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End-users' perceptions : an exploration on the study of electronic resources

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Carol Tenopir, Major Professor

We have read this thesis and recommend its acceptance:

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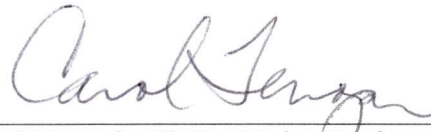
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Vice Provost and Dean of the Graduate School

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To the Graduate Council:

I am submitting herewith a thesis written by Deborah Michelle Powell entitled, "End-User's Perceptions: An Exploratory Study of Electronic Resources." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the Master of Science degree in Information Science.

_____
Carol Tenopir, Ph.D., Major Professor

We have read this thesis and
recommend its acceptance:

_____

_____
Elizabeth Aversa

Accepted for the Council:

_____
Dean of The Graduate School

END-USERS' PERCEPTIONS:
An Exploration on the Study of Electronic Resources

A Thesis
Presented for the
Masters of Information Science Degree
The University of Tennessee, Knoxville

Deborah Michelle Powell
August 2000

DEDICATION

This thesis is dedicated to two very special individuals
who passed away during the course of this study

Cheryl Lynn Cunningham
(My beloved aunt)

and

Myrtle Marie Lura
(An Emmanuel volunteer with over 20 years of service)

The encouragement and love you have given me will always be remembered

ACKNOWLEDGEMENTS

Words alone cannot express my gratitude to all who have helped make my time at the University of Tennessee so fulfilling   I thank God for providing me with the opportunity to finish what I began and for the placement of so many wonderful people in my life   I am especially grateful to my thesis committee, Dr Carol Tenopir, Dr Peiling Wang, and Dr Elizabeth Aversa for their support, encouragement, editing and research skills   Their constant support is what helped me make it through the challenging times

I would like to thank Michael Newman for his assistance with SPSS   He patiently worked with me as I learned the art of statistical input and analysis   He is truly an asset to The University of Tennessee, Knoxville

Lastly, I am ever grateful for the financial support provided to me by The University of Tennessee, Knoxville. In appreciation of my gratitude I devote the writing of this thesis   May the studies herein serve to assist information professionals both now and in the future

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ABSTRACT

The introduction of technology into the quest for information stimulates a need to educate, instruct, and guide end-users in their ability to effectively manipulate various electronic resources (i e , online public access catalogs (OPAC), CD-ROM databases, and the Internet). A study from the end-user's perspective was conducted at Emmanuel School of Religion, a graduate seminary, located in Johnson City, Tennessee to illustrate the need for end-user education Over 80% of the end-users surveyed indicate a greater use of the Internet than to the Online Public Access Catalog (OPAC) and CD-ROM databases (American Theological Library Association (ATLA) and Religious and Theological Abstracts (RTA)).

Respondents, in spite of the age of technology, continue to find human interaction, i.e., personal assistance from a librarian or another student to be a useful part of the instruction process. This study also reveals that many of the respondents do not use available help screens even though there is an active use of the electronic resource Suggestions to the information professional as to how they can develop programs geared toward end-user instruction are made based on the responses generated from the end-user's perspective.

Chapter I

Introduction

In an information society, all people should have the right to information that can enhance their lives. Out of the superabundance of available information, people need to be able to obtain specific information to meet a wide range of personal and business needs. These needs are largely driven by either the desire for personal growth and advancement or by the rapidly changing social, political, and economic environments of American society. To promote economic independence and quality of existence, there is a lifelong need for being informed and up-to-date [1]

Rationale

Technology continues to enhance, influence, and shape virtually every aspect of our lives. As our society advances rapidly in technological development, the information professional is faced with the challenge and opportunity to educate, instruct, and guide end-users in their use of various electronic resources, i e , online public access catalogs (OPAC), CD-ROM databases, and the Internet. Because the information age transforms how information is received and disseminated, "new technologies have drastically altered the workplace and the skills needed to be competent on the job "[2] In turn, the education of end-users on electronic resources will take on a more active role in the life of the informational professional. The library is involved in assisting end-users to identify and gather requested resources necessary for "bridging" and meeting their information needs

There has been a noticeable shift from library skills to information skills with attention to education for information literacy. Information skills are much broader than library skills. Where library skills center on location of sources, information skills encompass the use of sources and interpretation and application

[1] American Library Association, "Information Literacy," *Information for a New Age,* 89

[2] Carol C Kuhlthau, "The Instructional Role of the Library Media Specialist in the Information-Age School," In *Information for a New Age Redefining the Librarian* (Englewood, CO. Libraries Unlimited, 1995). 47

of information sources within sources   Where library skills center on how to use a library, information skills encompass the underlying concepts and patterns in the organization of information [3]

The ability to devise and implement innovative ways to educate, instruct, and guide

users through the wealth of information available on various electronic resources will

become a major focal point in the twenty-first century library   Increasingly, information

professionals see themselves as interpreters and educators The ability to manipulate a

particular electronic resource can be improved through the skills and insight of information

professional   Such skills require the informational professional to have a firm grasp of

technology, the ability to maneuver through a host of databases and/or web sites, a

comprehension of the language of technology, and the ability to translate this language in

an understandable manner to a multiplicity of end-users entering the library on a given day

> If library end-users, both academic staff and students, are to make the most
> effective and productive use of networked and electronic information services the
> need education and training in the selection, evaluation and use of information in
> those forms alongside generic information skills   Librarians must, therefore,
> become key agents in the provision of training in the employment of networked
> information   This entails an extension of the higher education librarian's traditional
> role   While library staff have already evolved a training role of the substantial
> technological and cultural changes being wrought within the system indicate that
> librarians must now become the key educators and trainers who will develop the
> training and support required to enable users to make effective use of networked
> information [4]

The future assures continued transition for the information profession as the role

resumes the shift toward educator, instructor, bridge, and interpreter of print and

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[3]Ibid , 47

[4] Robert Newton and David Dixon. "New Roles for Information Professionals   User Education as a Core Professional Competency within the New Information Environment," *Journal of Education for Library and Information Science* 40, no 3 (Summer 1999) 156

electronic resources   And while "print won't completely disappear from any type of library (for some things will remain still easier and better to read), .   some print publications, such as indexes/abstracts, will disappear,"[5] the focus of this study is on the use of electronic resources   As stated by the American Library Association,

> No other change in American society has offered greater challenges than the emergence of the Information Age   Information is expanding at an unprecedented rate, and enormously rapid strides are being made in the technology for the storing, organizing, and accessing the ever-growing tidal wave of information [6]

The purpose of the study is to take an in-depth look at how end-users perceive and understand their ability to access information using the available electronic resources, in particular OPAC, CD-ROM databases, and the Internet   Gaining clarification from the end-user's perspective aids in the information professional's ability to develop and implement methods of educating, instructing and guiding end-users   One objective of this study is to gain insight from the end-users' perspective to assist information professionals in their roles as educators   A second objective seeks to implement instructional methods that will help end-users become better equipped in their ability to maneuver successfully through various electronic resources

The ability to successfully access and retrieve information is a skill that helps develop information literacy in the end-user   "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information "[7] Information retrieval for the purpose of

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[5] Carol Tenopir, "Choices for Electronic Resources," *Library Journal* (July 1993), 53

[6] Kuhlthau, 47

research, writing and scholarship helps stimulate an individual's capacity to compete intellectually on a local and international basis. Information retrieval provides end-users with the ability to devise and implement innovative ideas and projects for the good of others. Likewise, adequate information retrieval contributes to the promotion of personal development and lifelong learning. "They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them."[8]

In the process of designing a survey that looked at the end-user's perception of their use of electronic resources several questions came to mind. Such questions served as a guide for the development of the survey. The first question looks at the education process. How could end-users learn how to effectively use electronic resources unless they are taught? And secondly, how can end-users be taught well unless the information professional understands where the teaching process begins? And third, how can the information professional understand where to begin unless there is an awareness of the end-user's ability to effectively maneuver through the various available electronic resources? Such questions serve as a guide in the design of a study that allows the end-user to enlighten the information professional through their perceived ability to effectively manipulate various electronic resources. A survey accommodates the information professional's ability to gain answers to such questions

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[7] Ibid.

[8] Ibid., 90

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The survey designed and implemented in this study attempts to accomplish several

goals 1) to obtain a clearer understanding of how the end-users view their ability to

access information, 2) to discover deficiencies experienced by end-users using electronic

resources, and 3) to discover the end-users' comfort levels and attitudes toward OPAC,

CD-ROM databases, and the Internet The study attempts to gain insight from the end-

user that will assist the information professional develop better instructional programs for

electronic resources

Statement of the Problem

Educating end-users is a concern that information professionals must address in the

twenty-first century

> New information workers need to begin their career with the strong
> expectation that user education will be a core professional competency, and
> information works with established careers needs to be supported in adjusting to
> this new horizon [9]

Providing educational investments in the midst of a diverse body of end-users with

varying informational needs constitutes the beginning of an arduous task awaiting

information professionals No longer is the library a warehouse for information, but it is

now a classroom for learning

> The library continues to be an absolutely essential classroom, scene of a
> "core course" for every student In this non-registered course that spans the
> student's academic career, cognitive thought processes are challenged and formed
> as the difficulty of assignments progresses reading what a professor has placed on
> reserve, writing a brief analysis of an assigned article, finding, critiquing, and
> applying scholarly material as it addresses a defined question, conducting an

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[9] Robert Newton, 155

extensive literature review and analyzing al the material gathered in order to apply it to a complex problem [10]

The task of educating the end-user presents both a challenge and an opportunity for the information professional as technology introduces the "supercatalog" into the instructional process   The supercatalog is a catalog that provides a new way to retrieve information in a manner that is convenient, easy, and instantaneous   It combines access to internal resources such as a library's catalog with external resources such as the Internet and commercial databases   At a moment's notice, the "supercatalog" can provide the end-user with access to automated catalogs around the world   In turn, the end-user is now faced with more information than he/she will ever use

> Advances in technology have allowed the "supercatalog" to move from an idea to a reality   With its multiple databases and integrated structures, the supercatalog offers access to more information more easily than every before. For all the advantages that this new technology offers, there are also serious problems that must be recognized and confronted   The most serious of these is that users must   choose from a multitude of possibilities in order to fulfill their information needs [11]

Learning how to maneuver successfully through the "supercatalog" is vitally important in the twenty-first century   The ability to educate end-users is not a skill that is taught once and discarded with the assumption that all is well. Teaching end-users how to use various electronic resources is a continuous lifelong process, dynamic in nature and utterly significant

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[10] Jennifer W Kimball. "A librarian's manifesto   The library is an essential classroom," *College Research Library News* (December 1999), 912

[11] Cerise Oberman, "Avoiding the Cereal Syndrome, or. Critical Thinking in the Electronic Environment," *Information for a New Age,* 107

Another challenge the information professional that seeks to educate the end-user must face is the attempt to integrate and interpret a wide range of useful information The ability to access and retrieve information is generated in enormous quantities for both the information professional and the end-user Devising a method for the storage, access and organization of this information will continue to be an issue for the information professional

Information and knowledge are terms that require clarification. What is information? What is knowledge? Are they the same or are they different? If different, how?

