ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

SCHOOL OF INFORMATION STUDIES FOR AFRICA

CARD CATALOGUE USE PROBLEMS IN ADDIS ABABA UNIVERSITY MAIN LIBRARY: A STUDY TO DEVISE COMPUTER BASED GUIDE TO THE USE OF THE EXISTING ACCESS TOOLS TO THE HOLDINGS OF THE LIBRARY

BY

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ABSTRACT

Catalogs are among the key information retrieval tools that help library users easily and quickly obtain information on the holdings of libraries. In order to easily and quickly access information sources available in the collection of a given library, users should know how to make proper use of information retrieval tools, particularly library catalogs. Catalog use study is very important to identify the problems users usually face in using the catalog and to indicate measures to be taken in order to enhance the use of this important access tool. This study, therefore, aims at identifying problems faced by undergraduate students in making use of the card catalog of the Addis Ababa University Main Library.

Earlier catalog use studies have been reviewed to establish theoretical background. Considering the role of library use instruction to enhance students' use of the library in general and catalogs in particular, the advantages and disadvantages of various methods of instruction have been discussed with special emphasis on computer-based methods.

Questionnaire survey, catalog use skill test and discussions were employed to gather data. The findings of the study revealed that students have difficulties to make proper use of the card catalog. The study, therefore, underlines the importance of properly designed catalog use instruction to solve the problems related to the use of card catalog.

In order to facilitate catalog use, the study proposes a computer-based guide that may help users understand the organization, content and use of the card catalog. A prototype computer-based guide has been developed using the hypertext markup language (HTML). However, based on users suggestions the study recommends the design and development of more interactive guide that may include multimedia features.

The study also recommends consideration of a systematic, detailed and well-planned library and information use instruction in the long run and automation of the university library system.

TABLE OF CONTENTS

List of Tables

LIST OF FIGURES

CHAPTER I

INTRODUCTION

1.1 GENERAL BACKGROUND

The basic mission of libraries and information centers is fulfilling information requirements of users. Libraries and information centers of academic institutions in general and of universities in particular are "central organs" of these institutions, which have a crucial role in the teaching-learning and research activities. Library is described as the "core of the university", for "as a resource it occupies the central and primary place because it serves all the functions of a university - teaching and research, the creation of new knowledge and the transmission to posterity of the learning and culture of present and the past "(Higham quoted in Lungu, 1995:174). In order to meet their missions libraries collect, process, organize and provide various types of information sources to users. Preparation of various information retrieval tools is also among the basic functions of libraries and information centers.

Library catalogs are among the most important information retrieval tools that are produced by libraries and information centers. In whatever form they will be, library catalogs are basic tools that describe the holdings of libraries. "The catalogue - whether book (manuscript or printed), card, COM (Computer Output Microfiche) or on-line is the key

tool that allows library users to obtain information on library holdings" (Martinez-Arellano, 1996:275).

Library catalogs as guides to the collection of a library are designed to tell users not only whether the library has the particular information source they want, but also what related materials are available in the library that might well serve the users' purpose. This implies that library materials have significant aspects by which they can be related to enhance their effective use. As far as aspects of library materials are concerned, if we take a book, which is the most typical of these materials, and its use for information requirements of users, we can recognize two distinct and important aspects - the bibliographic and subject aspects. The bibliographic aspect of a book refers to the origin and identity of the book as a phenomenon, entity, or product, and the subject aspect of the book refers to the character of its contents. Users who come to consult the catalog are normally looking either for particular book(s), author(s), title(s), or for books on a particular subject, or for books of a particular type. Generally speaking, the users of library catalog exhibit either a bibliographical or a subject interest in the library material they are seeking (Lubetzky, 1985). From this we can understand that in order to make proper use of library catalogs users should know one of the various aspects of the library materials they are looking for.

Thus, the library catalog is considered first and foremost as searching aid for known items, and the library user who knows how to search the catalog will make proper use of this tool successfully for the purpose of locating a given information source (Hancock, 1987).

Because of the importance of library catalogs, nowadays cataloging practices of libraries in different parts of the world (developed as well as developing) have gone through different stages of computerization processes to enable users easily access materials in the holdings of a given library. The development of information and the advancement of information technology (IT) have also forced libraries to computerize their information retrieval practices. Despite this fact, almost all functions of the Addis Ababa University Library (AAUL) system in general, and cataloging activities in particular, are performed manually. Thus, AAUL system still uses traditional card catalogs as primary records of the stock of the library and as the means of access to its holdings.

The AAUL was established in 1950 with the then University College of Addis Ababa, with its general objective being to serve instructional and research functions of the University.

The AAUL system has the following specific objectives:

- To render library and information services that can meet the needs of the undergraduate studies, in relation to approved curricula.
- To assist the teaching staff in the preparation of teaching materials and in keeping them up-to-date in the respective subject fields.
- To meet the needs of postgraduate studies, in relation to approved curricula.

- To support research and the advancement of knowledge in the major disciplines of natural sciences, the social sciences, and humanities, particularly as related to Ethiopia.
- To provide general reference and lending services to the university community as a whole as well as to the educated users beyond the walls of the university. In view of the absence of adequate library and information facilities in the country, the university libraries cater also for the information needs of other government organizations and educated public, although in a limited way.

AAUL system tries to meet these objectives through the services rendered by the Main Library and its six branches attached to different faculties in different campuses. For the organizational structure of the AAUL system see Appendix-1. The Main Library, which is also known as the J. F. Kennedy Library, holds materials primarily in the social sciences and humanities. The branch libraries hold materials related to the study areas of their respective faculties. The document obtained from AAUL Computer Center indicates that the holdings of the university library system is about 365,000 volumes of monographs, 47,614 volumes of bound periodicals and many other non-book materials. Out of the total monograph and periodicals collection of the University Library System 32.1% or 116,835 volumes of monographs and 34% or 16,057 volumes of bound periodicals are housed in the Main Library. According to the figure obtained from the above mentioned document, the AAUL system has 30,779 potential users and 10,395 actual/registered users which constitute academic staff, students and support staff of the university, out of which 22,082

or 72% of the total are potential and 5,365 or 52% of the total are actual/registered users of the Main Library.

The Main Library has seven Departments, namely: Acquisitions, Cataloging, Circulation, Documents, Ethiopian Collection, Periodicals and Reference. AAUL system has a Computer Center located in the basement of the Kennedy Library building. There are also Audio-Visual, Binding and Reprographic Sections which are located in the Main Library. Except Circulation, Documents, Periodicals and Reference which are also organized as Sections in all branch libraries, other Departments and Sections that are housed in the Main (Kennedy) Library serve the whole university library system. Cataloging Department is one of the Departments that serve the University Library System as a whole.

The Cataloging Department, therefore, catalogs and classifies monographs and serials for all libraries within the University Library System and produces different catalog cards for each material. The Department does copy cataloging or original cataloging. Copy cataloging is the process of adapting an existing catalog record prepared by another library or agency, whereas original cataloging is the preparation of a catalog record without the assistance of outside bodies.

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the information on the material to be cataloged and on the Bibliofile is the same, it can be printed as is. But if there is any variation it will be modified. The information can also be taken from Cataloging In Publication (CIP) data. But if the cataloging information is not found in any of these sources original cataloging will be done.

For each material available in the library the Department produces different catalog cards, such as main entry (usually author), title, shelf list, subject and other added entry cards. As far as the location of cards is concerned, if the cataloged book or periodical publication is for the Main Library all cards except the shelf list are filed in the public catalog of the Main Library. Shelf lists of these books are filed in the Cataloging Department's separate file. If the cataloged book or periodical publication is for the branch library, one shelf list and all other cards are sent to the branch library; one extra main card and extra shelf list card are prepared to be filed in the Main Library. The main card is filed in the public catalog that forms union catalog and the shelf list card is filed in the Department's separate file. Catalog cards are filed alphabetically in a word-by-word arrangement. All author or main entry cards, title cards, and added entry cards are filed in Author-Title catalog file and subject cards are filed in a separate Subject Catalog file.

After the cards are produced and properly filed in public catalog trays, the Reference Department is responsible for assisting users in the use of the public card catalog. The study described below has been intended to study the use of these card catalogs by students.

1.2. STATEMENT OF THE PROBLEM AND JUSTIFICATION

1.2.1. STATEMENT OF THE PROBLEM

Most of the users of the library, particularly undergraduate students, do not know the contents of card catalogs to identify different materials available in the library. Informal discussions with the Reference Department staff as well as the researcher's experience as a staff of the University Library indicate that despite a brief orientation and demonstration by the library on what the card catalog is and how to use it, many users cannot use these tools effectively. In other words, many users do not know what kind of information about a given material they can obtain from the card catalog, how the cards are filed, which catalog entries to consult, how to make effective search and what information to take from the cards in order to locate a given material.

These and other problems related to the use of card catalog needs to be solved based on the requirements of users and library staff. Thus, among the basic questions that are addressed by the study are:

- Do users know what information about a library material they can get from a given card?
- What major difficulties do users encounter in using card catalog?
- Which catalog entry (author, title, subject, etc.) do users usually consult and why?
- How successful are their searches for a given material?
- Do users know how cards are filed in the catalog trays?
- How much time do users spend at the catalog?

- How can the library help users to know about the catalog and to make proper use of it?

1.2.2. JUSTIFICATIONS OF THE STUDY

Even though almost all functions of the AAUL system are currently performed manually, there are evidences that indicate the library's preparation to automate its various functions. One can understand this preparation for automation from different indicators. Among such indicators are: the establishment of the library's computer center and the center's overall activities since its establishment, the library's computer-based literature search services, the measures taken by the library system to train capable professional staff that can deal with computer-based library systems and services, the library's link with other universities to share experience on modern library and information services in general and on library automation in particular (e.g. the link with the University of East Anglia, UK), the library's connectivity to the Internet and the initiative taken by the AAUL system to explore information resource sharing possibilities among academic libraries in Ethiopia.

It is obvious that library catalog is the basis of the major services of the University Library System. Therefore, cataloging function might be among the primary areas of computer application when the library automates its different activities. Literature on library automation indicates that since computers were started to be used to assist library functions, the catalog of a library has probably been the primary area to be converted into a computer-based system (Tedd, 1984). Computer-based library catalogs have opened new opportunities for libraries to improve user access to their collections, because compared to

manual card catalogs, computerized catalog records can provide more information about the holdings of a library and can also provide a number of access points to the collection (Weintraub and Shimoguchi, 1993).

It is obvious that the existing card catalog system is the basis for automated system that will be introduced in the future. Likewise users who have clear understanding of how to use card catalog can easily familiarize themselves with automated catalog system since both have basic similarities. Hence, on the one hand, properly designed computer-based guide to the use of the card catalog will help users know what the card catalog is all about and easily access materials available in the collection of the library without the assistance of library staff. At present the library staff (particularly the Reference Department staff) have to assist users who have problems in locating a given material. After the implementation of computer-based catalog user guide library staff can concentrate on other library activities, rather than engaging in the same routine all time. Thus not only users but also the library will benefit from the result of the study. On the other hand, use of computerized guide on card catalog usage would increase students' familiarity with the use of computers. This familiarity with computers will help users in dealing with automated library systems in the future. " Use of the computer in instruction ... help prepare students for the computer society in which they will live and work" (Kulik, 1983: 7).

Different branch libraries of the AAUL system can also apply the result of the study to their respective situations. Furthermore, the study can be used as a starting point for further research in the use and future improvement of the library catalog.

1.3. OBJECTIVES OF THE STUDY

The **general objective** of the study is investigation of the problems faced by users of the AAU Main Library in using card catalog with a view to preparing a prototype computer-based system that will guide users on how to use this important access tool to the holdings of the library.

The study has the following **specific objectives**:

- examining how well the existing card catalog system being used by the library users in accessing materials available in the collection;
- investigating users success in using the card catalog to find a particular material;
- identifying the major problems encountered by users in using the card catalog;
- gathering qualitative and quantitative data on search behavior of users and use of the card catalog;
- preparing and demonstrating a prototype computer-based system that will guide users in using card catalog and that will also familiarize students with the use of computers.

1.4. SCOPE AND LIMITATIONS OF THE STUDY

Hoping that the result of the study can be adopted by other branch libraries, the scope of the study have been limited to the Addis Ababa University Main Library. The study is also limited to the data collected from final year undergraduate students in different departments of the College of Social Sciences. The preparation of a prototype for the application of computer-based guide to the use of card catalog has also been limited to hardware available to the researcher and also to the tool the researcher believes appropriate for the purpose.

1.5. METHODOLOGY

Descriptive survey is the research method employed. Sources of data for the study include undergraduate students, library staff, and literature related to the area of the study, including various documents produced by the library system.

In order to collect data from the above listed sources, a combination of various survey techniques has been employed; namely, questionnaire, interview and discussions and personal observation - of how catalog cards are used. Related literature have also been reviewed to establish theoretical background.

Data has been analyzed manually. HyperText Mark-up Language (HTML) has been used to prepare the prototype computer-based guide. Chapter three of the thesis deals with the general description of the methodology used in the study.

1.6. ORGANIZATION OF THE THESIS

The thesis has six chapters. The first chapter provides overview of the study area, statement of the problem and its justification, objectives, scope and limitation, and methodology of the study. Chapter two deals with review of related literature. In the third chapter, description of the methodology used in the study is provided. Chapter four presents analysis of card catalog use problems in the Main Library of the Addis Ababa University. Chapter five describes the contents and a prototype of computer-based guide to the use of card catalog. The last chapter presents conclusions and recommendations of the study.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1. CATALOG USE STUDY

Catalogs are among the very important information retrieval tools that are produced by libraries and information centers. The catalog is the most heavily used file of libraries and information centers by both patrons and information service providers. This is because, on the one hand, it is valuable to the patrons as the major means of access to the holdings. On the other hand, it plays a vital role in much of the libraries' or information centers' internal process. According to the American Library Association (ALA), a catalog can be simply defined as "a file of bibliographic records, created according to specific and uniform principles of construction and under the control of an authority file, which describes the materials contained in a collection, library, or group of libraries" (ALA, 1983: 37). In the words of Jean Key Gates a library catalog is "a systematic listing of the books and materials in a library with descriptive information about each one: author, title, edition, publisher, date, physical appearance, subject matter, special features, and location" (Gates, 1989: 62).

We can understand from these definitions that library catalog is a basic tool that describes the holdings of libraries. Its function, like other bibliographic tools, such as indexes, bibliographies, lists and files, is to make the materials available in the library fully and

easily accessible to the users. Library catalogs can appear in different forms. They may be in the form of a book catalog, a card catalog, and an on-line catalog accessed by computer or it could also be in the form of CD-ROM catalog. "The catalog -- whether book (manuscript or printed), card, COM (computer output microfiche) or on-line -- is the key tool that allows library users to obtain information on library holdings" (Martinez-Arellano, 1996: 275).

Users make catalog search either to:

- Determine whether or not the library owns a particular book or other item -- *known item search* -- in which the user will have details on author or title or both;

  or

- Identify items owned by the library that deal with a particular subject which is known as *subject search* (Lancaster, 1988: 85). So, to determine the success or failure of a catalog searcher, it is important to know what information he/she brings to the search and how complete and accurate this information is.

Systematic studies of the way users make use of library catalogs are very important to make catalogs more valuable access tools. Catalog use studies are important mainly because they clearly show what library users really want from catalogs and how they have used the catalog to find what they want. Especially in academic libraries catalog use studies help improve the academic community's access to information sources. "The catalogue appears as a very valuable tool in academic libraries, but can be even more

valuable if the readers' remarks and pattern of usage are heeded" (Maltby and Sweeney, 1972: 197). Readers' remarks and pattern of usage of catalog can be known and be given proper attention if systematic and well-designed catalog use study is undertaken. Thus, the use of library catalog has received the attention of researchers and a number of catalog use studies have been reported in the literature.

As indicated by Richard H. Perrine more than three decades back, well aware of users problems in using card catalogs from their own searches as well as from their assistance to patrons, librarians have made many examinations of card catalog use processes in hopes of finding ways to improve the catalog or to facilitate its use (Perrine, 1967).

A review of catalog use studies by J. Krikelas in 1972 has documented the findings of many of these studies. The widely stated measures taken to study catalog use also include the establishment of the Catalog Use Committee by the Reference Service Division of the American Library Association to consider the use of card catalog and a national catalog use study conducted in the U.K. (Perrine, 1967; Maltby and Sweeney, 1972). Among the scholars who have contributed to the literature of catalog use studies are Perrine, 1967; Tagliacozzo, Rosenberg and Kochen, 1970; Abury, 1972; Krikelas, 1972; Lipetz, 1972; Maltby and Sweeney, 1972; Hafter, 1979; Pease and Gouke, 1982; Aguilar, 1984; Drone, 1984; Hancock, 1987; Lancaster, 1988; Hancock-Beaulieu, 1989.

Hancock (1987: 303) states that out of the catalog use studies that have proliferated since the 1930s those considered to have some scientific basis number over fifty. Even though their results are not applicable to card catalogs of all libraries in general, the findings of these studies are still valuable. Studies in the use of library catalogs, according to Hancock (1987: 303) have the following findings:

1. twenty-five to fifty per cent of library users do not use the library catalog;
2. students account for the largest group of library users;
3. known item searching accounts for the largest proportion of use and increases as the educational level of the user rises.

Looking at the needs, attitudes and difficulties of readers in using library catalogs is very important to evaluate the effectiveness of the catalog. Catalog use studies are also useful for collecting information that will reveal users' opinion and help libraries improve their policies, their means of information provision and the like (Maltby and Sweeney, 1972). Every catalog search, according to Lipetz, (1972) is a word-matching exercise in which the user attempts to match some known clue (for example, a name, or a title, or a subject term) against the filing terms in the catalog -- in the hope of finding some useful associated information on the catalog card, such as a call number, or a complete bibliographic description of a work.

