"COMPUTERS IN HOMES" IN NEW ZEALAND: Addressing gender and culture issues through ICT.

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Computers In Homes in New Zealand

Computers In Homes (CIH) was initiated by the 2020 Communications Trust to make recycled computers available to families unable to buy one for themselves. Their mission statement is "*to provide all New Zealand families who are socially and economically disadvantaged with a computer, an Internet connection, relevant training and technical support.*" The stated goals[1] are to empower low socio-economic communities with the necessary tools and skills to become active participants in the online world, and to provide children from these communities with access to online educational resources from home.

Parents enter into an agreement with their children's school to receive a recycled Pentium computer, 6 months free Internet access, free training and technical support. The NZ Ministry of Education classifies schools on a 1-10 scale of demographic family income, so decile 1 schools were initially chosen as their communities had the greatest need socially and economically, with significantly high proportions of Maori and Pacific Nations families. *'New Zealand research shows that low-income families, Maori and Pacific Islanders in particular, are being left behind in the new economy'*.[2]

Background

The digital divide is a worldwide phenomenon and the term illustrates the disparity between the "haves" and the "have-nots" in access to Internet capable computer technology. As far back as the late 1980's concern was expressed that the most disadvantaged groups in New Zealand would benefit least from new introductions such as the computer. Ramsay, Katterns and Lillas listed these groups as women, Maori and lower socio-economic status people and suggested that computer education could actually contribute to the widening of the gap between rich and poor.

They applied Bourdieu's notion of cultural capital to the accessing of computers, revealing children of the dominant middle (computer-owning) class as advantaged over those from lower socio-economic and minority culture groups. Their study[3] revealed that *'the provision of equal access to computer technology in schools would not be sufficient to combat the potential of the computer to be yet another symbol of inequity in New Zealand society'*.

Bishop and Glynn[4] are clear that culture in education counts if patterns of oppression are to be

[1] Computers In Homes – Development Strategy (2003-2005); 2020 Communications Trust submission to Community Employment Group, July 2003
[2] Craig, Barbara (2001) *Making Connections: Using the Internet to build virtual community and offer digital opportunities to low-income families and their children.* NZ: Victoria University of Wellington School of Education. See also Velde, M. (2000) *Computers In Homes.* NZ Education Gazette, 21 August 2000, p12.
[3] Ramsay, P., Katterns, B. & Lillas, C. (1987). *Children, computers and equity.* Delta 39, 1987 pp4-17.
[4] Bishop, R. & Glynn, T. (1999). *Culture Counts: Changing power relations in education.* NZ: Dunmore Press Ltd.

broken so that previously marginalised people are able to participate. They identify power imbalances and investigate the implementation of culturally relevant pedagogies within the context of cultural diversity. The absence of these, they claim, has negative results for people of colour in general.

'No significant advancement is being made in addressing cultural diversity in society in general or mainstream educational institutions…because current educational policies and practices in most Western countries were developed and continue to be developed within a framework of colonialism. As a result, the system continues to serve the interests of the monocultural elite'. [5]

Elliott[6] suggested further that these disadvantages for women and low socio-economic groups extended to limiting their entry into employment. He reported *massive inequity* of access to computers across racial group and agreed that computers in schools actively promoted this inequity. His evidence that parents who did purchase computers, did so as already-established job aids, showed socio-economic group and employment-related factors as the biggest deciders in access to computers.

International studies echo these concerns. In America, the National Telecommunications and Information Administration (NTIA)[7] reported that in email use alone, for the period 1994-1998 the digital gap between Black / Hispanic households and White households *quintupled*. Data collection over income, race/origin, education and employment factors revealed a widening computer-ownership divide that sees "computer-rich getting richer". They conclude:

> *'Despite patterns of growth, the information "haves" have dramatically outpaced the information "have-nots" in their access to electronic services. As a result, the gap between these groups --- the digital divide --- has grown over time.*[8]

Computers In Homes has consistently provided opportunities for low-income families to access information technology previously unavailable to them. This has been accompanied by training and support to further develop the skills of both parents and children, raising educational outcomes for both. The focus has always been on IT as an effective educational tool and on putting technology into the hands of those without previous access to it. This has had a flow-on effect into the communities served by *Computers in Homes*, in that neighbours and extended families have also benefited from the passing on of skills in the use of information technology.

Preliminary results

The principal of one of the pilot schools[9] claimed that *Computers in Homes* had produced some of the most life changing behavioural results of any school programme in existence. Its success has seen it expand to schools in other low-decile urban areas and to the *Tuhoe rohe*[10] of the rural East Coast, where the population is predominantly Maori and where there is a high proportion of native speakers of the Maori language (Te Reo Maori). In many Tuhoe communities, Te Reo Maori is the first language of choice.

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[5] Ibid, p12.

[6] Elliot, P. (1991). *Equity of access to computers.* Computers in NZ Schools, March 1991 pp28-30.

[7] National Telecommunications and Information Administration (1999). *Falling through the net: A report on the telecommunications and information gap in America.* Washington: U.S. Department of Commerce.

[8] ibid, p88.

[9] A two-year pilot project began in July 2000, in communities associated with schools in Cannons Creek (North Wellington) and Panmure Bridge (South Auckland).

[10] In April 2001 the Tuhoe Education Authority (TEA), Ministry of Education and 2020 Communications Trust launched a pilot extending Computers In Homes to 125 families associated with isolated rural schools in the North Island's East Coast.

Because the scheme has been running a relatively short time, research results are still being documented. Barbara Craig of Victoria University is a 2020 Trustee, the project champion and principal researcher. The writer has begun further research and we are collaborating with others on imminent future studies. Findings so far reveal that initial expectations of the scheme have been by far surpassed. What had originally been seen as a way to address the "digital divide", soon became more evident as a way to create whatever ICT opportunities were defined by the users of the scheme.

It has become inappropriate to determine their success in terms of comparison against a benchmark of Pakeha[11] privilege. Government policy makers in New Zealand defined a perceived lack of Maori and Pacific educational attainment and employment status as "the gap" between Maori/Pacific achievement and Pakeha achievement, creating policies to address the disparity in these terms. It has been suggested instead that Maori should describe their own "gap" as a comparison between where they are now educationally, and where they wish to be, which may indeed be far in excess of Pakeha achievement! There is a growing resistance amongst Maori academics against being continually measured by Pakeha defined criteria.[12]

Leading Maori health academic, the late Irihapeti Ramsden[13] said that post-colonial life for Maori has often been restricted to a series of brutal compromises and that changing these compromises to choices requires information and the depth of skills which help shape decisions at national level as well as within the family. There is widespread acknowledgment that Maori would benefit from the information revolution and the global network, but that the impact of these opportunities will be dictated by the scope of their participation. Sarah Peters[14] affirms that many Maori do not have access to the Internet as the cost of connection and associated hardware is beyond their means.

Craig claims that the 2020 Communications Trust launched the project in the belief that to be excluded from the digital revolution could only lead to harm, and to be included in it would possibly lead to social and economic benefits. [15] She explains how new theoretical frameworks have emerged in New Zealand over the two years since the project began. Rather than focussing on the 'digital divide' and the problem of inequitable access to the World Wide Web, we now speak of providing 'digital opportunities' for individuals and communities.

The CIH approach was practical, exploring ways of enhancing the well-being of families in low-income communities over time. We examined how ICT access can be made useful to excluded communities to promote local development and political empowerment. The communities identified are low socio-economic, Maori, Pasifika[16] and women, and of course, many New Zealand women fall into all these categories.

[11] Pakeha is the name or cultural grouping for New Zealanders of European origin, or white New Zealanders.
[12] Maori Education lecturer, Wally Penetito, oral source Victoria University of Wellington, 1999
[13] Ramsden, I. In Brown, A. (1994). Mana Wahine: Women who show the way. NZ: Reed Publishing.
[14] Peters, S. (2001). Maori and the Net: The 'digital divide' and the potential of the Internet for Maori development. Ngaruawahia, NZ: Waikato University
[15] Craig, B. (2002). Computers In Homes: Social consequences of new digital technologies in low-income communities. NZ: Victoria University of Wellington School of Education, p3.
[16] Pacific Nations Peoples tend to use this as a collective term for NZ Samoans, Cook Islanders, Tongans, Niueans, Tokelauns et al.

Computers in Homes Gender Outcomes

Both Barbara Craig and I found that the parents initially became involved with CIH as a commitment to their children's education, in harmony with the scheme's vision of promoting literacy in decile 1 schools. However, before long we noticed the parents were spending more time on the computer than the children were! Women in particular were using the PC during the day while the children were at school and the house was quiet. Here are some of their stories:[17]

- The sister of one of the mothers in the project got a job, as she was able to show that she had computers skills. She was 34 and had not previously worked. This job involves using a computer. She had been living with the family and using their computer during the day.
- Mums who cannot afford babysitters are joining chat rooms to talk to their friends from home.
- A mother accepted into a Diploma in Teaching programme, is sure it was the reference to Computers In Homes that helped her be accepted.
- Another has got over the fear of the computer. Now when she feels stressed she goes to the computer and plays the games.
- One mother has a promotion at work as she can now use a computer
- A grandmother was not using the PC herself, but getting the grandchildren to email aunties and uncles for her.

The most reliable attendees at the CIH training and family meetings at schools are the mothers. They often bring the children with them, so to facilitate this the school may run videos in the library so the parents can participate more fully. We often receive emails from the CIH parents, particularly the women communicating how their training is going or just saying hello, adding in graphics and colour as they become more confident. Some women are mentoring other new families to the scheme.

E-mail from a young Maori mother of three:
"Hi Di, I thought I'd send you an email to let you know how I'm doing. I've even told my neighbour that I will teach her how to use the computer because she has her one from e-learning now, and she is just like me when I first started. Only thing is she is too busy. Never mind, she knows my help is still there if she needs me. I've found a really good site for her to learn about the computer and it starts right from the basics. I tried sending it to her but I don't think she has her email up and running. Any way I must act like a banana and split [clip art banana in here]. *I am setting up some homework for my son who is having some difficulty with his learning. I have a lot to do today so I hope to hear from you soon. Take care…REUMA".*[18]

One of the limiting factors for many of the parents has been their level of literacy, which has limited their progress in ICT training and use. Peters agrees that *'new users, such as those emerging in Maori society, must first achieve these three pre-requisites – literacy, computer literacy and Internet intelligence – before being able to communicate fully online'.*[19] Victoria University accessed Ministry of Education funding to provide individual tutoring for CIH parents who wished to improve their literacy and take advantage of one-on-one learning at home. Of the twenty-six CIH parents involved, twenty-one were women.

[17] Craig, B. (2000) Computers in homes: Progress report 1. 2020 Communications Trust, Wellington, NZ
[18] Das, D. Research notes 2003, for Masters in Maori and Pacific Education thesis work in progress, Victoria University of Wellington.
[19] Peters, S. (ibid) p213

They have embraced the opportunity and increased their confidence as time has gone on with their tutors. Here is REUMA[20] again:
"Well so far I have done two sessions with my tutor Wendy and boy is she a super tutor. [Clip art of Superwoman] *She makes me feel really comfortable about my learning and about being able to teach my kids, where as before I wasn't comfortable at all. I now see that I can be confident in whatever I try, because I now know that everyone learns at different levels and so now I don't feel so dumb. Wendy has got me to do a homework diary for her and I must admit I wasn't very fond of doing this at first but now I think it's KOOL!! I hope to show you when I have finished".*

Women who began in the Computers In Homes programme as reserved participants, who possibly had minimal contact with the school, soon began to show confidence in speaking out at family meetings and in emailing the school principal and teachers.[21] One Samoan mother in particular, over the course of two years, progressed from speaking at family meetings to giving a speech at the Second Anniversary celebration, and on to addressing a National Seminar on Pasifika ICT and two on Adult Literacy Innovations. She is the mother of six children and came to NZ with no English literacy or language. Her speech[22] goes:

"I started Literacy programme last year because I have a younger child at home and it would give me some computer skills while I am at home. The skills I can learn on the computer are typing, send messages and gather information from the internet. I learn on the programme how to fill in application forms, check train and bus timetables, writing letters, how to do my CV and how to correct my written work, like spelling and punctuation. Since March last year, I have learn lots to do with email, how to connect and open my mail, how to send and receive a mail, how to make attachments and download photos, how to delete. I search on the internet information for Early Childhood development because I want my dream to come true. I want to be a teacher. I am doing a course at the moment called Adult Literacy. I encourage you people, if that course come down here please please do it. Especially mothers that got young children at home and also fathers, teenagers at home while not working, please do it. At the end you get a reward. You learn a lot of skills like developing my English speaking and spelling and punctuation to speak clearer so you can understand other people."
An exciting recent initiative for CIH is the posting of an online training manual for Internet and email on our website[23] in four languages. The NZ Todd Foundation funded the translation of the manual into Te Reo Maori, Samoan and Tongan. Part of our development process was to seek email feedback about the site from established and new CIH parents. All responses received to date have been from women. They are the mainstay and co-drivers of the projects at flax-roots level.

Computers In Homes outcomes for culture

Sometimes it is impossible to separate gender and culture outcomes in the Computers In Homes programme. A definition of culture is the sum total of ways of living built up by a group of human beings, which is transmitted from one generation to another.[24] For some Pasifika women it is inappropriate for them to go out alone in the evenings, which limits their access to night classes to further their education, while they are also not able to attend daytime classes, as they are caring for children at home. But it is acceptable for them to visit their children's school for

[20] The writer has Reuma's specific permission to use her name and words for the purposes of this ICT conference paper.
[21] Craig, B. (2000) (ibid) p9.
[22] The writer has permission of Lesa Kalapu of NZ Pacific Island Affairs, who documented and published Tala's speech, to include it in this presentation. Tala has also given her permission.
[23] http://www.computersinhomes.org.nz
[24] Royal, Turoa (1999). Cultural perspectives on Quality. NZ: Whitireia Community Polytechnic.

evening meetings, so Computers In Homes ICT training at the school computer suite has provided opportunity.

For Maori families in the projects, there have been content issues of not being able to access enough information about traditional ancestral culture and the emerging contemporary culture of education, development and self-determination.

Peters sees the Internet as providing an international platform for networking issues relating to sovereignty, protection of resources, language, education, health and other areas of interest. But she acknowledges that while there is an increase in Maori participation on the Net, Maori related information and issues are still uncommon, and content in Te Reo Maori (language) is minimal. She also warns of Maori being misrepresented by non-indigenous sources, using the example of inaccurate web based versions of the Treaty of Waitangi[25], raising issues of identity and intellectual property. She says *'one of the strongest reasons for having a presence on the Internet is to provide information from a viewpoint that may not be found in the mainstream media.'*[26]

The outcomes and issues for CIH Maori families were varied, depending on whether they were from the major city schools or part of the rural Tuhoe schools. Both Barbara Craig and I recorded parents writing poetry and tracing their *whanau whakapapa.*[27] Parents are emailing family around the country and accessing sites such as www.maori.org.nz to use the links for searching out the information they want.

A Maori carver from a remote rural area who had been only able to sell locally, has developed his market since becoming a CIH parent. He began by contacting other carvers via the Internet and now runs his business online, with his latest carving being commissioned by the New Zealand Parliament. He is so busy, he has taught another man from his community to use the computer and run that side of business, freeing him up to do more carving.[28]
Barbara Craig recorded the impact on everyday lives from the Tuhoe project[29]:

- Emailing whanau, communication, chats and MSM
- Contacting the school and Kohanga Reo[30]
- Being connected in a fashion that the rest of NZ takes for granted
- Sports and hobbies and searching Technical information e.g. horticulture
- Assignments, homework and news
- Language and culture
- Banking and shopping
- General Internet searching and surfing

Tuhoe parents listed their main benefits as gaining more confidence and skills; being able to ask for help and help others; intergenerational learning; and keeping up with the world. They also expressed their desire to live as Maori but participate in the global economy, by being able to access local cultural as well as international information online.

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[25] Treaty of Waitangi signed 6 Feb. 1840 between the sovereign NZ Maori chiefs and the British Crown. The Maori text signed at Waitangi grants Governorship to the Crown and retains Maori sovereignty, but draft texts in English assert British rule.
[26] Peters, S. (ibid) p215
[27] Whanau is extended family, and whakapapa is ancestral lineage in the Maori language: Te Reo Maori.
[28] As reported by the Coordinator of the Tuhoe Education Authority CIH schools, oral source 2003.
[29]Craig, B. (2003). Report on the first six to twelve months of connectivity. Tuhoe education Authority Schools Project.
[30] Te Kohanga Reo literally means "language nest". It is the Maori initiative pre-school programme promoting Maori language and cultural values.

The majority of the Pasifika families on CIH are Samoan. They found their ICT access useful for emailing family overseas as it is cheaper than telephoning and can be written at any time of day or night. Other benefits listed were[31]:

- Family able to look up where they lived in Samoa and show their children
- Accessing newspapers online in Samoa and Tonga
- Family can access church websites and make contributions
- Online church services in the Samoan language
- Writing stories in their own Pacific languages
- Renewing connections with ancestral villages in the Island Nations
- Fill in forms for family members
- Helping family and friends at the doctors or other appointments
- Translating for others

Through association with the 2020 Communications Trust and Computers In Homes, both Government Ministries of Maori Development (Te Puni Kokiri) and Pacific Affairs have launched initiatives to further ICT for their cultural organisations. Te Puni Kokiri (TPK) began by recycling their computers to provide Maori organisations with a cheap source of refurbished machines. The response was so overwhelming that the project coordinator was receiving thirty emails and ten voicemails a day. What began as a 40-machine project, was extended to 175 computer units, with the extra computers being accessed through 2020 Communications Trust. Another 2020 and TPK initiative is the development of Marae[32] Net, which establishes an ICT suite, enabling the Marae to operate a community education facility. Funding for this will be assisted by the Community Employment Grants (CEG) division of the NZ Department of Labour.

Pacific Island Affairs relied on CIH to bring families to the South Island to promote ICT to the Christchurch Pasifika community, and have since provided ICT training for parents of decile 1 schools there. We are poised to launch the first South Island CIH project on the strength of this association, with NZ Ministry of Education funding.

The Way Forward for Computers In Homes In New Zealand

Computers In Homes is an ambitious project and is hugely labour intensive in human terms. Craig sees it as an ongoing and complex project beyond providing computer access in the homes. There is a great deal of interaction with and between the participants, who communicate regularly and participate in meetings, celebrations and graduations.[33] Families need to be nurtured, given support and constant encouragement, and new and reachable challenges on a regular basis. The Computers In Homes programme goes a long way toward providing these things. [34]

The 2020 Communications Trust sees its challenge[35] as migrating Computers In Homes from a series of small-scale projects to a major national programme. There are approximately 30,000 families with children in decile 1 schools; a further 60,000 families have children at decile 2 & 3 schools. This suggests there are 100,000 families with children in low socio-economic areas. Many of these do not have access to a computer and the Internet, or in many cases, even a telephone line. These families are predominantly of Maori or Pacific Island ethnicity. In decile 1 schools, some 50% of children are Maori and 36% are Pasifika, with minimal access to ICT. The challenge to CIH is to grow the programme from 300 families to 100,000 families.

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[31] