The use of information and communication technologies to disseminate information to users in public libraries: a case study of Nyanga, Brown's Farm and Crossroads public libraries.

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A research project submitted in partial fulfilment of the requirements for the degree of MAGISTER BIBLIOTHECOLOGIAE in the Department of Library and Information Science, University of the Western Cape

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## DECLARATION

I declare that The use of information and communication technologies to disseminate information to users in public libraries: a case study of Nyanga, Brown's Farm and Crossroads public libraries is my own work, that it has not been submitted for any other degree or examination in any other university, and that all the sources that I have used or quoted have been indicated and acknowledged as complete references.

## Samuel Sibongile Ncoyini

Date: 15 May 2006

Signed: .....



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And lastly, to God the Almighty for giving me the strength and knowledge to achieve my goals.



#### LIST OF ACRONYMS

CD-ROM: Compact Disc - Read -only Memory

ICT: Information and communication Technology

ILL: Interlibrary Loans

ILS: Integrated Library Systems

ISDN: Integrated Services Digital Network

ISP: Internet Service Provider

IT: Information Technology

LAN: Local Area Network

MAN: Metropolitan Area Network

MnSCU: Minnesota State Colleges and Universities

MPLIS: Mpumalanga Provincial Library and Information Service

NEPAD: New Partnership for Africa's Development

OPAC: Online Public Access Catalog

PALS: Project for Automated Library Services

PC: Personal Computer

WAN: Wide Area Network

WCAB: Western Cape Administration Board

WCBAB: Western Cape Bantu Administration Board

WWW: World Wide Web

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## CHAPTER 1 INTRODUCTION

## 1.1 Background of the study

Africa is a developing continent. The lack of developed infrastructure for Information and Communication Technology (ICT) is widening the gap between Africa and the developed world. In response to this under-development, Africa has adopted a renewal framework, the New Partnership for Africa's Development (NEPAD), which identifies ICT as central in the struggle to reduce poverty on the continent. ICT provide hope to overcome barriers of social and geographical isolation, increase access to information and education, and enable the poor to participate in the making of decisions that have an impact on their lives (South Africa, 2004: 9). With relation to South Africa, any discussion of ICT developments has to acknowledge that its economic and social history has created a divided and confused community (Darch & Underwood, 1999: 285). In some respects, the country has characteristics of a "first-world" culture, with a highly literate group of its population making use of a comprehensive system of telecommunications, information and consumer services. It has, also, a high proportion of its population that is barely literate, with rates of literacy varying from between 52 percent in metropolitan areas to 28 percent in rural areas.

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The study focuses on the public libraries of Nyanga, Philippi (Brown's Farm public library) and Crossroads. Nyanga is a residential area situated about 20km from Cape Town city centre exclusively set aside for Africans. According to a 1960 proclamation, the township is 427 hectares in size, bordered by Lansdowne Road in the south, Klipfontein Road in the north, NY 78 in the west and Mchobe Street in the east. Nyanga, therefore, lies between Guguletu and Crossroads. Nyanga is composed of the Old Location, Mau-mau, Zwelitsha, White City and Newlands (Sikwebu, 1984: 1). The development of Nyanga was proclaimed in 1946. In 1948, the first housing scheme of 208 houses was completed. From then until 1973, Nyanga was under the control of the Cape Divisional Council, when it was transferred to the Western Cape Bantu Administration Board (WCBAB), which later known as Western Cape Administration Board (WCAB). Mau-mau, Zwelitsha, Newlands, and White City were built in 1952, 1957, 1968 and 1981 respectively. For many years Nyanga has also contained squatter camps such as Brown's camp, Kraaifontein, Jakkalsvlei, Sakkiesdorp and KTC. All these

settlements, except the latter, had been cleared by the late 1970's. KTC re-emerged from time to time (Sikwebu, 1984: 1). According to Nyanga Community Profile (2003/2004), there are fifteen public primary and high schools which are under the supervision of Western Cape Education Department. Pupils from these schools use the Nyanga public library. The Nyanga Public Library was opened in 1998.

Philippi, where Brown's Farm public library is, lies 14km from Cape Town city centre. The area comprises about 4600 hectares with boundaries in the north of Lansdowne Road, in the south of Punt Road, in the west of Strandfontein Road and in East Vanguard Drive. According to Edwards (1984: 4) it is difficult to put together a cohesive picture of how this section of the community developed. What one can gather is that there was a protracted process of urbanization. The majority of workers came from country areas. Their parents and great grandparents initially came from other farming districts. Others came from areas such as the Swartland, Hottentotsholland, Karoo, Boland, Outenique and Eastern Cape. Many workers came in search of employment at the urban centre but found that there was nothing else they could do but work the farms and they thus settled in Philippi. Farmers specially brought in other workers. The origins of squatters in the area can in the main be found in the process of urbanization. A contributory factor to the existence of squatters is the housing crisis i.e. the shortage of houses for the lower income group. The Brown's Farm Public Library was opened in 2001.

In 1976 Divisional Council officials pointed out the Crossroads site to squatters. Fleeing from Divisional Council squatter camp demolitions elsewhere in the Peninsula, an informal community rapidly developed. In June 1976 Crossroads was proclaimed an emergency squatter camp under the Prevention of Illegal Squatting Act, and in September 1976 the total dwelling units numbered 2 871 (Hewatt ... et al, 1984: 27). From the onset Crossroads exhibited certain unique features. It has attracted considerable attention from local and international supporters. During times of harassment the residents have shown a strong unity and spirit of defiance. Working in conjunction with outside organizations, the residents have established a number of facilities, including schools, a development centre, a clinic that offers general nutritional, dental, social, and legal aid services and a large number of informal churches. The Crossroads public library was opened in 1992.

## 1.2 Statement of the problem

Information and communication technology (ICT) is foreign to a number of public libraries and those libraries that have a technology infrastructure in place suffer from an under-utilization of the technology owing to a shortage of skills (i.e. skills in management of information systems) that are critical to boost the library into the global information society (Mutula, 2000: 320). Public library staff attitudes generally and to ICT in particular, affect the service received by users, which can have far-reaching consequences (Spacey, Goulding & Murray, 2004: 270). According to Rowley (as cited in Spacey, Goulding & Murray, 2004: 270), the performance of both professional and non-professional staff determines to a large extent the quality of the customer experience and has a significant impact on the contribution that public libraries can make to their communities. Mutula (2005: 597) points that the digital divide in African libraries, in general, is caused by various obstacles, for example, access to ICTs, but also by low utilisation of existing ICT resources. Mutula (2005: 597) observed that libraries in Africa that had implemented ICTs generally experienced under-utilisation of the technology on account of the lack of sound information technology exploitation skills.

