BEYOND THE BOOKS: A QUALITATIVE STUDY OF A LIBRARY LEARNING CENTRE

Kay Fenton

A thesis submitted in partial fulfilment of the requirements for the degree of Master of Education, Unitec New Zealand, 2011
ABSTRACT

Dedicated physical spaces, called Learning Centres, have been created in a New Zealand city’s libraries to provide the community with free technology resources, including computer use, first-step computer training and Internet access. The effectiveness of these Centres has never been measured. This qualitative research, using a case study, investigates the impact of providing these free resources on users of a Learning Centre via three research questions. These questions relate to access and use of the Centre, the skills and capabilities that users are acquiring from attending the Centre and the different impacts access to technology is having on users of the Centre.

While current literature provides valuable information on the uses of libraries as providers of free public Internet access, many studies report on the types of people accessing these Centres and the activities that the computers and the Internet are being used for, rather than the impact the provision of technology through these Centres is having on the users of the Centre. This study gathers rich data directly from the users of the Centre through questionnaires, interviews and observations.

The findings reveal that this Learning Centre is being used for a variety of computer-based activities by both genders across all ages and income levels. The Learning Centre is having a short and long term positive impact on participants through improving their computer skills and capabilities, increasing their social connections, assisting with employment seeking and lifting their confidence levels as users of modern technology. The Learning Centre is helping to reduce the digital gap for residents and is meeting the goals and objectives created at its inception. It is also achieving the goals of the New Zealand Government’s Digital Strategy, by providing the infrastructure and training that allows the local community to access and use information and communications technology more effectively in their daily lives. These findings may assist in the future development of Learning Centres in New Zealand.
As the use of the Learning Centre has progressively increased, concerns have been expressed that the current infrastructure may not meet the increasing demands of users, and recommendations are given that will help address this issue. Lastly, suggestions for further research, which include a long term study of the Learning Centre, are given.
ACKNOWLEDGEMENTS

The writing of a thesis is never a solo journey - this task requires a support crew along the way. I have been fortunate to have a great group of people around me as I undertook this journey and I wish to acknowledge all that they have done for me that enabled me to complete my studies.

I would firstly like to thank those closest to me – my family. Initially for believing in me and supporting my decision to return to study and then for giving me the time and space that I needed to get on and complete the task. To my two wonderful daughters, Nicky and Laura, thank you for encouraging me in my moments of doubt and for celebrating my achievements. To Rob, my husband, partner and best friend, thank you for stepping in and doing whatever needed doing so that I could maintain my focus. This journey would not have been possible without your love and support.

Thanks must also go to my wonderful friend Dr. Jennie Billot, an inspirational lady who provided many levels of support. Jennie, I appreciated your encouragement, mentoring, proof reading, the walks we had together and the many laughs we shared.

I was fortunate to have two supervisors who allowed me the freedom to do things my way but provided guidance when I needed it. Dr. Mary Panko and Dr. Ray Meldrum – thank you for your belief in me, your patience and your friendship.

This thesis would not have been possible without the support of three key people who work for a local City Council. To respect their wish for anonymity I cannot name them publicly but I need to acknowledge the work of the Learning Centre coordinators and their supervisor. Thank you for making the time for me, for allowing me to observe your teaching and for answering my many questions. Your passion for your work is admirable and infectious and I know you have made a difference to the lives of many members of your community.
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There is an accelerating use of information and communications technology (ICT) in everyday life (New Zealand Government, 2008), email is now a common form of communication, banking and shopping can be done on-line and social networking sites such as Facebook are used by all age groups (Smith, et al., 2010). Despite the increasing use of ICT, some members of the community still have no access to any ICT - this is referred to as the digital divide (OECD, 2005). This lack of access to ICT could be due to socio-economic factors, a lack of skills associated with the use of such technology, a combination of factors, or some as yet unidentified causes.

This research investigates measures to address the digital divide in one city in New Zealand. For the purposes of this research and at the request of the City Council, the city will be identified as “Local City”. In 2006, the Local City Council (LCC), in recognising the importance of information technology to business in their city, developed the Local City Information Access Strategy. The strategy has the following vision:

Local City will become a city where communications infrastructure is available, access to computers and the internet is without barriers, and all citizens are able to obtain meaningful online content; all of which is necessary to support the council’s goals and priorities for developing a city that is technologically advanced in the information age. (Local City Council, 2006b, p. 6)

The above strategy had strong linkages to the then current Government Digital Strategy (New Zealand Government, 2005) which included goals of providing all New Zealanders with access to digital content, the digital skills and confidence to enable citizens to find and use relevant information, as well as the necessary infrastructure for this to happen. In order to implement the Local City Information Access Strategy, a further strategy - the Local City Learning Centres Strategy - was developed as a delivery mechanism, to enable city residents to acquire basic information technology skills.
The Learning Centres Strategy has an objective of providing resources to enable community members to gain the necessary computing skills in order to have access to relevant on-line information to enable participation in the digital society (Local City Council, 2006c). As a consequence of this strategy, dedicated physical spaces, called Learning Centres, have been created in Local City community libraries. These centres offer free access, for citizens of Local City who have a library card, to computers and the Internet, as well as free first step computer training for new computer users.

The purpose of this study is to examine whether the Learning Centres Strategy implemented by the LCC is enabling members of the community to access and use ICT more effectively in their everyday lives and the impact one Learning Centre in Local City is having on users of the Centre.

In this chapter, I identify the context of this research and the rationale for the study. Finally the research questions that underpin this research are explained, along with the structure for this thesis.

**Background**

The LCC Learning Centres Strategy was implemented in September 2006 with the following vision: “To ensure that the people of Local City have access to relevant information online, and the necessary skills to obtain that information, in order to support the council’s wider goals of lifelong learning and access to information technology” (Local City Council, 2006c, p. 6).

This vision underpins the LCC intention to support and develop Learning Centres, which are dedicated physical spaces that have been created in Local City community libraries to offer free access to computers and the Internet, while at the same time providing free first step training for new computer users, homework clubs for school students and a job hunters’ club to assist the unemployed. The LCC’s objective for providing these centres is to address the digital divide in the city and develop a
community model that could be accessed by all members of the community (Local City Council, 2006c).

The policy document states the Learning Centres Strategy will be reviewed two years from the date of adoption (Local City Council, 2006c), however, to date no review has been conducted on the success of this strategy. At present it is unclear to the Council how citizens of Local City are engaging with the Learning Centres; whether for casual computer use or for participation in one of the structured programmes on offer. The intention of the strategy is to provide initial basic computer training which would then enable residents to gain further computer skills through other educational providers (Brewster, J., personal communication, February 9, 2009). At present there is only anecdotal evidence to indicate whether the strategy is accomplishing its intention and no data has been collected on the types of skills residents are acquiring through the Centres, the range of activities that the Centres are being used for, or the impact this strategy is having on users of the Learning Centres.

The research problem, therefore, is to investigate the impact of the LCC Learning Centres Strategy on upskilling citizens of Local City and improving their confidence in using information technology in their daily lives.

**Context**

Community education and the digital divide provide the context for this research. Findsen (2006) provides the following definition of community education: “organised learning activities that groups of individuals undertake for their personal, community, cultural or economic development. It touches all other areas of learning but its primary focus is the adult as learner and the community as context” (p. 211). This definition provides the basis for the examination of this research problem.

Within the strategy document the terms “community”, “residents” and “citizens” are all used to describe people who live within the boundaries of Local City. The same terms are used in this document to also represent the equivalent group of people.
While the LCC uses the term “digital city” (Local City Council, 2006c, p. 6) to describe the vision for Local City, Boshier (2006) identifies Local City as a learning city; a place where local government, private enterprise, public agencies, education providers and voluntary/community sectors all work together to “enhance the social, economic, cultural and environmental conditions of their community” (p. 36). Some local authorities do not want to be responsible for educating the community (Boshier, 2006); this is not the case with the LCC. The LCC has embraced learning and formulated strategies to ensure the success of community education, as lifelong learning and access to information technology are part of the Council’s wider goals.

Faris (2001) describes learning as a social process and an investment in the community, however to date it remains unclear to the LCC as to the outcomes of their investment and whether residents are gaining the necessary technological skills to participate fully in today’s information age. While computers are now used for everyday activities, not all families can afford this technology, therefore socio-economic factors impact on the way people access and use computers and the Internet (OECD, 2005). This has become known as the digital divide and this research investigates the ways in which the Learning Centres Strategy and the creation of Learning Centres in Local City are addressing the digital divide by providing community education and contributing to the educational experiences and lifelong learning of the citizens of Local City.

**Local City**

Local City forms part of New Zealand’s largest conurbation, Auckland. With a population of 186,444 as at March 2006 and an expected growth to 201,300 by June 2008 (Local City Council, 2006a), the LCC has developed nine strategic platforms to enable the city to develop a strong innovative economy (Local City Council, 2009).

As a consequence of the Learning Centres Strategy, seven Learning Centres have now been established, five of these in libraries and two in specialised Learning Centres which are not attached to libraries. These Centres have been called Learning Centres as they offer a range of learning opportunities from free beginning computer classes to one-on-one sessions, and specialised computer classes, as well
as providing a drop-in service for email or general Internet use (Local City Library and Information Services, n.d.). The free computer courses on offer run monthly, one day per week for four weeks. The first centre was set up in R suburb, an area identified as having a low socio-economic population where residents may not have the financial ability to purchase their own computer (Brewster, J., personal communication, February 9, 2009). The Council has plans to introduce two more Learning Centres as well as increasing the size of some existing Centres to meet the growing population needs.

This research is centred on the XYZ Learning Centre (a pseudonym for the actual Learning Centre studied) and this centre is situated in a local library in one suburb of Local City. Local City is divided into four wards and the XYZ Learning Centre is situated in the second largest of Local City’s wards, by population. This ward has a similar age structure to that of the city as a whole; there is a greater proportion of Asian and Pacific Peoples residents and fewer European and Maori residents in the ward and the median personal income is slightly lower than the Local City median (Local City Council, 2006d).

The XYZ Centre was chosen for this project as it provides a wide range of free computer courses, has a large area available as a drop-in computer centre, and is part of the XYZ Library. This library is located in the XYZ shopping area in close proximity to buses and trains, making it easily accessible to residents.

Rationale

In a learning city, learning is seen as a critical aspect of the development of the city and information technology is one means that can be used to sustain the city’s economic activity (Boshier, 2006), however some people are not able to participate in formal education, perhaps due to economic, political or socio-cultural reasons (Mejiuni & Obilade, 2006). The use of community learning centres, or what Oldenburg (1999) calls third places – informal neutral public places where people feel comfortable and can come and go as needed - is one mechanism to enable residents to further their education by acquiring basic information technology (IT) skills.
Ouane and Glanz (2006) believe that the ultimate goal of education is for all individuals to be able to fully participate in society and in turn be able to contribute to the sustainable development of their communities. However, at present the LCC does not have evidence to show whether their Learning Centres Strategy is providing residents with skills that will enable them to further their education, use computer skills to improve their job prospects or contribute back to the local community.

Another stated goal of the LCC is to address digital divide issues in the city (Local City Council, 2006c). The digital divide is not just about physical access to computer equipment, but also access to resources that enable effective use of the technology (Warschauer, 2002). It is therefore important to determine how the Learning Centres are being used and if they are in fact meeting the stated visions of the City Council and contributing to the goals of the Local City Information Access Strategy.

Local councils are under continuous financial pressure to meet the increasing needs of their diverse and growing communities, in terms of supplying infrastructure and community services (Local Government New Zealand, 2008). It is therefore important that council spending in these different sectors be reviewed to ensure Councils are being fiscally responsible for their ratepayers whilst also achieving set objectives.

The Learning Centres Strategy has been in place for just over two years, although there has been a Learning Centre in operation at R suburb for the past six years. During this time no review has been conducted, so there is no measure of the success in terms of meeting the goals of the strategy. While the Council has stated that the infrastructure to support the Learning Centres Strategy “may require significant public investment to deliver up to date technology” (Local City Council, 2006c, p. 5), and considers the development of the Learning Centres as a significant output, to date there is only anecdotal evidence that this strategy is educating some members of the community and helping to close the digital divide.

This research provides information, through the case study of one Learning Centre, on how the Learning Centres Strategy is impacting on members of the community.
and whether they are gaining appropriate skills to enable them to contribute to the knowledge-based society. The findings of this research may provide information that can be used for planning additional Learning Centres. For example, if training courses are popular with unemployed residents of the city, then more courses could be planned to encourage participants into the work force. On the other hand, if the research project identifies that community members simply want free access to the Internet, then future Learning Centres may not need to be sited in libraries. As there are many different organisations providing computing education programmes in Local City, this research could inform further research to ascertain the value of these diverse programmes and the reasons why one type of provider is chosen over the others.

In summary, this research will identify who is accessing the Learning Centre and why they are using the Centre, their attitudes and feelings towards the Centre and the skills they are acquiring from attending the Centre, as well as the impact technology is having on the users of the Centre.

**Research Questions**

The overall aim of this research is to identify what impact a library Learning Centre has on users of the Centre.

The research questions that guided this research were:

**Access and use:**
1. Who is accessing the Learning Centre and for what purpose?
This question aims to identify who is using the Learning Centre; when they are attending the Centre and how often; what their reasons are for attending the Centre, and whether their needs are being addressed.

**Skills and capabilities:**
2. How is the Learning Centre improving the skill level and capability of participants?
This question aims to identify what skills participants had before attending the Centre as well as what specific skills participants gain from engaging with the Centre.
Impacts:

3. What impact is the Learning Centre having on individuals?
This question aims to identify what impacts, both positive and negative, there are from attendance at the Centre.

**Thesis organisation**

This thesis is set out in six chapters. Chapter One has already provided an overview of the research along with background information and the context of the study. The aims of the research, along with the research questions that guided this study, were outlined.

Chapter Two presents an overview of the research and literature in relation to the digital divide, community computing and the use of libraries as centres of learning. The benefits to individuals of using a library learning centre as well as the impacts of technology on users of the centre are also included.

The third chapter outlines the research design and discusses the methods used to gather and analyse the data. Ethical implications, along with the issues of reliability and validity are also discussed in this chapter.

Chapter Four presents the findings of the study from a questionnaire, semi-structured interviews and observations.

A discussion of the findings and the themes that emerged are presented in Chapter Five in relation to the literature presented in Chapter Two. This discussion uses the ICT Development Index, provided by the International Telecommunication Union (2009), and described in Chapter Two, as a model for the discussions.

Chapter Six draws conclusions from this study and presents recommendations and areas for further study.
2 - LITERATURE REVIEW

Introduction

A decade ago, Beamish (1999) expressed concerns that community computing initiatives in the United States were not seen as leading to positive outcomes; she felt that this may be due to many claims being made about the success of these programmes without the support of valid research. In New Zealand there are many government and community computing initiatives operating, but while basic information is available on the types of learners accessing these initiatives, there is still a dearth of recent research on the effectiveness of these programmes in terms of perceived benefits to the participants.

This chapter reviews the literature concerning community computing initiatives with a focus on the digital divide, community computing, the use of libraries as places for learning and the benefits that can be gained by individuals who engage with technology. The research base for this review draws from studies conducted in the United States where the Learning Centre concept has been in operation for many years. Relevant research from the New Zealand context is presented and the implications for this research are discussed.

The Digital Divide

While some studies refer to the digital divide as simply a case of the haves and have-nots (Lei, Gibbs, Chang, & Lee, 2008; OECD, 2005), other research focuses more on the issue of not just access to computer equipment but also access to resources that enable effective use of the technology (Warschauer, 2002) and the ability of some people to become active participants in a digital society (Liff, Steward, & Watts, 2002). Most definitions of the digital divide simply refer to access limitations but Gurstein (2003) argues that this is just the first step - quantity, quality and format of the access are also important considerations.
There are many parts to the digital divide. The divide can refer to the differences between access in developed and developing countries (OECD, 2005), it can refer to the effective use of technology versus the ineffective use (Gurstein, 2003) or it can also include what Warschauer (2002) refers to as digital literacy - a combination of computer literacy and information literacy that is also an important aspect of engaging with the Internet.

The Local City Learning Centres Strategy states that the purpose of creating Learning Centres is to address the digital divide in their city (Local City Council, 2006c), therefore in order to answer the research questions posed for this study, it is necessary to understand the many aspects of the digital divide. This section of the literature review determines if there is a digital divide in New Zealand. Issues around access to technology are discussed, followed by research pertaining to the digital use divide and the need to equip users with digital skills in order to engage with technology. Finally this section concludes with a brief summary of the literature on social inclusion, an area that Local City hopes to address through the introduction of Learning Centres.

**Access to technology**

The digital divide is commonly measured in terms of access to technology, including computers, Internet access and mobile phone access and the use of these technologies has grown rapidly in the last few years (International Telecommunication Union, 2009). The International Telecommunication Union (ITU) has developed the ICT Development Index to track the digital divide in over 150 countries. The Index monitors global developments in closing the digital divide and countries’ progress in moving towards becoming information societies. The conceptual framework uses a three-stage model and while the ITU contend that the three stages of the model can be measured separately, they also recognise that the stages are very closely linked (International Telecommunication Union, 2009).
The ICT Development Index provides a very useful conceptual model for the focus of the research questions, and this model will be used in Chapter Five when discussing the findings from this research.

As shown in Figure 2.1, the ITU contend that access to technology is the first stage in the evolution towards an information society (International Telecommunication Union, 2009). This section investigates access to technology first from a global perspective, then a New Zealand perspective to determine if there are sections of the community who do not have adequate access to technology.

While Lei et al. (2008) ask if it is possible to find anyone without any ICT possession or access in the urban areas of most countries, Figure 2.2 shows the percentage of households with access to a home computer across the globe, based on OECD data.

Source: International Telecommunication Union, 2009
New Zealand is placed marginally above the median and, significantly, is ahead of Ireland, the U.S.A. and several developed European countries with regards to access to home computers. The data shows that 75% of the countries listed above have 20% or more of their population with no access to a home computer. While this data does not reveal whether this section of the population is urban or rural, it is possible that a percentage of this section of the population could be urban based.

In looking closer at the New Zealand situation, the following table compares access to telecommunications for households for both New Zealand and Local City from the 2006 census.
Table 2.1: Percentage of population with access to telecommunications, 2006

<table>
<thead>
<tr>
<th></th>
<th>Access to cell phone or mobile</th>
<th>Access to a telephone</th>
<th>Access to the Internet</th>
<th>Access to a fax machine</th>
<th>No access to telecommunication systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>74%</td>
<td>92%</td>
<td>61%</td>
<td>26%</td>
<td>2%</td>
</tr>
<tr>
<td>Local City</td>
<td>76%</td>
<td>93%</td>
<td>64%</td>
<td>27%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: Statistics New Zealand, 2006

The differences in the data for New Zealand and Local City are minimal, therefore Local City is no more digitally deprived than many other areas of New Zealand.

While more recent data from the New Zealand report of the World Internet Project (WIPNZ) shows that 83% of all New Zealanders use the Internet (Smith, et al., 2010) as Figure 2.2 and Table 2.1 show, there still remains a sector of the population, around 2%, who do not have access to any ICT and could therefore be described as digitally deprived.

Previous studies have identified factors that may influence access to technology, which include income, education, ethnicity (OECD, 2005), people’s ability to make use of technology (Warschauer, 2002), and gender (OECD, 2007). There is also the question of levels of access – Lei et al. (2008) call this the “zone of transition” (p. 541) that goes from zero access through to minimal access or use of technology, through to some use of technology. They argue that little research has been done on how people begin the process of making the digital transition. This research project will investigate how successful Local City has been in helping its residents make the transition to engaging with technology.

The OECD has identified that there are still significant access differences to ICT by gender, with educated younger males having higher levels of Internet access (OECD, 2007). Analysis from the WIPNZ however, shows little difference in individual Internet use in New Zealand between males and females but age does appear to be a factor (Smith, et al., 2010).
While the statistics in Table 2.1 refer to households who have access to technology, Figure 2.3 shows the breakdown of Internet use by age groups and identifies clear differences in Internet use when it comes to age. This finding is also supported more recently by the WIPNZ, and although no comparative statistics are provided by Smith et al. (2010), they do assert that younger New Zealanders use the Internet more frequently than older New Zealanders (Smith, et al., 2010). It is unclear if individual family members within households in New Zealand have equal access to ICT and the Internet. Family units within New Zealand may be made up of younger people who are competent users of technology, together with older members who perhaps have limited or no chance within the family unit to access ICT.

Figure 2.3: Individual Internet use aged 15 years and over, for previous 12 months

Source: Statistics New Zealand, 2007
### Table 2.2: Location of individual internet use

<table>
<thead>
<tr>
<th>Location</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>93</td>
</tr>
<tr>
<td>Work</td>
<td>68</td>
</tr>
<tr>
<td>Place of education</td>
<td>24</td>
</tr>
<tr>
<td>Other places – another person’s home; library; internet café</td>
<td>39</td>
</tr>
</tbody>
</table>

**Source:** Smith, et al., 2010

Table 2.2 data confirms the highest level of Internet access occurs in the family home. Correlating this data with Figure 2.1 suggests a reason for this could be that a high proportion of the 15-24 age group of Internet users, highlighted in Figure 2.1, are students still living at home. As can be seen from Table 2.2, a smaller percentage of the population uses another place, one of which is a local library, for their Internet access and it is this portion of the population that this research project will focus on.

The OECD (2007) reports differences in where men and women access the Internet, with men more likely to have access at both home and work, whereas women were more likely to have access from educational institutions. Smith et al. (2010) indicated that 8% of users in New Zealand never accessed the Internet from home and this could be because they do not have an Internet connection.

In New Zealand, the cost of owning a computer and acquiring an internet connection is for some people, a large expense. It is therefore important to have access at strategically central locations such as schools and libraries in low-income communities.

In summary, it is likely that a digital divide exists for some residents of Local City. As there currently is no evidence to confirm who is using the XYZ Learning Centre, research question one will provide information on the types of users who are accessing technology through the provision of Learning Centres in Local City.
**Digital use divide**

As well as the hardware, software and Internet connections needed for computing, community members need to be motivated to develop the necessary skills. This has been identified as the second step in the ICT Development Index as shown in Figure 2.1. Providing access to technology on its own does not bridge the digital divide, there is also a need for training so effective use is made of the technology (Gurstein, 2003).

A report by the OECD (2007) has identified that although the digital access divide has declined in recent years due to greater broadband access, the digital use divide has significantly increased, thus there are members of the community who cannot use technology. In New Zealand, 23% of Internet users state their ability to use the Internet is low and just over one third stated they would like to undergo further training to improve their Internet skills (Smith, et al., 2010). In today’s world the lack of digital skills has significant impacts on the country as a whole and this is summed up by the following statement: “To stay competitive and enhance social and economic participation, New Zealand needs a population that is willing and able to use ICT to best effect” (Doczi, 2000). The LCC also recognises the importance of ICT skills and in the Learning Centres Strategy has identified how this strategy fits with other local and regional government goals, one of which identifies the “Economic benefits of educated and skilled workforce, including moving unemployed into the workforce” (Local City Council, 2006c, p. 7). Question two of this study will help to identify how effective the Learning Centre is in equipping residents with skills that will be of benefit, not only to individuals, but ultimately to the wider community.

There are many reasons why people do not engage with technology. Liff et al. (2002) found that expenses and lack of access are common barriers to the use of ICT, along with the perception that ICT was not relevant or necessary to their lives, while the latest findings from the WIPNZ found that 45% of the non-users surveyed in New Zealand felt that the Internet was not useful to them (Smith, et al., 2010). Today ICT has permeated many areas of daily life and the rise of electronic communication has changed the way people communicate; people can now communicate rapidly across the globe using long-distance many-to-many communication.
communication tools such as discussion boards, chat rooms and social networking sites (Warschauer, 2003). A recent study by the OECD found that a general trend across OECD countries was that an increasing amount of household income was being spent on communication (OECD, 2007). Personal computers, the Internet and broadband connections were being cited as the reason for a major change in people’s lives; educational backgrounds and socio-economic status were also identified as being factors in how people use information technology (OECD, 2007).

The OECD reports that although research has been conducted on the impacts of ICT use by businesses, very little research has been done on the impact of use by households and individuals (OECD, 2005) while Lei et al. report that more research is needed on how people begin the transition to using technology (Lei, et al., 2008). What has been identified is that there are significant differences in how people use technology and their motivations for becoming technologically literate.