Liptez's study was designed to cast light on many factors that determine the success or failure of a catalog search. Such factors include the availability of the desired material in

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Earlier catalog use studies have been reviewed to establish theoretical background. Considering the role of library use instruction to enhance students' use of the library in general and catalogs in particular, the advantages and disadvantages of various methods of instruction have been discussed with special emphasis on computer-based methods.

Questionnaire survey, catalog use skill test and discussions were employed to gather data. The findings of the study revealed that students have difficulties to make proper use of the card catalog. The study, therefore, underlines the importance of properly designed catalog use instruction to solve the problems related to the use of card catalog.

In order to facilitate catalog use, the study proposes a computer-based guide that may help users understand the organization, content and use of the card catalog. A prototype computer-based guide has been developed using the hypertext markup language (HTML). However, based on users suggestions the study recommends the design and development of more interactive guide that may include multimedia features.

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TABLE OF CONTENTS

List of Tables

LIST OF FIGURES

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the information on the material to be cataloged and on the Bibliofile is the same, it can be printed as is. But if there is any variation it will be modified. The information can also be taken from Cataloging In Publication (CIP) data. But if the cataloging information is not found in any of these sources original cataloging will be done.

For each material available in the library the Department produces different catalog cards, such as main entry (usually author), title, shelf list, subject and other added entry cards. As far as the location of cards is concerned, if the cataloged book or periodical publication is for the Main Library all cards except the shelf list are filed in the public catalog of the Main Library. Shelf lists of these books are filed in the Cataloging Department's separate file. If the cataloged book or periodical publication is for the branch library, one shelf list and all other cards are sent to the branch library; one extra main card and extra shelf list card are prepared to be filed in the Main Library. The main card is filed in the public catalog that forms union catalog and the shelf list card is filed in the Department's separate file. Catalog cards are filed alphabetically in a word-by-word arrangement. All author or main entry cards, title cards, and added entry cards are filed in Author-Title catalog file and subject cards are filed in a separate Subject Catalog file.

After the cards are produced and properly filed in public catalog trays, the Reference Department is responsible for assisting users in the use of the public card catalog. The study described below has been intended to study the use of these card catalogs by students.

1.2. STATEMENT OF THE PROBLEM AND JUSTIFICATION

1.2.1. STATEMENT OF THE PROBLEM

Most of the users of the library, particularly undergraduate students, do not know the contents of card catalogs to identify different materials available in the library. Informal discussions with the Reference Department staff as well as the researcher's experience as a staff of the University Library indicate that despite a brief orientation and demonstration by the library on what the card catalog is and how to use it, many users cannot use these tools effectively. In other words, many users do not know what kind of information about a given material they can obtain from the card catalog, how the cards are filed, which catalog entries to consult, how to make effective search and what information to take from the cards in order to locate a given material.

These and other problems related to the use of card catalog needs to be solved based on the requirements of users and library staff. Thus, among the basic questions that are addressed by the study are:

- Do users know what information about a library material they can get from a given card?
- What major difficulties do users encounter in using card catalog?
- Which catalog entry (author, title, subject, etc.) do users usually consult and why?
- How successful are their searches for a given material?
- Do users know how cards are filed in the catalog trays?
- How much time do users spend at the catalog?

- How can the library help users to know about the catalog and to make proper use of it?

1.2.2. JUSTIFICATIONS OF THE STUDY

Even though almost all functions of the AAUL system are currently performed manually, there are evidences that indicate the library's preparation to automate its various functions. One can understand this preparation for automation from different indicators. Among such indicators are: the establishment of the library's computer center and the center's overall activities since its establishment, the library's computer-based literature search services, the measures taken by the library system to train capable professional staff that can deal with computer-based library systems and services, the library's link with other universities to share experience on modern library and information services in general and on library automation in particular (e.g. the link with the University of East Anglia, UK), the library's connectivity to the Internet and the initiative taken by the AAUL system to explore information resource sharing possibilities among academic libraries in Ethiopia.

It is obvious that library catalog is the basis of the major services of the University Library System. Therefore, cataloging function might be among the primary areas of computer application when the library automates its different activities. Literature on library automation indicates that since computers were started to be used to assist library functions, the catalog of a library has probably been the primary area to be converted into a computer-based system (Tedd, 1984). Computer-based library catalogs have opened new opportunities for libraries to improve user access to their collections, because compared to

manual card catalogs, computerized catalog records can provide more information about the holdings of a library and can also provide a number of access points to the collection (Weintraub and Shimoguchi, 1993).

It is obvious that the existing card catalog system is the basis for automated system that will be introduced in the future. Likewise users who have clear understanding of how to use card catalog can easily familiarize themselves with automated catalog system since both have basic similarities. Hence, on the one hand, properly designed computer-based guide to the use of the card catalog will help users know what the card catalog is all about and easily access materials available in the collection of the library without the assistance of library staff. At present the library staff (particularly the Reference Department staff) have to assist users who have problems in locating a given material. After the implementation of computer-based catalog user guide library staff can concentrate on other library activities, rather than engaging in the same routine all time. Thus not only users but also the library will benefit from the result of the study. On the other hand, use of computerized guide on card catalog usage would increase students' familiarity with the use of computers. This familiarity with computers will help users in dealing with automated library systems in the future. " Use of the computer in instruction ... help prepare students for the computer society in which they will live and work" (Kulik, 1983: 7).

Different branch libraries of the AAUL system can also apply the result of the study to their respective situations. Furthermore, the study can be used as a starting point for further research in the use and future improvement of the library catalog.

1.3. OBJECTIVES OF THE STUDY

The **general objective** of the study is investigation of the problems faced by users of the AAU Main Library in using card catalog with a view to preparing a prototype computer-based system that will guide users on how to use this important access tool to the holdings of the library.

The study has the following **specific objectives**:

- examining how well the existing card catalog system being used by the library users in accessing materials available in the collection;
- investigating users success in using the card catalog to find a particular material;
- identifying the major problems encountered by users in using the card catalog;
- gathering qualitative and quantitative data on search behavior of users and use of the card catalog;
- preparing and demonstrating a prototype computer-based system that will guide users in using card catalog and that will also familiarize students with the use of computers.

1.4. SCOPE AND LIMITATIONS OF THE STUDY

Hoping that the result of the study can be adopted by other branch libraries, the scope of the study have been limited to the Addis Ababa University Main Library. The study is also limited to the data collected from final year undergraduate students in different departments of the College of Social Sciences. The preparation of a prototype for the application of computer-based guide to the use of card catalog has also been limited to hardware available to the researcher and also to the tool the researcher believes appropriate for the purpose.

1.5. METHODOLOGY

Descriptive survey is the research method employed. Sources of data for the study include undergraduate students, library staff, and literature related to the area of the study, including various documents produced by the library system.

In order to collect data from the above listed sources, a combination of various survey techniques has been employed; namely, questionnaire, interview and discussions and personal observation - of how catalog cards are used. Related literature have also been reviewed to establish theoretical background.

Data has been analyzed manually. HyperText Mark-up Language (HTML) has been used to prepare the prototype computer-based guide. Chapter three of the thesis deals with the general description of the methodology used in the study.

1.6. ORGANIZATION OF THE THESIS

The thesis has six chapters. The first chapter provides overview of the study area, statement of the problem and its justification, objectives, scope and limitation, and methodology of the study. Chapter two deals with review of related literature. In the third chapter, description of the methodology used in the study is provided. Chapter four presents analysis of card catalog use problems in the Main Library of the Addis Ababa University. Chapter five describes the contents and a prototype of computer-based guide to the use of card catalog. The last chapter presents conclusions and recommendations of the study.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1. CATALOG USE STUDY

Catalogs are among the very important information retrieval tools that are produced by libraries and information centers. The catalog is the most heavily used file of libraries and information centers by both patrons and information service providers. This is because, on the one hand, it is valuable to the patrons as the major means of access to the holdings. On the other hand, it plays a vital role in much of the libraries' or information centers' internal process. According to the American Library Association (ALA), a catalog can be simply defined as "a file of bibliographic records, created according to specific and uniform principles of construction and under the control of an authority file, which describes the materials contained in a collection, library, or group of libraries" (ALA, 1983: 37). In the words of Jean Key Gates a library catalog is "a systematic listing of the books and materials in a library with descriptive information about each one: author, title, edition, publisher, date, physical appearance, subject matter, special features, and location" (Gates, 1989: 62).

We can understand from these definitions that library catalog is a basic tool that describes the holdings of libraries. Its function, like other bibliographic tools, such as indexes, bibliographies, lists and files, is to make the materials available in the library fully and

easily accessible to the users. Library catalogs can appear in different forms. They may be in the form of a book catalog, a card catalog, and an on-line catalog accessed by computer or it could also be in the form of CD-ROM catalog. "The catalog -- whether book (manuscript or printed), card, COM (computer output microfiche) or on-line -- is the key tool that allows library users to obtain information on library holdings" (Martinez-Arellano, 1996: 275).

Users make catalog search either to:

- Determine whether or not the library owns a particular book or other item -- *known item search* -- in which the user will have details on author or title or both;

  or

- Identify items owned by the library that deal with a particular subject which is known as *subject search* (Lancaster, 1988: 85). So, to determine the success or failure of a catalog searcher, it is important to know what information he/she brings to the search and how complete and accurate this information is.

Systematic studies of the way users make use of library catalogs are very important to make catalogs more valuable access tools. Catalog use studies are important mainly because they clearly show what library users really want from catalogs and how they have used the catalog to find what they want. Especially in academic libraries catalog use studies help improve the academic community's access to information sources. "The catalogue appears as a very valuable tool in academic libraries, but can be even more

valuable if the readers' remarks and pattern of usage are heeded" (Maltby and Sweeney, 1972: 197). Readers' remarks and pattern of usage of catalog can be known and be given proper attention if systematic and well-designed catalog use study is undertaken. Thus, the use of library catalog has received the attention of researchers and a number of catalog use studies have been reported in the literature.

As indicated by Richard H. Perrine more than three decades back, well aware of users problems in using card catalogs from their own searches as well as from their assistance to patrons, librarians have made many examinations of card catalog use processes in hopes of finding ways to improve the catalog or to facilitate its use (Perrine, 1967).

A review of catalog use studies by J. Krikelas in 1972 has documented the findings of many of these studies. The widely stated measures taken to study catalog use also include the establishment of the Catalog Use Committee by the Reference Service Division of the American Library Association to consider the use of card catalog and a national catalog use study conducted in the U.K. (Perrine, 1967; Maltby and Sweeney, 1972). Among the scholars who have contributed to the literature of catalog use studies are Perrine, 1967; Tagliacozzo, Rosenberg and Kochen, 1970; Abury, 1972; Krikelas, 1972; Lipetz, 1972; Maltby and Sweeney, 1972; Hafter, 1979; Pease and Gouke, 1982; Aguilar, 1984; Drone, 1984; Hancock, 1987; Lancaster, 1988; Hancock-Beaulieu, 1989.

Hancock (1987: 303) states that out of the catalog use studies that have proliferated since the 1930s those considered to have some scientific basis number over fifty. Even though their results are not applicable to card catalogs of all libraries in general, the findings of these studies are still valuable. Studies in the use of library catalogs, according to Hancock (1987: 303) have the following findings:

1. twenty-five to fifty per cent of library users do not use the library catalog;
2. students account for the largest group of library users;
3. known item searching accounts for the largest proportion of use and increases as the educational level of the user rises.

Looking at the needs, attitudes and difficulties of readers in using library catalogs is very important to evaluate the effectiveness of the catalog. Catalog use studies are also useful for collecting information that will reveal users' opinion and help libraries improve their policies, their means of information provision and the like (Maltby and Sweeney, 1972). Every catalog search, according to Lipetz, (1972) is a word-matching exercise in which the user attempts to match some known clue (for example, a name, or a title, or a subject term) against the filing terms in the catalog -- in the hope of finding some useful associated information on the catalog card, such as a call number, or a complete bibliographic description of a work.

Liptez's study was designed to cast light on many factors that determine the success or failure of a catalog search. Such factors include the availability of the desired material in

the library; the clues that the catalog user brings to a search; how the user applies these clues; and the file terms and associated data provided in the catalog (Lipetz, 1972; Hafter, 1979).

Because of users' difficulty in using card catalogs, library staff -- particularly reference staff -- often devote most of their time in assisting readers. A catalog use study undertaken by a Catalog Use Committee of the Reference Service Division of the American Library Association found that since users have difficulty in using the card catalog a considerable amount of the reference librarians' time is occupied in efforts to assist card catalog users (Perrine, 1967).

Some catalog use studies indicate that many users do not make use of library catalogs. Reasons for non-use of the catalog are varied as indicated in different studies. Maltby and Sweeney (1972: 193), for instance, underlined that most non- users believe that they can manage accessing library materials without the catalog, while a number of users prefer to seek help from the staff to trace the book that they require. Inability to make effective search could also be among the reasons for non-use of the catalog.

Pease and Gouke (1982) studied the use of on-line catalogs and that of card catalogs at the Ohio State University. They have compared the success of patrons in finding the same titles in the card catalog and the on-line catalog and found that patrons used the on-line

catalog more often than the card catalog. According to their study, patrons' use of card catalog has been decreased, but did not end.

Hancock's study revealed that "the great majority of searchers use the catalogues or subject index to identify areas of the shelves where they can pursue their subject search. Individual titles from the author/title and classified catalogues seem to be used merely to confirm the relevant subject areas" (Hancock, 1987: 308). Hancock also identified through observation of the entire search process that users looked for book materials in a variety of ways. According to this observation, users differed not only in the way they initiated their search but also in the number of steps they followed and the sequence or combination of those steps. These searching steps include author/title catalog; specific item search at the shelves; subject searching at the shelves; use of index; subject guide and classified catalog.

Catalog use surveys have identified a number of difficulties faced by users. The American Library Association Reference Service Division's Catalog Use Committee provided a summary of these difficulties. According to this committee, the six basic difficulties identified are:

1. filing rules used in the catalogs;
2. subject headings -- the absence of certain terms or the use of terms too general for the user's needs;
3. the "see" and "see also" structure;

4. the lack of title added entries;
5. inaccurate bibliographic information possessed by the patron; and
6. call number (Krikelas, 1972: 202).

Lancaster also summarizes the points suggested by the previous catalog use studies as important reasons for the failure of users to find entries present in the catalog as follows:

1. The user's previous experience with library catalogs and with the one now being studied in particular.
2. The user's general intelligence and perseverance.
3. The amount and quality of information brought by the user to the catalog. For example, does he have complete and correct author information and /or complete and correct title information? It has been found that, in general, a user is more likely to have accurate information on the title of a book than he is to have complete and accurate information on the name of the author.
4. The search approach followed by the user. Most users will search under names of authors despite the fact that their title information may well be somewhat better.
5. The number of access points provided by the catalog -- e. g., the extent to which title entries are included and the extent to which cross references occur.
6. Whether the catalog is a dictionary catalog or one that is split and, if so, how it is split.
7. Other characteristics of the catalog, including the extent of misfiling and the quality of the guiding or labeling (Lancaster, 1988: 86).

Generally speaking, catalog use studies are important to identify users' difficulties, to suggest possible solutions for identified problems, to identify serious problem areas that need further studies as well as to design and develop better catalog systems. The above-mentioned and many other catalog use studies, therefore, resulted in the identification of major problems and improvement of conventional card catalogs. Furthermore, these studies led to the computerization of most of the catalogs of the world's large libraries. This in other words means catalog use studies pave the way to the development of better means of access to the holdings of libraries and information centers. To use the words of Hancock (1987: 319) "Ultimately it is hoped that studying users searching behavior will provide feedback for designing better on-line public access catalogues."

The utilization of this better means of access and solving major problems identified through catalog use studies require users' clear understanding of how to make effective use of libraries in general and library catalogs in particular. Krikelas (1972: 202) underlined that "problems in using the catalog have led many investigators to emphasize the desirability of providing assistance at the catalog and instruction in its use." In other words, design and development of better system by itself is not enough to enable users easily access library materials. That is, in order to easily access materials available in libraries and information centers as well as to solve major problems related to the use of information access tools such as catalogs, users must be educated on how to make effective and efficient use of various information sources and services. Catalog use

studies, therefore, are important professional activities that have led to the development of better means of access -- like development of computerized public access catalogs -- and that have emphasized the importance of systematic and well-designed catalog use instruction.

2.2 THE IMPORTANCE OF LIBRARY INSTRUCTION

The proliferation of body of knowledge in every field makes the literature of each field to grow rapidly. Due to this growth of literature, information access becomes difficult and complex. To overcome such difficulty and avoid information access complexity, instructing users on how to make effective use of services rendered by libraries and information centers is very essential. Particularly in academic institutions where the library and information service is expected to play a central and critical role in the instructional and scholarly activities, the importance of instructing users on how to use information sources and services is unquestionable. In academic institutions, library instruction programs grew "out of the increasing complexity of the organization of library materials and the explosive growth of published literature on the one hand and the inadequacy of undergraduate students to cope with these factors on the other" (Aluri, 1981: 140). Library instruction or library user education enables students know how to make the most effective use of the library system. Such instruction aims at helping students become efficient users of information (Tiefel, 1995).

According to some surveys many users of academic libraries, particularly students, do not make adequate use of different services rendered by libraries and information centers or do not know what information sources are available in different units of libraries. The survey of the undergraduate use of university libraries in the United Kingdom that was conducted in 1967, for instance, showed that many students were not active users of their academic libraries. According to this survey, only 37% of the students claimed to know what abstract journals were, 22% did not know whether or not there was an author catalog and 28% did not know whether or not there was a subject catalog. Surveys on the use of academic libraries in other countries also come up with almost similar result with that of the United Kingdom. For example, the studies made in academic libraries of the United States of America and Sweden have shown that library users were only a relatively small part of the total student population (Fjallbrant and Malley, 1984).

From these studies and many other research outputs we can understand the importance of library use instruction. To use the words of Fjallbrant and Malley (1984: 11) "user education is one of the most effective ways of stimulating potential users and introducing them to the vast amount of available information." Potential users that have been given good instruction on the overall information sources and services available in libraries and information centers will definitely use these sources and services for their day-to-day information needs. Effective use of information, therefore, is very important. To use the words of Tiefel (1995: 320) "[students] will be mentally more powerful if [they] concentrate on how to find knowledge rather than try to remember every thing [they] have

learned." Library instruction help students know how to find knowledge from various information sources.

Library instruction programs (also known as user education programs) can be divided into three general levels. These are *library orientation, library instruction* and *bibliographic instruction* (Rice, 1981). Although many writers use the terms -- especially library instruction and bibliographic instruction – interchangeably, Rice explains each of these terms as follows:

Library orientation according to Rice (1981: 5) generally has the following objectives:

- to introduce users to the physical facilities of the building itself;
- to introduce the departments or service desks and the appropriate staff members;
- to introduce specific services such as computer searches, book talks, or interlibrary loan;
- to introduce library policies, such as overdue procedures, or the hours the library is open;
- to introduce the organization of the collection with the specific goals of reducing user anxiety about trying to locate materials;
- to motivate users to come back and make use of the resources;
- to communicate an atmosphere of helpfulness and friendliness.

In this study the term library instruction is used to refer to the concept of instructing (educating) users the use of libraries and information resources.

Properly designed and well-planned library instruction programs enable students to develop the ability to use information effectively and efficiently throughout their life. Such ability is very important in the modern world where information has very significant role in each and every activity of the society. "It is widely recognized that the ability to use information is extremely important in today's society and will continue to become more so" (Tiefel, 1995: 320).

2.3. GOALS AND OBJECTIVES OF LIBRARY INSTRUCTION

Like many other educational programs library instruction requires the formulation of statements of goals and objectives. The term 'goal' is used to express broad, general statements of purpose, whereas the term 'objective' is used to express short-term aims, in agreement with the main goals.

Statements of goals and objectives are important for the choice and determination of course content, for choice and determination of media and methods of presenting the course and for determination of timing required for different parts (units) of the course. Goals and objectives can be divided into three main groups, namely :-

- Cognitive Goals and Objectives;

- Affective Goals and Objectives;

- Psychomotor Goals and Objectives (Fjallbrant and Malley, 1984).

Fjallbrant and Malley (1984: 23) have given the following brief explanation of each group.

Cognitive Goals and Objectives are concerned with understanding various concepts. Within the cognitive domain the goal and objectives can be arranged according to degree of complexity. This means from complex to simple and from abstract to concrete.

Affective Goals and Objectives are concerned with feelings such as whether the learner wants to, and subsequently does, behave in various educationally desirable ways, as for example the pleasure involved in making use of library resources in order to find information. These affective goals and objectives are of considerable long-term importance for the behavior of the student.

Psychomotor Goals and Objectives are concerned with coordinated physical activity, such as in the use of the computer terminal.

From the above explanations it is possible to understand that cognitive and affective objectives are closely interrelated.

> There is usually a close inter-relationship between cognitive and affective objectives. The verbally expressed goals and objectives for a given course of instruction tend to describe cognitive elements. There are, however, in many cases, affective components implicit in these statements. Most teachers hope that their students will develop a continuing positive interest in the material being

- Affective Goals and Objectives;

- Psychomotor Goals and Objectives (Fjallbrant and Malley, 1984).

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> taught; but these goals are often unspecified in a statement of objectives.
>
> Thus in library user instruction in the cognitive domain the student should know to make use of specific library tools such as catalogues and abstracts when asked to do so. In the affective domain the student will feel confident in using appropriate library resources in connection with his information needs (Fjallbrant and Malley, 1984: 23-24).

For library instruction to achieve fruitful results goals and objectives of instruction should be clearly formulated, appropriate course content should be designed and effective and efficient method of instruction should be chosen by taking users needs and requirements into consideration.

2.4. METHODS OF LIBRARY INSTRUCTION

Library instruction programs, in order to meet their stated goals and objectives can be offered using different methods of instruction. Among various methods that have been practiced in different parts of the world are guided tours, lectures, audio-visual methods, independent study and computer assisted instruction (Culkin, 1980; Rice, 1981; Fjallbrant and Malley, 1984). Previously large-group instruction methods such as library tour, general orientations and the like were used to teach library skills. However, librarians have found these methods to be unsatisfactory, because students tend to be unmotivated, they forget important skills by the time they need them, or, in any given group of students, the level of library sophistication varies widely. Many information professionals, therefore, have turned from large-group instruction to methods which promise to meet the

needs of individual learners (Adams, 1980). Computer-based instruction is one of such methods of instruction, which can successfully offer education to individual learners.

2.5. COMPUTER-BASED INSTRUCTION

Application of computers for instructional purposes often called Computer-Assisted Instruction (CAI), or Computer-Based Instruction (CBI), or Computer-Based Learning (CBL). However these terms deal with the same issue. Alan B. Salisbury has defined the term computer-assisted instruction as "man-machine interaction in which the teaching function is accomplished by a computer system without intervention by a human instructor. Both training material and instructional logic are stored in a computer memory" (Quoted in Bourne, 1990: 160). According to Criswell (1989: 1) "computer-based instruction (CBI) refers to any use of a computer to present instructional material, provide for active participation of the student, and respond to student action. Very simply, the goal of CBI is to teach." In this study, the term computer-based instruction is used to refer to the use of computers in educating learners.

Literature show that educational application of computers started to develop during the 1960s and 1970s just when computer technology started advancing and developing (Knizer, Sherwood and Bransford, 1986). The major projects developed for computer-based instruction during the earliest development stage of computers include the IBM

1500, PLATO (Programmed Logic for Automatic Teaching Operation) and TICCIT (Time-Shared Interactive Computer Controlled Information Television).

The project that was using IBM 1500 was developed at Florida State University and was used to offer computer-based university courses in physics and statistics. The PLATO system, which was founded by the National Science Foundation of the United States and housed in the University of Illinois was began in the early 1960s. Since its beginning, PLATO has become a very large database of instructional programs in every subject area and at all educational levels (Rice, 1981; Matta and Kern, 1989; Kinzer, Sherwood, and Bransford, 1990). TICCIT was also developed by the National Science Foundation in 1977 at the University of Texas and Brigham University. TICCIT was designed to provide basic undergraduate instruction in English and mathematics using microcomputers and modified TV receivers (Kinzer, Sherwood and Bransford, 1990).

2.5.1. ADVANTAGES OF COMPUTER-BASED INSTRUCTION

Computer-based instruction has advantages, which have attracted educators. Different authors note a number of advantages of computer-based instruction. Rice, for instance lists the following points:

- students actively participate in the learning process and receive immediate feedback;
- students can go at their own pace;
- the computer has endless patience;

- highly complex branching is possible so considerable remediation can be included for a very heterogeneous audience;
- lessons are standardized so all students get all the information by the time they have completed the program;
- records can be kept on students' progress and rate of progress;
- students work as individuals and do not get so embarrassed if they are confused (Rice, 1981: 77).

McDonald and Searing (1983) also state that computer-based instruction programs are valuable teaching methods for individuals or small groups. They give learners immediate feedback and reinforcement. Such instructional programs also familiarize learners with the use of computers. According to Bourne (1990: 161) the advantages of computer-based instruction include "an attractive learning experience, immediate feedback, individualization, student control of pacing, student control of sequencing, student control of content, and the elimination of personal factors such as subconscious prejudices."

Computer-based instruction can be used effectively when:

- the subject matter does not change significantly over time, because changes in the topic require reprogramming;
- repeated presentations of the same course are needed, because computers are excellent at repeating courses over and over without a decrease in proficiency due to fatigue;

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- repeated presentations of the same course are needed, because computers are excellent at repeating courses over and over without a decrease in proficiency due to fatigue;

- actual practice of the skill being learned is important, because students using computer-based instruction can practice skills that would not otherwise be possible;
- human teachers thereby spared the teaching time may productively engage in other important instructional activities. Computer-based instruction does not replace teachers, but it permits teachers to perform other activities (Criswell, 1989: 3).

As we can understand from the above points, through computer-based instruction learners are interacting with the computer and its effect is very dynamic and impressive. In recent years, therefore, computer-based instruction has become the most widely practiced method of teaching in almost all subject areas. Researchers in the field of computer-based instruction, such as Kulik, Kulik and Bangert-Drowns, 1985; Kulik, Kulik and Cohen, 1980; Kulik, Kulik and Schwalb, 1986; and Price, 1989, state its effectiveness and efficiency; its ability to improve student achievement and attitudes; and the decreased instructional time it requires as some of the reasons for expansion of computer-based instruction into virtually all subject areas (cited in Ester, 1994).

2.6. COMPUTER-BASED LIBRARY INSTRUCTION

The extra benefits of machines in teaching various library skills as compared to other techniques has received understanding among researchers of the field many years back.

- actual practice of the skill being learned is important, because students using computer-based instruction can practice skills that would not otherwise be possible;
- human teachers thereby spared the teaching time may productively engage in other important instructional activities. Computer-based instruction does not replace teachers, but it permits teachers to perform other activities (Criswell, 1989: 3).

As we can understand from the above points, through computer-based instruction learners are interacting with the computer and its effect is very dynamic and impressive. In recent years, therefore, computer-based instruction has become the most widely practiced method of teaching in almost all subject areas. Researchers in the field of computer-based instruction, such as Kulik, Kulik and Bangert-Drowns, 1985; Kulik, Kulik and Cohen, 1980; Kulik, Kulik and Schwalb, 1986; and Price, 1989, state its effectiveness and efficiency; its ability to improve student achievement and attitudes; and the decreased instructional time it requires as some of the reasons for expansion of computer-based instruction into virtually all subject areas (cited in Ester, 1994).

2.6. COMPUTER-BASED LIBRARY INSTRUCTION

The extra benefits of machines in teaching various library skills as compared to other techniques has received understanding among researchers of the field many years back.

Genung, for instance, in an article published before three decades stated that, compared to other technique machines can effectively teach the use of the library.

> A variety of traditional techniques combined with innovations had been used and improved each semester to acquaint new students with the library. The tour, illustrated lectures, informal question-and-answer periods over a cup of coffee, special lectures in the classroom, the generalized handbook, the specialized handbook, were but a few of the techniques used. Inevitably, when the time of reckoning arrived as students began actually to use library materials in context, follow-up was necessary. The peak periods appeared always to have certain points in common. Repetition, hour after hour, in answering mechanical routine questions on the use of materials, involved much directional and locational information. The same questions requiring the same answers in the explanation of very elementary techniques of library usage became the order of the day.
>
> It appeared that some type of mechanical device might be able to answer the routine questions satisfactorily, and it was for this reason that the possibility of using the teaching machine was explored (Genung, 1967: 25).

It is obvious that computers are among the major teaching machines that can be used for library use instruction. The advancement of information technology, particularly that of computer technology has enhanced users access to information sources and services. Computers are used to facilitate and support users' search for information and also used to instruct (guide) in the use of different information sources and services (Fjallbrant, 1990). Such uses of computers are more visible in academic and research institutions where each and every activity should be supported by and based on current information. "Only if computers are used actively to guide the user in the information-seeking effort will their full potential in the research process be exploited and will we avoid replicating the passive kinds of information access that we have had in the past" Culkin, 1980: 69).

Like in many other subject areas, such as biology, chemistry, English language, mathematics, physics, etc., computers can be successfully used to teach various library skills to users. Computer-based instruction "can be used in a library to provide instruction on how to use the library, a card catalog, a particular reference source, or OPAC; it can even teach an end user how to perform an on-line search, use a CD-ROM, or operate another computer" (Bourne, 1990: 160). Thus, different computer-based library instruction systems have been developed at different academic institutions.

Patricia B. Culkin indicates that, in the University of Denver the first computer-assisted instruction in library use was developed in 1972. On this system courses covering such topics as the use of indexes and abstracts, the use of the card catalog, and how to do research for a term paper were available (Culkin, 1980: 69).

At Wayne State University Library an in-house package called Education Library Locator (ELL) was developed using an Apple II Plus. This program helps the user trace the stack number for any call number he/she derives from the catalog. Similarly, an application program has been developed at the University of Stirling Library to assist in user education for abstracting and indexing reference works. Using a BBC Micro and Microtext software, the library staff have created a number of modules for use with such works as Biological Abstracts, Chemical Abstracts and Science Citation Index (Burton and Petrie, 1986: 140-142).

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As far as the advantages and disadvantages of computer-based library instruction are concerned, a number of authors indicate that almost all the advantages of computer-based instruction in other subject areas hold for library instruction too (Lawrence, 1980; Fjallbrant and Malley, 1984; Burton and Petrie, 1986; Pack and Pack, 1988; McWeeney, 1992).

On the other hand, some authors state disadvantages of using computers in library instruction. Deanna Nipp and Ron Straub, for instance, note a reduction in personal contact between students and the librarian and lack of commercially available software as the disadvantages of computer-based library instruction. Judith M. Pask also states the time and money that must be devoted to authoring the program as disadvantage (Cited in Bourne, 1990).

However, we can understand from the foregoing discussions that the advantages of computer-based library instruction have more weight than the points raised as disadvantages. Instructional software can be developed in-house by making use of expertise of library and information professionals with reasonable cost (Burton and Petrie 1986). Information professionals can also contact users for information-related purposes other than library instruction.

The use of computers as instructional devices to teach various library skills is advantageous not only for library users but also for the library staff. Application of

computer-based instruction can free librarians engaged in instructing users from the confines of a desk, and enable them to interact with diverse group of users even outside the library, so that they can act as information transfer specialists (Lawrence, 1980; Cherry and Clinton, 1991).

Different studies show that because of its advantages, learners also prefer computer-based instruction to other methods. Denis Madland and Marian Smith, for instance, report that students preference to learn library skills with computer- assisted instruction, because it let them work at their own pace and let them repeat sections they did not understand (Quoted in McWeeney, 1992: 18).

Patricia E. Jensen had examined the effectiveness of three methods of instruction in the teaching of basic subject cataloging. The three methods were computer-assisted instruction, television/lecture and a printed text. Pre- and post- test results of Jensen's study indicated that students learned significantly more from the computer-assisted instruction mode than they did from the other two methods (Cited in McWeeney, 1992).

Lawson investigated the effectiveness of computer-assisted instruction and the traditional library tour in orienting freshmen to the college library and teaching them the use of basic reference tools. Lawson divided the participants of the study into three groups: those receiving computer-assisted instruction, those taking a tour, and those receiving no instruction. Pre- and post- test results indicated a significant learning gain for students in

the computer-assisted instruction group in relation to those taking the tour and those receiving no instruction (Quoted in McWeeney, 1992: 18).

2.6.1. COMPUTER-BASED CATALOG USE INSTRUCTION

Knowledge of how to make effective use of different access tools is very essential for information users. It has been stated earlier that catalogs are the basic access tools to the holdings of libraries and information centers. Therefore, instructing users in the use of catalogs (conventional card catalogs or computerized ones) could help them to easily access materials available in the collection of the library or information center. Catalog use instruction, like instruction of other library skills, may use several approaches (McDonald and Searing, 1983).

Little work has been carried out in the areas of application of computer-based instruction to the use of library catalogs, particularly to the use of card catalogs. However, a number of works, whose basic idea and findings can be used for the card catalog, have been done on computer-based instruction for on-line information retrieval systems including on-line public access catalogs (OPACs). Literature shows that computer-based instruction has been proven to be fruitful in the use of on-line information retrieval systems. "Efforts to incorporate electronic media into instructional programs have focused on three areas: on-line catalogs, on-line databases, and computer-assisted instruction" (Shill, 1987: 436).

According to Jackson (1989) the first major introduction of computer-assisted instruction for use in teaching the use of on-line systems came from the National Library of Medicine (NLM) in the United States. This was through the development of a system known as MEDLEARN, a program providing on-line training for the medical database MEDLINE, which is one of the NLM's databases.

Henry, et. al., (1989) mention various computer-assisted instruction packages that have been developed to guide users of on-line information retrieval systems. A student at Sheffield University has developed a program in BASIC known as FOSSILS. This program aims to give an idea of how on-line searching works by guiding students through the prepared searches on Lockheed using ERIC and SSCI databases. Another program has also been developed at Trent Polytechnic Library to guide users to search on the NTIS database on ESA-IRS. At Leeds Polytechnic, a number of self-instructional packages have been prepared using Hewlett Packard HP 2645A intelligent terminal. "By using programmable keys the student can interact with the terminal and be led to different pieces of text recorded onto the terminal's cassettes, depending on the answer given to a question." Lockheed's On-line Training and Practice facility is also another example of a computer-assisted system for education and training (Henry, et. al., 1989: 43).

Cherry, Yuan and Clinton (1994) have found the effectiveness of computer tutorial for OPAC users. Their study indicated that "students who viewed the computer tutorial performed significantly better on search tasks than those who received no instruction, and

performed as well as students who received the standard classroom lecture provided by the University of Toronto Library" (Cherry, et. al., 1994: 357).

2.7. COMPUTER LITERACY PROBLEM AND IMPLEMENTATION OF COMPUTER-BASED CATALOG USER GUIDE IN AAU

Like in on-line information retrieval systems, computer-based instruction can be used to teach the proper use of card catalog, and users will benefit a lot from computer-based card catalog guide. The guide will enable users to know what important information they can get from catalog cards and how to look for a given material on a card catalog using various approaches, such as author, title and subject of the material under question. Unlike human educators computer-based instruction will not be bored to explain a given means of search repeatedly. That is, users can repeatedly use it till they fully understand a given search technique. Its use will not require the availability of library staff or will not depend on predetermined schedule of learning or specified working hours when the library staff are on duty.