Today the most current and important information is accessed through technology, if staff develop or hold negative attitudes towards technology, the service offered may no longer meet the needs of users who expect to be offered the latest in technological advances. Communication is also made possible through the use of technology. To have the right information at the right time one needs to have an information and communication technology infrastructure. It is important that staff in public libraries have the necessary skills and positive attitude to use the technology offered to them. The problem upon which this study is based is to determine the use of information and communication technology to disseminate information to users by Nyanga, Brown's Farm and Crossroads public libraries.

#### 1.3 Research question

The research question of the study is, "how do Nyanga, Brown's Farm and Crossroads public librarians utilize information and communication technology to disseminate information to their users?"

## 1.4 Objectives of the study

The main objective of the study is to determine the use of ICTs in Nyanga, Brown's Farm and Crossroads public libraries and make recommendations towards effective use of ICT in the above-mentioned public libraries. The study will:

- Assess the use of ICT in Nyanga, Crossroads and Brown's Farm public libraries;
- Determine the impact of the Internet on the above-mentioned public libraries;
- Determine the extent to which ICT is managed within Nyanga, Brown's Farm and Crossroads public libraries; and
- Examine the available skill the above-mentioned public librarians have in dealing with ICT support issues.

## 1.5 Research methodology

As mentioned previously, the main objective of the study is to determine the use of ICTs in Nyanga, Brown's Farm and Crossroads public libraries by librarians. Therefore, this is applied research aimed at finding solutions to specific practical problems. More specifically it is evaluation research. In Library and Information Science evaluation research can be used to obtain objective and systematic evidence of success or failure of library projects and programs (Busha & Harter, 1980: 160). When a program or project is evaluated, its relative effectiveness in terms of standard, goals and objectives is determined. Thus evaluation research is an attempt to measure operations in terms of the goals of a library or the end results sought.

Many research techniques are used to evaluate library systems. A literature review research design is used, which involves analysing texts to investigate and gain a proper understanding of theories and debates set out in the literature. The application thereof is mainly presented in chapter 2. In this study, the major data collection instrument that will be used is a questionnaire. Questionnaires are the most suitable mechanism for obtaining information on a wide range of phenomena; and for providing data on values, facts, opinions, explanations and individual's behavioural relationship. For the purpose of this study, use of questionnaires is considered to be the best method for gathering facts about the perception of the use of information and communication technologies by Nyanga, Brown's Farm and Crossroads public libraries to disseminate information to their users.

Questionnaires usually ensure the anonymity of respondents and so give the confidence to provide freely and without fear of punishment.

Nachmias (1990: 294) defines a population as the aggregate of all cases that conform to some designated set of specifications. The population of the study will be Nyanga, Brown's Farm and Crossroads public librarians and public library users. A subset of the whole population which is actually investigated by a researcher and whose characteristics will be generalized to the entire population is called a sample. A sample of this study will be librarians-in-charge from each public library and users from the three public libraries.

## 1.6 Chapter outline

This research project consists of the following chapters:

- Chapter 1 introduces the research project. This chapter includes the statement of the problem, the research question, objectives of the study, the research methodology and summary of chapters.
- Chapter 2 surveys the application of information and communication technology in public libraries.
- Chapter 3 describes the research design and methodology.
- Chapter 4 presents and analyses the data gathered during the research process.
- Chapter 5 interprets the findings, draws some conclusions and give recommendations of the study.

# CHAPTER 2 APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN PUBLIC LIBRARIES

#### 2.1 Introduction

Information and Communication Technologies (ICT) are central to the changes taking place throughout the world. Digital media has revolutionised the information society and advances in ICTs have dramatically changed the information provision. Mutula (2000: 324) supports this view when he states that at the end of the twentieth century and the dawn of the twenty-first century, a new revolution has just begun to shape the context of human civilization, it is called the 'information revolution'. Basically boosted by the expansion of the industrial revolution and advance in technology, the information revolution is the result of a convergence between information and communication technologies. The background of the current information revolution can be traced to developments in the telecommunications arena during the last half of the nineteenth century and the first half of the twentieth century. These developments include the development of the telegraph and telephone, followed by the radio, television and electronic computers.

What is Information Technology (IT)?

Information Technology is a term used to describe the items of equipment (hardware) and computer programmes (software) that allow us to access, retrieve, store, organise, manipulate and present information by electronic means. It is the electronic display, processing and storage of information, but not necessarily the transmission of the information. IT carries strong historical associations with enterprise data processing and centralised computer services (South Africa, 2004: 15).

What is Communication Technology (CT)?

Communication Technology is a term used to describe telecommunications equipment through which information can be sought, sent and accessed – for example, phones, faxes, modems and computers (South Africa, 2004: 15).

What is Information and Communication Technology (ICT)?

Information and Communication Technology represent the convergence of information technology and communication technology. ICT is a combination of networks, hardware and software as well as the means of communication, collaboration and engagement that enable the processing, management and exchange of data, information and knowledge (South Africa, 2004: 15).

## 2.2 Application of ICTs in public libraries

The application of information technology products and systems to information services has introduced many new opportunities but also some new challenges. Library Association Information Services Group (1999: 28) argues that ICT is often difficult to deal with because of the hype and mystique surrounding the technology, the lack of experience of many people in using the systems and the complex nature of some of the software needed to access them. According to Barton (1996: 3) information technology is set to transform the way we work, provide services and communicate with our customers over the next decade. The technology is developing so rapidly that many of us are unable to clearly predict its future influence. Baker (2004: xi) points that it is not just the pervasiveness of ICT that challenges us personally and professionally; it is also the speed at which the technology is changing and developing.

Public libraries are challenged to provide greater information access and improved levels of service, while coping with the pace of technological change and ever-increasing budget pressure (Pasquinelli, 2003: 2). An increasing amount of information is being made available all the time. At the same time, both physical and digital subscription resources are increasing in volume and cost, while acquisition budgets are under pressure to keep up with the explosion of content.

Changes in society are prompting public libraries to develop services that are more in tune with the needs of individuals and communities. Among the strategies that public libraries need to employ to improve their quality are developing user-friendly information technologies. Johnson (1999: 30) argues that developing World Wide Web sites does not appear to call for significantly different skills from those we already possess, but the new environment calls for us to perform these tasks in different and more thorough ways, so that the users remain, if not dependent on us, at least aware of our unique contribution to meeting their needs. Raitt (1997: 204) claims that the core services of public libraries across the land are very similar. The standards and availability of these services may differ, but their nature does not. The same is not true of information technology

developments, which have evolved across a shorter time frame and in a much less even way. CD-ROM and other information technologies do bring change to the pattern and segmentation of library use. According to Library Association Information Services Group (1999: 29), there are a number of specific ways in which a public library service should extend its ICT work. It is said that, an expanded range of information can be provided, and its availability be extended by:

- creating a CD-ROM network to all service points and providing a wide range of titles;
- providing Internet access to the public in order to give users access to more local,
   national and international information sources;
- increasing the coverage of council and local information provision in ICT formats, for example through networks used for issue and cataloguing systems to branch libraries;
- taking part in local initiatives involving the development and exploitation of information provided in electronic form;
- computerizing relevant indexes and catalogues to give improved access to information collections and services;
- exploring how private communications providers such as cable companies could offer access to information services;
- offering services in the libraries in conjunction with commercial organizations;
- providing access for the business community to relevant database such as those covering market research, legislation and careers information;
- being a local ICT centre which supports lifelong learning, providing access to hardware, software and networks and developing and being aware of partnerships with higher education institutions such as e-Lib and metropolitan area networks (MANs) (Library Association Information Services Group, 1999:29).

## 2.3 The impact of ICTs on public library staff

When technology was introduced into libraries a major justification was that it would save money by reducing the number of staff required or, at least, allowing the library to cope with increasing demands without the need for extra people. According to Lancaster and Sandore (1997: 1) there is little evidence that ICT has reduced staff size. The staffs of the larger libraries have been expanded by the addition of people specifically involved in technological applications. They further argue that in the early days, it was often thought

that such appointments would be temporary; once the library was automated, the need for those people would disappear. Instead these temporary appointments have become permanent and the proportion of the staff dealing primarily with the application of technology has increased steadily in many libraries. The rapid changes that occur in ICT make it impractical for all staff to keep up with developments. The group (Library Association Information Services Group 1999: 31) suggests that it is advisable to have suitably trained and experienced staff in each authority specifically responsible for:

- · Planning and managing ICT developments
- · Operational management of large ICT systems
- Training others in ICT system use
- Advice and guidance on selection of ICT software and hardware.

It is advisable that all staff supporting information work need training in ICT systems. Libraries should develop plans for establishing a skills base in ICT and should provide training including, where necessary, longer-term education. Plans should include provision for a programme of continuous basic ICT training covering operation of systems currently in use. Distance learning, self-instruction and manufacturers' or other commercial courses may often be appropriate (Library Association Information Services Group 1999: 31).

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Garcha and Buttlar (1996: 32) surveyed the extent of library automation in Ghana, Kenya and Nigeria, they found that the problem faced by a majority of the public libraries in each of the three countries is the lack of training in librarianship, particularly in the field of automation of libraries and the use of computers. According to Spacey, Goulding & Murray 2003: 63) the effects of automation on library staff have been a focus of research for the last 20 years and are relevant in the current discussion of the effects of ICTs on the lives of public library staff. The introduction of automated library systems was a major point in the working lives of library staff since it involved learning new technologies, new processes and procedures.

## 2.4 Library Automation

It was during the early 1970s when libraries began to adopt software applications to allow them to perform specific functions more efficiently, but according to Mutula (2004: 281) library automation activities started during the 1950s and 1960s in the US and the UK respectively. During that period, library systems were developed locally on mainframe computers of parent organizations using local programming language expertise. According to Pasquinelli (2003: 1), the software applications were frequently developed by the university or research institutions with some cooperation from commercial software and hardware firms. In time, these systems became more widespread and the benefits more evident. The next phase of library automation combined several library activities into one integrated system, allowing librarians to perform almost all their functions online. This produced the turnkey systems commonly known as Integrated Library Systems (ILS), discussed in the next section, that subsequently dominated library management and service functions. The traditional ILS products commonly include modules that perform:

- Acquisitions: tracking the purchase of materials through ordering, claiming, receiving, invoicing, and processing.
- Cataloguing: creating catalog records.
- Circulation: allowing librarians to check materials in and out, place renewals or holds, and enter payments.
- Online Public Access Catalog (OPAC): an electronic record of holding, bibliographic, and item information,
- Serials: automating ordering, receipt, routing, and renewals of all serial subscriptions.

According to Cohn, ...et al. (2002: xvii), during the 1990s public library automation underwent a transformation that reflected changing definitions of library service and access to resources. The rapid technological change forced a comprehensive reexamination of what automating the public library really meant – not just for libraries but for the library user as well. The purpose and scope of the library's automated, integrated system was broadened to do more than just computerize manual or paper-based routines. Systems had to connect through the local library or network of libraries into systems of other vendors, far-flung networks, full-content databases, and, the Internet. Cohn, ...et al. (2002: xvii) believe that, 'automating the library' no longer refers only to computerizing operations in a discrete, physical place. It has assumed a wider frame of reference – namely that of enabling the library user to reach beyond what is merely local to information and knowledge base that is truly global and interconnected.

Library automation systems, and the catalogues and various indexes they contain, form the basis of a library network (Saarti, 2003: 25). These systems permit many different libraries and patrons to access and use the materials held in the library. The reasons for automation found by Chisenga (2004:10) in his survey on the status and use of ICTs in African public libraries were: "to enhance administrative efficiency and effectiveness through office automation, enhancement of library service productivity and effectiveness through automated procurement and processing of information resources, and provision of up-to-date on-line proprietary and web-based services'. According to Mutula (2004: 285), following the first multi-party elections of South Africa in 1994 that ushered in a democratically elected government, the country opened up its doors to the international community. Consequently many public libraries in Eastern and Southern Africa were able to gain access to the rich automation market in South Africa. The library automation environment in Africa is improving but there are several challenges to be addressed. For example, although the Internet is becoming widespread, its use is dominated with e-mail use, small in-house databases or use of donated CD-ROM databases. In addition, in some institutions where the Internet is available, restrictions are put in place to restrict its use on account of cost, policy, etc. (Mutula, 2004: 287).