> Three meanings of "information" are distinguished "information-as-process", "information-as-knowledge", and "information-as-thing," the attributive use of "information " Since information has to do with becoming informed, with the reduction of ignorance and of uncertainty, it is ironic that the term "information" is itself ambiguous and used in different ways [12]

Buckland looks at three concepts that surround the term "information " Under the first concept, "information-as-process," information brings about altered state of being to an end-user "When someone is informed, what they know is changed "[13] This method is the "act of informing.. communication of the knowledge or 'news' of some fact or occurrence, the action of telling or fact of being told of something "[14] Information-as-process broadens the knowledge base of the end-user and expands it to a new level of understanding

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[12] Michael K Buckland, "Information as Thing," *Journal of the American Society for Information Science* 42, no 5 351

[13]Ibid

[14] *Oxford English Dictionary* 7 (1989), 944

The second concept, "information-as-knowledge" is described as being abstract in nature It is defined by Buckland as something that,

> one cannot touch it or measure it in any direct way Knowledge, belief, and opinion are personal, subjective, and conceptual Therefore, to communicate them, they have to be expressed, described, or represented in some physical way, as a signal, text, or communication [15]

The intangible aspect of knowledge is what makes information-as-knowledge immeasurable, private, and one-sided in nature

The third concept, "information-as-thing is of special interest in relation to information systems because ultimately information systems, including 'expert systems' and information retrieval systems, can deal directly with information *only* in this sense "[16]

"Things" can be stored in automated form Information-as-thing include "data, text, documents, objects, and events "[17]

Buckland goes on to state

> The intention may be that users will become informed (information-as-process) and that there will be an imparting of knowledge (information-as-knowledge) But the means provided, what is handled and operated upon, what is stored and retrieved, is physical information (information-as-thing) On these definitions, there can be no such thing as a "knowledge-based" expert system or a "knowledge access" [18]

Information-as-knowledge is abstract It becomes concrete when it is captured in print or electronic form Webster's dictionary defines knowledge as "understanding gained by actual experience, something learned and kept in the mind " Knowledge is

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[15] Buckland, 351

[16] Ibid, 352

[17] Ibid, 351

[18] Ibid, 352

theoretical and personal   "The interpretation and assimilation of information or knowledge is so influenced by the user involved that it is necessary to recognize the importance of such issues as the cultural adaptability of the information and how well it fits into the contextual and cognitive structures of the users."[19] The mind is the storage unit for knowledge   To access mind stored knowledge requires verbal communication Joseph Nitecki views the term knowledge in three ways

> 1) conceptually, as a platonic focus on the essence of things and the explanations of their meaning,
>
> 2) contextually, as Piaget's "operative" knowledge in which one knows how to act in a specific situation based on specific knowledge in a specific context, and
>
> 3) empirically, as a static, figurative view of knowledge as expressed in symbols, such as a written language [20]

"Information and knowledge can also be seen as two ends of a continuum,"[21] and both are equally essential and must converge to meet end-user information gaps Information, on the other hand, is knowledge captured and transposed into written form Information is what end-users seek when searching an electronic resource   Access and information retrieval is attained through use of an automated storage unit   In turn, information is what gives an end-user the "power" or ability to access information for the purpose of research, writing, or personal edification

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[19] Lynn Westbrook, "User Needs   A Synthesis and Analysis of Current Theories for the Practitioner," *RQ* (Summer 1993). 543

[20] Joseph Nitecki, "The Concept of Information-Knowledge Continuum   Implications for Librarianship," *The Journal of Library History, Philosophy and Comparative Librarianship* 20 (Fall 1985) 389

[21] Westbrook. 543

Information is power when can be accessed and put to constructive use
Educating end-users on how to successfully manipulate electronic resources enhances the
end-user's capacity to use retrieved information   The ability to train end-users on how
they can effectively use electronic resources rests on the shoulders of the information
professional

> The library is not simply about information, but about knowledge   It is not
> only knowing what button to push on the computer, but knowing how to evaluate
> what the computer emits   It is not only knowing when to use a computer, but also
> recognizing when to use a book   It is not simply knowing where to go, but what
> to do when you get there [22]

Education is necessary to achieve the transition from knowledge to information
Education helps the information professional in their ability to guide end-users through the
instruction process in the most logical and effective way possible   Education stimulates
the learner's ability to locate, evaluate, and effectively apply information retrieved
"Librarians must be responsible for assessing and promoting effective use of instructional
technologies "[23]

Information professionals are bridges over the information gap   Brenda Dervin,
the originator of the phrase "information gap," defines a gap as "needing bridging,
translated in most studies as 'information needs' or the questions people have as
constructive sense and move through time-space " [24] Information professionals are
teachers who educate end-users,

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[22] Kimball, 912

[23] http.//www baisl org/information_gap.htm

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- in the process of gathering information
- in how to think creatively while exploring ideas for topics,
- in how to judge when their research topic needs to be narrowed or broadened,
- in how to create a comprehensive search strategy
- to be independent learners in an age of rapid technological change
- in how to use computers as another tool for information retrieval
- in how to use the Internet
- in how to handle and evaluate the information acquired[25]

The role of the information professional continues to shift back and forth between educator and gap filler   The capacity to implement effective methods of instruction on the various electronic resources available will continue to be a significant factor in the ever-changing age of technology

Objectives of the Study

There are several objectives of this study   They include gaining greater insight in 1) supporting electronic resource instruction and information literacy, 2) discovering shortcomings overlooked in educating end-users, and 3) addressing shortcomings through innovative methods of educating end-users on various electronic resources

Definitions

In this study several terms are addressed end-user, education, information professional, use, information, comfort, attitude, needs, and electronic resources   Below is a clarification of the concepts employed in this study

End-User

End-user is defined as members of the library community (i.e , students, faculty, etc) who have information gaps and must utilize information resources in order to retrieve

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[24] http //edfu lis uiuc edu/allerton/96/w1/Dervin83a html

[25] Ibid

information Users differ from end-users in that they consist of those who utilize the library's resources but never take advantage of the electronic resources available Examples of a library user are those who use the library to read periodicals or study

Information Gap

Information gap is a term derived by Brenda Dervin She defines it as how the individual sees information It is derived internally or retrieved from external sources, for instance, colleagues or libraries as helping (facilitating) or, something impeding (blocking) the problem-solving activity

Education

Education is derived from the Latin origin meaning "to draw out " This study seeks to assist end-users in their ability "to draw out" of electronic resources information necessary for filling "information gaps " Education begins with formal training

Webster defines education as "the process of training and developing the knowledge, skill, mind, character, etc , especially by formal schooling, teaching, training "[26] Education is significant in the effective use of electronic resources

Information Professional

The information professional is trained, educated, or instructed in the field of information science Such individuals will hold a Masters degree in the field of information or library science and are familiar with the electronic resources in the facility of employment Information professionals are also defined as teacher, bridge, interpreter, guide, and professional The information professional is a teacher because of their ability

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[26] *The New Merriam-Webster Dictionary* (1989)

to educate end-users to manipulate electronic resources   They are bridges because of their ability to help fill "information gaps " They are interpreters since they have the ability to understand the "language of access " They are guides due to their ability to direct end-users to the appropriate resources

Comfort

Comfort is defined in Webster's Dictionary as the "freedom from pain, trouble, or anxiety " Comfort in regards to electronic resources is how the end-user interacts with a particular electronic resource   The less anxiety one has in regards to a resource the more "comfort" he/she will have   End-users who are "uncomfortable" with an electronic resource will find use of it to be a hindrance when attempting to access information.

Attitude

Attitude is defined in Webster's dictionary as "a mental position or feeling with regard to a fact or state " Attitudes can play a tremendous part in how end-users perceive their behavior on various electronic resources   This study includes the end-user's attitude as a means of comprehending their "mental position or feeling" toward the various electronic resources available

Need

Webster defines a need as "a lack of something useful, required, or desired; call or demand for the presence, possession, etc of something " An end-user need is the "lack of" information for the purpose of research, scholarly writing and/or publication. End-user needs can be known or unknown

End-user needs are best defined and understood by the end-user (known) rather than the information professional (unknown) Information professionals are bridges that assist in educating end-users to find and fill an "information gap " In this study end-user needs in regard to electronic resources are defined by the end-user The end-user's comfort level, attitude, and perception of an electronic resource are all important factors in gaining greater insight into how information professionals can devise and implement methods of instruction on various electronic resources

Electronic Resources

Electronic resources are the automated resources used for storing large amounts of information in a computerized form In this study electronic resources include the online public access catalog (OPAC), in house databases (i.e , ATLA and RTA) and the Internet

Research Questions

Technology is a tool that comes with an even greater need to educate end-users on various electronic resources This need is further stimulated by information gaps from the end-user Such information gaps demand filling Information needs can only be resolved if information can be access and retrieved Access and retrieval require the end-user to effectively manipulate a host of electronic resources. The most efficient way to assist end-users in this process is education

The research questions revolve around the belief that increased usage of technology will produce an even greater need to educate, instruct, and guide end-users on various electronic resources for the intent of offering an effective means of retrieving information It is believed that the survey expectations will disclose that.

