



Connecting Communities with CTLCs

From the digital divide to social inclusion

Kristy Muir



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By

Kristy Muir

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the support of Microsoft Australia
as a part of the Unlimited Potential initiative.



Foreword

The Smith Family's internal capacity for Research and Development ensures that The Smith Family's programs are evidence-based and develop our *Learning for Life* strategy consistently. In addition, a key theme that integrates and underlies all of our research activities and program development is *social capability*, the capacity of communities and individuals to draw from their own strengths and social capital and to move beyond the limitations of disadvantage. We also investigate a range of issues with national and community relevance, such as trends in financial disadvantage, education and social policy. In addition, we also contribute to policy debates in government and the community sector. This is an integral component of our vision for a more caring and cohesive Australian community.

The Smith Family's strategy for program development is one of collaborating with a range of stakeholders who are interested in working for societal change. As well as conducting our own research, therefore, we also form strategic alliances with other research centres and social sector organisations.

A range of publications, including this special report, make our research findings and activities accessible to those who have either an interest in or a commitment to The Smith Family's agenda for societal change. **Background Papers** identify areas to be researched as well as provide important pre-evaluation information of Smith Family programs and activities. **Working Papers** present research findings that contribute to the development of evidence based social policy and initiate professional dialogue on critical research questions. **Briefing Papers** provide analysis of Smith Family programs and wider social policy issues in a more concise timely manner. A regular **E – Bulletin** publicises the Team's publications as well as provides current updates on TSF research and policy. These publications, as well as occasional reports, submissions and monographs are either produced in-house, the product of collaborative efforts with other researchers or arise from commissioned research. All publications are subject to a refereeing process.

The Smith Family's forward research agenda, which will be reflected in upcoming publications, builds on previous work and is concerned with, but not limited to, the following areas:

- The early years and early childhood readiness for school and lifelong learning
- Indigenous disadvantage
- Literacy – reading, financial, ICT
- Mentoring, role modelling and facilitating school to work transitions
- Place management and learning communities
- Volunteering in the 21st century – an emerging paradigm
- Corporate social responsibility
- The role of social enterprise in facilitating innovation and leadership capacity in the not-for-profit sector
- The social, economic and ethical imperatives driving contemporary reform of our social support system

We trust that you find the following report a worthwhile contribution to evidence based social research and to the development of social policy that unlocks opportunities and builds capacity for all Australians.



Dr Rob Simons
National Manager Strategic Research & Social Policy

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About the author

Kristy Muir is a Research Officer with The Smith Family's Research and Development team. She has worked on a number of research projects and program evaluations while at The Smith Family, including digital inclusion, youth unemployment, mature aged workers and mentoring. Kristy has a Bachelor of Arts (Honours) degree and a Doctorate in history. Her PhD thesis examined the effects of mental illness on war veterans and their families. Prior to joining the team in May 2003, Kristy was an associate research fellow and tutor in the School of History and Politics at the University of Wollongong.

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This research is also an important element of the Microsoft Unlimited Potential (UP) initiative in Australia. UP is a global program focused on improving lifelong learning for children, young people and adults by providing technology skills through community based technology learning centres. UP in Australia is designed and built on the collective experience of Microsoft and its community partners.

Numerous individuals contributed to this paper throughout its development and during draft phases. I wish to acknowledge Roger Boot, Anne Clark, Maree Murray, Rob Simons, Daniel Slack-Smith and Mike Wilson from The Smith Family who provided detailed feedback and discussion throughout all stages of the paper. A number of other individuals with expertise in the area contributed feedback on the final draft. Many thanks to Martin Stewart-Weeks (Albany Consulting), Leone Wheeler (RMIT), Peter Huta (Department of Communications, Information Technology and the Arts), Simon Cant (Social Ventures Australia), Amy Denmeade (Social Ventures Australia) and Liz Adsett (Right Management Consultants). Thanks also to Evan Shapiro and Ilia Shapiro for the graphic design on this report.

Introduction

This paper draws together the relationship between technology, learning and individual and community resilience. It examines the theory behind, and practical responses to, access and usage of technology in society, with a primary focus on community technology learning centres (CTLCs).

The educational, employment and economic benefits of using Information and Communication Technologies (ICT) became evident in the 1990s, along with the fact that not all individuals reap these benefits. While the digital divide was initially thought to be a result of financial limitations, initiatives that solely provided access to the physical hardware and software revealed that the gap was not simply monetary. The ABCs of the digital divide, access, basic training and content, became the new catch cry, and local nets and CTLCs were established to address this divide.

While the digital divide remains a populist term, it has begun to lose relevance. Technological inclusion is far more complex than the black and white descriptive term, 'digital divide'. Education levels, opportunities and motivations to learn are strongly tied to a person's ability to access and utilise technology to its fullest capacity; and the extent of access and usage exists on a continuous scale, not merely as a two way split. Nonetheless, ICT can positively affect learning and social outcomes in certain circumstances and disadvantaged individuals arguably have the most to gain. Consequently, the term 'digital divide' has been replaced with 'technology for social inclusion'; redefining the focus from technology as the end, to technology as a means to the end.

A key step towards social inclusion is engaging individuals in lifelong learning. ICT has the capacity, if used in the right environment and with sufficient support, to influence attitudes towards learning. This has significant implications for individuals who have become disengaged from learning – largely those with the lowest skill, education and employability levels. These individuals are usually those who could benefit most from training or education, but often lack the motivation and understanding of the benefits further education and/or training can render. Informal, community based education where learning can be self-directed and self-paced has been found to be successful in engaging these individuals. CTLCs can provide this environment.

Social inclusion goes beyond education to include factors such as social interaction, civic engagement and the all encompassing social capital. Some CTLCs have demonstrated their capacity to achieve these outcomes. CTLCs act as public meeting places where individuals from a community can meet neighbours and establish social networks. In addition, access to the Internet, along with sufficient training and support, at a CTLC enables participants to build networks within and outside of their geographic area. These virtual and local networks can be used to draw upon social, emotional and economic resources; otherwise known as social capital.

Technology is merely the means to possible change and its ability to produce positive outcomes is contingent on a number of factors. The final section of this paper provides six best practice criteria, which have been found to produce positive social outcomes for some CTLCs. These include, formulating partnerships, engaging with the community, providing an appropriate learning environment, employing skilled and supportive staff and volunteers, ensuring the physical environment promotes both attendance and interaction, and carrying out evaluation.

ICT and the digital divide

The benefits of ICT

The potential educational and economic benefits of ICT are well documented. On an individual level effective use of ICT has been found to increase academic results and employability.¹ At a national level, the Organisation for Economic Co-operation and Development (OECD) argues, ICT has the 'potential to transform economic and social activity'.² In fact, knowledge has become the basis for most developed countries' economies.³ Therefore the more people who have access to knowledge, the stronger the economy. Thus, as the OECD maintain, 'it is more important than ever to ensure that no groups in our society are left isolated by their inability to access technology and learning opportunities'.⁴ However certain groups have been, and continue to be, left behind.

Access for some

The technological gap between different groups in society was popularly acknowledged in the mid 1990s after the US National Telecommunications and Information Administration coined the term 'digital divide'.⁵ This divide is hardly surprising given that most major innovations throughout history have taken a significant period of time to become 'universally available, fully developed and configured, cheap and easy to use'.⁶

The digital divide that persists throughout the developing and developed world is largely determined by socioeconomic status. A 2003 Australian study by The Smith Family found 59 per cent of disadvantaged families in its *Learning For Life* program had a computer at home, compared to 74 per cent of all Australian households with dependant children. Disadvantaged families were also less likely to be connected to the Internet (32 per cent compared to 48 per cent of all families).⁷ Similarly, a recent study by the National Centre for Social and Economic Modelling (NATSEM) reported 70 per cent of Australians with tertiary qualifications used a computer at home and 75 per cent used the Internet, compared to 27 and 32.1 per cent respectively of those who had completed up to Year 10 at school.⁸

Compared to other developed countries, Australia is faring poorly in terms of addressing this divide. Although the International Telecommunications Union (ITU) considers Australia to be a 'high [ICT] access' country, over the past few years we have slipped in terms of technological access in comparison to other developed nations. Australia's ranking dropped from eleventh place in 1998 to nineteenth in 2002.⁹

Building bridges – addressing the digital divide

Both in Australia and internationally, the initial community and governmental response to the digital divide was to provide access to ICT. But it soon became evident that 'digital inclusion' encompassed far more than 'access'.¹⁰ Those from low socioeconomic status backgrounds were not only found to be less likely to have access to technology, they were also discovered to be less likely to have the resources to use ICT to its full advantage.¹¹ The response thus shifted from simply providing access to computers to the 'ABCs of the digital divide – Access, Basic Training and Content'.¹²

On a tangible level this change meant moving from (although not phasing out) issuing computers to disadvantaged individuals and placing standalone kiosks in public areas to providing local nets and community technology learning centres. Standalone computers were especially popular in the developing world. In New Delhi, for example, outdoor computer kiosks were set up as 'Hole[s]-in-the-wall[s]'. These computers were connected to the Internet, but the Internet function rarely worked, the 'minimally invasive education' meant there was no training, curriculum or guidance, keyboards were not provided, and the community was not involved.¹³

The developed world also embraced handing out technology without adequate training and/or support. In Ireland 15 million pounds was awarded to one town, Ennis, to give every household a computer and an Internet connection. According to Warschauer, however, the town had 'little to show for its money'.¹⁴

Local Nets

The establishment of 'local nets', or local networks, was another common response to the digital divide. Local nets are community Intranets or web sites, which electronically link certain groups of people. Communities using electronic networks to connect people are sometimes referred to as 'smart communities'.¹⁵ These networks predominately deal with local information and local issues and they provide a forum for discussion and email among residents.¹⁶ An example of a local net or community Intranet in Australia is the electronic Atherton Community Enterprise which was developed as a part of InfoXchange's *Reach for the Clouds* initiative.¹⁷ Four hundred residents of a public housing block in Melbourne were issued with free computers, which were linked to a local network.¹⁸ *My Connected Community* (mc²) is another Victorian online site where communities can interact.¹⁹ While local nets may provide benefits for some communities,²⁰ they have some limitations in terms of ongoing support and face-to-face encouragement.²¹

Community technology learning centres (CTLCs)

While local nets have proved popular in some countries, one of the most common responses to the digital divide is the provision of computers, along with training and ongoing support in public areas. These are known as Online Access Centres, Technology Access Centres, Telecentres, Community Technology Centres, Neighbourhood Technology Centres and Community Technology Learning Centres (CTLCs), among other names. Throughout this paper, these centres will be generically referred to as CTLCs, except when a centre or country utilises a specific title.

A CTLC 'is a free or low cost, friendly place (in a community center, school, library, housing facility or other convenient location) where people of all ages and abilities can come to learn about computers, use the internet, explore new careers, further their education, participate in community activities or develop technology skills'.²² CTLCs can be split into three broad groups – those that stand alone, those that are within multi-service agencies, and those within networks.²³ Most centres focus on offering 'access' to individuals in the community (whether it be general, disadvantaged, or specific groups), but some also provide services and training courses.²⁴ After assessing the status of technology access centres in sixteen countries the Academy for Educational Development concluded that there is widespread diversity between centres in terms of access, funding and objectives. The difficulty lies in outlining the specific differences because many centres provide little detail about their attributes on the web.²⁵ Those centres affiliated with networks are much easier to trace, as is the overall international presence of CTLCs.

According to Davies et al., CTLCs have had a long-term presence in the USA. They maintain the movement began over thirty-five years ago with a 1968 initiative, but its focus turned to equitable access in 1980 when Playing 2Win was set up in Harlem, New York. The early 1990s saw the introduction of Unix based computer networks called 'Freenets' in the USA and Canada.²⁶ By 1995 the USA's Department of Housing and Urban Development (HUD) had launched 'neighborhood networks' and CTLCs were placed in HUD insured housing.²⁷

This movement has spread to the establishment of major networks throughout the developed world. CTCNet in the USA, for example, includes over 1,200 CTLCs throughout the USA²⁸ and offers technical assistance, an avenue for centres to communicate with each other, evaluation tools, staff/volunteer advice and examples of best practice.²⁹ The America

Connects Consortium supports another 400 CTLCs³⁰ and SeniorNet, a network for CTLCs targeting men and women over 54 years of age, supports 140 centres throughout the USA.³¹

The early twenty-first century also witnessed major growth of CTLCs in the UK. The UK government committed 252 million pounds to ICT learning centres in 2000.³² Twelve months later the UK government launched over 1,200 centres³³ and by 2004 the national network included over 6,000 centres.³⁴ These centres are housed in various buildings, including local pubs under the initiative 'Locals on Line'. Pubs are being utilised as online centres because they are often the only community buildings left in rural areas.³⁵

CTLCs in Australia

In Australia the CTLC movement has also grown considerably. Since 1997, the Federal Government has invested \$61 million in the creation of 1,700 public Internet access sites across Australia.³⁶ Federal funds such as these were channelled through the \$250 million Networking the Nation (NTN) initiative which funded programs using technology to enhance the 'economic and social development of rural Australia' between the financial years 1997-1998 and 2003-2004.³⁷ This included significant funding for libraries throughout Australia under the Online Public Access Initiative (OPAI), Victorian Rural Libraries Online, Queensland Local Government Building Community Capacity, and Regional Internet Access Project.

Although state and territory government responses have varied, most have matched or complemented funds provided by Networking the Nation to run their own technology centre based networks or initiatives. In New South Wales, CTC@NSW Network supports 75 centres; skills.net in Victoria covers 700 centres; Queensland's Learning Network supports 51 centres; Western Australia's WA Telecentres Network includes 94 centres;³⁸ South Australia's Networks for You has established 230 centres,³⁹ and Tasmania has a network of 64 Online Access Centres.⁴⁰

From a digital divide to social inclusion

While many CTLCs were initially established with a focus on the hardware and software of technology as the solution to the digital divide,⁴¹ some individuals, like SeniorNet's founder, Mary Furlong, were far more progressive. When others were concerned primarily with access in the 1980s, she focussed on 'community, rather than technology, and discovered how technology could support a sense of community.'⁴² Furlong has since been joined by many commentators. Indeed, as a term, the 'digital divide' is considered by some to be obsolete. For a start, the digital divide connotes a simple two-way split between the 'haves' and 'have nots'. Yet digital inclusion occurs on a number of levels.⁴³ Warschauer argues that the term 'provides a poor framework for either analysis or policy'. He advocates moving away from the physical ownership of, and access to, technology and encourages the use of ICT as a means of social development, suggesting that the term 'digital divide' be replaced by 'technology for social inclusion'.⁴⁴

The potential of ICT to facilitate social change has been widely embraced in what has become the third phase of digital inclusion.⁴⁵ While this phase moves beyond the ABCs (access, basic training and content) of the digital divide, these concepts are far from redundant. As such, and to align with the 'technology for social inclusion' direction, perhaps the ABC acronym should be reassigned to 'access', 'basic training' and 'community connectedness'. Access remains a key factor of digital inclusion; basic training is essential and should be extended to include curriculum, content, the learning environment and ongoing support; and community connectedness involves using ICT to connect individuals with each other and to opportunities. One major part of this is using ICT to increase lifelong learning.

Lifelong learning and ICT

The benefits of education

Self-directed, self-motivated lifelong learning has become a vital necessity for citizens of all ages if they are to keep apace with the political, ecological, economic and social changes going on around them (UNESCO 2004).⁴⁶

Education levels can strongly influence economic outcomes. On a micro level, educational attainment is directly linked to labour force outcomes and further education/training is correlated with wages. Those who participate in work related training on average experience a 3 per cent higher wage growth each year, than those who do not participate. If training is certified and continues over a twelve-month period, wages may increase by 5 per cent. Not only does training have the potential to increase wages, it halves the risk of job loss. On a macro level, the education levels of a nation significantly affect Gross Domestic Product (GDP). The OECD estimates by adding an additional year of schooling across a country's population, GDP per capita may increase by 6 per cent.⁴⁷

Education can have significant economic benefits, but its advantages may go even further. A learning community (whether based geographically or by interest) also promotes 'social cohesion [and] regeneration'.⁴⁸ While learning is known to have these positive outcomes and although Australia does well in terms of adult education (12 per cent of all tertiary enrolments are over 35 years),⁴⁹ not all Australians are enthusiastic about learning.

We're not all proactive learners

Individuals from certain groups are more likely to leave school early and remain disengaged from education. Males, Indigenous Australians, those from low socioeconomic status (SES) backgrounds, those with poor literacy and numeracy skills, those who dislike school and those living in rural and regional areas are far more likely to leave school early than their counterparts.⁵⁰ Early school leaving places these individuals at risk of unemployment⁵¹ and decreases their chances of voluntarily engaging in further education or training.⁵²

Post compulsory education and training is largely restricted to younger adults, those with a higher education, high skilled employees, and those with a job.⁵³ After examining average training patterns across twenty countries, the OECD found only 13.6 per cent of those not in the labour force and 26.4 per cent of unemployed adults engaged in training, compared to almost half (42.8 per cent) of employed adults.⁵⁴ The high unemployment rates among the unskilled exemplify the need for education and training across all sections of society.⁵⁵ To address this problem it is important to understand people's motivations for learning.

There are a number of reasons that individuals may not engage in education or training. These may be related to financial limitations, family and/or work commitments, but the OECD found the most common barrier to learning is failing to understand the advantages of education. The OECD believes that understanding the 'needs and benefits' of learning is such a strong indicator of engaging in learning, they segment adults into two very distinct groups: learners - those who are convinced of the benefits of learning, and non-learners - those who are not.⁵⁶ Selwyn et al. also maintain that the greatest barrier to learning is a 'lack of drive' and without this drive, even if all other barriers are removed, non-participants will not engage in learning.⁵⁷

Adults who do not understand the advantages of learning are usually those who need it most – those with few skills and low education levels.⁵⁸ The OECD's International Adult Literacy Survey (IALS) revealed that those with the lowest levels of literacy were the ones

who were least likely to feel they needed training. In addition, individuals with low literacy levels are also likely to overstate their own abilities. More than one in four individuals at the two lowest literacy levels (26.12 per cent) believed their reading skills were 'excellent' and half of those at these levels reported their skills as 'good'.⁵⁹ Individuals with low skills were also less likely to believe that basic skills affect their employability or promotion chances.⁶⁰ Unsurprisingly, those with the least skills are those who hold unskilled jobs. These positions may prevent the unskilled employee from seeing the importance of training, when it is apparently unnecessary in their employment. This not only places limitations on individuals and personal well being, it also has widespread labour force and economic implications.⁶¹

Thus non-learners and disengaged learners need to be encouraged to adopt a positive attitude towards learning. Back in 1996 OECD country education ministers and policy makers agreed significant changes were needed to increase the number of lifelong learners.⁶² However motivating individuals to become lifelong learners can be challenging.⁶³

Community based learning & ICT

Offering accessible and flexible learning, which focuses on the learner, may assist to engage individuals in learning and promote a 'learning society'.⁶⁴ Community based learning has the capacity to offer such an environment. Community based education is nothing new in Australia. Local education centres were established in the early nineteenth century. The Mechanics' Institutes or School of Arts, for example, set up 2,000-3,000 centres from the 1830s. It was not until the 1970s, however, that centres became both community based and community run and offered an informal learning environment.⁶⁵

From community based education centres developed the notion of a learning community. Learning communities use learning to work towards economic, social and environmental benefits for an area, community or region.⁶⁶ From learning communities emerged learning networks, which have similar goals of economic development, social inclusion and civic engagement, but differ in that ICT becomes the tool for learning.⁶⁷

Great faith has been placed on the ability of ICT to extend learning opportunities. The United Nations Educational, Scientific and Cultural Organization (UNESCO) is particularly optimistic about ICT encouraging lifelong learning, among other advantages:

not only can [ICT] stimulate new learning attitudes and strategies, it is also a powerful medium for developing formal and informal learning environments which empower, liberate, transform and create new roles, relationships and processes, particularly for those who encounter difficulties in traditional learning situations. When implemented effectively, IT can overcome learners' fears of being judged, heighten motivation and raise self-esteem – access to powerful technology conveys messages about being valued members of society, thereby opening up new opportunities for equality.⁶⁸

Not all education and ICT commentators share UNESCO's positive attitudes towards ICT and lifelong learning. After interviewing thirty-six participants at four ICT centres in Wales, Selwyn, Gorard and Williams concluded that 'there is no reason here to believe that ICT is significantly overcoming the barriers to lifelong [learning] participation'.⁶⁹ In a later study of 5,885 households Selwyn and Gorard inferred 'that access to ICT does not, in itself, make people any more likely to participate in education and (re)engage with learning'.⁷⁰

Despite this skepticism, many participants of CTLCs have substantiated UNESCO's argument. A 1998 CTCNet survey of centre users throughout the USA found attitudes towards learning and self-confidence increased.⁷¹ An evaluation of participants at a CTC in Camfield Estates in Massachusetts, USA, found participants became more positive about learning over a two year period.⁷² Another longitudinal study of CTCs within CTCNet,

including 860 participants across 54 centres, found individuals felt 'much more positive about themselves as learners as a result of class participation at the center'.⁷³ And even Selwyn and Gorard concede 'that ICT can go *some* way to altering patterns of participation in education for *some* individuals'.⁷⁴ Thus access to technology at a CTLC has the potential to positively influence attitudes towards learning. The advantages of attending a CTLC, however, can go beyond learning outcomes.

Social outcomes of ICT

Davies et al. maintain CTLCs have the potential to contribute to economic growth, help create community identity, promote social interactions, provide access to diverse groups (on and/or offline), increase civic engagement and promote community activism.⁷⁵ These social outcomes are impressive, but are they the result of individuals attending a CTLC?

It is difficult to ascertain the causal link between ICT use and the above social outcomes. Concern has been voiced about the great expectations placed on ICT as a solution to cure social ills.⁷⁶ Selwyn and Gorard go as far to criticise governments, educational communities and academics for making 'assumptions' regarding the link between ICT and social inclusion 'on the basis of little or no empirical evidence at all'.⁷⁷ They have been proven correct in so far as ICT alone cannot necessarily increase community connectedness or have positive social outcomes.⁷⁸ This has been demonstrated on numerous occasions.

A 1998 study found greater use of the Internet within the home resulted in decreased social interaction and poorer psychological well being.⁷⁹ Similarly, a study of a group of disabled individuals who were provided computers and Internet connections found that technology did not lead to the formation of social bonds between participants.⁸⁰ Warschauer has also documented a number of ICT projects, which have failed to deliver positive social outcomes.⁸¹ After evaluating a local net in Skarpnack, Stockholm, Ferlander found disadvantaged individuals living in the area rarely used the local net. Only 15 per cent of surveyed residents connected to the local net actually used it. Of this group there were no users over 65 years, only 3 per cent were pensioners and 1 per cent were unemployed (compared to 11 per cent of the control group who were over 65 years, 17 per cent who were pensioners and 8 per cent who were unemployed). Consequently, the local net failed to bring about any social changes within that community.⁸²

Yet, while the connection between positive social outcomes and ICT use cannot be proven and while ICT is far from a panacea, empirical evidence of the correlation between CTLCs and positive social outcomes does exist. Given the right environment, learning methodologies, capacity of staff and volunteers, training and support provided, among other resources, CTLCs can produce positive social outcomes and potentially increase social capital at an individual and community level.

Establishing the link – ICT and social capital

The OECD defines social capital as 'networks together with shared norms, values and understandings that facilitate cooperation within or among groups'.⁸³ More simply, Hopkins and Thomas describe social capital as 'the invisible bonds which connect people into smaller and larger social groups and allow people to work together cooperatively, for the good of the group rather than the benefit of the individual'.⁸⁴ As relationships are built on trust and reciprocity, the greater the trust in the community, the greater the social capital.⁸⁵ A person's social capital is based on the relationships they have with others and the resources they can access through these connections.⁸⁶

Social capital is broken into three varying types of relationships or networks - bonding, bridging and linking capital. Bonding capital is based on strong relationships between similar individuals; bridging capital is a result of weak relationships between diverse

individuals; and linking capital refers to the relationships individuals have with those in positions of power, such as a local councillor and/or government department.⁸⁷

Having all three types of social capital – bonding, bridging and linking – to draw upon is important. While small groups of close friends can provide much social, emotional and financial support, weaker ties can be beneficial for accessing resources beyond the means of close networks.⁸⁸ Those from disadvantaged groups are more likely to have lower levels of social capital than their advantaged counterparts.⁸⁹ Bridging social capital may be especially weak among those living in disadvantaged areas, which places these individuals in precarious situations when they are in need of support or access to networks beyond those available from people in similar situations.⁹⁰ Linking capital can facilitate access to opportunities and enable civic engagement.

Overall, high levels of social capital enable communities to stay ‘together, healthy, crime-free and livable’.⁹¹ Thus low levels of social capital can place communities at risk of crime, poor health, low levels of social participation and tension between groups.⁹²

While increasing social capital within communities is difficult,⁹³ ICT is a possible means to accomplish this.⁹⁴ CTLCs offer public meeting places in communities. This public place provides a space where locals can meet and potentially develop relationships (bonding or bridging capital) with other locals.⁹⁵ If centres attract participants from differing age, gender, class and ethnicity groups and the participants interact, an increase in understanding and tolerance between groups may develop. As Michael Roberts from the United Neighborhood Houses of New York found, ‘one of the positive outcomes of bringing different groups together is that they can learn from, and about, each other as well as confront and dispel the many stereotypes and prejudices that unfortunately are still prevalent in our society’.⁹⁶ If such an outcome occurs, social cohesion may strengthen. A number of social capital commentators agree that providing public meeting places is one way to increase social capital and strengthen communities.⁹⁷

Some geographically based communities use the Internet to disseminate information, share issues and opportunities and facilitate local discussion (linking and bridging capital), as the earlier commentary on local nets pointed out. The Internet also provides CTLC participants with the opportunity to overcome geographical and physical boundaries and establish networks with individuals outside of their area (bridging capital). Interest groups established on the Internet have been found to provide a sense of community.⁹⁸

Thus the establishment of social networks both within and outside of geographical areas increases social capital at an individual and community level. The public location of a CTLC and Internet access at the centre provides individuals and communities with the opportunity to increase bonding, bridging and linking capital. The empirical evidence corroborates the link between social capital and CTLCs.

The empirical evidence

Numerous evaluations of CTLCs have reinforced the correlation between these centres and positive social outcomes. In 1997 participants attending CTCs within CTCNet ‘reported increased involvement in civic activities, including writing letters to government officials, organizing and participating in voter registration drives, and experiencing a greater awareness of current events through reading newspapers’.⁹⁹ CTCs were also perceived as safe places for families and children and places that encourage interaction between previous strangers.¹⁰⁰ A later evaluation of participants at a CTC in Camfield Estates in Massachusetts, USA, found participants’ knowledge and awareness of community resources and activities increased over the two years they attended the centre.¹⁰¹ A 1997-1999 study of 860 participants attending 54 community technology centres within CTCNet, revealed an increase in ‘civic participation, and social and community connections’ among participants along with an improved ‘sense of community’.¹⁰²

While an increase in social capital is not directly referred to as an outcome of CTLCs, an increase in social interaction is often noted and it is this interaction, which may lead to the establishment of new relationships and in turn result in social capital. The evaluation of the *Creating Community Connections Project* in the USA found after attending the centre for a period of time, participants experienced a 33 per cent increase in name recognition and a 100 per cent increase in email and telephone communication.¹⁰³ In addition, individuals learnt about the skills and abilities of their neighbours, assisted each other with technical problems and a number participated in discussion forums. Pinkett concluded that 'community cultural capital' was 'activate[d]' because social interactions increased and participants saw 'even greater possibilities for themselves and their community'.¹⁰⁴ Similarly, an evaluation of a group of home carers connected over the Internet in South Australia found an increase in social interaction, group cohesion and personal well being among participants.¹⁰⁵ In the USA, SeniorNet users also reported an increase in social interaction as a result of their involvement in the network. As one SeniorNet user explained, 'if I am unable to sleep at night, all I have to do is go to my computer and there's always someone to talk to, laugh with, [and] exchange ideas'.¹⁰⁶

Ferlander completed a comprehensive study on ICT and social outcomes as part of her doctorate between 1999-2003. She examined the social effects of an Internet Café in Skarpnack, Stockholm. In 1999 Ferlander discovered the locals in the area had 'high mobility, little participation in community networks, few local friends and little contact between neighbours, little local support, a high degree of distrust, much tension between different groups and a low level of local identity'.¹⁰⁷ Thus the café was placed in an area with 'low social capital and little sense of community'. The café successfully attracted the digitally excluded (those over 65 years, pensioners and the unemployed)¹⁰⁸ and the social outcomes were impressive.

Fifty-two per cent of café users increased their participation in the community, 69 per cent experienced a decrease in isolation, 48 per cent reported 'better contacts between residents', and 43 per cent felt more supported by community members as a result of attending the café. In addition, 74 per cent reported an increase in local identity (they were proud of having an Internet café in the area) and 85 per cent believed Skarpnack was a more attractive area to live. Thirty-nine per cent reported a decrease in tensions between different groups and 37 per cent felt social cohesion was stronger. This could be the result of interactions between different groups. Approximately two-fifths of users reported making new contacts with people different from themselves in terms of age (43 per cent), nationality (43 per cent), gender (38 per cent) and interests (18 per cent).¹⁰⁹

Ferlander concluded that 'social capital and sense of community were significantly higher among Café users' than among those residents of Skarpnack surveyed two years earlier. The café visitors had 'more local friends, are more trusting and socially integrated and feel a much stronger sense of local identity than the non-visitors'. The focus groups maintained that these outcomes were directly related to the Internet Café. Ferlander's research strongly supports 'the positive relationship between digital and social inclusion in contemporary society'.¹¹⁰

Thus technology may increase, or help create, social capital in communities. In tangible terms, however, centres have to provide an environment that facilitates interaction between people, the building of friendships between participants, an increase in social trust, and that directs individuals to people, knowledge and networks within and outside of their community. It is also important to emphasise that different initiatives and programs will be appropriate for different groups and individuals. Thus CTLCs should complement other social programs in an effort to strengthen communities.

An attempt at best-practice criteria: some success factors for positive social outcomes

There is a general consensus among researchers, practitioners, educators and other commentators in regard to factors that are most likely to result in positive social outcomes for CTLCs. The following includes six criteria, which are mentioned by a number of experts in the field, as success factors. Not all criteria will be relevant to all centres and this is far from an exhaustive list.¹¹¹

1. Partnerships

Partnerships at all levels can be of significant benefit. The OECD recommends collaboration between groups in regard to achieving positive learning outcomes,¹¹² and partnerships have been found to be critical for community strengthening organisations.¹¹³ Similarly, partnerships can significantly strengthen CTLCs. Community organisations, businesses and individuals possess numerous skills and resources, which can be drawn upon to assist CTLCs to achieve their desired educational and social outcomes. Partners, for example, can be called upon to provide technical support; an essential requirement for CTLCs, which can be of considerable expense. Links between CTLCs allow centres to share resources and in turn strengthen the sector.

Partnerships between CTLCs and community organisations have mutual advantages. Community based organisations have skills, resources and networks, which CTLCs can benefit from and CTLCs can assist community strengthening organisations to increase their technological capacity.¹¹⁴ Placing ICT within already established community services can also be beneficial, especially in encouraging reserved individuals to access technology.¹¹⁵ Thus partnerships between the two groups make sense, especially when both are often working towards the same goal.¹¹⁶ Canada's PolicyLink argues that such partnerships can 'strengthen low-income communities'.¹¹⁷

Researchers, supporting networks and CTLCs have highlighted the benefits of partnerships. In their 2001 research on *Effective Technology Use in Low-Income Communities* for the America Connects Consortium, Ba et al. stressed the importance of partnerships with community groups for positive social outcomes.¹¹⁸ In the same year a national CTCNet conference identified collaboration with community organisations and individuals as key for CTLCs.¹¹⁹ CTCNet also includes partnerships in its best practice guidelines.¹²⁰ Furthermore, both a Californian evaluation and an evaluation of five CTLCs by Cisler et al. found the most successful CTLCs were those that partnered or networked with existing community groups.¹²¹

SeniorNet's founder bases the network's long term success (it was established in 1986) on local, regional and national partners who provide in kind, technological and financial support.¹²² The Program Manager for Tasmanian Communities Online, Andy Norris, also advocates partnerships as a success factor for the centres it supports.¹²³ And the Smith Family, Microsoft and RMIT found having a range of partners, for both resources and funding support, was a success factor of *The Smith Family Community Learning Network* (SNET – a network of CTLCs based in Collingwood, Eaglehawk, Geelong, Morwell, Shepparton and Wendouree West, Victoria).¹²⁴

2. Engagement with the community

A community focus is another success criteria mentioned by key stakeholders involved with CTLCs. The focus on community engagement and involvement stems

from a strengths based approach, where communities draw upon their own resources. Some support may be external, but this is based upon external parties working 'with' communities, rather than for them.

Community engagement may include local ownership and operation of centres. One of the advantages of involving members of the community is their awareness and understanding of cultural and social factors in that community. In addition, they can use their networks to help educate their fellow community members about the potential benefits of ICT and encourage targeted individuals to attend. As mentioned earlier, motivation is key to engaging individuals in the learning process and to accessing ICT.

A number of researchers, CTLC networks and centres are strong advocates of a community based approach. Participants in the UK Communities Online National Conference (2000) listed community engagement – allowing community members to take ownership of the project and using resources within the community such as local staff and volunteers – as a major success factor of a learning network.¹²⁵

Ferlander maintained the success of the Internet Café in Skarpnack was largely attributed to the manager - a previously unemployed young resident who is well known and well connected in the community. There is also a perception that the community owns the café.¹²⁶ Similarly, Norris believes that 'critical success factors' for Tasmanian Communities Online are the local management of centres and their responsiveness to the community's needs.¹²⁷ The Smith Family, RMIT and Microsoft also reported the local aspects of SNET – having local champions in each centre, engaging community members and making centres locally relevant – as success components.¹²⁸

A number of evaluations have also found that local engagement is fundamental to a successful CTLC. After evaluating five community ICT programs in low SES areas Cisler et al. concluded that those most successful had strong leaders who were tied to the community. These leaders were well known, respected and understood the communities' strengths.¹²⁹ Ba et al. also concluded that effective centres used staff and volunteers who were both based in and engaged with the community.¹³⁰

3. *A positive learning environment - self-paced, interest based & interactive*

A successful CTLC is one that provides a positive learning environment, which encourages both learners and disengaged learners to initially attend and, more importantly, return to the centre. Informal, self-paced and self-directed or interest based learning may be the most appropriate approach.¹³¹ The OECD recommends adults should 'create their own learning project'. Whether this learning is based on employment or leisure is irrelevant because the adult is engaged in the learning process.¹³² It is important, however, to acknowledge that some individuals may require assistance 'to define the goal of their learning activity'.¹³³ The research on andragogy has also shown that 'adults have to believe in the objectives they set themselves'.¹³⁴ Learning should also be structured with a focus on building skills, rather than on completing tasks within set time periods.¹³⁵

In addition, centre staff and volunteers should be aware that those from low SES backgrounds might require further encouragement in terms of challenging themselves in using ICT. In 'Demystifying the Digital Divide' Warschauer pointed out that from kindergarten to Year 12, students from low SES backgrounds were more likely to use the computer for less challenging activities, than students from high SES families.¹³⁶

The curriculum provided will determine much of the above and, according to Cisler et al., the curriculum should be 'thoughtful', 'up-to-date' and continuously change over time.¹³⁷ The curriculum within centres may differ depending on the needs of the community.

Finally, a learning environment that encourages interaction between learners has been found to contribute to a successful learning environment. The Research Centre for Educational Technology in the USA listed interaction between learners as a condition for best learning outcomes of Higher Education distance students.¹³⁸ In the VET sector Oliver also found interaction between students had positive learning outcomes.¹³⁹ While these examples do not pertain to informal adult education, the criterion can also positively affect informal ICT based learning.¹⁴⁰ Providing an environment that encourages interaction between individuals may also increase understanding and tolerance between participants from varying groups, decrease tensions and therefore improve social cohesion.

4. *Engaged, well trained, high quality staff and volunteers*

As mentioned above, it is important that staff and volunteers are involved with the community, and it is equally important that staff and volunteers are trained and of high quality.¹⁴¹ As the founder of the USA's CTCNet, Tony Stone, articulated, 'it's the people and not the technology that is the powerful force behind community technology centers'.¹⁴² Staff and volunteers should have a diversity of skills, positive attitudes and an ability to work with people from numerous backgrounds.¹⁴³ To ensure staff and volunteers are supported and exposed to development opportunities, Ba et al. recommend the establishment of a mentoring system.¹⁴⁴

The importance of high quality trainers, support personnel or volunteers should not be understated. As disadvantaged adults are the target group that CTLCs predominately wish to attract and these individuals may fall into the section of the population who do not see the benefits in training or learning, it is essential that their first experience in a CTLC is positive, otherwise it is unlikely they will return.¹⁴⁵

Chow et al. in their longitudinal case studies of CTLC users found one way of ensuring a ready supply of volunteers who are in touch with the community, is to get users or ex-users to volunteer at the centre.¹⁴⁶ At some centres, such as the CTC in Lower Roxbury, an alumni has been established where volunteers are drawn from to run the centre.¹⁴⁷ SeniorNet also uses volunteers who are participants or ex-participants of the network.¹⁴⁸ The Tasmanian Communities Online network attracts both external and CTLC participant volunteers. In 2001 over 1,000 volunteers spent more than 80,000 hours assisting CTLCs.¹⁴⁹ Finding volunteers with expert skills may prove problematic. To overcome this difficulty, Cisler et al. suggest the establishment of an advisory board.¹⁵⁰

5. *An appropriate physical location and appearance*

The location and appearance of a CTLC can have significant implications in terms of those who attend the centre and the interactions that occur between participants within the centre. In most cases CTLCs should be visible in the community (for example, located in an area that gets a lot of foot traffic), located in a place perceived as safe, which is accessible both in terms of parking availability and public transport.¹⁵¹ A highly visible centre is not always optimal, especially if confidentiality is a concern.¹⁵² While some centres may have to be placed in schools, due to a lack of publicly available space, a school environment may deter individuals who had negative experiences in this setting.¹⁵³

Internally, the centres should not only be clean, but also provide a setting with a choice of comfortable places to sit. In addition, desks and computers should be set up to encourage individuals to engage in conversation and assist each other. Separate places to sit, such as lounge chairs with tables, can also influence the level of interaction that occurs within a centre.¹⁵⁴ Centres should also create a physical environment that attracts the desired target group (whether they are youth, seniors or other) and makes them feel comfortable.

The importance of a centre's physical attributes was reinforced by Cisler et al.'s evaluation of five CTLCs. Two of the five centres had recently been renovated and the aesthetic qualities and layout of these centres were sources of pride within their communities. Cisler et al. suggested inviting physical features should result in an environment which is 'equally friendly, professional, and respectful, clean, organized, open to feedback, and exhibits a seriousness of purpose'.¹⁵⁵ A positive physical environment may also help to improve the sense of community within disadvantaged areas. This is especially important for disadvantaged areas where community identity is generally low.¹⁵⁶

Davies et al. also reinforced the importance of the physical features of a centre. They emphasised four areas where CTCs need to concentrate – 'uses and activities' (why people attend and return), 'comfort and image' (a key determinant of whether a centre will be used), 'access and linkages' (the physical location and visual aesthetics of the centre) and 'sociability' (does the centre encourage social exchanges). To fulfil these requirements, Davies et al. suggest that centres have times available for unrestricted activities, be opened at various hours, cater for a number of people doing different activities and allow the space to be used for community events or meetings.¹⁵⁷

6. *Evaluation*

The importance of evaluating CTLCs should not be underestimated. This is imperative in terms of sustainability and positive outcomes.¹⁵⁸ While centre sustainability needs to be assessed, a large part of the evaluation should focus upon the users' perspectives and the impact the centres have on the community.¹⁵⁹ Evaluation also enables centres to remain responsive to the community's needs.

The challenges in becoming a best-practice centre

Implementing the above criteria requires numerous resources and will not always be practical. Yet, if success factor one – partnerships – are achieved, centres may have significantly more resources to draw upon. Establishing partnerships, however, is not necessarily easy for some CTLCs. Below are number of shared challenges reported by CTLCs.

1. Difficulties establishing partnerships

Davies et al. found many CTLCs experience difficulties forming partnerships with other CTLCs, businesses, individuals within the community and/or community based organisations. A 2001 evaluation of 353 community institutions in the USA found that community strengthening organisations were not yet linked to the ICT movement.¹⁶⁰ Canada's PolicyLink labels this missing connection the 'organizational divide'.¹⁶¹

2. Problems recruiting and retaining staff and volunteers

Cisler et al. reported that numerous centres experience problems recruiting and retaining qualified staff.¹⁶² The OECD also acknowledged the problems centres face in regard to the quantity of staff and volunteers needed to adequately equip a centre. Compared to most other learning environments, CTLCs require a much higher ratio of staff to learners.¹⁶³

Centres can also find themselves in a predicament if the local champion leaves the centre. This reinforces the importance of developing other staff and/or volunteers.

3. Problems recruiting participants

In addition to attracting staff, some CTLCs have difficulty attracting participants, especially those least likely to have ICT skills and to be engaged in learning.¹⁶⁴ The physical presence of a CTLC in a disadvantaged community will not necessarily mean disadvantaged individuals disengaged from learning will attend the centres. As mentioned earlier, those who could benefit most from learning – those in disadvantaged situations – are usually the least likely to participate in learning activities. It may be especially difficult to motivate some individuals to see value in learning when their communities face significant social and economic problems. As Meredyth commented:

From the perspective of community workers confronting the effects of intergenerational poverty, illiteracy, lack of English and alienation, in an environment where a broken lift, violence in the corridor and discarded needles on the stairs pose immediate problems, giving residents free computers and expecting them to use the technology might seem quixotic.¹⁶⁵

Thus promoting CTLCs and engaging disadvantaged individuals can prove challenging for centres.

4. Providing relevant curriculum

Once participants are within centres, some CTLCs have difficulty providing appropriate and interesting curriculum.¹⁶⁶ Other centres find it hard to move beyond access to focus more broadly on issues such as education.¹⁶⁷

5. Funding

Understandably, one of the most challenging problems for some centres is related to funding. The sustainability of a centre is highly dependant upon funding it can attract or revenue it can raise. Cisler et al. and Davies et al. both acknowledged funding as a significant problem for many centres.¹⁶⁸

Throughout the 1990s and early twentieth century large amounts of funding was injected into the ICT movement. In the USA, for example, the financial commitment to CTLCs reached \$65 million and a further \$42.8 million was directed towards a Technical Opportunities Program (TOP). While this allowed for the establishment of strong infrastructure, with 2002 came budget cuts. President Bush cut funding for CTLCs to \$32.5 million and TOP to \$15 million.¹⁶⁹ Further budget cuts followed in 2003,¹⁷⁰ leaving a legacy of sustainability problems.¹⁷¹

A similar situation is occurring in Australia. Since 1997 the federal government has provided funding for CTLCs under the Networking the Nation initiative. The 2003-2004 budget included \$27.9 million for Networking the Nation. Yet come July 1, 2004, there is no further funding for its continuation.¹⁷² In terms of sustainability, this could be testing for centres because according to a 2000 survey by the National Office for the Information Economy (NOIE, which was recently split into the Australian Government Information Management Office and the Department of Communications, Information Technology and the Arts), Australian federal, state and territory governments funded 96 per cent of access related ICT programs and projects.¹⁷³ While this proportion may have changed over the last few years, the lesson remains – centres should not depend on one terminable source for funding.

The America Connects Consortium point out that many CTCs have had to resort to providing some paid training courses as a means of generating income.¹⁷⁴ By their nature CTLCs are costly because of the software, hardware and support expenses.¹⁷⁵ Financial problems may be further compounded by the need to update equipment.¹⁷⁶

It is important to note that while not all centres experience all of the above difficulties, the literature suggests significant overlap. After examining CTLCs in sixteen countries, the Academy for Educational Development concluded many centres close because of a heavy reliance on funding, an impoverished client base and operational problems. While funding is perceived by some to be the most crucial sustainability issue, the Academy for Educational Development found this 'may not be their most acute need'.¹⁷⁷ An evaluation of a CTLC in the UK, which failed to deliver positive outcomes, revealed funding was not accountable for its failure. The centre was plagued with problems relating to staff/volunteers, curriculum and engaging participants. Those attending the centre were not necessarily digitally excluded or at risk of social exclusion, many participants did not feel the learning material was relevant, they stated learning was too formalised, they did not report increased ICT skills and they felt unsupported by the centre's staff.¹⁷⁸

Conclusion

Over the last decade, ICT interest groups, community organisations, business and governments in Australia and overseas have moved from the physical provision of hardware and software as the solution to the 'digital divide', to using ICT in the public domain as a means towards social inclusion. This has occurred at both a philosophical and practical level.

The understanding behind the potential of technology to act as a tool to bring about educational, employment and social outcomes has deepened. Those in advantaged situations are more likely to have access to ICT and the skills to use it to its full potential. Yet, this goes beyond simply having the financial means to attain hardware and software. It is also related to education, opportunity and motivation. Education is a key indicator of life outcomes, yet not everyone has had the opportunity, or the motivation, to take full advantage of our formal education system. Those who have become disengaged from learning at an early age are the least likely to voluntarily return to education or training, but they are also more likely to be entrenched in low skilled jobs, underemployment or unemployment. Technology, delivered in a non-formal community based environment, such as a CTLC, has been found to re-engage some of these previously disengaged learners. If CTLCs can reintroduce a number of individuals to learning in a community, these centres may have the potential to help instil a culture of lifelong learning throughout that community.

Links have also been found between ICT and social capital. The social capital an individual has to draw upon is dependent on their social networks. CTLCs provide an opportunity for individuals to establish networks both within and outside of the community. The physical public meeting place of a CTLC can enable the development of local relationships, and the Internet can facilitate the building of networks within and outside a geographic area. While the capacity of CTLCs to create or increase civic engagement, social interaction and social capital, has been contested, the empirical evidence affirms a strong association between CTLCs and these outcomes.

The presence of a CTLC in a community, however, does not necessarily mean the above effects will ensue. Positive learning and social outcomes are largely reliant on a number of factors. Centres need to develop partnerships on a micro and macro level; be engaged with the community in terms of ownership, involve local staff and volunteers and respond to local issues; provide a positive learning environment that will motivate disengaged learners to attend and return to the centre; offer training and support to staff/volunteers with diverse skills; provide an appropriate physical location and an internal environment that encourages social interaction; and conduct evaluations on the sustainability and impact the centre has upon the community. While the above factors require numerous resources, if CTLCs establish a network of partners, such conditions will be easier to attain.

The difficulties faced by CTLCs, such those relating to engaging partners, attracting and retaining staff, volunteers and participants, developing curriculum and attaining funding,

leaves a possible legacy of unsustainable CTLCs. Alternatively, the potential of CTLCs to strengthen communities by increasing lifelong learning and social capital should provide an incentive for non-profit organisations, business and governments to work together to strengthen the sector.

