is expected from both the supervisor and the employee. Refresher courses are very important and in this manner the long time supervisor would be reminded of best practices and even learn some new ones.

Theme 3: Disaster/emergency Handling Skills (7 units)

The theme of training on handling disaster/emergency skills offered seven units of

information, including training needs on First Aid, lifeline, fire safety, CPR safety, etc. One respondent wrote that “a good supervisor is concerned about the well-being of the supervised as well as the task. I feel this can be conveyed in providing training for staff well-being.”

Theme 4: Human Resource Skills (6 units)

Six units of information were collected on the theme of training on “Human resource skills.” Topics such as hiring, interviewing, evaluating, and terminating employees were mentioned in the answers to open-ended questions on this theme. One respondent specifically pointed out that training on human resource skills “enable evaluation of new employees through how to ‘read’ resumes and importance of intangible qualities.”

Theme 5: Diversity (6 units)

The six units of information gathered on the theme of the training needs on diversity are in response to demographic changes in a large society and at the six university libraries, as well. One respondent explained that “training should be fair and equal, reaching beyond race and color.” Another respondent echoed the same needs, saying that “some people might be very intelligent and capable but not as aggressive... If everyone was given a chance at the same opportunities, the better person for the job might be recognized.”

Theme 6: Communication/expectations (4 units)

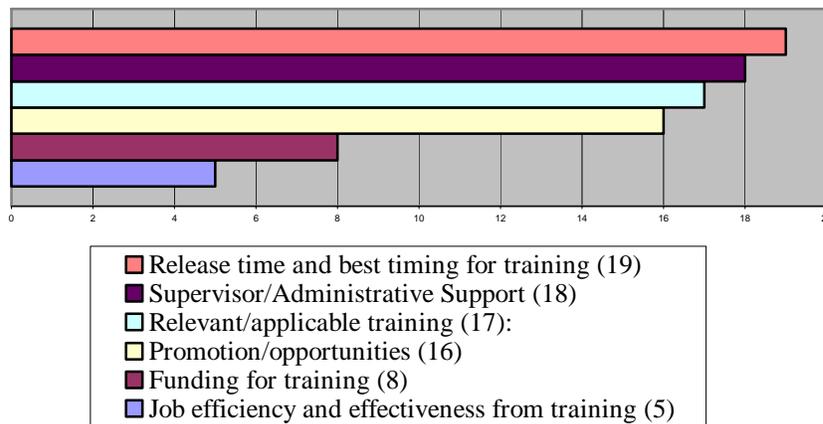
There were four units of information on the theme of “Communication/expectations.” The respondents suggested that supervisors’ expectations must be made clear. One respondent wrote: “I definitely think staff training and follow-up is the most important. Followed by communication of priorities and expectations.” In this way,

“supervisors can better help the staff sustain training through which he/she goes.”

Library/organizational Support

In expressing their opinions and suggestions on the library/organizational support that helps training, the respondents provided 83 units of information in six theme: “Release time and best timing for training,” “Supervision/ administrative support,” “Relevant/applicable training,” “Promotion/opportunities,” “Funding for training,” and “Job efficiency and effectiveness from training.” Figure 56 presents the six themes from answers to open-ended questions.

Figure 56. Additional Comments and Suggestions on Library/organizational Support



Theme 1: Release Time and Best Timing for Training (19 units)

Respondents provided 19 units of information that identified the theme of needing “Release time and best timing for training.” One respondent offered an insightful observation on needed time for training: “Time to get training would be nice. We are running as fast as we can just to stay even.” Overall, finding time for training and getting release time for training were the two most cited reasons that would help the support staff

to participate in training, including time provided to be away from the office, time to travel to and from the training locations, and time to support self-paced learning at support staff's desks. One respondent was concerned about time away from the desk or office: "The biggest problem related to attending any kind of training is, who does my work when I am not there?" Another respondent made a similar statement: "Due to budget cuts our unit is short-staffed. The remaining staff are required to take on more and more complicated duties, and yet we have less time available for training."

With more online training available that support staff can access from their workstations, time also needs to be provided to accommodate the staff who take advantage of online training opportunities. Regarding that idea, one respondent wrote that "any type of self-paced learning must be supported by (time) at work. Without this support the work suffers." Another respondent stated a similar viewpoint, writing that "I would like to stress that devoted time to training without interruptions is vital for topic flow and learned development."

Regarding the best timing for training, the respondents offered several suggestions: "maximum of one and a half hours or less if out of office," "afternoon training best vs. morning," and each training session should not be "longer than an hour," etc.

Theme 2: Supervisor/administrative Support (18 units)

Eighteen units of information were collected as part of the theme of "Supervision/administrative support." The respondents cited support from library administration or their supervisors as being the most important reasons to help their participation in training. The words "support" and "supervisors" were mentioned

frequently in answers to the open-ended questions in this section. One respondent stated that “training is very important, but along with the training you must have support from your supervisor to use what you have learned and to be supported if you succeed or fail.” In one case, the respondent attributed success to her or his immediate supervisor: “I have a supportive supervisor who has encouraged me to attend training sessions on specialized subjects and technology pertinent to my work and job details. I feel fortunate in this respect.” However, when staff failed to keep up with learning new skills, they also attributed it to the supervisor. One respondent remarked: “supervisor/administrative support would go a long way. If they don’t care, then I definitely don’t care.” Another respondent expressed the expectations from the supervisor in training: “the supervisor is responsible to assist in staff development. The use of suggested course work and future use is important to guide and train not only one person but an entire team.” According to another respondent, “the single most critical component of a successful work experience is to have and be a good, well – trained supervisor.”

Theme 3: Relevant/applicable Training (17 units)

Seventeen units of information emerged on the theme of “Relevant/applicable training.” When time and funding at the library become tight, it makes sense to make training sessions job-specific and applicable. “Make it applicable to the job I do or help to prepare me for promotion,” one respondent cited as a reason for participating in training. Another respondent wrote that “this kind of specialized, job-specific knowledge is the most valuable that we have.” The value of training may diminish if it is not relevant, as one respondent stated: “a good rule of thumb would be: if it is not job specific and position specific and if it takes longer than an hour, its probably of dubious

value.”

Other comments from the answers to open-ended questions were related to immediate use of the learned skills and application of the new skills to their job. One respondent suggested that training sessions should lead to “fairly immediate use of learned skills (i.e., relevance of training).” A second respondent commented that “pay is important, but it is usually important to be able to use the new skill and be recognized for above and beyond the norm.”

Theme 4: Promotion/opportunities (16 units)

The respondents provided 16 units of information on the theme of “Promotion/opportunities” through training. Topics such as “Promotion,” “new job opportunities,” and “pay increase” gained through training were commonly used throughout this theme. One respondent commented that “training should be a means to promotion within a system.” Regarding a pay increase, one respondent wrote that “salary concerns are vital to retention of well trained workers.”

However, some respondents recognized that the current state-wide employment system may not be able to offer a pay increase tied to training. One respondent referred to a question on the survey, “Link my training to a pay increase” and wrote that “it is not possible within current system.”

Theme 5: Funding for Training (8 units)

The respondents identified “Funding for training” as a theme with eight units of information to support it. Several respondents repeated the closed-ended choice of “Allocate funding for my training goals” on the questionnaire in their answers to open-ended question. Providing funding for on-site training opportunities was welcomed by the

respondents. For instance, one respondent suggested “the need to encourage more people to attend on-site training when provided.” On-site training can also accommodate the special needs of the support staff. One respondent explained that the reason that she or he preferred on-site training was, “I have children at home and cannot travel and stay overnight.”

Allocating funding for training may also include the provision of travel expenses for off-campus training. One respondent stated the need for such funding: “I have only been to one out of state conference in the seven years I have worked here.” Another respondent suggested “a visit to other workplaces” as a training/learning opportunity that also required off-campus travel expenses.

Theme 6: Job Efficiency and Effectiveness from Training (5 units)

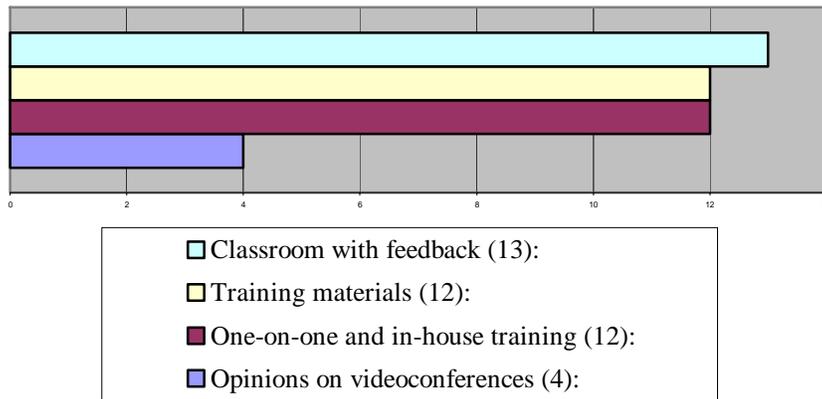
Five units of information were collected on the theme of “Job efficiency and effectiveness from training” from responses to open-ended questions. “I generally attend training to help work better, not to get better work,” wrote one respondent. A second respondent expressed a similar viewpoint: “the more knowledgeable I am about chemistry, the more efficient I can be (in the Chemistry Library).” The respondents also viewed training as a way of developing effective staff. One respondent wrote that training “not only keeps processes smoothly flowing during absences or with unfilled positions but also develops effective staff.”

Additional Delivery Methods

The respondents’ suggestions and comments on delivery methods for their training were represented by 41 units of information in four themes that emerged from answers to open-ended questions. The four themes on delivery methods were: “Classroom with feedback,” “Training materials,” “One-on-one and in-house training,”

and “Opinions on videoconferences.” Figure 57 presents data on the units of information in these four themes.

Figure 57. Additional Delivery Methods



Theme 1: Classroom with Feedback (13 units)

The respondents reported that training in a classroom with feedback was the preferred training delivery method. The theme “Classroom with feedback” offered 13 units of information. The respondents’ comments included: “I like classroom interaction training because I am competitive”; “Classroom/workshops give immediate feedback and time for questions that need to be reinforced by practical use at work”; “[I like] feedback on questions and concerns as they arise keeps training on target.” However, classroom training should also provide needed equipment. For instance, one respondent stated that “classroom instruction must include a terminal for each participant.” Another respondent wrote, “I feel the need for refresher course and periodic staff discussion is needed to develop and refresh to refine desired skills.”

Theme 2: Training Materials (12 units)

On the emerging theme of “Training materials,” there were twelve units of information. The respondents identified the needs of such items as training materials,

procedures, having access to taped programs, printed instructions, visual aids, and appropriate software to support their training. One respondent wrote that “I really think that having tapes available to view again later is an excellent idea.”

In addition to physical items of training materials, some respondents suggested online training materials. For instance, one respondent wrote that “a handy thing to have would be a ‘Tips and Tricks’ database on a server” for staff to share their knowledge on certain skills. Another respondent commented that “this kind of specialized, job-specific knowledge is the most valuable that we have, and it would be nice to have a clearing-house for it.” One respondent even offered ideas on how to organize such a database:

It could be divided into sections: Excel, Lotus, MS Word, etc... within those sections, alphabetized, would be subsections where people who had learned a tricky thing (like making graphs in Excel- what a PAIN that is if you haven’t been shown) could tell others how to do it.