Apart from enabling students make proper use of card catalog, computer-based instruction will also enable students to foster positive attitude toward computers. "Use of the computer in instruction may help prepare students for the computer society in which they will live and work" (Kulik, 1983: 7).

However, there might be some obstacles that need solution in order to implement computer-based guide in AAU Library. One of the major obstacles will be users inability to use computers, since computer literacy is still limited to a small portion of library users. One possible reason for this situation might be lack of clarity as to the unit responsible for providing such a service.

Nowadays computers are applied in almost every activity and people directly or indirectly use them in their daily undertakings, so that basic knowledge of how to use computers is very essential. Particularly, today's university students who join various economic, social and political sectors should be computer literate. "Students must be taught to use the computer in ways that they will be expected to use it in the work environment. To do this successfully, computer use must be infused into all academic areas at every level of education" (Kinzer, Sherwood and Bransford 1986: 27).

The United States National Commission on Excellence in Education also states that having computer skills will enable students to

> (a) understand a computer as an information, computation and communication device;
> (b) use the computer in the study of the other basics and for personal and work-related purposes; and
> (c) understand the world of computers, electronics and related technologies (quoted in Shill, 1987: 440-441).

Since computers are important tools for information generation, storage, retrieval, analysis and dissemination, the library's role in introducing students to the use of computers is vital. To use the words of Piele, et. al. (1986: 375)

> It will be argued that the microcomputer -- far from being seen as a programmer's instrument -- should be seen, at least as far as the needs of many faculty, staff, and students are concerned, as an information retrieval and management tool, and, as such, something with which librarians, as information professionals, should be vitally involved. Furthermore, the implications of this point of view and of developments in technology and telecommunications will have profound implications for the professional roles of academic librarians in the future.

The experiences of different universities of the developed world show that library and information professionals are appropriate staff and libraries are appropriate places to teach basic computer skills.

> At Texas A&M a large microcomputer lab, staffed by library personnel, has been built within the library. At the University of Wisconsin - Parkside, librarians teach students spreadsheet, word processing, and file management applications. At West Virginia University, librarians have been active in university planning for computer-based education. This approach has been defended as a way for the library to demonstrate its continued relevance in the electronic environment (Shill, 1987: 436).

Moreover, nowadays computerized library and information services are very common in academic institutions that libraries should educate their users in general and students in particular the basic uses of computer technology. This practice will enable students to effectively use computer-based information sources and services, and to familiarize themselves with the basic use of computers. The situation in Addis Ababa University cannot be an exception, because, as already indicated earlier, it is possible to understand from different indicators that the computerization of the library sometime in the future is inevitable. So, in AAU, like in other academic institutions mentioned above, the University Library System can take the responsibility of teaching students basic computer

skills. This is important not only to make students use computer-based catalog user guide but also to introduce them to the use of computers for information processing, storage and retrieval purposes and to enhance the role of the library and information service in scholarly activities of the University.

within short period of time. Card catalog, therefore, will probably continue to be the mode of access to the holdings of the library until the fulfillment of all necessary requirements for full automation.

Informal discussion with the staff of the Reference Department and practical experiences show that the current library orientation has limitations to enable users make effective and efficient use of the card catalog. The assumptions for this are:

- All students do not participate in the orientation program, because they do not realize the importance of library orientation at this early stage of their stay in the University.
- The orientation time allowed to introduce students to different functions of the library is not enough to familiarize students with the services rendered by these functions. (The Reference Department staff disclosed that the maximum time assigned to each function is 10-15 minutes.)
- The majority of the students have no previous experience in how to use libraries in general and library catalogs in particular. Therefore, they cannot familiarize themselves with various services of the library as a result of such orientation.

Thus, enabling users to make effective use of the existing access tool is necessary. This requires conducting systematic catalog use study and designing better system of instruction that enhances the use of card catalog. Therefore, the points discussed under different subtopics above, help us analyze:

- How the existing access tool to the holdings of AAU Library is used;
- What major problems are faced by students in using these access tools;

- The measures to be taken to improve the use of card catalog through proper library instruction program;
- Whether or not computer-based catalog user guide can be used to solve problems related to the use of the card catalog and so on.

The following chapters will deal with these points and many other related issues.

CHAPTER III

METHODOLOGY

3.1. METHODS OF DATA COLLECTION

As already highlighted in the first chapter, in addition to reviewing related literature on the topic and survey of relevant documents produced by the University Library System, data collection instruments and strategies: - a) questionnaire, b) interview, and c) catalog use skill test are included.

a) A questionnaire distributed to fourth year students in different departments of the College of Social Sciences, namely Geography, History, Political Science and International Relations (PSIR), and Sociology and Social Administration (SOSA).

These are the only departments in the College of Social Sciences that train students for Bachelor of Arts (BA) degree. Fourth year students in these departments have been chosen for this study because:

- they highly make use of the Main Library since there is no other library or reading room that has collection of materials in the Social Sciences and renders services to undergraduate students;

- their number is not very large, and thus it is possible to collect information within limited period of time;
- they have been using the library for the third year (starting from their second year), so it is believed that useful information that give good picture on students' use of card catalog can be obtained from them.

b) Interview and discussion with the library staff serving in the Reference Department.

c) Catalog use skill test.

Catalog use skill test was administered to volunteer fourth year students. The students from each department were made to search the card catalog under the researcher's observation. The participants were given three questions. Under each question there were two items to be searched. The questions were the same for students from the same department. Each student participant in the catalog use skill test was also interviewed on the success of his/her search following the completion of the test.

3.2. POPULATION AND SAMPLE

Catalog researchers underlined that difficulties associated with reaching agreement on the appropriate sample size and the construction of sampling frame are among the more important problems reflected in previously undertaken catalog use studies. Hafter (1979: 203), for instance, in a review of research on the performance of card catalog, stated that "almost all of the catalog use surveys are flawed by inadequate sampling procedures. In

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some cases, the sample is simply too small and/or the response rate is also too low." In this study too it was not possible to cover all the users of the AAU Main Library due to time and financial constraints. What has been taken as good alternative was to concentrate on the fourth year students of the College of Social Sciences, because of the reasons mentioned under 3.1 above. As it has been indicated by Hafter (1979: 204) "it seems true even today that sampling problems characterize catalog use studies and greatly impair the reliability of their results." In the case of this study the total number of fourth year students in the College of Social Sciences have been taken. The list obtained from the Record Office of the College show that in 1998/99 academic year the number of fourth year students in each department is as follows:

Geography	48
History	34
PSIR	40
SOSA	51

Totally, there have been 173 final year students, and since this figure is not as such very large taking sample has not been found necessary. As writers on research methods, for instance Kothari, 1985; and Ronson, 1993, state when the population is manageably small it is no use resorting to a sample survey. Taking all the population if it is not large and is easily attainable is useful for research works, because when all the population is covered "no element of chance is left and highest accuracy is obtained" (Kothari, 1985: 77). Therefore, copies of the questionnaire were distributed to all fourth year students in the above departments.

3.3. A PROTOTYPE COMPUTER-BASED GUIDE DEVELOPMENT TOOL

HyperText Mark-up Language (HTML) is a tool used to develop the proposed computer-based card catalog user guide. "HTML is a document-layout and hyperlink specification language. It defines the syntax and placement of special, embedded directions that aren't displayed by the browser, but tell it how to display the contents of the document, including text, images, and other support media" (Musciano and Kennedy, 1996: 7). Thus, it enables to develop hypertext system that is made of independent nodes or concepts and links or relationships. Hypertext is non-sequential writing with branching and responding text. It is a way to link and access information of various kinds as a web of nodes (units of information) in which the user can browse at will. Potentially, hypertext provides a single user-interface to many large classes of stored information such as reports, notes, database, computer documentation and online systems (White, 1996).

HyperText Mark-Up Language has been chosen to prepare the prototype computer-based catalog user guide because of the following reasons:

- Using HTML it is possible to develop different instructional documents that are interrelated with one another through special hypertext links. Such documents could be those stored within a given computer or they could also be those available in different computers that are connected via the World Wide Web. In other words, using HTML's

hyperlinking capabilities it is possible to navigate among local documents stored in a given computer and it is also possible to be connected with any other computers to share HTML documents.

There are a number of ways in which authoring systems can provide facility for automatically creating the process of linking a given piece of information to other related or associated pieces of information. One of these ways, according to Hutchings, et. al., (1992) is to use an interchange file format which allows hypermedia systems constructed in one environment to be imported into others, thus removing the need for information structures to be recreated. One such method that has received much attention is the use of mark-up language. Using hypertext facilities, therefore, different independent lesson topics and graphic documentation can be stored in the computer and linked to one another in order to provide understandable instruction whenever needed.

- The possibility of displaying both text and images using HTML is also another point to choose it for preparing a prototype computer-based card catalog user guide. By making use of HTML facilities students can easily learn the contents and appearance of different catalog entries that enable them access library materials through different alternative approaches.

- Instructions are embarking on web-based information systems that heavily rely on hypertext document. Browser technologies such as Netscape and Internet Explorer have become standard worldwide. Online public access catalogs use browsers as the main graphical user interface. Thus the choice of hypertext based catalog use guide will not only enhance understanding of catalog use but also increases knowledge of browser technology. It also helps students to stick to a global standard.

- Furthermore, catalog user guide prepared using HTML could be used by other branch libraries of the University with slight modification on university-wide network which could be implemented in the future in the form of campus-wide and inter-campus network.

- Another reason for choosing HTML as a development tool is that, it is simple to read and understand, and it is simple to write too.

CHAPTER IV

ANALYSIS OF CATALOG USE PROBLEMS

4.1. OVERVIEW OF THE SURVEY

The study is concerned specifically with utilization of the public card catalog of the Addis Ababa University Main Library. The catalog is located in the front lobby of the ground (first) floor of the Main Library (John F. Kennedy Memorial Library) building. The public catalog consists author-title and other added entry cards interfiled and subject cards filed separately in a word-by-word alphabetical sequence. The card catalog of the Main Library contains about 500,000 cards in 811 catalog trays. It contains main entry cards as well as other added entry cards for about 116,835 volumes of monographs housed in the Main Library, and main entry cards for about 247,542 volumes of monographs housed in branch libraries of the A. A. U. library system.

The catalog is open to all eligible users and consulted in order to check out books from the general stack. The general stack is open for browsing to academic staff and postgraduate students, whereas all undergraduate students have no browsing access to the stack. Undergraduate students need the assistance of library staff to check out books from the stack. They are requested to provide brief description such as author, title and correct call number of the book they are looking for. It is obvious that this information is obtained

from the card catalog. Thus, the catalog area most of the time is a scene of constant activity with users that make search in different catalog entries.

Undergraduate students are the major users of the library who are also frequent users of the card catalog. As already indicated in chapter III the focus of this study is card catalog use of fourth year students in different departments of the College of Social Sciences.

4.2. SURVEY POPULATION

Questionnaire were distributed to all 173 fourth year students in the four departments of the College of Social Sciences, out of which 152 students (88 percent) have returned by filling it carefully. Very few students have not answered some of the questions (particularly open-ended ones). The following table shows number and percentage of students in each department who have returned and not returned the questionnaire.

Table 1. Number of Questionnaire Distributed and Returned

DEPARTMENT	Questionnaire Distributed	Questionnaire Returned	Questionnaires Not Returned
Geography	48	41 (85%)	7 (15%)
History	34	28 (82%)	6 (18%)
PSIR	40	35 (88%)	5 (12%)
SOSA	51	48 (94%)	3 (6%)
Total	173	152 (88%)	21 (12%)

One can understand from the age distribution of respondents that the majority of students are joined the university directly from the high schools. They, therefore, need to be taught how to make effective use of libraries and various information sources for fruitful academic performance. This is because of the fact that most of the high schools in the country have no well-organized libraries.

4.3. SURVEY RESULTS

A total of 16 questions that were aimed at collecting information on:

- Students' purpose of going to the library;
- Frequency of library use;
- Means of access to the holdings of the library;
- The respondents' knowledge in making use of library catalogs and major problems faced in using the card catalog;
- Respondents' participation in the library orientation and how they judge the usefulness of the orientation;
- Respondents' previous experience in the use of library catalogs;
- The opinion of respondents on measures to be taken to improve user access to the library's holdings, etc.,

were prepared and distributed to fourth year students in the above mentioned departments.

A questionnaire contains both closed and open-ended questions (see APPENDIX 2). The questions, according to the researcher's belief are not difficult to understand for fourth year students. This has been proved from the returned questionnaires. Only one respondent had commented that some of the questions were difficult for him to answer.

The responses to the survey are coded and analyzed manually. The facts gathered using the questionnaire were categorized under seven sub-topics, namely: use of the library, use of the card catalog, library orientation, student's previous experience in using card catalog, use of computers, major problems identified by the respondents and suggested measures to improve the use of the card catalog. The following section of this chapter is a presentation and analysis of data, i.e., presentation and analysis of responses under separate sub-topics.

4.3.1. USE OF THE LIBRARY

The first question was designed to know why students go to the library, and the responses show that students go to the library for different purposes. Five different choices were given for this question and many respondents indicated that almost all the points given in the choice are possible reasons why they go to the library. When we look at the number of respondents under each choice 78 respondents indicated that they go to the library to find out something on a given subject or topic. 72 respondents go to the library to read books reserved for particular courses, 68 respondents said that they go to the library to do research, 64 respondents go to the library to read their own material, and 56 respondents

go to the library to find a specific book. Table 3 summarizes the data, reasons for going to the library.

Table 3. Purpose of Going to the Library

Department	To do research	To find a specific book	To find something on a given subject or topic	To read one's own material	To read books on reserve
Geography	20	15	25	17	22
History	10	11	13	11	9
PSIR	12	13	16	13	13
SOSA	26	17	24	23	28
TOTAL	68	56	78	64	72

As can be seen from the table all reasons why students go to the library (except reading their material) requires them to use some means of access to the material they are looking for. Since the card catalog is the only access tool to the library's collection, students directly or indirectly use this tool. They use it directly if they search for the material by themselves and they also use it indirectly if they access the material through the assistance of the library staff.

The second question was designed to know frequency of library use. This point has been included in the belief that, respondents who use the library with some frequency know the problems related to the use of the card catalog and can give dependable information. Out of the total survey population 70 (46%) indicated that they use the library everyday. 54 respondents (36%) use the library occasionally; 15 respondents (10%) use the library

4.3.4. PREVIOUS EXPERIENCE IN USING THE CARD CATALOG

Respondents were asked if they had experience of using the card catalogs before joining the University. A very large number of the survey population indicated that they had no such experience. Respondents who had no previous experience in using the card catalog are 133 (88%) of the survey population. Only 19 respondents (12%) had experience of using it before joining the University. Those respondents who had previous experience said that their experience has helped them in using this access tool at the University.

4.3.5. USE OF COMPUTERS

One of the objectives of this study as stated in the first chapter, is looking at the possibility of using computer-based guide to enable students make proper use of the card catalog. To introduce such a guide, students' knowledge of computers and their attitude towards the use of computers have significant impact. Thus respondents were asked whether they have ever used computers. Responses indicated that 132 (86%) have never used computers. Only 21 respondents (14% of the survey population) said that they have used computers for word processing and games.

Respondents were also asked to indicate their opinion (based on their experience or based on what they have heard or read) about the usefulness of computer-based guide to enable students make effective and efficient use of the card catalog. The responses given to this question showed that 99 respondents (65% of the survey population) think computer-based guide will help. Of course students wish that training is given on how to make use

of computers for different purposes in general. On the other hand, 51 respondents (34%) said they can't answer this particular question, because they know nothing about computers. Only 2 respondents said that computer-based guide will not enable students make proper use of the card catalog.

4.3.6. MAJOR PROBLEMS

The questionnaire includes an open-ended question that allows respondents to state their major problems in using the card catalog. The problems stated by respondents in all departments are summarized as follows:

- Inability to find a given item from the catalog quickly.
- Complexity of searching due to interfiling of author and title cards.
- Non-existence of clear and easy to understand guide that explain the arrangement (filing system) of cards.
- Inability to identify surnames of authors.
- Inability to understand some codes written on cards; e.g., Ref., Per., etc.
- Inability to search by title of the material.
- Inability to understand the the use of "see" and "see also" references.
- Typographic errors on some cards.
- Poor arrangement (misfiling) of cards.
- Filing (arranging) a large number of cards in a single tray.
- Existence of cards whose books are not in the library and non-existence of cards for some books.

- Non-existence of seats for catalog searchers.
- Crowd of users around the public catalog.

Out of the total survey population only seventeen respondents (11%) stated that they have no problem in using the card catalog. Ten respondents (about 6%) did not respond to this question. The remaining respondents have stated their problems in one way or the other.

4.3.7. SUGGESTED MEASURES TO IMPROVE THE USE OF CARD CATALOG

According to the suggestions of the respondents, the following measures should be taken to improve users access to the holdings of the library.

- Detailed and well-planned orientation should be given with practical exercises .
- Continuous catalog use assistance by the library staff.
- A printed guide that clearly explains how to use card catalog must be prepared and given to each student.
- Library and information use instruction that has credits should be offered at freshman level.
- Correct alphabetical arrangement of cards in catalog trays should be maintained.
- Author, title and other added entry cards have to be filed separately.
- Introducing computerized catalog with appropriate education to students on how to use computers.
- Filing of limited number of cards in a single catalog tray to facilitate searching process.

- The library staff should be polite, cooperative and always ready to assist students with any kind of library use problem.
- Suitable seats should be arranged for catalog searches, so that users can search catalog cards without difficulty.