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² Berlind Asgeirsdottir, 'Seizing the Benefits of New Technologies in a Changing Economy: Key Requirements for Human Capital Politics', Speech by Deputy Secretary-General OECD, Brussels, 28-29 October 2002.

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- ¹⁶ Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 103.
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- ¹⁹ See VICNET, My Connected Community, <http://mc2.vicnet.net.au/index.html>, viewed 7 June 2004.
- ²⁰ The local net for residents of Hobson's Bay, Victoria, is an excellent resource for individuals living in the community; see <http://www.williamstownonline.net/index.htm>, viewed 13 May 2004. This community, however, is not disadvantaged. According to the ABS's socio-economic indexes for areas, the Hobson's Bay (Williamstown) statistical local area is more advantaged than the Victorian average. Australian Bureau of Statistics, *Socio-Economic Indexes for Areas 2001: A Comprehensive Profile of the Australian People*, Cat. No. 2033.0.30.001-2033.8.30.001, ABS, Canberra, 2003.
- ²¹ This will be further discussed later in the paper.
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- ²³ Stephen Davies, Andrew Wiley-Schwartz, Randal Pinkett and Lisa Servon, *Community Technology Centres as Catalysts for Community Change*, A Report to the Ford Foundation, Project for Public Spaces, BCT Partners and New School University, January 2003, p. 6.
- ²⁴ Academy for Educational Development, *Country Reports: Research on Non-Profit Public Access Technology Centers*, Report for Microsoft Corporation, Academy for Educational Development, Washington, USA, 2003, p. 2.
- ²⁵ Academy for Educational Development, *Country Reports*, p.1. The major limitation with this division is that in some circumstances educational institutions may be used for community access.
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- ²⁷ By 1997 there were 600 HUD centres in some stage of development. Annette Beachham and Marilyn Henry, 'Neighbourhood networks: putting people to work', *Journal of Housing and Community Development*, Vol 54, Issue 6, Nov/Dec 1997, pp. 31-35.
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- ³⁰ See www.americaconnects.net, viewed 25 February 2004.
- ³¹ SeniorNet claims to have introduced over 85,000 seniors to ICT. Mary Russell, 'Online learning communities: implications for adult learning', *Adult Learning*, Vol 10, issue 4, Summer 1999, pp. 28-31.
- ³² David Devins, Alison Darlow and Vikki Smith, 'Lifelong learning and digital exclusion: lessons from the evaluation of an ICT learning centre and an emerging research agenda', *Regional Studies*, vol 36, issue 8, November 2002.
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- ⁴² Furlong in Mary Russell, 'Online learning communities: implications for adult learning', pp. 28-31.
- ⁴³ Cisler in Mark Warschauer, 'Reconceptualizing the Digital Divide'.
- ⁴⁴ Mark Warschauer, 'Reconceptualizing the Digital Divide'; and Mark Warschauer, 'Demystifying the Digital Divide', pp. 42-47. Ferlander describes social inclusion as 'participation in the encompassing community and society' and it 'involves being

included in a complex network of different relationships'. This may not only include friends and neighbours, but also using local services, such as the post office or library. Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 53-54.

⁴⁵ See for example, The Smith Family, RMIT and Microsoft, 'Improving Online Access Centre Impact and Sustainability: An integrated Approach from a New Perspective', Comments on the Discussion Paper *Maintaining the Viability of Online Access Centres in Regional, Rural and Remote Australia*, unpublished, 11 November 2003.

⁴⁶ UNESCO, Information Technology, Adult Learning, Employment (ITALE), <http://www.unesco.org/education/educprog/lwfi/doc/itale01.htm>, Viewed 1 March 2004.

⁴⁷ Berlind Asgeirsdottir, 'Seizing the Benefits of New Technologies in a Changing Economy'.

⁴⁸ Kearns et al. in Roger Morris, *Learning communities: A review of literature*, Working Paper 01-32, UTS Research Centre for Vocational Education & Training, Sydney, 2001, p. 11. There is also evidence to suggest that learning in adult life is linked to social capital. For a discussion on this see John Field, 'Civic engagement and lifelong learnings: Survey findings on social capital and attitudes towards learning', *Studies in the Education of Adults*, Vol. 35, No. 2, Autumn 2003, pp. 142-157.

⁴⁹ Berlind Asgeirsdottir, 'Seizing the Benefits of New Technologies in a Changing Economy'.

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⁵¹ K. Muir et al., *Youth Unemployment in Australia*, pp. 6-8.

⁵² OECD, *Beyond Rhetoric: Adult Learning Policies and Practices - Highlights*, OECD, Paris, 2003, p. 4.

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⁵⁴ Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning: Highlights, Emerging Issues and Lessons to Date*, OECD, Paris, 2001, p. 19.

⁵⁵ OECD, *Beyond Rhetoric*, p. 3.

⁵⁶ Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, p. 18.

⁵⁷ Neil Selwyn, Stephen Gorard and Sara Williams, 'We are guinea pigs really': Examining the realities of ICT-based adult learning', *Studies in the Education of Adults*, Vol 34, No 1, Spring 2002, p. 25; and Neil Selwyn and Stephen Gorard, 'Reality bytes: examining the rhetoric of widening educational participation via ICT', *British Journal of Educational Technology*, Vol 34, No 2, 2003, p. 179.

⁵⁸ OECD, *Beyond Rhetoric*, p. 5.

⁵⁹ Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, pp. 14-15.

⁶⁰ 40.15 per cent of those at levels 1 or 2 stated this view. Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, p. 15.

⁶¹ Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, p. 16.

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⁶³ For further discussion on lifelong learning see A. Beavis, M. Murphy, J. Bryce and M. Corrigan, *Post-School Plans: aspirations, expectations and implementation*, The Smith Family, Sydney, 2004, pp. 16-19.

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⁶⁵ Roger Morris, *Learning communities*, p. 5-8.

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⁶⁷ Leone Wheeler, *Learning Network Models*.

⁶⁸ UNESCO, Information Technology, Adult Learning, Employment (ITALE).

⁶⁹ Neil Selwyn, Stephen Gorard and Sara Williams, 'We are guinea pigs really', pp. 23-41.

⁷⁰ Neil Selwyn and Stephen Gorard, 'Reality bytes', p. 169.

⁷¹ Steve Cisler, et al., 'Computer and Communications Use in Low-Income Communities', p. 5.

⁷² Those involved in this project were also offered computers and Internet access within their homes. Stephen Davies, et al., *Community Technology Centres as Catalysts for Community Change*, p. 16.

⁷³ While this quote is based upon the second year of the study (817 participants in 44 centres), the positive attitudes towards learning were found in all three years of the study. Clifton Chow, et al., *Who Goes There?*, p. 1.

⁷⁴ Their emphasis. Neil Selwyn and Stephen Gorard, 'Reality bytes', p. 178. For further discussion on how ICT can enhance learning outcomes for disadvantaged students see Jill Blackmore, Lesley Hardcastle, Esme Bamblett and Janet Owens, *Effective Use of Information and Communication Technology (ICT) to Enhance Learning for Disadvantaged School Students*, Deakin Centre for Education and Change, Institute of Koorie Education & Institute of Disability Studies, Deakin University, Victoria, July 2003.

⁷⁵ Stephen Davies, et al., *Community Technology Centres as Catalysts for Community Change*, p. 10.

⁷⁶ Denise Meredyth, 'Wired community', p. 12.

⁷⁷ Neil Selwyn and Stephen Gorard, 'Reality bytes', p. 172.

⁷⁸ Liza Hopkins and Julian Thomas, *e-social capital*.

⁷⁹ Hopkins and Thomas argue that this could largely be because these individuals had little in common in terms of their disabilities – they had various visual, intellectual and physical disabilities. Liza Hopkins and Julian Thomas, *e-social capital*. Others have also argued that using the Internet decreases social interactions in the local community (see Slouka, Stall, Schiller and Nie in Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 109). Internet advocates rebut this, arguing that the Internet complements other forms of communication. In addition, one of the most common uses of ICT is email, which is very interactive. Ferlander argues that even passive Internet use can be effective in terms of increasing knowledge and exchanging information. Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 110, 117.

⁸⁰ Liza Hopkins and Julian Thomas, *e-social capital*.

