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BY ANY OTHER NAME: A STUDY ON LIBRARY USER  
COMPREHENSION OF SUBJECT HEADINGS

by  
Elizabeth Campbell

A Thesis

Submitted in partial fulfillment of the requirements of the  
Master of Arts Degree  
of  
The Graduate School  
at  
Rowan University  
May 1, 2008

Approved by \_\_\_\_\_  
Professor(s)

Date Approved May 15, 2008

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## ABSTRACT

Elizabeth Campbell  
BY ANY OTHER NAME: A STUDY OF LIBRARY USER  
COMPREHENSION OF SUBJECT HEADINGS  
2008  
Dr. Marilyn Shontz  
Masters of Arts in School and Public Librarianship

The current research examined library users and their use of subject headings in library catalog searches. It also examined how effective library catalog searches were for users. A survey was designed to give the researcher an idea of what search terms the public used to search library catalogs. Those survey results were then compared to the actual subject headings found in the library catalog.

The overall results indicated that very few public search terms matched the vocabulary used in the catalog. This showed a disconnection between what was being offered to the public as a search tool and how the public actually searched.

## ACKNOWLEDGEMENTS

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## CHAPTER I

### INTRODUCTION

#### Statement of the Problem

The release of new technology and innovative thinking is at hand. Society today is not a reliant one, but a self-sufficient one. The Internet has affected our way of life in a way that will never be erased. The library, however, has not swiftly embraced the changes of this social influence. There are key reasons that the library may no longer be the center and heart of society. One of the main reasons that the library is slowly losing its place in society is that it has not fully recognized the revolution that has taken place due to the Internet and other technological advances.

While the library has made some significant changes in its response to the Internet Era, such as self-checkout stations and library Web pages, a needed advancement seems to be overlooked. That is the transformation of the library catalog. A user friendly system is defined as that in which relatively untrained users can interact easily. The first sight of this mystery is the catalog, that is supposed to be the key to a modern library. It has now become a tool, more for the librarian than the library user. Its purpose and its function is seemingly und



erstood only by the creator (being the librarian). The library catalog is composed of subject headings and keywords. Subject headings and keywords are words or phrases that provide access to catalog information. Due to controlled vocabulary, subject headings and keywords do not always match with patron selected search terms. The terminology of the catalog can be misleading.

### Relevance of Study

The importance of this topic is linked directly to the survival and effectiveness of the profession. If the user needs a way to identify needed materials and there is no way but to know the jargon, it is the responsibility of the profession to change, to provide a better way of access by making fundamental changes to subject headings and search terminology.

### Research Questions

1. What relevant materials on selected subjects did not appear in a library catalog search using natural language vs. controlled vocabulary?
2. How effective were library catalog searches for public library users?

### Definitions

“Catalogs- A set of bibliographic records that represent the holdings of a library collection” (McCain and Merrill, 2001).

“Controlled vocabulary- in subject analysis and retrieval, the use of an authorized subset of the language and indexing terms” ( Chan, L. M., 1994).

“Keyword- A word or phrase included in the description of a subject and provides access to a catalog” (McCain and Merrill, 2001).

“Library Users- a person who uses the library at least once a year”( Greiner, J., 1994).

Libray of Congress Subject Headings are “a subject authority produced by the Library of Congress and used to locate and recognize subject headings” (McCain and Merrill, 2001).

“Natural language search- a search using regular spoken language, such as English” (Natural language, 2008).

“Subject Headings- A word or phrase that describes a subject and provides access to a catalog” (McCain and Merrill, 2001).

“Technology- The use of a wide variety of equipment and resources to facilitate instruction and the learning process in an educational setting”(McCain and Merrill, 2001).

## Assumptions and Limitations

One assumption for this survey was that the library users used natural language to search the library catalog rather than the controlled vocabulary used in cataloging by catalogers.

It was also assumed that the library users had some knowledge of library keywords and subject headings. This study was limited to patrons ages 18-55 years and by location to one public library.

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## CHAPTER II

### REVIEW OF THE LITERATURE

#### Research

According to Cutter (1904), the best interest of the library user was the most important principle of cataloging. “The convenience of the public is always set before the ease of the cataloger” (Drabenscott, 1999).

By 1977 Bates demonstrated that users knowledgeable in a certain subject area were more successful in retrieving information from a library catalog than users without that knowledge. However, Bates also found that the most successful users were not those with subject area expertise but those who knew the structure and content of the library catalog. This study was one of great relevance to this thesis and to the profession in general. To show that one must be knowledgeable with how the catalog was designed in order to retrieve relevant materials has a direct affect on library users and their research experience in the library (Drabenscott, 1999).

In 1999, K. Drabenscott., S. Simcox, and E. Fenton conducted the first large-scale study on end-user understanding of subject headings. Their objective

was to determine how well children and adults understood subdivided subject headings used in library catalogs. They also addressed changes that should be made to LCSH (Library of Congress Subject Headings) specifically, and controlled vocabulary to improve the understanding of the library user.

The researchers distributed questionnaires to children and adults at three different libraries in southeastern lower Michigan. Demographic information of the participants was supplied. They were asked to define the meanings of eight subject headings and then rate how certain they were of the meanings.

To obtain the correct meanings for the provided subject headings, the researchers first attempted to have professional librarians determine the meanings. But interestingly enough, librarians, both reference and technical, did not agree on enough meanings of provided subject headings. The researchers decided to consult a subject-cataloging expert and a second expert to agree on correct meanings (Drabenstott, 1999 January).

Some of the results were that only 36% of adults and children had correct meanings for given subject headings. Since the library catalog was intended to be specifically for the user, this percentage was low. The researchers concluded that a cost effective way to simplify cataloging would be to standardize subdivision order. The long term goal was to change headings to a less controlled vocabulary. (Drabenstott, 1999 January)

Another study (K. Drabenscott, S. Simcox, M. Williams, 1999) showed that even when librarians were tested on the understanding of meanings of subject headings, their responses deviated from an expert cataloger's understanding of the meanings. The Bates (1977) study mentioned earlier proved to be correct in this instance because those who were experts in cataloging knew far more than the librarians who participated in the same test.

This problem with controlled vocabulary use in catalogs has been a known by the library profession for quite a while. It seems that because there is no simple, cost effective way to solve or approach this situation, it continues to be the elephant in the room of many library association meetings. Suggestions have been made to remove subject headings from the catalog altogether. The argument was that subject headings needlessly take up gigabytes of space because library users mainly use keywords rather than subject search (Drabenstott, 1999).

When this suggestion was further looked into, experts reported that if subject headings were removed at least one third of library records would be lost to users. This is due to the fact that some keyword searches retrieved records that were only in the subject string in the subject heading field. But no one knew how often this occurred (Drabenstott, 1999).

A study done in 1994 on keyword searching relevancy by Jennifer Rowley showed that users who used keywords for subject searches had 63 to 73 percent relevancy rate. However, when she further asked users about their satisfaction

with their results she found that, “Part of what happened was that people resorted to keyword searches when an exact search failed and then found nothing they liked with the keyword search either.” (p. 5)

Also in 1994, Monica McJunkin reported that the results of her study of title keyword searches was similar. She used the subject headings that were on the retrieved records to judge the relevancy of keyword title searches. She found that “Many exact subject heading matches were missed by the title keyword searches.” (p. 10)

These studies were very important to consider when thinking about how library users feel when using the library catalog to find things. Rowley’s study was especially alarming because it showed that even while users were able to find relevant keyword terms when their exact searches were failing, they still were not satisfied with the results that they retrieved. So the end result was still unsuccessful. It would be interesting to find out how many of those users took time to ask a librarian for assistance after they had a difficult time themselves (Drabenstott, 1999).

The most used search engine in the world, Google, picked up on frustrations felt by library catalog users. Google is now in the process of creating a Google Book Search feature that will act like a library catalog and show basic bibliographic information about a book and where it can be bought. If the book is



out of copyright, users can view and download the entire book. The purpose of the Google project is to:

....make it easier for people to find relevant books – specifically, books they wouldn't find any other way such as those that are out of print – while carefully respecting authors' and publishers' copyrights. Our ultimate goal is to work with publishers and libraries to create a comprehensive, searchable, virtual card catalog of all books in all languages that helps users discover new books and publishers discover new readers (Google, 2007).

#### Summary

Researchers have found that librarians and library users alike did not understand the meanings of controlled vocabulary subject headings. However, subject headings remained critical in obtaining the highest number of relevant materials. As keyword searches were not always successful in finding relevant materials, both keyword and subject heading searches seem to be needed.

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## CHAPTER III

### METHODOLOGY

#### Research Design

This study was designed to examine library catalog subject headings and how public library users used or did not use them. The researcher chose descriptive survey research as a method for data collection. A descriptive survey was appropriate for this study because it is a “research method commonly used to determine the present status of a given phenomenon” (McCain and Merrill, 2001).

#### Purpose and Research Questions

The purpose of this study was to determine if useful subject headings were used by public library users when completing library catalog searches. Better understanding of the catalog searching success rate of library users has the potential to change the future of controlled vocabulary in library catalogs.

Research questions that were answered through data gathered from this study included:

1. What relevant materials on a selected subject did not appear in a library catalog search using natural language vs. controlled vocabulary?
2. How effective were library catalog searches for public library users?

## Variables

Independent variables determine or produce a change in the dependent variable. The dependent variable is that which can be measured. In this study the independent variable was the actual number of subject headings in the library catalog. The dependent variable was the number of items not found by patron natural language searches.

A descriptive survey was created by the researcher for a pretest using SurveyMonkey, an online survey Web resource (<http://www.surveymonkey.com>). SurveyMonkey is a Web site that allows researchers to post and create surveys. Changes were made as a result.

## Survey Design

The survey (see Appendix) was designed by the researcher to obtain responses from the public library users about what words or phrases they would use to search for five selected search topics.

The “correct” subject headings that were found in the catalog were be obtained from the Head Cataloger at the library. These terms were compared with the popular patron search terms to estimate how accurate public library users were with catalog searching. Once the surveys were completed, a search was conducted by the researcher using each of the search terms noted by the public for the selected topics. Comparison of the results of the popular search term searches and

the actual subject heading catalog searches showed the relevance of library user searches. There was expected to be a difference in the amount of material found with popular search terms and actual controlled vocabulary subject headings.

#### Data Collection

A public library in the Camden County area agreed to participate in this study by offering a survey to their library users. The survey, created by the researcher, was offered to library users throughout the month of March, 2008. The surveys were available at the circulation desk. Library staff encouraged users to complete and turn in the surveys. The researcher later collected all surveys. No names or identification was provided by the participants.

#### Readability and Validity

The survey designed for the general public was tested by several Library Science students who were colleagues of the researcher. The readability of the survey was limited to public library users of a specific public library in New Jersey. The surveys were available and filled out at the library.

This research could be replicated in other libraries to determine the usability of the library catalog. The results of this study were helpful in measuring how successful the public is in library catalog searches.

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Powell, R. R., & Connaway, L. S. (2004). *Basic research methods for librarians*. Fourth ed. Westport, CT: Libraries Unlimited.

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## CHAPTER IV

### ANALYSIS OF DATA

#### Response Rate

This topic of understanding subject headings can be assessed several different ways. For this study, the library users' understanding and accurate use of catalog subject headings were measured by a survey that was completed by a group of 30 adult public library users, in the Camden County area, between the ages of 18 and 50. The survey was not specific to search terms or phrases so that they would feel comfortable offering any terms that they would normally include in a library search. The public was asked to give no more than three phrases or search terms that they would use to find information on five selected subjects. Each participant gave at least two search terms for each subject presented.

The survey was available at the circulation desk of the library. Within three weeks, thirty two library patrons had completed the survey. Two of the surveys received from public were not usable because the respondents were not at least 18 years of age.

## Presentation of Results

The five subject topics for this survey were put together using two popular Internet search engines, Google and Dogpile. Since this study dealt with public searches, it was pertinent to present common searches as the subjects for the survey. Currently popular Web searches were found by the researcher and listed, then formatted into questions inquiring how one would go through the same search in a library catalog rather than an Internet search engine. The few popular Internet searches found and used were: mortgage rates, assisted living, college financial aid, Christopher Columbus and Italian recipes. These subjects were randomly chosen by the researcher from a list of popular internet searches.

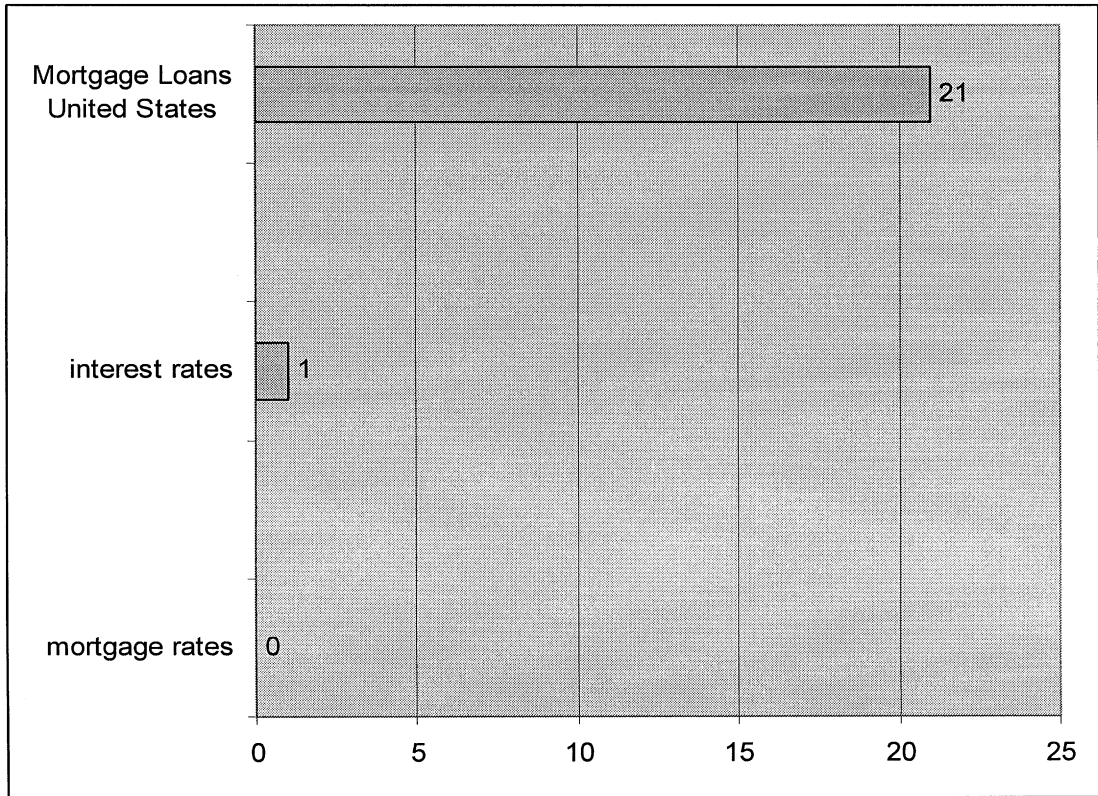
For the subject of mortgages, the most common search terms that the public used were “mortgage rates” (with 30 responses) and “interest rates” (with 17 responses). The term “mortgage rates”, however, was not a subject heading in the catalog and did not offer any direct listings. The term “interest rates” in the catalog retrieved one item. The subject heading that the cataloging librarian provided was “Mortgage Loans United States.” This search phrase listed 21 relevant results (see Figure 1).

For the subject of assisted living in New Jersey, the most common search terms that the public used were “nursing homes” (with 22 responses) and “assisted living” (with 18 responses). The term “nursing homes” retrieved 30