## 2.5 Integrated library systems

An "integrated" library system is an automated system in which all of the functional modules share a common bibliographic database (Lopata, 1995). The integrated library system is superior in several ways to one that is not integrated, advantages are that the duplication of effort to create and maintain multiple copies of bibliographic records is eliminated in an integrated system; opportunities for errors are reduced when records are entered only once, and changes are automatically propagated throughout the system; and library staff and patrons can have access to all pertinent information at one location. Some of the examples of integrated library systems that are widely used by South African public libraries are: PALS, BOOK Plus, URICA and PROLIB. A study conducted by Chisenga (2004:95) shows that Mpumalanga Provincial Library and Information Service (MPLIS) and Govan Mbeki Municipal Libraries use the PALS library management system. He also found that in eThekwini Municipal Libraries there are two systems in use. Fifty-seven of the automated libraries use URICA while the rest use PALS. Also found by Chisenga was that the City of Johannesburg Library and Information Services use URICA. PROLIB is used by Free State Provincial Library Service. Western Cape

Provincial Library Services use both PALS and BOOK Plus. Following is a brief description of the four integrated library systems:

## 2.5.1 PALS Library Management System

PALS is an acronym for Project for Automated Library Services. PALS is a complete library automation system offering public access to catalogs (OPAC), automated acquisition and circulation of materials, cataloguing of materials, booking, serials management and serials binding. Key features of the PALS system are its interlibrary loan feature, which allows users to easily obtain materials from other libraries, and the ability to provide management statistics on a wide range of library operations (MnSCU/PALS, 2004).

#### 2.5.2 URICA

URICA is a sophisticated Library Management and Information System that has been developed, enhanced and updated over a period of some 20 years. It provides in-depth functionality for all requirements of the Library community and also incorporates all new and emerging technologies for usage with the Internet, web browsers, document storage and delivery and z39.50 inter-connectivity. URICA modules include: cataloguing, monograph acquisitions, serials control (periodicals), circulation control, short loans and reserve collection, interlibrary loans (ILL), OPAC (Online Public Access Catalogue), self-service facility, community information, document storage and delivery, z39.50, and Web products (UKS Library Systems).

#### 2.5.3 PROLIB

Provincial Library System (PROLIB) is an integrated, professional software that makes it possible to automate various library procedures, such as: acquisition, cataloguing, searching, circulation, managing check-out and check-in functions, as well as users and collections. The library's own catalogs are made available on the Internet. It is very flexible and user-friendly (Wozniak, 2000).

#### 2.5.4 BOOK Plus

BOOK Plus is a library management system that is effectively implemented in public, corporate, academic, and departmental libraries. It is designed to allow each user the ability to tailor the software to suit their own requirements and to make changes at any time. It provides management information such as financial data, borrowing statistics, ordering information, and budgets in the format and schedules required by the user. Some of the modules and key features of BOOK Plus are: acquisitions, cataloguing, circulation, community information management, holds management, inventory control, OPAC with Web interface, report creation module, reversed material management, serials, Z39.50 server and client interface, etc. (Gaec Computer Corporation, 2005).

## 2.6 Smart Cape Access Project

The Smart Cape Access Project was initiated by the City of Cape Town through their Information Service Directorate. It was launched in July 2002 as a pilot project at six libraries: Westfleur, Brooklyn, Delft, Grassy Park, Guguletu and Lwandle. The following year Smart Cape won the Bill and Melinda Gates Foundation's \$1-million Access to Learning award, which has contributed to extending the project. The aim was that by the end of 2005, people will be able to connect to the Internet at all 99 of the city's libraries. It was envisaged that each library will have five computers installed, which means there will be 500 access stations around Cape Town.

The goal of the Smart Cape Access Project is to ensure that all citizens of Cape Town have access to basic information and communication technologies. Based in public libraries, this public access model offers free use of computer technology through existing facilities and resources. It allows technical management, including maintenance, of the computers from a remote facility reducing the amount of time librarians spent on management (Valentine, 2004).

According to Valentine (2004: 5), free Internet access is a critical factor in the project's success. For people who do not have access to the Internet at work or cannot afford it at home, the options are limited. There are some Internet Cafes in the city, as well as a handful of community-based telecentres, but none of these offers free connectivity to the Web or e-mail accounts, as do the Smart Cape sites. Smart Cape Access Project Manager Mymoena Ismael stresses that:

"If the City of Cape Town is to realize its vision of making information technology available to its citizens and improving IT literacy and communication between government and the public, Internet access must be offered without charge." The Smart Cape computers have a word processor; spreadsheet; web browser; e-mail; presentations tool; ICQ & Internet Relay Chat; and Adobe Acrobat Reader. The former Executive Mayor of Cape Town, NomaIndia Mfeketo as quoted in Valentine (2004: 1), states that:

"The Smart Cape Access Project provides an opportunity for poor children in particular to access the same information and technology that is available to their more privileged friends ... By making cutting-edge technology available to everyone, we move closer to social justice and equal opportunity for all."



#### CHAPTER 3

#### METHODOLOGY

## 3.1 Research problem and question reinstated

As stated in chapter I, the research problem of this research is to determine how Nyanga, Brown's Farm and Crossroads public libraries use information and communication technology to disseminate information to users. The background to the problem was also covered in chapter I to give the reader background to the users of the three places.

## 3.1.1 Research question

As stated in chapter 1, the problem statement leads to the following question:

"How do Nyanga, Brown's Farm and Crossroads public librarians utilize information and communication technology to disseminate information to their users?"

The problem statement also leads to the following objectives as identified in chapter 1:

- To assess the use of ICT in Nyanga, Crossroads and Brown's Farm public libraries;
- □ To determine the impact of the Internet on the above-mentioned public libraries;
- To determine the extent to which ICT is managed within Nyanga, Brown's Farm and Crossroads public libraries. IVERSITY of the
- To examine the available skill the above-mentioned public librarians have in dealing with ICT support issues; and
- To make recommendations towards effective use of ICT in Nyanga, Brown's Farm and Crossroads public libraries.

#### 3.2 Research site

The respondents in this survey were chosen as follows:

- □ The three librarians-in-charge
- Eighteen users in the public libraries

These were selected randomly and by observing them while using the library. The researcher chose the three public libraries for the following reasons:

Nyanga, Philippi and Crossroads are previously disadvantaged communities and as a result ICT is new to their public libraries. The researcher once lived in these communities and used the public libraries, and now wants to find out how the information is disseminated to the users through the use of ICT.

The researcher chose to work with frequent users of the public library to focus on responses to the ICT usage.

## 3.3 Methodology

This was a case study needed to gather in-depth data on the use of ICT to disseminate information to public library users. The data was collected by means of questionnaires and observation. As stated in chapter 1, for the purpose of this study, use of questionnaires was considered to be the best method for gathering facts about the perception of the use of ICT by the three public libraries to disseminate information to their users. Twenty-one participants (3 librarians-in-charge and 18 public library users) completed the questionnaires in the presence of the researcher. The importance of the researcher's presence was that he can probe for more information and clarify some ICT terms that were not clear to the participants.

The research process was as follows:

- Firstly, early in September 2005, the three librarians-in-charge of the three public libraries were consulted for permission to conduct a survey. Permission was granted later in September.
- Secondly, on February 2006, the researcher visited the three librarians-in-charge and asked them to complete the questionnaires.
- Thirdly, on March 2006, the researcher visited the three public libraries to approach the users to complete the questionnaires.

The survey data was analysed using the Statistical Package for the Social Sciences (SPSS).

#### 3.3.1 Questionnaires

Two different questionnaires were designed, one for librarians-in-charge and one for users. The questionnaire for librarians-in-charge has five sections:

Section 1: ICT facilities. This section requested details of current library hardware and software infrastructure, including the number and specifications of computer servers, personal computers, printers and application software in use.

- Section 2: Library automation. This section requested the library service's use of ICTs for the automation of various library functions and information services, including which functions or activities that are automated and name of the library automation system being used.
- Section 3: Internet connectivity. This section requested the type of Internet connection, details of the library's Website, and provision of Internet/Web-based services to library users.
- Section 4: Staff skills. This section requested information on the availability of technical support for ICT facilities in the library, library staff and their ability to deal with minor and day-to-day ICT-related problems.
- Section 5: Barriers to the use of ICTs. This section requested information on what hinders the implementation and use of ICTs in public libraries and their impact.

The survey questionnaire for users requested information on the following:

- Occupation: This part requested information on whether the users were full-time employed, unemployed, student, etc.
- Library usage: The aim of this part was to find out if respondents were frequent users of the library, which facilities they use, and the main purpose for using the library.
- Use of computer facilities: Reason for using computer facilities, application most used and the reason why, interest in training on how to use computer facilities, average use of computer facilities, access to computer facilities and the value of computer facilities to the users.

#### 3.4 Respondents

The researcher observed the survey respondents while they were using the library. Some respondents were using the computers and some were studying while others were browsing the books on the shelves. The researcher decided to select from all the different kinds of users (those who were using computers, those who were studying and those who were browsing books on the shelves) in the library. Most of the survey respondents were young adults (approximately 70%) while a few were teenagers (approximately 30%).

## 3.5 Conclusion

The following chapter will analyse and summarise the data gathered from the two questionnaires.



# CHAPTER 4 PRESENTATION OF DATA

4.1 Introduction: A survey questionnaire seeking data on the use of information and communication technologies was developed and distributed to Nyanga, Crossroads and Brown's Farm public libraries. The results and discussion presented below are based on an analysis of the responses to the questionnaires received at the three public libraries. Section A will represent the results from the 3 Principal Librarians while section B represents the results from the public library users.

#### SECTION A: Staff

#### Computer hardware

Respondents were asked to indicate the number of computer hardware (servers, personal computes and printers) available in their libraries. Table 1 provides a summary of the responses. Thus, all the respondents didn't have computer servers in their libraries; servers were housed at head office, which is City of Cape Town Libraries. In all the public libraries surveyed, staff were using 5 PCs of which 1 was connected to the Internet and which was also used for word processing, while the remaining 4 PCs were used to perform integrated library systems, i.e. circulation, online catalogue, interlibrary loans and serials control.

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Table 1: Computer hardware

Public library	Computer servers	Personal computers (PC)	Laser Printers	Ink Jet Printers
Brown's Farm	0	11	1	0
Crossroads	0	9	1	0
Nyanga	0	10	1	0

## Software applications

Respondents were asked to indicate the software applications that were available for staff and general library users. With regard to office application software, all three public libraries surveyed have Open Office installed on their computers for both staff and library users. Open Office is software used for word processing. Other software applications installed on all the public library's computers were Microsoft Internet Explorer, Smart Cape Webmail and Adobe Acrobat Reader for both staff and library users.

## Library automation

Respondents were asked to indicate whether their library was automated. All the libraries were automated and had an integrated system. The library automation system used in the surveyed public libraries was Book Plus. Brown's Farm public library started using an automated library system in 2001, Nyanga in 1998, while the Crossroads public library could not remember. Respondents have indicated that their services were partly automated as they were not having the acquisitions and cataloguing services in their systems. The reason was that those services were centralized and done at head office. Their automated applications were circulation, online catalogue, inter library loans and serials control.

#### Internet usage

Internet connectivity, which was provided by Smart Cape, was available in all the libraries surveyed. Respondents were asked to indicate the extent of their use of Internet facilities. All the respondents indicated that e-mail and WWW were used daily, while there was only 1 respondent using Newsgroups and Listservs. All the public libraries surveyed were using a shared Internet server. The Internet access was controlled in all the public libraries surveyed due to the fear of access to pornographic material. All the surveyed libraries did not have their own websites. There is a main website for all the city libraries which offers the following information services:

- Library opening times
- Access to PALS, but the surveyed public libraries were using Book Plus which was not in the website.
- Events and announcements

#### Staff skills

Respondents were asked to rate library staff and their ability to deal with minor and day-to-day ICT related problems (see Table 2). According to the respondents, they were only trained for the Smart Cape Access Project. They stated that the 3-day training programme was very poor and the kinds of problems they experience from day-to-day were not covered in the training programme.

Table 2: Staff skills rates

Public Library	Excellent	Good	Reasonable	Poor
Brown's Farm			V	
Crossroads		√.		
Nyanga		√		

Respondents were also asked to indicate the kinds of ICT support issues that their library staff has to deal with on a day-to-day basis. A summary of their responses is presented in Table 3. One respondent had problems relating to hardware. Brown's Farm and Nyanga public libraries have indicated that they had to deal with network problems, and while the researcher was conducting research at Brown's Farm public library the Internet was offline. The respondents indicated that it was a problem that they have to deal with on a daily basis. In cases like that they said that they usually call their head offices where the IT specialists are located. The staff had also to deal with the printing problems. None of the respondents indicated that they had software problems.

	Brown's Farm	Crossroads	Nyanga
Hardware problems		<b>V</b>	10, 300
Network access problems	√	✓	
Printing problems			√
Software problems	IINIVERSITY of the		

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## Barriers to the usage of ICTs

Other

Training and support of other staff

Table 3: ICT support issues

The public libraries surveyed were asked to indicate the impact that the barriers listed in Table 4 had on their use or implementation of ICTs. The responses show that inadequate existing ICT resources, lack of ICT qualified staff, difficult to recruit ICT qualified staff, lack of updated ICT strategy and difficulties in training library staff in appropriate ICT skills has the greatest impact on the use and implementation of ICTs in public libraries. Skill levels of library users, reluctance among staff to use ICTs and lack of commitment by institutional management also had a significant impact. These barriers are presented in Table 4.

Table 4: Barriers to ICTs arranged according to scores on 'large impact'

Barriers	Number	
Inadequacies of existing ICT resources	2	
Skill levels of library users	1	
Lack of ICT qualified staff in the library	2	
Difficult to recruit or retain ICT qualified staff	2	
Reluctance among staff to use ICTs	1	
Library lacks updated ICT strategy	2	
Lack of commitment by institutional management	1	
Difficulties in training library staff in appropriate ICT skills	3	

This is what the respondents had to say in relation to the use of ICTs in their public library systems:

"Users are most interested in computer usage than in books. ICT is important because it give most current information than printed material."

"Information and communication technologies play a vital role in disseminating information in our libraries. Whatever information we need, especially latest information, ICT provides it. The staff also gained a lot of skills through ICT. Our users also benefit a lot in terms of searching information and computer skills."

"As information providers, it has become much easier for us to access information for the users, since most of what is available is updated and current information."

#### SECTION B: Users

## Occupation of respondents

Survey respondents were asked to indicate their occupation (Table 5). A large proportion of respondents were students (61.1%) compared with 16.7% unemployed and 11.1% self-employed. The high percentage of student respondents corresponds with the fact that the majority of users at these public libraries are students studying at tertiary institutions.

Table 5: Occupation

	Frequency	Percent	
Full-time employed	1	5.6	
Part-time employed	1	5.6	
Self-employed	2	11.1	
Unemployed	3	16.7	
Student	11	61.1	
Total	18	100.0	

## Library use

This section of the survey aimed to discover how often respondents use the library. It was discovered that 72.2% (as shown in Table 6) of respondents covered in the survey were using the library two or three times a week while 16% use the library once a week.

Table 6: Library use

	Frequency	Percent	
Once a month	1	5.6	
Once a week	3	16.7	
Two or three times a week	13	72.2	
Daily	1	5.6	
Total	18	100.0	

## Use of library facilities

Survey respondents were asked to indicate which library facilities they were using in the libraries. Results in Table 7 indicate a high proportion of book lending (88.9%) and the use of reference books, which includes newspapers (83.3%).

Table 7: Use of library facilities

Facility		Frequency	Percent	
Books	No	2	11.1	
	Yes	16	88.9	
Audio Cassettes & Music CDs	No	18	of the 100.0	
Video Cassettes	No W	E TERN CA	APE 100.0	
CD-ROMs	No	18	100.0	
Reference Books	No	3	16.7	
	Yes	15	83.3	
	Total	18	100.0	

## · Respondent's main purpose for using the library

Respondents were asked to indicate why they use the library. Most of the respondents indicated that they use the library to get information and mainly to study and borrow books. Some of the respondents indicated that the library assists them with their assignments by searching and locating information for them. Access to computers was also mentioned as the main purpose for using the library.

## Use of computer facilities

Table 8 indicates that 61.1% of the respondents were using the library computer facilities while 39.9% indicated that they were not using the computer facilities.

Table 8: Do you use any of the computer facilities in the library?

	Frequency	Percent	
No	7	38.9	
No Yes	11	61.1	
Total	18	100.0	

## Reason for using computer facilities

Survey respondents were asked to indicate the reasons for using the computer facilities ranging from word processing; spreadsheets; open learning courses; CD-ROMs; e-mail and Internet. The researcher has discovered that most of the respondents were using the Internet (61%) and e-mail (50%) while a few indicated that they use the computer facilities for word processing (33%).

## Application

The aim of this question was to find out which application was used often by the respondents and to determine the main reason for using the application. Table 9 indicates that 44.4 % of respondents were using the Internet while Table 10 indicates that the main reason for using the Internet was for independent learning and research (38.9%), as well as for supporting the course of study (11.1%) and for leisure / general enjoyment (11.1%).

Table 9: Which application you use most?

	Frequency	Percent
Did not answer	7	38.9
Word processing	2	11.1
E-mail	1	5.6
Internet	8	44.4
Total	18	100.0

Table 10: Main reason for using the facility

	Frequency	Percent
Did not answer	7	38.9
To support course of study	2	11.1
Leisure/general enjoyment	2	11.1
Independent learning / research	7	38.9
Total	18	100.0

Table 11, below, indicates that 61.1% of the respondents covered in the survey indicated that they were not using the computer facilities in the library. Trying to find out why, they were asked to indicate why they were not using them. The researcher discovered that most of the respondents did not know how to use the computer facilities (16.7%) and another 16.7% had access elsewhere while 5.6% did not know that computer facilities were available in the library.

Table 11: Why you do not use the computer facilities?

	Frequency	Percent
Did not answer	11	61.1
Did not know they were there	1	5.6
Don't know how to	3	16.7
Have access elsewhere	3	16.7
Total	18	100.0

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#### Training

Survey respondents were asked to indicate if they would be interested in training on how to use the computer facilities on a scale of yes or no and also to indicate what would they like to be trained in. Table 12 below indicates that 88.9% of the respondents would like to be trained on how to use the computers. Respondents indicated that would like to be trained for information searching and word processing while other respondents indicated that they were passionate about computers and it would be such a good move for libraries to offer training on them.

Table 12: Interest in training how to use the computer facilities

	Frequency	Percent
Did not answer	1	5.6
No	Ĭ	5.6
Yes	16	88.9
Total	18	100.0

#### Respondent's average use of computer facilities

Respondents were asked to indicate how often they use computer facilities. Table 13 below indicates that 44.4% of the respondents were using the computer facilities once or twice a week, 11.1% daily and 11.1% once every two weeks.

Table 13: How often do you use the computer facilities?

	Frequency	Percent
Did not answer	6	33.3
Daily	2	11.1
Once or twice a week	8	44.4
Once every two weeks	2	11,1
Total	18	100.0

#### Access to library computer facilities

Survey respondents were asked to indicate whether the library was their only access to computer facilities and were also asked to indicate whether they have access to computer facilities in the library. 55.6% (Table 14) indicated that the library was their only access to computer facilities while 33.3% indicated that library was not their only access to computers, meaning that they have access elsewhere, some in school and others at work, etc. In relation to whether they have access to computers in the library, 72.2% (Table 15) of the survey respondents indicated that they have access while 16.6% indicated that they don't have access.

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On the question of value of the computer facilities to them, respondents indicated that: computer facilities broaden their mental abilities; help to retrieve more information from the Internet; Internet offers them current information; the availability of computer facilities in the public libraries save their time because they used to go to Internet Cafés in town and facilitate their work and acquire all the information that they need.

Survey respondents were also asked to indicate how would the withdrawal of computer facilities affect them. Some indicated that it could affect them in terms of acquiring current information from the Internet while some indicated that they would not be able to do their research; some indicated that withdrawal of computer facilities would be cost effective to them because they will have to have to travel long distances to find computers and also pay in the Internet Cafés and their daily business activities would be affected. Their assignments and projects would also be affected.

Table 14: Is the library your only access to computer facilities?

	Frequency	Percent
Did not answer	2	11.1
No	6	33.3
No Yes	10	56.6
Total	18	100.0

Table 15: Do you have access to computers in the library?

	Frequency	Percent
Did not answer	2	11.1
No	3	16.7
	13	72.2
Yes Total	18	100.0



## CHAPTER 5 CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion

In chapter 1, the following objectives were identified:

- Assess the use of ICT in Nyanga, Crossroads and Brown's Farm public libraries. The researcher has realised that the use of ICTs in these public libraries is increasing and responding to changes in technology. The trends regarding the use of ICT in Brown's Farm, Crossroads and Nyanga public libraries show that public libraries are adopting modern information and communication technologies, including the use of the Internet and e-mail. It has been revealed that the use of ICT in public libraries plays a vital role in the dissemination of the latest information to the users.
- Determine the impact of the Internet on the above-mentioned public libraries. The
  researcher has realised that the impact of the Internet has been substantial, which
  was to be expected. Public libraries are establishing Internet connectivity and
  providing computers for Internet access by library users.
- Determine the extent to which ICT is managed within Nyanga, Crossroads and Brown's Farm public libraries. The researcher has realised that the provision of library and information services via the Web has not yet taken place. The Website that is managed by their head office provides the type of information that is generally found in public library brochures.
- Examine the available skill the above-mentioned public librarians have in dealing with ICT support issues. The researcher has realised that the public library staff lack the skill in terms of dealing with ICT support issues like network and printing problems. They had to call their head offices where the IT specialists are located.

The five broad questions to librarians and three broad questions to users were answered by the findings. However, it cannot be stated that these are the definite answers to the questions as the researcher worked only with three members of staff and eighteen users.

#### 5.2 Recommendations

The researcher would like to make the following recommendations towards effective use of ICT on the surveyed public libraries:

- The librarians and users of Brown's Farm, Crossroads and Nyanga public libraries still need to be assisted and guided in their effective use of ICTs. There is a need for user training programmes whereby users will be trained on searching information on the Internet and the online catalogue. Some users still need the basic introduction on using computers. There is a need to assist these public libraries with the development of formal ICT strategies. Without those strategies most of the public libraries will continue using ICT in an informal manner, which in the long run will not be cost-effective. Library Association Information Services Group (1999: 31) advised that all staff supporting information work need training in ICT systems. Libraries should develop plans for establishing a skills base in ICT and should provide training including, where necessary, longer-term education. Plans should include provision for a programme of continuous basic ICT training covering operation of systems currently in use. Distance learning, self-instruction and manufacturers' or other commercial courses may often be appropriate.
- Presently, the website for all the city libraries refers to the following information services: library opening times; access to PALS, but the surveyed public libraries were using Book Plus which was not in the website; and events and announcements. There is a need to make innovative use of the Web in the provision of public library services to users. This can be possible by equipping staff in public libraries with appropriate skills relating to digital information resource management and the provision of Internet-based library and information services.
- Local governments should provide sufficient ICT infrastructure to public library services if they are to play an active role in the provision of access to global information resources in their communities.
- Lastly, recommendation for further research. A thorough research project should be launched to include a bigger sample of the users and staff of the three public libraries.

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## Appendix 1

## QUESTIONNAIRE Staff

The use of information and communication technologies to disseminate information to the users in public libraries: a case study of Nyanga, Brown's Farm and Crossroads public libraries

This survey is being carried out in connection with research I am undertaking to determine the use of Information and Communication Technologies in public libraries.