Theme 3: One-on-one and In-house Training (12)

The theme of “One-on-one and in-house training” consisted of 12 units of information. The respondents repeatedly suggested such phrases as “one-on-one training/mentoring,” “in-house one-on-one instruction,” “peer-training,” and “one-on-one training with a person” on the open-ended responses of this study. This consistent theme indicated that support staff involved in complex work procedures not only required adequate training sessions to keep up with the procedures, but also needed in-house expertise to help them when it was necessary. One respondent marked “Very Important” on all of the seven closed-ended choices on the questionnaire in the section of “Delivery Methods” and also wrote, “one-on-one assistance (desk-side coaching) as a follow-up to any of the above especially classroom instruction.”

In-house assistance was perceived by the respondents to be very important to reinforce what they learned from their training. One respondent wrote that her or his preference on training delivery methods was “a small group introductory session, followed up with project assignment to be done on my own with ready access to a trainer for questions.” A second respondent suggested that “in-house training sessions be offered on a regular basis.”

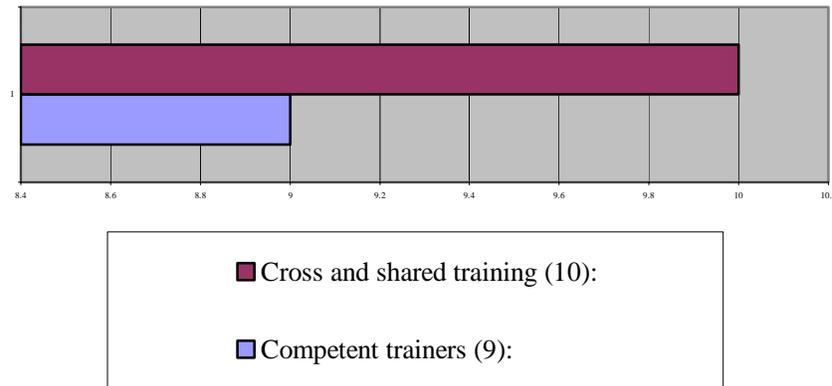
Theme 4: Opinions on Videoconferences (4 units)

The four units of information on Videoconferences as a training delivery method revealed concerns from some respondents who either have had negative experiences with this new delivery technology or have never experienced it. One respondent stated that “videoconferences, in my experience, are worthless. They do not engage, there is no dialogue or feedback and there is always some technical problem.” Another respondent reported similarly that “videoconferences are a waste.” A third respondent wrote that “I cannot really rate videoconferences because I have never experienced them.”

Additional Training Sources

Two themes emerged from the answers to open-ended questions on additional training sources. The respondents’ suggestions and comments on training sources for their receiving training included 19 units of information, the smallest amount among all sections in this study. The two emerging themes were: “Cross and shared training” and “Having competent trainers.” Figure 58 presents the two themes with their number of units of information.

Figure 58. Additional Training Sources



Theme 1: Cross and Shared Training (10 units)

The theme of “Cross and shared training” emerged from 10 units of information. The respondents cited that their “co-workers,” “periodic discussions among staff,” “talking with each other,” and “learning from people doing the same job” were valuable training sources. One respondent suggested “possible shared training from these able to attend directly and in turn train others later. This would save on workshop costs, i.e., fees, travel, etc.” A different respondent wrote that “I would like to have more training, or at least opportunity to talk with each other in my position (e.g., stacks supervisor/manager) to know how they cope with similar situations.” The same was true for another respondent who “would like to see the availability of cross-training...it would be helpful to learn habits of what others do in case extra help is needed during busy times.” Unfortunately, cross and shared training have their own limitations. One respondent offered her or his experience: “much of my training has been through support and instruction by co-workers. It is satisfactory for particular task but not comprehensive.”

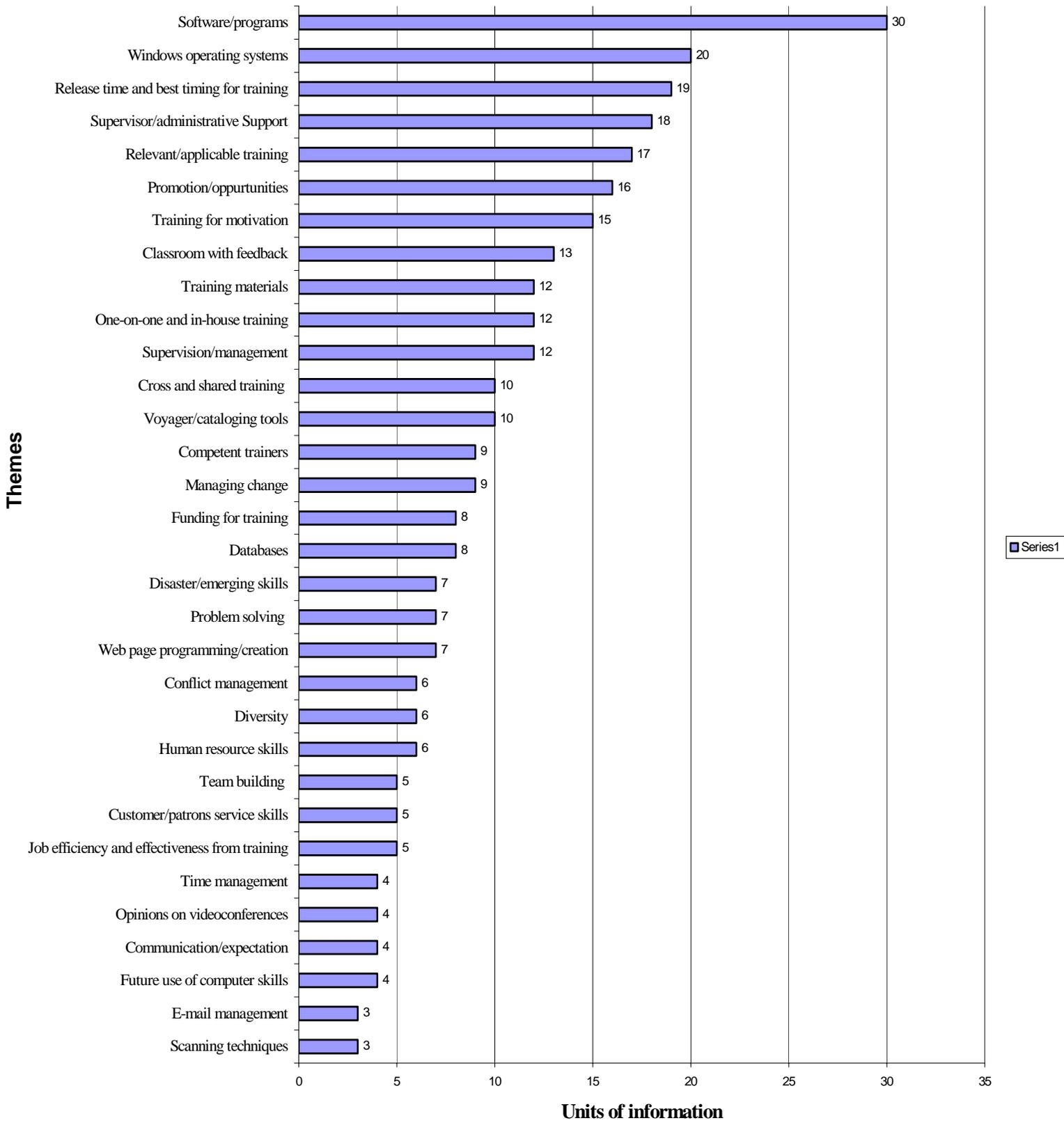
Theme 2: Competent Trainers (9 units)

The theme of “Competent trainers” as a training source came from nine units of information. The respondents cited “real professionals,” “professionals,” “librarians,” “faculty,” and “campus trainers” as competent sources for their training. One respondent expected a training session to “make it interesting with dynamic teachers that do not bore you to death.” A different respondent suggested having “competent trainers... someone who has worked in the field and has trendy relevant information. National seminars often provide professionals that own their business as trainers.”

Qualitative Measures Summary

The qualitative data collected from the responses to open-ended questions on the questionnaire were coded and analyzed. Three hundred and fourteen units in 32 themes emerged from qualitative data on the respondents’ perceptions of additional training needs of computer skills, interpersonal skills, supervision/management skills, additional comments and suggestions on library/organizational support, helpful delivery methods, and training sources. The entire themes and their units of information are presented in Figure 59.

Figure 59. Emerging Themes



Respondents in this study perceived training on technology and computer skills as important. The respondents indicated that the theme of “Software/programs” was the most important topic, as it received 30 units of information. In addition, the respondents also listed training needs on “Windows operating systems” as the second most important training topic to improve their computer skills, with 20 units of information provided on this theme. The training topic on “Windows operating systems” was also listed as a closed-ended item on the questionnaire; 27 percent of the respondents considered it to be an important training topic and 38 percent viewed it as being very important. Other themes on additional training topics on computer skills were: “Voyager/cataloging tools,” “Database,” “Web page program/creation,” “Future use of computer skills,” “E-mail management,” and “Scanning techniques.”

On additional training topics on interpersonal skills, the respondents offered six themes with 36 units of information. The data collected from the answers to open-ended questions revealed that the respondents considered “Managing change” as a top priority of training to their interpersonal skills, with nine units of information, followed by a training topic on “Problem solving,” with seven units of information. Other themes on additional training topics related to interpersonal skills included “Conflict management,” “Team building,” “Customer/patron service skills,” and “Time management.”

The data from the answers to open-ended questions on additional training topics of supervision/management skills presented six themes including 50 units of information. “Training for motivation” was the most important theme, receiving 15 units of information. “Supervision/management” was listed as the second important theme, with 12 units. Other themes on additional training topics of supervision/management skills

were: “Disaster/emergency handling skills,” “Human resource skills,” “Diversity,” and “Communication/expectation.”

Through additional comments and suggestions on library/organization support from the responses to open-ended questions, 83 units of information on 6 themes emerged. “Release time and best timing for training” was the most important support viewed by the respondents, receiving 19 units of information. The second most frequent theme was “Supervisor/administrative support,” receiving 18 units of information. In addition, the respondents identified other themes related to library/organizational support: “Relevant/applicable training,” “Promotion/opportunities,” “Funding for training,” and “Job efficiency and effectiveness for training.”

The respondents’ additional comments and suggestions on training delivery methods generated four themes and 41 units of information. “Classroom with feedback” emerged as the most important training delivery methods, receiving 13 units of information. “One-on-one and in-house training” and “Training materials” were the second important themes identified by the respondents, each with 12 units. The fourth theme was “Opinions on videoconferences,” receiving four units of information.

Two themes emerged from the respondents’ additional comments and suggestions on training sources. The most important theme was “Cross and shared training,” receiving 10 units of information. “Competent trainers,” receiving 9 units, was the other theme.

Though several themes, such as “Scanning techniques,” “E-mail management,” “Team building,” etc. received smaller units of information in qualitative data than others, the respondents repeated these questionnaire items from the closed-ended questions.