# Survey Results for Mortgage Rates

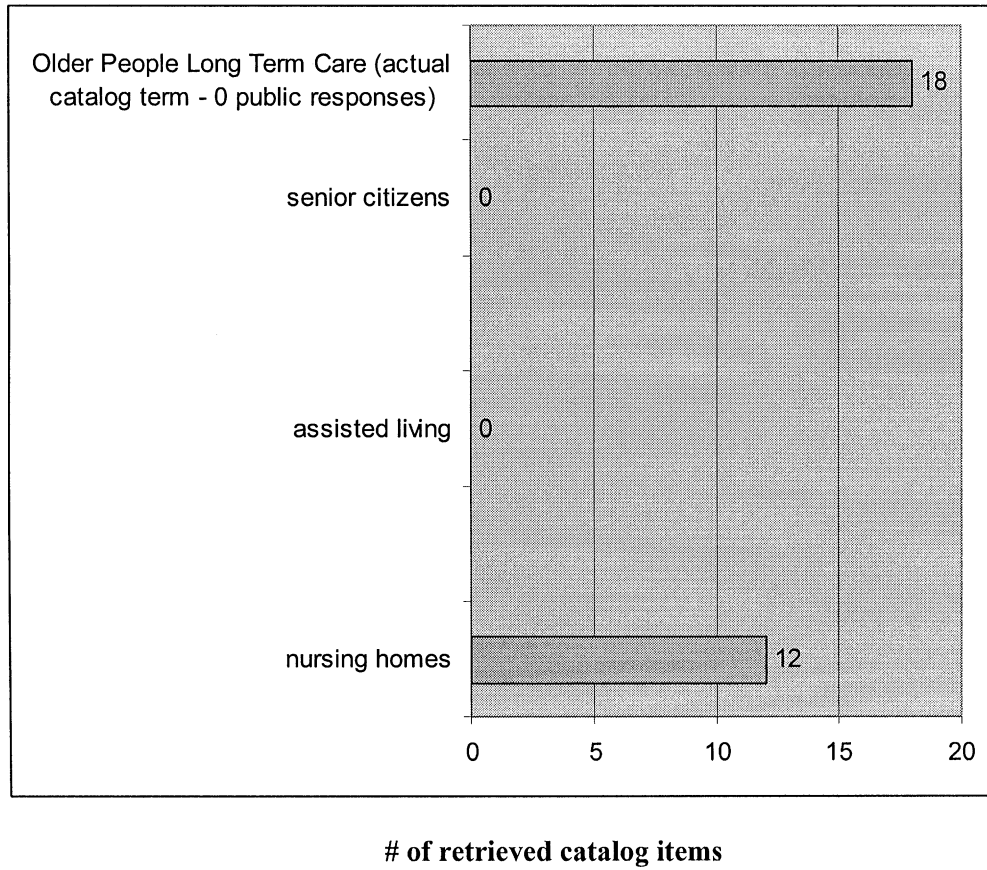
## Figure 1



# of retrieved catalog items

## Survey Results for Assisted Living

Figure 2



items of which only 12 were relevant (18 are fiction). The term “assisted living” had no results. The subject heading that the cataloging librarian provided was “Older People Long Term Care.” This search phrase listed 18 relevant results. (see Figure 2).

For the subject of college financial aid, the most common search terms that the public used were “financial aid” (with 21 responses) and “college costs”(with 17 responses). The term “financial aid” had no results. The term “college costs” retrieved 23 items. The subject heading that the cataloging librarian provided was “Student Aid.” This search phrase listed 67 relevant results (see Figure 3).