The responses given to the survey questions and most of the problems stated indicate that students are not comfortable with the use of card catalogs. From the responses given by the majority of students, it is possible to conclude that students cannot make proper use of the card catalog despite their participation in library orientation, their awareness of the existence of different catalog entries, and their claim of employing different search approaches. To strengthen this coclusion, practical catalog use skill test has been administered and interview and discussion with the Reference Department staff has been conducted. In the following section of the thesis we will look at the results of the test and the views of the staff.

4.4. CATALOG USE SKILL TEST

For the purpose of catalog use skill test twenty-two volunteer students from the four departments of the College of Social Sciences were given different clues to search some information from the card catalog. The number of students from each department is:

Geography	5
History	4
PSIR	5
SOSA	8

All of the participants in the catalog use skill test were among the students who have already filled the questionnaire. They were provided with a sheet of paper that contains 3 questions. Under the first question they were given full name of two authors who have one book each under their names in the students' respective study area. For this question students were asked to write titles and call numbers of the books by the two authors.

The second question contains two titles of books in the respective study areas of the participants. They were requested to write names of the authors and call numbers of the books.

The third question contains two titles of books in the participants' respective area of study. For this question they were asked to write the subject heading(s) under which they could find these titles.

All the clues were taken from different entries of the public catalog. While making a search, students were observed from a nearby area. Concerning the time, the estimate of the researcher was that participants could complete all the searches within 12 minutes (4 minutes for each question or 2 minutes for each search). However, no student has been able to complete the question paper in less than 25 minutes -- 35 minutes being the longest and 25 minutes the shortest time taken by participants. The average time taken by the participants to return the question paper was about 30 minutes.

Students were expected to identify two authors and call numbers, two titles and call numbers and two subject headings (see APPENDIXES 3-6). The following paragraphs explain the results of catalog use skill test.

Among the five geography students only two have identified the titles and the call numbers of the books whose authors were given. Only one student has found the authors and call numbers of books whose titles were given and only one student has identified the subject heading of the books whose titles were given. Two students have answered none of the questions.

Among the four history students who have participated in the catalog use skill test, two of them have identified the titles and call numbers of the books whose authors were given

and only one student has found the names of the authors and call numbers of the books whose titles were given. No student has indicated subject headings for the titles provided.

Among the five PSIR students that have participated in the catalog use skill test, three of them have found the titles and call numbers of the book whose authors were given. Two students found the authors and call numbers of the books whose titles were given. No student has answered the question on subject heading.

Out of the eight students from the department of SOSA four have found the titles and call numbers of the books whose authors were given. Three participants have found the authors and call numbers of the books whose titles were given. Three participants have identified the subject headings of the books whose titles were given. Two participants have found nothing for all questions.

Those students who have identified only one item for each question have not been included in the above analysis. Table 10 summarizes results of the test.

Table 10. Results of Catalog Use Skill Test

Department	Total # of participants	# of Students identified two titles and call numbers	# of Students identified two authors and call numbers	# of Students identified two subject headings	# of Students who have found nothing
Geography	5	2	1	1	2
History	4	2	1	--	--
PSIR	5	3	2	--	1
SOSA	8	4	3	3	2

After completing the search, participants were asked why they had not completed all the requests and asked to indicate their overall problems in using card catalog for this particular test.

The majority of them about 77%) said that they don't know how to search by title. Among the participants 16 (73%) can't determine (estimate) subject headings from a given title; even in the case of self-explanatory titles. Almost all participants do not know the existence of subject headings for a given work on main entry cards, and 8 (36%) of the participants indicated that they don't know about the inverted author names (surnames) under which author cards are filed.

Many students said that they mostly find the material they want from the card catalog through trial and error after taking long time to search through many catalog trays. For the purpose of knowing contents of a given tray, alphabetical labels on each tray have considerable importance. However, 10 (45%) of the participants in the catalog use skill test said that they don't know the use of these labels.

Almost all the problems mentioned by students during short interview after the catalog use skill test were also confirmed by the Reference Department staff. It is the belief of the staff that many undergraduate students do not know how to get important information about library materials from the card catalog.

What one can conclude from the catalog use skill test is that:

- the majority of the students have limitations in using card catalog. Even if some students can find a given material from one of the entries, they take longer time;
- for most students searching by title is difficult than searching by name of the author;
- students can find a given material from the card catalog if they know full name of the author. However, some of them have problem of using surnames of authors (i. e. they don't know under which name a given card is filed);
- students in all departments have problem in identifying subject headings.

4.5. SUMMARY OF FINDINGS

- Either due to the problems in the arrangement and appearance of the card catalog or due to their own limitations, it is difficult for many undergraduate students to search and take important information from the card catalog in order to easily and quickly access a given library material.
- The majority of undergraduate students have no experience of using large libraries in general and library catalogs in particular before joining the University.
- Almost all students have participated in the library orientation. However, the orientation seems to have not been adequate to enable students make effective use of the card catalog.
- Many users know the existence of different catalog entries, and all author, title and subject approaches are used to look for a given library material in the public catalog. However, the majority of students are comfortable with the use of author name.
- Compared to other approaches, using subject headings as a search approach is the most difficult for many students.
- Students spent a long time to find a given piece of information from the card catalog. This is because they do not know how to make systematic search, and rather attempt to find information from the cards by trial and error.
- Many students do not know what the variety of information available on cards mean and the importance of each piece of information.

- The use of the card catalog is very tedious. Lack of experience in making quick search, the poor arrangement of cards in some catalog trays, the practice of filing very large number of cards in a single catalog tray, and the non-availability of seats for card catalog searchers are among the causes for the tediousness of the use of the card catalog.
- Users are unable to find materials from the stack most of the time even if they get all the necessary information from the public catalog.
- Students want to learn how to make effective and efficient use of the public catalog in order to easily and quickly access library materials. To this end, they required detailed, well-planned and systematically designed catalog use instruction.
- Even if they seem to have general awareness of the importance of using computers for different purposes – including library applications, the majority of undergraduate students lack basic skill of using computers. Easy-to-use computer-based guide, however, can be taken as a means of introducing students to the use of computers and their applications. It could also be said that a user-friendly guide would arouse students' interest of using computers for other practical purposes too.

CHAPTER V

THE PROTOTYPE CARD CATALOG USER GUIDE

5.1. ALTERNATIVE METHODS TO PRESENT THE GUIDE

The results of the survey and catalog use skill test presented in the previous chapter emphasize the importance of offering card catalog use instruction to undergraduate students. As already indicated, library use instruction can be offered using different methods. Hence, card catalog use guide can be in the form of printed guides, class lectures, audiovisual aids and computer-based instruction. Below is brief explanation of each method.

5.1.1. PRINTED GUIDES

Use of printed guides is one of the conventional methods of library use instruction. Through the use of printed guides it is possible to reach large number of learners. If provided to students individually, such a guide can be studied by the student at any time and it can be kept as an aid - memoir to be consulted when he/she has mastered elementary outlines and wishes to make use of other services (Higham, 1980).

Among the advantages of the printed guide are: it is available for use whenever the need arises, it enables individual users to learn a given topic at their own pace, in the case of

unclear topics (issues) repetition is possible, etc. In addition to text, such guides can include visual displays in the form of diagrams. Printed guides also enable libraries to overcome the problem of shortage of librarians and funds available for the purpose of library instruction.

This method, however, has some disadvantages. There is less teacher control over the learning situation, so some materials may not be completely covered. Printed guides to the use of libraries are not effective methods of instructing users, specially when the use of the card catalog has to be explained (Higham, 1980). A step by step explanation of the use of a catalog and showing one form of catalog entry in comparison to the other, as well as explaining different parts of a catalog requires inclusion of too much information in the guide. It is not as such simple and straightforward to clearly present all these integrated information through the use of printed guides.

Furthermore, providing copies of such materials for each student requires high cost and reprinting from time-to-time as new students come to the library. The process of correcting and improving or updating printed guides is also a more arduous task.

5.1.2. LECTURE

Lectures are used to teach large group of learners by making use of different teaching aids like blackboard or overhead projector. The basic advantage of lectures is that they give an opportunity for personal contact. That is, through such method there is a possibility of

clarifying some unclear concepts and ideas, it is possible for learners to note important points stressed by the lecturer, and it is also possible for the lecturer to get feedback from learners on the topics presented.

However the lecture method, according to Fjallbrant (1984), has the major disadvantage that the learner cannot control the speed of delivery of information. That is, among large number of learners that may participate on a given lecture, there could be slow learners and quick learners whereas lecturers deliver a given topic in their own speed of presentation (teaching).

It is obvious that students are with wider variations in ability, knowledge and library skills. So, making all learners get common understanding at equal time is not as such easy. According to Adams (1980), assuming that greater heterogeneity calls for more individualization, librarians should consider individualized approaches of instruction if they are to teach students how to make proper use of libraries and various information resources.

Lectures might be suitable for the purpose of providing general introduction on a given subject (topic) for learners who are on similar knowledge level. Nevertheless, the lecture method is unsuitable method for conveying information about bibliographic aids, such as card catalogs that need detailed description and practical application of what has been learned.

5.1.3. AUDIOVISUAL AIDS

Audiovisual aids such as tape-slide presentations, films, videotape and audiotapes may be used for library use instruction. They have special quality of providing moving images. This special quality of most of the audiovisual aids however is not that much applicable to libraries, because in library instruction there are few areas where it is necessary to use moving images. Especially for catalog user guide there is no need of using moving images. Instead library instruction can be given in a series of units such as slides, overhead transparencies or printed illustrations.

Among audiovisual aids, films that explain the use of the library can be both instructive and attractive. But films have many disadvantages. Among the disadvantages of films are: they are relatively expensive to produce and difficult to keep up-to-date, the pictures are in a pre- set sequence that they have to be shown in that pre- set order, they are easily damaged by scratching or heat and they are difficult to repair (Higham, 1980; Fjallbrant, 1984).

Audiovisual materials can also be prepared in the form of modules that explain to a student how to use a particular tool and are located near that tool. However such methods of instruction may be surprisingly expensive in terms of time needed for production, initial cost of the equipment, and maintenance (Adams, 1980).

Since instruction given using audiovisual aids is mostly presented for large group of learners, all participants cannot have the same speed of learning a given topic. Particularly, undergraduate students that are unlikely to have had experience of using library catalogs need method of instruction that can explain clearly all the necessary details as repeatedly as possible. This is not possible through the use of audiovisual aids whose contents are in pre-set order. So, it is not suitable to offer dependable catalog user guide using most audiovisual aids. Furthermore, audiovisual aids even if can be considered as attractive methods of instruction, in most cases are not interactive and cannot be seen as reasonable substitutes for other methods.

5.1.4. COMPUTER-BASED GUIDE

Effective library instruction methods should employ short modules that allow self-directed study with more emphasis on instructional content. The method should be one that users are comfortable in using and gives them a sense of control over it. Computer-based instruction method has these qualities (Tiefel, 1995). In chapter two, computer-based instruction has been discussed in detail. So, the points raised in that part of the discussion will not be repeated here.

Computers may be used for instructional purposes in different ways. Computer terminals will be placed in library lobbies, and used to instruct students how to use particular tools. Through such instruction learners will be given a small amount of information, respond to questions, told if the responses are correct and move to the other part of the instruction.

Computer-based instruction has a number of advantages over other methods such as printed guides, lectures, and audiovisual aids. In using computers for instructional purposes, learners generally enjoy the interaction with the terminal. Addition to and deletion from the instructional program can be performed easily and quickly. Using the interactive capacity of this method learners can be directed to a sub-program or other topic based on their mastery of a given topic.

Researchers in the area of library instruction, for instance, Tiefel (1995) indicated that, because of its benefits users prefer computer-based instruction to formal training sessions and printed instructions. Thus based on a number of points, such as its advantages in educating users, the inevitability of automation of the Addis Ababa University Library System sometime in the future, the interest of the majority of students (as identified through the survey), the role such instruction will have to familiarize students with the use of computers, etc., computer-based method has been chosen as an appropriate method to guide users to the use of the card catalog.

5.2. PRESENTATION OF THE GUIDE

In order to give clear understanding to students, the guide should include different topics that could give clear explanations about different aspects of the catalog. These topics need to be linked to one another to enable users consult any topic of their choice in nonlinear way. Hypertext, which is, explained as "a combination of natural language text with the

computer's capacity for interactive branching or dynamic display ... of a nonlinear text ... " (Conklin, 1987: 17), is an appropriate system to provide interactive and nonlinear information. As one can understand from this brief explanation hypertext is advantageous to present computer-based catalog user guide. According to Bourne (1990: 169) "[t]he advantages of hypertext over a conventionally programmed CAI system is that ... more branches are possible, and they are all chosen by the user."

In order to make the guide nonlinear, its contents, its presentation and links between different information screens are designed based on the guidelines for designing instructional hypermedia systems written by Chia-Shing Yang and David M. Moore.

Yang and Moore (1995) after looking at the pitfalls of attempts made by many researchers to use hypermedia systems for instructional purposes have proposed a "hypermedia system, which addresses the various needs in an instructional process." According to Yang and Moore (1995: 8) designers are engaged in two activities when designing computer-based instruction. These are:- creating a series of information screens and organizing them into a certain order. "These two activities are well represented in the design of hypermedia courseware which is composed of two parts, nodes and links."

Therefore, they have proposed the design of two categories of instruction namely node design and link design. The node design deals with the creation of discrete information screens and the link design deals with the connection between the information screens.

The node and link design of the proposed computer-based card catalog user guide is briefly explained as follows.

5.2.1. NODE AND LINK DESIGN

For the purpose of designing information formats, the use of both text and graphical information is found appropriate. Therefore text information for each topic is presented in clear and specific language that can be easily understood by learners. Whenever necessary, texts are supported by images that show the physical appearance of cards.

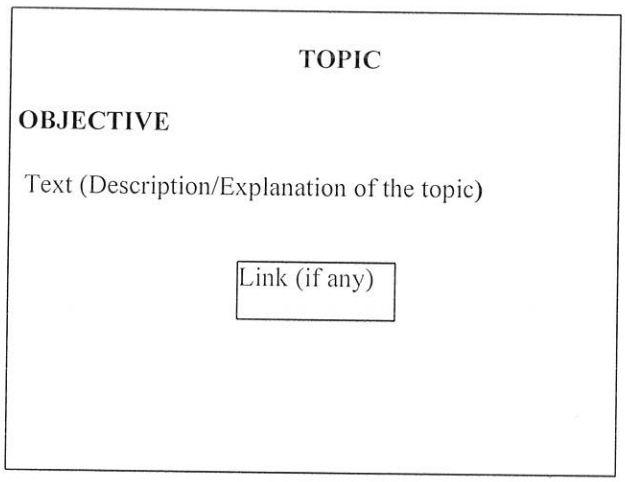
As much as possible, concise and simple language has been used to write the text under each topic. To avoid the problems created by some technical terms, explanations of terms that have been considered difficult to students are included. Each explained (defined) term has been linked to its respective definition.

Limited information has been presented on a single screen. Italicized and highlighted words or phrases are used to indicate key terms and concepts that have to be clicked in order to be linked to other screens for further explanation. Suitable color combinations are chosen to keep users' visual comfort.

Each piece of information to be explained to users of the card catalog is broken down into topics or sub-topics. Each topic or sub-topic is presented on a single information screen

and linked to further explanations, examples or graphical representations. **Figure 1** shows the appearance of each information screen.

Figure 1. Appearance of Information Screen



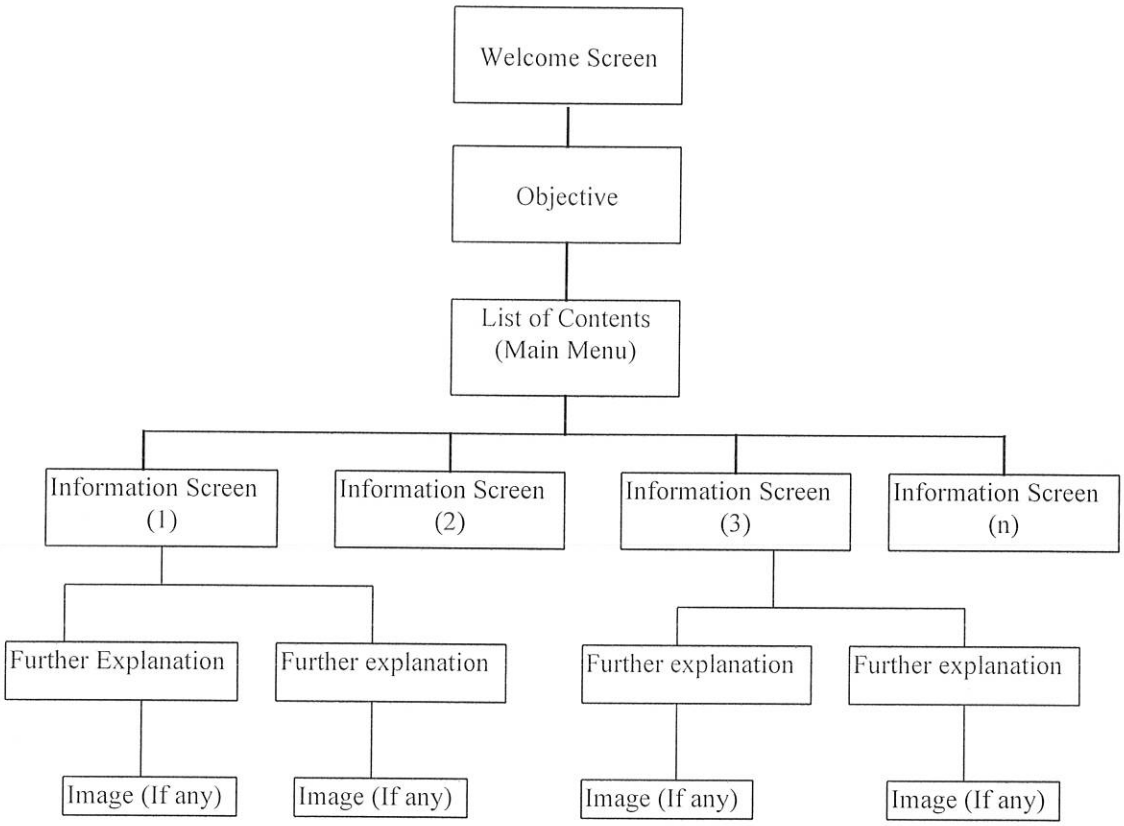
Users can select the topic of their interest from the main menu (list of contents of the guide). By clicking the topic of their choice they will be linked to the text that gives them basic description or explanation about that particular topic. If the topic has further explanation, examples or graphic representation they can access such further information (explanation) by clicking on the highlighted part of the information screen. After fully understanding a given topic, users will be returned to the main menu by clicking on the highlighted part that instructs them to do so.