Therefore, though these themes did not have a high number of stakeholder responses, the fact that they have been previously identified perhaps lessened the need for stakeholders to address them in open-ended responses.

Chapter Summary

This chapter presents the data analyses and findings of the study on the training needs of support staff at the six Kansas Board of Regents' university libraries. Through the use of a survey instrument, the researcher was able to collect the quantitative and qualitative data from responses to closed-ended questions and to open-ended questions, respectively. This chapter includes three major sections: the findings of the general characteristics of the respondents, analyses and test results of quantitative measures, and emerging themes from qualitative measures.

General characteristics of the Respondents

The data on the respondents' general characteristics were presented through descriptive analyses. The respondents' general characteristics were their educational attainment, library work experience, work units, level of job responsibilities, rank, and age range.

Among 139 respondents, 36 percent had high school diplomas or some college courses; 48 percent had a Bachelor's degree, and 16 percent had an advanced degree. Almost half of the respondents, or 48 percent, had worked in the library field for 16 or more years; however, about 49 percent had worked at their current positions between 1 to 5 years. The respondents reported 14 work units in which they spent more than 60 percent of their work time. The three work units, Cataloging (26 percent), Circulation (17 percent), and Acquisitions (15 percent) were larger than other units. The smallest work units were Digital library, Database maintenance, and Archives, with only one respondent from each of these units. There were three levels of job responsibilities among the respondents: those who did not have supervisory duties, those who supervised student

employees only, and those who supervised both student employees and staff. While 38 percent of the respondents were non-supervisors, 42 percent supervised student employees only, and 20 percent supervised both student employees and staff. The respondents reported three classification ranks: Library Assistant I, Library Assistant II, and Library Assistant III. About 20 percent of the respondents were at a rank of Library Assistant I; 47 percent were Library Assistant II, and 33 percent achieved Library Assistant III. The respondents reported that 62 percent of them were 46 or older and only 20 percent 35 or younger. The majority of the respondents were female (82 percent) and male respondents accounted for 18 percent.

Quantitative Measures

The responses to closed-ended questions were first illustrated by frequency of each questionnaire item rated by the respondents on a 1 to 4 Likert scale, with 1 representing “Not at All Important” and 4 “Very Important.” The data were then summarized by measures of central tendency to report the mean values of the respondents’ perceptions of their training needs on computer skills, interpersonal skills, supervision/management skills, library/organizational support, helpful training delivery methods, and training sources. The quantitative data were finally analyzed through a series of one-way multivariate analysis of variance (MANOVA) tests to determine if the statistically significant differences existed in the respondents’ perceptions of their training needs as a function of their general characteristics.

Research question 1: The respondents highly rated the training on “Database searching,” “MS Office suites,” “Web browsers,” and “E-mail management” as being important to improve their computer skills. The summary of the nine training topics on

computer skills through measures of central tendency indicated that the training topics such as “Database searching” (M=3.45), “MS Office suites” (M=3.15), “Web browsers” (M=3.14), and “E-mail management” (M=2.99) had high mean values because the respondents needed training on these tools for their computer skills. The results of one-way MANOVA tests indicated that the respondents’ perceptions on their training needs of computer skills were not influenced by their educational attainment, library work experience, level of job responsibilities, rank, and age range. The null hypotheses *Ho 1-a*, *Ho 1-b*, *Ho 1-c*, *Ho 1-e*, *Ho 1-f*, and *Ho 1-g* were accepted. A statistically significant difference was found in the respondents’ perceptions of training needs on computer skills as a function of their work units. The null hypothesis *Ho 1-d* was rejected at the alpha level = .05.

Research question 2: The respondents rated training on “Working with difficult people” as an important aspect of their skills training. Fifty percent of the respondents rated it as “Very Important” to their interpersonal skills, on a 1 to 4 Likert rating scale. This training topic was followed by training on “Managing priorities,” with 40 percent of the respondents rating it as “Very Important.” The summarized mean values of the seven training topics on interpersonal skills showed that training on “Working with difficult people” (M=3.23), “Managing priorities” (M=3.12), and “Oral/written communication skills” (M=3.12) received high means from the respondents. The results of one-way MANOVA tests did not demonstrate statistically significant differences in the respondents’ perceived training needs on interpersonal skills as a function of their general characteristics. The respondents’ perceptions of training needs on interpersonal skills were not influenced by their general characteristics. The null hypotheses *Ho 2-a*, *Ho 2-b*,

Ho 2-c, Ho 2-d, Ho 2-e, Ho 2-f, and Ho 2-g were accepted at the $\alpha = .05$ level.

Research Question 3: The respondents gave a high rating on the importance on of the training on “Training new employees.” Forty-five percent of the respondents rated it as “Very Important” to their supervision/management skills. Next in importance was “Supervising student employees,” with 41 percent of the respondents rating it as “Very Important” to their supervision/management skills. The data collected from the responses were analyzed through measures of central tendency that summarized the mean values of the nine training topics on supervision/management skills. Training on “Training new employees” ($M = 3.10$), “Supervising student employees” ($M = 3.01$), and “Work flow design” ($M = 2.94$) had high means rated by the respondents to their supervision/management skills. The results of one-way MANOVA tests revealed that the respondents’ training needs of supervision/ management skills were not influenced by their educational attainment, library work experience, rank, or age range. The null hypotheses *Ho 3-a, Ho 3-b, Ho 3-c, Ho 3-f, and Ho 3-g* were accepted. Statistically significant differences were found in the respondents’ training needs on supervision/management skills as a function of their work units and as a function of their level of job responsibilities. The hypotheses *Ho 3-d and Ho 3-e* were rejected at the $\alpha = .05$ level. Follow-up Scheffe test results did not show where the statistically significant differences existed among the respondents in the four work units. However, the Scheffe test results indicated that the perceptions of the respondents’ training needs on supervision/management differed statistically based on their level of job responsibilities. Those who had supervisory duties viewed training on supervision/ management skills as to be more important than those who did not have supervisory

duties.

Research Question 4: The respondents rated highly all 11 questionnaire items related to library/ organizational support that would help their training. For example, 60 percent of the respondents rated “Supply me with appropriate software” as a “Very Important” library/organizational support for their training, followed by “Provide me with release time for training,” with 53 percent of the respondents rating it “Very Important.” The data collected from the returned questionnaires were analyzed through measures of central tendency that summarized the mean values of the 11 questionnaire items on library/organizational support. On a 1 to 4 Likert rating scale, “Supply me with appropriate software” had the highest mean of 3.47, followed by “Provide me with release time” and “Provide me with technical support,” with means of 3.43 and 3.34, respectively. The results of one-way MANOVA tests revealed that there were no statistically significant differences in the respondents’ perceptions of library/organizational support as a function of their educational attainment, total years at their current positions, work units, level of job responsibilities, and rank. The null hypotheses *Ho 4-a*, *Ho 4-c*, *Ho 4-d*, *Ho 4-e*, and *Ho 4-f* were accepted. Statistically significant differences were discovered in the respondents’ perceptions of library/organizational support as a function of their total years of working in the library field and as a function of their age range. The respondents who had worked in the library field for 16 or more years viewed library/organizational support as being more important than those who had worked in the library field between 6 to 10 years. Within the four age-range groups, the respondents who were 35 or younger viewed “Provide me with release time for training” as being more important than other age range groups. Those

who were 46 to 55 years old considered “Allocate funding for my training goals” and “Suggest relevant training topics to me” as being more important support for their training than other age range groups. The hypotheses *Ho 4-b* and *Ho 4-g* were rejected.

Research Question 5: Among the seven training delivery methods, 53 percent of the respondents rated “Classroom instruction with a teacher” as a “Very Helpful” training delivery method. This delivery method was followed by “Interactive classroom discussions” and “Self-paced hands-on courses,” as 35 percent and 27 percent of the respondents, respectively, viewed them as “Very Important.” On a 1 to 4 Likert rating scale, “Classroom instruction with a teacher” was rated highest, with a mean of 3.40 as a helpful delivery method, followed by “Interactive classroom discussions” (M=3.04) and “Self-paced hands-on courses” (M=2.96). The results of one-way MANOVA tests indicated that the respondents’ perceptions of helpful training delivery methods were not influenced by their general characteristics. At the alpha = .05 level, there were no statistically significant differences in the respondents’ perceptions of helpful training delivery methods as a function of their general characteristics. Consequently, the null hypotheses *Ho 5-a*, *Ho 5-b*, *Ho 5-c*, *Ho 5-d*, *Ho 5-e*, *Ho 5-f*, and *Ho 5-g* were accepted

Research Question 6: Training “From in-house trainers” was rated as “Very Helpful” by 39 percent of the respondents, followed by training “From your supervisors” at 36 percent and “From your co-workers” with 31 percent. Measures of central tendency summarized the mean values of the eight training sources. On a 1 to 4 Likert rating scale, in-house trainers were rated with the highest mean of 3.14 as being a helpful training source, followed by supervisors (M=3.09) and co-workers (M=2.99) as being helpful training sources. The results of one-way MANOVA tests showed that there were no

statistically significant differences in the respondents' perceptions of training sources as a function of their educational attainment, total years working in the library field, level of job responsibilities, rank, and age range. The null hypotheses *Ho 6-a*, *Ho 6-b*, *Ho 6-d*, *Ho 6-e*, *Ho 6-f*, and *Ho 6-g* were accepted. A statistically significant difference was found in the respondents' perceptions on helpful training sources as a function of the total years working at their current positions. The respondents who had worked at their current positions between 11 to 15 years regarded nearby library schools as being a more helpful training source than those who had been at their current positions for 16 or more years. The hypothesis *Ho 6-c* was rejected at the $\alpha = .05$ level.

Qualitative Measures

The qualitative data collected from the responses to open-ended questions on the questionnaire were coded and analyzed. Three hundred and fourteen units of information in 32 themes emerged from qualitative data on the respondents' perceptions of additional training needs of computer skills, interpersonal skills, supervision/management skills, additional comments and suggestions on library/organizational support, helpful delivery methods, and training sources.

Respondents in this study perceived training on technology and computer skills as important. The respondents indicated that the theme of "Software/programs" was the most important topic, as it received 30 units of information. In addition, "Windows operating systems," "Voyager/cataloging tools," "Database," "Web page program/creation," "Future use of computer skills," "E-mail management," and "Scanning techniques" were also regarded to be important to enhance their computer skills.

On additional training topics on interpersonal skills, the respondents offered six

themes with 36 units of information. “Managing change” as a top priority of training to their interpersonal skills, with nine units of information, followed by a training topic on “Problem solving,” “Conflict management,” “Team building,” “Customer/patron service skills,” and “Time management.”

Additional training topics of supervision/management skills presented six themes, including 50 units of information. “Training for motivation” was the most important theme, receiving 15 units of information. “Supervision/management,” “Disaster/emergency handling skills,” “Human resource skills,” “Diversity,” and “Communication/expectation” were also considered important supervision/management skills.

Through additional comments and suggestions on library/organization support from the responses to open-ended questions, 83 units of information within six themes emerged. “Release time and best timing for training” was the most important support viewed by the respondents, receiving 19 units of information. Other frequent theme were “Supervisor/administrative support,” “Relevant/applicable training,” “Promotion/opportunities,” “Funding for training,” and “Job efficiency and effectiveness for training.”

The respondents’ additional comments and suggestions on training delivery methods generated four themes and 41 units of information. “Classroom with feedback” emerged as the most important training delivery methods, receiving 13 units of information. “One-on-one and in-house training” and “Training materials” were also important themes identified by the respondents.

Two themes emerged from the respondents’ additional comments and suggestions on training sources. The most important theme was “Cross and shared training,”

receiving 10 units of information. “Competent trainers” was the other theme.

Though several themes, such as “Scanning techniques,” “E-mail management,” “Team building,” etc. received smaller units of information from qualitative data than others, the respondents repeated these questionnaire items from the closed-ended questions. Therefore, though these themes did not have a high number of stakeholder responses, the fact that they have been previously identified perhaps lessened the need for stakeholders to address them in open-ended responses.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS FOR FURTHER STUDY

Summary

The purpose of this study was to learn the training needs that the support staff in the six Kansas Board of Regents' university libraries considered important to improve their job performance and to explore statistically significant differences in the perceptions of the respondents' training needs as a function of their general characteristics (i.e., their educational attainment, library work experience, work units, level of job responsibility, rank, and age range). Three main areas of interests prevailed: 1) identification of training topics that the respondents perceived as needed, 2) exploration of delivery methods and training sources valued by the respondents in the study, and 3) examination of the statistical differences in the perceived training needs as a function of the respondents' general characteristics. A survey instrument was designed to center around the six research questions which enabled the researcher to collect valuable information from the responses to both open-ended and closed-ended questions and to provide evidences to null hypotheses.

General Characteristics of the Respondents

The general characteristics of the respondents in this study were their educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. In this study, the respondents were asked to provide the information related to their general characteristics at the end of the questionnaire.

Educational Attainment

The respondents reported that 36 of them had a high school diploma or some college course; 48 percent were with a Bachelor's degree, and 16 percent had received an advanced degree.

Library Work Experience

Among all respondents, 67 percent had worked in the library field for 10 or more years; however, close to one half, or 49 percent, had worked at their current positions between 1 to 5 years.

Work Units

The respondents in the six university libraries were from 14 different work units, ranging from Cataloging as the largest, with 36 respondents, to a newly emerged but smaller work unit such as Digital library, with only one respondent.

Level of Job Responsibilities

A majority of the respondents had supervisory duties. Forty-two percent of the respondents supervised student employees. About 20 percent supervised both student employees and staff. The remaining 38 percent were non-supervisors.

Rank

The respondents held three different ranks: about 19 percent had a rank of Library Assistant I; 47 percent were categorized at Library Assistant II, and 34 percent achieved a rank of Library Assistant III, the upper level position among the library support staff in the six university libraries.

Age Range

The data on age range showed that while seven percent of the respondents were 25 or younger and 13 percent were between 26 to 35 years old, 61 percent of the respondents were 46 or older.

Quantitative Measures

The quantitative data analyses in this study centered around the six research questions and provided evidences for null hypotheses. The quantitative measures were presented through the respondents' perceptions of their training needs on computer skills, interpersonal skills, supervision/management skills, their perceptions on favorable library/organization support for training, helpful training delivery methods, and helpful training sources. Measures of central tendency for each research question followed to summarize mean values. The results of a series of one-way multivariate analysis of variance (MANOVA) tests were reported to provide evidences to null hypotheses.

Research Question 1

What kind of training needs on computer skills are perceived as important by support staff for their job performance?

On a 1 to 4 Likert rating scale, the respondents identified such training topics as "Database searching"(M=3.45), "MS Office suites"(M=3.15), "Web browsers"(M=3.14), and "E-mail management"(M=2.99) as being important to improve their computer skills. One-way MANOVA test results indicated that the respondents' perceptions of their training needs on computer skills were not influenced by their educational attainment, library work experience, level of responsibilities, rank, and age range. The null hypotheses *Ho 1-a*, *Ho 1-b*, *Ho 1-c*, *Ho 1-e*, *Ho 1-f*, and *Ho 1-g* were accepted. A statistically significant difference

was found in the respondents' perceptions of their training needs on computer skills as a function of their work units. The results of the follow-up Scheffe contrasts reported that the respondents who worked in Acquisitions and Collection/user services considered their training on computer skills more important than the respondents from Cataloging. The null hypothesis *Ho 1-d* was rejected at the $\alpha = .05$ level.

Research Question 2

What kind of training needs on interpersonal skills are perceived as important by support staff for their job performance?

The results of data analyses on interpersonal skills indicated that the respondents considered "Working with difficult people"(M=3.23), "Managing priorities"(M=3.12), and "Oral/written communication skills"(M=3.12) as being important training topics that they needed to enhance their interpersonal skills. One-way MANOVA test results did not provide statistically significant differences in the respondents' perceived training needs of interpersonal skills as a function of their educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. The respondents' perceptions were not influenced by their general characteristics. The hypotheses *Ho 2-a*, *Ho 2-b*, *Ho 2-c*, *Ho 2-d*, *Ho 2-e*, *Ho 2-f*, and *Ho 2-g* were accepted.

Research Question 3

What kind of training needs on supervision/management skills are perceived as important by support staff for their job performance?

The respondents rated the nine training topics related supervision/management skill. Among these training topics, "Training new employees"(M = 3.10), "Supervising student employees"(M = 3.01), and "Work flow design"(M = 2.94) were perceived to be

important to the respondents' supervision/management skills. One-way MANOVA test results did not demonstrate statistically significant differences in the respondents' perceived training needs on supervision/management skills as a function of their educational attainment, library work experience, rank, and age range. The null hypotheses *Ho 3-a*, *Ho 3-b*, *Ho 3-c*, *Ho 3-f*, and *Ho 3-g* were accepted. Statistically significant differences were found in the respondents' perceived training needs on supervision/management skills as a function of their work units and as a function of their level of job responsibilities. The hypotheses *Ho 3-d* and *Ho 3-e* were rejected at the alpha = .05 level. The results of the follow-up Scheffe contrasts did not present where the respondents' perceptions differed statistically among the four work units. However, the Scheffe test results indicated that those who had supervisory duties viewed training on supervision/management skills more important than those who did not have supervisory duties.

Research Question 4

What kinds of library and organizational support are perceived as important by support staff to participate in training?

The respondents rated 11 questionnaire items related to library/organizational support that help their training. Among these library/organizational support tools, "Supply me with appropriate software" (M=3.47), "Provide me with release time" (M=3.43), and "Provide me with technical support" (M=3.34) were considered by the respondents as most favorable library/organizational support for their training. One-way MANOVA test results did not present statistically significant differences in the respondents' perceptions of library/organizational support as a function of their

educational attainment, total years working at their current positions, work units, level of job responsibilities, and rank. The null hypotheses *Ho 4-a*, *Ho 4-c*, *Ho 4-d*, *Ho 4-e*, and *Ho 4-f* were accepted. Statistically significant differences were found in the respondents' perceptions of library/organizational support as functions of their total years working in the library field and as a function of their age range. The respondents who worked in the library field 16 or more years viewed library/organizational support as being more important for their training than those who worked in the library field between 6 to 10 years. The null hypothesis *Ho 4-b* was rejected at the $\alpha = .05$ level. Within the four age-range groups, the respondents who were 35 or younger viewed having release time for training more important than other age-range groups. Those who were 46 to 55 years old considered allocating funding for their training goals and suggesting relevant training topics to them to be more important library/organizational support for their training than other age range groups. The null hypothesis *Ho 4-g* was rejected at the $\alpha = .5$ level.

Research Question 5

What delivery methods are perceived as being helpful by support staff for their training?

The respondents indicated that training delivery methods such as "Classroom instruction with a teacher"(M=3.40), "Interactive classroom discussions"(M=3.04), and "Self-paced hands-on courses"(M=2.96) were to be more helpful. One-way MANOVA test results indicated that the respondents' perceptions of helpful training delivery methods were not influenced by their educational attainment, library work experience, work units, level of job responsibilities, rank, and age range. At the $\alpha = .05$ level, the null hypotheses *Ho 5-a*, *Ho 5-b*, *Ho 5-c*, *Ho 5-d*, *Ho 5-e*, *Ho 5-f*, and *Ho 5-g* were

accepted.

Research Question 6

What internal and external training sources are perceived as being helpful by support staff for their training?

Several training sources such as “From in-house trainers”(M=3.14), “From supervisors”(M=3.09), and “From co-workers”(M=2.99) were rated as helpful to the respondents’ training. One-way MANOVA test results did not report statistically significant differences in the respondents’ perceptions of helpful training sources as a function of their educational attainment, total years working in the library field, work units, level of job responsibilities, rank, and age range. The null hypotheses *Ho 6-a*, *Ho 6-b*, *Ho 6-d*, *Ho 6-e*, *Ho 6-f*, and *Ho 6-g* were accepted. A statistically significant difference was found in the respondents’ perceptions of helpful training sources as a function of their total years working at their current positions. The respondents who had worked at their current positions between 11 to 15 years considered “From nearby library schools” to be a more helpful training source than those who were at their current positions for 16 or more years. The null hypothesis *Ho 6-c* was rejected at the alpha = .05 level.

Qualitative Measures

The qualitative data from the responses to open-ended questions were first coded by the frequency of their appearances. Then the similar concepts of the coded data were placed together to allow common themes to emerge. The emerging themes with their units of information and quotations from the respondents were reported under the section of qualitative analyses in chapter 4. A total of 32 themes with 314 units of information

emerged from qualitative data analyses that reflected the respondents' perceptions of additional training needs on computer skills, interpersonal skills, supervision/management skills, additional comments and suggestions on library/organizational support, helpful delivery methods, and facilitative training sources.

Additional Training Topics on Computer Skills

Training on technology and computer skills were perceived as being important by the respondents from qualitative data. The respondents listed the theme of "Software/programs" to be the most important training topic, with 30 units of information. In addition, the respondents also listed training needs on "Windows operating systems" as being important to their computer skills; 20 units of information were identified on the theme. It is notable that this training topic was also listed as a closed-ended choice on the questionnaire; 27 percent of the respondents considered it as being important and 38 percent considered it as a very important training topic. Other related themes that emerged included "Voyager/cataloging tools"(10 units), "Database"(8 units), "Web page program/creation"(7 units), and "Future use of computer skills"(4 units). Though the training topics of "E-mail management" and "Scanning techniques" were listed as closed-ended choices on the survey instrument, the responses from open-ended questions also mentioned training needs on these two topics with three units of information, respectively.

Additional Training Topics on Interpersonal Skills

The respondents offered six themes with 36 units of information on additional training topics related to interpersonal skills. The data collected from the responses to open-ended questions revealed that additional training topics on "Managing change"(9

units) and “Problem solving”(7 units) were needed to improve the respondents’ interpersonal skills. “Managing change” was also listed as a closed-ended question; 42 percent of the respondents considered it as being important and 33 percent considered it to be a very important training topic. Other themes related to interpersonal skills included “Conflicting management”(6 units), “Team building”(5 units), and “Customer/patron service skills”(5 units).

Additional Training Topics on Supervision/management skills

The data from the responses to open-ended questions on additional training topics of supervision/management skills presented six themes with 50 units of information. “Training for motivation”(15 units) and “Supervision/management”(12 units) were listed to be important themes. Other themes, such as “Disaster/emergency handling skills”(7 units), “Human resource skills”(6 units), and “Diversity”(6 units), were also identified by the respondents to enhance their supervision/management skills.

Additional Comments on Library/organizational Support

Through additional comments and suggestions on favorable library/organization support from the responses to open-ended questions, 83 units of information on six themes emerged. “Release time and best timing for training” was considered to be important support for staff training, with 19 units of information. The choice of “Provide me with release time for training” was also rated on a closed-ended question; 39 percent of the respondents reported it as being important and 44 percent reported it to be a very important library/organizational support. Other important themes included “Supervisor/administrative support”(18 units), “Relevant/applicable training”(17 units), “Promotion/opportunities”(16 units), “Funding for training”(8 units), and “Job efficiency

and effectiveness for training”(5 units).

Additional Comments on Training Delivery Methods

The respondents’ additional comments and suggestions on training delivery methods generated 41 units of information on four themes. “Classroom with feedback” emerged as the most important training delivery method, receiving 13 units of information. Additionally, “One-on-one and in-house training”(12 units) and “Training materials”(12 units) were also important themes identified by the respondents.

Additional Comments on Training Sources

Two themes emerged from the respondents’ additional comments and suggestions on training sources. The most important theme was “Cross and shared training,” receiving 10 units of information. “Competent trainers” was the other theme, receiving nine units of information.

Though some themes, like “Scanning techniques,” “E-mail management,” and “Team building,” received smaller units of information from qualitative data than other themes, the respondents repeated these closed-ended choices on the questionnaire. Therefore, though each of these themes did not have a high number of units of information at stakeholders’ responses, the fact that they were previously identified in closed-ended questions lessened the need for stakeholders to address them fully in open-ended responses.

Conclusions

Based on the findings and analyses of this study, the following conclusions can be drawn:

1. Support staff of this study, as a group, have advanced knowledge and degrees beyond their job qualifications. The respondents in this study possessed a high level of

educational attainment: 64 percent of the respondents reported having a Bachelor's degree or an advanced degree. This finding concurred with that of Kao's study (1998), in which the author studied educational attainment, workplace, and job satisfaction of library technicians in academic libraries in Connecticut. In Kao's study, 63 percent of the respondents had a Bachelor's degree or a Master's degree. Similarly, in Jones' study (1999) on support staff's perceptions of technology in the workplace, 78 percent of the 109 respondents from three university libraries had an undergraduate or graduate-level degree. There is no doubt that well-educated support staff will continue to play an important role in helping shape library services and functions at university libraries. The chief benefit that this group of knowledgeable support staff provided for libraries is "highly skilled labor at a bargain cost" (Letarte, Pennel, and Hamlett, 2004, p. 290). As valuable assets in university libraries, they should be allowed "to take on responsibilities that befit their education to benefit the entire academic community" (Jones and Stivers, 2004, p. 91).

2. The library support staff is an aging population. In this study, 62 percent of the respondents reported to be 46 years or older. This finding is similar to that of the Association of College and Research Libraries' (ACRL) Adhoc Task Force on Recruitment and Retention Issues White Paper (2002). In this paper, it noted that more than 60 percent of librarians working at the libraries within the Association of Research Libraries (ARL) were due to retirement in the next decade (ACRL Adhoc Task Force White Paper, 2002). Additionally, the statistics from ARL are mirrored the fact of "massive retirement of current women librarians over next twenty years" (Deyrup, 2004, p. 245).

In recent years, attention on aging library profession has mainly focused on recruitment and retention of professional librarians. Because support staff will continue to

perform tasks that professional librarians had done in the past, attention and efforts on recruiting, retaining, and training library support staff should be made. This issue is as equally important as that with professional librarians.

3. The training needs for upgrading support staff's work skills remain enormous.

The respondents consistently demonstrated their training needs on computer skills, interpersonal skills, and supervision/management skills in this study. For example, in responding to both closed-ended and open-ended questions on training needs of computer skills, the data from the respondents' rating and comments showed that, despite their level of education, library work experience, level of job responsibilities, rank, and age range, they needed training to improve their computer skills. Such training needs were evidenced by the measures of all nine training topics on computer skills from the lowest mean of 2.17 to the highest one on 3.45 on a 1 to 4 Likert rating scale, with 1 signifying "Not at All Important" and 4 "Very Important." Additionally, 85 units of information came from the responses to open-ended questions on additional training topics on computer skills. Computer skills are essential for their job performance, as one respondent rated all training topics on computers skills in "3s" and wrote to open-ended questions, "all these are important topics." Without adequate training on computer skills, the support staff's job performance would suffer. The training need for computer skills was also evidenced by O'Hanlon and Phillips (1999)'s in-house survey of 84 staff members addressing comfort and competence with computers. The survey revealed that 56 percent of the respondents stated that they were not familiar or somewhat familiar with Windows 95; 53 percent were not confident in ability to demonstrate web browsers, and 52 percent were not comfortable using Word 97. Therefore, it is vital for university libraries to provide training on skills that support staff need in order

to provide library services to meet users' needs.

4. The nature of support staff's work has continuously become technology-driven. The respondents identified 14 functional work units where they spent more than 60 percent of their work time. Though some names of these work units appeared to have traditional library functions, such as Cataloging and Circulations, there was an emerging work unit for digital library applications, as seen in the responses. In fact, even in the traditional work units, the respondents already saw their work routinely involved in technologies, as one respondent wrote that "we are expected to be the in-house techs and know how to make everything work and training people to scan and use the programs." Obviously, the quality of library services depend to a great degree on support staff's ongoing training and skill upgrades. In the 2000 ACRL survey, "close to 66 percent of the respondents highlighted impact of expanding technologies as the most critical issue they face as librarians" (Cannon, 2004, p. 259). In the 2003 survey on the same issue, "with 95 percent of the respondents rating the impact of expanding technologies as very important and somewhat important issue to them in their job" (Cannon, p. 259). Because a large percent of library employees are support staff in university libraries, the support staff will continue to experience the expanding role of technology in the library field and must continue their training to keep up with technological advancements.

5. The respondents' training needs on computer skills transcended their educational attainment, library work experience, work units, responsibilities, rank, and age range. The respondents' perceived training needs on computer skills reflected the rapidly changing work environment created by technology and advanced telecommunications. For example, support staff routinely search a large scale of

databases, ranging from the library online cataloging database, commercially purchased databases, to the World Wide Web, for getting their own work done and for helping users. They wanted to master database searching strategies and to receive better search results. Therefore, it is not surprising to see that the respondents rated “Database searching,” “MS Office suites,” “Web browsers,” “E-mail management” to be important training topics, in addition to “Software and programs” and “Voyager cataloging tools.”

The findings on the research question 1 of this study concurred with those at the Rutgers University Libraries where both professional librarians and support staff identified Internet browsers, spreadsheet, Powerpoint software, word processing, basic computer use, e-mail management, using/training /learning web sites, and sharing documents on the library’s network as top 25 computer skills that they wanted to “learn more” (Rutgers University Libraries Report, 2000). In an article, “Technical Training,” Eastmond (2002) also stated that Microsoft Word, Microsoft Excel, Internet skills, and Microsoft Access were “the top four most commonly identified technological needs in libraries” (p. 74). The training needs for these four top skills were rated highly by the respondents in this study, as well. Marmion (1998) listed computer operating systems, Microsoft Windows, and basic troubleshooting with hardware as basic computer skills for professional librarians and support staff in 1998. Six years later, these skills are needed even more urgently in libraries. Though some authors suggested that in an area of increasing financial constraints, only staff with certain skills should be hired (Chaffin and Smith, 2003), continual training on computer skills for all support staff should remain a priority at university libraries.

6. There may be a link between the rate of a constantly changing workplace and

the high level of stress, as reported from the open-ended responses, which would require greater attention from supervisors and library administration. While the preferred interpersonal skills may vary from one type of organization to the other, due to the rapidly changing work environment in university libraries, support staff often stated a need to have skills to cope with change. In this study, “Working with difficult people” was identified by the respondents as being very important training topic to enhance their interpersonal skills. One respondent wrote in an answer to an open-ended question regarding additional training needs on supervision/management skills, “although some of these topics (on the questionnaire) do not apply to me currently, it is something that would be very helpful.” This may explain why the respondents of this study rated highly on the closed-ended questionnaire items on supervision/management skills. Chaffin and Smith (2003) pointed out that librarians did not learn supervisory and interpersonal skills in library school; “we may be equipped to handle the latest technology, but people are always unique and often come with real problems that one must work with as a colleague or supervisor” (p. 39). The authors suggested that institutions offer courses that “emphasize the responsibilities of a supervisor and techniques for managing staff, such as doing performance review and handling conflict” (p. 39). In this study, the respondents’ level of job responsibilities influenced their perceptions of training needs on supervision/management. When support staff are assigned a high level of job responsibilities or new projects, relevant training on supervision/management should be provided to them. In that way, it will help ease their stress level and help them fulfill their responsibilities.

7. Library/organizational support plays a vital role in encouraging support staff to

participate in training. In this study, the top three library/organizational support that the respondents considered important were “Supply me with appropriate software” (M=3.47), “Provide me with release time for training” (M=3.43), and “Provide me with technical support” (M=3.34). These responses reflected that in a rapidly changing workplace, library/organizational support to staff training should be technology-oriented because “adequate staff training requires a firm commitment from the library administration” (Tennant, 1995, p. 46). Additionally, there are many creative ways that university libraries can help with support staff training, from arranging on-site training, suggesting relative training topics to support staff, encouraging support staff to practice newly learned skills, etc. Others may need resources like purchasing software, funding for travel, and providing training materials. For libraries facing limited funding for staff training, Tennant (1995) suggested that “although a financial commitment is important, what is essential is allowing and encouraging staff to take the time to learn and utilize new methods” (p. 46).

It is very interesting to note that, when the subjects were asked to rate the importance of a closed-ended questionnaire item on “Link my training to a pay increase,” this item was not a top-rated one by the respondents. The response from open-ended questions provided a clue to the reason, “it is not possible within current system.” The state-wide classification system in Kansas is based on the nature of job itself, not training sessions attended. Therefore, support staff have to be promoted from a lower rank to a higher rank in order to get a pay increase, not through training itself. In theory, training helps employees acquire needed skills and therefore prepare them for a promotion. In practice, it is not clear how often each library is able to promote support staff based on

the new skills they have acquired. In a study of the motivation of professional librarians and paraprofessional staff for participating in continuing education program, Smith and Burgin (1991) found that the reason rated least highly by the respondents was “To increase the likelihood of personal financial gain” (p. 408). Leonhardt (1996) also concluded that “compensation is important, but it is not the only important reward” valued by support staff”(p. 214). To what degree will a pay increase motivate support staff’s participation in training? This could be a fruitful area for further investigation.