Email is a common activity for all Internet users, both male and female, while downloading of software and videos, along with visits to sports pages, tends to be a male-dominated activity. Males are also reported to be more engaged with on-line shopping (Smith, et al., 2010). While it is important to know what people are using the technology for, it is also important to know how their daily lives have been impacted by the use of technology, and as there is limited literature in New Zealand in this area, this study provides findings that inform these issues.

Latest research shows that the Internet is being used more and more for social interaction, with a large proportion of the population relying on this medium for contact with family and friends (Smith, et al., 2010) but for non-users there is the risk that they may become isolated, or socially excluded. The LCC has recognised this as an issue and has social, as well as cultural well-being, as a priority of the Learning Centres Strategy (Local City Council, 2006c) and hopes that the use of the Learning Centre may lead to citizens being socially included.

While the technological aspect of the digital divide is important, many researchers recognise the social problems that occur around lack of access to technology (Liff, et al., 2002; OECD, 2005; Warschauer, 2002). Warschauer (2002) sees a need for
more social support systems, language and literacy skills, or what he calls “technology for social inclusion” (p. 5). He defines social inclusion as:

the extent that individuals, families and communities are able to fully participate in society and control their own destinies, taking into account a variety of factors related to economic resources, employment, health, education, housing, recreation, culture, and civic engagement. (Warschauer, 2003, p. 8)

Although ICT has not fully replaced face-to-face communication and interaction, electronic communication is nevertheless an important element of social practice. Today more and more forms of communication and social interaction are moving online, therefore those who do not have access to, or the skills to use the technology, risk being excluded from participation. This is creating two groups of citizens - those who have access to and can use technology and can interact with others, and those who do not have access to or use of technology and are therefore deprived of on-line interaction.

Social inclusion, or rather lack of it, is not a new phenomenon. As people’s lives have got busier there is less time for social interaction with family, friends or neighbours. Fortunati (2008) sees technology as a way to re-engage and claim back our sense of community, and by using the Internet, we can do this on a global scale.

In summary, the digital divide encompasses much more than simply being able to access a computer and connect to the Internet. People need to have sufficient skills to enable them to participate fully in both the economic and social aspects of technology.

**Community Education**

In New Zealand, the Tertiary Education Commission (TEC) is responsible for funding, policy advice and support to all tertiary education organisations. In its report on adult and community education (ACE) in New Zealand, TEC described the provision of education for this sector as “a process whereby adults choose to engage in a range of educational activities within the community” (Tertiary Education Commission, 2005, p. 6).
Commission, 2001, p. 8). Over the last few years the Government funding for ACE has been reduced, thus the choices available for community members who want to engage in further learning, after formal schooling, is now limited.

Research from overseas identifies benefits from adult and community education for individuals as well as for communities and society as a whole (Benseman, 1992). In their report, TEC lists many benefits to individuals from ACE programmes, including improved self-confidence, intellectual stimulation, increased work chances and improved chances for socialising. Their list of benefits to society include: less dependency on welfare, better employment prospects (an economic benefit to the country) and better access to information therefore less chance of social exclusion (Tertiary Education Commission, 2001). While there are many school and tertiary based programmes offering adult and community education, there are also many community based education initiatives and TEC recognises the value these initiatives have in the community as follows:

These organisations have an important role in contributing to the country’s education, social and economic objectives. They are providing education opportunities for those with the highest need, fostering the development of a civil society, and doing what no other education sector does as well – identifying emerging needs and developing innovation in education. (p. 11)

While acknowledging the important work being carried out in the ACE sector, TEC also acknowledges that at the time of the report, there was very little actual research on adult and community education in New Zealand, and what research there was available was mostly anecdotal accounts with very little data available on the impact that these programmes were having (Tertiary Education Commission, 2001). Almost a decade on from this report, there is still a dearth of information on the outcomes for adult and community education programmes and while work has been done on formalising ACE through government departments in recent years, initiatives like the Local City Council's strategy do not fall under this umbrella, therefore little is known about their impacts and successes.
As shown in Figure 2.1, ICT skills are needed in order to move towards an information society. This section focuses on the computing education that is occurring in the community, and following a brief history of community technology centres, the literature on community computing initiatives in New Zealand is reviewed. As the focus of this research is a Learning Centre situated in a library, the research around the use of libraries for computer access and training is discussed.

**Community Computing**

“Every individual must be in a position to keep learning throughout his life. The idea of lifelong education is the keystone of the learning society” (Faure, et al., 1972, p. 181). Although written over thirty years ago, this statement came out of the work that Faure et al. did for UNESCO, who at the time were focussing on lifelong education and the need to continue learning throughout one’s life. Faure et al. believed that education should be taken outside of the school walls and that everyone should be provided with the tools and incentives to enable them to engage in lifelong learning. For many adults the opportunity to continue learning comes through community education and for computer training, one way to achieve this is through community computing initiatives.

Beamish (1999) describes community computing as “public access computing centres where hardware, software and technical support are provided to neighbourhood residents” (p. 351). These centres provide both access to technology and training in the use of new technology and also content relevant to their community’s needs so that residents are motivated to use the technology.

There are many terms now used to describe community computing centres – community access sites (Faris, 2001), computer clubhouse (Resnick, Rusk, & Cooke, 1999), community technology centre (Dorsey, 2003; Nelson, 2002), telecottage (Falch, 2000) and the one used by Local City, which is Learning Centres. The purpose of these facilities is to offer similar services – that is access to technology and the Internet for members of the public who would not normally have access from home or work. A key feature of most of these centres is some form of
training or assistance with technology. These centres tend to differ from Internet cafés, in that these centres are not-for-profit facilities, whereas Internet cafés, while providing access to technology, generally charge their users for their services.

The next section briefly looks at the history of community technology centres before discussing the types of centres now found both worldwide and in New Zealand.

**History of technology centres**

Looking at the historical development of technology centres can provide some explanation for current circumstances. In the past, post offices and telegraph offices were used as access points for information and communication in communities, and as technology moved into the home environment, these centres were replaced with telephone lines, improved postal services and now Internet connections (Dorsey, 2003). One of the earliest community computing initiatives in the United States were Freenets, volunteers with computing backgrounds who made the Internet resources of universities available to members of the public (Gurstein, 2000). This service in the late 1980s was only available to community members who had a home computer, a modem and a dial-up connection and provided access mainly to on-line bulletin boards. From these small beginnings, the idea of on-line community networks developed and the broader issues of access to technology for certain members of the community, such as the unemployed, those without computer skills and the disabled, were addressed.

In her research on early community networks, Beamish (1995) reported that most U.S. networks relied on government or corporate donations as well as volunteers. These networks provided information about the community, generally from a services perspective, and offered access to bulletin boards that provided forums for discussions of local interest. These networks tended to operate independently and one of the recommendations from this research was that an umbrella organisation needed to be established to support and co-ordinate these community networks, to ensure policies were developed for use, funding was secured and assistance was provide for new networks starting up.
From these early beginnings, as technology developed, the community learning centre concept evolved where the focus is on computer networking services such as email and Internet access, along with some form of basic computer training and it is this model that has been followed in New Zealand for the library Learning Centres.

**Community technology centres**

Today, community informatics (CI) is a term that is used to describe community computing. Gurstein (2000) defines community informatics as:

> An approach to ICT, which includes a concern for the accessibility of the hardware, the software, the connectivity, and the information; and for the use and user to which the technology is being applied; particularly within the context of the user’s physical community. (p. 6)

Community technology centres (CTCs) are now widespread throughout developed and developing countries, although their focus is slightly different depending on location and their stage of adoption. For instance, Dorsey (2003) discusses various projects to create community learning centres in the late 1990s in places such as Benin, Bulgaria, Ghana and Paraguay. In Paraguay, twelve centres were opened to provide the community with a range of learning tools, including access to technology and the Internet, along with basic computer training. A centre co-ordinator was employed to not only assist with the learning, but also to promote the centre to others in the community (Dorsey, 2003). Other centres funded by UNESCO in Africa followed a different pattern in that they were targeted at educators, health workers and public administrators so that these people could then become innovators and promote the service to their colleagues. These centres were not initially open to the general public.

Other centres reported by Dorsey (2003) were opened in Canada and Australia to serve remote, mainly rural communities and provide access that would otherwise be unavailable to them. Centres in the United States were originally developed to serve
low income communities, sometimes sited in local schools where the facilities can be used by the community after hours. These centres were benefitting the community by helping with the economic development of the community, helping combat poverty and working towards eliminating social exclusion (Faris, 2001).

Another benefit of CTCs is that a greater number of residents can have access to expensive resources, and training and support are readily available as and when needed (Beamish, 1999). However, setting up such a centre is expensive and finding and keeping knowledgeable staff may be difficult. While some CTCs target certain members of the community, e.g. new immigrants, unemployed, or at-risk youth, these groups may require more specialised help and may need programmes that are tailored to their specific needs.

The use of CTCs enables not only new technology skills to be developed but also new forms of interaction, new types of activities, new areas of knowledge and new attitudes to learning (Resnick, et al., 1999). The computer clubhouse model discussed by Resnick et al. is a facility where youth are encouraged to develop their skills by using technology and working with a mentor. An added bonus of this model is at the same time youth are seeing other adults learning and in this rapidly changing society that provides good role models for them to appreciate that they need to keep on learning throughout their lifetime.

Malina and Ball (2005) report on community computing projects in Scotland, where in the 1990s Learning Centres were developed in deprived areas and areas in crisis. In 2004 an audit was conducted in Scotland to determine the benefits of these Learning Centres and while 83% of the centres still offered free Internet access to the public, only 50% of the centres offered formal training classes, therefore these centres could be seen simply as free Internet cafés, providing limited benefit to the community they serve. While the audit identified an 8% increase in Internet access since 2003, a more worrying finding was that forty-seven centres had either closed, or no longer provided Internet access. Malina and Ball feel that more research is needed to determine what people are doing with the technology and what effect technology is having on their daily lives, as we cannot assume that there are always positive outcomes.
Community technology centres in New Zealand

There are many types of CTCs currently in New Zealand – public computer and Internet access centres; access centres that target specific groups (e.g. SeniorNet); Internet access from public libraries; tertiary providers that offer free Internet access to students and members of the public, and Internet cafés. There have also been many community ICT projects over the last six to eight years but these projects are generally not co-ordinated at a national level and some are not co-ordinated at a regional level (Craig, Dashfield, & Thomson, 2003).

One of the first community computing projects in New Zealand was in 2000 (Crump, 2004). The Smart Newtown project was a Wellington initiative in the suburb of Newtown, where computers were placed in public access centres such as the Pacific Island Network Centre, the Newtown Cultural and Community Centre, various council owned flats and local libraries. Newtown was chosen for this project as a significant number of residents were either Maori or Pacific Islanders, on low incomes, had little or no qualifications, poor literacy skills or unemployed; these groups were identified by the New Zealand government as being more likely to have little or no access to technology (Crump, 2004). The project was established with the following economic and social inclusion objectives:

- provide opportunities for residents to learn and improve IT skills;
- staircase residents to further IT training with a tertiary provider;
- provide better access to the Internet, World Wide Web and other information and communication channels;
- provide greater economic opportunities through job-hunting, CV development, self-employment or small business applications;
- provide educational opportunities for homework and parental involvement, etc; and
- strengthen intra-family relationships and cooperation. (Crump & McIlroy, 2003, p. 5)

At the same time that the Smart Newtown project was getting underway, the Computers in Homes project was launched at the Newtown Primary School. This
project placed recycled computers into the family home of children attending the local school who otherwise would not have access to technology. For a nominal fee they were not only given the computer, but also provided with phone and Internet access, as well as training and technical support for six months. After this period, they could continue using the technology, but had to pay for the services.

Four significant pieces of literature have been written on these projects, providing information on the benefits and outcomes of the two projects. The first review was conducted by Craig (2003) and her argument was that by using the technology centres, community members were becoming connected, and that this was building stronger communities. Her research identified that “the Internet has a positive effect on social capital by increasing the number of connections families make that may lead to further literacy, education and job opportunities” (Craig, 2003, p. 2)

While the Smart Newtown project used computers sited mainly in public access centres, the Computers in Homes project, as the name implies, placed computers with families in their homes. Feedback from the participants of both projects identified that Maori and Pacific Island people were not comfortable in public access centres, preferring to use the computers in the privacy of their own homes (Craig, 2003). This is contrary to the ‘third’ places theory espoused by Oldenburg (1999) - informal public places separate from home or work, where people feel comfortable coming and going as necessary to access technology. There were however, two distinct threads that came through the research by Craig: it was found that the Internet led to new kinds of communication and participants liked being able to access this information from their own home, but other views from participants in the projects saw the technology as keeping people isolated from their families and their communities (Craig, 2003).

Prior to 2003, the focus of digital divide research in New Zealand was primarily on the users of technology and how they were benefitting from gaining computer skills and access to the Internet, little research was available on why people chose not to engage with technology. Crump and McIlroy (2003) conducted a survey to determine why some residents of the apartment block that was involved with the Smart Newtown project, who had free access to technology, had chosen not to
participate. The high-rise city council block of flats not only offered free computer and Internet access to residents, but also a printer, appropriate software, as well as help desk and maintenance support. The computer centre was designed to make effective use of the model of Technology for Social Inclusion, developed by Warschauer (2003) – the model involves access to ICT as well as content, human resources and skills and social support. A common response to the questionnaire used to determine the reasons for non-use of the centre was simply a lack of motivation and this is supported by the research of Raine et al. (2003) who found that in America, not everyone wants to be involved with technology. The majority of the respondents from the Smart Newtown survey were on social welfare benefits and although the technology was readily accessible, it appeared these respondents did not see technology as a priority in their daily lives (Crump & McIlroy, 2003). The researchers did note that at the time there was no resident co-ordinator for the Smart Newtown project, someone who could promote the benefits to the residents and this may have been a factor in the lower than expected uptake by residents.

In 2004, a further evaluation of the Smart Newtown project was undertaken by Barbara Crump, again using Warschauer’s Framework of Technology for Social Inclusion. Research by Warschauer (2003) suggested that many community ICT projects fail as they merely provide devices and conduits for Internet access, with no regard to the needs of the targeted community members. One location in the Smart Newtown project that was successful was the Pacific Islands Network Centre (PINC) and in contrast to the apartment block studied by Crump and McIlroy (2003), the PINC hub had a strong champion who co-ordinated the centre, along with a group of committed volunteers who provided additional support (Crump, 2004). Other factors identified as contributing to the success of the PINC centre included the highly visible and accessible location of the centre in a public place, adjacent to the local library – a successful ‘third place’. This hub allowed participants to create strong connections with other users of the centre and it was seen as a positive learning centre with a strong sense of collegiality (Crump, 2004). This would suggest that Learning Centres located in public libraries would not only be accessible to community members but may also be places that they are familiar and comfortable with.
The research concluded that the four parts of Warschauer’s (2003) model – physical, digital, human and social, were evident in the PINC centre and it was felt the human and social aspects were a key feature of the centre as literacy support was provided with the programmes on offer.

While the research by Crump (2004) provided reasons why the centres were successful, questions still remained over who was using the hubs in the Smart Newtown project. McIlroy and Crump (2004) used a questionnaire at three of the hubs to identify the demographics of the users. The groups most under-represented at these centres were women and older people, and this correlates with both the data presented in Figure 2.1 and research by the OECD (2007) that identified groups who did not have equal access to technology. The research by McIlroy and Crump identified that Maori and Pacific Island women used the centres more than men, while Indian women barely used any of the centres. Could the location of the hubs be influencing the use by different ethnic groups? McIlroy & Crump’s research identified a possible answer to this question.

The purpose of the research by McIlroy and Crump (2004) was also to determine what happens in a community when members are given free computers, Internet access as well as training and support. Results from the three hubs were vastly different, but one significant finding was that the hub that was placed within an existing community facility and co-ordinated and run by local community members, was the most successful in providing a socially inclusive environment for community members who could be identified as being marginalised from society. This is an example of what Pinkett (2000) calls community building, using existing community members as the building blocks to strengthen the community, thereby allowing community members to become active change agents.

A further finding of the research by McIlroy and Crump (2004) was that language and literacy barriers were also a factor in non-use of the centres and it was suggested that more on-line content for non-English speakers could help address this issue. If participants were given the necessary computing skills, they may then in turn be able to develop relevant content in their own language for others to access.
In 2003 a New Zealand research project, commissioned by the Department of Labour, was conducted by Craig, Dashfield and Thomson (2003) to determine what community-led ICT initiatives were happening across the country, what outcomes and benefits resulted from these initiatives, and what the success factors were. The project also compared New Zealand practices with those of Australia, Canada and the United Kingdom. The research involved a literature review as well as a survey of forty-five organisations that were active in providing community ICT initiatives in New Zealand.

The research questions for the project were to ascertain what the current state of community-led ICT initiatives was in New Zealand; how New Zealand community ICT practices and actions compared with international practice; what were the outcomes and benefits of these initiatives and what were their success factors, and sustainability issues? (Craig, et al., 2003, p. 6).

Key findings from this research are summarised below:

- While public Internet access centres are common in Canada and the United Kingdom, at that time there were no co-ordinated Internet access centres in New Zealand. While nearly all New Zealand libraries provided public Internet access, these centres were in need of more equipment, ICT skills and training.
- In the studied countries, ICT training was provided at the Internet access centres. In New Zealand, there were many different training programmes, offered through many different providers, with varying levels of quality.
- The Australian, Canadian and U.K. governments all have specific funded programmes to address the digital divide through national community ICT projects. At that time the New Zealand government had set aside very little funding for community ICT programmes.
- 50% of the New Zealand projects surveyed reported benefits in employment and education for their participants; 43% reported increased inter-communication and social inclusiveness (Craig, et al., 2003).
The report by Craig et al. (2003) recommended standards be established in New Zealand for ICT access centres; a national on-line register of these centres be established; the location for ICT centres be in libraries; and a co-ordinated approach be taken to providing ICT training with a standard set of course material. To date there does not appear to be any set standards for access centres and there is no national on-line register of community technology centres. Some centres do offer standardised training material by using the International Computer Drivers Licence programme, but this is not universal. Many of these issues have been addressed in Local City with the appointment of a council employee who oversees the provision of the Learning Centre services. This staff member is responsible for the quality of the programmes on offer, along with providing support to the on-site co-ordinators based at the library.

One significant recommendation from the research by Craig et al. (2003) that has been implemented is the integration of ICT centres into many local libraries across the country, through the Aotearoa People’s Network (APN). The APN, a collaboration between the National Library and local libraries in New Zealand, has developed free Broadband Internet access in thirty-four mainly rural libraries. The next section looks at the literature pertaining to the use of libraries as learning centres firstly from an overseas perspective, followed by their use in New Zealand.

**Libraries as Learning Centres**

In recent years libraries have been used as a venue for community computing education. Boshier (2006) maintains that it is more important to focus on what is learned rather than where the learning takes place, however, for some individuals location is important. Some adults have negative connotations associated with schools and therefore do not feel comfortable attending classes there (Findsen, 2006; Resnick, et al., 1999), while for some sectors of the community, schools represent authority and are “threatening” (Mejiuni & Obilade, 2006, p. 140). If lifelong learning is to be encouraged within the community, then education must not be confined to just within the school walls (Faure, et al., 1972).
One of the first projects to use libraries for community-based initiatives was in the United Kingdom where a government programme - IT for All - gave free introduction to computer and Internet lessons to residents (Liff, et al., 2002). Many similar initiatives have been developed in libraries all over the world since then and data reported by McClure, Jaeger and Bertot (2007) shows a steady increase in availability of free public Internet access in public libraries in the United States, as public libraries are increasingly being seen as centres of Internet access by communities as well as governments.

Findings from the 2007 Public Libraries and the Internet survey by McClure et al. (2007) in the United States reveals that 99.1% of public library branches offer public Internet access. Wireless access to the Internet is offered in 54.2% of public library branches, however, the report concludes that this access may have reached a plateau in terms of infrastructure. There are on average 10.7 public access workstations per library branch and nearly 75% of the public libraries that responded to the survey state the public library is the only place offering free Internet access in their communities.

While the research by McClure et al. (2007) shows that public libraries in the United States are meeting a need in the community for Internet access, there could be negative effects in the future as these centres become more popular due to over-use and residents are unable to gain access to the computers as required. This could affect their ability to perhaps apply for a job, obtain timely health information or communicate electronically. This argument is supported by the further findings of Bertot, McClure, Wright, Jensen and Thomas (2008) that over half of the public library access centres that they studied had inadequate connection speeds to meet the demand of users and around half of these centres could not afford to increase their bandwidth. Their report also identified that space, cost and other infrastructure expenses were preventing them from adding new workstations into their access centres, despite increasing use by community members. One solution to this problem would be to allow wireless Internet connections to be made, and while Bertot et al. (2008) noted a large increase in the number of libraries offering wireless access, this does reduce the efficiency for patrons using the workstations in the library and therefore may not be a long-term solution.
A current research project, the U.S. Impact Studies, is underway in the United States to determine the extent of use of public libraries for Internet access, as well as the impact this is having on the lives of individuals, families and communities (Becker, Crandall, & Fisher, 2009). The literature reviewed for this project identified that “past research has produced little evidence that shows a relationship between public access computers and Internet access and patron or community outcomes” (Becker, et al., 2009, p. 2). Most research has focussed on who is using the library access centres, how often and for what purpose, and is frequently obtained from the library staff rather than the users themselves.

The results of the above research project were released in March 2010 as a report. This research was the first large-scale national project to investigate how library patrons were using the library access centres, their reasons for using the service and the impact this free technology service was having on their lives (Becker, et al., 2010). Approximately 45,000 online surveys were completed, together with hundreds of interviews and a national telephone survey; the research involved users through 636 public libraries. In the year preceding the study approximately 77 million people, or nearly one-third of all Americans aged 14 or older, used a computer to access the Internet through a library facility. While the service was used by 44 percent of the people identified as living below the poverty line, more than three-quarters of all users had access to an Internet connection elsewhere, either at home, work or another venue (Becker, et al., 2010).

This research also confirms earlier findings from United States studies that show that many libraries are struggling to meet patron demand, do not have adequate Internet connections, and are unable to afford the replacement costs of newer computers (Becker, et al., 2010; Bertot, McClure, Wright, et al., 2008; McClure, et al., 2007). While these studies confirm the library access centres are providing services that allow users to perform routine tasks, they also highlight the need for public and/or private investment to ensure they can keep offering the technology that the public are demanding and in many cases, needing.
New Zealand Libraries

Many libraries in New Zealand are now offering Internet access to community members through the Aotearoa People’s Network (APN) and an evaluation of the APN project has been conducted for the National Library of New Zealand (First Research, 2008). This evaluation identified that in the rural areas involved, the library has been an effective venue for community computer access, becoming a focal point for the community, and the most cost-effective way to provide high-speed Internet access to these rural communities (First Research, 2008). The research also identified that libraries are becoming important sites of civic life and are often seen as a one-stop shop for the community in terms of providing access to a world of information. Many people see library Internet access points as an extension of the function of the library (Dorsey, 2003) and as noted by Bertot, McClure & Jaeger (2008), the New Zealand report also identified that owing to the success of the project, many libraries had to take steps to manage the demand for access and restrict the duration of use by imposing a time limit at peak times. Restrictions are also in place for use by school-age students and users of the centres must be New Zealanders.

The LCC chose to place Learning Centres within libraries to take advantage of the existing library infrastructure (Local City Council, 2006c). This has extended the range of services offered by the libraries and it is the intention of the Council to make the Learning Centres accessible to all communities within the city, thus facilitating physical access to computers and the Internet (Local City Council, 2006c). The LCC is moving towards “developing a network of 21\textsuperscript{st} century libraries that embrace technological change” (Local City Council, 2006c, p. 4) and that will “provide a safety net for the information poor and the IT deprived, giving every individual in the community who wants to take advantage of the ability and opportunity to access knowledge however they wish” (Local City Council, 2006c).

The research on the APN found that the most common uses of the library computer centres was for accessing social networking sites such as Facebook, email, on-line shopping through sites such as Trademe and Internet banking (First Research,
and that users of the centres reported benefits not only for themselves but for the community as a whole.

Impacts and Benefits

Many studies of community computing initiatives focus on benefits to the community as a whole, rather than the benefits to individuals. As shown in Figure 2.1, the third stage of measuring the impact of ICT on society is to determine the effective use that people are making of technology and to measure the skills or outcomes of ICT initiatives (International Telecommunication Union, 2009).