5.2.2. SCREEN FLOW OF THE GUIDE

The guide has different information screens. The first screen is a welcome screen that is linked to a screen that contains the objectives of the guide. The second screen presents

general objectives of the guide. The objective screen directs users to the list of contents that show the topics and sub-topics included in the guide. Each topic and sub-topic is presented in the form of questions and linked to information screen that contains its answer. In order to find explanation for a given topic (question), what users are expected to do is simply clicking on the highlighted part of the topic from the list of contents of the guide. Figure 2 shows the presentation flow of the guide.

Figure 2. Presentation Flow of the Guide



5.3. CONTENTS OF THE GUIDE AND SCREEN LAYOUTS

5.3.1. CONTENTS OF THE GUIDE

For the purpose of understanding and collecting list of topics and sub-topics included in the guide, the library science education and experience of the researcher, comments and suggestions by professional colleagues, related literature, as well as information obtained from the students have been used.

The following outline shows the topics and sub-topics included in the guide.

1. General Introduction

    - What is a library catalog?

    - What are the main functions of the catalog?

2. Contents of a Card Catalog and their Explanation

    - Call Number

    - Author

    - Title

    - Imprint

    - Collation

    - Tracing

3. Kinds of Catalog Entries

    - Author Entry

    - Title Entry

    - Subject Entry

    - Other Added Entries

4. Arrangement (Filing System) of Cards and How to Search

5. The Use of Cross References

    - See

    - See also

6. Use of Subject Headings

    - What is a subject heading?

    - Sample subject headings under different study areas

7. Different Marks (Additional Information) on Cards

- Per

- Ref

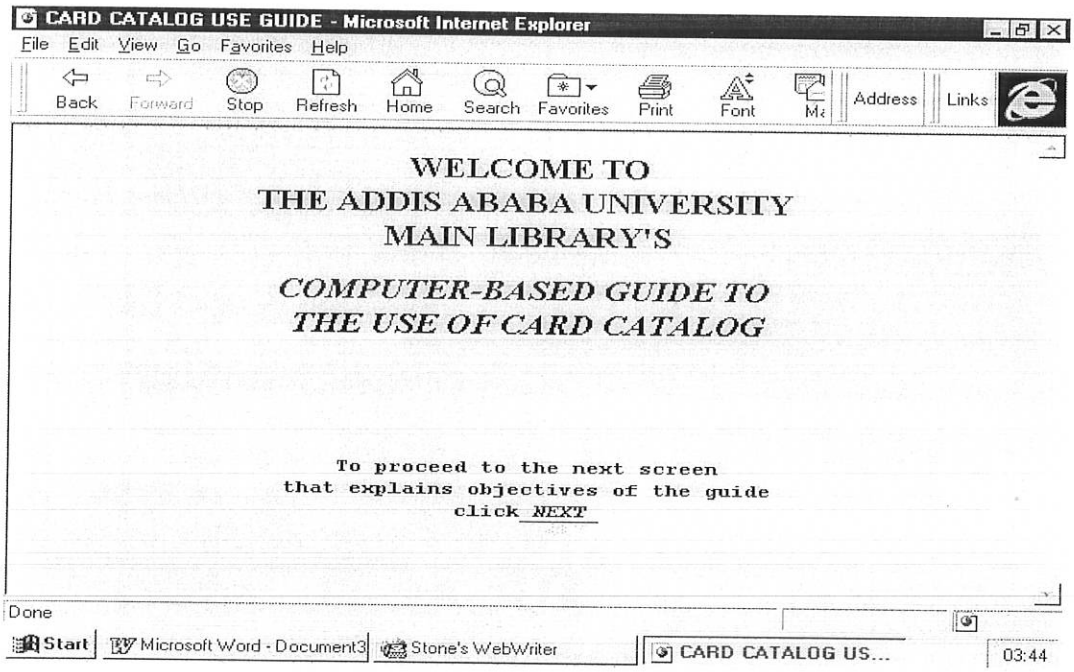
8. Explanation of labels available on card catalog trays

As already indicated above, these topics and sub-topics are presented on different information screens. The following section deals with explanation of how to use the guide and presentation of sample screen layouts. Appendix 7 shows the full information content of the guide.

5.3.2. HOW TO USE THE GUIDE AND LAYOUTS OF SAMPLE SCREENS

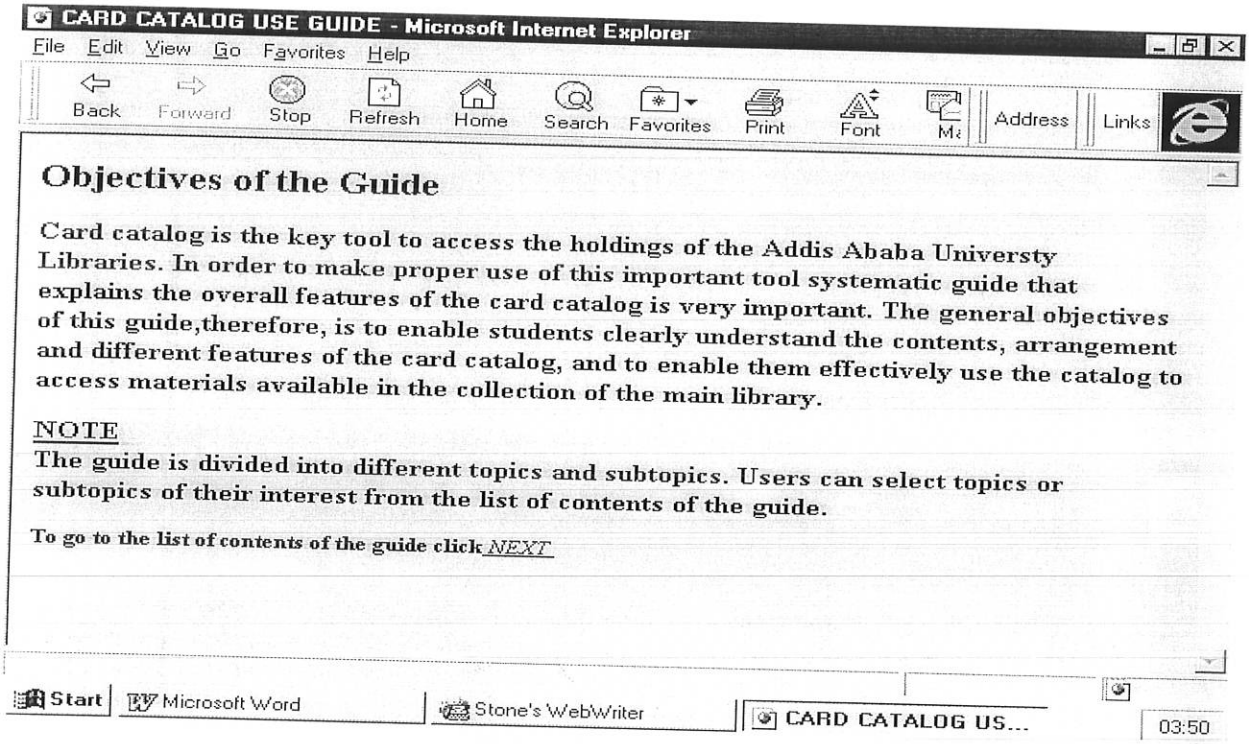
The guide can be used on any personal computer that has Windows and Internet Explorer. In order to use contents of the guide one has to open Internet Explorer and selects the drive on which HTML files that contain the guide are saved. The first screen of the guide is a welcome screen that has been linked to another screen that explains objectives of the guide. The guide, therefore, should start from the **welcome** screen. Figure 3 shows the content of the welcome screen.

Figure 3. The Welcome Screen



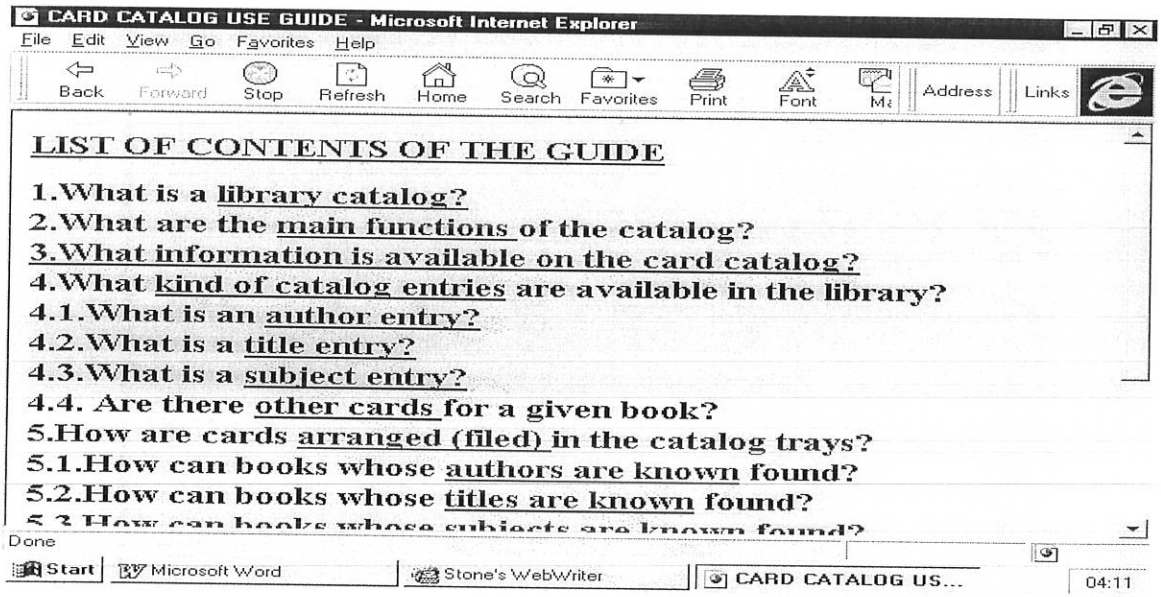
Users will be linked to the next information screen by clicking the highlighted part of the welcome screen. The next information screen as indicated in the welcome screen is a screen that describes the objective of the guide.

Figure 4. The Objective Screen



The objective screen briefly presents the general objectives of the guide. After reading (understanding) the objectives of the guide users are directed to the list of contents (main menu) of the guide. Figure 5 shows the screen layout of the list of contents of the guide.

Figure 5 List of Contents of the Guide

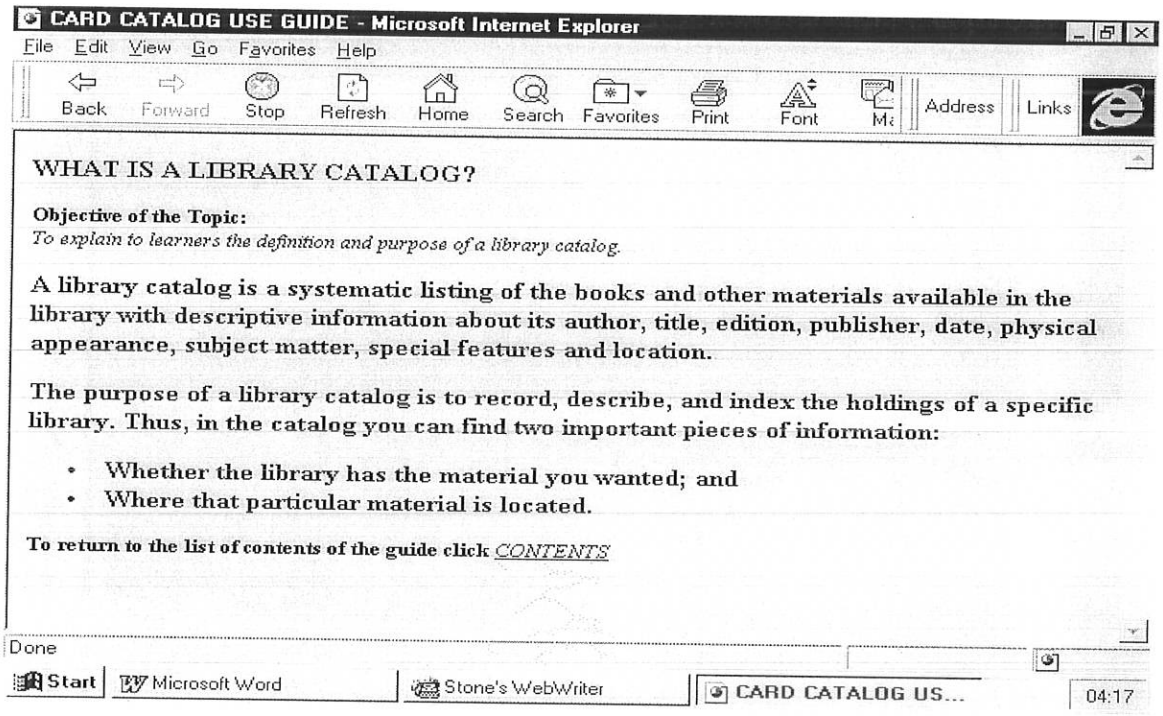


Each topic and sub-topic in the list of contents has been linked to its respective information screen and each information screen is also linked to the list of contents. Users, therefore, can access a given topic by clicking on the highlighted part of the topic from the list and can also go back to the list of contents to select another topic by clicking the word "***CONTENTS***". The instruction that says, "To return to the list of contents of the guide click *CONTENTS*" is available on each information screen. As can be seen from the above figure, topics and sub-topics are presented in the form of questions and users can select specific question for which they need answer.

For example, if a user wants to know what the library catalog is he/she has to click on the highlighted part from the topic "What is a Library Catalog?" Then the following

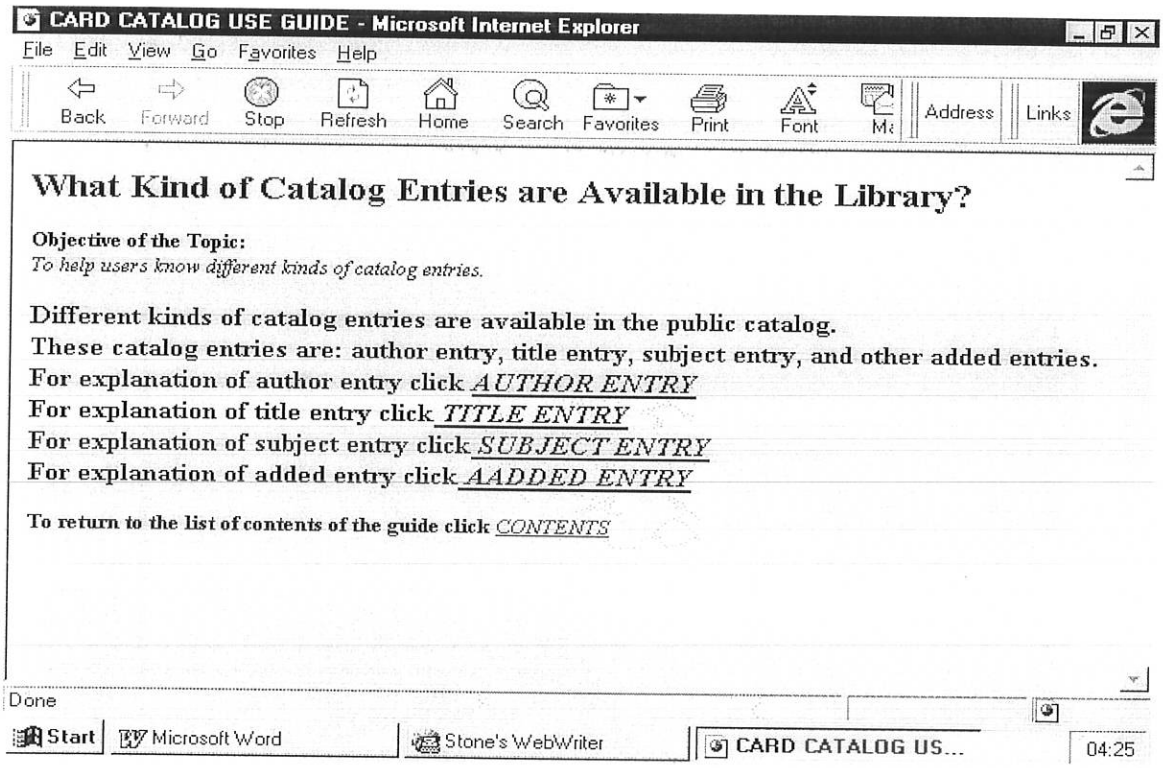
information screen (Figure 6) which contains explanation of the library catalog will be displayed.