8. Training delivery methods can help or impede support staff training. The respondents of this study identified “Classroom instruction with a teacher” as being the most helpful delivery method. These findings echoed Corder’s (2002) observation that “the old-fashioned lecture is the most direct method of transferring knowledge from one person to a large group” (p. 44). Additionally, a study by the American Society for Training and Development found that even if online courses were made available, people were far more likely to complete them in a classroom rather than at their desk (Zimmerman, 2001). Although some library training sessions have been offered through videoconferencing, online tutorial, blackboard, and web interface, because the support staff at university libraries were not trained to use them on a daily basis, their apprehension regarding those delivery methods is understandable, as one respondent pointed out, “the videoconferences, ... do not engage, there is no dialog or feedback and there is always some technical problem.” To remedy this shortcoming, Pugh (2003) suggested some general principles of using this medium: “make it relevant; make it short, use it in the right place, brief, and debrief” (p. 66).

Using technology to deliver training is not an easy job from an instructor’s side,

either. In a description of team-teaching two courses in acquisitions and processing to library technical assistant (LTA) students via interactive synchronous videoconferencing, Hulbert and McBride (2004) listed both technical difficulties (i.e., needing more time for preparation, lack of student access to the same reference books, and the need for upgrading telecommunication infrastructure) and personal challenges (i.e., needing good rapport between the instructors and needing to learn watching the camera and speaking into a stationary microphone) in teaching this kind of class.

Although the respondents of this study expressed their preference for “classroom instruction with a teacher” for training delivery, it is unclear in what circumstances this preferred delivery method works better than other delivery methods. In discussions of the impact of face-to-face teaching, Bates and Poole (2003) concluded that the use of face-to-face teaching should be based on the unique educational features, i.e., subject matters, the circumstances of the potential learners, the resources available, and economics. When resources are not available for face-to-face teaching or a classroom teaching, other training delivery methods such as online or web broadcasting courses may be used instead. Bates and Poole (2003) preferred to use the term of mixed mode (or hybrid or blended teaching) for situations in which “classroom contact is reduced but not eliminated and the rest of the time is spent by students (and instructors) online”(p. 117). Nonetheless, with the increased maturity of technology-based training delivery methods in the next few years and with more exposures to these delivery methods, the support staff’s perceptions on a variety of training delivery methods may change. It remains an interesting area for further study.

9. In-house trainers, supervisors, and co-workers were the most helpful training sources for the respondents of this study. The respondents liked to have immediate

human interaction, to have quick feedback, and to learn new skills from someone they knew and with whom they felt comfortable. This is consistent with the findings of Boud and Middleton (2003) which indicated that peers, supervisors, and informal networks played important roles in workplace learning. In the researcher's library, support staff were trained first by their immediate supervisors when they entered the work setting and then consulted with their co-workers as they started practicing the new skills. In-house trainers may be able to re-enforce what they have learned. Because supervisors are closely working with support staff, their training on new skills should remain a priority, especially when the library resources (training funding, release time, etc.) are limited. In addition to in-house training programs, Tennant (1995) also lists training vendors, outside training opportunities (commercial training organizations), and self-paced instruction as sources of training. These external training sources and internal training sources should in one way or the other help support staff's training on new skills.

Recommendations for Future Study

Based on the findings, summaries, and conclusions of this study, the researcher proposes the following recommendations for further study:

1. It is recommended that a broader scope of training topics on computer skills for support staff be explored. In this study, the researcher chose the nine training topics that were related closely to the support staff's job areas in the six Kansas university libraries. Additional training topics on computer skills were identified by the respondents through open-ended questions. These topics included a variety of software/programs such as Dreamweaver, Hypersnap, Adobe package, Photoshop, digital photography, macro-express, XML, web programming, etc. To what extent does the support staff need

training on these topics to enhance their job performance? How may their current level of computer skills influence their perceptions on training needs? These are some questions that should be explored.

2. It is recommended that further studies be conducted on motivating factors that may influence support staff's perceptions of their training needs on computer skills. In this study, despite the respondents' different levels of educational attainment, library work experience, job responsibilities, rank, and age range, these variables did not influence the respondents' perceptions of their training needs on computer skills. Therefore, investigations on what motivating factors may exist would provide possible evidences on this topic.

3. It is recommended that further studies be conducted on the perceptions of the supervisors and library administrators on the support staff's training needs on computer skills. Supervisors and library administrators were, most often, the people who make it possible for support staff to engage in job-related training. The areas for further research would be the following: What are their perceptions? How do they rate the computer skills that support staff should have to get the job done? What are some helpful delivery methods that enable support staff to acquire needed computer skills?

4. It is recommended that further studies be conducted on how training on interpersonal skills could help support staff manage and cope with rapid changes in technology. Support staff with good interpersonal skills, or "soft" skills, have become more important to university libraries. What are some additional interpersonal skills on which support staff need training? What are the priorities among these skills, in terms of training?

5. It is recommended that further studies be conducted on how much training on supervision/management that non-supervisory support staff need. What are some variables that may influence their training needs on supervision/management skills?

6. It is recommended that further studies be conducted on why the support staff's views on the library/organizational support were different based on the years of library services and age range. When the resources for training become limited, understanding these differences will help libraries better plan training programs and distribute resources.

7. It is recommended that further studies be conducted on how different training delivery methods may enhance or impede support staff's training. In this study the respondents consistently rated highly on conventional delivery methods, such as classroom instructions and classroom discussions. With the increasing use of teleconferences, video conferences, online tutorial, and web broadcasting on training, it may be more convenient, cheaper, and more effective to use these technology-based delivery methods than otherwise it would be.

8. It is recommended that further studies be conducted on relationship between perceived helpful delivery methods and the extent to which the support staff have used these delivery methods. The findings of the investigation would help identify appropriate delivery methods with which support staff are familiar, feel comfortable, and would perceive the training as being relevant to their job performance and to their development needs.

9. It is recommended that further studies be conducted on training outcomes by in-house personnel verses professional trainers. With the rapid changes of technology, in-house personnel may not be able to keep up with all the new developments. Smaller

university libraries may not be able to afford in-house trainers to take care of support staff training needs. The findings from the investigations will help select appropriate training sources.

10. It is recommended that the parameters of this study, or one similar to it, be replicated in other settings, including a group of similar types of libraries (e.g., a consortium of school, university, or public libraries). Such studies would serve the participating libraries' common training needs and provide a greater research base on which to view library support staff training on a larger scale, thus enhancing opportunities for shared training, as was recommended by a participant in this study.

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APPENDIX A

Date

Name
Library

Dear (name):

Support staff have always played an important role in academic libraries. Their opinions on training and development needs are vital in planning and designing library staff training programs for them. I am undertaking a doctoral research project at Kansas State University that studies support staff training and development needs in the six Kansas Board of Regents university libraries. The findings of this project will help enhance the current training programs and better serve your training needs and interests.

It will take about 15 minutes to complete the enclosed questionnaire. I trust and sincerely hope that you can help me with this project by taking a few minutes to complete the questionnaire. If possible, would you please return the completed questionnaire in the provided postage paid and self-addressed envelope by **(Date)**?

All returned questionnaires will be kept by the researcher. Your identity will be kept confidential. Only the findings in the aggregate form will be presented in the study so that your library will not be listed separately from any other library. The results of this study are available to you at your request by contacting Professor Rosemary Talab of Kansas State University at talab@ksu.edu. A copy of the final dissertation will be housed at the Kansas State University Library.

Your participation in this study is critical; thus, I ask you to devote the few minutes necessary for completing the questionnaire. This study will undoubtedly result in a better understanding of the training issues facing support staff and, hopefully, identify appropriate solutions. Your participation in this study will be genuinely appreciated.

Thank you!

Sincerely,

Sha Li Zhang
Doctoral Candidate/Researcher
Kansas State University

Dr. Rosemary Talab,
Professor and Dissertation Committee Chair
Kansas State University
Phone: (913) 532-5904

Enclosures

Kansas Board of Regents University Libraries

Support Staff Training Needs Questionnaire

Instructions:

On a scale from 1 to 4, where 1 is not at all important and 4 is very important, please circle one number on the 1 to 4 point scale.

Start here:

Computer Skills

1. Please rate the importance to you of the following training topics on your computer skills:

Table with 5 columns: Topic, Not at all Important, Somewhat Important, Important, Very Important. Rows include Database creation, Database searching, E-mail management, MS office suites, Presentation software, Scanning techniques, Web browsers, Web page creation/maintenance, and Windows operating system.

What other training topics relevant to computer skills would you like to suggest? Please write your suggestions and comments in the space provided below.

Two horizontal lines for writing suggestions and comments.

Interpersonal Skills

2. Please rate the importance to you of the following training topics on your interpersonal skills:

	Not at all Important	Somewhat Important	Important	Very Important
a. Managing change.....	1	2	3	4
b. Managing priorities.....	1	2	3	4
c. Oral/written communication skills.....	1	2	3	4
d. Presentation skills.....	1	2	3	4
e. Stress management skills.....	1	2	3	4
f. Team building skills.....	1	2	3	4
g. Working with difficult people.....	1	2	3	4

What other training topics relevant to interpersonal skills would you like to suggest? Please write your suggestions and comments in the space provided below.

Supervision/Management Skills

3. Please rate the importance to you of the following training topics on your supervision/management skills:

	Not at all Important	Somewhat Important	Important	Very Important
a. Coaching/mentoring.....	1	2	3	4
b. Conducting effective meetings.....	1	2	3	4
c. Departmental coordination	1	2	3	4
d. Interviewing skills.....	1	2	3	4
e. Project management	1	2	3	4
f. Staff appraisal/evaluation	1	2	3	4
g. Supervising student employees.....	1	2	3	4
h. Training new employees.....	1	2	3	4
i. Work flow design.....	1	2	3	4

What other training topics relevant to your supervision/management skills would you like to suggest? Please write your suggestions and comments in the space provided below.

Library/Organizational Support

4. Please rate the importance to you of the following library and organizational support that may affect your decision to attend training:

	Not at all Important	Somewhat Important	Important	Very Important
a. Enable me to practice new skills learned from training.....	1	2	3	4
b. Provide me with technical support.....	1	2	3	4
c. Offer in-house expertise when I need it	1	2	3	4
d. Link my training to a pay increase.....	1	2	3	4
e. Acknowledge my training on my evaluation.....	1	2	3	4
f. Provide me with release time for training.....	1	2	3	4
g. Allocate funding for my training goals...	1	2	3	4
h. Provide me with training materials.....	1	2	3	4
i. Supply me with appropriate software...	1	2	3	4
j. Arrange on-site training sessions.....	1	2	3	4
k. Suggest relevant training topics to me	1	2	3	4

What other factors would you like to suggest that affect your decision to attend training? Please write your suggestions and comments in the space provided below.

Delivery Methods

5. Please rate your preferences of the following delivery methods that will help your training:

	Not at all Helpful	Somewhat Helpful	Helpful	Very Helpful
a. Classroom instruction with a teacher.....	1	2	3	4
b. E-mail correspondance	1	2	3	4
c. Interactive classroom discussions.....	1	2	3	4
d. Online learning tutorials.....	1	2	3	4
e. Self-paced hands-on courses	1	2	3	4
f. Self-paced online courses.....	1	2	3	4
g. Videoconferences.....	1	2	3	4

What other delivery methods would you like to suggest to help your training? Please write your suggestions and comments in the space provided below.