- End-users who are "comfortable" with the various electronic resources (OPAC, CD-ROM databases and the Internet) will disclose that human interaction was involved in learning to access information on the various databases
- End-users will reveal that human interaction (i e , "a librarian approaching," "friend/another student") is an important aspect of the learning and instruction process
- End-users are not likely to use "help-screens" as part of the learning process
- End-users will reveal a higher comfort level with Internet searches than OPAC or CD-ROM database searching

Summary

Technology is an instrument that will continue to enhance, influence, and shape our lives It is with this in mind that the information professional must seek to gain a greater comprehension of the end-user's perspective of their behavior on various electronic resources A survey serves as the most appropriate tool for gaining this insight

Information assists the end-user in their ability to compete intellectually on a local and international basis for the purpose of producing scholarly research and writing Being able to effectively manipulate the various electronic resources housed in a library accommodates, enhances, and promotes the end-users ability to access and retrieve information

Information professionals can improve the end-user's effectiveness through the implementation of instructional sessions on the available electronic resources

The implementation of a study at Emmanuel School of Religion in Johnson City, Tennessee serves as a way to understand how end-users perceive various electronic resources. Through this study information professionals can devise and apply methods of instruction that will meet the end-user's information needs

Chapter II

Literature Review

The literature relevant to this study consists of resources that discuss topics

pertaining to user information needs, library services to the graduate community, the

difficulty in using online catalogs, instruction librarians as a change agents, end-user search

strategies and behavior, educating online catalog users, and the development of lifelong

learners Also relevant are results from surveys that have been implemented at other

libraries in order to develop user instruction

Information Needs

The success of end-user instruction requires the development of methods that will

accommodate a diverse group of end-users Needless to say, one of the greatest

challenges facing information professionals is the ability to provide instruction to a diverse

group of end-users with differing information needs

> Since the future of instruction is closely joined, in some ways dependent
> upon, the expectations of today's and tomorrow's information seekers, what
> exactly do we know, or can we surmise about this group? They will be an
> increasingly diverse and multicultural group   Some will be highly computer
> literate, articulate and demanding of service   Others will be computer naive, but
> know what they want Still others may not know that what they need even exists
> College students will be older, perhaps returning to school for additional training
> As adult learners they will have different motivations than younger or first-time
> learners   More and more of them will be aware of and ready to use (or learn to
> use) technology [1]

The variety of end-users provides a clearer understanding of Ranganathan's fundamental principle number two, "every reader his/her books "[2] A library attempts to accommodate its patrons through resources that are applicable to a diverse body of end-users   Technology is a tool helps to ensure that every reader gets his/her book

> We have already seen that most students do not fear technology, but instead ascribe almost magical powers to it   If something is not found in a paper source it might be found elsewhere   If something is not found in an electronic source it does not exist   The computer is synonymous with the information it accesses and is unimpeachable [3]

The ability to gain insight into end-user information needs requires input from the end-user   Such clarification comes from asking the end-user to address their concerns as information professionals ask questions that draw out answers

> Dervin and her colleagues have studied, for example, the information needs of Californians to elaborate ways in which libraries could help with these needs. The information needs were investigated by asking people to indicate what questions they had in the most important recent troublesome situation, what strategies they used to get answers, what kind of help they wanted from the answers, what barriers they say as standing between them and getting help, and how the answers helped [4]

According to Dervin, "gaps are not always easy identifiable, and people may find it difficult to articulate them in detail "[5] Human interaction is an important factor in filling information gaps

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[2] G Bhattacharyya. "Relevance of Ranganathan's Ideas in the Context of Modern Development " In *New Trends in International Librarianship*   (Ed. P.A. Mohanraja). 228.

[3] Dusenbury, 100

[4] Reijo Savolainen, "The Sense-Making Theory   Reviewing the Interests of a User-Centered Approach to Information Seeking and Use," *Information Processing & Management* 29, no 1 (1993) 15

[5] Ibid , 17

The gap comprises the stops or barriers to movement (i e , a cognitive gap that can be operationalized according to the questions asked or information needs articulated by the individual) The terms *gap-defining,* and *gap-bridging,* stand for the cognitive strategies found useful in answering these questions The terms *uses/helps* denote the ways in which these cognitive bridges (i e , answers to questions) are put to work how the individual sees information, derived internally or retrieved from external sources, for instance, colleagues or libraries as helping (facilitating) or, sometimes impeding (blocking) the problem-solving activity [6]

A wealth of opportunities awaits the information professional in the midst of

bridging gaps through use of technology "Technology itself is complicated and using a

complicated system to access a complicated system of many, many information resources

appears to be a morass to many users "[7] The best that any informational professional can

hope for is a chance to assist in educating, instructing, and guiding users through this

"morass" in a fashion that meets the needs of both parties "The advent of the computer

into the library has a profound impact on librarians, not so much because of what it does

or can do directly to the library or librarians, but because of the effect it has on the library

patrons "[8] One effect generated by the advent of the computer is that it stimulates the

need for education. A second effect is that information professionals must serve as the

educator A third effect is that effective manipulation requires that the end-user be

information literate

[6] Ibid

[7] Ibid, 104

[8] Gail Herndon Lawrence, "The Computer as an Instructional Device New Directions for the Library User Education." *Library Trends* (Summer 1980) 147

Lubans attempts to understand the diversity that exists among the host of end-users that enter a library seeking information. Lubans makes three observations from a 1974 survey. His observations are

1) Through experience and observation, an awareness of ineffective use or misuse occurs without the help of a librarian,
2) End-users have a distorted view of their knowledge of library skills, and
3) When put to a test (a standard library test) the users fail [9]

Such discoveries have served to assist the information professional in his/her ability to comprehend the needs in the population served

Lubans provides examples of how surveys give end-users the opportunity to address their concerns. "The user/nonuser has rarely been given the opportunity to describe his or her needs as related to library use knowledge "[10] Studies such as Lubans' provide the information professional with an opportunity to understand end-user needs from the end-users' perspective

Lubans addresses several concerns in his study. They include the attitudes students have about librarians, how students feel when entering a library, and students' comprehension in their knowledge of library uses. The ability to adequately use a library is just as important to Lubans as the end-user's attitude toward the information professional and library in general

Comprehending end-users' behavior on a particular electronic resource is a relevant factor in assisting the information professional's capacity to bridge information

[9] John Lubans. Jr , "Library-Use Instruction Needs from the Library Users'/Nonusers' Point of View A Survey Report," In *Educating the Library User* (New York R. R Bowker, 1974), 401

[10] Ibid.

gaps Surveys that center on end-user behavior and attitudes present an effective way to connect the needs of the information professional with the instruction process and the end-user learning capacity

In a target group similar to the group surveyed in the current study, Lipow studied graduate students. Lipow describes her efforts to "evaluate their library in terms of their special or potential relevance to graduate students, especially as they meet students' needs in the various stages of their graduate careers--coursework, dissertation proposal, dissertation research, and dissertation writing "[11]

Borgman takes a closer look at "user behavior on online catalogs is in its early stages "[12] Information cannot be valuable unless it can be accessed   Information professionals of the future will need to gain an even greater comprehension of why online catalogs are so challenging to the end-user   Borgman believes "online searching of bibliographic-retrieval systems is a complicated process with a multitude of variables "[13] The variables studied by Borgman range from the psychological--overcoming the intimidation of using an online catalog--to the physical-interface problems   Borgman concludes her study by stating "that people have problems using information-retrieval systems in general, both online catalogs and other retrieval systems, and with both the mechanical and conceptual aspects of searching "[14] Problems that were found by

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[11] Ann Grodzins Lipow. "Library Services to the Graduate Community   The University of California. Berkeley," *College & Research Libraries* (May 1976) 252

[12] Christine L Borgman, "Why are Online Catalogs Hard to Use? Lessons Learned for Information Retrieval Studies." *Journal of the American Society for Information Science* 37. no 6 (1986). 387

[13] Ibid

[14] Ibid . 390

Borgman in her study of the difficulty in using online catalogs consist of two factors   1) individual differences, and 2) computer design   In learning of the individual differences and computer interface it was concluded "on any given system, people will search in different ways, with different levels of success and satisfaction "[15]

Borgman's study reveals that no matter how technologically advanced our society becomes, the need for human interaction in the educational process will play an instrumental role in the information professional's ability to successfully educate, instruct, and guide end-users on various electronic resources

End-User Instruction

"User education in the United States began in the 1930s, but the vast quantity of library literature about user education dates from the mid 1970s "[16]   In 2000 the need for user education remains vast

Mellon discloses how "instruction librarians can make effective use of such techniques as raising awareness of and interest in a program, building relationships with key faculty, gaining acceptance for course-integrated instruction, and adapting instruction to the needs of classroom instructors "[17]   In order to achieve this goal, Mellon provides six stages for its institution   The six stages are.

    1) Building a relationship,
    2) Diagnosing the problem,
    3) Acquiring relevant sources,

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[15] Ibid . 393

[16] Sharon A Hogan, "Education Users about Catalogues and Cataloguing   The Impossible Dream," *International Cataloging and Bibliographic Control* 22, no 2 (April-June 1993) 23

[17] Constance A   Mellon. "Instruction Librarian as Change Agent," *Research Strategies* 1, no 1 (Winter 1983) 4

4) Choosing the solution,

5) Gaining acceptance, and

6) Stabilizing the innovation of generating self-renewal [18]

The University of Tennessee at Chattanooga performed a study "to provide library

instruction to students whenever appropriate across the curriculum"[19] The study

revealed that the "instruction librarian may benefit from advanced training in change

strategies, interpersonal communication, and instructional design methods and

processes"[20] In conclusion, it was found that a "relationship" between the informational

professional and the end-user is an important factor in the education and instruction

process

> The ever-expanding presence of information in our lives has made it imperative that people learn to access and evaluate information confidently--those who do not will find survival increasingly difficult The challenge that academic librarians face, therefore, is difficult but not impossible we must learn to work with people who possess points of reference significantly different from our own [21]

Huston addresses the philosophy that information demands a reassessment of

professional presumptions about education The "key to the empowerment of learners is

awakening their personal and collective potentials"[22] Huston believes that learners can

awaken their potential by changing how end-users see themselves and how the

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[18] Ibid . 7ff

[19] Ibid., 11

[20] Ibid., 13

[21] Mary M Huston and Susan L Perry, "Information Instruction Considerations for Empowerment," *Research Strategies* (Spring 1997), 70

[22] Ibid. 75

informational professional perceives them   The end-user must learn to become self-reliant, and to become self-reliant he/she must be educated

Online Searching Behavior

Information retrieval is inherently a complex task   It involves the articulation of an information need, often ambiguous, into precise words and relationships that match the structure of the system (either manual or automated) being searched   In an automated environment, the user must apply two types of knowledge. Knowledge of the mechanical aspects of searching (syntax and semantics of entering search terms, structuring a search, and negotiating through the system) and knowledge of the conceptual aspects (the "how and why" of searching—when to use which access point, ways to narrow and broaden search results, alternative search paths, distinguishing between two matches due to a search error and no matches because the item is not in the database, and so on) [23]

Effective manipulation of an electronic resource is interwoven in a multiplicity of tasks that make it difficult for end-users to gain the best results without some form of instruction   Borgman discusses possible sources of problems derived when accessing information from online catalogs   She believes that such problems are due either to individual characteristics or to system variables

Ojala and Yuan each wrote articles that focus on end-user searching and behavior These articles together provide an in-depth study of end-users and how they interact with electronic resources

Ojala notes how "online searching is a changing, evolving portion of the information industry "[24]   She defines end-users as "a person accessing online databases

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[23] Christine L Borgman, "Why are Online Catalogs Hard to Use? Lessons Learned from Information-Retrieval Studies." *Journal of the American Society for Information Science* 37, no 6 (1986) 388

[24] Marydee Ojala, "Views on End-User Searching," *Journal of the American Society for Information Science* 37, no 4 (1986) 197

and performing search operations for the purpose of finding information to be used by that same person rather than another, end-user searching is done to answer questions posed by the searcher, in contrast with the intermediary searcher."[25] Ojala goes further in her definition of end-user by attempting to explain and define the difference between the average searcher and the intermediary searcher. She states

> Casual searchers can quickly lose interest in searching once the thrill of something new wears off. If it is not a normal part of someone's job, it becomes so time consuming to remember how to search that it is easier to employ an intermediary. Others feel it beneath their dignity. They are not researchers, they are executives, and anything that wastes their time will not be utilized. It is not always easy for the casual searcher to get superior results. The recognition that there are drawbacks to online searching comes hard to end-user searchers.[26]

Ojala concludes by stating how the "cooperation between librarians, end-user searchers, and vendors is crucial to the success of the online searching segment of the information industry."[27] To adequately meet the needs of the end-user it will become increasingly important to understand the dynamics of technology and the transitions that likewise occur with the needs of a diverse end-user group.

Yuan, on the other hand, takes a look at the search effects on an end-user's behavior when using an online information retrieval system. This is done through a one-year observation of QUICKLAW students.[28] Yuan's study discloses how "research on the searching behavior of end users has serious implications for system designers, practitioners

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[25] Ibid.

[26] Ibid., 200

[27] Ibid., 202

[28] Weijing Yuan, "End-User Searching Behavior in Information Retrieval A Longitudinal Study," *Journal of the American Society for Information Science* 48, no 3 (March 1997) 218

in the library and information profession "[29] Yuan concludes that more research is needed, but that overall, the search experience could be stated as having the ability to affect "some aspects of end-user behavior "[30]

Baker and Nielson's article expounds on the subject of educating users. In their study, Baker and Nielson disclose how libraries will have to direct their attention to the "issues involved in educating the online catalog user "[31] The attempt "to accommodate a variety of learning styles, an integrated approach to teaching the online catalog was undertaken "[32] Online instruction, printed material, instruction provided by librarians, and workshops were all a part of attempting to include a variety of learning styles This study concluded that "instructing the user is an important facet of online catalog use and should be viewed as an essential step in online catalog implementation "[33] Baker and Nielsen believe that the ability to equip the end-user with the opportunity to attend instructional training sessions on electronic resources is important

Wilson takes a closer look at the term "information " An attempt is made to help provide the reader with a clarification of this term Wilson believes that "these multiple uses of the term 'information' cause confusion because researchers sometimes fail to distinguish between one sense and another, or simply leave the reader to discover which

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[29] Ibid., 231

[30] Ibid

[31] Besty Baker and Brian Nielsen, "Educating the Online Catalog User Experiences and Plans at Northwester University Library," *Research Strategies* (Fall 1983) 155

[32] Ibid , 160

[33] Ibid , 165

sense is meant by reading the paper or report "[34] Once Wilson clarifies what he means by

"information" he goes on to address the issue of user studies and information needs

Electronic Resources

Online Public Access Catalog

The Emmanuel library provides its users with access to information through

EMMA, the online public access catalog Information from this electronic resources is

secured in two ways 1) in-house use and 2) through Internet use

Connaway, Johnson, and Searing conducted focus group interviews with users

(undergraduate students, graduate students, and faculty) at the University of Wisconsin-

Madison for the purpose of reporting their experiences with library online catalogs other

than the Network Library System (NLS) From this report it was disclosed that all

participants (undergraduate students especially) were confused with keyword searching

and searching using controlled vocabulary

> The objectives of the General Library System (GLS) study were to identify
> the strengths and weaknesses of the online catalog system from the users'
> perspective and to determine users' priorities for improving the systems Users'
> expressed need would later be weighed against technical feasibility, cost, and other
> factors to inform decisions about changes to the online catalog [35]

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[34] T D Wilson "On User Studies and Information Needs," *Journal of Documentation* 37. no 1 (March 1981) 3ff

[35] Lynn Silipigni Connaway, Debra Wilcox Johnson, and Susan E. Searing, "Online Catalogs from the Users' Perspective The Use of Focus Group Interviews,'" *College & Research Libraries* (September 1997) 403

From this study it was determined that "users of OPACs wanted more online prompts and dialogue with the system "[36] Such dialogue indicates a need for students to have some form of feedback from the system "Users would like the system to give instructions to limit searches if too much information is retrieved and to give them other terms to search if no information is retrieved "[37] The ability to design an interactive system remains a concern No automated system is yet capable of replacing the human intermediary

CD ROM Databases

The Emmanuel library provides two CD ROM databases to its graduate students 1) American Theological Library Association (ATLA) database and 2) the Religion & Theological Abstracts (RTA) database

ATLA Religion Database is a comprehensive reference database produced by the American Theological Library Association designed to support religious and theological scholarship in graduate education and faculty research The database contains citations to journal articles, essays in multi-author works, book reviews, and Doctor of Ministry projects from Religions Index One (RIO), Religion Index Two (RIT) and Index to Book Review in Religion (IBRR)

Religion and Theological Abstracts (RTA) is the second database available to students attending Emmanuel This database is,

> regarded as a nonsectarian abstracting service which covers 300 journals
> on an international basis Abstracts are in English and average about 100 words in

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[36] Ibid , 404

[37] Ibid

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length There are five major categories or topical divisions biblical, theological, historical, practical, and sociological [38]

The databases offered at the Emmanuel library are local databases that are restricted to in-house use The complex interface of the CD ROM databases at the Emmanuel library is one cause for difficulty in searching on these particular electronic resources The icons are present, but there is no indication as to what each icon represents End-users are also required to fill in search options (keyword, title, author, language, year, etc) without any indication that each completed option assists in the narrowing down of the topic Nevertheless, the local databases housed at the Emmanuel library serve as appropriate tools for locating and identifying relevant research materials available through the effective manipulation of this resource

Internet

The Internet is a research tool that provides instant access to literally hundreds of thousands of websites The information retrieved can be overwhelming Providing the end-user with an effective way to evaluate retrieved information is a concern for information professionals On a daily basis information is added and deleted from the databases found on the Internet In turn,

> The scope of online information retrieval options is constantly expanding and changing A wealth of experience has shown that online searching can be used to tap effectively and quickly vast quantities of information. Clearly, users are drawn to this service, and it has rapidly become a preferred source of information for many, offering both convenience and retrieval advantages over its print

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[38] Ron Blazek and Elizabeth Aversa *The Humanities A Selective Guide to Information Sources* 4th ed. (Englewood, CO Libraries Unlimited. 1994). 78

counterparts This preference is not surprising, given society's reliance upon and promotion of quick, efficient delivery of information [39]

Sandore utilizes the advantages of a survey to measure in quantitative terms the satisfaction of end-user's online searches "Findings in the study revealed a low overall association between precision and satisfaction, regardless of whether the users' expectations were exhaustive (high recall) or specific (high precision) results "[40] The "low association between precision and satisfaction" stems from a lack of end-user training by a skilled information professional "From an educational standpoint, evaluating user's satisfaction will enable one to design better teaching methods and other support services to help end-users achieve satisfactory search results "[41]

The objective of Sandore's study was to "examine patron's evaluations of results of online searches and the search service gathered during a 5-month telephone survey of approximately 200 users "[42] The results of the survey concluded that the vast wealth of information generates more information than the end-user will ever use Satisfaction reports by the end-user searching online did not necessarily conclude that satisfaction was gained from the search results rather than the ability to find information In turn,

> These findings pose some questions about librarians' understanding of the type of research need that is met by online searching Primarily, they point to the need for expanded research and information gathering to identify more clearly what satisfies users of online search services It also suggests that a shift is

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[39] Beth Sandore, "Online Searching What Measure Satisfaction?" *Library & Information Science Research* 12, no 1 (1990) 33ff

[40] Ibid

[41] Ibid. 38

[42] Ibid, 41

occurring in which the user has assumed an integral role in assessing the value of information [43]

Nevertheless, electronic resources are an important part of information retrieval

and access Some of the advantages of using electronic resources include

- *Remote Access and Shared Use.* Remote access and shared use is available 24 hours a day, 7 days week regardless of physical location The only requirements are a computer and telecommunications connection

- *Currency of Information* Electronic resources can be updated and made available in less time and are therefore more current than print-based resources

- *More Sophisticated Searching.* Electronic resources allow more flexibility in searching. An online resource can search multiple years' worth of data in a single search

- *Ease in Archiving* End-users can save information immediately (or print information if a printer is available) Print-based information must be copied by hand or through the use a copying machine

Disadvantages include

- *Dependency on Technology* If the power goes out, the batteries die, the computer breaks, the phone line is disconnected, there is a busy signal, the ISP has network problems, a backhoe cuts through the network line, or any one of a myriad of possible technological-disaster scenarios occurs, access to the Internet is abolished

- *Cost.* To own a computer costs more than owning a library card There are additional costs such as a modem, printer, ISP charges, etc Schools, workplaces, or local libraries provide an alternative solution to this problem

- *Searching Skills Required* Searching electronic resources requires skill and practice Sometimes the power of electronic searching is overcome by the complexity or user-friendliness of its search commands and structure

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[43] Ibid , 52

- *Limited Archival Material.* Many databases were not created in electronic form until the 1970s With the exception of material in the public domain, older material is often harder to find on the Internet [44]

Conclusion

In conclusion, as electronic resources continue to serve as a conduit for information, "looking for, finding, and evaluating information has become an activity of enormous consequence for us in our touted 'information age '"[45] The supply of information is exceedingly great and more than able to accommodate the demands placed on it Inexperience on a particular electronic resources presents a wealth of challenges as "these difficulties are compounded by the relatively scarcity of methods for developing such skills "[46] In turn, the opportunity to meet these challenges arises in the quest to provide effective instructional methods

Summary

The literature selected for this review looks at information needs, end-user instruction, electronic resources, (online public access catalog, CD ROM databases and the Internet) Much of the literature reviewed demonstrates the continued need for instructional training on the various electronic resources

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[44] Ned L Fielden and Maria Garrido *Internet Research   Theory and Practice* (Jefferson McFarland, 1999), 94-95

[45] Ibid . 4

[46] Ibid . 5

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Chapter III

Methodology

Population

Emmanuel School of Religion is a graduate seminary in Johnson City, Tennessee

It is accredited by the Association of Theological Schools in the United States and Canada

and by the Commission on the Colleges of the Southern Association of Colleges and

Schools Emmanuel awards the Master of Divinity and Master of Arts in Religion with

recent accreditation to award the Doctor of Ministry Degree

> The mission of Emmanuel School of Religion is best understood in light of
> the name of the school and the design of its educational programs Courses are
> taught by a faculty of competent scholars, and the disciplines of a spiritual life are
> nurtured in a variety of ways within the seminary community By these means the
> school endeavors to educate a ministry of high scholarly and spiritual attainments [1]

Emmanuel School of Religion offers a curriculum in theological studies where men

and women prepare for effective ministry in

- worship, preaching and pastoral care
- Christian education
- evangelism and church growth
- cross-cultural missions
- institutional and military chaplaincy
- teaching in schools and colleges
- Christian exercise of other vocations[2]

Theological programs of this nature are provided to individuals who have

completed a bachelor's degree The three programs offered are the Masters of Art in

Religion, the Master of Divinity, and the Doctor of Ministry

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[1]*Emmanuel School of Religion A Graduate Seminary* Catalog 1998-2000, 11

[2]Ibid., 10

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The Master of Art in Religion is a residential degree designed for those interested in advanced Christian study with theological interests in areas other than congregational leadership This program is geared to those who have had ministerial experience or whose time of study is limited The Master of Art in Religion is intended for individuals "interested in pursuing graduate study primarily in one of the theological disciplines, while acquiring minimal introductory exposure to the other areas of classical Christian learning "[3] The Master of Art in Religion is modified for the person who desires a deepened biblical and theological understanding for "study or for more effective service in the church and in the world while in a 'secular' profession "[4]

The Master of Divinity is also a residential degree This program is designed for those seeking comprehensive preparation for any of the pastoral ministries of the church The Master of Divinity program offers four options of study 1) with concentration; 2) Christian Care and Counseling, 3) Christian Education, and 4) Urban Ministry "The Master of Divinity is considered the standard program of ministerial education and is formally required for ordination by many churches "[5] This academic degree "aims at providing a breath of education in all areas of theological learning, with special focus on the practice of pastoral ministry "[6]

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[3] Ibid 36

[4] Ibid

[5] Ibid . 27

[6] Ibid

The Doctor of Ministry is a non-residential degree "offered for persons who hold the Master of Divinity degree (or equivalent), who are already experienced in pastoral ministry, and who desire to renew and deepen their theological understanding and to increase their competence in the practice of ministry "[7] This degree is attained while engaged in full-time ministerial work. This academic degree goes beyond the 90 credit hours required for the Master of Divinity and is stated as being "the highest earned degree for the profession and practice of ministry "[8]

The second objective of Emmanuel is to serve the church as an intellectual center To do so the following activities are pursued

- Enriching the Church through the scholarly research and writing of the faculty,
- Sponsoring lectureships and conferences that will be informative and helpful to ministers and church leaders,
- Providing through its library high quality resources for the educational life of the church,
- Making available to the church the expertise and experience of the faculty through various special programs [9]

Emmanuel School of Religion is a relatively small graduate seminary comprised of approximately 150 thesis students and individuals who are presently working toward a degree Many of the students enrolled in Emmanuel have graduated from liberal arts colleges, universities, and Bible colleges Faculty and administrative staff encompass a select group of competent scholars, some who are internationally known, with doctorial degrees from educational institutions such as Boston University, Johns Hopkins

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[7] Ibid. 36

[8] Ibid., 68

[9] Ibid. 10

University, The University of Illinois, Yale University, and The University of Tubingen Unlike a major academic institution with diverse graduate and undergraduate programs, Emmanuel offers specialized graduate courses in the area of theological studies

The Emmanuel library holds approximately 110,000 volumes (13,000 are microform volumes) EMMA is the computerized public access catalog for the school's media, reference, New Testament Seminar, archives and main collection Two CD ROM databases are available for periodical resources

Approximately ninety percent of the total student population attending Emmanuel School of Religion is male and between the ages of 25-50 Many are actively involved in ministries in the Johnson City area or surrounding communities

During the Spring 2000 semester ninety surveys were distributed to Emmanuel School of Religion student mailboxes Thirty-three of the ninety surveys were returned

Procedures

The design and implementation of a survey is appropriate for several reasons First, for any change to take place there must be recognition of the problem Surveys help recognize concerns The expectations of this survey provide insights into the end-user's perception of their experiences on various electronic resources In turn, libraries in general can recognize end-users' concerns and successfully apply the appropriate teaching methods to meet the challenges faced by end-users on various electronic resources

Second, problems or concerns must be identified Surveys assist in identifying some of the challenges faced by end-users on electronic resources This survey will address the end-user's training on an electronic resource The survey will identify library

use or non-use, the importance of human interaction, the end-user's comfort level on various electronic resources, attitudes toward electronic resources, instruction preference,and use or non-use of available help screens

Third, the resolution of problems, concerns, or needs, once recognized and identified, can be resolved If the need is unknown the solution cannot be found Through recognition and identification of these problems, a survey can help identify and bring solutions to problems An awareness of a problem enables the ability to change and accommodate those needs

Finally, the survey analysis provides insight into how end-users perceive electronic resources and how what they feel is the most appropriate method of instruction on these resources. Methods of instruction on electronic resources can take the form of seminars, personal or group training sessions, workshops, printed resources, etc And, just as learning brings a new way of viewing the world, education, in and of itself, is a lifelong process The challenge to educate and improve the library's services does not stop once the survey has been reviewed and tucked away Surveys are a means of gaining greater insight into the needs of a particular group and should be done on a yearly basis Just as learning is a continuous process, constant surveying of end-user needs should be constant

The findings from this survey can be applied to the concerns addressed by the respondents For it is through surveys that those surveyed are addressing *their* needs as they apply to the real world It is through such surveys that a study of end-users' behavior on a particular OPAC or information retrieval system can be applied in a manner that is applicable to the needs of that particular user or group of users. It is through surveys that

information professionals can learn how to better meet the needs of the end-users on electronic resources and, thereby, assist in educating them.

Appendix A is the survey instrument   Appendix A is developed from the questionnaire designed for the Online Catalog Public Access Project where "a survey was conducted of users and nonusers in thirty-one libraries in the United States "[10] Survey questions were restated to support the hypotheses tested   Comprised of twenty-four survey questions on various electronic resources (i.e , OPAC, CD ROM databases at ESR, and the Internet) this survey seeks to secure end-user's perception of their ability to interact with various electronic resources   The survey questions concentrate on end-user behavior with OPAC, CD ROM databases at Emmanuel, and the Internet   The ultimate objective is to assist information professionals in their capacity to generate teaching methods for the purpose of educating, instructing and guiding end-users on electronic resources

The electronic resources available at Emmanuel consist of an online public access catalog of the library's collections (EMMA), American Theological Library Association (ATLA) on CD-ROM[11], Religious and Theological Abstracts on CD-ROM, and access to the Internet via computer workstations in both the library and computer lab

Survey Questions

Survey questions focused on electronic resources housed at Emmanuel School of Religion. These resources include online public access catalog (OPAC), CD ROM

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[10] Joseph R. Matthews and Gary S Lawrence. "Further Analysis of the CRL Online Catalog Project " *Information Technologies and Libraries* (December 1984) 345

[11] The software vendor for ATLA is Dataware Technologies

databases (American Theological Library Association (ATLA) and Religious & Theological Abstracts (RTA), and the Internet

The first set of questions (1-4) focuses on library use or nonuse It is important to understand the characteristics of the end-users at Emmanuel School of Religion Those who are less likely to visit the library would probably not be interested in learning how to do more effective searches on the various electronic resources available Questions 2-4 divide the electronic resources into categories (OPAC, CD ROM databases, and the Internet) and attempt to determine the time spent utilizing such resources This segment of the survey will disclose the use of the library and the electronic resources addressed

The second set of questions (5-7) concentrates how end-users learned to search The questions pertaining to how end-users learned to search various electronic resources assists in determining whether or not there is a need for human intermediaries Informal training methods will indicate a lesser need for human interaction than formal training This segment determines the need for human interaction.

The third set of questions (8-10) concentrates on comfort level Whether or not the end-user is comfortable using an electronic resource could assist in determining the method of instruction If end-users are comfortable with electronic resources then electronic resources can be employed in training sessions This segment of the survey reveals the comfort level of the end-user

The fourth set of questions (11-13) focuses on attitudes toward electronic resources End-user attitudes toward the electronic resource will assist in shaping education on such resources A positive attitude depicts openness to learning A negative

attitude reveals a possible lack of receptivity toward a particular electronic resource

Clarification of how the end-user perceives their attitude toward electronic resources

assists in the information professional's ability to implement innovative instructional

methods to assist end-users in overcoming negative attitudes   This segment of the survey

determines the attitude of the end-user

The fifth set of questions (14-16) concentrate on use of help screens   Use or non-

use of available help screens aids in determining how much instruction is needed   Little or

no use of help screens discloses insufficient end-user search techniques   End-users can

learn how to effectively manipulate an electronic resource by applying the skills found

within the available help screens.   This segment of the survey determines whether or not

help screens are used on the various electronic resources addressed

The sixth and final set of questions (17-23) separate the various methods of

instruction   This section is divided into three groups   one-on-one, group, and informal

instruction   The ability to narrow down the type of instruction an end-user perceives as

being the "best" will serve as a valuable tool for assisting information professionals design

educational methods for the various electronic resources   This segment of the survey will

help to narrow down the type of preferred instruction

Data Collection

During the Spring 2000 a twenty-four-question survey was distributed to ninety

student mailboxes at Emmanuel School of Religion a graduate seminary located in

Johnson City, Tennessee   The purpose of this study is to gain greater insight in the

end-user's perspectives of their behavior on various electronic resources (i e ,

OPAC, CD-ROM databases, and the Internet) and to provide information professionals with innovative ways to assist in educating, instructing, and guiding end-users on various electronic resources A copy of the twenty-four-question survey is in Appendix A Thirty-three surveys were completed

Completed surveys were returned to Emmanuel's bookstore to ensure anonymity At the top of each survey an explanatory statement describing the purpose of the survey, a student confidentiality statement, and a clause indicating voluntary participation in the survey were stated at the heading of each survey The survey was instituted in a manner that would not conflict with previous surveys conducted by the Emmanuel library (See Appendix A)

To encourage a higher return rate a complimentary gift consisting of a bag of candies was provided for each completed survey, and reminder letters were submitted to student mailboxes three days into the study Emmanuel's bookstore manager agreed to assist in this process and in reassuring each student that the surveys would remain anonymous

The Dean of Students approved the distribution of the survey to the students attending Emmanuel School of Religion Approval from The University of Tennessee's Human Subjects Committee was also secured before the actual issuance of this survey

Limitations of the Study

The limitations of study conducted during the Spring 2000 semester are discussed in the following section Sampling size, terminology, missing data, and open-ended questions were some of the limitations of this study

Population Limitations

The population limitations in this survey revolved around the population size Emmanuel School of Religion is an educational facility that attempts to meet the intellectual needs of men and women interested in theological studies and/or preparing for ministry careers The total population is approximately 150 students, including Doctor of Ministry and thesis students who visit the facilities as needed. The total number of surveys distributed was lowered to a subpopulation of ninety possible responses Doctor of Ministry and out-of-state thesis students were eliminated from this survey and copies were distributed to in-house students only

Methodological Limitations

Methodological limitations involved language Many respondents unfamiliar with the term online public access catalog (OPAC) questioned how to answer when asked OPAC questions The name designated for the Emmanuel library OPAC is Emma

Missing data arose through the consistency of the respondent's answer to each of the questions Questions 2 through 4 ranked the respondent's use of a specified electronic resource If the respondent indicated that he/she "never" used a particular e-resource, when responding to comfort level or attitude toward that particular e-resource answers were left blank Occasionally this occurred when respondents answered questions relating to the online public access catalog, however, the bulk of unanswered response centered around nonuse of CD ROM databases

Question 24 is an open-ended response that did not require ranking but provided the respondent with the opportunity to suggest optional methods of instruction The result of this question is discussed without statistical analysis

Summary

Emmanuel School of Religion, a graduate seminary, located in Johnson City, Tennessee, was selected as a site for a survey The population consists of approximately (150) Master of Religion, Master of Divinity, and Doctor of Ministry students The design of the survey was based on a previous study conducted with (31) United States libraries [12] The purpose of the survey is to gain further insight in how end-users perceive their behavior on various electronic resources

Ninety surveys were distributed to student mailboxes in the Spring 2000 semester To ensure anonymity the surveys were returned to the Emmanuel bookstore A higher return rate was encouraged through the provision of a complimentary bag of candies and a reminder letter submitted three days into the study Appendix A is the survey instrument.

