CHAPTER ONE

INTRODUCTION

1.1. Library Automation

Libraries adopt automated systems to manage and receive information for clients more accurately and quickly (Matthews, 1980). About forty or more years ago, libraries have begun to computerize their library systems to accomplish these objectives (Kimber, 1974; Sun and Jiang, 1992). Libraries are using automation systems for various reasons. Lancaster and Sandore (1997) listed those reasons as follows.

- To cope with increasing demands;
- To reduce staff or prevent staff increases;
- To allow more activities to be performed by clerical and paraprofessional staff;
- To improve existing services;
- To provide new services; and
- To collect better data to aid overall management of the library.

Matthews (1980) described the advantages of library automation as:

- Able to eliminate or complete the task of a function more accurately;
- Able to maintain or improve productivity even in the event of an increase demand for service and their accompanying library workload, especially with either static or declining budget resources;
c. Able to collect data that will assist the librarian in the management of the library’s collection while simultaneously providing new and more detailed data to support its budget requests;
d. Able to offer new or important services to patrons, provide valuable by-products (often unanticipated) as a result of automation, and facilitate cooperation between libraries;
e. Able to eliminate staff positions and the end results may be reduced unit cost for a particular activity. However the reduction or elimination of staff positions is actually a matter of library policy, rather than a direct result of automation; and
f. Able to avoid the need to hire additional staff, even with increased demands for service.

Therefore the objectives of library automation can be summarized as:

a. To process library functions more accurately and more quickly;
b. To cope with the reduction of staff number and increasing cost;
c. To provide an effective and efficient service for users;
d. To improve library and library resources management;
e. To provide an integrated system between the divisions, branches or other libraries; and
f. To offer new services to patrons.
1. 2. Online Catalogue Developments

Libraries devised the catalogue to manage the vast amount of materials obtained.

As noted by Liebaers (1984), ‘Even a large open access collection does not totally eliminate the need for a catalogue’. Lancaster and Fayen (1973) summarized the development of catalogues as follow.

a. Before the 1940’s- Most libraries maintained card catalogues and printed book indexes.

b. 1940-1949- The first application of semi-mechanized catalogues, including edge-notched cards, the optical readers, and the first microfilm searching system.

c. 1950-1959- The use of punched card data processing equipment, some early computer systems, and further micro-image searching systems.

d. 1960-1969- General applications of digital computers to information retrieval in an off-line, batch-processing mode, some experiments with online interactive systems, and more advanced micro-image searching systems.

e. 1970 to the present- Definite trend towards the design of online systems and conversion of batch systems to the online mode.

1. 3. Online Public Access Catalogue (OPAC)

The Online Public Access Catalogue (OPAC) is a computerized catalogue containing records of the items in a library (or any institutional organizations). The system is used for the storage and retrieval of information.
Peters (1991) stated that definitions of online catalogues abound. But there is no clear definition of them (Norgard et al., 1993). Crawford (1987) defines an online catalogue as any computer-based set of bibliographic data that can be accessed by library users working directly at a terminal.

The OPAC is of special importance to the library users (Lapp, 1996). Through the OPAC, clients can access all type of materials in the library such as books, periodical titles, theses, audio-visual items etc. and check whether these are available for loan or make reservations for them. Drabenstott (1985) says, “Today’s online catalogs typically access machine-readable records for books, journal titles and audio visual material, and indicate their circulation status.” Some libraries allow patrons to request items from another library on inter-library loans via the OPAC. Patrons’ library registration details, and borrowing information are also available in the OPAC. Patrons of libraries can also connect to the OPAC, and databases in their libraries via the Internet.

According to Chen (1991), the online catalogue attracted a great deal of attention in the field of library science after research studies on its use began to appear in the literature in the 1980s. The OPAC literature has grown in the early 1990’s (Efthimiadis, 1990). Dale (1989) organized the literature on subject access; Elsberned, Campbell, and Wesley (1990) provided a bibliography of OPAC instruction, and Pask (1990) supplied a bibliography on patron education for online systems covering the years from 1970 to 1988.
The first major research was launched by the Council on Library Resources (CLR) in 1982. They carried out a national survey involving five organizations about the usage of the online catalogue in 29 academic, research, special, and public libraries in the United States (Markey, 1983; Matthews, Lawrence and Ferguson, 1983). They found out that the online catalogue was heavily used by patrons who mainly used it for subject searches.

The CLR and other research projects investigated adults’ and college students’ information access through the online catalogue in public, special, college, and university libraries (Chen, 1991). Other studies have compared the usage of the card catalogue and the online catalogue (Pease and Gouke, 1982). Other researchers have focused their attention to effective training programs, support aids, user assistance services, and the issue of improving the subject searching capabilities of the online catalogue (Chen, 1991).