Training Sources

6. Please rate your preferences of the following training sources from which you would like to receive training:

	Not Helpful	Somewhat Helpful	Helpful	Very Helpful
a. From your co-workers.....	1	2	3	4
b. From your supervisors.....	1	2	3	4
c. From in-house trainers	1	2	3	4
d. From nearby library schools	1	2	3	4
e. From campus workshop.....	1	2	3	4
f. From state conferences.....	1	2	3	4
g. From regional networks.....	1	2	3	4
h. From library vendors.....	1	2	3	4

What other training sources would you like to suggest? Please write your suggestions and comments in the space provided below.

Information about yourself

7. Are you a supervisor? No _____ Yes _____

If Yes, _____ number of students you are supervising

_____ number of staff you are supervising

8. Your job classification: (check only one)

_____ Library Assistant I

_____ Library Assistant II

_____ Library Assistant III

_____ Other (please specify) _____

9. Your major work areas, e.g., cataloging, circulation, government documents, ILL, reference, etc.

Primary work area (60 percent or more of your work time): _____;

Secondary work area: _____; _____ percent of your work time

Other work area: _____; _____ percent of your time

10. Your total years of library work experience:

(rounded to the nearest half year): _____ years

11. Your total years of experience in your current position:

(rounded to the nearest half year) _____ years

12. Your highest education level attained: (check only one)

a. _____ GED/high school diploma

b. _____ Two-year associate degree or some college courses

c. _____ Bachelor's degreeMajor _____

d. _____ Master's degreeMajor _____

e. _____ Ph.D. degree.....Major _____

13. Your age range:

25 or younger _____ 26-35 _____ 36-45 _____

46-55 _____ 56-65 _____ 66 or older _____

14. Your Gender:

Female _____

Male _____

APPENDIX B

Job Description

LIBRARY ASSISTANT I

1998E1

Pay Grade: 16

SOC: 43-4120

Supervisory Default Code: N

FLSA Default Code: N

DEFINITION OF WORK

Summary

This is specialized, technical and/or archival library work. Work involves assisting in performing a limited scope of library tasks in such areas as circulation, cataloging, acquisitions, serials, inter-library loans, bindery, preservation, storage or a related area.

Standard Classification Factors

Supervision Received - LEVEL A: "Under immediate supervision..." "Immediate" means that the employee has little or no authority to select alternative work methods or to render independent judgments of any consequence. Each task is performed according to detailed instructions, written or oral. Assignments are usually for a short duration and when completed are usually checked for accuracy, adherence to instructions and established regulations, as well as the worker's rate of performance.

Difficulty - LEVEL A: Routine... Where the work is usually repetitive and the employee works from detailed instructions, the difficulty is usually limited to accuracy and speed.

Complexity - LEVEL B: Work is of a structured nature including duties that have several related steps. This level involves simple analysis of data, identification of easily distinguishable facts and recognition of differences in related situations. Workers at this level exercise limited independent judgment in determining methods or procedures to be used in making minor decisions. Work is normally

controlled by frequent review and consultation with supervisors. When guidelines exist at this level, they are usually specific and aid in determining an approach to problems or situations. Workers at this level must be able to identify basic differences in situations to determine the actions which need to be taken.

Consequence of Actions or Decisions - LEVEL B: Consequences of actions or decisions at this level are minor as the work is normally reviewed regularly and errors are usually detected in following operations. Errors may be disruptive to co-workers or may cause minor inefficiency. Costs due to errors are minimal.

Contacts - LEVEL B: The purpose of the contact is to plan, coordinate and advise on work efforts, interpret guidelines or instructions, elicit opinions or give guidance on the basis of facts to resolve common issues or problems when the information is not sensitive in nature or the individuals or groups are working toward mutual goals and have basically cooperative attitudes. Well developed communication skills are required.

Physical Demands - LEVEL B: The work requires light physical exertion. The employee may be required to perform handling activities with lightweight or easily moved items (e.g. books, file folders, boxes of office supplies, small machine parts, etc.); perform moving activities for brief periods; operate light equipment; perform repetitive motions for brief periods; confined to a work area.

Environmental Conditions - LEVEL A: The work environment involves normal everyday hazards or discomforts typical of offices, meeting and training rooms, or libraries. Comfortable levels of temperature, ventilation, lighting and sound are inherent in the work environment. Exposure to deviations from pleasant environmental conditions is only occasional. The likelihood of injury is remote.

Supervision/Leadership - LEVEL A: No supervisory or leadership responsibility; may explain work instructions or assist in training others.

Distinguishing Features

Differs from the Library Assistant II class in which the incumbents perform a full-range of library tasks such as assisting in library collection development, conducting difficult searches of library materials, and performing limited cataloging activities.

EXAMPLES OF WORK PERFORMED

Performs routine bibliographic searches and maintenance of library records by generating, interpreting, modifying, updating, and verifying bibliographic and holdings record data according to local and national standards.

Provides basic information to patrons by utilizing standard sources of information, such as indexes, handbooks, encyclopedias, and electronic databases. Directs patrons to appropriate unit required; explains policies and procedures.

Formats and enters complete or modified record sets and updates into established library data files.

Assists higher-level library staff by performing routine library tasks in an assigned area.

Searches and proofs records through a computerized library system, such as the On-line Computer Library Center; may use a computerized library system in place of card catalog.

May work with foreign language or specialized subject area materials.

May train and supervise clerical or student employees performing routine library functions.

REQUIRED KNOWLEDGE, ABILITIES AND SKILLS

Knowledge

*Knowledge of routine library techniques, methods and procedures.

*Knowledge of written communications.

Knowledge of master records, reference sources and procedures used in bibliographic searching and descriptive cataloging.

Knowledge of principles and techniques of supervision.

Knowledge of foreign languages or specialized subject areas.

Abilities

*Ability to verify the accuracy of bibliographic information and maintain exact records.

*Ability to establish and maintain effective working relationships with patrons, librarians and other library personnel.

*Ability to comprehend written and oral technical instructions and communicate effectively.

*Ability to perform arithmetic computations.

*Necessary at Entry

MINIMUM REQUIREMENTS:

Job knowledge at an entry level in library support work.

NC: 06/93

REV: 12/95

REV: 10/98

REV: 02/00

LIBRARY ASSISTANT II

1999E1

Pay Grade: 18
SOC: 43-4120
Supervisory Default Code: L
FLSA Default Code: N

DEFINITION OF WORK

Summary

This is specialized, technical and/or archival library work. Work involves assisting in performing a full-range of library tasks in such areas as collection development, arrangement, preservation and storage. Work may also involve overseeing a library function such as circulation or reserve, or performing various cataloging activities.

Standard Classification Factors

Supervision Received - LEVEL B: "Under general supervision..."
Employees working under general supervision usually receive some instructions with respect to the details of most assignments but are free to develop their own work sequences within established procedures, methods and policies. They are often physically removed from their supervisor and subject to only periodic checks.

Difficulty - LEVEL B.: Average - Where the employee is confronted with a variety of duties susceptible to different methods of solution which, in turn, places a correspondingly higher demand upon resourcefulness and concentration. Positions which require the analysis and evaluation of raw data and the rendering of conclusions would, in many instances, fall into this category.

Complexity - LEVEL C: Work is of a standardized nature that may involve a variety of duties. Analytical thought becomes more important at this level due to increased data and changing situations. Tasks usually have several steps, some of which may not be directly related. Alternatives may exist for processes or methods to be used in solving problems. Workers at this level experience a moderate amount of independent judgment. Work is controlled by routine review and reporting to or consultation with

supervisors. When guidelines exist at this level, they tend to be more complicated or technical in nature requiring careful interpretation.

Consequences of Actions and Decisions - LEVEL C:

Consequences of actions or decisions at this level are limited in scope and effect as the work is reviewed occasionally. Errors may cause moderate inefficiency. Costs due to errors may be significant.

Contacts - LEVEL B: The purpose of the contact is to plan, coordinate and advise on work efforts, interpret guidelines or instructions, elicit opinions or give guidance on the basis of facts to resolve common issues or problems when the information is not sensitive in nature or the individuals or groups are working toward mutual goals and have basically cooperative attitudes. Well developed communication skills are required.

Physical Demands - LEVEL B.: The work requires light physical exertion. The employee may be required to perform handling activities with lightweight or easily moved items (e.g. books, file folders, boxes of office supplies, small machine parts, etc.); perform moving activities for brief periods; operate light equipment; perform repetitive motions for brief periods; confined to a work area.

Environmental Conditions - LEVEL A: The work environment involves normal everyday hazards or discomforts typical of offices, meeting and training rooms, or libraries. Comfortable levels of temperature, ventilation, lighting and sound are inherent in the work environment. Exposure to deviations from pleasant environmental conditions is only occasional. The likelihood of injury is remote.

Supervision/Leadership - LEVEL C: Typically involves limited supervisory responsibility which entails performing as a "first line supervisor" for a small number of employees. Supervision is not the primary responsibility of the job. Responsibility includes training, instructing, scheduling, and reviewing work and recommending hiring and disciplinary actions to-a higher level of authority.

Distinguishing Features

Differs from the Library Assistant I class in which the incumbents perform routine and maintenance library tasks, provide only basic information to library patrons, and perform routine searches of library materials.

Differs from the Library Assistant III class in which the incumbents perform advanced library work by assisting patrons in conducting the more difficult and complex searches of library materials, performing the more difficult cataloging activities, and conducting searches of library materials related to legislative issues or complex academic subject matter.

EXAMPLES OF WORK PERFORMED

Performs difficult bibliographic searches by developing search strategies and using a wide variety of both standard and unique bibliographic tools.

Oversees a library functional area, such as circulation, serials, inter-library loan, government documents, reference, acquisitions, special collections, reserve or a related area; keeps relevant library records and statistics.

Performs complicated copy cataloging and some original cataloging in a limited area for routine or standard library materials; determines the correct form of the main entry, composes descriptive notes, performs authority searches, assigns call numbers and performs subject analyses under close supervision. Follows local and national standards.

May work with foreign language or specialized subject area materials.

Updates the library card catalog or computer system by identifying the need for modifications of bibliographic information with regard to subject, author, title entry, and cross reference changes, additions or deletions.

Provides information to patrons by using standard and unique sources; gives instructions for locating library materials and services; interprets operating policies and procedures of the unit; instructs patrons in the use of library equipment.

Determines the appropriate placement of library materials according to library procedures, standards, and systems; arranges library materials for systematic accessibility; performs techniques necessary to preserve library collections.

Participates in library collection development by suggesting items to be acquired; resolves problems regarding possible duplication of library materials and identifies errors in the shipment of library materials.

Selects, prepares and records library materials for inter-library loan requests or bindery shipment or receipt according to library policy.

May train and supervise a staff of lower-level library assistants, or clerical or student employees.

REQUIRED KNOWLEDGE, ABILITIES AND SKILLS

Knowledge

*Knowledge of complex library work techniques, methods and procedures.

*Knowledge of library sources and procedures used in bibliographic searching and descriptive and original cataloging.

Knowledge of the principles and techniques of supervision.

*Knowledge of written communications.

Knowledge of foreign languages or specialized subject areas.

Abilities

*Ability to supervise the work of others.

*Ability to distinguish pertinent bibliographic information, verify its accuracy and maintain exact records.

*Ability to establish and maintain effective working relationships with patrons, librarians and other library personnel.