What is impact and how can it be measured? “It is the relationship between the use of a service and the outcome of that use that defines the impact of the service” (Debono, 2002, p. 80). Brophy (2005) provides a fuller description:

- any effect of a service, product or other ‘event’ on an individual or group. It
  - may be positive or negative;
  - may be what was intended or something entirely different;
  - may result in changed:
    - attitudes;
    - behaviours;
    - outputs (i.e. what an individual or group produces during or after interaction with the service);
  - may be short or long term;
  - may be critical or trivial. (p. 44)

Brophy (2005) also notes that impact studies are often about what people say about a service rather than talking about what has changed for them as a result of a service. Impact studies often focus on ‘improved perception’ (p. 45) whereas it would be more beneficial to report on changed behaviours and assess any new skills.
A study of recent literature reveals the following overseas impact studies. A very early study in the United States by Chow, Ellis, Mark and Wise (1998) surveyed 817 people at 44 public libraries to probe for any negative effects technology could be having on the users of the centres. Their research found that the main areas of impact were on employment and education and were of benefit on a personal as well as a community level. One of the main reasons people came to the centre was the dynamic social environment and it was suggested that the atmosphere of the centre was a contributing factor to the successful learning experience.

Faris (2001) reports on an initiative in British Columbia which includes the use of ICT in community access sites, and the use of learning technologies to enable further online instruction. While Faris reports many benefits to the community as a whole from this initiative, it is not clear what the benefits were to the individuals who were accessing these programmes. In the United Kingdom, Gaved and Anderson (2006) report on both short and long-term impacts of ICT projects and found there is little research into the long-term effects of ICT training. Most research in this area has been carried out in the last decade and much has focussed on the effects of projects while projects are in operation, and the sustainability of projects, rather than the long-term outcomes.

Partridge, McAllister and Hallam (2007) report on an Australian project in a digitally divided community in Brisbane to provide ICT training to residents. One year after the completion of the project a focus group was held to determine what ongoing impact the training had on their lives, with all participants reporting positive ongoing impacts. Although there was a small sample size in the study, this research did find that ICT training and access to ICT did change people’s lives, through training at specialised learning environments.

The 2007 Public Libraries and the Internet study (Bertot, McClure, & Jaeger, 2008) reported the following impacts for patrons using United States library access centres:
Table 2.3: Impacts of public library information technology training for patrons

<table>
<thead>
<tr>
<th>Impact of training</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides information literacy skills</td>
<td>45.7</td>
</tr>
<tr>
<td>Offers technology training to those who would otherwise not have any</td>
<td>39.4</td>
</tr>
<tr>
<td>Provides general technology skills</td>
<td>37.6</td>
</tr>
<tr>
<td>Helps students with their school assignments and schoolwork</td>
<td>35.2</td>
</tr>
<tr>
<td>No training offered</td>
<td>23.8</td>
</tr>
<tr>
<td>Helps patron complete job applications</td>
<td>21.5</td>
</tr>
<tr>
<td>Helps users access and use electronic government services and resources</td>
<td>19.9</td>
</tr>
<tr>
<td>Facilitates local economic development</td>
<td>2.3</td>
</tr>
<tr>
<td>Helps business owners understand and use technology, information, resources, or both</td>
<td>1.7</td>
</tr>
<tr>
<td>Other</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Note: does not total 100%, as respondents could select more than one option

Source: Bertot, McClure, & Jaeger, 2008, p. 290

The responses in Table 2.3 were recorded from the librarians; this research did not contact patrons of the library access centres to determine the impacts listed above; therefore the recorded impacts are the perceptions of the library staff. From the findings in the above table, computer use and free Internet access are not seen as the biggest impact for patrons of the centre.

The aim of a thesis study of four branches of a public library system in the United States was to determine the adequacy of libraries in bridging the digital divide and the satisfaction of users with the services on offer (Brzozowski, 2007). Although there was a very low response rate to the study, the conclusion was that there is still a proportion of the population who cannot afford the cost of computers or Internet access and the library provided an access point for people who would otherwise have been excluded.

Very recent research from the United States by Becker et al. (2010) identifies that public library access centres were seen by users as an essential tool and their main
impacts were in the areas of employment, education, health and connecting communities (Becker, et al., 2010). Around 30 million people (40% of users) used a library computer for job related activities while 42% were using the computers to meet their educational needs. Information on health issues were a focus for 37% of users, while 60% of users engaged in communication with family or friends. The research also identified that the support of the library staff and the one-on-one help received through these centres also had a positive impact on the users and was identified as a contributing factor to the success of these public access centres.

In New Zealand, Brimblecombe (2005) conducted a survey on the many free computer short courses being offered by a number of tertiary institutions. While 600 participants were surveyed, the focus of the research was on the range of courses offered and the availability and quality of the courses, therefore the success of the courses in terms of outcomes for the participants was not determined. A further review of free computer courses offered through tertiary providers was conducted by PricewaterhouseCoopers (2003) to determine whether the objectives of the Computing for Free programmes were being met. Computing for Free were computer training programmes, offered through tertiary providers that attracted government funding. The review also considered whether the outcomes achieved were consistent with the Government’s objectives for tertiary education at the time. The report did identify benefits to individuals taking the programmes, including the following:

- Computing for Free was instrumental in helping between 578 and 1976 previously unemployed people to find jobs; therefore there was a large saving to the Government on unemployment benefits annually.
- Computing for Free led to increases in computer use for participants in many areas including work, hobbies, information and learning, entertainment and Internet and email use.
- After doing the computing courses only 6.3% of people aged over 50 did not use the computer in daily life.
The report concluded:

Computing for Free is contributing positively toward the achievement of government, student, institutional and sponsors’ objectives, by achieving the following outcomes:

- Enhancing skills
- Creating jobs
- Contributing to foundation education and lifelong learning
- Helping people to become more connected
- Closing the digital divide. (PricewaterhouseCoopers, 2003, p. 9)

The research carried out by Craig et al. (2003) for the New Zealand Department of Labour did identify benefits for the participants including a gain in confidence in the use of computers and increased communication with family and friends; some participants had reportedly moved into employment, others had undertaken further education. Further results from the Computers in Homes project (Craig, 2003) identified that participants believed the benefits of being able to use technology included being able to write job applications, prepare CVs, write letters and create their own content on the Internet.

The APN research noted the following impacts of library access centres on users and their communities:

- an increase in confidence for adult users of the centre,
- participants being able to produce professional CVs and apply for jobs on-line,
- increased connection both within and outside their communities,
- being able to access up-to-date, relevant information,
- for rural communities, youth were reportedly spending more time in the library and were able to make digital connections with their peers that previously had left them excluded,
- a wider and more diverse section of the community were interacting with the library and the staff,
• increased challenges for library staff however, not just with technology but managing the behaviour of some users of the centres (First Research, 2008).

Although there are many overseas studies that report on the benefits to individuals from having access to free public computing through local libraries, there is still the need for current information in New Zealand on the benefits to individuals. This thesis will address this issue by gathering data from individuals who are using the free services offered through the XYZ Learning Centre to access technology.

Chapter Summary

The research question for this study is to identify what impact a library Learning Centre has on users of the Centre. By using the ICT Development Index (International Telecommunication Union, 2009) as a conceptual model, this chapter has incrementally addressed the concepts and theory underpinning the thesis topic, by exploring the issues of a digital divide and community education, in the context of basic computer training for individuals who may be digitally deprived.

The literature has identified, through the use of statistics and analysis, that there are some members of Local City who do not have access to technology and some who have access, but lack the necessary skills for effective engagement with technology. In order to address this issue, various community computing initiatives have been identified in the literature, that are helping some members of the community by providing a venue for computer access along with some form of training. The literature review reports on some venues in New Zealand offering free Internet access and computer training, but finds that there is little evidence to show whether this training is having an impact on participants and meeting their needs. Overseas studies on users of public access sites have provided findings that have informed this study.

While some studies have been conducted on libraries as Learning Centres, very few have involved direct contact with the users of the centres and those that have were mainly concerned with what people were accessing, how often they were using the
centre and what could be done to improve access to technology. There is still a
dearth of literature in New Zealand identifying what benefits individuals perceive they
are getting from attending community technology centres based in public libraries
and more longitudinal studies could determine what impact technology skills are
having on the daily lives of community members attending Learning Centres. This
research adds to the body of knowledge by identifying how a Learning Centre is
equipping residents of Local City with ICT skills and how access to technology,
through the Centre, is impacting on their lives.

The following chapter discusses the methodology used for this research, along with
a description of how the data was analysed. The methods used to ensure reliability
and validity are presented and finally the ethical issues that surrounded this study
are addressed.
**Introduction**

This chapter discusses the methodology used to frame this research, and the rationale for choosing the methodology. The data collection methods and techniques that were used are also discussed and the methods used for data analysis are explained. The ethical considerations that underpinned the research process are also specified.

**Research Methodology**

Research methodology is explained by Blaxter, Hughes and Tight (2006) as “.. the approach or paradigm that underpins the research” (p. 58). Bryman (2008) defines the term paradigm as the way of thinking or the set of beliefs that guide the research process. The choice of methodology for this research was dictated by the aims of the research and the research questions. As the goal was to investigate the perceptions of participants and answer “how” and “what” questions, qualitative rather than quantitative methods were deemed the most appropriate for this project. The differences between quantitative and qualitative research are summarised by Bryman (2008) in the following Table 3.1 and this guided me in the choice of the appropriate strategy for this research.

| Table 3.1: Fundamental differences between quantitative and qualitative research strategies |
|---|---|---|---|
| Principal orientation to the role of theory in relation to research | Quantitative | Qualitative |
| Epistemological orientation | Deductive; testing of theory | Inductive; generation of theory |
| Natural science model, in particular positivism | Interpretivism |
| Ontological orientation | Objectivism | Constructionism |

*Source: Bryman, 2008, p. 22*
Qualitative Research

This research has been conducted using a qualitative methodology. Qualitative research is exploratory and interpretive (Creswell, 2009), allowing greater flexibility (Davidson & Tolich, 2003) to study phenomena in their natural setting (Denzin & Lincoln, 2005). Holliday (2002) describes qualitative research as the opportunity to investigate the depth of behaviour within specific settings, as opposed to a study that could be applied to broad populations. Qualitative methods are used to explore attitudes as well as experiences (Dawson, 2002; Morse & Richards, 2002; Wisker, 2001) and focus on gathering evidence that allows the researcher to understand what is going on.

A qualitative methodology was chosen for this research project as the purpose was to investigate peoples’ experiences and the meanings they give to these experiences (Morse & Richards, 2002) in order to determine the impact of the Learning Centre Strategy on the residents who use the Centre. While descriptive statistics have been incorporated as part of the research questionnaire, the main focus of this research was to delve into the reasons why people are using the Learning Centre, their attitudes and feelings towards the Centre, the skills they perceive they are acquiring, and the perceived impact that technology is having on them.

This research took place in a single library Learning Centre located in Local City. As this research focussed on one specific location, it is not intended that the results from this study be applied to other situations, although the findings can provide input to the development of an IT strategy for similar locations.

Positioning of the researcher

Because qualitative research does not involve experiments or measurement, but rather interpretations, there is concern that biases could shape the outcomes (Creswell, 2009). It is therefore important that the researcher clearly states any past experiences, judgements or personal values that could influence the interpretations made by the researcher.
My belief in the importance of ICT in everyday lives has been shaped by my personal experiences as a lecturer to novice computer users for over twenty years. Seeing the increase in confidence as students overcome their fear of technology and develop computing skills has been a rewarding experience. I have been able to witness firsthand the difference that computing skills have made in the lives of the students I have taught, and I firmly believe that as we are now in such a technological age, every person should have the opportunity to develop computer skills if they so wish. My background in computing as well as my interest in education led me to the topic for this research. In particular, I am interested in examining how community-based initiatives may enhance the IT proficiency of community members.

**Advantages and disadvantages of qualitative research for this study**

Qualitative research allows the researcher to respond to uncontrolled variables (Holliday, 2002) and to focus on the details of a smaller number of examples (Blaxter, Hughes, & Tight, 1996). As this research was located in a public library, I was not able to control the environment or the number of people who were accessing the Learning Centre. While the Learning Centre was always busy at the times I visited, the number of people who chose to participate in this research was not as large as I had hoped. However, being able to interview some of the users of the Centre has allowed me to focus on issues that were relevant to a sample of participants.

One of the advantages of qualitative research for this project was the ability to look deeper into the problem than a purely quantitative approach would have allowed. The focus of this research was not simply to provide statistics on the users of the Learning Centre, but more to understand the thoughts and feelings of the users in terms of the technology they were engaging with.

While Silverman (2006) notes that some researchers see the flexibility offered by qualitative research as a negative, in that there could be a lack of structure around the research, this project provided structure through the use of a questionnaire and
an interview schedule that was used to provide a framework for using semi-structured interviews to gather rich data.

**Case Study**

The research strategy I have used is that of a case study. Case studies are often used in education (Merriam, 1998) however there is debate in the literature over whether a case study is classed as a “methodology” (Hamel, Dufour, & Fortin, 1993; Simons, 1996) or more an object to be studied (Stake, 1995).

Many positive aspects of case study research are discussed in the literature: case studies are strong in reality as data is drawn from people’s experiences (Blaxter, et al., 1996); the ability to study human actions as they really happen (Gillham, 2000); the ability to study a wide variety of issues to a greater depth, and to gather rich data from multiple sources (Gray, 2004). Scott (2005) describes case studies as the opportunity to give people a voice and to see the world through the eyes of those being studied. A case study is also used when a researcher wants to show the complexities of social life and to explore alternative meanings. However, the complexities of a case can make analysis difficult (Blaxter, 2006), and Gray (2004) says there is a need to provide multiple sources of evidence to ensure validity of the case.

The following table summarises definitions from the literature on case studies.

**Table 3.2: Definitions of Case Study**

<table>
<thead>
<tr>
<th>A case study is...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creswell (2009)</td>
</tr>
<tr>
<td>Bell (1999)</td>
</tr>
<tr>
<td>Scott (2005)</td>
</tr>
<tr>
<td>Jones et. al (2006)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
The case study method was deemed appropriate for this research as the purpose of this research was to study a group of people, in depth. The chosen group of people all had an activity in common – they were accessing the XYZ Learning Centre. The research was conducted in an actual context where I was not able to control the variables in any way, i.e. the number of people who were accessing the Learning Centre, the time of day they were attending, the activities they were doing on the computers, the skills they were acquiring from the Learning Centre, or the interaction that was occurring between people in the Learning Centre. I chose to use a variety of tools to collect the data in order to answer who, what and how questions.

The results of this study have been presented as a descriptive narrative. Zikmund (2000) explains descriptive research in the following way: “descriptive research seeks to determine the answers to who, what, when, where and how questions” (p. 50). He further clarifies this with the following statement: “Frequently, descriptive research will attempt to determine the extent of differences in the needs, perceptions, attitudes, and characteristics of subgroups” (p. 51).

Merriam (1998) states that descriptive research allows for “thick description” (p. 29) – “the complete, literal description of the incident or entity being investigated” (p. 30). Descriptive narrative is appropriate for this research as I wanted to delve into the reasons why the Learning Centre was being used by the residents of Local City and how their engagement with the Centre is benefiting them in their everyday lives.

**Case Study Setting**

Holliday (2002) provides five criteria that can be used to define the research setting. The following table identifies how these five elements were applied to this research project.
### Table 3.3: Criteria for research setting

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Details</th>
<th>Details of this research</th>
</tr>
</thead>
<tbody>
<tr>
<td>The setting must have a sense of boundness</td>
<td>Time, place, culture</td>
<td>This research was located within the Learning Centre over a period of six weeks, involving residents of Local City who were interacting with the Learning Centre in some form during the research period.</td>
</tr>
<tr>
<td>The setting should provide a variety of relevant, interconnected data</td>
<td>People to watch or interview, artefacts</td>
<td>Everyone who accessed the Learning Centre over the research period was able to participate. The participants were interconnected via the environment of the Learning Centre, this gives them meaning.</td>
</tr>
<tr>
<td>There should be sufficient richness</td>
<td>Different instances, facets and viewpoints – microcosm of the research topic in wider society</td>
<td>By using a variety of research methods over a period of time, different sections of the community were researched. This provided a richness of data and viewpoints.</td>
</tr>
<tr>
<td>The setting should be sufficiently small</td>
<td>Logistically and conceptually manageable</td>
<td>This research was manageable; the Learning Centre was easily accessible to me and the number of participants who attended the Centre over the period of the research was not overwhelming.</td>
</tr>
<tr>
<td>There should be access</td>
<td>For the researcher to take whatever role is necessary to collect data</td>
<td>Local City Council gave permission for this research to be carried out in the Learning Centre.</td>
</tr>
</tbody>
</table>

*Source: Adapted from Holliday 2002, p. 38*

These criteria provide the setting in which this case study took place within the XYZ Learning Centre.
Methods

Methods can be described as the tools and techniques that are used for the collection, analysis and interpretation of data (Scott, 2005). This research involved interaction with the participants and co-ordinators of the Learning Centre through interviews, as well as observations at the Learning Centre. Merriam (1998) describes this type of qualitative research as field work, where participants are observed in their natural setting. Blaxter et al. (1996) similarly note that the data collected through fieldwork are original and cannot be accessed without the researcher going out into the field.

This research required methods that would allow me to collect open-ended, emerging data that could then be coded into themes for analysis. The methods used for data collection were questionnaires, observation and semi-structured interviews – these methods provided the thick, rich data required for descriptive research. Questionnaires were made available at the Learning Centre for both drop-in users of the Centre and for attendees at the computer classes.

During the period the questionnaire was available I conducted observations to get a feel for how the Centre was being used and to provide information that would help inform the interviews. Once the questionnaire was analysed, interviews with both users of the Learning Centre and course participants were held.

Prior to commencement of this research, permission to access the Learning Centre was obtained from the Group Manager, Library and Information Services for Local City. Consultation was also held with the co-ordinators at the XYZ Learning Centre where the research would be based.

Having discussed methodology and methods, the following sections explain their use in this study.
**Questionnaires**

In the first instance, a self-completion questionnaire (Bryman, 2008) was used to obtain information from participants attending the XYZ Learning Centre. Two questionnaires were developed – one for participants who use the Learning Centre as a drop-in facility for Internet access, and a separate questionnaire for participants who come to the Learning Centre to attend the computer courses (see Appendix A). The questionnaire for the drop-in users contained twenty-two closed and two open questions. The closed questions were included to provide descriptive statistics on the users of the Centre as this data did not previously exist. Of the twenty-two questions on the questionnaire for the computer classes, fifteen were closed and seven were open questions.

It was intended that both an on-line and paper-based questionnaire would be offered as it was felt that some participants may not be sufficiently skilled with technology to complete an on-line version. However, after consultation with the Learning Centre co-ordinator, it was determined that a paper-based questionnaire would be the most appropriate tool, as there is a time limit for participant use of the computers at the Learning Centre, and this could have been a barrier to completion of the questionnaire.

Blaxter et al. (1996) assert that questionnaires are one of the most widely used tools in social research and are also a convenient way for respondents to give their views (Bryman, 2008). A questionnaire allows the same information to be gathered from all participants (Blaxter, 2006) and for this research it was a relatively quick way to gather initial data.

The limitations of this type of data collection method include a lower response rate, incomplete questionnaires or respondents misunderstanding the questions (Bryman, 2008). Zikmund (2000) warns that people who feel strongly about something are more likely to respond, therefore extreme points of view may be over-represented. He further cautions that people could deliberately answer questions falsely to avoid embarrassment, to appear intelligent or to conceal personal information, or could provide the answers they think the researcher wants to hear.
These issues were addressed in the following way:

- To reduce the likelihood of a low response rate, the questionnaires for the drop in Centre were placed in folders beside each computer. On the front of the folder was an eye catching notice with details of the research and an invitation for participants to complete the questionnaire. Questionnaires for the computer course participants were given out during the computer course by the course tutor.

- Careful piloting of the questionnaire is needed so that any misunderstandings can be minimised (Bell, 1999). Both questionnaires were piloted with colleagues to ensure questions were clear and logically presented and the length of time taken to complete the questionnaire was within fifteen minutes. From their feedback, several changes were made to the wording of some questions to improve clarity. Copies of both questionnaires were then sent to the Learning Centre co-ordinator as well as a staff member from Local City Council for their feedback. A further small trial was then conducted with a senior citizen and a person with English as a second language. No further changes were made to the questionnaires from their feedback.

- There was no way that I could control who was answering the questions therefore it is likely that people with strong views could be included in the questionnaire data, however as this is only one of the methods used to gather data it is hoped that a more balanced opinion would be coming through once all data are analysed.

- A sealed box with a large sign displayed on the front was placed in a prominent position in the Learning Centre so participants could place their completed questionnaires into this, thereby assuring their anonymity. This box was cleared by me on a regular basis.

In completing the data analysis for the questionnaires a further limitation was identified. While participants were asked to indicate their satisfaction with the services of the drop-in Centre, no further question was included in order to identify why they were dissatisfied with the services on offer. This information could have been used by the Learning Centre to improve the facility for future patrons.
Sampling methods for questionnaires

Bryman (2008) describes sampling as “the segment of the population that is selected for investigation” (p. 168) and asserts that convenience sampling - a type of non-probability sampling, is commonly used for social research. He describes convenience sampling as choosing participants who are available at the time; however he cautions that convenience sampling has limitations in that it cannot be used for generalisations. As findings from this research project will not be applied to other situations, convenience sampling was deemed appropriate for this case study and was the method used for the questionnaire. No attempt was made to seek a random sample but rather all residents over the age of fifteen, who used the Learning Centre over a period of six weeks, were invited to complete a questionnaire. Participants were self-selected by using the Learning Centre during the research period.

It was initially intended to have the questionnaires available for a four week period, however by the end of that period, only twenty questionnaires for the drop-in Centre had been completed and of the twelve given out to people attending the computer classes, only seven were returned. By extending the time frame for another two weeks, a further twelve questionnaires were received from the drop-in Centre.

Observation

Observation can be described as the act of watching an event, making notes on what is observed and then analysing the events (Blaxter, et al., 1996), in a natural setting (Angrosino, 2005). It is a direct method of research (Bryman, 2008) and can be either structured with a pre-determined framework, or open and unstructured (Blaxter, et al., 1996).

Angrosino (2005) describes three main ways social scientists conduct research using observation:

- participant observation - the researcher becomes immersed in the life of the group being researched;
reactive observation - participants are aware they are being observed;
unobtrusive observation - participants are not aware they are being observed.

For this research project I chose to conduct reactive observation (Angrosino, 2005), also known as non-participant observation (Wisker, 2001). I visited the Learning Centre to conduct observations on four separate occasions and while I was not a participant during those visits I was visible to the people in the Learning Centre. Users of the Centre were made aware that observation was being carried out during their time in the Centre by the use of large printed posters that were placed around the room as well as a large sign on the Centre’s whiteboard which was placed in the middle of the group of computers during the periods of observation.

Angrosino (2005) further describes three procedures used during observation:

1. Descriptive observation - all details are recorded, large amounts of data may be collected, not all of this may be used.
2. Focussed observation - particular parts of the issue are observed and recorded.
3. Selective observation - preselected smaller parts are categorised for observation.

The procedure I used was that of selective observation (Angrosino, 2005) where the participants were observed as they interacted with the environment of the Learning Centre as well as with other participants. My goal with observation was to identify whether structures or groups exist amongst the participants; the social behaviour that may occur within the Learning Centre; the interaction occurring between the co-ordinators and participants, and how the Learning Centre environment may be helping or hindering engagement with technology.

An observation schedule was used to record the data during the observation (see Appendix B). The use of a schedule gave me a clear focus for the observation and was an orderly way to record what was happening. At regular intervals I recorded the number of people who were using the computers, the gender of the participants and the number of people who were waiting to access a computer. The length of
time each person was using their computer was also recorded, along with any interactions either between people using the Centre and the co-ordinator or between users at the Centre.

One of the sessions I observed was the first lesson for a beginners computing class. The observation schedule used here was to record the gender of the participants, the previous computer experience they shared with the group and the type of interaction and help they needed from the course tutor during the lesson.

By using observation, I was able to get an overall feel for what was happening in the Learning Centre, to see who was accessing the Centre and how busy the Centre was at various times of the day/days of the week. This information was helpful to me when selecting participants for interviews as many of the people who indicated they would be happy to attend an interview were from a particular demographic. From the observations I conducted, this demographic was not representative of the people whom I observed attending the Centre the most, but may have been the people with the most time available during the day and perhaps they saw an interview as an interesting way to fill their available time. I felt this sample would not give me a good cross-section of the Learning Centre users.

The information gathered during the observations was invaluable in informing the interviews. Many of the issues I had observed were the same issues that came through from participants in the interviews and I was able to delve deeper into these issues as I had witnessed them first-hand.

**Sampling methods for observation**

As I had no control over who was coming to the Learning Centre during the period of observation, convenience sampling was once again the most appropriate method to use for observations, recognising that this would not give a cross-section of the users of the Centre. The observations were conducted on different days of the week and at different times on those days and all people using the Learning Centre over the observation period were included as part of the observation.
**Semi-structured interviews**

Semi-structured interviews were chosen for this research as this type of interview allows the researcher to interact with the interviewees and follow up any significant issues that may arise (Bell, 1999; Bryman, 2008). This method also allows for flexibility and can lead to a deeper understanding of the participants’ responses (Bryman, 2008) allowing motives and feelings to be probed (Bell, 1999). Gillham (2000) asserts that semi-structured interviews are the most important form of interview in a case study and can be the richest single source of data. This method allowed me to take the information given from the questionnaires and probe deeper to gain further understanding on how the Learning Centre was impacting on the users of the Centre.

While each interview is unique, it is important to have some structure or an interview guide to focus the interview and ensure all topics are covered (Bryman, 2008; Dawson, 2002). The interview guide that was used for these interviews is included in Appendix C. The completed questionnaire for each interview participant was used as a starting point for the interview so that clarification of some answers and further probing could occur. The interview then followed the interview guide, although some of these points had been covered during the initial stages of the interview. Being a semi-structured interview, some deviation from the set pattern was inevitable as interviewees were keen to ask questions about technology and seek help from the interviewer. Being able to answer these brief questions and provide some technical support was seen by the researcher as an appropriate way to thank participants for giving up their time for this research project.

Davidson and Tolich (2003) provide sound advice on conducting interviews: the need to be an active listener, and allowing silences during the interview; this allows participants “the space to talk” (Silverman, 2006, p. 111). During pauses in the conversation there was the temptation to ‘fill the gap’ and to remind me of the need for these natural pauses, I found it helpful to have reminders written on my notes so all that was needed was a quick glance. During the interviews I also took brief notes on the body language of the participants, as along with the tone of voice that came through the recordings, non-verbal signals were also an important part of the
interviews and often gave emphasis to the issues that were being addressed. The types of non-verbal signals mostly displayed during the interview were closed eyes while thoughts were being gathered; this was often accompanied by long pauses in the conversation. Some participants also used hand gestures to emphasise points of view, head nodding for confirmation of a point, while one participant used hands thrown in the air, along with big sighs to indicate how frustrated the computer made them feel.

All interviews were conducted in a meeting room at the XYZ Library. This location was chosen as it was attached to the Library and was a place the participants were familiar with and could easily access. Interviews were limited to forty minutes; although most were completed in around thirty minutes, allowing some time for the researcher to help afterwards with any technical questions the interviewees had.

As suggested by Blaxter et al.(1996) all interviews were taped and transcribed before analysis occurred. A digital tape recorder was used, with the permission of participants, and these files were then transferred to a computer. I chose to complete the transcription myself, thus enabling me to become immersed in the process and more familiar with the topics and themes that were coming through. Interviews were transcribed and saved as a Word file, and along with the original recordings, these files were archived to a CD and stored in a locked cupboard, where they will remain for a period of five years before being destroyed.

**Sampling methods for interviews**

Purposive sampling is another form of non-probability sampling that is recommended for interviews (Bryman, 2008) and is the method I used for interviewing the users of the Learning Centre. Bryman explains purposive sampling as “wanting to interview people who are relevant to the research questions” (2008, p. 458).

In choosing participants for an interview, I wanted to get a spread of ages and genders, and if possible different cultures. By using purposive sampling I was able to look at the demographic information from the completed questionnaires and this
helped me choose the users to interview. I interviewed three people who had attended recent computer courses at the Centre as well as four people who were users of the drop-in Centre. One person I interviewed from the drop-in Centre had also attended a computer course at the XYZ Learning Centre in the previous year. As mentioned earlier, a large proportion of the participants who volunteered for an interview were mainly males from the same age range and were not a representative sample of the users of the Centre. I therefore chose not to include all of these in the interviews, but rather selected participants across a wide range of ages.

The information sheet given to participants as part of the questionnaire invited them to attend an individual interview with me. Participants were asked to record their name and phone number if they wished to be considered for an interview. Of the thirty-one questionnaires completed by drop-in participants, eleven indicated they were willing to undertake an interview, by putting their contact details on their questionnaire. All of the completed questionnaires from the computer classes had contact information recorded.

As the interview participants had also completed a questionnaire, and added their contact details to the first page, I was able to use the completed questionnaire, along with the interview schedule, as the basis for these interviews. This enabled me to delve deeper into some of the responses given in the questionnaire thus giving me a better understanding of the issues and impacts the Centre was having on users.

Each Learning Centre in Local City has a co-ordinator, someone who meets and greets the public, provides one-on-one tuition and runs group teaching sessions. I chose to interview the two co-ordinators of the XYZ Learning Centre as they are interacting on a daily basis with the participants. This gave me another perspective on the way the Centre was being used and as I conducted these interviews last, I was able to address issues that were arising from interviews with the users of the Centre.

The methods chosen for this research supported each other in that observation was used to enable the researcher to understand the workings of the Centre and to provide a context for the research. The data from the questionnaires, along with the
findings from observations, provided information that helped shape the interview questions. The following section discusses the methods used to analyse the data collected, along with the implications for reliability and validity and the ethical issues that were addressed.

**Data Analysis**

Data analysis can be described as transforming raw data into “findings or results” (Lofland, Snow, Anderson, & Lofland, 2006, p. 195), or the understanding and explanation of data (Blaxter, et al., 1996) or the meaning given by Yin (2004) where data are first examined to determine a category, in order to produce evidence. Lofland et al. (2006) describe data analysis as an inductive process where the data gathered drives the analysis process. They assert that there is a high level of interaction between the researcher and the data collected, with the researcher often immersed in the data in order to carry out the analysis. Both Dawson (2002) and Creswell (2009) advise analysing data as it is collected and interpreted, and the first step in this process is coding the data.

Miles and Huberman (1994) provide a useful model for data analysis as shown in Figure 3.1 below; this model guided the analysis of data for this research project.

Figure 3.1: Components of data analysis: Interactive model

Source: Miles & Huberman, 1994, p. 12
Coding

Data reduction is the process of organising and sorting data into a form that will allow conclusions to be drawn (Miles & Huberman, 1994). This process is also called coding (Blaxter, et al., 1996; Bryman, 2008; Lofland, et al., 2006; Morse & Richards, 2002). Creswell (2009) uses coding to identify categories and themes that can then be used to explain the research story.

Morse and Richards (2002) identify three types of coding:

- descriptive coding - used to store information known about the data items such as the context or setting. This information can then be accessed to look for patterns or explanations.
- topic coding - usually the first stage of analysis where descriptive or interpretive categories are developed so that data can be analysed.
- analytic coding - used to develop new categories or to make comparisons so that new themes can be developed.

For this research project all three types of coding were used to analyse the data. In order to look for themes within the data, there needs to be some system to organise or display the information. Miles and Huberman (1994) name this stage the data display and suggest using charts, tables or matrices to assemble the data so that it is easily accessible. Using this mode, the data from the observations and the questionnaires were entered into a Microsoft Excel spreadsheet as they were gathered. The use of a spreadsheet during the analysis stage allowed easy searching of common themes as well as comparisons to be made between the data. Once all data had been entered, a printout of the results was done; this enabled me to study the data in hard copy.

Miles and Huberman (1994) use the conclusion drawing and verification stage to look for patterns or explanations within the data. It is also an important step in looking for verification of the data as other data is analysed. By having hard copies of the data I was able to look for patterns and common themes and these were colour coded with pen. The printouts of the interviews were also colour coded in a similar
manner. As suggested by the diagram in Figure 3.1, the steps in this process were continuous and inter-related throughout the analysis stage as more data became available.

**Reliability and validity**

There is much discussion in the literature on reliability in qualitative research. According to Bryman (2008) a case study is an “intensive examination of a single case” (p. 57) which cannot be replicated, therefore external reliability is not such an issue, rather validity is more important. Cohen, Manion and Morrison (2007) argue that reliability and validity are important in both quantitative and qualitative research, but they are applied in different ways, while Lincoln and Guba (1985) prefer to use the words truth value, applicability, consistency and neutrality to replace reliability and validity. Similarly Rubin and Rubin (1995) have substituted validity and reliability with ‘transparency, consistency/coherence and communicability’ (p.85).

Cohen et al. (2007) refer to reliability as the match between what actually happens and what is recorded as happening, while Lincoln and Guba (1985) call this dependability. I determined to utilise these applications in combination and the following methods were used in my research project to ensure dependability and validity.

**Questionnaires.** As some of these were open questions, it was necessary to apply logical codes to these answers, ensuring that incorrect inferences were not made (Cohen, et al., 2007). To ensure validity, questionnaires were pre-tested with a trial group.

**Observations.** The major threat to dependability and validity with observations is around the presence of the observer and as stated earlier, reactive observation was used, therefore the presence of the observer was obvious. Cohen et al. (2007) caution that this may change the natural behaviour of the participants while being observed; Bryman (2008) calls this the “reactive effect” (p. 265). To ensure consistency with observations, an observation schedule was used to provide a framework.
Interviews. It is important that transcripts are made of interviews as soon as possible after the event and these transcripts are given to the interviewees to confirm the accuracy (Bryman, 2008). Interviews were taped and transcripts were made; to ensure dependability participants were offered the opportunity to read and review these transcripts, none of the participants chose to do this. Cohen et al. (2007) suggest structuring the interviews so that each interviewee is asked the same questions and being careful not to use leading questions. An interview schedule was used to ensure the same questions were being asked of all participants.

Ethical Issues

Ethical issues can emerge in all areas of the research (Bryman, 2008; Jones, et al., 2006). Wilkinson (2001) provides a simple definition of ethics as “how we should treat others” (p. 13). Bryman (2008) discusses three ethical principles that should be used in social research. The following table shows how each of these principles was applied to this research project.
<table>
<thead>
<tr>
<th>Bryman’s principles</th>
<th>Explanation of principles</th>
<th>Application to my research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harm to participants</td>
<td>this is both physical and harm from a lack of confidentiality (Bryman, 2008).</td>
<td>anonymous questionnaire; a transcript of the interviews was provided for confirmation, a pseudonym was used so the organisation cannot be identified, names of individuals being interviewed were not disclosed; no identifying characteristics were used to record observations.</td>
</tr>
<tr>
<td>Informed consent</td>
<td>permission must be given before starting the research, participants must be given enough information on the research so they can understand what is being done (Wilkinson, 2001).</td>
<td>in order to obtain informed and voluntary consent from the participants, a letter was attached to the questionnaire which explicitly outlined the purpose and nature of the research; this letter also stated that the names of the participants and the name of the Learning Centre would remain anonymous and the data would only be viewed by the researcher and the researcher’s supervisors; the Learning Centre co-ordinators were given information about the project before being interviewed, they were also provided with consent forms to sign and were offered transcripts; large posters were prominently displayed in the Learning Centre during the periods of observation to explain what was happening</td>
</tr>
<tr>
<td>Invasion of privacy</td>
<td>take all necessary measures to ensure your research is not intruding on the lives of the participants or causing unnecessary anxiety (Dawson, 2002).</td>
<td>the questionnaire was trialled to ensure it could be completed within fifteen minutes; interviews were limited to forty minutes; observation was not intrusive but I did need to be sensitive to the effect my presence may have had on people using the Learning Centre.</td>
</tr>
</tbody>
</table>
Prior to the commencement of this research, approval was sought and given by the Local City Council as well as the Unitec Research Ethics Committee in 2009. Along with the above principles, this research complied with the appropriate laws as detailed in the Unitec guidelines for ethics applications (Unitec New Zealand, 2009).

**Chapter Summary**

This chapter provided the rationale for the methodology chosen as well as details on the data collection methods that were used. A brief discussion on sampling methods was followed by a description of the process for data analysis. Finally, ethical issues as they applied to this research were discussed.

The following chapter presents the findings of the research.
4 – FINDINGS AND ANALYSIS

Introduction

This chapter presents the findings of the research study. As described in the previous chapter, qualitative data were gathered via questionnaires, observation and interviews and in this chapter the data are analysed and presented.

The information gathered from the descriptive statistics provides an insight into the type of people who are using the Learning Centre, while the qualitative analysis of the questionnaires discusses how and why people are using the Centre, along with their perceptions and attitudes towards technology in general. The details recorded during observation were analysed to determine what interactions may have been occurring while users were at the Centre. As explained in the previous chapter, semi-structured interviews were transcribed, coded and then analysed to provide thick, rich data in order to further understand the impact technology is having on users of the Centre.

Each section of detailed analysis begins with a brief outline of the main findings.

Descriptive Statistics

Participant sample – questionnaires

A total of thirty-nine questionnaires were completed by users of the Learning Centre. Thirty-two of these questionnaires were completed by people who were using the Centre as a drop-in, while seven questionnaires were completed by people who had attended a beginner’s computer course at the Learning Centre. Nine questions were included on the questionnaire to gather demographic information. Where participants did not respond to a question, this is recorded as “no response”.

Findings and Analysis
Section summary

From the responses received, the Learning Centre is popular with both males and females across a wide range of ages. Participants who earned under $15,000 were the highest percentage of users in this research; none of the respondents who earned under $15,000 had an Internet connection at home and they identified themselves as predominantly unemployed or beneficiaries. It appears that the Centre is proving a popular venue for unemployed people to access computers. The only other facility in the local area providing Internet access is an Internet café, where patrons are charged for their computer use. Although half of the drop-in Centre respondents had access to a home computer, very few had an Internet connection at home. While the drop-in Centre questionnaire was mainly completed by Europeans with English as their first language, visits to the Centre to conduct observations confirmed there was a variety of ethnicities using the Centre. The low response by non-Europeans may have been due to various reasons such as language barriers or a lack of confidence to complete the survey in English.

The following sections describe the results in more detail.

Gender

Of the thirty-two questionnaires returned for the drop-in Centre, 41% were from males; 56% were from females and 3% recorded no response. Of the seven questionnaires returned from the computer courses, 71% were from males and the remainder from females.
**Age**

Table 4.1: Age of participants

<table>
<thead>
<tr>
<th>Age range</th>
<th>Drop-in Number of participants</th>
<th>%</th>
<th>Classes Number of participants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>5</td>
<td>16</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td>5</td>
<td>16</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>30-34</td>
<td>3</td>
<td>9</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>35-39</td>
<td>2</td>
<td>6</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>40-44</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>45-49</td>
<td>2</td>
<td>6</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>50-54</td>
<td>5</td>
<td>16</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>55-59</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>60-64</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>65-69</td>
<td>5</td>
<td>16</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>70-74</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>&gt;75</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>100</strong></td>
<td><strong>7</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

It can be seen from Table 4.1 that the age groups with the highest number of questionnaire responses were 20-24, 25-29, 50-54 and 65-69. The next largest group was people aged between 30 and 34 years. Although the Learning Centre is well used by school children, those under the age of 15 were not included in this research due to ethical complexities. Over the period of this research, beginners computing classes were most popular with those aged 60 years or more.
Employment status

Figure 4.1: Employment status of participants

As Figure 4.1 shows, unemployed people returned the highest number of completed questionnaires for both the drop-in Centre and courses. When asked to indicate their current employment status, three respondents selected two choices – e.g. a homemaker and unemployed.

Income

From the drop-in Centre, twelve people chose not to indicate their income level; the next highest group was in the under $15,000 bracket with seven responses recorded, closely followed by the $15,000-$29,999 income bracket with six responses. Table 4.2 summarises all responses received for this question.
Table 4.2: Income level of respondents

<table>
<thead>
<tr>
<th>Income bracket</th>
<th>Drop-in Number of responses</th>
<th>Courses Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$15,000</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>$15,000-$29,999</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>$30,000-$49,999</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>$50,000-$69,999</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>$70,000-$89,999</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>&gt;$90,000</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>No response</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

Access to technology

Three questions were used to determine if participants had access to computers in their home or at their work place, as well as access to the Internet. If Internet access was available at home, participants were asked to indicate if this was dial-up access or broadband.

Figure 4.2: Access to a computer – drop-in Centre

While the yes or no responses for home computer access shown in Figure 4.2 were similar for the drop-in Centre, a much larger portion of the survey group did not have access to technology at their work place. However, as shown in Figure 4.1, a high proportion of respondents were unemployed. For the computer classes, six of the seven respondents had a computer at home with two of the six indicating they also had access to a computer at work.
Although 50% of the drop-in survey group had a computer at home, only 22% reported having an Internet connection at home. The full results for this question are shown below.

### Table 4.3: Access to Internet connection and broadband

<table>
<thead>
<tr>
<th></th>
<th>Drop-In</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet at home</td>
<td>22%</td>
<td>71%</td>
</tr>
<tr>
<td>No Internet at home</td>
<td>75%</td>
<td>29%</td>
</tr>
<tr>
<td>No response</td>
<td>3%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>Broadband connection</td>
<td>16%</td>
<td>43%</td>
</tr>
</tbody>
</table>

No-one from either group indicated they had a dial-up connection for Internet access.

**Ethnicity and language**

The largest number of people completing the questionnaire for the drop-in Centre was Europeans with 75% of the respondents indicating that English was their first language. Although 22% of respondents (7 people) identified themselves as Maori, only one person indicated that Maori was their first language. All people who completed the computer courses questionnaire during the period of the research were European with English as their first language. Table 4.4 shows the breakdown of ethnicity and first language for the drop-in Centre.
Table 4-4: Ethnicity and first language of respondents – drop-in Centre

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>No. of responses</th>
<th>First language</th>
<th>No. of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>European</td>
<td>18</td>
<td>English</td>
<td>18</td>
</tr>
<tr>
<td>Maori</td>
<td>7</td>
<td>English</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maori</td>
<td>1</td>
</tr>
<tr>
<td>Pacific Peoples</td>
<td>3</td>
<td>English</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Samoan</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cook Islands</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>Middle Eastern</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arabic</td>
<td>1</td>
</tr>
<tr>
<td>Filipino</td>
<td>1</td>
<td>Tagalog</td>
<td>1</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

Qualitative Analysis - Questionnaires

The questionnaire for the drop-in Centre included fifteen questions to determine when and how people were using the Learning Centre, their feelings and attitudes towards technology and the types of activities the Learning Centre drop-in was being used for. Participants were also asked to indicate what benefits they perceived they were gaining by using the Centre.

Similar questions were asked of the people who had attended computer courses at the Learning Centre. These participants were also asked to identify if they had done any previous computer training and why they had enrolled at the Learning Centre.

Section summary

An equal number of males and females had come to the drop-in Centre to send or receive emails - the most popular reason for coming. Email use was popular with all age groups, including one respondent aged over 75. Although nine people identified themselves as unemployed, only six of these people indicated job-related activities...
as their reason for coming to the Centre on the day they completed the questionnaire. Most people come to the drop-in Centre more than once a week and have been coming to the Centre for more than a year. The only day that is not popular with users is Saturday, an issue explored in the following section. On most days the busiest time is from 10am to 3pm. While users are happy with the location, opening times and support from staff of the Centre, they are not so positive about the Internet speeds. Users of the drop-in Centre feel they are adding to their computer skills and improving their job chances by using the Centre.

Computer courses are popular due to the small class sizes and participants report feeling more positive about technology as a result of the courses. Attending computer classes is clearly giving participants skills to access information on the Internet with the main benefit reported by course participants being an increase in confidence to try something new.

The following is a full analysis of the findings.

Reasons for coming to the Learning Centre
Participants were asked an open question to indicate why they had come to the Learning Centre that day. Many participants had written more than one reason for coming to the drop-in Centre in their response; the common themes were collated from the responses. The reason most stated for coming to the Centre was for accessing emails. While some people just responded as checking emails, others were more specific stating they were using emails to communicate with family and friends either in New Zealand or overseas.

The next most common response, with six recordings, was for research on the Internet. This was recorded separately from the responses who indicated they were coming to use the Centre for homework (four responses) or just to use the Internet with no further explanation (two responses). One person stated their reason for visiting the drop-in Centre that day was to look for rental properties.

Looking for work provided four responses, while coming to produce their curriculum vitae (CV) produced two responses. The remaining uses of the drop-in Centre were
Participants of the computer courses were asked why they had enrolled in a course at the Learning Centre. Some people gave more than one reason in their answer. While a common response was to learn how to use a computer, one respondent also added that they felt computer skills were needed these days; another needed to gain skills for current employment, with another person stating they needed to have computer skills to feel more confident when applying for jobs. One person commented they enrolled in this course as they were dissatisfied with a previous experience on a computer training course.

Usage patterns
Six questions were related to finding out when and for how long people use the drop-in Centre. Information was also gathered on how far people thought they were travelling to access the Centre.

As shown in Figure 4.3 a large majority of the respondents have been coming to the Learning Centre drop-in for more than one year. No first time users completed the questionnaire.

Figure 4.3: Length of drop-in Centre usage
Respondents indicated which day or days they came to the Centre by the use of check boxes, recognising that the Learning Centre is closed on Sunday. Table 4.5 is a summary of the responses to the question “Which days of the week do you usually come to the Learning Centre? Please tick all that apply to you.”

Table 4.5: Daily drop-in Centre usage

<table>
<thead>
<tr>
<th>Days</th>
<th>No. of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>12</td>
</tr>
<tr>
<td>Tuesday</td>
<td>10</td>
</tr>
<tr>
<td>Wednesday</td>
<td>11</td>
</tr>
<tr>
<td>Thursday</td>
<td>9</td>
</tr>
<tr>
<td>Friday</td>
<td>8</td>
</tr>
<tr>
<td>Saturday</td>
<td>3</td>
</tr>
<tr>
<td>No preferred day</td>
<td>14</td>
</tr>
</tbody>
</table>

The option for “no preferred day” was worded on the questionnaire as “I don’t have a preferred day, I come when I need to use the computers”. While most days are fairly popular, for the participants of this research, Saturday was not seen as a day when many needed to access a computer through the Learning Centre.

The peak time for the Learning Centre drop-in would appear to be between the hours of 10am and 3pm – 18 responses. While most people reported they did not have a preferred time, they came when they needed to use the computers (10 responses) only three people indicated they liked to come between the hours of 3pm and closing time. Closing time for the library is 5.30pm except for Wednesdays, which is 8pm and Saturdays which is 4pm. This research was only focussed on adults; the Centre is very busy with children after 3pm and this may be the reason why adults choose not to come to the Centre at this time. A small number of responses (6) indicated they used the Centre before 10am.

Most respondents use the maximum allowable computer time at the Centre, which is up to two hours per day, however when the Centre is not busy, computer usage can be extended beyond the two hour limit. Figure 4.4 shows all responses to this question.
Table 4.6 shows the responses to the question “How often do you usually come to the Learning Centre”. This question was used to determine frequency of use for the participants of the drop-in. Repeat visits, identified by “more than once a week”, was by far the highest proportion.

**Table 4.6: Frequency of use for drop-in Centre**

<table>
<thead>
<tr>
<th>Frequency of Use</th>
<th>No. of responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>First time at the Centre</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Once every few months</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Once a month</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>More than once a month</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Once a week</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>More than once a week</td>
<td>19</td>
<td>60</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Twenty-two respondents travelled less than five kilometres to attend the Centre and six people indicated they travelled more than five kilometres to the Centre. Four people were not sure how far they travelled.

As computer classes are held on set days, respondents of the computer courses questionnaire were not asked to indicate the days or times they attended the Centre. Instead they were asked if this was the first time they had done computer training. For six of the seven respondents, this was not their first computer course. One person had previously attended a night school course, two people had attended courses at another Learning Centre in Local City, and three people had attended courses through a tertiary training provider in Local City. Of the three who had trained with a tertiary provider, two reported dissatisfaction with the courses as they felt they had been left behind by the fast pace of the training, and were getting no assistance with understanding the content of the course in order to catch up to the rest of the class; both people did not complete the courses for this reason.

*Use of Learning Centre*

Participants were asked to indicate, by the use of check boxes, for what purpose they had used the drop-in Centre, either on their current visit or on previous visits. The following table summarises the responses. Participants could have chosen more than one category. Percentages have been rounded up or down to nearest percentage.
Table 4.7: What computers are being used for in the drop-in Centre

<table>
<thead>
<tr>
<th>What they have used</th>
<th>No. of participants</th>
<th>% of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send or receive emails</td>
<td>28</td>
<td>88</td>
</tr>
<tr>
<td>Applying for a job</td>
<td>15</td>
<td>47</td>
</tr>
<tr>
<td>Searching for a job</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>Buying goods on-line e.g. TradeMe</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>Creating a CV or resume</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>Visiting social sites e.g. Facebook</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>On-line banking or paying bills</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Researching for homework or study</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Visiting Council or Government sites</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>Writing letters using the word processor</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>Researching travel options</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Searching for information on health issues</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Reading newspapers on-line</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Playing on-line games</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Checking movie listings</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Making travel bookings</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Following sports events</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Uploading photos to sites e.g. Flickr</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Finding weather information</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Finding trades people or service men</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Other services not listed here – described as:</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>• printing documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• writing memoirs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• visiting different web sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• selling on TradeMe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• general information and interest in gardening, cooking, history</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Participants were asked to comment on the services of the drop-in Centre using the following Likert Scale:

<table>
<thead>
<tr>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
</table>

Findings and Analysis
When asked about the location of the drop-in Centre, 44% were very satisfied, with 41% reporting being satisfied. 6% indicated they were very dissatisfied. The questionnaire did not ask them to elaborate on their response and this was not followed up in the interviews, so no reasons are known for their unhappiness with the location of the Centre.

The majority of respondents are either satisfied or very satisfied with the opening times of the drop-in Centre and the quality of the computers, however the speed of the Internet did not receive such overwhelmingly positive responses as seen in Table 4.8.

Table 4.8: Responses to speed of the Internet

<table>
<thead>
<tr>
<th></th>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25%</td>
<td>19%</td>
<td>12%</td>
<td>25%</td>
<td>19%</td>
</tr>
</tbody>
</table>

When questioned on the help they receive from the staff of the drop-in Centre, 56% indicated they were very satisfied with help from the staff, 16% were satisfied, 16% were neutral and 6% were very dissatisfied. There were two people (6%) who recorded no response to this question.

**Impact of the Learning Centre**

Four questions were used to identify the perceived impact of technology on participants using the Learning Centre as a drop-in facility and attending computer courses. Two of these questions again used a Likert Scale and the responses are summarised below in Table 4.9 and Table 4.10.

Table 4.9: Feelings about computers and technology BEFORE using the Centre

<table>
<thead>
<tr>
<th></th>
<th>Very positive</th>
<th>Little positive</th>
<th>Neutral</th>
<th>Little negative</th>
<th>Very negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop-in Centre</td>
<td>18</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Computer courses</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
Using the Learning Centre as a drop-in facility does not appear to have a marked effect on participants' feelings towards computers and technology; however participants who complete computer courses at the Learning Centre become much more positive towards technology.

Participants of the computer courses were asked an open-ended question to ascertain what they perceived were the benefits of attending computer courses at the Learning Centre. The small size of the classes (a maximum of six people) was seen as a benefit by three of the seven respondents. The ability to ask questions was noted as a benefit, along with easily followed handouts to take home. Two respondents felt the main benefit to them was simply being brought up to date with a modern form of communication.

A tick list was used to ascertain, apart from free use of the computers and the Internet, what other benefits participants felt they received from attending the Learning Centre. They were asked to select all benefits that they perceived as relevant and to add any extra benefits not on the given list, and the responses are presented in Table 4.11.

Table 4.10: Feelings about computers and technology AFTER using the Centre

<table>
<thead>
<tr>
<th></th>
<th>Much more positive</th>
<th>Little more positive</th>
<th>Not changed</th>
<th>Little more negative</th>
<th>Much more negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop-in Centre</td>
<td>10</td>
<td>6</td>
<td>15</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Computer Courses</td>
<td>6</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 4.11: Benefits from attending drop-in Centre

<table>
<thead>
<tr>
<th>Benefits</th>
<th>No. of responses (total participants = 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved computer skills</td>
<td>19</td>
</tr>
<tr>
<td>Improved job chances</td>
<td>12</td>
</tr>
<tr>
<td>Meeting other people</td>
<td>10</td>
</tr>
<tr>
<td>Something to do for the day</td>
<td>9</td>
</tr>
<tr>
<td>Getting out of the house</td>
<td>9</td>
</tr>
<tr>
<td>Learning to use the Library</td>
<td>7</td>
</tr>
<tr>
<td>Gave them confidence to try something new</td>
<td>7</td>
</tr>
</tbody>
</table>

Other impacts that participants recorded were:

“keeping up to date with current community activities” (Participant 9).
“closer and quicker contact with family and friends” (Participant 17).
“keeping up to date with technology as not having a computer at home is a major handicap and scary. This is a ‘lifeline’ – a connection to the world of technology and outside world generally” (Participant 27).

A slightly modified list of benefits was included on the questionnaire for the computer courses and all participants indicated that completing the courses had given them the confidence to try something new. The next most significant benefit identified by six of the seven respondents was perceived improved job chances. Unlike the questionnaire responses, meeting other people, getting out of the house and learning to use the library were not seen as significant benefits by the majority of the respondents; their main focus for attending the courses was to gain computer skills. When asked to record other benefits, one respondent felt the computer courses had made them “feel more empowered”; one person noted that they needed computer skills to retain their present job; and a third person commented on the one-on-one training aspect of the Learning Centre and felt that this was a great benefit for older people.
While many of the participants indicated their main reason for coming to the drop-in Centre was to use the computers, many people also interacted in other ways while at the Centre. Borrowing or reserving a book from the library itself was done by 53% of the respondents while they were at the Learning Centre on the day they completed the questionnaire. A similar number of respondents (50%) read a newspaper while at the Centre; 19% reported searching the library catalogue while 9% both asked a librarian for help and did research using resources other than a computer. The visit to the drop-in Centre was the only activity while in the Library for only 13% of respondents.

In order to provide some measurement to the increase in skills of computer course participants, a tick list was included to identify the types of skills that participants had before and after attending the classes. The results of this question are shown in Table 4.12 below.

Table 4.12: Perceived impact of computer courses on skills

<table>
<thead>
<tr>
<th>Activity</th>
<th>Could do BEFORE course</th>
<th>Could do AFTER course</th>
</tr>
</thead>
<tbody>
<tr>
<td>send and receive emails</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>search for information on the Internet</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>write letters using the word processor</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>play games on the computer</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>on-line banking or paying bills on-line</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>visit social sites e.g. Facebook</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>buy goods on-line e.g. Trademe</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>search for a job</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>read newspapers on-line</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>find weather information</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

Total respondents = 7
In order to further understand the impact technology is having on participants of the computer classes, they were asked to describe their computer skills before attending the courses and then after attending. Five of the seven responses were either that they had no computer skills or very limited computer skills before attending classes. One person noted they were very apprehensive about using the computer and one person felt confused and frustrated before attending the computer courses at the Learning Centre.

After attending computer courses the responses were much more positive with the following themes being recorded: moderate computer skills; more confidence; not as scary and more comfortable.

The last open-ended question computer course participants were asked was “What has changed, or what will change, in your life as a result of doing these computer courses at the Learning Centre?” Their responses are recorded verbatim below:

“The satisfaction of being reasonably computer literate” (Participant 33).

“More interest in general knowledge” (Participant 34).

“I now feel confident that I can continue on-line learning. I think it’s very common for older students to feel overwhelmed by what seems to be such a confusing machine. Clear, simple instruction of the basics is very important” (Participant 35).

“My confidence to get on the computer is much improved” (Participant 36).

“I think it is so unbelievable at what you are able to learn, keep up with the great work Local City Library – a great service” (Participant 37).

“Will continue to try and improve on computer skills at home. Course has given me the confidence to know that I am more capable than I thought I was” (Participant 38).

“I can look up information without having to ask my sons” (Participant 39).
These positive affirmations give a strong indication that the computer courses at the Learning Centre are achieving the desired outcome for course participants.

Qualitative Analysis – Observation

At the same time as the questionnaires were being gathered, four visits were made to the Learning Centre to observe what was happening in the Centre, how busy the Centre was at different times of the day and to observe the interactions between the co-ordinators and the users of the Centre. One of these visits was to observe a computer class being taught. An observation schedule was used to record notes (see Appendix B).

Section Summary

Computer classes are held on a regular basis with a small number of users. During the classes one-on-one help is constantly provided to ensure participants understand content being taught. The use of notes and slow pace of delivery ensures no-one is left behind.

The drop-in Centre has a steady flow of people either using the computers or making reservations for future use. On the days of observation, very little interaction occurred between users of the Centre, despite participants stating in their survey responses that they saw meeting other people as a benefit of attending the Centre (see Table 4.11). The co-ordinator at the Learning Centre is available as needed for one-on-one instruction or to help with problems.

The following is an analysis of the results of the observations.

Computer Classes

The first session of a beginner’s computer class was observed for 1.5 hours of the 2 hour session. This class comprised of three females and one male and was facilitated by a male Learning Centre co-ordinator. During introductions, members
were asked if they had a computer at home (three did) and were also asked to describe their computer skills (three had no previous experience with computers). The class was conducted at a slow pace with many opportunities for one-on-one help as needed, and many opportunities for questions to be answered. Most of the participants needed help with very basic instructions at some point during the observation; two participants in particular required constant help and reassurance. Comprehensive notes were given to participants and these were referred to at appropriate times during the session. The pace of teaching needed to be extremely slow with many repetitions of the same instruction and a lot of intervention needed by the co-ordinator to ensure participants were able to complete very basic commands.

**Drop-in Centre**

Three visits of one hour each were made to observe the drop-in Centre on different days of the week and at different times of the day. During the observation an observation schedule was used to record the following:

- the gender of computer users,
- the length of time each person used their computer,
- how many reservations were made for future computer use, and
- any interactions that were occurring between users of the Centre, or users and the co-ordinator.

The observations were made on a Friday between 10.30am and 11.30am; a Monday from 10.20am to 11.20am and a Tuesday from 3.20pm to 4.20pm. The busiest day that was observed was the Friday when fifteen females and six males used the drop-in Centre over the hour of observation. The following chart, Figure 4.5, summarises the usage data from the observation of the drop-in Centre for the busiest day. The arrow indicates that computer use for that participant continued past the observation end time.
At the completion of their time on the computer, five of the users made a reservation for a computer at another time. One person printed documents, while one person was having a one-on-one session with the Learning Centre co-ordinator - this lasted for around 40 minutes. No other interactions occurred during the observation.

Users of the drop-in Centre are restricted to two hours of computer time each day. It is possible that eight of the users observed may have continued their computer use for the full two hours once the observation ceased, as indicated by the arrows in Figure 4.5, however, as can be seen from the above figure, most computer use is for relatively short periods of time; this is contrary to usage time noted by questionnaire participants in Figure 4.4.
Summarised results for the other two days of observation are as follows:

- Monday 10.30am to 11.20am there were nine females and eight males accessing the computers, while on Tuesday between 3.20pm and 4.20pm there were five females and six males – three of these males were school children. A technician was also present on Tuesday fixing a computer.
- One interaction occurred during the Monday observation between two users – (showing each other photos on their screen); on the Tuesday three interactions occurred between users and the co-ordinator (a child requested headphones, a user requested help with a computer problem, and lastly the co-ordinator needed to discipline a male child for eating, talking and annoying other users of the Centre).
- Usage patterns for both days were similar to those recorded in Figure 4.5, on Monday seven people could have had extended use and for Tuesday five people were still using their allotted time at the end of the observation period.

Notes were also taken of the number of people coming in to the Centre to make a reservation for computer use as well as people who had finished their allocated time that day and went on to book another time. While users are allocated two hours of computer time per day, if the Centre is busy users are allocated one hour at a time, and may then need to rebook for a further hour if a computer is available. Apart from the seven main computers in the Centre, there are two computers designated as express computers – these can only be booked for 30 minutes at a time and allow access for people who just want a short period of access. On the busiest day that was observed, two people had use of the express computers for over the 30 minute period, therefore it appears the 30 minute time limit may not always be monitored.

On all three dates the observations occurred, one computer was not in operation due to faults, this may have increased the waiting times for users of the Centre.
Qualitative Analysis – Interviews

Seven interviews were conducted with users of the Learning Centre as detailed in Table 4.13 below. The two co-ordinators from the XYZ Learning Centre were also interviewed so that their perspective could be obtained and these transcripts have been numbered 8 and 9.

Table 4.13 Details of Interviews

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Use of Learning Centre</th>
<th>Gender</th>
<th>Age</th>
<th>Status</th>
<th>Date of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Computer courses</td>
<td>M</td>
<td>&gt; 75</td>
<td>Retired</td>
<td>8.10.2009</td>
</tr>
<tr>
<td>2</td>
<td>Computer courses</td>
<td>M</td>
<td>70-74</td>
<td>Employed part-time</td>
<td>12.10.2009</td>
</tr>
<tr>
<td>3</td>
<td>Computer courses</td>
<td>M</td>
<td>60-64</td>
<td>Unemployed</td>
<td>11.11.2009</td>
</tr>
<tr>
<td>4</td>
<td>Drop-in Centre</td>
<td>M</td>
<td>25-29</td>
<td>Tertiary student</td>
<td>11.11.2009</td>
</tr>
<tr>
<td>5</td>
<td>Drop-in Centre and computer courses</td>
<td>F</td>
<td>50-54</td>
<td>Unemployed</td>
<td>11.11.2009</td>
</tr>
<tr>
<td>6</td>
<td>Drop-in Centre</td>
<td>F</td>
<td>25-29</td>
<td>Unemployed</td>
<td>18.11.2009</td>
</tr>
<tr>
<td>7</td>
<td>Drop-in Centre</td>
<td>M</td>
<td>30-34</td>
<td>Unemployed</td>
<td>18.11.2009</td>
</tr>
<tr>
<td>8</td>
<td>Co-ordinator 1</td>
<td></td>
<td></td>
<td></td>
<td>11.12.2009</td>
</tr>
</tbody>
</table>

The transcripts of the interviews were analysed and the following themes emerged from the participant interviews:

- reasons for using the Learning Centre
- benefits of the Learning Centre to users
- the impact of technology on users of the Centre
- difficulties experienced.

These themes were then used as a basis for the co-ordinator interviews. The following analysis of findings combines co-ordinator interviews and participant interviews.
Section summary

Despite having Internet connections and printers at home, people use the Learning Centre as it offers a free service close to their home. Small classes, personal tuition and an increase in computer confidence were seen by users as some of the benefits of attending the Centre. While it can be frustrating at times having to wait to use a computer and the Centre was sometimes noisy, the Learning Centre is having distinct effects - both positive and negative - on users of the Centre. These include increased communication with family and friends, access to a wealth of on-line information and perceived time savings. Interviewees did note however there were some negative impacts from using technology.

The following is an analysis of the interviews grouped by the themes identified above.

Reasons for using the Centre

Responses to this question when posed in the interviews were very similar to the questionnaire responses. Course participants reported the need to gain basic computer skills, with one person saying they needed to have computer skills for their current employment. As reported earlier, negative experiences with previous training providers was also a catalyst for enrolment at the XYZ Learning Centre and the small group classes was another popular reason for attending.

As with respondents to the questionnaire, the Learning Centre is popular with users as it is close to home, and being a free service was also another reason given for attendance at the computer courses. This was reflected in the following comment:

“There’s sort of like a mental barrier for older people to learn the computer and such an alien thing, and I had to overcome barriers, but I made a commitment to do so and so the fact that it was free and I didn’t have to shell out money for it was another barrier that was stopped”.

(Interviewee 3)
Although some users of the Centre have a computer at home, not having a Broadband connection or a printer was also a factor in using the drop-in Centre for some people. Further probing on this revealed that one person did have a Broadband connection, however it was slow compared to the speeds obtained through the Library. While some people did have printers at home, the cost of replacing ink was an issue along with poor printing quality from home printers.

Benefits of the Learning Centre
For participants of the computer courses the common theme that came through the interviews when this question was asked was confidence. When asked to describe their computer use before doing a course, one participant expressed his fear of the computer and the feeling of confusion with “lots of buttons” (Interviewee 1). He also got bad tempered and nervous when using the computer. He expressed his anger with the “damn thing” (Interviewee 1) and stated he often walked off in a “huff” when things didn’t go right and wouldn’t touch the computer for two days. His comments however were very positive when asked to describe the benefits of doing the course – he now has a lot of confidence and can do things on the home computer by himself and feels “more connected to technology” (Interviewee 1). Like all interviewees, this man was able to quickly list the activities he could accomplish on the computer as a result of the training he received.

Small class sizes were seen as a benefit by people completing the questionnaire, and this was also the case with those interviewed. On further probing, interviewees liked the personal approach that smaller numbers allowed, and the opportunity to ask questions was seen by one person as a distinct benefit as they felt they received one-on-one help during the classes.

While meeting other people was noted as a benefit for the questionnaire group, the interview group who had used the drop-in Centre had an entirely different reaction when asked if this was seen as a benefit by them. Although interviewees stated that they often saw the same people in the Centre each day, there did not appear to be any type of on-going communication happening between the users. This was confirmed during the observations that were undertaken. One interviewee had observed that the people accessing social networking sites were the least
communicative of all, it was perceived that they were absorbed in their Facebook pages, whereas other users who were checking emails or doing general research were more likely to look up and say “hi”. On reflection this interviewee commented:

“I find it ironic really that they [social network users] appear to be the least social of the lot really in the library” (Interviewee 7).

The interviewees who attended the courses did interact and communicate with other course attendees. Interviewee number 2 had this to say when asked about interacting with other members of the class:

“Some of the times I was able to lean over and help them and some of the times they were leaning over and helping me” (Interviewee 2).

Further probing though revealed that due to the short nature of the course – only four sessions, no further camaraderie developed between participants, other than knowing first names and helping each other during class.

Many interviewees remarked on the quality and variety of service offered by the Centre and the fact that they were free was a distinct benefit. Several of the interviewees had previously taken courses with other training providers in Local City and were not happy with the services or teaching they received. This sentiment was summed up by one interviewee who said:

(Other training providers are) “interested in you because you pay the money, here you not pay money, they interested in you, not to make money” (Interviewee 5).

Interviewees who attended the beginners courses all acknowledged they had a lot more to learn and were generally positive about continuing to learn more, either through one-on-one sessions at the Learning Centre or through other training providers. Two particular comments, both from computer users over sixty, show that age is not a barrier to gaining more computer skills and the opportunity to be a part of the technological world was seen as a very positive benefit for them.
“I think it generally has given me more enthusiasm towards this form of technology and possibly sowed the seed to have a go at getting more advanced and getting really highly familiar with it” (Interviewee 2).

“I’m noticing the more I learn the more I speak to people and I learn more sites to go to” (Interviewee 3).

The impact of technology on users of the Centre

This question formed a large part of the interviews for both users of the drop-in Centre and those attending courses. The two Learning Centre co-ordinators were also asked for their perceptions on the impact of technology for users of the Centre. While each person interviewed had worded the impacts differently, on analysis several common impacts were noted:

- Communication with family and friends
- Access to information
- Time savings

Communication - Sending and receiving emails was identified through the questionnaire as being the most common use for the drop-in Centre and this was confirmed by all participants who were interviewed. One person stated that this was now their main form of communication, while another reported they would not be able to keep in contact with family overseas if they had not learned how to use email and it was seen by this person as highly important for her to keep in touch with her family. Having learnt how to use the computer for email through the computer classes, Interviewee number 1, the oldest of the interview group, then went on to use Skype to keep in touch with overseas family members and stated that being able to use the computer filled a vacuum in his life when his wife died. The three youngest members of the interview group (Interviewees 4, 6 & 7) reported being frequent users of social networking sites to keep in touch with family and friends, while Interviewee 6 also used the drop-in Centre to play on-line games through Facebook and Beebo.
Access to information –

“I can see how so many people can access so much more information that they wouldn’t access if they didn’t have the Internet” (Interviewee 3).

This comment sums up the impact reported by most people when asked how the Internet has changed the way they do things. Interviewees 4-7 all reported a positive impact when looking for jobs. This group were using the drop-in Centre to look for work on-line, primarily using the job site Seek, as well as applying on-line and producing cover letters, mainly using MS Word.

Another impact reported by Interviewees 3, 6 and 7 was the ease of arranging travel through the Internet. This group reported how convenient it was to compare prices in order to find the cheapest travel options and along with this use Google Maps and Google Earth to check out the places to be visited. Web cams were also a popular tool with this group enabling them to see where they would be going.

Not all impacts reported were positive however, with Interviewee 2 commenting on what he felt was a definite negative impact of technology for him. As a result of attending courses and learning to use email, he has been receiving regular notifications via email from various clubs that he belongs to. However, as a result of untimely checking of emails he recently missed an important meeting, and this had a negative impact on him. A further negative impact for him was tiny printing on some of the websites he needed to access.

Time savings – all interviewees spoke about the convenience of using the Internet and the time it was saving them. On-line banking was not a popular option, due to security concerns, with all but one person. Interviewee 4 felt that internet banking was a great time saver for him and summed up his feelings with the following comment:

“I mean you could go into the bank but it’s just not that convenient when you can just jump on the internet” (Interviewee 4).
Interviewee 7 now reads international newspapers on-line where previously he would go to several stores in order to purchase the range of papers he was interested in. When asked about the time-saving aspect of the computer in relation to newspaper access this was his comment:

“Yeah, it's a lot more up to date as a lot of the libraries don't stock international newspapers and not every dairy sells them. The supermarket sells a couple of the English ones and the odd dairy that you go to might have the Samoan or Tongan ones and it depends on which part of Auckland you go to. If you go to East Auckland there is a lot of Asian newspapers but I can't speak any of those languages and certainly can't read them so it's not at all handy for me whereas I can hop on the internet and just bang, bang, bang it's all there. It's a lot quicker and it's a lot more efficient and time is so valuable these days so if I can utilise my time a little better” (Interviewee 7).

In order to get another perspective on the impact of technology on the users of the Centre, the co-ordinators were asked what they perceived to be the impact of technology for their clients. One of the co-ordinators, Interviewee 9, made the following comments:

“I guess the obvious one is most of the people who use the Learning Centre don’t have computers so it’s giving them access to a resource, and a pretty good resource, for all sorts of things that they wouldn’t otherwise have or would cost them money. I guess it's also bringing them into libraries, they might not necessarily have been a library user” (Interviewee 9).

Difficulties experienced – not all conversation during the interviews was positive. There were some issues that arose that caused difficulties for people using the Centre and in order to gain a balanced understanding of the issues, these were discussed during the Co-ordinator interviews as well. The co-ordinator responses have been incorporated into the following dialogue as appropriate.
The biggest issue was around access to the computers in the drop-in Centre. There was frustration voiced over waiting times during peak periods, however most of the people who were unhappy with wait times did not plan ahead and pre-book their computer use. The Co-ordinators have observed that children who use the Centre appear to be the most organised in terms of planning ahead and making future bookings. When classes are held in the Centre there are still computers available, including the two express computers that are available for blocks of thirty minutes. Some interviewees would like to see the daily time limit of two hours increased, but the Co-ordinators feel that this would simply make the situation worse rather than decrease the present waiting times.

The issue of wireless Internet access was also raised during the interviews as currently there is no provision for the public to gain Internet access using their own laptops. The Co-ordinators are aware of the requests for this access, as well as many requests from tourists to use the Internet facilities offered through the Library, however due to security issues and the cost factor, Local City Council does not have immediate plans to address this. Installing secure wireless hotspots, however, may help to free up computers in the Centre and thereby reduce waiting times for some users.

When the Centre is busy, it can also become noisy and this is particularly so when there is a computer course running, or after 3pm when schoolchildren are frequent users of the Centre. Several people indicated they simply avoid coming to the Centre after 3pm, while attendees of the courses suggested the use of a separate training room. The Co-ordinators stated they are proactive in addressing issues with noisy children and have several strategies to deal with them, including the use of pop-up screen messages that are a non-aggressive way to control behaviour. The sheer expense of providing a separate training room is currently beyond the budget of the Local City Council, and although they recognise the concerns around noise levels, they are committed to offering beginners classes in as many locations as possible for the convenience of the public.

The last difficulty expressed by users was frustration that some content on Internet sites could not be accessed due to older versions of software. This is particularly
problematic when accessing sites that require the latest version of plug-ins such as Flash Player. In order to complete these upgrades the Centre would need to be closed for several hours and the Co-ordinators report that this creates problems with users. At present, upgrades are saved up and done in one session to try and minimise disruption, however this may be adding to the frustrations felt by users in accessing certain content.

**Chapter Summary**

This chapter presented analysis based on data gathered through the use of questionnaires, observation and semi-structured interviews. The following chapter discusses these findings in relation to the literature presented in Chapter 2.
5 - DISCUSSION

Introduction

The aim of this research is to investigate how the services of a library Learning Centre are impacting on users of the Centre and whether the residents of Local City are acquiring the necessary skills to address the digital divide that Chapter 2 suggests may exist within Local City.

The research sub questions to be answered are:

1. Who is accessing the Learning Centre and for what purpose?
2. How is the Learning Centre improving the skill level and capability of participants?
3. What impact is the Learning Centre having on individuals?

This chapter will discuss the findings of this research with reference to the literature reviewed in Chapter 2. The discussion will be structured in relation to the components from Figure 5.1 below, the ICT Development Index previously discussed in Chapter 2. This index is used to measure how effectively a country is moving towards becoming an information society, and in this case it will be used to determine how effectively Local City is moving along the path towards providing digital access and ICT training to the residents of Local City.
Figure 5.1: Three stages in the evolution towards an information society

Source: International Telecommunication Union, 2009

Figure 5.1 is being used as a model to structure the discussion in this chapter as the components of the model are resonant with the intentions of the LCC Learning Centres Strategy. The Council vision for the strategy is:

To ensure that the people of Local City have access to relevant information online, and the necessary skills to obtain that information, in order to support the Council’s wider goals of lifelong learning and access to information technology. (Local City Council, 2006c, p. 2).

The Council further qualifies this when discussing the strategic framework for this strategy: “The Local City Council has developed a strategic framework for ensuring the provision of infrastructure, access and skills necessary to support the council’s goals and priorities for developing Local City as an eco city....” (Local City Council, 2006c, p. 4). Both these statements refer to the provision of infrastructure to ensure access for all citizens of the city, along with the development of ICT skills to ensure residents have the capability to effectively use modern technology.
The research questions for this project also reflect the components of the model in Figure 5.1, in that question one is determining who is benefitting from access to the Learning Centre and whether the infrastructure provided by the Council is meeting the needs of the residents attending the Centre. Question two focuses on the perceptions of the users of the Centre to determine the skills they are acquiring from attending the Centre. In order to determine the alignment between the intentions of the Learning Centres Strategy and the perceptions and experiences of those who use the Learning Centre, it is necessary to identify the impact the use of the Learning Centre is having on the participants of this research. Question three discusses these impacts; this is the third component of the ICT Development Index shown in Figure 5.1.

There is limited research in New Zealand on initiatives to address the digital divide, and specifically the use of libraries as effective centres for ICT access and education. In March 2010, the 2009 WIPNZ findings were released (Smith, et al., 2010) and in this section I will refer to these since they are the most current findings on Internet use in New Zealand. Public computer access centres have been in operation in United States libraries for many years now and current research released also in March 2010 (Becker, et al., 2010) provides useful information on issues that may be faced in the future by New Zealand libraries. I will also refer to these findings in this chapter as the most recent international research on this topic.

**ICT Readiness – Infrastructure and Access**

“Without ICT infrastructure and access there is no ICT use” (International Telecommunication Union, 2009, p. 13).

The ITU state that the stage one component of their Index – ICT Readiness - assesses the availability of the networking infrastructure, the support services around the technology as well as users’ ability to access ICT (International Telecommunication Union, 2009). This section discusses issues that have arisen
from the literature in regard to infrastructure and access and relates these issues to the findings from the research conducted on the XYZ Learning Centre.

**Infrastructure**

The infrastructure issues that emerged from the findings of this study relate to Internet speeds, currency of hardware and software, and the support of the Learning Centre co-ordinators. These issues relate to the first research question for this project, as some research participants were unhappy with the quality of some of the services offered at the Learning Centre and they perceived these issues were impacting on their ability to effectively use the Learning Centre.

Public computer access centres have operated in United States libraries for many years now and although significant investment has been made in the library infrastructure in order to keep up with the rapid pace of technology, increased demand by patrons over the years has strained the available library resources and both Becker et al. (2010) and McClure et al. (2007) warn that the ability of libraries to provide adequate services is declining. McClure et al. (2007) report that, due to cost, the majority of libraries included in their research were not intending to add workstations in the future. This issue provides a warning for other libraries as the use of Learning Centres becomes more popular in New Zealand.

The LCC has already made a significant investment in the Learning Centres in Local City, not only in providing co-ordinators but also in allocating physical space in the library for the Centres, providing hardware in the form of computers, printers and associated peripherals, and also software. Internet connections in the form of Broadband charges are an ongoing cost. Regardless of this, participants from the XYZ Learning Centre still raised issues over the quality of the service they were receiving.

Although half of the drop-in Centre participants who completed the questionnaire had a home computer, very few had an Internet connection, yet eight participants indicated they were very dissatisfied with the speed of the Internet connection at the
Learning Centre. From this group of eight, only one respondent indicated they had an Internet connection at home with a Broadband connection. A further respondent indicated that they had access to a computer at work, but it was not ascertained if this also included an Internet connection. It is therefore not clear what Internet connection speeds respondents were comparing the Learning Centre Internet speeds against, as from the data available it would appear the Learning Centre may be their only point of access.

A relationship between the dissatisfaction with the Internet speed at the Learning Centre and the type of use of the Internet was examined in my study, on the theory that users who were accessing content that required more Broadband capacity might be the ones who were reporting the most dissatisfaction with Internet speeds. However, cross-tabulations of level of satisfaction with Internet speeds against activities such as playing on-line games or uploading photos showed no apparent association between these activities and the level of satisfaction with Internet speeds. The one participant who stated they used the Internet at the Learning Centre to upload photos reported being satisfied with the Internet speed. Interestingly, the findings from the WIPNZ report show that 23% of the users in their sample of 1250 participants – both users and non-users, were also dissatisfied with the speed of their Internet connections (Smith, et al., 2010) but from the data available it is not clear where these respondents were connecting to the Internet.

As the Internet has evolved, user created content such as YouTube, Facebook, blogs and wikis have placed more demands on Internet connection speeds (McClure, et al., 2007) and although sending and receiving emails appears to be the most popular use of the Learning Centre at present (see Table 4.7), future users may wish to access content that could place more demands on Broadband capacity. While current users of the Centre may feel frustrations at present with Internet speeds, such as Interviewee 7 who reported dissatisfaction with very slow speeds when other users were uploading photos to sites such as Flickr, there is the potential for frustration to increase in the future as more people access the Centre and use applications that require more bandwidth. One drop-in Centre user commented that slow download speeds meant that sometimes they had used up their allocated
computer time for the day while waiting for content to download and this meant they needed to return to the Centre on another day to complete their tasks.

Users also reported dissatisfaction with outdated software, in particular upgrades to Flash players that were not happening often enough, resulting in users not being able to access certain content. The issue of software upgrades was discussed during the co-ordinator interviews. These upgrades are controlled by the LCC Information Technology department who prefer to accumulate software upgrades for each Learning Centre and then perform maintenance in one upgrade session; this results in the Learning Centre being unavailable to the public for the period of scheduled maintenance – this could be up to three hours. Although no participants of this study reported concerns over this process, as the Centre becomes more popular, the scheduling of maintenance may require further consideration.

“Librarians enhance the computing Internet experience” (Becker, et al., 2010, p. 4) but McClure et al. (2007) raise concerns that libraries may not have dedicated IT staff to support the technology needs of the users. The research by Becker et al. (2010) found that librarians have taken on new roles with the introduction of the Centres and some are now seen as informal job coaches as well as technology trainers, offering both one-on-one sessions to users of the Centre as well as formal beginner computer classes. Their study also reports that two-thirds of the people who used the library received help from library staff or volunteers on computer or wireless access issues.

The XYZ Learning Centre is staffed by paid, experienced co-ordinators who do have technology skills. Seventy-two percent of users of the XYZ drop-in Centre reported they were happy with the quality of the service and the support they received from the Centre co-ordinators. Users of the Learning Centre also consider the Centre staff to be a valuable asset and two participants stated that the supportive and knowledgeable staff were the reason why they preferred courses through the XYZ Learning Centre over training received through other providers. The one-on-one training offered to users of the XYZ Learning Centre was also seen as an important aid in acquiring technology skills and participants who had taken one-on-one training
commented on the patience and friendliness of the co-ordinators and their willingness to assist users.

On the other hand, as Brzozowski (2007) comments, “technology is not stagnant” (p. 12) and ongoing technology training for the co-ordinators is necessary to ensure they are up-to-date with new advances. At present LCC does not offer technology training for their co-ordinators, although staff training in the areas of conflict management and managing difficult behaviour had been offered to the co-ordinators in the past.

**Access**

Access is the second component of ICT Readiness and is recognised by the LCC as an important part of their strategy in enabling residents the opportunity to pursue individual goals with the aid of technology. This section discusses the characteristics of the users of the Learning Centre and also addresses the issues arising from the users of the Learning Centre who were involved with this study, in the areas of physical access to the Learning Centre, availability of computers and wireless access through the Learning Centre.

“Internet access is now one of the most sought after public library services, and it is used by nearly half of all visitors” (Becker, et al., 2010, p. 1). This study of the XYZ Learning Centre did not ascertain how many of the visitors to the library also used the Learning Centre, but information from the APN study revealed that for one library involved in their research there was a significant impact in terms of usage with a reported 45% increase in walk-in foot traffic over a six month period (First Research, 2008). What this research has identified is that the XYZ Learning Centre is providing access to computers and the Internet for both genders across a wide range of ages. Similar to the findings of Becker et al. (2010) access to technology through the library is popular with low-income earners and the unemployed.

Contrary to Craig’s (2003) argument that Maori and Pacific Island people were not comfortable accessing technology in public access centres, 21% of the drop-in Centre respondents identified themselves as Maori and 9% as Pacifica. Most users of the drop-in Centre indicated they attend the Centre on a regular basis with 60%
attending more than once a week. Similar findings are reported by United States studies where users of library computer centres also have frequent visits over the period of one week (Becker, et al., 2010; Brzozowski, 2007).

While the intention of the LCC is to provide access to residents who would not otherwise have access to a computer or the Internet, 50% of the users of the Centre do have access to a computer in their home, but 75% of the drop-in Centre respondents had no Internet connection at home. So why is the Learning Centre a popular venue for users who already have computer access through their home?

The answer to this question may be that although some users have a computer at home, they may not have an Internet connection or their connection may be slow. Users who were accessing mainly rural libraries as reported by the APN study (First Research, 2008) also came to use the library computers as the speed was faster than was accessible through their home Internet connections. While this is understandable in rural New Zealand, and given that no users of the XYZ Learning Centre indicated they had a dial-up connection, it is unclear why home broadband connections are reported to be slow. Brzozowski (2007) also noted similar trends in her study where patrons who accessed the library also had access from other venues, including their home. In her study, speed and quality compared to other computers they had access to, were the main reasons given for accessing the Internet through a library.

For some users, the Learning Centre has become an integral part of their library experience with many users reporting also engaging with the library in the more traditional ways such as borrowing books, reading newspapers or searching the library catalogue. Other studies report similar findings (Becker, et al., 2010; Brzozowski, 2007; First Research, 2008) in that patrons of the libraries use the full range of services on offer, including the computers. While this may have raised the profile of libraries in general, for some users it has led to frustration in that computers are not always available when they require them.

The drop-in facility has become a popular venue for computer and Internet access with residents from the local area, even though there is no large-scale advertising of
the Learning Centres or the computer courses offered through the Centres. The libraries involved in the APN study (First Research, 2008) rely purely on word-of-mouth advertising, and, similar to the XYZ Learning Centre, they also report the popularity of the services with local users.

While the facilities on offer through the libraries are appreciated by the users, the increased profile of the library has led to some frustrations expressed by users over waiting times for computer access. As shown in Table 4.5, the early part of the week is a popular time to access the Centre with most respondents indicating they came to the Centre between the hours of 10am and 3pm. As highlighted in Figure 4.4 most users are spending between one and two hours at the Centre and are making repeat visits during the week. The questionnaire given to users of the drop-in Centre did not address the issue of waiting times for computer access, however from the observations carried out in the Centre, it was apparent that many people frequently had to wait to use a computer. This concern was therefore raised during the interviews with both users of the Centre and the co-ordinators, in order to gain their perspectives on this issue.

The co-ordinators explained the time allocation of two hours use per day per person, but this was not always available on the same computer, as it was dependent on prior bookings. Users of the Centre are encouraged to pre-book a computer, although the co-ordinators report that children who use the Centre are more organised than adults in this respect, as children do plan ahead and pre-book for the following days. This ensures that a computer is free and waiting for them when they come to the Centre. The co-ordinators report that some adults are organised with their bookings and these tend to be the regular users of the Centre who are reported to come in at roughly the same time each day and appear to be set in their routines. From a user’s perspective, waiting times for computer use are a concern for six of the seven users who were interviewed. As well as requesting a longer daily time allocation, users also want to see more computers added to the Centre as they perceived this would reduce waiting times during peak usage. As discussed earlier however, this is a cost issue that the Council may or may not be able to address.
Some Centre users were proactive in avoiding waiting times by planning ahead and pre-booking future computer usage while others felt that there should be a system to prevent users from booking the same times on a daily basis. Waiting times have also been raised as an issue in other research conducted on Learning Centres. The research carried out on the APN highlighted concerns with overcrowding in the library’s computer centres as well as lack of privacy for users and it was reported by one library that some users were having to wait up to six hours for access (First Research, 2008). Brzozowski (2007) also reports that users were requesting more computers and longer hours of access in some libraries, but budgets and staff constraints were preventing this from happening. Brzozowski’s research identified that for most patrons the waiting time to access a computer was less than 15 minutes, however on the days that observation was carried out at the XYZ Learning Centre, waiting times of around 30 minutes were observed.

Frequency of access to the Learning Centre is shown in Table 4.6 with 60% percent of users attending the Centre more than once a week. Correlation with income levels (Table 4.2) and frequency of use shows that 50% of the people who attend the centre more than once a week earn under $30,000. Of these frequent-use low-income earners, 60% have indicated they do not have a computer at home. This finding is similar to the findings from the U.S. Impact Studies (Becker, et al., 2010) where it is reported that “low income people are more likely to visit public libraries frequently” (p. 27) and that “Income is a major driver for uses of public library Internet access (p. 33).

As seen in Table 4.5, Saturday was not a popular day for users to access the Learning Centre. While participants of this research were not asked why they chose to attend on particular days, it could be surmised that users are busy with other activities on weekends. However, Interviewee 7 had strong feelings on the library being closed on Sundays. His reasoning was that while most other venues in the local area are open on Sundays, many of these require a cost outlay to attend and he would like to see more opportunities for families to have access to free activities on Sundays where he could take his children. He feels attending the library is a good healthy activity he can enjoy with his children and it would “help keep them out of trouble and stop them getting bored” (Interviewee 7). Results from the APN study
confirm that in small rural towns in New Zealand libraries are creating diversionary activities for the youth of the town, and this is seen as a positive impact for the community (First Research, 2008). As well as providing a safe venue for families, Sunday opening may help ease the pressure on access to computers in the XYZ Learning Centre on weekdays, although this would be a cost consideration for the Local City Council.

Interviewees who had attended the computer classes at the Learning Centre also commented on access issues. It was reported by two of the three computer class interviewees that noise was an issue during their classes, as while the classes were being conducted several computers were still available for drop-in use at the Centre. Interviewee 1 suggested his learning was disturbed by people coming and going in the Centre, along with other people talking, while Interviewee 2 was also disturbed by the general noise in the Learning Centre during classes. Both these participants suggested that the learning environment could be enhanced by conducting classes in a separate room to the rest of the Learning Centre. But it is not just participants of the computer classes who are disturbed by noise. Other research conducted on library computer access has also identified the changing nature of libraries which offer technology to patrons and the disparity between the traditional library users who expect quietness and the newer users who simply want to access technology and may do so with some degree of noise (First Research, 2008).

As discussed, Saturday appears to be the least popular day for computer use at the Centre; therefore this could be a suitable, quiet time when computer classes could be held. This would free up more computers for drop-in Centre use during the week when the Centre is at its busiest and would allow classes to be held in a quieter environment, thus enhancing student learning.

Interviewees were asked to suggest any improvements they felt could be made to the Centre. Two interviewees requested wireless access through the Library; one of these interviewees had their own laptop that they would like to use in the Library. Allowing wireless access through the Library would help reduce the pressure on the Centre's computers, therefore this issue was raised during the co-ordinator interviews. The co-ordinators have previously received requests from users of the
Centre for wireless access, and in fact often receive requests from tourists who are in the area and wanting to access the Internet.

McClure et al. (2007) noted an increase in the number of United States libraries offering wireless access to their patrons and stated this was helping to meet the demand for more computers and to reduce the cost to libraries by not having to add more work stations or find more space to add work stations. However, this does not help users who do not have a laptop. In New Zealand, some rural libraries also allow wireless access for tourists (First Research, 2008) and while the LCC originally did have a plan for wireless access in their library branches, and the Learning Centre staff are getting a lot of enquiries for it, the co-ordinators report the implementation of wireless access has now fallen by the wayside and there are currently no plans to have wireless access at any library branches in Local City.

In summary, this research has found that some residents of Local City require access to computers and/or the Internet and Local City is addressing this need by providing the infrastructure to enable residents to access technology through the XYZ Learning Centre. Users of the Centre voiced concerns over slow Internet connections at times and the unavailability of computers when required and these issues are perceived by the users of the Centre to be hindering their access to technology.

**ICT Use and Capability**

“The public library is one of the widest bridges to the Internet and computers” (Becker, et al., 2010, p. 11).

As can be seen from Figure 5.1, stage 2 of the ICT Development Index is used to measure the level of use of ICTs in society (International Telecommunication Union, 2009). But in order to use ICT effectively people need to acquire ICT skills and this section will first discuss the steps LCC have taken to provide basic computer training to residents and how effective the Learning Centre is in equipping residents with the
necessary skills. This section will then determine what types of activities the Learning Centre is being used for.

**ICT capabilities**

The vision statement for the LCC Learning Centres Strategy is “To ensure that the people of Local City have access to relevant information online, and the necessary skills to obtain that information,... (Local City Council, 2006c, p. 2). The LCC strategy explains the Council’s commitment to ICT training with the statement that the Council will provide “… the training that enables the community to gain the skills to uptake all of these services in the libraries and learning centres” (Local City Council, 2006c, p. 4). To equip residents with ICT skills, free basic computer courses are offered to members of the LCC library service. Although these courses are not advertised through any media, they are popular with library users and are run on a monthly basis at several of the Learning Centres in Local City. The XYZ Learning Centre offers basic computer courses on different days of the week and at different times of the day throughout the year; the intention is to provide suitable times that will appeal to the widest possible audience.

Not all public Internet access centres offer free training. In the United States only 35% of libraries offer formal technology training classes, however 53% do offer informal one-on-one assistance as required (Bertot, McClure, Wright, Jensen, & Thomas, 2009). Libraries involved in Brzozowski’s study (2007) did offer computer classes but she reported a low response to these with the majority of the users of the centre not taking classes. No explanations were given in her study for the low response rate to computer classes nor did her study identify what types of skills were being acquired through the computer classes. The US Impact study reports that 14% of their users had some type of training through their public library either one-on-one or as part of a formal course (Becker, et al., 2010).

In New Zealand the APN project does not offer classes as part of their service but it has been suggested that third parties could offer technology courses to improve the skill level of local residents (First Research, 2008). There have been many providers
offering free computer courses throughout New Zealand in the past decade and the investigation by PriceWaterhouseCoopers (2003) found that computer courses “open up the opportunity for e-learning” (p. 6) and enable people to undertake education in new ways. A need for computer courses in the New Zealand community has been identified by the WIPNZ which reports just over one-third of their respondents would be interested in computer training to improve their Internet abilities (Smith, et al., 2010).

As well as free computer courses, the XYZ Learning Centre also offers one-on-one assistance to users of the Centre as and when required. Not only does this provide support for users who encounter problems when using the technology, but just-in-time training for users helps them gain needed skills in a context, with the result that these skills are then more likely to be retained. As part of the computer courses, participants are provided with copies of handouts that can be taken away. Responses from the participants indicate that these handouts are invaluable when reviewing their new skills and provide much needed support when accessing a computer outside of the Learning Centre.

Although not advertised as a computer course, the Learning Centre also offers a “job hunters club” where participants are given the skills needed to search and apply for jobs, prepare resumés and receive advice on attending interviews. In overseas libraries imparting job skills has also been an important feature of some computer classes as far back as the late 1990s with users needing to improve their computer skills either to improve work skills or for personal satisfaction (Chow, et al., 1998). Given that many employment vacancies are now advertised solely on Internet job sites, it is critical that people acquire the technical skills necessary in order to maximise their opportunities when seeking employment, and the Learning Centre is providing assistance in this area.

In order to ascertain how effective these courses were for the participants and to provide some measure of the increase in their skills after doing a computer course, several questions were asked on the questionnaire given to participants who had previously attended computer courses at the XYZ Learning Centre. Interview participants were also asked about their experiences with the computer classes.
While the Council’s intention was for the Learning Centre to provide basic computer skills training, thus enabling residents to take that “first step” (Local City Council, 2006c, p. 5) before continuing further education with other training providers, for six of the seven questionnaire participants who had attended a course through the XYZ Learning Centre, this process has been reversed with participants undergoing training elsewhere before coming to the Learning Centre.

Three of the participants state their first attempt to gain basic computer skills was through a tertiary training provider in Local City; however they report very unpleasant experiences with this training. This response from a completed questionnaire reflected the general feeling about tertiary courses: “I only attended a couple of times as I found myself getting left behind, and I felt like there was no assistance” (Participant 36). Two of the six interviewees also reported similar experiences with Interviewee 3 reporting the reason for attending classes through the Centre was due to “bad experiences elsewhere” (Interviewee 3). As the courses at the XYZ Learning Centre can only accommodate up to six participants, the small group aspect of the training is a distinct benefit with one respondent stating that it felt like one-on-one training and they did not feel intimidated when asking questions.

The computer courses offered through the Learning Centre are non-assessed so it is difficult to measure an actual increase in computer skills; rather participants were asked their perceptions of increased computer skills by asking what they could do before and after attending the courses. These courses are designed to teach foundation skills in computing and a main objective is to increase users’ confidence in technology - this objective is clearly being met. None of the overseas studies referred to previously have evaluated the effectiveness of computer training courses undertaken through libraries, although the research conducted by PriceWaterhouseCoopers (2003) did ask participants to identify the effectiveness of free computer training for them. Responses included gaining additional skills that added value to the job market; an increase in wages; and helping people become connected to the “knowledge society” (PriceWaterhouseCoopers, 2003, p. 8). Their research found that many of the skills obtained through the courses were sustained over the long term and may not show an immediate impact.
Users of the XYZ Learning Centre did report immediate benefits from attending the computer classes. Most of the course attendees reported having either no or very limited computer skills before attending the classes and, as can be seen in Table 4.12, the participants were able to increase their range of technology skills as a result of attending the classes. The ability to effectively use the Internet, identified by six of the seven questionnaire respondents as a new skill, enables access to many on-line resources that could be used by participants to further enhance their skills at a later date, thus fulfilling the Council’s intention of providing lifelong learning opportunities (Local City Council, 2006c).

While participants cannot be expected to become expert users of technology after only four training sessions, the comments from Participant 38 reflect the general level of comments from most course participants:

Before comments:

“My computer skills were practically non-existent and I was very apprehensive about using the computer”. (Participant 38)

After comments:

“Not yet 100% confident but far more comfortable about trying to do things on the computer without thinking I am going to mess things up. I understand much more than I did before attending the course”. (Participant 38)

These comments provide evidence that the goals stated in the Learning Centre’s Strategy (Local City Council, 2006c) are being met and the Learning Centre is effective in equipping residents with technology skills.


**ICT use**

In order to fully answer research question one – Who is accessing the Learning Centre and for what purpose – it was necessary to determine what type of activities the Learning Centre is being used for. This section discusses the findings from the questionnaire and interviews in relation to the activities the users are engaging in while attending the Centre.

The most common use of the XYZ Learning Centre is for maintaining social connections, in particular email and social networking sites. These activities are available through the Learning Centre for people who may previously have been socially excluded as a result of not having access to technology. Interviewee 6 stated “it’s quite important for me to keep in touch with friends”. Overseas studies also confirm maintaining social connections is the most popular use of public library computer centres (Becker, et al., 2010; Brzozowski, 2007). Social networking, including email, was identified as the most popular use of the libraries included in the APN study (First Research, 2008) while 82% of the users in the WIPNZ study reported checking their email on a daily basis (Smith, et al., 2010).

Employment-related activities were identified as the second most popular use of the Centre, with users searching for vacancies, applying for jobs and creating resumés at the Learning Centre. Many of these activities are conducted with support from the co-ordinators, as Interviewee 5 explained, for example, it can be difficult for users to include attachments with emails. In this instance there has been little change since the late 1990s when Chow et al. (1998) also reported employment activities as a popular use from their study and more recently findings from the US Impact Studies show that 59% of users were engaged in employment-related activities (Becker, et al., 2010). However, not all users of technology centres appear to be focussed on employment. Only 14% of participants in Brzozowski’s (2007) research were using the libraries for employment-related activities and only 33% of participants in the APN study were doing so (First Research, 2008). The APN study was focussed on mainly rural libraries and in rural areas employment opportunities may not be advertised on the Internet, whereas in urban areas, such as Local City, many of the job vacancies now only appear on-line and require on-line applications, thus needing technology.
skills. For this reason, it is imperative that users of the XYZ Learning Centre who are actively seeking employment, are given the means and the assistance to engage with technology in order to maximise their chances of successfully gaining employment. The services offered through the job hunter’s club is addressing these needs.

Using the Learning Centre’s computers to conduct banking and the buying and selling of goods (e-commerce) was the third most popular use of the Centre. Interviewee 4 reported using the Learning Centre to help manage finances and to conduct Internet banking, as it was inconvenient to physically go to the bank. However, not all users felt comfortable accessing such confidential information through the Centre, with interviewees expressing concerns over on-line banking. These concerns reflect the general perception of many users of the Centre who report being unsure of the safety of the Internet. This issue could be addressed during the computer classes in order to educate the users more about the safety aspects that are in place to protect users’ data when accessing banking and e-commerce sites. The WIPNZ report noted weekly use of on-line banking by 55% of their respondents, with 27% stating they paid their bills on-line at least weekly (Smith, et al., 2010) while a large proportion of public access computer users in the United States also engage in on-line banking and e-commerce while in the library (Becker, et al., 2010).

Other research on public access centres has also identified e-commerce as a popular activity, particularly with rural users of the APN service (First Research, 2008). Using the Internet would give access to a wider range of goods and services for these rural customers, but for the users of the XYZ Learning Centre, it appears convenience is the main reason for on-line shopping. The research by Smith et al. (2010) identified that younger New Zealanders were more likely to engage with this aspect of the Internet, with males tending to buy and sell on-line more frequently than women, but there were no differences in frequency of on-line e-commerce between urban and rural areas of New Zealand. Further analysis of the data in Table 4.7 shows that the XYZ Learning Centre is being used equally by both genders to purchase goods on-line, but this activity is slightly more popular with users under 30 years of age and with users who earn less than $30,000 in income.
The Learning Centres Strategy (Local City Council, 2006c) was designed to fit in with the national E-government Strategy as an aid to developing e-citizens and e-government access to central and local government sources. Approximately one quarter of the users of the XYZ Learning Centre are using the computers to visit Council or Government sites, with one user stating they regularly accessed the Council site to read the Mayor’s comments. From the findings of the WIPNZ we know that New Zealanders are accessing government or council services on a regular basis (Smith, et al., 2010) with 40% of the respondents reporting they get policy information on-line and 30% pay their taxes or fines on-line.

Residents of the United States also use library computers to access government services on-line and Becker et al. (2010) report that this use has increased in recent years with public libraries becoming de facto service centres for accessing government agencies. This has put more pressure on libraries to maintain reliable access to the Internet and as e-government services become more prevalent in New Zealand, consideration will need to be given to the role our libraries will play in delivering access to these services.

Research for homework or study was also a popular use of the Centre for 25% of the questionnaire respondents. Not only are users accessing technology for study, but are also making use of the work desks available in the Centre for their study activities; Interviewee 4 would like to see more desks available for this purpose in the Centre. Although school children were not included in this study, the co-ordinators report that the Centre is popular with school students doing homework activities after 3pm; this is the time when adults indicated they avoid coming to the Centre as it is always busy and somewhat noisy.

While the Council’s vision for the Learning Centres Strategy (Local City Council, 2006c) is to encourage lifelong learning, it was not clear from this study what type of learning participants were engaging in. Equal numbers of males and females indicated they used the Centre for homework or study with the highest number coming from those aged over 30. Only two participants out of the eight who were using the Centre for study indicated they were in formal tertiary education at the time, while five of the eight were either unemployed or on social welfare benefits. It is
likely that these users could be undertaking on-line study in order to increase their job prospects, but this was not confirmed during the study. The US Impact study reports that libraries are now an important part of the education system especially for younger people accessing educational material on-line. They report that over 42% of the users of the computers in the library engage in education-related activities (Becker, et al., 2010).

There were a number of uses recorded in the questionnaire that come under the heading of entertainment or social use, excluding social networking. These include reading newspapers on-line, playing on-line games, checking movie listings, following sports events and uploading photos to the Internet. These activities were popular with some users of the XYZ Learning Centre and this type of use was also popular with the participants in Brzozowski’s study (2007).

In summary the XYZ Learning Centre is meeting the needs of the users of the Centre by providing access to computers and the Internet to enable connections to be maintained with family and friends, opportunities for employment to be pursued and access to personal activities such as banking, on-line shopping, homework, study and leisure activities. The Centre is also meeting the goals and vision of the Local City Learning Centres Strategy (Local City Council, 2006c) by providing access to technology to help bridge the digital divide in Local City and provide opportunities for residents, through the use free training courses, to make effective use of the technology to suit their individual needs. The next section discusses the impact of ICT skills on users of the XYZ Learning Centre.

**Impact**

Referring back to Figure 5.1, ICT Impact is the final stage in the ICT Development Index (International Telecommunication Union, 2009). The ITU state that “ICT capability or skills are an indispensable input measurement required to achieve maximum ICT impact” (p. 13) and “Given the potential impact of ICT use on social and economic development, countries strive towards making the benefits of ICT available to all people” (p. 1). Local City Council has developed policies to ensure ICT is available to those who wish to use it, and have provided free training to ensure
citizens of Local City have the capability and skills to use ICT effectively. What was not known was the impact access to this technology was having on users of the Learning Centre therefore research question 3 - What impact is the Learning Centre having on individuals - aims to provide insight into these impacts.

This research sought evidence of the impact on users first by way of a questionnaire. The findings were then validated and enhanced by interview respondents who provided in-depth information and explanations on how technology was impacting on them. The results of this research identified both positive and negative impacts resulting from exposure to technology for the users of the Learning Centre, as is the case with similar studies in New Zealand and overseas. These impacts are discussed in this section with reference to the findings of other current researchers.

The impacts from the findings fall into three main categories – capabilities, connections and confidence, and these themes will form the structure for the discussion on the impacts of technology for users of the XYZ Learning Centre. While the intention of this research is to identify the impact on users of the Centre, the following comment from one library involved in the APN research highlights the fact that the provision of a Learning Centre in a public library could also be impacting on people who simply wish to use the traditional services of the library: “One issue raised in a branch library was the balance between the provision of service to all potential users and the impacts that provision may have on other users” (First Research, 2008, p. 23). However, the impact of the XYZ Learning Centre on other library users was not a focal point of this research.

**Capabilities**

“Individuals must be provided with the means, tools and incentives for making personal studies a fruitful activity” (Faure, et al., 1972, p. 244). The services of the XYZ Learning Centre are assisting users to gain the necessary skills to not only bridge the digital divide, but also instil in some users the desire to continue learning.
A core component of the vision statement for the Local City Learning Centres Strategy is providing access to computers in order to improve the technology skills of residents of Local City (Local City Council, 2006c). The XYZ Learning Centre is achieving this goal - the most commonly reported impact by users of the Centre is an increase in their computer skills. While this could be expected to be a normal outcome for participants of the computer courses, interestingly 59% of the drop-in Centre users reported their computer skills had increased as a result of using the Centre. This may simply be due to repeated use of the Centre and an increasing familiarity with the computers and the Internet, thus giving a feeling of increased technology skills through passive learning, or it could be as a result of the one-on-one training offered to users of the Centre. This research project did not pursue this finding; therefore definitive conclusions cannot be drawn on the reasons for this increase in computer skills by users of the drop-in Centre.

The biggest impact reported by Bertot et al. (2008) from their study of public library Internet access was not an increase in technology skills but rather an increase in information literacy skills. Their research was focussed on the perceptions of library staff and did not involve direct interaction with users of the computers; therefore this finding may reflect the strong focus by the library staff on developing literacy skills for their users. The research on the XYZ Learning Centre did not specifically ask participants about their information literacy skills, but a component of the computer courses includes Internet search techniques, although not in-depth. Further research could determine whether use of the Learning Centre does increase users’ information literacy skills.

Other users of the XYZ Learning Centre went further in explaining how computer skills were impacting on them. For some, being able to use the computer independently and not needing to ask for help from family members was important, while one participant felt that they now had a connection to technology and this was having an impact by changing the way activities such as socialising and household budgeting were being done. A desire to keep learning was a positive impact for another participant and in this instance the seeds for life-long learning had been sown, therefore for this participant the impact will be on-going and long-term. One participant explained the impact for them as:
“I now feel I have the grounding to now continue more learning on-line where I would not have felt able to previously” (Participant 35).

An increase in capabilities was also cited as a positive impact from the research conducted on the APN (First Research, 2008). Their research identified many examples where adult users were able to attempt new activities as a result of the skills acquired through the local libraries, with one user explaining the ‘personal growth’ (p. 4) they had undergone through an increase in their computer skills. The US Impact Study also reported an increase in capabilities with 42% of their participants using the computers for educational purposes (Becker, et al., 2010).

Improved job opportunities were also stated as an impact of the XYZ Learning Centre by 38% of the respondents. As mentioned previously, users of the Centre undertake all aspects of employment seeking while at the Centre and help from the co-ordinators has been particularly appreciated in this area. Participants of the computer courses also felt they had increased job opportunities, not only with the computer skills they were acquiring, but also other skills that would increase their value in the labour market. Interviewee 2 wanted to be “more functional” in his current employment while Interviewee 5 was going further and using her technology skills to investigate tertiary study options for her children, to ensure they eventually had worthwhile careers – her exposure to technology may ultimately have a positive impact on her children.

As shown above, the skills acquired by the users of the XYZ Learning Centre are both short term and long term, in that they may have an immediate impact on their current work situation, but longer term they may have a strong impact on their quality of life and their future potential in society (PricewaterhouseCoopers, 2003). PricewaterhouseCoopers identified from their study that participants of Computing for Free courses had a higher general skill level and therefore the potential for higher incomes. Users who come to the XYZ Learning Centre have the potential for increased incomes as a result of the technology skills and other capabilities they are acquiring from attendance at the Centre and this finding is confirmed by the research of Becker et al. (2010). Participants also reported that learning to use the library
while attending the Centre was a benefit to them, and this skill may open up new possibilities as participants engage with printed material. One user of the Learning Centre described these benefits as simply “general learning and improving skills” (Participant 28).

The Learning Centre is providing access to education for people who may not feel comfortable in more traditional educational settings (Mejiuni & Obilade, 2006) as, like Interviewee 2, they may have negative memories of school days:

“Well my difficulty is the classroom. I have an anti classroom, I mean I can go on any kind of course, it could be CPI, it could be um, we have to do courses on nutrition, then if I’m going to be examined on it I can’t actually get a printout, I can’t get the text out. I can’t get it. I’ve got this fear of getting it wrong and I have this fixation that it’s a classroom. And I am slow and I think it’s probably worse with males particularly with young boys because boys just freak out” (Interviewee 2).

This interviewee attended computer classes at the Centre and has now had a positive experience with education and sums his experiences up by the following:

“I didn’t go in there [the Learning Centre] to waste my time. I went in there positively to learn for the purpose of being more functional. I didn’t even know there was a Learning Centre here, didn’t even know there was such a thing and I thought it was wonderful of the Council’s spending money on teaching people. I admire the course, I thought the tutor was fantastic” (Interviewee 2).

When asked how his life would change as a result of the computer course and the skills he has obtained this was his response:

“I’ll be participating more fully in using this [the computer] as the main form of modern information communication so if I want to know something about trout fishing in the Tongariro, or skiing on Mt Ruapehu, I’ll dial that up so Ruapehu will come up and show you all the lifts that are working and the
snow conditions and all the rest of it and I'll want to be able to do that” (Interviewee 2).

The impact of using the XYZ Learning Centre on the above user has been significant as demonstrated by his comments and these impacts will continue into the future for him.

In terms of capabilities, the users and co-ordinators of the XYZ Learning Centre have not reported any negative impacts, but previous studies do note issues that may need to be addressed in future by Local City. The APN study identified that in smaller library branches where there are fewer staff, the need for staff with technology skills to support users of the centre is having an effect on the quality of service they can deliver (First Research, 2008). This appears to be impacting more on the smaller libraries, and while the XYZ Learning Centre has dedicated co-ordinators, it is likely that as LCC open more Learning Centres, there is the potential for future library staff to be impacted. McClure et al. (2007) raise concerns about the increasing demand for access to free technology and the inability of some Centres to meet this demand. Without increased spending on technology infrastructure, they warn that users may not be able to access technology when needed and this may have a distinct impact on their ability to search and apply for jobs.

In summary, users of the XYZ Learning Centre are gaining not only technology skills, but general skills, including skills that may improve employment opportunities, and this is having a positive impact on their lives both now and potentially in the future.

Connections

“This is a lifeline – a connection to the world of technology and the outside world generally” (Participant 27).

Users of the XYZ Learning Centre are using the Centre in order to connect with many people in different ways. Many of the users less than 40 years of age are connecting with family and friends through social networking sites, while those over 40 years
valued the connections with family and friends through email and were not using social networking sites. The findings from the WIPNZ confirm that the Internet has increased the contact of New Zealanders with others, with 60% of their respondents reporting the Internet has allowed an increased contact with family and friends (Smith, et al., 2010)

The oldest user of the XYZ Learning Centre who was interviewed, aged over 75, reported keeping in touch with overseas family members through Skype and this was as a result of the skills he had acquired through the computer course. When asked what impact technology had on him he responded:

“It’s just amazing, it does change your life, it gives you a different outlook”
(Interviewee 1).

For this user, computer skills enabled him to explore many areas of interest and fill his time in during the day.

As many of the users of the Centre indicated they did not have access to technology elsewhere, it is likely that they may have felt socially excluded without access to the computers at the library. Perhaps users are coming to the Centre not only to make electronic connections, but perhaps also for the physical social connections that can be made while at the Centre. Chow et al. (1998) report that socialising was seen by over 50% of their respondents as being an important aspect of attending the Centre and found that the dynamic social environment of the Learning Centre was a reason some people chose to come to the Centre. To determine if this was happening at the XYZ Learning Centre, users were asked to indicate what other benefits there were from attending the Centre. Thirty-two percent of participants responded that they were coming to meet others, while 28% of respondents indicated coming to the Centre gave them something to do for the day, and the same number indicated it got them out of the house. Responses from the computer course participants were focussed more towards increased confidence as a benefit; they did not rate the social aspect of attending the Centre highly, although they did comment on the limited social aspect of the courses, in terms of interaction with other students during
classes. Only one interviewee came to the Centre with the intention of meeting other people.

Although the social aspects of the Centre have been identified as being important by participants, in reality there was no evidence that this was happening during the periods of observation at the Centre. Some users did come to the Centre with other people, and these users worked together on one computer, but there was no other interaction between users on the days the observations were carried out. It may well be the intention or hope of users that there will be opportunities for social interaction at the Centre, but the time limit imposed on users could mean that they are task focussed once at the Centre and therefore may not have the time to make these hoped-for social connections.

This lack of physical connection may be due to the library being in an urban area as findings from the APN study report quite the opposite result. Their research shows that rural users come to the library not only to use the computers but also to make social connections so they felt less isolated (First Research, 2008). The users of the Westport Library involved in the APN study felt having computer access opened up the world for them as prior to this they had limited connectivity or access to up-to-date information. Users from Kawerau used the library as a meeting place for both on-line and face-to-face interaction with others. The many immigrant users of the Kawerau library reported the computers gave them access to their own countries and communities and this had a big impact on them (First Research, 2008). Many ethnicities were observed using the computers at the XYZ Learning Centre, so further research could investigate how different cultures are using the Centre for social connections.

Apart from social connections, participants are also making connections for employment reasons as previously discussed. Connecting with the Internet to arrange travel was important for one user, as was connecting to the world through on-line newspapers and being kept up-to-date with current affairs. These impacts are similar to those reported by Brzozowski (2007) and First Research (2008) in their respective studies. The APN study also reports increased connections being made between the library and new users and note that while the number of books borrowed
has not changed, the number of new library members has increased with many of their branches noting an increase in patronage (First Research, 2008).

One group of users who are able to make connections through the rural libraries is tourists (First Research, 2008). The APN study reports that the library is a popular venue for tourists to come to use the computer – most of this use is to make contact with family and friends. Often in these rural areas, the library is the only place where there is public Internet access. The XYZ Learning Centre does not make their computers available to tourists; users must be members of the Local City library network in order to gain access to the free computers and the co-ordinators do not see this changing in the near future.

Along with the above positive connections noted by users of the XYZ Learning Centre, there were some negative connections stated by participants. One interviewee was concerned at the sheer number of emails he was now receiving and this was adding to an already busy day for him. His reaction to this was to ignore many of these but in doing so he missed out on some vital information. He is concerned that email is now becoming the main form of communication for many people and organisations; however he feels this is a negative step as there are still many people who are not computer literate and he feels there should be a choice for people who still wish to receive information in paper form.

Other users were concerned at small print on some websites, and this was proving a barrier for some people when they were attempting to find information on the Internet. If this is known to the co-ordinators, they will show users how to increase font sizes of web pages, or change background colours to make text easier to read, however many users do not know these solutions are available.

An increase in demand for the Learning Centre has meant the co-ordinators have to make connections with a diverse range of people, who often have very different needs. One of the co-ordinators summed this up with the following statement:

“It’s not only the technical knowledge, its being able to communicate it to everyone from advanced to a real beginner who doesn’t speak English” (Interviewee 7).
This is a challenge that is also faced by other Learning Centres as noted in the APN study where in some branches library staff also report having to deal with inappropriate youth behaviour and some staff feel they “are being forced into a social worker role in some circumstances” (First Research, 2008, p. 17).

From the data collected at the XYZ Learning Centre we know that having access to free computers is impacting positively on users and allowing them to make connections in many different ways to many different people.

**Confidence**

“It impacts increase as users develop more skills” (Interviewee 3).

This research has identified that confidence is a critical factor in successfully gaining technology skills and as users’ confidence increases, so too does the impact of technology on users. The vision and goals of the LCC Learning Centres Strategy (Local City Council, 2006c) do not specifically mention confidence, but this was a strong theme that came through the questionnaires and interviews. The Council’s vision for the Learning Centres Strategy includes removing barriers that prevent citizens from accessing computers and the Internet, and for many participants simply increasing their confidence level has removed a major barrier to their participation in the information age.

All computer course participants who completed the questionnaire indicated they were now more confident when using technology. The use of the Learning Centre is also increasing the confidence of some drop-in Centre users with 22% of these participants indicating increased confidence as a benefit of attending the Centre. One participant described the impact as “feeling more empowered” (Participant 39) while the following comments reflect the increase in confidence by two interviewees of this study:

“I have gained a lot of confidence from the computer course. I can do things on the home computer by myself now” (Interviewee 7).
"I am not feeling so dumb now, feeling confident" (Interviewee 5).

The findings from other researchers confirm that Learning Centres are increasing the confidence levels of users. The APN study records empowerment along with confidence as an impact in their report (First Research, 2008) while Becker et al. (2010) report an increase in self-confidence amongst the users of their library services. Two users of the XYZ Learning Centre reported not having to ask their children for help now; acquiring computing skills may also increase a persons’ self-esteem and this could have a positive impact on the family as a whole.

As discussed previously the study of the XYZ Learning Centre did not set out to determine the long-term impact of this service on users of the Centre, however it is feasible that by increasing the confidence levels of users, their attitudes and behaviours may undergo a positive change as well (Brophy, 2005). As stated by the Tertiary Education Commission “Skills learnt in a community education programme also have an impact in other spheres of the learners’ lives” (2001, p. 59) and it is hoped that the confidence gained by users of the XYZ Learning Centre is enabling users to engage with technology in order to access resources and knowledge that will enable them to become active participants of the knowledge economy.

By improving confidence levels, participants may also feel empowered to continue learning, either in a formal situation or on-line. The Learning Centres Strategy (Local City Council, 2006c) states “the intention is that the basic skills training will enable residents to take that ‘first step’ and to continue with further education, through private providers, community agencies, and tertiary institutes if they choose to do so” (2006c, p. 5). This could result in long-term positive impacts on participants in many areas of their life; there are potential impacts on employment opportunities and increased incomes, which will then flow back into the community, thus impacting on their potential in society. Participants of the computer courses were asked if they would like to attend other courses at the Centre, and five of the seven indicated they would like to continue learning.
In conclusion, the provision of a Learning Centre is improving the confidence of users with technology and it is feasible that this confidence is permeating into other areas of their lives.

Chapter Summary

This chapter discussed the findings presented in Chapter 4 with support from the literature presented in Chapter 2. The ICT Development Index (International Telecommunication Union, 2009) was used to provide a structure for the chapter with the components of the Index forming the headings under which the findings were discussed.

The following chapter draws conclusions from this research, discusses the limitations of this study and provides recommendations for future research.
6 - CONCLUSION

Introduction

This study contributes to the body of literature on public access computer centres, or Learning Centres as they are called in Local City. This research makes visible the views and perceptions of the users of the XYZ Learning Centre, and while there is a limited number of participants, the study provides a snap shot of how users interact with the Centre, the increase in their technology skills through attending computer courses at the Centre, and how using the Centre is impacting on them. While generalisations cannot be drawn without caution, there are a number of findings which may assist Councils in their expansion or development of Learning Centres in New Zealand.

This final chapter discusses the limitations of this research before summarising the findings relating to the research questions as discussed in Chapter 5. Conclusions are then drawn for these questions. Finally, recommendations for further study are made.

Limitations of this study

This study was designed as a modest scale research project that set out to investigate the impact of a library Learning Centre on its users. The strength of the current study was the ability to gather information directly from users of the Centre, as previous studies had focussed mainly on the perceptions of library staff. However, in order to determine the long term impact of technology on users of the Centre it would have been desirable to have access to previous course participants, but due to privacy issues, I was not able to access the contact details for these people.

A further limitation of this study is that the majority of participants were Europeans, although many different ethnicities were observed using the Learning Centre. It may be that the Learning Centre is impacting differently on users of the Centre of other
Conclusion

ethnicities, but this was unable to be investigated in this study. Notwithstanding these limitations, the following summary and conclusions are presented.

Summary and Conclusions

The overall aim of this research was to identify whether the Learning Centres Strategy is enabling community members to access and use ICT more effectively and what impact a library Learning Centre is having on users of the Centre. The three research questions that guided this research relate to access and use, skills and capabilities and impacts. To conclude this study, each question will be reviewed and conclusions presented to show how the Learning Centre is addressing the needs of the residents of Local City and the different impacts access to technology is having on the users of the Centre.

Access and use

Helping to bridge the digital divide

In order to identify the impact the Learning Centre was having on users, it was first necessary to identify who was using the Centre, for what purpose and whether the needs of the users were being met. The research conducted in this study identified that the Learning Centre situated in the XYZ Library is proving to be a successful ‘third place’ (Oldenburg, 1999) where residents can use computers, connect to the Internet, receive one-on-one help as needed and gain basic computer and Internet skills.

Statistics presented in Chapter 2 indicate there are residents in Local City who do not have access to technology, but no more so than people elsewhere in New Zealand. These residents can therefore be described as digitally deprived. While it was anticipated that the facilities developed by Local City would be used primarily by these residents, this research has identified that some residents of Local City have computer and Internet access at home, but are also attending the drop-in Centre. For this group of users, slow home Internet connections and the costs of these connections have been a driving factor in use of the Centre, and as Web 2 technologies now demand greater Broadband speeds, there is a sector of the
community who are also becoming digitally deprived, not through lack of access to
the Internet but through the quality of the access that is available to them through
their home connections. This supports Gurstein’s (2003) argument that the digital
divide is not just about having access to technology; the quality of the Internet access
is also an important factor when bridging the digital divide.

Data from this research project has revealed a need for residents on low incomes,
along with the unemployed, to access the Internet and for this group of people, the
drop-in Centre has become an important place they visit frequently during the week.
Both males and females attend the Centre and a wide range of ages were present
during the period this research was conducted. While mostly Europeans with English
as their first language chose to participate in this research, there were many
ethnicities making use of the XYZ Learning Centre during the periods of observation
and it was evident that the Centre is a venue that many different sectors of the local
community are accessing. The Internet has now become an important part of daily
life for many New Zealanders and this is confirmed by the frequent repeat visits that
users make to the Centre over the course of the week. The Centre is at its busiest
with adults visiting between 10am and 3pm to use the drop-in Centre or attend the
computer classes. School children make use of the facilities available at the Centre
after 3pm. Saturday is not a popular day for drop-in Centre use, so computer classes
could be held on Saturdays to relieve the pressure on the drop-in Centre during
weekdays.

The drop-in Centre is being used for employment-related activities such as job-
searching, and the preparation of job applications and resumés. The assistance of
paid co-ordinators at the Centre enables one-on-one help to be given as and when
needed and this is frequently required by users who are searching and applying for
job vacancies. While some participants of this research indicated that employment
activities were the main reason for attending the Centre, there appears to be some
disparity between their intentions and their actual use of the Internet while at the
Centre. It is possible that drop-in Centre users get distracted while on the Internet
and due to use restrictions they may run out of time before they have completed all
their intended searches for the day. This may be why many users requested the time
limit of two hours per day be extended.
The evidence from this research indicates that there is a need in the community to maintain connections with family and friends and the XYZ Learning Centre is helping to overcome social exclusion by providing access to email and social networking sites such as Facebook and Beebo. Sending and receiving emails is the most popular activity for users while at the drop-in Centre and many users feel strongly about maintaining connections with their family and friends and therefore rely on the Centre for this purpose. The Centre is also being used to connect to the digital world for work, hobbies, education and employment.

The XYZ Learning Centre may not be meeting the needs of all users due to infrastructure issues such as waiting times for computer access and out of date software. Overseas studies have identified the challenges of maintaining an acceptable service to users of library Learning Centres and warn that infrastructure plateaus may limit the ability of the Centre to meet the needs of the users (McClure, et al., 2007). While the Local City Council has made a commitment to providing these services for residents and has stated their intention to “deliver up to date technology” (Local City Council, 2006c, p. 5), it may be necessary to increase funding so that the services offered keep pace with the demands of the users of the Centre.

In conclusion, the technology infrastructure available to residents of Local City through the Learning Centre is helping to narrow the digital divide for residents who do not have access to technology through other venues and who wish to use it. The Learning Centre is a familiar and comfortable venue that also allows users to access the traditional library services while visiting the Centre. The provision of this infrastructure has given residents the opportunity to pursue individual goals with the aid of technology but as demand grows there is the need to ensure that the infrastructure expands as well.
**Skills and capabilities**

*Community Education*

This research suggests that the XYZ Learning Centre appears to be a successful example of community education. Chapter 2 identified that there are members of the community who have limited ability to use computers and the Internet and for some of these residents the library has become a place of learning. Although some participants had received computer training through other providers, it was clear that the small class sizes and one-on-one tuition available through the Learning Centre were a factor in successfully training residents of Local City and the atmosphere of the Centre was contributing to their learning experience.

The Learning Centre is improving the skill level and capability of users of the Centre by providing relevant basic computer training to small groups of residents. Comprehensive take-home notes ensure that written support is available when needed and the use of trained co-ordinators at the drop-in Centre, who are able to offer varying levels of training and support, allows further one-on-one instruction if required. While participants reported an increase in their computer skills from attending the classes at the Centre, the confidence levels for many of the participants has also increased. The Learning Centres Strategy (Local City Council, 2006c) is meeting the goals of the Government Digital Strategy (New Zealand Government, 2005) in that it is enabling users to gain the necessary digital skills but more importantly giving users the confidence to use these skills in order to improve their lives.

Acquiring technology skills also improves the employment opportunities for residents and this has personal benefits as well as benefits to society. In the future these people may be less dependent on social welfare benefits, they will have better employment chances and better access to relevant and timely information to enable them to go about their daily lives. As noted by the Tertiary Education Commission (2001), education is primarily about change and for the participants of this research the changes have been not only in their technology skills but also in their attitudes to technology and their feelings about themselves.
While the computer classes are an important aspect of the Learning Centre, users of the drop-in Centre are also improving their computer skills and confidence with technology. The use of trained co-ordinators in the Learning Centre is a critical factor in the success of the Centre and participants in this study implied that the friendliness and knowledge of the co-ordinators was one reason why the Centre was so popular. Boshier (2006) contends that adult learners want to be able to apply their learning immediately to an area where they have a lack of knowledge or skills and the co-ordinators at the Learning Centre are able to provide help as and when needed on a one-to-one basis.

Alongside the computer classes, the Learning Centre also provides support in the form of a job hunters club which gives residents the skills necessary to conduct employment-related activities in order to enable them to improve their employment prospects. As employment-related activities are the second most popular use of the Learning Centre, it is important that this support is continued for the unemployed residents of Local City so they can eventually move into the workforce and become part of the educated and skilled labour force.

**The library as a centre for learning**

*Impacts*

The impacts of the Learning Centre were assessed in order to determine if the objectives of the LCC Learning Centres Strategy were being met. While users of the Centre reported beneficial economic impacts to themselves and in some cases to their employers, there were also a number of non-economic impacts that extended into the personal lives of the participants and have the potential to improve their quality of life.

Participants who attend the XYZ Learning Centre report positive changes in their attitudes to technology. As their confidence level with computers increases, the impact of technology for them also increases as they are able to access relevant on-line information. For some participants this has resulted in changed behaviours as they are now able to communicate electronically, conduct business on-line and
continue their education. For others the impact has been an increase in job opportunities, and some users report that technology skills are adding to their quality of life. Becoming self-reliant has been an important impact for some users as they no longer need to rely on family members for assistance with technology.

As a result of using the Learning Centre, participants are able to interact to a higher level with technology and evidence from this research indicates that the Learning Centre is enhancing social equity in Local City and assisting in the development of a knowledge-based society; this impact is meeting the goals of the Central Government strategy (New Zealand Government, 2008). The Learning Centre is having both a short term and long term impact on participants. While the effect of increased confidence and skills is immediately obvious, the longer term impacts of the technology skills that have been developed are not yet known; however, participants report being more effective in their home and business life from the skills they have developed through the Centre and it is likely that these impacts will continue and possibly increase over time.

Negative impacts were also recorded by some users of the Centre and these relate to the inability to access a computer when needed due to waiting times, and the slow response in updating software. As the Centre continues to be popular with residents, the negative impacts may be felt by more users and this is an issue that Council will need to address in the future to ensure the aims and objectives of the Learning Centres Strategy (Local City Council, 2006c) are still being met.

Several findings in this study confirm that access to the Internet is empowering users of the XYZ Learning Centre as it not only connects them with family and friends but also allows access to the wealth of information that is available on-line. The LCC is clearly meeting the goals and objectives of the Learning Centres Strategy (Local City Council, 2006c) by providing the infrastructure and training that allows members of the local community to access and use ICT more effectively in their daily lives.
**Recommendations**

The investigation of the impacts of a library Learning Centre has prompted the following recommendations to the Local City Council in order to continue to meet the needs of the community in terms of access and use of ICT.

- That the Local City Council continues to fund the provision of free computer and Internet access through libraries and other appropriate venues in Local City.

- While the co-ordinators at the XYZ Learning Centre are technologically competent, there is the need to ensure co-ordinators are given the opportunity to upgrade their technology skills, as ICT is a rapidly advancing field with new technologies regularly being developed.

- The scheduling of regular updates will ensure current software is available. Consideration could be given to scheduling these updates outside of peak usage times at the Centre, perhaps running this maintenance overnight.

- There is a need to plan for growing demand by users of the Learning Centre to ensure the infrastructure can meet the future needs of users. As well as increased Broadband, suggested solutions for improving access include adding more computers to the Learning Centre, investigating the possibility of opening the Centre on Sundays, running computer courses on Saturdays and making wireless access available to users of the Centre.
Further research

The design of and findings from this research project enabled my research questions to be answered. Future research could focus on some of the issue that emerged in this study.

Impact of Learning Centre on immigrant families
Many ethnicities were observed using the drop-in Centre and attending computer courses. These users were not participants in this research. Further research could investigate how immigrant families are using the Centre and whether ICT is enabling them to maintain connections within their own communities. Questionnaires could be available in languages other than English and this may encourage their participation.

Research on other Learning Centres
As there are other Learning Centres in Local City, both larger and smaller than the XYZ Learning Centre, further research could be conducted on these Centres to add to the knowledge gained from this study. This would help the Council to determine how effective the Learning Centres Strategy is in other parts of the city and could assist with any strategies Council were considering for expansion of these Centres.

Longer term impacts of the Learning Centre
As this study was a short-term study, it was not possible to identify the longer term impacts of ICT on users of the Centre. Further research over a longer period could provide valuable data to determine how ICT skills were improving over time and whether the impact of technology also improved over the longer term.


Local City Library and Information Services (n.d.). Learn I.T. online: Learning centres. Local City: Local City Council.


Widening access to education as social justice (pp. 149-164). Dordrecht, Germany: Springer.


APPENDIX A

Questionnaires

1. Drop-In Centre

2. Computer Courses at the Learning Centre
PARTICIPANT INFORMATION FORM

My name is XXX. I am currently enrolled in the Master of Education degree in the Department of Education at Unitec Institute of Technology and seek your help in meeting the requirements of research for a Thesis course which forms a substantial part of this degree.

The aim of my project is to investigate how effective the services of the XYZ Learning Centre are in providing members of the community with computer skills and access to the Internet.

1. I request your participation in completing the attached questionnaire, which will provide me with information that will be used in the writing of my Thesis.

You will not be identified in the Thesis. You are free to ask me not to use any of the information you have given up to 4 weeks after you have completed this questionnaire.

2. I would also like to interview some people to further understand how the Learning Centre is helping you, and what could be done to make it better. If you are willing to meet with me for 40 minutes, please note your name and phone number on the bottom of this page so I can make contact with you. Interviews that I conduct will be anonymous and no identifying information will be included in the Thesis. You will be required to sign a consent form before the interview takes place.

I hope that you will agree to take part and that you will find your involvement interesting. If you have any queries about the research, you may contact my supervisor at Unitec New Zealand - Mary Panko, phone 8494-180 or email mpanko@unitec.ac.nz

UREC REGISTRATION NUMBER: 2009-994
This study has been approved by the UNITEC Research Ethics Committee from 26 August 2009 to 26 August 2010. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

If you are willing to meet with me for an interview, please note your name and phone number here:

Name:.................................................................................................. Phone number:.....................................
Using the computers at the Learning Centre

1. Why did you come to the Learning Centre today?

2. How long have you been coming to the Learning Centre?

   - [ ] this is the first time
   - [ ] less than 6 months
   - [ ] 6 months to one year
   - [ ] more than 1 year

3. Which days of the week do you usually come to the Learning Centre? Please tick all that apply to you.

   - [ ] Monday
   - [ ] Tuesday
   - [ ] Wednesday
   - [ ] Thursday
   - [ ] Friday
   - [ ] Saturday
   - [ ] I don’t have a preferred day, I come when I need to use the computers

4. What time of day do you usually come to the Learning Centre?

   - [ ] before 10am
   - [ ] 10am – noon
   - [ ] noon – 3pm
   - [ ] 3pm – closing
   - [ ] I don’t have a preferred time, I come when I need to use the computers

5. How long do you usually spend at the Learning Centre?

   - [ ] less than 30 minutes
   - [ ] between 30 minutes and 1 hour
   - [ ] between 1 and 2 hours
   - [ ] more than 2 hours

6. How often do you usually come to the Learning Centre?

   - [ ] this is the first time I have visited the Learning Centre
   - [ ] once a month
   - [ ] more than once a month
   - [ ] once a week
   - [ ] more than once a week

7. How far do you travel to get to the Learning Centre?

   - [ ] less than 1km
   - [ ] between 1km and 5kms
   - [ ] more than 5km
   - [ ] I am not sure
8. What have you used the computers at the Learning Centre for, either today or on previous visits? Please tick all that apply to you.

- send or receive emails
- buy goods on-line e.g. Trademe
- search for information on health issues
- visit social sites e.g. Facebook
- upload photos to sites e.g. Flickr
- research for homework or study
- find trades people or service men
- visit Council or Government sites
- create a CV or resume (curriculum vitae)
- search for a job
- other services not listed here – please describe in the box below

- on-line banking or paying bills
- play on-line games
- check movie listings
- read newspapers on-line
- follow sports events
- find weather information
- research travel options
- make travel bookings
- write letters using the word processor
- apply for a job

9. What were your feelings about using computers and technology **BEFORE** you started coming to this centre?

- very positive
- neutral
- very negative
- a little positive
- a little negative

10. What are your feelings about using computers and technology **NOW**?

- much more positive
- have not changed
- much more negative
- a little more positive
- a little more negative
11. **How satisfied are you with the following services at this Learning Centre?**
   Please use a tick to indicate your answer for each service.

<table>
<thead>
<tr>
<th>Service</th>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of the Learning Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening times of the Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of the computers that you use at the Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The speed of the Internet at the Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help from the staff at the Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. **Do you face any of the following problems when using the Learning Centre?**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Description</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language problems</td>
<td>language issues that may make it difficult for you to understand others</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy problems</td>
<td>anything that may make it difficult for you to understand written content or information presented on the computer</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer problems</td>
<td>anything that stops your from using the computers to do what you want to do</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

13. **If you answered Yes to question 12 above, please describe your barriers and list anything you think the Learning Centre could do to help you overcome these barriers.**
14. Apart from free use of the computers and the Internet, what other benefits do you feel you have received from attending the Learning Centre? Choose as many as apply to you.

- confidence to try something new
- improved chances of getting a job
- practice speaking in English
- learnt how to use the library
- other benefits - please describe in the box below

15. What else will you do/or did you do while you were at the library today? Choose as many as apply to you.

- borrow or reserve a book
- search the library catalogue
- ask a librarian for help finding information
- do research with resources other than the computer
- nothing else

Statistics on users of the Centre

16. What is your gender?

- Male  
- Female

17. What is your age range?

- Under 15 years
- 25 to 29 years
- 40 to 44 years
- 55 to 59 years
- 70 to 74 years

- 15 to 19 years
- 30 to 34 years
- 45 to 49 years
- 60 to 64 years
- 75 or over

- 20 to 24 years
- 35 to 39 years
- 50 to 54 years
- 65 to 69 years

18. What is your current status?

- primary school student
- intermediate school student
- secondary school student
- tertiary student
- self-employed
- beneficiary

- employed part-time
- employed full-time
- homemaker
- retired
- unemployed
19. If you are not a school student, what is your current total household income?

- [ ] less than $15,000
- [ ] $15,000 - $29,999
- [ ] $30,000 - $49,999
- [ ] $50,000 - $69,999
- [ ] $70,000 - $89,999
- [ ] over $90,000

20. Do you have a computer at home?

- [ ] Yes
- [ ] No

21. Do you have access to a computer at work?

- [ ] Yes
- [ ] No

22. Do you have Internet access at home?

- [ ] Yes
- [ ] No

- [ ] Is your Internet connection
- [ ] Dial Up
- [ ] Broadband

23. What is your first language?


24. What ethnic group do you identify with?

- [ ] European
- [ ] Maori
- [ ] Pacific Peoples
- [ ] Asian
- [ ] Middle Eastern, Latin American or African
- [ ] Other

Thank you for taking the time to complete this questionnaire. Please hand this paper to the Learning Centre co-ordinator.
Computer Courses at the Learning Centre

1. Why did you enrol in a computer course at the Learning Centre?

2. What do you feel are the benefits to you from doing a computer course through the Learning Centre?

3. Is this the first time you have attended any type of computer training?
   - [ ] Yes
   - [x] No

   If you answered No, where else have you learnt to use a computer?

4. What were your feelings about using computers and technology BEFORE you attended a computer course at this centre?
   - [ ] very positive
   - [ ] a little positive
   - [ ] neutral
   - [ ] a little negative
   - [ ] very negative
5. What are your feelings about using computers and technology **NOW**?

- [ ] much more positive
- [ ] a little more positive
- [ ] have not changed
- [ ] a little more negative
- [ ] much more negative

6. From the list below, please indicate which lessons from the following courses you have attended at the Learning Centre by placing a tick ✓ in the last column.

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Lesson 1 – Using the mouse</th>
<th>Lesson 2 – Using the keyboard</th>
<th>Lesson 3 – Introduction to the internet</th>
<th>Lesson 4 – Searching the internet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Beginners Computer</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Classes</strong></td>
<td></td>
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<tr>
<td><strong>Chinese</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Simplified Lessons</strong></td>
<td></td>
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<tr>
<td><strong>Maori Lessons</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Traditional Lessons</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Arabic Lessons</td>
<td>Lesson 1 – Using the mouse</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lesson 2 – Using the keyboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lesson 3 – Introduction to the internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lesson 4 – Searching the internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Littlies, The Mouse and Me” Lessons</td>
<td>Littlies Lesson 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Littlies Lesson 2</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Littlies Lesson 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Littlies Lesson 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra Lessons</td>
<td>Typing Practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mouse Practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Digital Photography</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Job Hunters’ Club</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coffee and Computers Club</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. From the list below, please indicate (by placing a tick beside an item) which of the following activities you could do **BEFORE** attending a course at the Learning Centre, and then indicate which of the following activities you could do **AFTER** attending a course. Please choose all that may apply to you.

<table>
<thead>
<tr>
<th>Activity</th>
<th>BEFORE</th>
<th>AFTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>send and receive emails</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>search for information on the Internet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>write letters using the word processor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>play games on the computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>on-line banking or paying bills on-line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>visit social sites e.g. Facebook</td>
<td></td>
<td></td>
</tr>
<tr>
<td>buy goods on-line e.g. Trademe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>search for a job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>read newspapers on-line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>find weather information</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. **Before** you attended the courses you ticked above, how would you describe your computer skills?


9. **After** completing the computer courses, how would you describe your computer skills?


10. Apart from computer skills, what other benefits do you feel you have received from attending the Learning Centre? Choose as many as apply to you.

- confidence to try something new
- improved chances of getting a job
- something to do for the day
- meets other people
- gets you out of the house

**other benefits - please describe in the box below**


11. What other courses would you like the Learning Centre to offer?
12. If you could make one suggestion to improve the Learning Centre, what would it be?


13. What has changed, or what will change, in your life as a result of doing these computer courses at the Learning Centre?


---

**Statistics on participants of the computer courses**

14. What is your gender?

- [ ] Male
- [ ] Female

15. What is your age range?

- [ ] Under 15 years
- [ ] 15 to 19 years
- [ ] 20 to 24 years
- [ ] 25 to 29 years
- [ ] 30 to 34 years
- [ ] 35 to 39 years
- [ ] 40 to 44 years
- [ ] 45 to 49 years
- [ ] 50 to 54 years
- [ ] 55 to 59 years
- [ ] 60 to 64 years
- [ ] 65 to 69 years
- [ ] 70 to 74 years
- [ ] 75 or over

16. What is your current status?

- [ ] employed part-time
- [ ] employed full-time
- [ ] homemaker
- [ ] retired
- [ ] self-employed
- [ ] unemployed
- [ ] beneficiary
- [ ] beneficiary
17. What is your current total household income?

- [ ] less than $15,000
- [ ] $15,000 - $29,999
- [ ] $30,000 - $49,999
- [ ] $50,000 - $69,999
- [ ] $70,000 - $89,999
- [ ] over $90,000

18. Do you have a computer at home?

- [ ] Yes
- [ ] No

19. Do you have access to a computer at work?

- [ ] Yes
- [ ] No

20. Do you have Internet access at home?

- [ ] Yes
- [ ] No

  - Is your Internet connection
  - [ ] Dial Up
  - [ ] Broadband

21. What is your first language?

22. What ethnic group do you identify with?

- [ ] European
- [ ] Maori
- [ ] Pacific Peoples
- [ ] Asian
- [ ] Middle Eastern, Latin American or African
- [ ] Other

Thank you for taking the time to complete this questionnaire. Please hand this paper to the Learning Centre co-ordinator.
APPENDIX B

Observation schedule

1. Observation Notice
2. Observation Schedule
Observation

We are conducting a research project looking at how effective the services of the XYZ Learning Centre are in providing members of the community with computer skills and access to the Internet.

During your visit today, you may be observed while you are working at your computer. No information that can identify you will be recorded by the observer.

If you do not wish to be part of this observation, please notify the Learning Centre Co-ordinator before you log-in to your computer.

Thank you for your help with this research.
<table>
<thead>
<tr>
<th>Length of time at computer</th>
<th>Gender</th>
<th>Interaction with Co-ordinator or others</th>
<th>Notes/other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of time at computer</td>
<td>Gender</td>
<td>Interaction with Co-ordinator or others</td>
<td>Notes/other</td>
</tr>
<tr>
<td>----------------------------</td>
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APPENDIX C

Interview Schedule

1. Consent Form
2. Participant Interview Schedule
3. Co-ordinator Interview Schedule
Participant consent form - Interviews

The XYZ Learning Centre

I have had the research project explained to me and I have read and understand the information sheet given to me.

I understand that my participation in this research project is voluntary and I may withdraw up to 4 weeks after this interview.

I understand that everything I say is anonymous and none of the information I give will identify me and that the only persons who will know what I have said will be the researcher and their supervisor. I also understand that all the information that I give will be stored securely on a computer at Unitec for a period of 5 years.

I understand that my discussion with the researcher will be taped and transcribed.

I have had time to consider everything and I give my consent to be a part of this project.

Participant Signature: ………………………….. Date: ……………………………

Project Researcher: ……………………………. Date: ……………………………

UREC REGISTRATION NUMBER: 2009-994
This study has been approved by the UNITEC Research Ethics Committee from 26 August, 2009 to 26 August, 2010. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
## Participant Interviews

| **Computer Use:** |  
|-------------------|---|
| previous formal/informal training |  
| current formal/informal training |  
| skills before/after Learning Centre |  
| why come? |  

| **Benefits/Impact** |  
|---------------------|---|
| from attending L.Centre |  
| from courses at L.Centre |  
| changes to your way of doing things |  

| **Difficulties:** |  
|-------------------|---|
| accessing computers |  
| language |  
| literacy |  

| **Communication:** |  
|-------------------|---|
| with co-ordinator |  
| with others |  

| **Learning Centre Setting:** |  
|-------------------------------|---|
| access |  
| support |  
| availability of computers |  
| other? |  

| **Advantages & disadvantages:** |  
|-------------------------------|---|
| would you come if they weren't free |  

| **Improvements:** |  
|------------------|---|
| to Centre |  
| to courses |  

## Learning Centre Co-ordinator Interview

<table>
<thead>
<tr>
<th><strong>Access:</strong></th>
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<tbody>
<tr>
<td>access/ time</td>
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<td>provision for disabled</td>
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<tr>
<th><strong>Interactions:</strong></th>
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<tbody>
<tr>
<td>with participants</td>
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<td>with equipment</td>
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<thead>
<tr>
<th><strong>Improvements:</strong></th>
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<tr>
<td>to drop-in facilities</td>
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<td>to courses</td>
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<td>to delivery</td>
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<tr>
<th><strong>Benefits for users:</strong></th>
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<td>How is it meeting community needs:</td>
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<tr>
<td>drop-in</td>
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<tr>
<td>courses</td>
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<td>non-computing</td>
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<td>training for co-ordinators</td>
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<td>technical support</td>
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