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[12] Ibid., 345

Chapter IV

Analysis and Findings

Quantitative Results

Library and Electronic Resource Use

Questions 1 through 4 of the survey (Appendix A) address the use of the

Emmanuel library and the various electronic resources made available to the students

attending Emmanuel School of Religion   End users who actively use the library and its

electronic resources will value and appreciate library and its resources   Frequent visits

justify the rationale for this theory   Likewise, it is believed that end-users who visit

frequently will also support the need for education on various electronic resources and

serve as active participants in the learning process

Table 1. USE OF EMMANUEL LIBRARY (ESR)

	Respondents	% Users
Daily	17	51 5
Weekly	14	42 4
Monthly	1	3.0
Once/Semester	1	3 0
Total	33	100.0

Table 1 reveals that all of the respondents use the Emmanuel library at least once a

semester   Fifty-one percent, 51 5% (n=17) use the Emmanuel library daily   Fourteen

respondents, 42 4%, use the Emmanuel library weekly

Survey questions 2 through 4 of the survey concentrate on the various electronic

resources available at the Emmanuel library   The ability to determine the type of

electronic resource used by the respondent assists in gaining further insight on the

electronic resource most preferred by the end-user and in helping the informational professional to determine educational methods that will increase use on less popular electronic resources

The Emmanuel library provides access to two CD ROM databases 1) American Theological Library Association (ATLA) database, and 2) Religious & Theological Abstracts (RTA) database. These resources are accessed locally and are used to electronically locate articles found in printed journals

The CD ROM databases at the Emmanuel library are relatively more difficult to maneuver than web based resources of the same nature The interface is not user-friendly, and information retrieval often requires the assistance of a librarian Nevertheless, because the Emmanuel library operates on a budget with restricted financial resources the CD ROM databases are the most cost-effective electronic resource tool for this particular organization

Table 2 indicates that 60 6% (n=20), of the respondents use the Internet on a daily basis and 6 1% (n=2) use CD ROM databases on a daily basis. None of the respondents use OPAC daily

Of those surveyed, 19 4% (n=6), never use OPAC, 12 1% (n=4), never use CD ROM databases and one 3 0%, never use the Internet More respondents indicate having never used OPAC over any other e-resource Low use could indicate a need for formal instruction on OPAC as a means of increasing the number of users

Respondents indicate that they use OPAC, 41 9% (n=13), on a weekly basis more

than CD ROM databases, 36 4% (n=12) or the Internet, 21 2% (n=7)   OPAC is used `

twice as much on a weekly basis than any other electronic resource   The increased use of

OPAC indicates the need to access the Emmanuel library resources at least once a week.

However, a forty percent, 41 9%, weekly use of OPAC reveals that less than half of the

respondents take advantage of OPAC's capabilities. Looking into methods for increasing

OPAC use may be an issue that needs to be addressed further

Table 2. USE OF ELECTRONIC RESOURCES

	OPAC		CD ROM databases		Internet	
	Respondents	%	Respondents	%	Respondents	%
Daily			2	6 1	20	60 6
Weekly	13	41 9	12	36 4	7	21 2
Monthly	7	22 6	10	30 3	4	12 1
Once/Semester	5	16 1	5	15 2	1	3 0
Never	6	19 4	4	12 1	1	3 0
Total	31*	100 0	33	100 0	33	100 0

*Those who did not respond indicated nonuse of specified electronic resource

Of those surveyed the Internet is the preferred electronic resource with 81 8%

(n=27) of respondents use the Internet weekly   Forty two percent, 42 5% (n=14) use CD

ROM databases weekly and 41 9% (n=13) use OPAC weekly   Surprisingly, twice as

many respondents indicate using the Internet than CD ROM databases or OPAC   ˮ

Table 2 reveals that more respondents use the Internet daily, 60 6% (n=20), than

any other e-resources available in the Emmanuel library   Previous studies disclose that

convenience, ease of use, speed in access, and the ability to connect to a wealth of

information in a moment's notice contribute to the increased use of the Internet

Understanding the type of electronic resource most used assists the information

professional address various methods of instruction based on the kind of electronic

resource

Sources of Learning

Questions 5-7 of the survey revolve around how end-users learned to use various

electronic resources Understanding how end-users learned to use an electronic resource

provide insight into assisting the end-user find more effective ways to search. The ability

to search effectively requires knowing how to manipulate the available electronic resource

If end-users are learning on their own or from a friend rather than an information

professional, effectiveness in information retrieval may be improved through more formal

instruction on that particular e-resource.

Table 3. SOURCES OF LEARNING TO USE ELECTRONIC RESOURCES

	OPAC		CD ROM Databases		Internet	
	Respondents	%	Respondents	%	Respondents	%
Friend/someone nearby	3	10 7	2	6 7	7	21 2
Printed instructions			1	3 3		
Library staff	4	14 3	16	53 3	2	6 1
Library course/orientation	4	14 3	4	13 3		
Myself	17	60 7	7	23 3	24	72 7
Total	28*	100 0	30*	100 0	33	100 0

*Those who did not respond did not because the questions were not applicable

In Table 3, 60 7% (n=17) of the respondents indicate having learned to use OPAC

on their own "without any help " Seventy two percent, 72 7% (n=24) of the respondents

indicate learning how to use the Internet on their own while 23 3% (n=7) indicate learning

CD ROM databases on their own Respondents who use CD ROM databases indicate

that they are less self-guided than OPAC and Internet users

Fifty three percent, 53 3% (n=16) of the respondents learned how to use CD ROM databases from a member of the library staff while 14 3% (n=4) learned how to use OPAC from the library staff and 6 1% (n=2) learned how to use the Internet from a member of the library staff

Only one respondent, 3 3%, indicate learning how to use CD ROM databases from printed resources None of the respondents indicate learning to use OPAC and the Internet from a printed resource Some form of human interaction was involved in the learning process if the electronic resources are not self-guided

Comfort Level on Electronic Resources

Questions 8 through 10 of the survey looks at the end-users' comfort level on various electronic resources. The comfort level of the end-user provides insight into whether or not an end-user is comfortable using a particular electronic resource Frequency of use on a particular resource increases the end-user's comfort level In turn, there is less need for additional end-user training on any given electronic resource

Table 4 indicates that 60.6% (n=20) of the respondents are very comfortable using the Internet while 36 4% (n=12) are very comfortable using OPAC and 15 6% (n=5) are very comfortable using CD ROM databases

Respondents indicate that they are more comfortable on the Internet than any other electronic resource listed Frequency of use is listed as a contributing factor to the increased comfort level as respondents indicate using the Internet on a daily basis, 60 6% (n=20) than CD ROM databases, 6 1% (n=2) or OPAC which is not used daily

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Only one respondent, 3 0% (n=1), indicates feeling very uncomfortable on Internet while 21 2% (n=7) OPAC and 6 3% (n=2) CD ROM database are very uncomfortable Respondents indicate that they are less comfortable on OPAC than the Internet and CD ROM databases Understanding why end-users are less comfortable on OPAC is a question that is in need of further research One reason respondents are more comfortable on CD ROM databases than OPAC is attributed to the instruction received from the library staff Over half, 53 3% (n=16) of the respondents indicate learning how to use CD ROM databases from a member of the library staff (See Table 3)

Table 4 COMFORT LEVEL ON ELECTRONIC RESOURCES

	OPAC		CD ROM Databases		Internet	
	Respondents	%	Respondents	%	Respondents	%
Very Comfortable	12	36 4	5	15 6	20	60 6
Somewhat Comfortable	8	24 2	10	31 3	8	24 2
Comfortable	2	6 1	10	31 3	1	3 0
Uncomfortable	4	12 1	5	15 6	3	9 1
Very Uncomfortable	7	21 2	2	6 3	1	3 0
Total	33	100 0	32*	100 0	33	100 0

*Those who did not respond did indicated having not used the specified electronic resource

Attitude on Electronic Resources

Table 5 looks at the attitude toward a particular electronic resource, as addressed in Questions 11-13 of the survey Understanding end-users' attitude toward an electronic resource and how it affects their comfort level various electronic resources is an important part of the instruction process

Two respondents indicate having a "not favorable" attitude toward a particular e-resource, (3 4% OPAC, and 3 1% CD ROM database)   Surprisingly, none of the respondents indicate having a not favorable attitude toward the Internet

Overall respondents indicate having a more favorable attitude toward the Internet, 51 5% (n=17) than OPAC, 27 6% (n=8) or CD ROM databases37 5% (n=12)

Table 5. ATTITUDE ON ELECTRONIC RESOURCES

	OPAC		CD ROM Databases		Internet	
	Respondents	%	Respondents	%	Respondents	%
Very Favorable	10	34 5	6	18 8	12	36 4
Somewhat Favorable	8	27 6	12	37 5	17	51 5
Favorable	9	31 0	11	34 4	2	6 1
Somewhat Unfavorable	1	3 4	2	6 3	2	6 1
Not Favorable	1	3 4	1	3 1	0	
Total	29*	100 0	32*	100 0	33	100 0

*Those who did not respond indicate not using the specified electronic resource

Help Screen Use on Electronic Resources

Table 6 focuses on the use of electronic resource help screens   Understanding if end-users are utilizing the readily available help resources, i e , help screens, can help the information professional in their ability to assist end-users improve their search strategies

Table 6   USE OF ELECTRONIC RESOURCE HELP SCREENS

	OPAC		CD ROM Databases		Internet	
	Respondents	%	Respondents	%	Respondents	%
Always	0		1	3 1	0	
Almost Always	0		3	9 4	0	
Sometimes	4	14 3	6	18 8	1	3 1
Almost Never	7	25 0	8	25 0	13	40 6
Never	17	60 7	14	43 8	18	56 3
Total	28*	100 0	32*	100 0	32*	100 0

*Those who did not respond indicate nonuse of specified electronic resouce

Over half, 60 7% (n=17), of the respondents (See Table 6) indicate never using

OPAC help screens, while 43 8 % (n=14) never use available CD ROM database help

screens and 56 3% (n=18) never use Internet help screens

Only one respondent, 3 1% (n=1) indicates always using CD ROM database help

screens Respondents indicate that CD ROM database help screens are used more

frequently than OPAC or Internet help screens

An equal number, 25 0% (n=7), of respondents indicate almost never using

available help screens when using OPAC and CD ROM databases, respectively, while

40 6% (n=13) indicate almost never using available help screens when using the Internet