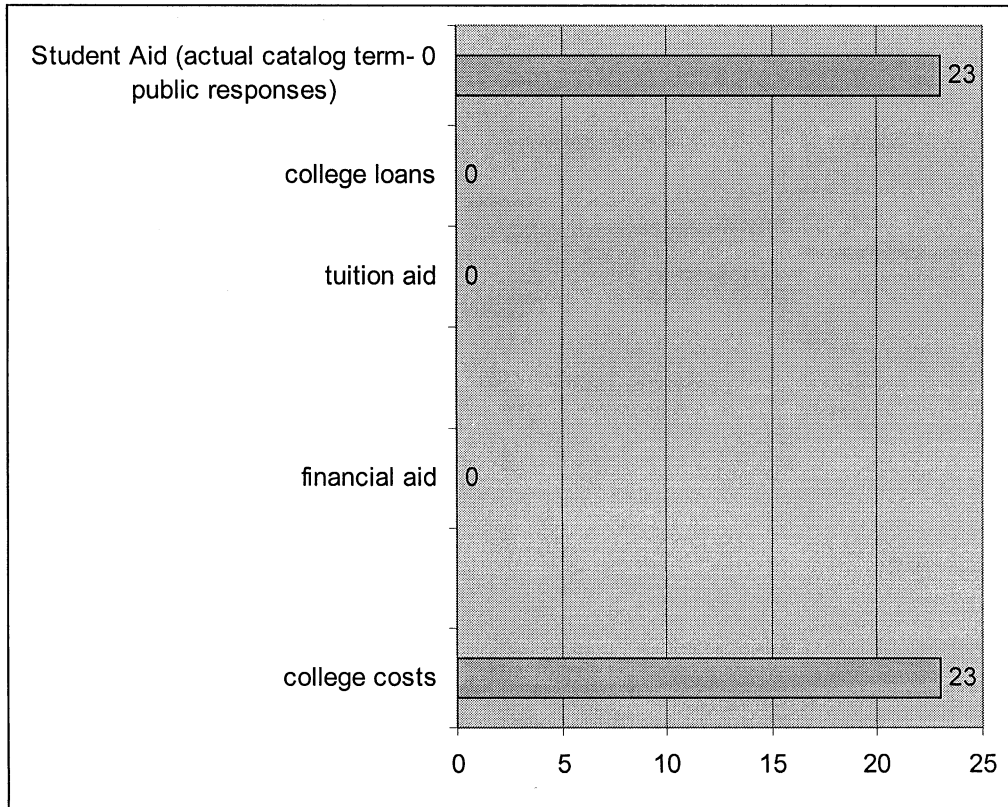
For the subject of Christopher Columbus, the most common search terms that the public used were “Columbus, Christopher” (with 30 responses) and “explorer” (with 15 responses). The term “Columbus, Christopher” retrieved 83 items. The term “explorer” retrieved 529 items of which 11 were relevant (specifically about Columbus). The subject heading that the cataloging librarian provided was “Columbus, Christopher” which was also a common term used by the public (see Figure 4).

For the subject of Italian recipes, the most common search terms that the public used were “Italian recipes” (with 30 responses) and “Italian food” (28 responses). Both of these search terms retrieved no results. The subject heading

that the cataloging librarian provided was “Cookery, Italian”. This search phrase listed 109 relevant results (see Figure 5).