*Ability to comprehend written or oral technical instructions and communicate effectively.

*Ability to perform basic arithmetic computations.

*Necessary at Entry

MINIMUM REQUIREMENTS:

Job knowledge at an advanced level in library support work.

NC: 06/93

REV: 12/95

REV: 10/98

REV: 02/00

LIBRARY ASSISTANT III

2000E1

Pay Grade: 20
SOC: 43-4120
Supervisory Default Code: L
FLSA Default Code: N

DEFINITION OF WORK

Summary

This is advanced specialized, technical and/or archival library work. Work involves performing complex library activities such as providing advanced technical information to patrons, performing some original cataloging activities, conducting the more difficult bibliographic searches, monitoring assigned library expenditures, conducting tours and overseeing arrangement, preservation and storage of library collections.

Standard Classification Factors

Supervision Received - LEVEL C: "Under direction. . ." Employees at this level usually receive a general outline of the work to be performed and are generally free to develop their own sequences and methods within the scope of established policies. New, unusual, or complex work situations are almost always referred to superior for advice. Work is periodically checked for progress and conformance to established policies and requirements.

Difficulty - LEVEL C: Considerable - Duties which require a high degree of concentration because of the many factors which must be considered and weighed before a decision can be reached. Usually positions that require planning, developing, and coordinating programs and directing fairly large groups of people fall into this category.

Complexity - LEVEL C: Work is of a standardized nature that may involve a variety of duties. Analytical thought becomes more important at this level due to increased data and changing situations. Tasks usually have several steps, some of which may not be directly related. Alternatives may exist for processes or methods to be used in solving problems. Workers at this level experience a moderate amount of independent judgment. Work is

controlled by routine review and reporting to or consulting with supervisors. When guidelines exist at this level, they tend to be more complicated or technical in nature requiring careful interpretation.

Consequences of Actions and Decisions - LEVEL C: Consequences of actions or decisions at this level are limited in scope and effect as the work is reviewed occasionally. Errors may cause moderate inefficiency. Costs due to errors may be significant.

Contacts - LEVEL B: The purpose of the contact is to plan, coordinate and advise on work efforts, interpret guidelines or instructions, elicit opinions or give guidance on the basis of facts to resolve common issues or problems when the information is not sensitive in nature or the individuals or groups are working toward mutual goals and have basically cooperative attitudes. Well developed communication skills are required.

Physical Demands - LEVEL B: The work requires light physical exertion. The employee may be required to perform handling activities with lightweight or easily moved items (e.g. books, file folders, boxes of office supplies, small machine parts, etc.); perform moving activities for brief periods; operate light equipment; perform repetitive motions for brief periods; confined to a work area.

Environmental Conditions - LEVEL A: The work environment involves normal everyday hazards or discomforts typical of offices, meeting and training rooms, or libraries. Comfortable levels of temperature, ventilation, lighting and sound are inherent in the work environment. Exposure to deviations from pleasant environmental conditions is only occasional. The likelihood of injury is remote.

Supervision/Leadership - LEVEL C: Typically involves limited supervisory responsibility which entails performing as a "first line supervisor" for a small number of employees. Supervision is not the primary responsibility of the job. Responsibility includes training, instructing, scheduling, and reviewing work and recommending hiring and disciplinary actions to a higher level of authority.

Distinguishing Features

Differs from the Library Assistant II class in which the incumbents assist patrons in less difficult searches of library materials and perform less complex cataloging activities.

Differs from the professional library classes in which the incumbents perform professional library work to develop the library's collections and perform original cataloging for all types of materials in a number of languages.

EXAMPLES OF WORK PERFORMED

Provides advanced technical library information to patrons utilizing print and electronic resources which may include abstracts, encyclopedias, periodical and other indices, guides and handbooks, atlases, glossaries, almanacs, and dictionaries.

Performs some original cataloging of complex materials in limited areas in collaboration with a librarian; determine the correct form of the main entry, composes descriptive notes, performs authority searches, maintains consistent authority files; assigns call numbers in an in-house cataloging system and performs subject analyses.

Performs copy cataloging involving complexities in form, language or content by utilizing a computerized cataloging system and knowledge of a foreign language, or specialized subject expertise, subject to review by a librarian.

Performs in the more difficult bibliographic searches for library materials such as those involving subject areas with complex entries.

Develops, disseminates and interprets unit policies, procedures and goals; established training curricula for patrons in the use of library equipment.

Prepares statistical tabulations and reports; oversees library expenditures as assigned.

Participates in collection development and library equipment procurement by recommending items to be acquired.

Answers inquiries regarding library materials and actions of the state legislature by tracking bills, locating amendments and committee reports, providing voting details of the legislators, and providing legislative histories.

Tracks updates on technological developments in library services and legislative reference services; researches future topics being considered by the state legislature.

Oversees the work of indexing legislative bills, preparing cards for legislative bill index catalog and subject authority file, and clipping, indexing and filing newspaper articles relating to state government and the legislature.

Determines appropriate placement of library materials according to library procedures, standards, and systems; arranges library for accessibility; performs techniques necessary to preserve library collections.

May train and supervise lower-level library assistants, or clerical or student employees.

May work with foreign language or specialized subject area materials.

REQUIRED KNOWLEDGE, ABILITIES, AND SKILLS

Knowledge

*Knowledge of library organization, facilities, services, methods and policies.

*Knowledge of library sources and procedures used in bibliographic searching and descriptive and original cataloging.

Knowledge of the principles and techniques of supervision.

Knowledge of foreign languages or specialized subject areas.

Abilities

*Ability to plan, organize, direct, and supervise the work of subordinates.

*Ability to establish and maintain effective working relationships with patrons, librarians, and other library personnel.

*Ability to prepare operating and statistical tabulations and reports.

*Necessary at Entry

MINIMUM REQUIREMENTS:

Independent work experience in library support work.

NC: 06/93

REV: 12/95

REV: 10/98

REV: 02/00

APPENDIX C

KANSAS BOARD OF REGENTS' UNIVERSITIES

Emporia State University

Fort Hays State University

Kansas State University

Pittsburg State University

University of Kansas

Wichita State University

APPENDIX D

BIOGRAPHIC INFORMATION OF THE PANEL OF EXPERTS

Dr. Camila Alire is Dean of Library Services for the University of New Mexico General Libraries. Prior to that position, she was Dean Emeritus at Colorado State University in Fort Collins, Colorado; Dean/Director of Libraries at the Auraria Library, University of Colorado at Denver; and an assistant to Dean/Instructor at the University of Denver Graduate School of Librarianship and Information Management. Dr. Alire's research focuses on library services for Latinos and other minorities, on library disaster recovery, and on recruitment and retention of minorities in the library profession and in higher education. She and Orlando Archibeque co-authored a book entitled *Serving Latino Communities* published by Neal-Schumann Press. She recently completed her second book entitled *Library Disaster Planning and Recovery Handbook*. Dr. Alire served on ALA Council and on the ALA Executive Board. In 2004, She is President-Elect of Association of College & Research Libraries, a division of American Library Association.

Dr. Joseph W. Mau is professor at the College of Education, Wichita State University where he has been on the faculty for 13 years. Dr. Mau's teaching responsibilities include career development, principles and philosophy of counseling, assessment in counseling, educational research, and research seminar. Dr. Mau has published over 35 journal articles, books, book chapters, reviews, and monographs. He is currently serving on the editorial board of the *Measurement and Evaluation in Counseling and Development*. Dr. Mau has extensive experience in statistical analysis of large datasets. His work experiences include research at American College Testing program, The University of Iowa Evaluation and Examination Services where he conducted many research projects that utilized large data bases.

Dr. Barbara Moran joined the faculty at the School of Information and Library Science (SILS) at the University of North Carolina Chapel Hill in 1981. She served as

dean of the School from 1990 to 1998 and currently is a professor at SILS and Director of International Programs. Dr. Moran teaches primarily in the area of management. Her other teaching areas include academic librarianship and readers' advisory services. Dr. Moran's areas of research are focused on various aspects of management including organizational structures, career progression patterns, and leadership. Dr. Moran is co-author of the widely used textbook, *Management of Libraries and Information Agencies*. Its sixth edition was published in 2002, in addition to her other books and numerous journal articles.

Dr. Donald E. Riggs has been professor, Vice President for Information Services and University Librarian at Nova Southeastern University since 1997. His previous positions included Dean of Libraries and Senior Professor of Library and Information Science at University of Michigan, and Dean of Libraries at Arizona State University. Dr. Riggs has taught advanced library management, global information infrastructure, and research methods at the University of Michigan, Emporia State University, and University of South Florida. The author of eight books, more than one hundred and forty journal articles and book chapters, and thirty-three invited presentations at the international conferences, Dr. Riggs' book of leadership in librarianship (1982) became a classic in the library profession. He was the only librarian to be invited to write an article on leadership for the four-volume *Encyclopedia of Leadership* (2004). Dr. Riggs served as Editor for *College & Research Libraries*, a primary research journal in North America, *Library High Tech*, and was founding editor for *Journal of Library Management and Administration*. He was President of ALA's Library Administration and Management Association and served two terms on the ALA Council. Dr. Riggs was recognized in 1991 by receiving the national Hugh C. Atkinson Memorial Award for risk taking and leadership in technology.

Dr. Tony Schwartz is Associate Director for Collection Management at Florida International University. His previous academic appointments included University of Massachusetts-Boston and Rice University. Dr. Schwartz was an editor and contributing author of the book, *Restructuring Academic Libraries: Organizational Development in*

the Wake of Technological Change in 1997, in addition to his numerous journal articles and conference presentations. He is currently Editor for ACRL Publications in Librarianship.

Dr. Mark Winston is professor at School of Communication, Information and Library Studies, Rutgers University. Dr. Winston's research interests concentrate on library management and organizational behavior, leadership, leadership development, diversity, and recruitment. He edited two books on diversity and multiculturalism, is an author of numerous journal articles and conference presentations, and has served on the editorial board of *College & Research Libraries*.

APPENDIX E

RESEARCHER'S BIOGRAPHIC INFORMATION

Shali Zhang has been Associate Professor and Chair of Technical Services at Wichita State University Libraries since February 1999. Prior to that, she held several academic appointments at the University of South Carolina Spartanburg, Ohio Wesleyan University, and University of Kentucky/Southeast Community College. In addition to her library responsibilities, Zhang is very active in serving library professional associations. She is a council member (2004 -2007) of American Library Association (ALA), a governing body of the 68,000 membership organization, Treasurer/Secretary of the ALA's International Relations Round Table, in addition to chairing several committees at the national, regional, and state library associations. An author of one book, two book chapters, and more than twenty journal articles, Zhang has regularly published on the top journals in the library field, for instance, *College & Research Libraries*, *Library Collections, Acquisitions, and Technical Services*, *the Journal of Library Science in China*, *Journal of Library and Information Science*, *Library Trends*, *American Libraries*, *Library Journals*, *International Leads*, *Journal of Academic Libraries*, etc. Zhang was Editor-in-Chief of *International Leads*, a publication of the ALA's International Relations Round Table from March 2000 to December 2003. She is currently serving on the editorial boards of *College & Research Libraries* and *OCLC Systems and Services: International Digital Perspective*.