Hildreth (1982) examined ten operational OPAC systems, and their computer-based features and recognized some barriers to the success of bibliographic information retrieval through the OPAC. These barriers include inefficient hardware, inadequate number of terminals, and indexing structure of the database.

Blecic, Dorsch and Koenig (1999) carried out a longitudinal study, on how the OPAC interface changed user’s searching behavior and searcher success. They found that early changes to the introductory OPAC screen had a positive impact on users’ online
searching behavior and success and also help to reduce some of the more common searching errors.

Chisman, Diller and Walbridge (1999) carried out a case study, which aimed to examine the usability of WEB-based and other library catalogues at Washington State University (WSU). They found out that the library users were not always accurate in the information retrieval of the OPAC. Another simultaneous researchers noted the success of library users in obtaining materials and particularly in using electronic tools to satisfy their information needs in an academic library (Ciliberty, Radford, and Radford, 1998).

1.4. Statement of Problem

The online catalogue system is accepted in the library field since the early 1980’s (Peters, 1991). Patrons may have access to information in the library via the OPAC by author, title and subject heading(s) (Lancaster & Sandor, 1997). Besides these access points, they can also retrieve information via call numbers, and keywords (see Appendix A). Lynch (1989) and Chisman, et al. (1999) noted that the OPAC users do not always retrieve accurate information beyond searching under the author, title, subject heading(s), and call number etc. Users do not know other searching techniques. As a result of these errors, patrons cannot make efficient use of the OPAC. As indicated by Peters (1991), ‘one major problem with online catalogues and their use is the professional belief that we know what the problems are without really going to the systems, the data, and the users themselves.’ Peters categorized four kinds of
problems with online catalogues and their users such as user behavior problems, user conceptual and attitudinal problems, system problems, and other problems and concerns. According to him users’ behavior problems are indicated as follows.

a) Users make numerous typing errors- He says ‘many users seem more anxious to interact with the computer with their fingers than with their minds’.

b) Low use of advanced features- The majority of users do not use many of the unique features of online catalogues. He examined users capability in using the following advanced search feature.
   
   i. New access points- Boolean searching, call number browsing.
   
   ii. Search options- truncation, scooping, sorting and display options.

c) High failure rates- He discussed about the outcome of the search session, which showed failure outcomes such as no information, too little information, too much information, and too much information of the wrong kind.

d) Truncation confusion- This feature could be useful if the user knows about the variety of skills needed such as spelling abilities, and the use of title keyword searches as uncontrolled vocabulary subject searches;

e) Low persistence/Early session termination.

Peters (1991) noted that the users also exhibit and express conceptual and attitudinal problems in their understanding of the online catalogue system. According to Arret (1985) users are not passive and they will create mental models of the information systems use. Users have problems understanding the scope of online catalogues because most online catalogues are union catalogues in some sense, while most
traditional card catalogues are not. Users come to the search with their vague sense for finding via the online catalogue. Therefore user makes misconceptions about the system coverage and utility of subject searching (Steinberg and Metz, 1984).

Users tend to overestimate the scope and coverage of the online catalogue. Tyckoson (1989) said that ‘unfortunately, users often believe that the new electronic catalog is actually the ideal catalog of the nineteenth century.’ Peters (1991) described users’ conceptual and attitudinal problems following topics such as users conceptualizations of the system, controlled subject vocabularies, authority files, syndetic structure, and precision and recall.

The University of Malaya Library (UML) system comprises the main library, three branch libraries and ten special libraries. The library system was automated in 1991 with the main library and a campus network links its branches. The main library comprises a four-storey building and the OPAC can be used at all levels. Patrons may also access the library’s OPAC through the Internet. The OPAC can also be accessed from the library’s computer laboratory via the Internet.

1. 5. Research Questions

The following research questions are proposed in this study.

a) Why do foreign postgraduate students at the University of Malaya use OPAC?

b) What are the common types of searches made by foreign postgraduate students at the University of Malaya?
c) From whom do foreign postgraduate students at the University of Malaya learn how to use the OPAC?

d) Were foreign postgraduate students given any formal training on how to use the OPAC?

e) Do professional librarians play a role in imparting OPAC use skills to foreign postgraduate students?

f) Are foreign postgraduate students aware of the facilities provided by OPAC?

g) What are the problems faced when searching via OPAC?

h) What other features would they like OPAC to provide?

1. 6. Aims and Objective of the Study

The aim of this study is to understand the foreign postgraduate students’ OPAC using behavior at the University of Malaya Library. The study hopes to examine how foreign postgraduate students use OPAC, and the problems they can make in usage. The objectives of the study are as follows.

a. To investigate the foreign postgraduate students’ ability in using OPAC;

b. To examine their knowledge about OPAC;

c. To discover the reasons that affect or reduce their effectiveness in using OPAC; and

d. To present some proposals on how to increase users’ effectiveness of using OPAC.
1. 7. Significance of the Study

The OPAC has changed from a public access catalogue to a public access information gateway to local and remote sources in the late 1980s and early 1990s (Carande, 1992). It has revolutionized library services for three reasons (Liebaers, 1984);

a. It offers up-to-date information.

b. It offers multi-access points to information held in the library; and

c. It enables access to information in local, regional, or national networks.

The many advantages of using OPAC are;

a. Able to access a wide coverage of information quickly.

b. Can obtain information which is not available in printed form.

c. Can obtain current information since online databases are updated speedily and more frequently.

d. Removes irksome clerical work of typing and arranging catalogue cards.

e. Offers larger number of access points for a single record.

f. Offers faster search facilities.

Postgraduates need to be acquainted with a vast amount of materials available in the library for their learning and research requirements. Therefore, the skill to obtain information from online systems such as the online catalogues is essential (Lancaster, 1973). This study aims to find out whether foreign postgraduate students have the necessary skills to use the OPAC effectively.
A number of studies have indicated users have very poor understanding of OPAC use (Millsap et al., 1993; Cherry et al., 1994; Hildreth, 1997). Hildreth says ‘… users search more often by keyword, even though the search usually fails and they don’t understand it’. According to Ensor (1990), most users do not perform keyword searching and only half understood that subject searching using only the Library of Congress subject headings. Therefore, this study aims to investigate the various search approach used by foreign postgraduate students.

Other studies have indicated the need to change users’ attitudes towards OPAC (Chen, 1991). As such, this study aims to find out the attitude foreign postgraduate students have about the OPAC in the University of Malaya Library.

1. 8. Assumption of the Study

This study focuses on OPAC use by foreign postgraduate students in the University of Malaya Main Library. Some of the foreign postgraduate students who participated in the investigation came from developing countries. These students have little experience with the OPAC system or computers (including Internet). It is suspected that there is vast disparity in OPAC use skills among the foreign postgraduate students.

1. 9. Limitation of the Study

This study limits its scope to OPAC use and attitudes of foreign postgraduate students at the University of Malaya Library only. Foreign postgraduate students are chosen
because it is assumed that they need OPAC skills to efficiently search the catalogue for research information. It is assumed that most foreign postgraduate students having gone through tertiary level education could use a University library catalogue.

The study is confined to data collected for a period of one month. On the other hand only 60 foreign postgraduate students were chosen as the sample. This study also limits its data gathering through a structured questionnaire.

This study will only concentrate on the following issues about the OPAC.

a. Foreign postgraduate students’ knowledge of using OPAC.

b. Their comprehension and attitude towards OPAC.

c. Their ability and aptitudes towards OPAC use.

1. 10. Definitions

Access points: Entry points to information about library holdings on ‘an element of a record used to retrieve that record’ (Chen, 1991, p.13).

Bibliographic records: Information such as author, title, subject headings, publication information, call number, content notes, and physical description.

Boolean searching: ‘Principal Boolean operators are “AND” (intersection), “OR” (union), and “NOT” (difference). When combining search terms with Boolean operators, users, broaden or narrow the scope of search terms’ (Chen, 1991, p.13)
Information skills: Ability to select and retrieve information accurately, using various methods.

Library automation: Implementation of an automated library management system, which can be accessed through computer terminals and telecommunication connection.

Online: A situation, which describes a direct and immediate communication with a computer system.

Online searching: Bibliographic information database searching through a computer system.

Post-coordination: ‘The combination of natural language or controlled vocabulary terms at the time of retrieval, as opposed to pre-coordination of concepts in the indexing vocabulary’ (Harter, 1986, p.247)

Pre-coordinated system: A controlled vocabulary in which specific, complex concepts are themselves elements in the indexing vocabulary. For example, the term “database producer” pre-coordinates the concepts of databases and publisher (Harter, 1986, p. 247)
Search aids: Printed materials, brochures, or reference guides placed by the computer terminal to aid users in searching.

Searching behavior: Foreign postgraduates’ behaviour while looking information through the online catalogue

Searching errors: ‘Errors are defined as those that might occur while users type, enter search terms, use the system, interpret information, and record search results.

Search success: It occurred when information is retrieved more accurately and effectively.

Search term: Word or words entered into the computer to search for bibliographic records in a database.

Transaction log: some computer systems can automatically record searcher’s keystrokes during a search. The printed copy of a search executed demonstrates detailed interaction between the searcher and the computer.

1.11. Summary

OPACs have become a potential reference resource in all kinds of libraries. Patrons face some problems when they are searching information using the OPAC. This study will investigate the foreign postgraduate students’ OPAC using behavior at the
University of Malaya Library and will identify their attitudes about the system. This chapter provides a description about the Online Public Access Catalogue (OPAC) system, including its development. Objectives and research questions of the study were also discussed.