Methods of Learning Electronic Resources

Questions 17-24 of the survey address the end-users' method of learning electronic

resources Several methods of learning are presented as a way to determine the most

preferred method of training

The method of instruction is grouped into three categories 1) one-on-one instruction

(personal assistance from a librarian or student), 2) group instruction (introductory

classes, bibliographic research classes, and library orientations/tours), and 3) self-guided

instruction (help screens or help sheets)

Table 7 indicates that, 63 6% (n=21) of the respondents find a librarian's assistance to

be very useful and 36 4% (n=12) find another student's assistance very useful The third

preferred choice of instruction is group assistance through library orientation/tours, 24 2%

(n=8) Fourth, respondents find help sheets, 18 8% (n=6), to be very useful

Under the mean heading, (1.55) prefer the librarian's assistance as the most preferred method of learning electronic resources Closing following the librarian's assistance is assistance from a student (2 00) The respondents indicate a preference for one-on-one instruction

Table 7. METHODS OF LEARNING ELECTRONIC RESOURCES

	Very Useful		Sometimes Useful		Useful		Sometimes Not Useful		Not Useful		Mean	Total
	n	%	n	%	n	%	n	%	n	%		N
Introductory Classes	5	15 2	10	30 3	6	18 2	10	30 2	2	6 1	2 82	33
Bibliographic Research Classes	4	12 1	8	24 2	12	36 4	7	21 2	2	6 1	2 85	33
Library Orientation/tours	8	24 2	9	27 3	3	9 1	10	30 3	3	9 1	2 73	33
Librarian's Assistance	21	63 6	8	24 2	3	9 1	0	0	1	3 0	1 55	33
Student Assistance	12	36 4	12	36 4	7	21 2	1	3 0	1	3 0	2 00	33
Help Sheets	6	18 8	16	50 0	4	12 5	4	12 5	2	6 3	2 38	32*
Help Screens	4	12 5	8	25 0	12	37 5	6	18 8	2	6 3	2 81	32*

*Those who did not respond did not because the question was not applicable

Of those surveyed the method of instruction most preferred are listed as follows [1]

Personal assistance from a librarian – 87 8%
Personal assistance from another student – 72 8%
Readily available help sheets – 68 8%
Library orientation/tours – 51 5%
Introductory classes – 45 5%
Help Screens – 37 5%
Bibliographic research classes – 36.3%

[1] Data is calculated by collapsing "very useful" and "sometimes useful" into one category

Based on the survey results, respondents indicate that human interaction (one-on-one) instruction is most preferred When one-on-one instruction is not available readily available help sheets (self-guided instruction) is preferred followed by group instruction (in the following order library orientation/tours, introductory classes, and bibliographic research classes) Interestingly, in an age of tremendous technological advances the traditional methods such as the human element or readily available help sheets are ranked as an important aspect of the learning process

Question 24 of the survey is an open-ended question. This question attempts to provide the respondent with the opportunity to list other possible resources that would be of use to them in the instruction process This is an open-ended question that does not require a ranked response and serves as a means of providing the information professional with alternative suggestions

The responses generated from question 24 are as follows

- Better introductory classes and library tour/orientation
- Introduce Bibliographic Resource Classes as part of the Supervised Ministry Experience (SME)
- More reliable Internet connections
- Need more time to determine other resources

Testing Research Questions

Four expectations were tested The research questions focus on end-user comfort level and training preference (one-on-one versus group instruction), the importance of human intermediaries over personal or self-guided learning, help screen use, instruction preference, and comfort with Internet searches over OPAC and CD-ROM database searching Aggregate results are drawn for each of the research questions listed below by

combining the various electronic resources or responses, i e , comfort with electronic

resources is grouped by combining all of the electronic resources together and comparing

it to all of the responses to end-user comfort levels

End-User Comfort Level and Training Preference

Research Question   End-users who are "comfortable" with various electronic resources
(OPAC, CD-ROM databases, and the Internet) will disclose that
some form of human interaction was involved

Table 8 looks at the mean and standard deviation of the end-user's comfort level

and method of instruction

Table 8   COMFORT AND METHODS OF INSTRUCTION

			Count	Mean	Std Deviation
Comfort*	OPAC	Fnend/Someone Nearby	3	1 9	8
		Library Staff	4	2 3	1 0
		Library Course/Orientation	4	2 8	1 0
		Self-Guided	17	2 8	1 3
	CD ROM Databases	Fnend/Someone Nearby	2	3 5	7
		Pnnted Instructions	1	3 0	0
		Library Staff	16	2 6	1 0
		Library Course/Orientation	4	1 8	5
		Self-Guided	7	2 6	1 5
	Internet	Fnend/Someone Nearby	7	2 8	9
		Library Staff	2	2 0	1 4
		Self-Guided	24	2 7	1 2

*See Question 10 Missing data in comfort is calculated as an average

In Table 8 respondents indicate a standard deviation of (8) OPAC respondents

who prefer a friend/someone close by   Instruction from the library staff has a standard

deviation of (1.0)   Self-guided instruction is the least preferred method for CD-ROM

databases as indicated by the standard deviation of (1 5), friend/someone close by (7) and

the library staff (5) are preferred with the library staff holding the highest preference level

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When using the Internet the method of instruction selected is a friend/someone close by

(9) or self-guided instruction (1 2). The research question is supported. Respondents

who are comfortable using a particular electronic resource indicate that some form of

human interaction is involved

The Importance of Human Intermediaries

Research Question   End-users will reveal that human interaction (i e , "a librarian
                     approaching," "friend or another student") is an important aspect of
                     the instruction process

The significance of the human element is addressed in Table 7. Over fifty percent,

63.6% (n=21) find the librarian to be an important part of the learning process. Only one

respondent 3.0% (n=1) indicates that the human element is not useful Respondents find

human interaction in the form of assistance from another student, 36.4% to also be useful

Respondents reveal that human interaction (i.e , "a librarian approaching," "friend or

another student" is an important aspect of the instruction process The research question

for this expectation is supported

Non-Use of Help Screens

Research Question   End-users are most likely not to use "help-screens" as a part of the
                     learning process

Table 6 reveals that most respondents do not make use of the readily available help

screens   Only one, 3 1% (n=1) CD ROM database respondent indicate using the readily

available help screen while 43 8% (n=14), indicate that they never utilize the help screen

Aggregated analysis of respondents who "almost never" or "never" use help screens

indicate that 85 7% (n=24) OPAC, 68 8% (n=22) CD ROM database, and 96 9% (n=31)

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Internet respondents do not take advantage of available help screens   One reason for non-use of the help screen is attributed to a lack of awareness of its availability. The support and encouragement of help screens use and resource evaluation is an avenue that should be taken into consideration when instructional sessions are planned and implemented This research question is supported

Comfort Level and the Internet

Research Question   End-users will most likely reveal a higher comfort level with
                       Internet searches than OPAC or CD-ROM database searches

Table 4 indicates 36 4% (n=12) respondents are "very comfortable" with OPAC Sixty percent, 60 6% (n=20) are "very comfortable" with Internet searches while fifteen percent, 15 6% (n=5), indicate that they are "very comfortable" with database searching End-users reveal that they are self-instructed on the Internet and OPAC and have more guidance in how to search on other databases   Nevertheless their comfort level with the Internet is much greater than with any other electronic resource

Of those surveyed only one Internet respondent, 3 0% (n=1) indicates being "very uncomfortable" on the Internet in comparison to slightly over twenty percent, 21 2% (n=7) OPAC users and 6 3% (n=2) database users who indicate being "very uncomfortable " The increase in comfort level could be justified by the increase in the amount of Internet use   The more a particular resource is used the greater the comfort level

In conclusion, findings indicate

- All of the respondents indicate that they use the Emmanuel library (ESR) at least once a semester

- The Internet is the most used electronic resource   Over fifty percent, 60 6% (n=20), use the Internet daily.
- Of those surveyed 60 6% (n=20) of the respondents feel very comfortable using the Internet   Increased use of an electronic resource is believed to contribute to a high comfort level in comparison to respondents who do not use the Internet as frequently
- None of the respondents indicate have an unfavorable attitude toward the Internet   Attitudes toward the various electronic resources listed are favorable   The aggregated attitude responses are follows 62 1% (n=18) OPAC, 56 3% (n=18) CD ROM databases, and 87 9 % (n=29) Internet [2]
- Respondents indicate non-use the available help screens   Over have, 60 7% (n=17) OPAC, 43 8% (n=14) CD ROM database, and 56.3% (n=18) Internet respondents indicate that they never use the available help screens
- Respondents prefer personal assistance from a librarian than any other method of instruction indicated
- More or better help screens (Table 7) are considered useful even though many of the respondents indicate never using available help screens

The ability to implement instructional methods requires gaining greater insight in the end-users' perception of their ability to effectively manipulate the various electronic resources available   The study conducted at Emmanuel School of Religion, a graduate seminary, serves as a valuable tool in measuring the perceived views of end-users as to their behavior on various electronic resources for the purpose of developing such instructional methods

Summary

During the Spring 2000 semester a twenty-four-question survey was distributed to Emmanuel School of Religion students   Thirty-three surveys were returned. This survey looks at the end-users perception in regards to library and electronic resource use, comfort and attitude levels, use of available help screens on electronic resources, and methods of learning

Respondents indicate greater use of the Internet than OPAC or CD ROM databases Overall respondents indicate a positive comfort level and attitude toward various electronic resources. Interestingly, in an age of technological advancement the human element continues to remain the most preferred method of learning how to use the various electronic resources available

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[2] Aggregated responses are calculated by collapsing "very favorable" and "somewhat favorable" into one category

Chapter V

Conclusions

Quantitative Findings

In conclusion, the survey presented to the graduate students attending Emmanuel

School of Religion indicates a need for continued instruction on the various electronic

resources

> Librarians generally agree that library-user education is necessary for
> students at all levels There may be some differences of opinions on what the best
> approach of instruction may be and what goals of such instruction should be, but
> the need for library-use instruction in some form or another is not questioned [1]

While all of the respondents surveyed reveal using the library at least once a

semester, less than half of the respondents, 41 9% (n=13), use OPAC weekly The

amount of use on OPAC indicates a need to increase the amount of OPAC use One

explanation for low use is that student's only access OPAC when research is required

However, low use is also a factor among those who are uncomfortable with OPAC

Previous studies indicate that the greater the use of a particular electronic resource the

greater the comfort level of the end-user

Interestingly, 33 3% (n=11) are uncomfortable with OPAC as compared to the

Internet, 12 1% (n=4) and CD ROM databases, 21 9% (n=7)[2] (See Table 4) More

respondents are uncomfortable using OPAC than any other electronic resource

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[1]Lubans. Jr . 401

[2] Aggregated responses are calculated using "uncomfortable" and "very uncomfortable "