Figure 6. Explanation of a Library Catalog



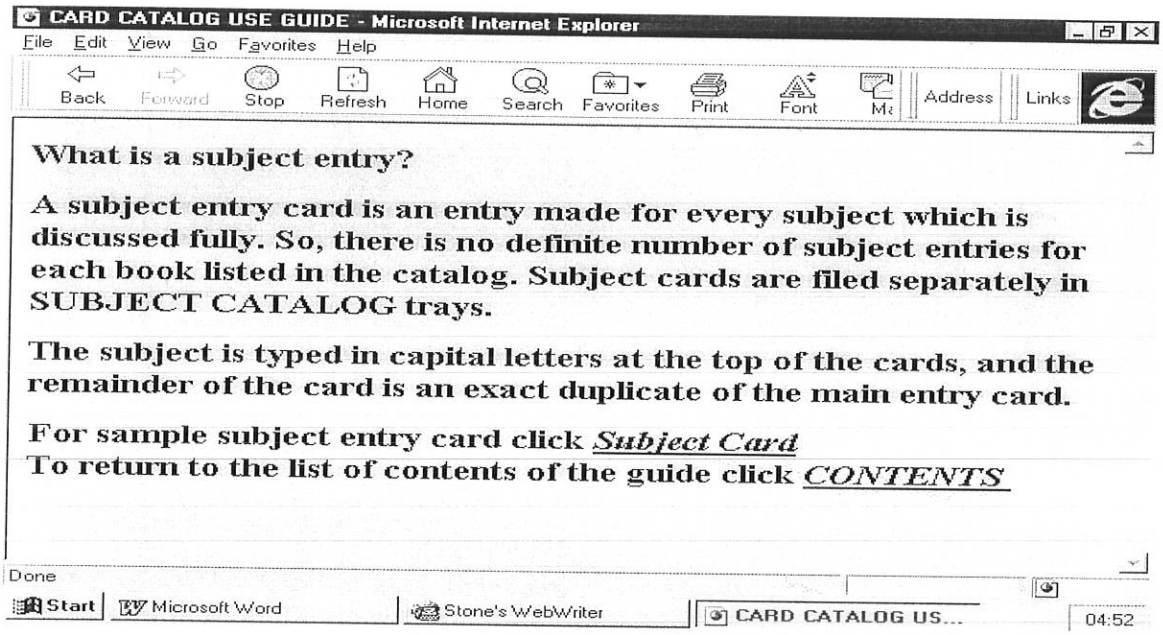
There are also some topics that need further explanation or graphic representation. Such topics are linked to other topic(s) or to an appropriate image representation. For example, if a user wants to know different kinds of catalog entries that are available in the library, he/she has to select a topic "What kind of catalog entries are available in the library?" from the list of contents and click on the highlighted part. As a result, the following information screen (Figure 7) will be displayed.

Figure 7. Kinds of Catalog Entries



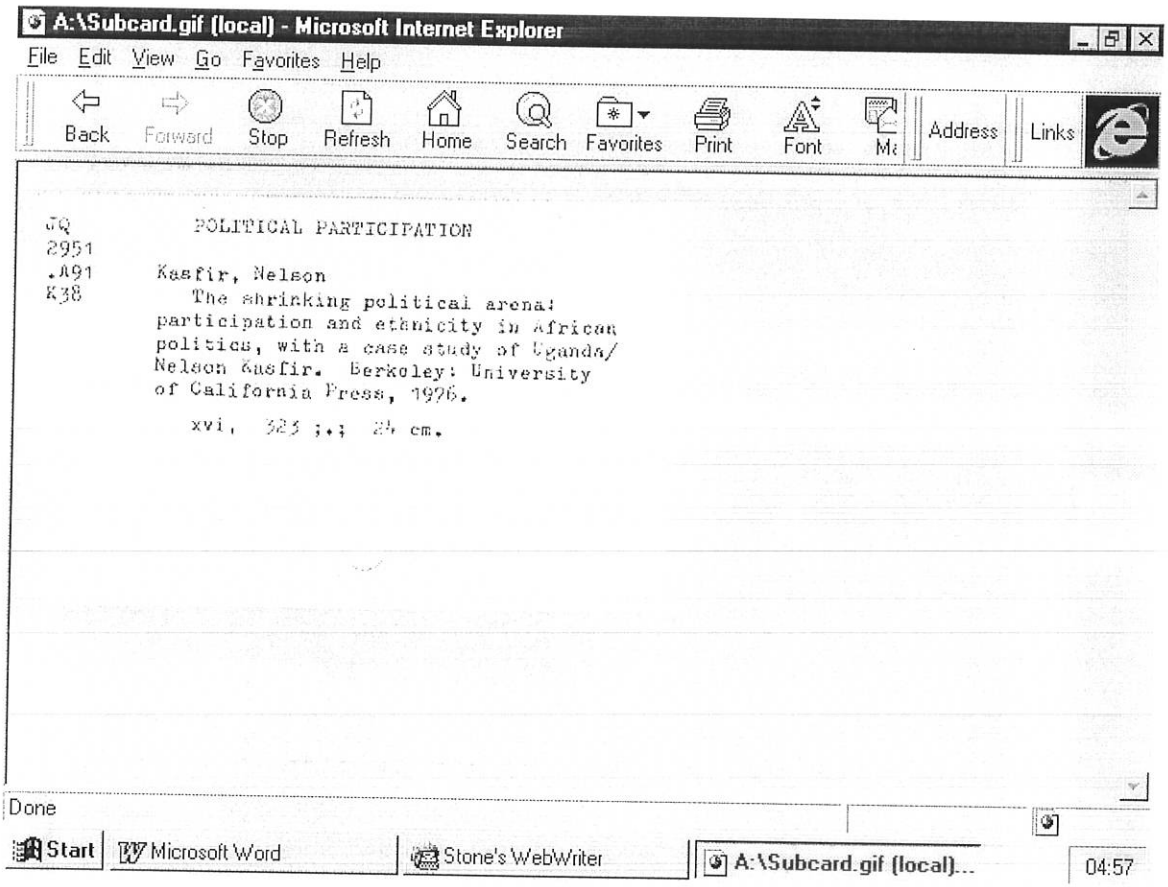
As can be seen from the figure, there are statements that give options of further explanation on different kinds of catalog entries. The user has to select a kind of catalog entry for which he/she wants further explanation and click on the name of the selected entry. Explanation of that particular entry will be displayed. If a user selects subject entry, for instance, the information screen displayed will be the one shown in figure 8 below.

Figure 8. Subject Entry



To make users clearly understand a given topic(s) some information screens are linked to images of sample cards. Thus, the above screen that explains subject entry has been linked to image of sample subject card. In order to look at the physical appearance and contents of a sample subject card, one has to click on the phrase ***Subject Card*** As a result of the clicking the following image (Figure 9) will be displayed.

Figure 9. Sample Subject Card



After looking at the sample card a user can return back to the previous information screen. The same procedures have to be followed in order to access every information included in the guide. Hence one can understand from the sample screens and brief explanations that users can easily understand how to access different information screens.

5.3.3. USERS COMMENTS AND SUGGESTIONS

The prototype has been demonstrated to two groups of undergraduate students in the computer center of the main library.

In the first group there were 15 fourth year students from the department of library and information science. These students were made to take part in the demonstration in the belief that they can give useful suggestions based on their field of study (their major area of study is library and information science and their minor area of study is computer science).

The second group consists 18 fourth year students from different departments of the College of Social Sciences. Students in this group are among the students who filled the questionnare and also participated in the catalog use skill test.

Almost all students appreciated the attempt made to prepare a compuiter-based guide for the card catalog. They commented that compared to the current library orientation, the explanations given under different topics and sub-topics of the guide are very useful to help students get clear understanding about the catalog. According to the students' suggestions, the guide will be more useful and understandable if some additional features are included. The suggestions given by students in their own ways of explanation can be summarized as follows:

* Before getting into the information contents of the guide, users should be given clear explanation on how to use the guide. This will enable users to easily move from one screen to the other and to understand the purpose of the highlighted parts of each information screen.
* Rather than selecting topics and sub-topics only from the list of contents of the guide, some features that allow users to submit their requests to the system and get relevant explanations from the system should be added to make it more interactive.
* The system should be able to explain some important information that appeares on cards. For instance, users who do not know the use of call numbers (the numbers on the top left part of each card) must get clear explanation about the use of this piece of information by clicking on that part of the card.
* It will be more useful and attractive if text description of some information screens are supported by background audio.

Due to time constraint attempt has not been made to improve the prototype as per these suggestions.

In order to implement the proposed guide, therefore, additional works should be done to improve it as per the suggestions of users. The organization and maintenance of the cards also need improvement to enhance the overall performance of the public catalog. The following chapter presents conclusions of the study and important points to be considered by the university library system.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

6.1. CONCLUSION

Card catalog is the key tool to access the holdings of the Addis Ababa University Libraries. Despite many indicators of the future automation of the AAUL system, it is not likely that it will soon be feasible to fully computerize all the housekeeping activities of the library system. The existing card catalog, therefore, will continue to be the mode of access to the holdings of the library until all necessary requirements for automation are fulfilled.

Catalog use study is important to identify difficulties in using library catalogs, to suggest possible solutions to identified problems, to design and develop better systems, etc. This study, therefore, has been an attempt to identify the problems related to the use of card catalog in the main library of the Addis Ababa University and to devise a better system that may improve the use of the card catalog. The information gathered using the questionnaire, catalog use skill test, and discussions with the library staff indicated that students have difficulties in making effective and efficient use of the card catalog. The undue long time spent at the public catalog to look for a given library material and inability of students to find necessary bibliographic information that helps them locate

specific library material show the students' difficulties in making proper use of the card catalog.

The findings of the study have also shown that almost all undergraduate students have no experience of using large libraries in general and library catalogs in particular before joining the University. Furthermore, students cannot be acquainted with different services of the library and various library tools, such as the card catalog through the current library orientation program given when students start their second year study. Thus, well-planned and detailed library and information use instruction, particularly systematic catalog use instruction is very necessary.

Preparation of systematic catalog user guide that may be readily consulted as required has been found a viable means of enabling students to easily access the holdings of the library by making use of the card catalog. Like in many other subject areas, computers can be successfully used to teach users various library skills. Among the different methods that can be used to guide students to the use of card catalog, therefore, computer-based system is identified as an advantageous method. Among the obvious advantages of computer-based guide are:

- It can be consulted or approached anytime and unlike human beings it has endless patience. Hence it is a good device to help some students overcome the possible inhibitions that may hinder them from making requests or asking for assistance.

- Unlike other large group instruction methods, computer-based approach is useful to meet needs of individual learners.
- The interactiveness of computers as well as their ability to provide clear images and text are also benefits of computer-based guide that can motivate learners.
- In computer-based method learners can go at their own pace.
- Using computers it is possible to present a given topic repeatedly without a decrease in proficiency due to fatigue.
- Standardized and uniform lessons can be presented to all learners.
- Using the branching ability of computers learners can select topic of their interest instead of following predetermined sequence of instruction.
- The guide can also be adapted and used by other branch libraries.
- Furthermore, the use of computer-based guide familiarizes students with the use of computers for various purposes. It could "help prepare students for the computer society in which they will live and work".

A prototype computer-based card catalog user guide has been prepared using hypertext markup language (HTML). The prototype consists different information screens that are linked to one another to enable students to clearly understand the contents, arrangement, use, and different kinds of entries in the card catalog. The hyperlinking capability of HTML has been found useful to link one instructional topic to other topics in order to give further explanation to students. The survey result has indicated that the majority of students have had no experience of using computers. However, the guide has been

prepared in a very simple way, such that students can use it with brief orientation on how to get into the program and click on the highlighted words or phrases to go to the topic of their interest. Furthermore, the suggestions given by students could be used for further improvement of the guide.

The findings of this study and the proposed card catalog user guide could also be used as a starting point to undertake detailed study on the use of other information sources and services of the library and to design and develop all-inclusive and operational computer-based library and information use instruction.

6.2. RECOMMENDATIONS

In order to highly minimize the existing catalog use problems by making use of the proposed computer-based card catalog user guide, some important measures that may enhance the use of the library in general and the use of card catalog in particular should be taken. Therefore, by way of enhancing the capability of students in information use and thus, facilitating the teaching-learning process the following recommendations are made based on the findings of the study.

- The University Library System should give proper attention to the implementation of the proposed purposeful card catalog user guide. In order to implement the proposed computer-based guide, it needs to be improved according to the suggestions of users. To this end, a computer-based guide that includes additional features than those included in the prototype should be designed and developed using appropriate tools.

In order to fully exploit the potentials of the guide, the card catalog needs improvement in terms of:

a. keeping only appropriate cards that indicate the materials available in the holdings of the library;

b. the number of cards filed in a single catalog tray;

c. adopting and practicing procedures for establishing the correctness of every bit of information recorded on cards and reviewing the alphabetical

arrangement (filing system) of the public catalog regularly to increase the hit rates of searches;

d. arrangement of suitable seats around the public catalog drawers to make the use of the card catalog more comfortable. Because, seats could ease the effort or tediousness of the card catalog search.

- In the long run the library system may consider designing a systematic, detailed, and well-planned library and information use instruction. Such instruction could be designed in the form of computer-based library use instruction based on the lessons learned from the proposed card catalog use guide.
- The proposed computer-based card catalog user guide is a stopgap solution for the current card catalog use problem. In order to make users easily and quickly access the available information sources, enhance the role of the library in the teaching-learning and research activities of the University, and properly cope with the advancements of modern information systems and services the library needs to be automated. It is obvious that automating different functions of the library is very important for effective, efficient and timely information service. Hence, necessary requirements should be fulfilled as much as possible and practical measures should be taken towards the automation of the AAUL system.

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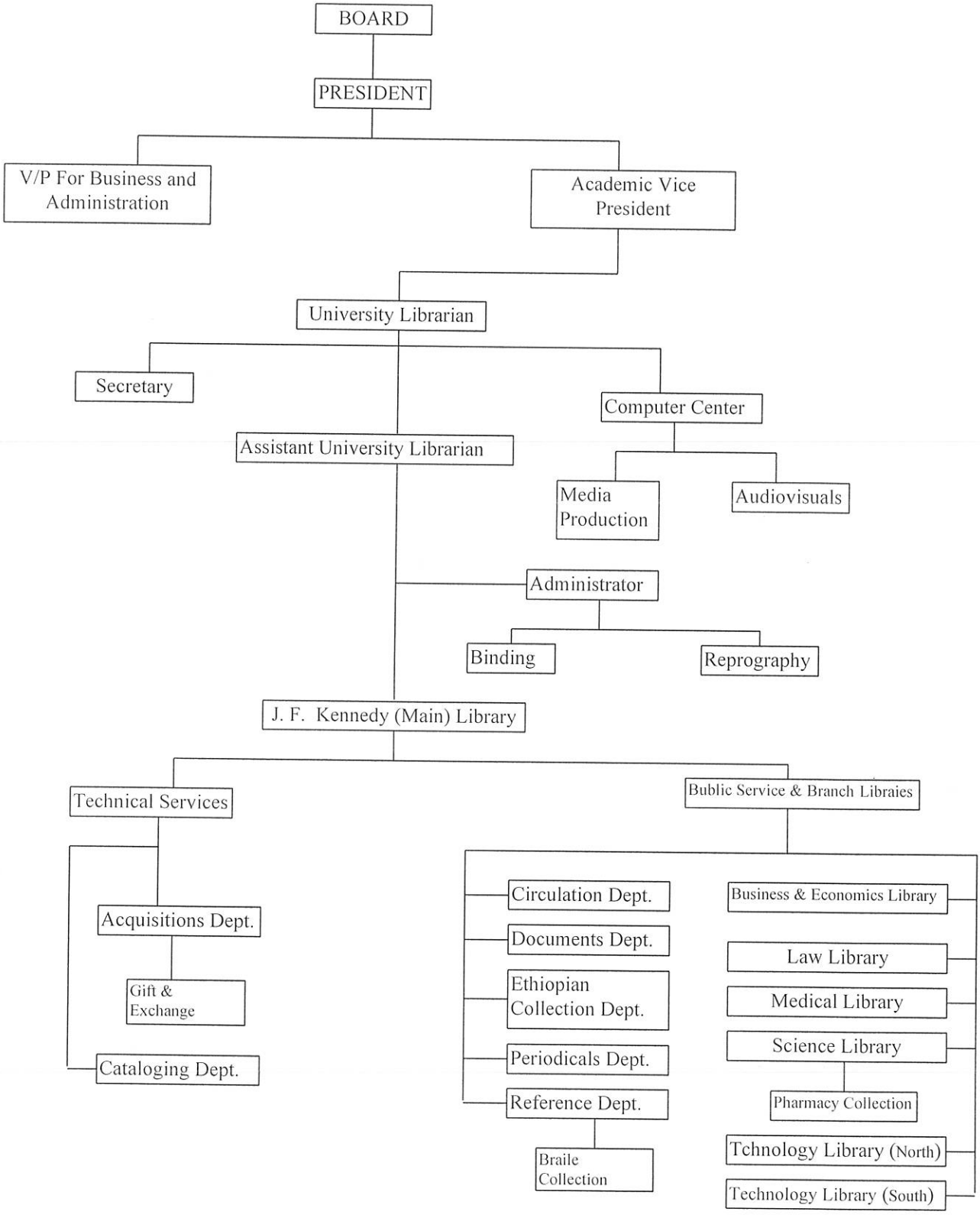
APPENDIX 1 ORGANIZATIONAL STRUCTURE OF AAUL



APPENDIX 2 QUESTIONNAIRE

Questionnaire to be filled by 4th year students in different departments of the College of Social Sciences of Addis Ababa University

INTRODUCTION

The purpose of this questionnaire is to identify whether or not students in different departments of the College of Social Sciences can make proper use of the card catalog and to identify major problems faced by students in using card catalog of the AAU Main Library. The information gathered using this questionnaire would help in the design purposeful guide to the use of the card catalog. Each respondent's genuine participation in filling the questionnaire will be helpful for the fulfillment of the objectives of the study.