# Survey Results for College Financial Aid

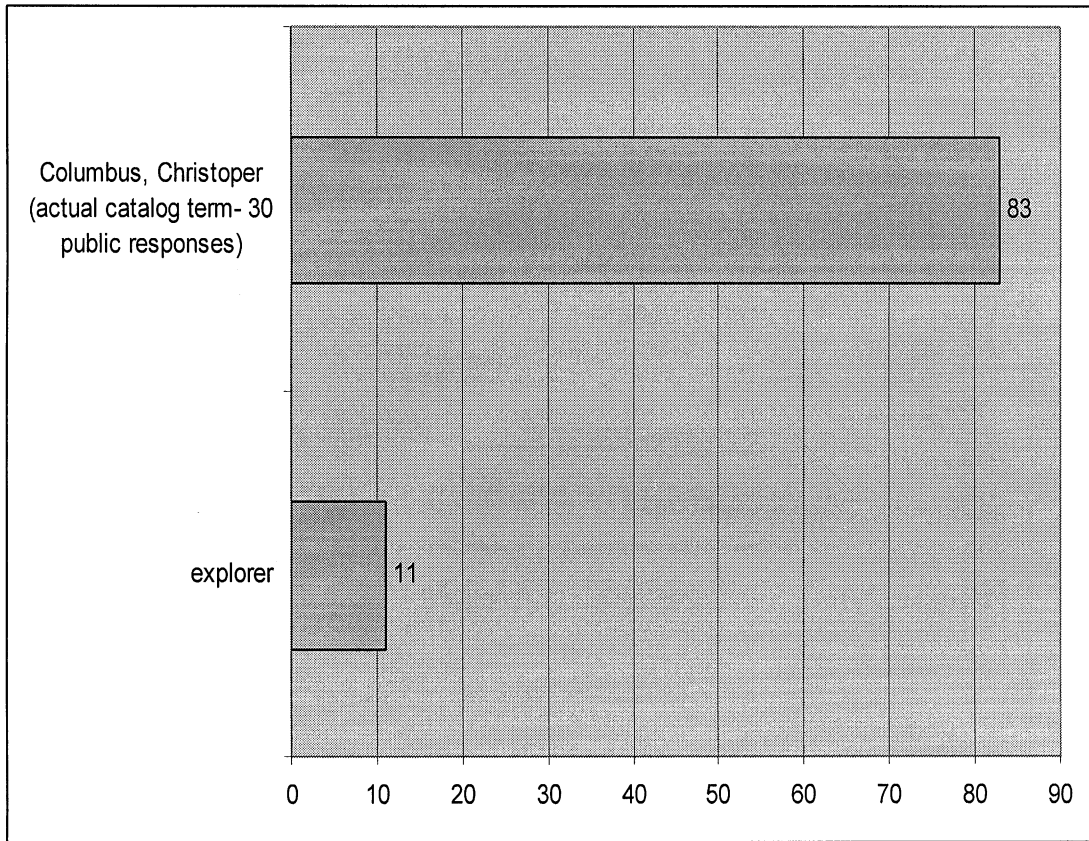
## Figure 3



# of retrieved catalog items

# Survey Results for Christopher Columbus

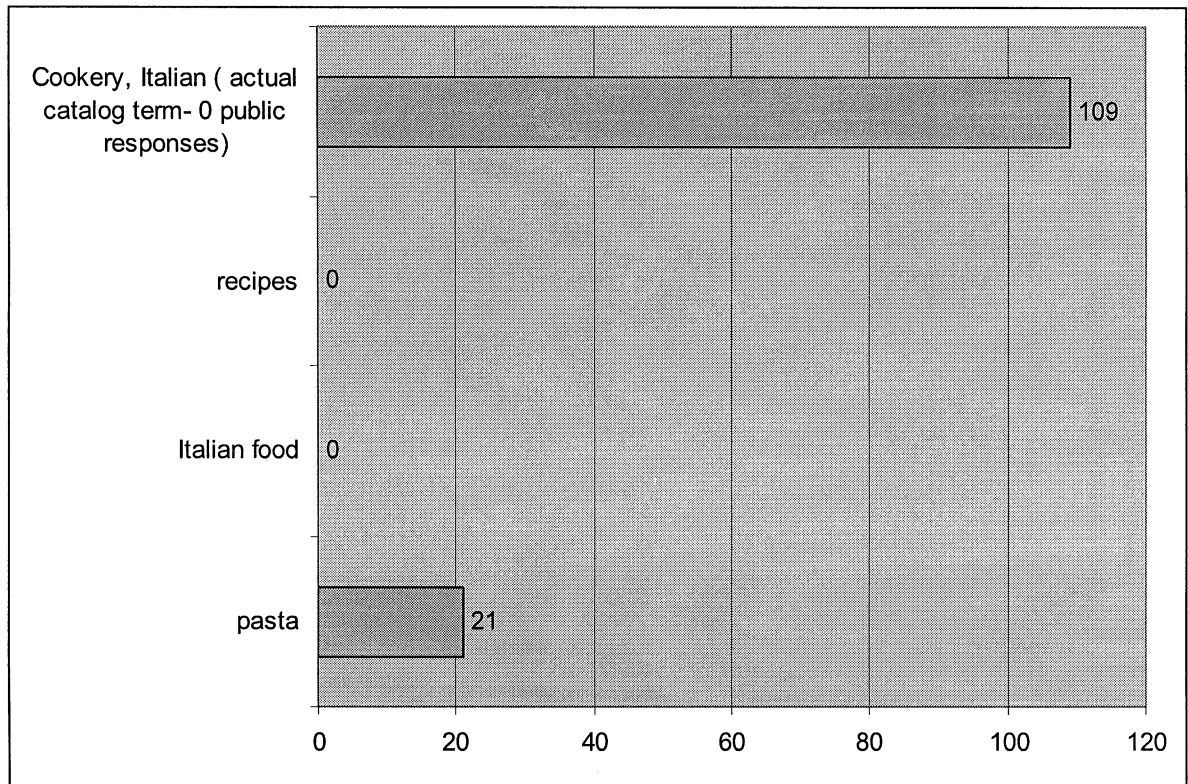
## Figure 4



# of retrieved catalog items

## Survey Results for Italian Recipes

Figure 5



# of retrieved catalog items

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### Summary

The current research examined public library users and their comprehension of subject headings. It also examined how much information was not retrieved in public library searches when controlled vocabulary subject headings were not used. The overall results indicated that the majority of library user search terms were not used as subject headings in the library catalog, creating a low retrieval rate.