A second explanation for low use is the difficulty of using OPAC   Effective use

of OPAC requires instruction regardless of OPAC's user-friendliness or attractive

interface

> Information retrieval is inherently a complex task   It involves the
> articulation of an information need, often ambiguous, into precise words and
> relationships that match the structure of the system (either manual or automated)
> being searched   In an automate environment, the use must apply two types of
> knowledge   knowledge of the mechanical aspects of searching (syntax and
> semantics of entering search terms, structuring a search, and negotiating through
> the system) and knowledge of the conceptual aspects (the "how and why" of
> searching—when to use which access point, ways to narrow and broaden search
> results, alternative search results, distinguishing between no matches due to
> search error and no matches because the item is not in the database, and so on) [3]

Information professionals are confronted choosing a method of instruct that will

best accommodate the needs of educating the end-user on various electronic resources

Proper education empowers end-users and equips them with confidence   Education is

what is needed to awaken "personal and collective potentials "   The implementation of

instructional methods on OPAC is one way to assist the increase use of OPAC and the

end-user's level of comfort

> Key to the empowerment of learners is awakening their personal and
> collective potentials   This requires a shift in how students view themselves and in
> how they are viewed by librarians [4]

Of the respondents surveyed, 81 8% (n=27)[5], indicate a weekly use of the Internet

(See Table 2)   This is expected   Many of the graduate students attending Emmanuel

have previous exposure to the Internet and come to the institution with a higher comfort

level than those who never use the Internet

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[3] Borgman, 388

[4] Huston, 75

[5] Aggregated response is calculated using "daily" and "weekly "

In their free time, participants used the Internet for a variety of functions, including communicating with and locating friends and relatives, downloading music, and locating information about various subjects (e g , performance schedules, sports, courses, scholarships, stocks, and consumer issues) They thought of the Internet as a vast source of information, a large network or communication system where they could access information on almost anything [6] One important factor of interest to information professionals is the evaluation of

Internet resources Of the respondents surveyed, 72 7% (n=24), learned how to use the

Internet on his/her own The aggregated response to use of Internet help screens

indicates that 96.9% (n=31) never use the available help screen (See Table 6) Many do

not "necessarily view the Internet as a library resource and would not think to ask a

librarian for assistance with locating information on the Internet " [7] Educating end users

on the evaluation of Internet resources must be addressed as well as instruction on the use

of available help screens One rationale for lack of evaluation and use of available help

screens is attributed to the end-user's inability to evaluate Internet resources and their

unawareness of available help screens. Instructional sessions would assist in the

elimination of this concern

With regard to promotion of library resources, librarians spend substantial amounts of time evaluating and developing expertise about the Web, yet, if users are unaware of this expertise and do not take advantage of it, is this a valuable use of librarians' time? What are librarians doing to educate users and to promote the profession in a way that increases the "customer" base? [8]

As more and more end users access the Internet for information, whether it is for

convenience or ease of use, the ability to select authoritative resources demands the

expertise of information professionals

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[6] Joann E D'Esposito and Rachel M Gardner, "University Students' Perceptions of the Internet An Exploratory Study." ournal of Academic Librarianship 25, no. 6. 458.

[7] D'Esposito, 460

[8] Ibid

This study indicated that less than half of the respondents use CD ROM databases weekly and even less use CD ROM databases on a monthly basis (See Table 2). One explanation for monthly use of CD ROM databases is that respondents access this particular electronic resources as papers are needed and, in turn, do not require further use of this resource Of the respondents surveyed over half indicate learning how to use CD ROM databases from the library staff Less than twenty percent, 14 3%, (n=4) and 6.1% (n=2) learned how to use OPAC and the Internet from a member of the library staff (See Table 3) Overall respondents disclose that the library staff is listed as a very important component in learning how to use CD ROM databases

To the contrary, in spite of the complexity of the Emmanuel library's CD ROM database only 6.3% (n=2), indicate that they are very uncomfortable with CD ROM databases, 21.2% (n=7) OPAC and 3.0% (n=1) Internet respondents are very uncomfortable using the various electronic resources (See Table 4) The CD ROM databases in the Emmanuel library present a challenge for many of the respondents in that they are difficult to manipulate, are not user-friendly, and provide a challenging interface. Effective searching requires skilled knowledge and instruction in order to access and retrieve information However, one reason for the low level of respondents who indicate that they are very uncomfortable on CD ROM databases is attributed to the assistance from the library staff

Implications for Research

One important finding of this study is the lack of help screen use (See Table 7) One explanation is that end-users are unaware of available help screens but find them

useful when the awareness of their availability is present Nevertheless, further study of the factors behind this conflict is required to determine the underlying discrepancy.

The ability to determine and implement instructional techniques that assist and inform end-users on available help screens is a consideration for future study

Implications for Practice

Information professionals can help in the education process several ways The first is through one on one instruction Of the respondents surveyed over sixty percent find assistance from a librarian to be useful (See Table 7). From this finding it is believed that respondents prefer interaction with the information professionals Some suggested ways for accomplishing this goal is to

- Build relationships through personal contact This can be done by providing graduate level students with a name and phone number an information professional as a contact person

- Approach end-users on a more frequent basis. Of those surveyed, respondents prefer information professionals to approach them

- Provide adequate instructional sessions so that end-users can instruct each other The second preference of instruction is through personal assistance from another student. If information professionals successfully implement instructional sessions, in their absence, personal assistance from another student is effective in assisting in the educational process of other end-users.

- Provide user-friendly readily available help sheets When assistance from an information professional or student is not available respondents indicate that readily available sheets are preferred

- Take advantage of technology Information professions are faced with the challenge to educate in a variety of ways including through distance education programs The ability to connect to individuals in and out of the country is accomplished through use of email, fax, and the Internet Technology is a tool that connects and information professionals are a tremendous part of the bridging process

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Based on the study submitted to the Emmanuel School of Religion graduate

students, information professionals play a very important role in the education

process In spite of the age of technology, human interaction continues to play a

major role in educational process of end-users

> Information comes best when wrapped in a person Those who claim that
> we will satisfy all our information needs through the networks misunderstand the
> nature of information needs and information-seeking behaviour True, we will
> make greater and greater use of electronic information. But, as our use of
> information becomes more sophisticated, we will need recourse to information
> specialists who can help us find the answer to our problems by tailoring the
> information provided by our particular circumstances [9]

Through this explorative study of how library end-users perceive their behavior

on various electronic resources, technology serves as merely one tool in the access and

retrieval of information The human element is an important aspect of the end-user's

learning process and an even greater factor in gaining clarification on the end-user's

perception of their behavior on various electronic resources In turn, information

professionals gain insight into the importance of their role as educators, instructors, and

guides on electronic resources while providing instructional methods to assist the end-

user in their learning process

Summary

Respondents indicate a need for end-user education on various electronic

resources available, i e , online public access catalog (OPAC), CD-ROM databases

(ATLA and RTA), and the Internet Of those surveyed the importance of personal

assistance from a librarian continues to remain an important aspect of the instructional

process Respondents reveal insufficient use of available help screens Further research

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[9] Newton, 153

is needed to determine why the non-use of help screen is so high   Suggestions for

assisting information professionals in the instructional process are presented

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Appendix

APPENDIX A

	Daily	Weekly	Monthly	Once a Semester	Never
1 How often do you use the Emmanuel Library (ESR)?	1	2	3	4	5
2 How often do you use ESR's online public access catalog (OPAC)?	1	2	3	4	5
3 How often do you use the Internet (either from home or the library)?	1	2	3	4	5
4 How often do you use other databases (i e , ATLA, Religious & Theological Abstracts (RTA), etc) available in ESR's Library?	1	2	3	4	5

Please select only <u>ONE</u> answer for the following question:
5 How did you learn to search on OPAC?

- a) From a friend or someone at a nearby terminal
- b) Using printed instructions
- c) From the library staff
- d) From a library course or orientation
- e) By myself without any help

Please select only <u>ONE</u> answer for the following question:
6 How did you learn to search on the Internet?

- a) From a friend or someone at a nearby terminal
- b) Using printed instructions
- c) From the library staff
- d) From a library course or orientation
- e) By myself without any help

Please select only <u>ONE</u> answer for the following question:

7 How did you learn to search on other databases (i e , ATLA, RTA, etc)?

    a) From a friend or someone at a nearby terminal
    b) Using printed instructions
    c) From the library staff
    d) From a library course or orientation
    e) By myself without any help

Please <u>rate</u> your level of comfort in the following, where "1" is very comfortable and "5" is very uncomfortable/don't know how to use.

	Very Comfortable				Very Uncomfortable
8 Online Public Access Catalog	1	2	3	4	5
9 Internet Searches	1	2	3	4	5
10 Databases (i e , ATLA, RTA, etc)	1	2	3	4	5

Please <u>rate</u> your attitude toward the following, where "1" is very favorable and "5" is not favorable:

	Very Favorable				Not Favorable
11 My overall or general attitude toward OPAC is	1	2	3	4	5
12 My overall or general attitude toward the Internet is	1	2	3	4	5
13 My overall or general attitude toward other Databases (i e , ATLA, RTA, etc) is	1	2	3	4	5

14 When using the Internet how often do you utilize the help screen?

Always				Never
1	2	3	4	5

15 When using OPAC how often do you utilize the help screen?

Always				Never
1	2	3	4	5

16 When using other databases (i e , ATLA, RTA, etc) how often do you utilize the
     help screen?

	Always				Never
	1	2	3	4	5

Please rate each of the following methods, where "5" is not useful and "1" is most useful in
obtaining a more effective/efficient way to search electronic resources.

	Very Useful				Not Useful
17 Readily available help sheets	1	2	3	4	5
18. Introductory classes	1	2	3	4	5
19 Bibliographic Research Classes	1	2	3	4	5
20 Library Orientation/tour	1	2	3	4	5
21 More or better help screens	1	2	3	4	5
22 Personal assistance from a librarian	1	2	3	4	5
23 Personal assistance from another student	1	2	3	4	5
24 Other (please specify)_____	1	2	3	4	5

THANK YOU.   Please *return* completed *surveys* to the *bookstore* on or before
Friday, February 18, 2000 and receive a complimentary gift in appreciation for your time

VITA

Deborah Michelle Powell was born in St Louis, Missouri on March 3, 1965 She received her Bachelors of Science in Finance in May 1992 from St Louis University January 1993, she began her Masters of Library Science at the University of Arizona However, in August 1993, she placed her ambitions of becoming a librarian on hold to pursue a Master of Divinity degree in Christian Education at Emmanuel School of Religion in Johnson City, Tennessee She completed her Masters of Divinity degree in 1998 and was able to return to her previous ambitions in the field of library science (now called information science) at The University of Tennessee, Knoxville The Masters of Information Science degree was received August, 2000

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