## Computer Hardware

1. For each of the following indicate the number of computer equipment and printers available in the library.

	Hardware facilities	No. Available
Computer Servers	<ul> <li>How many computer servers in the library?</li> </ul>	
SELECT DE 100	<ul> <li>Used by staff and connected to the Internet</li> </ul>	
Workstations	· Used by staff and not connected to the Internet	
(Personal Computers)	<ul> <li>Used by library users and are connected to the Internet</li> </ul>	
	Used by library users and not connected to the Internet	
Laser Printers	<ul> <li>How many are used by staff?</li> </ul>	
	How many are used by library users?	
Ink Jet Printers	<ul> <li>How many are used by staff?</li> </ul>	
	<ul> <li>How many are used by library users?</li> </ul>	

#### . Software Applications

2. What software is available for staff and general library users?

#### Pleases note:

- Microsoft Office applications: Word, Excel, Access, PowerPoint, FrontPage and Publisher.
- · WordPerfect Office applications: WordPerfect, Quattro Pro and Presentations.
- Lotus SmartSuite: Lotus Word Pro, Lotus 1-2-3, Lotus Freelance Graphics, Lotus approach, Lotus SmartCentre, Lotus Organize, and Lotus FastSite.

	Staff		Users	
Software Package	Yes	No	Yes	No
Office Applications				
<ul> <li>Microsoft Office applications</li> </ul>				
WordPerfect Office applications				
Web Browsers				
Internet Explorer				
Intranet				
E-mail Clients				
Outlook				
GroupWise				
PDF Document Viewers				
Adobe Acrobat Reader				

Library	<b>Automation</b>
True to the true	* ** * CONTRACT CONT

3.	Is your	library	automated?
		The second secon	

Yes	
No	



4. If automated, is the library using an integrated system for all the functions or standalone systems?

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Integrated system	
Stand-alone system(s)	
Both integrated and stand-alone system(s)	

5. Please give the name(s) of the system(s) being used: (i.e. PALS or URICA)	
	:
6. In which year did the library start using an automated library system?	
***************************************	

7. Which of the following applications are automated? (Select all that apply)

Application	Yes	No
Acquisitions		110
Cataloguing		-
Circulation		_
Online Catalogue		
Inter Library Loans		
Serials Control		-
Other (Please specify)		

## Internet Usage

8. If you use the Internet, please indicate, in the table below, the extent of your use of these facilities, using the following scale:

1	Daily	4	1 or 2 times a month
2	9 2 9 9	1000	1 of 2 times a month
4	2 or 3 times a week	5	Monthly
2	117 1 - 1	-	[ 시 : [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [
3	Weekly	6	Other (please specify where applicable)

E-mail	Yes	No	Extent of use
WWW			
Newsgroups	1 , 11 11 11	W III III III	
Discussion lists e.g. Listserv	UNIVE	RSITY of th	le l
Other (please specify)	WEST	RN CAP	S

9. Does the library use?

	Yes	No
Its own Internet server		
Shared Internet server		

10. Are there any controls on Internet access? (e.g. limited numbers of users, barred Web sites, banned uses, etc)

Yes	
No	

ebsite?
and if no why is that you don't have a website?
(2d 2-7-1-2-7-1-3-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7
formation or services is/are available on the library
s for using library resources
rary skills development
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and their ability to deal with minor and day-to-day
f

## Barriers to Usage of ICTs

15. What impact do the following barriers have on the library's usage of ICT in general?

Barriers to ICT	None	Some	Large	Don't Know
Inadequacies of existing ICT resources				
Lack of budget for ICT				
Skill levels of library users				
Lack of ICT qualified staff in the library				
Difficult to recruit or retain ICT qualified staff				
Reluctance among staff to use ICTs				
Library lacks updated ICT strategy				
Lack of commitment by institutional management				
Difficulties in training library staff in appropriate ICT skills				

#### COMMENTS

Please provide any additional and relevant comments/information relati	ion to the use of
ICTs in you public library system.	
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***************************************	

Thank you very much for taking time to complete this questionnaire.

Samuel Ncoyini, Masters Student, Department of Library and Information Science, University of the Western Cape, Private Bag X17, Bellville, 7535. Cell: 0736193272 E-mail: <a href="mailto:sncoyini@uwc.ac.za">sncoyini@uwc.ac.za</a>

## Appendix 2

## QUESTIONNAIRE Users

The use of information and communication technologies to disseminate information to the users in public libraries: a case study of Nyanga, Brown's Farm and Crossroads public libraries

This survey is being carried out in connection with research I am undertaking to determine the use of Information and Communication Technologies in public libraries.

1.	Occupation	1:

Full-time employed	
Part-time employed	
Self-employed	
Unemployed	
Student	
Retired	
Visitor	
Other (please specify)	

2. Do you use the library, on average: (please tick one)

Once a month			
Once every two weeks			
Once a week		111 111 111	Ш
Two or three times a week	TINITY	PRITY	E 41.
Daily			1: 111

3. Which library facilities do you use? (Please tick all that apply)

Books (lending)	
Audio cassettes & music CDs	
Video cassettes	
CD-Roms (lending)	
Reference books/information (e.g. newspapers)	

Othe	r (please specify)	,,
	hat is the main purpose for you to use the library? Why do you use	
****		********
	***************************************	

5. Do you use any of the computer facilit	ies in the library (other than the library
catalogue)?	200 mm
Yes	
No	
6. If you answered YES to question 5, wh	nat do (or have) you used the computer facilitie
for? (Please tick all that applies).	
Word processing	
Spreadsheets	
Open learning courses	
CD-ROMs	
E-mail	
Internet	
Other (please specify)	
Word processing	
Spreadsheets	
Open learning courses	
CD-ROMs	
E-mail	
Internet	
Other (please specify)(b). What is your main reason for using the	
To support course of study	
Leisure/general enjoyment	<del></del>
Independent learning/research	<del></del>
Other (please specify)	
8. If you answered NO to question 5 about could you please say why you do not use	at use of the computer facilities in the library, them:
Didn't know they were there	
No interest/use	
Don't know how to	
Have access elsewhere	
No-one to help/reluctant to ask for help	

Other (please specify) .....

9. Would you be interested in training on how to use the computer facilities?
Yes
No
If yes, what would you like training in?
***************************************
10. How often do you use the computer facilities?
Daily
Once or twice a week
Once every two weeks
Once a month
Once a month
11. Is the library your only access to computer facilities?
The Part of the Control of the Cont
Yes
No
12. Do you have access to computers in the library?
Yes
No
If yes what is the value thereof to you?
***************************************
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13. How would the withdrawal of computer facilities affect you?
***************************************
14. If you have any other comments, please add them below:
(3*(*)*********************************
$\cdots \cdots $
Thank you very much for taking time to complete this questionnaire.
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