#### Research Questions

*What relevant materials on selected subjects did not appear in a library catalog search using natural language vs. controlled vocabulary?*

On the subject of mortgages, the majority of the public responded that they would use the search term “mortgage rates” in order to find material on mortgages. While “mortgage rates” was the popular public term, it retrieved nothing from the catalog. “Mortgage rates” was not a subject heading found in the catalog. Another term that the public chose to use on this topic was “interest



rates.” While this search retrieved two items, it did not offer the majority of items that were actually available in the catalog.

The subject heading that was given by the cataloging librarian was “Mortgage Loans United States”, which retrieved the full 21 items that were listed in the catalog. While this term appropriately described the items retrieved, it proved not to be a search phrase that the general public would think to look under. The subjects of college financial aid and Italian recipes both had similar results. For both of these subjects, the majority of the public chose very similar search terms but they retrieved no to very few items in the catalog that matched their search terms.

The only search that the public matched directly with the cataloging librarian was the search for material on Christopher Columbus. The catalog had the most information retrieved when the term “Columbus, Christopher” was searched. The majority of the public chose this as a search term that they would use in this case. Using the last name first when searching for a person is a searching technique used for encyclopedias and reference books. It seemed as if the general public kept that in mind when answering this question.

*How effective were library catalog searches for public library users?*

The results from the survey showed that the subject headings in the library catalog differ significantly, in most cases, from the search terms that the public uses to locate material. Out of the five search questions that were asked to the

public, only one search (Christopher Columbus) showed the majority of public search terms matching with library catalog subject headings. This showed that the majority of library users searching for these topics in a library catalog would not be successful in their searches.

### Discussion and Conclusion

A definite observation of the results of this study was that while many of the public search terms were similar to each other, very few matched the vocabulary used in the catalog. This showed a disconnection between what is being offered to the public as a search tool and how the public actually searches.

Another interesting observation of the public responses to these questions was how similar their search terms were to Internet searches. The language used was very natural compared to the controlled vocabulary used in the library catalog. This shows the impact that the Internet has had on general public searches.

### Significance

This study was relevant because it supplied evidence that library catalog subject headings were not useful to public library users for identifying material. Expanding the body of research results about natural language searches and controlled vocabulary searches can help to create a more effective way for the public to search library catalogs.

## Recommendations for Future Study

The future of Library of Congress subject headings remains to be seen.

While there are many programs that now allow the public to tag certain items with popular search terms, and many databases are beginning to include natural language searches, the library catalog has a long way to go to properly accommodate the public with less formal language. The topic of library catalogs and the public they are supposed to serve should be studied much more in years to come. The impact of Internet searching on library catalog use is a closely related topic that should be considered in the study of the future of subject headings.

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APPENDIX

Survey on Subject Headings

## Subject Heading Survey

Thank you for taking this survey! The information gathered from this survey will be used to study how useful (or not) library subject headings are to the public. Keep in mind there are no right or wrong answers to these questions. Just let us know what you would key into the catalog to find information on the following subjects.

[Add Question Here](#)

[Edit Question](#) [MoveCopy](#) [Delete](#)

### 1. What search terms would you use to find information on mortgage rates?

Term 1

Term 2

Term 3

[Add Question Here](#)[Split Page Here](#)

[Edit Question](#) [MoveCopy](#) [Delete](#)

### 2. What search terms would you use to find good recipes for Italian food?

Term 1

Term 2

Term 3

[Add Question Here](#)[Split Page Here](#)

[Edit Question](#) [MoveCopy](#) [Delete](#)

**3. What search term would you use to find information on assisted living in New Jersey?**

Term 1

Term 2

Term 3

[Add Question Here](#) [Split Page Here](#)

[Edit Question](#) [MoveCopy](#) [Delete](#)

**4. What search terms would you use to find information on financial aid for college?**

Term 1

Term 2

Term 3

[Add Question Here](#) [Split Page Here](#)

[Edit Question](#) [MoveCopy](#) [Delete](#)

**5. What search terms would you use to find information on Christopher Columbus?**

Term 1

Term 2

Term 3