⁸¹ See for example, Mark Warschauer, 'Demystifying the Digital Divide', pp. 42-47.

⁸² There were a number of limitations with the Local Net – the chat component was cancelled, interest groups were not established and content was so limited that users could quickly cover the entire site and had little reason to return. Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 167-202.

- ⁸³ Cote and Healy in Rosalyn Harper, *The measurement of Social Capital in the United Kingdom*, Office for National Statistics, 2002, <http://www.oecd.org/dataoecd/22/52/2382339.pdf>, viewed 7 June 2004.
- ⁸⁴ Liza Hopkins and Julian Thomas, *e-social capital*.
- ⁸⁵ Ferlander points out that Putnam has switched from an emphasis on trust to social networks in defining social capital. There is a difference between trusting people in general in a community ('social trust') and trusting governments and institutions ('political trust'). Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 73-74, 80.
- ⁸⁶ Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 62.
- ⁸⁷ Liza Hopkins and Julian Thomas, *e-social capital*.
- ⁸⁸ Liza Hopkins and Julian Thomas, *e-social capital*.
- ⁸⁹ Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 84.
- ⁹⁰ It is important to note that social capital is not always positive. It can bring together and strengthen unwanted groups in society (such as gangs, drug cartels etc) and bonding capital can reinforce the social exclusion some individuals face. A balance between bonding and bridging capital can assist in overcoming this problem. Putnam in Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 62, 90-91.
- ⁹¹ Putnam in Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 88.
- ⁹² Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 89.
- ⁹³ Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 95.
- ⁹⁴ Putnam argues that the digital divide must be overcome if social capital is to be created or increased in disadvantaged communities. Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 103. Ferlander, Lin and Wellman also believe the Internet can facilitate the creation of social capital. Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 123. Simpson, Daws and Wood also believe ICT can increase social capital, but they also maintain that a certain level of social capital needs to exist in a community for them to 'take up ICT initiatives'. Lyn Simpson, Leonie Daws & Leanne Wood, 'More than just an Internet connection: Building Rural Social Capital Through Public Access', *Rural Society*, vol. 13, no. 2, 2003, pp. 113-125.
- ⁹⁵ This only occurs if the centres do not have a specific target group. While focussing on specific groups may have positive outcomes within that group, it will not necessarily have wider community implications.
- ⁹⁶ Steve Cisler, et al., 'Computer and Communications Use in Low-Income Communities', p. 7.
- ⁹⁷ Oldenburg, Onyx and Bullen in Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 94.
- ⁹⁸ Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 103, 108.
- ⁹⁹ Mark, Cornebise and Wahl in Stephen Davies, et al., *Community Technology Centres as Catalysts for Community Change*, p. 14.
- ¹⁰⁰ Mark, Cornebise and Wahl in Stephen Davies, et al., *Community Technology Centres as Catalysts for Community Change*, p. 14.
- ¹⁰¹ Those involved in this project were also offered computers and Internet access within their homes. Stephen Davies, et al., *Community Technology Centres as Catalysts for Community Change*, p. 16.
- ¹⁰² Clifton Chow, et al., *Who Goes There?*, pp. 1-2.
- ¹⁰³ As part of this project individuals were provided with a computer and Internet connection in their home, along with training and access to a local network. While social interaction increased, trust levels did not similarly improve. Therefore, by definition, social capital did not increase. Randal Pinkett, *Toward Social and Cultural Resonance with Technology: Case Studies from the Creating Community Connections Project*, unpublished paper, 2002.
- ¹⁰⁴ Randal Pinkett, *Toward Social and Cultural Resonance with Technology*.
- ¹⁰⁵ Liza Hopkins and Julian Thomas, *e-social capital*.
- ¹⁰⁶ Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 126.
- ¹⁰⁷ This was determined by Ferlander's research using qualitative and quantitative data. Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 232-233.
- ¹⁰⁸ Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 238.
- ¹⁰⁹ Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 262-263, 316.
- ¹¹⁰ Sara Ferlander, *The Internet, Social Capital and Local Community*, pp. 330, 338.
- ¹¹¹ For a far more comprehensive list of best practice criteria, see CTCNet's 'Standards of Excellence for Computer Technology Centres', Version 4 Rev. 10/02. This includes three levels – best practices, preferred practices and minimum standards. See www.npower.org/nationalservices/sbcexcelerator/ctc+standards+evaluation+form_blank.pdf, viewed 9 March 2004.
- ¹¹² OECD, *Beyond Rhetoric*, p. 11.
- ¹¹³ Roger Morris, *Learning communities*, p. 17.
- ¹¹⁴ Josh Kirschenbaum and Radhika Kunamneni, *Bridging the Organizational Divide: Toward a Comprehensive Approach to Digital Divide*, A PolicyLink Report, Canada, 2001, pp. 5, 9.
- ¹¹⁵ Denmeade, Amy, e-mail comment to draft version of this paper, copy in possession of the author, 31 May 2004.
- ¹¹⁶ Davies et al. and Kirschenbaum & Kunamneni found many CTCs have taken on a community building approach. Stephen Davies et al., *Community Technology Centres as Catalysts for Community Change*, p. 22; Josh Kirschenbaum and Radhika Kunamneni, *Bridging the Organizational Divide*, p. 11.
- ¹¹⁷ Josh Kirschenbaum and Radhika Kunamneni, *Bridging the Organizational Divide*, p. 8.
- ¹¹⁸ Penuel & Kim in Harouna Ba, et al., *Effective Technology Use in Low-Income Communities*, p. 11.
- ¹¹⁹ Stephen Davies, et al., *Community Technology Centres as Catalysts for Community Change*, p. 17.
- ¹²⁰ CTCNet, *Standards of Excellence for Computer Technology Centres*, Version 4 Rev. 10/02, www.npower.org/nationalservices/sbcexcelerator/ctc+standards+evaluation+form_blank.pdf, viewed 9 March 2004.
- ¹²¹ Stephen Davies, et al., *Community Technology Centres as Catalysts for Community Change*, p. 15; and Steve Cisler, et al., 'Computer and Communications Use in Low-Income Communities', pp. 6-7.
- ¹²² Mary Russell, 'Online learning communities', pp. 28-31.
- ¹²³ Andy Norris, 'Online access centres and partnerships for building community capacity', *Australian Journal of Adult Learning*, vol. 42, no. 3, November 2002, p. 379.
- ¹²⁴ The Smith Family, RMIT and Microsoft, 'Improving Online Access Centre Impact and Sustainability', pp. 3-4.

- ¹²⁵ Leone Wheeler, *Learning Network Models*.
- ¹²⁶ Sara Ferlander, *The Internet, Social Capital and Local Community*, p. 339.
- ¹²⁷ If the number of participants is a measure, this network has been successful - it has more than 44,000 registered users, over 25,000 people have participated in a basic IT skills training course and 23,000 new email accounts and 10,000 web pages with local information have been set up. Andy Norris, 'Online access centres and partnerships for building community capacity', p. 379.
- ¹²⁸ The Smith Family, RMIT and Microsoft, 'Improving Online Access Centre Impact and Sustainability', pp. 3-4.
- ¹²⁹ Steve Cisler, et al., 'Computer and Communications Use in Low-Income Communities', pp. 6-7.
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- ¹³¹ OECD, *Beyond Rhetoric*, p. 8 and Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, p. 14; Ron Oliver, 'Seeking best practice in online learning: flexible learning toolboxes in the Australian VET sector', *Australian Journal of Educational Technology*, 17 (2), 2001, p. 208; and Penuel & Kim in Harouna Ba, et al., *Effective Technology Use in Low-Income Communities*, p. 11.
- ¹³² Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, p. 23.
- ¹³³ Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, p. 14. Centres should also be prepared to redirect individuals who do not feel comfortable within that particular learning environment to one which is more appropriate. David Devins, et al., 'Lifelong learning and digital exclusion'.
- ¹³⁴ Directorate for Education, Employment, Labour and Social Affairs, OECD, *Thematic Review on Adult Learning*, p. 20.
- ¹³⁵ Andy Norris, 'Online access centres and partnerships for building community capacity', p. 379.
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