You are therefore kindly requested to answer each question frankly.

Thank you very much for your kind cooperation.

DEPARTMENT _____

YEAR _____ SEX_____AGE_____

1. For what purpose do you go to the library? (You can give more than one answer)
   1.to do research 2. to find a specific book
   3. to find out something on a given subject or topic 4. To read your own material
   5. to read books on reserve for particular courses
   6. other (please specify)
2. How often do you use the library?
   1. occassionally 2. Once in a week 3. Twice a week
   4. three times a week 5. Everyday
3. How do you get access to library materials?
   1. by looking for a material in the card catalog
   2. by giving the author/ title/subject of the material to the library staff and asking them to help in finding the material
   3. by asking a fellow student
   4. other (please specify)_____
4. Do you know the availability of different catalog entries (author, title, subject, etc.) for a given book?
   Yes_____ No_____
5. If your answer for No. 4 is "Yes" how did you learn the availability of different catalog

entries? 1. From your high school experience 2. From your instructors

3. through library orientation 4. Other (please specify)

6. Which approach do you use to search for a material in a card catalog?

1. Author 2. Title 3. Subject 4. All

Why?_____

_____

7. Using the card catalog makes you feel

1. very comfortable 2. Fairly comfortable 3. Adequate

4. slightly uneasy 3. Anxious

Because_____

_____

8. Is it easy for you to understand the card catalog arrangement (filing system) of cards?

Yes_____ No._____

9. List your major problems in using the card catalog

_____

_____

_____

_____

10. Have you participated in library orientation? Yes_____ No_____

11. If your answer for number 10 is "Yes", you have participated in the library orientation, because:

1. you wanted to get library pockets
2. you wanted to get clear understanding on how to use the library
3. you were told by your Department to do so
4. other please specify)_____

12. Do you think the library orientation is enough to make students know how to make proper use of card catalog? Yes_____ No_____

13. Have ever used library catalog before joining the University? Yes_____ No_____

If your response is "Yes" has your previous experience helped you in using card catalog at the University? Yes_____ No_____

14. Have you ever used computers? Yes_____ No_____

If "Yes" for what purpose did you use computers?

1. for word processing 2. For literature search 3. For games

4. other (please specify)_____

_____

15. From your experience, or from what you have heard or read about computers, do you

think a Computer-based guide will enable students to make effective and efficient use of card catalog? 1.Yes_____ 2.No_____

1. You can't answer, because you know nothing about computers.

16. In your opinion what measures should be taken to improve students access to the holdings of the library? _____

_____

_____

_____

_____

_____

_____

APPENDIX 4 CATALOG USE SKILL TEST QUESTIONS - History

The following questions are prepared to see whether or not students can find books of their choice by making use of different catalog entries. So you are kindly requested to use appropriate catalog entries to answer each question.

1. Please write the title and call number of books written by the following authors:

   a) Kan-Chin Ho

   b) Howard Hensman

2. Please write the author and call number of the books whose titles are given below:.

   a) A history of the Arab State of Zanzibar

   b) A history of Islam in West Africa

3. Under which subject heading(s) would you find the following books?

   a) History of ancient peoples

   b) Ancient times, a history of the early world: an introduction to the study of ancient history and the career of early man

APPENDIX 5 CATALOG USE SKILL TEST QUESTIONS - PSIR

The following questions are prepared to see whether or not students can find books of their choice by making use of different catalog entries. So you are kindly requested to use appropriate catalog entries to answer each question.

1. Please write the title and call number of books written by the following authors:

   a) M. J. Rendell

   b) Geoffrey Ponton

2. Please write the author and call number of the books whose titles are given below:.

   a) The use of force in international relations

   b) International relations: a handbook of current theory

3. Under which subject heading(s) would you find the following books?

   a) Ethnicity, party and national intergration: an Indonesian case study

   b) The nature of the Italian party system: a regional case study

APPENDIX 6 CATALOG USE SKILL TESTQUESTIONS - SOSA

The following questions are prepared to see whether or not students can find books of their choice by making use of different catalog entries. So you are kindly requested to use appropriate catalog entries to answer each question.

1. Please write the title and call number of books written by the following authors:

   a) Arnold Wilfred Green

   b) Joan Ferrante-Wallace

2. Please write the author and call number of the books whose titles are given below:.

   a) Sociological relations: a guide to the study of society

   b) Social welfare services and social work in the Federal Republic of Germany

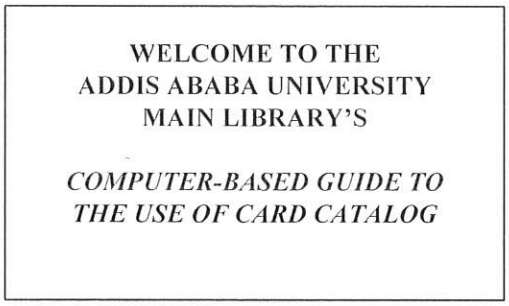
3. Under which subject heading(s) would you find the following books?

   a) Contemporary topics in urban sociology

   b) The urban mosaic: towards a theory of residential differentiation

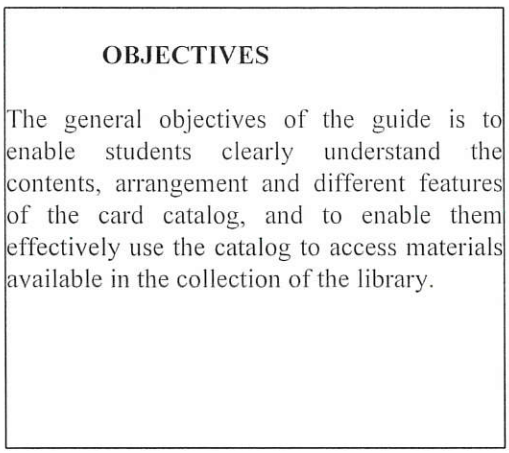
APPENDIX 7 INFORMATION CONTENTS OF THE GUIDE

Screen 1 *The Welcoe Screen*



The welcome screen is the beginning screen of the guide and it leads to the second screen that shows the general objectives of the guide.

SCREEN 2 *Objective*



The objective screen is linked to the list of contents (main menu) of the guide.

SCREEN 3 *List of Contents* (*Main Menu)*

Users can find explanation for each topic included in the card catalog use guide , by selecting and clicking the topic of their choice from the menu. Each topic and sub-topic is presented in the form of questions and users can select specific question for which they want answer.

LIST OF CONTENTS

1. What is a library catalog ?
2. What are the main functions of the catalog?
3. What information is available on the card catalog ?
4. What kind of catalog entries are available in the library?
   - 4.1. What is an author card?
   - 4.2. What is a title card?
   - 4.3. What is a subject card?
   - 4.4. Are there other cards for a given book?
5. How are cards arranged (filed) in the catalog trays?
   - 5.1. How can books whose authors are known found?
   - 5.2. How can books whose titles are known found?
   - 5.3. How can books whose subjects are known found?
   - 5.4. How can users find relevant material for a given topic of study?
6. What is a subject heading?
   - Sample subject headings – Geography
   - Sample subject headings – Political Science
   - Sample subject headings - Sociology
7. What is the use of "*See*" and "*See also*" references?
8. What is the meaning of different marks available on cards?
   - 8.1. What is indicated by Per.?
   - 8.2. What is indicated by Ref.?
9. What is indicated by labels on card catalog trays?

Each topic is linked to its respective information screen and users can access each screen by clicking the highlighted part of the topic

Contents of Subsequent Screens and Links Between Screens

What is a library catalog?

Objective of the topic:

- *To explain to learners the definition and purposes of a library catalog.*

A library catalog is a systematic listing of the books and other materials available in the library with descriptive information about its author, title, edition, publisher, date, physical appearance, subject matter, special features and location.

The purpose of a library catalog is to record, describe, and index the holdings of a specific library. Thus, in the catalog you can find two important pieces of information:

- whether the library has the material you wanted; and
- where that particular material is located.

What are the Main Functions of the Catalog?

Objective of the Topic:

- To explain the basic functions of the library catalog.

The functions of a library catalog are to enable users to know:

- Whether the library contains a certain item;
- Which works by a particular author are in the collection;
- Which editions of a particular work the library has; and
- What materials the library has on a particular subject.

A catalog leads to a particular material in the collection, by showing the location of the material, its physical description and its subject content.

From this screen users will be returned back to the list of contents of the guide to select other information screen.

What Information is Available on the Card Catalog?

Objective of the topic:

- *To give explanations on information available on card catalog*

A card catalog contains the following information about the material it describes.

Call Number
Author
Title
Imprint
Collation
Tracing

For a sample card that contains all the above listed information users are linked to a figure of a card that has explanation of each item. Since some of this terms are professionals jargons users may need definition of each term. Therefore, information screens that contain definitions of each term are linked to this screen.

What kinds of catalog entries are available in the library?

Objective of the topic

- *To help users know different kinds of catalog entries.*

Different kinds of catalog entries are available in the public catalog.

These catalog entries are:

- ***Author Entry***
- ***Title Entry***
- ***Subject Entry***
- ***Other Added Entries***

For explanations of each catalog entry, users have to click on the name of the entry. For example to read the explanation of title entry they have to click the phrase ***Title Entry***.

What is an Author Entry?

The author entry is the basic catalog record. Author entry is called Main Entry.
Author entry gives the following information:

- Inverted full name of the author.
  e.g. If the author's name is **Richard E. Olsen,**
  it will appear on the card as **Olsen, Richard E.**
- Title and subtitle of the material;
- Edition if it is not the first;
- Co-author, illustrator, translator;
- Imprint, which includes place of publication, publisher, and date of publication;
- Collation, which includes number of pages or volumes, illustrative material, and size in centimeters;
- Series to which the work belongs, if it is one of a series;
- Subject which are treated fully;
- Full name of the co-author, translator, editor, or illustrator.

For a sample author (main) entry card users are linked to a figure.

What is a Title Entry?

A title entry is made for a publication, which has a distinctive title. On a title card the title appears at the top of the card above the author's name. If the title is used as the main entry, the work will not have a title in the public catalog.

A sample of title entry card is linked to the above explanation.

What is a Subject Entry?

A subject entry card for a given book is made for every subject that is discussed fully. So, there is no definite number of subject entries for each book listed in the catalog. Subject cards are filed separately in SUBJECT CATALOG trays.
The subject is typed in capital letters at the top of the cards, and the remainder of the card is an exact duplicate of the main entry card.

A sample of subject entry card is linked to this explanation and users can have a look at the image (figure) of the sample card by clicking the highlighted part of the screen.

Are There Other Cards for a Given Book?

Yes, a given publication can have other entries. If a publication has a joint author, illustrator, or translator, an entry is made for each one. If a publication is one in a series of publications series entry also prepared. These cards are called ***Added entries***.

This information screen is linked to an image of sample added entry card.

How Can Books whose Authors are Known Found?

Bibliographic information about books whose authors are known can be found in AUTHOR-TITLE catalog. Such books are searched by surnames or inverted names of the authors.

Example, A book by **Gail M. Presby** is searched under
Presby, Gail M.
A book by **Karsten J Struhl** is searched under
Struhl, Kartsen J.

A book by **Colin Robson** is searched under
Robson, Colin

However, there are some exceptions. For instance, names of Ethiopian authors are not inverted; author names in Scandinavian, Spanish, Dutch, etc., languages follow different rule. For clear understanding of the arrangement of some author names users are advised to contact the Reference Department staff.

How Can Books Whose Titles are Known Found?

Bibliographic information about books whose titles are known can be found in AUTHOR-TITLE catalog. Such books are searched by their titles.

Example, -A book whose title is **"The Dilemma Confronting Ethiopian Resource Conservation"** is searched under **"Dilemma".**
-A book whose title is **"A History of Modern Ethiopia, 1855-1974"** is searched under "**History".**
- A book whose title is "**The Silent Revolution in Africa"** is searched under **"Silent"**.

How Can Books Whose Subject is Known Found?

Bibliographic information about books whose subjects are known can be found in SUBJECT catalog. Such books are searched by their subjects. The arrangement of subject card is just like that of Author-Title cards in word-by-word arrangement.

Example- A book on urban sociology is searched under SOCIOLOGY-URBAN or URBAN-SOCIOLOGY.

-A book on Economic Geography is searched under GEOGRAPHY-ECONOMIC or ECONOMIC-GEOGRAPHY

-A book on parties in a given country is searched under the subject "Political Parties" and name of that country.

e.g. POLITICAL PARTIES-ITALY

What is Subject Heading?

Objective of the Topic:
To give hint on how subject headings for different topics are determined.

Subject heading is the word or group of words under which books and other materials on a subject are entered in a catalog in which the entries are arranged in alphabetical order.

The Addis Ababa University Library System uses Library of Congress Subject Headings List (LCSHL) to assign subject heading(s) for a given publication. The LCSH uses

UF (Used For)
BT (Broader Topic)
NT (Narrower Topic)
RT (Related Topic) and
SA (See Also)
May Subd Geog (Place names may follow the Heading)

symbols to list subject headings in different study areas.

Sample subject heading lists under GEOGRAPHY, POLITICAL SCIENCE and SOCIOLOGY are taken from LCSH and included in the guide.

This information screen is linked to these sample subject-heading lists. Users can select area of their interest from the three fields and click the name of the field of study they have selected to look at the sample list of subject headings.

Here users are also advised to refer to the LCSHL that are available in the Reference Department to ask the library staff about subject headings.

Sample Subject Headings – Geography

Geography (May subd Geog)

Here are entered works on geography as a branch of learning. This heading may be divided geographically for works on this branch of learning in a specific place. Comprehensive geographical works about a place, including general geography textbooks, are entered under headings of the type [place]-Geography. Works limited to descriptive information including those derived from travel narratives or intended to assist travelers are entered under the names of countries, cities, etc. with the subdivision Description and travel or Guidebook.

BT Cosmogeography
Earth sciences
World history

SA subdivisions Geography and Maps under names of countries, cities, etc.

NT Arial photography in geigraphy
Biogeography
Commercial geography
Economic geography
Geography, Ancient
Historical geography
Human geography
Local geography
Maps
Mathematical geography
Medical geography
Military geography
Physical geography
Religion and geography
Rural geography
Urban geography
Voyages and travels

Sample Subject Heading List – Political Science

Political Science May subd Geog)

Here are entered works on political science as a branch of learning. This heading may be divided geographically for works on this branch of learning in a specific place. Works on the political processes of particular countries, regions, cities, etc., are entered under the name of the place subdivided by Politics and government.

UF Administration
Civil government
Commonwealth, The
Government
Political theory
Political thought
Politics
Science, Political

BT Social sciences

RT Constitutional history
State, The

NT Aristocracy (Political science)
Authority
Autonomy
Biopolitics
Bureaucracy
Cabinet system
Central-local government relations
Citizenship
City states
Civics
Comparative government
Constitutions
Constitutions, State
Delegation of powers
Democracy
Equality
Federal government
Ideology
Imperialism
International organization

Sample Subject Heading List – Sociology

Political Science May subd Geog)

Here are entered works on political science as a branch of learning. This heading may be divided geographically for works on this branch of learning in a specific place. Works on the social conditions of particular countries, regions, cities, etc., are entered under the name of the place subdivided by social conditions.

BT Social sciences

SA subdivision Sociological aspects under types of institutions
e.g. Universities and colleges – sociological aspects

NT Agriculture – research – sociological aspects
Community
Crime – sociological aspects
Economic Development – sociological aspect
Educational sociology
Equality
Ethnic relations
Historical sociology
Industrial sociology
Macrosociology
Microsociology
Organizational sociology
Race relations
Religion and sociology
Social conflict
Social institutions
Social medicine
Social mobility
Social psychology
Society, Primitive
Sociolinguistics
Sociology, Rural
Technology – sociological aspects
Women – sociological aspects

What is the use of "*See*" and "*See also*" references?

A **See** reference is used to refer from a heading that is not used to the heading that is used.

Example: **Bendon, Dorothy**
See
Van Ghent, Dorothy (Bendon)
This means, if one is looking for works by Dorothy Bendon, he/she has to look under Dorothy (Bendon) Van Ghent. In other words, "Van Ghent, Dorothy" is the relevant name under which author card for materials (books) by Dorothy Bendon are found.

A **See also** reference is used to refer from a heading that is used to another heading that is also used.

Example: GEOGRAPHY
See also
PHYSICAL GEOGRAPHY
This means, materials on Geography can also be found under Physical Geography, so users are advised to look under both subject headings.

The above description is linked to sample SEE and SEE ALSO cards. Users can have a look at the cards by clicking the highlighted part of the guide.

What is the Meaning of Different Marks Available on Cards?

There are cards that have some kind of marks under the call number. Such marks are written in red color and have their own meaning.

If there is **Per.** under the call number on a given card, it means the material described on that card is a periodical publication. These materials are found in the Periodical Department of the Library.

If there is **Ref.** under the call number of a given card, it means the material described in that card is a reference material. These categories of library materials are found in the Reference Department of the Library.

Sample cards with these marks are linked to the information screen that contains the above text description.

What do Labels on Card Catalog Trays indicate?

Cards are filed in catalog trays that have sequence number and alphabetical labels on the outside of each tray.

Example:

50 BHA - BIB	270 JAN - JAZ

The above labels show that in tray number 50, users can find materials whose author, title, subject or other added entry headings are between BHA and BIB. In tray number 270, materials whose author, title, subject or other added entry headings are between JAN and JAZ are found.

So, to find bibliographic information of books whose author, title, or subject is known, users have to search a single tray in which one of the cards of that book might be found by looking at alphabetical labels on each tray.

Declaration

This thesis is my original work and has not been submitted for a degree in any other university.

ZEWDIE GUDETA
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The thesis has been submitted for examination with our approval as university advisors.

Dr. Lishan Adam
May 1999

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May 1999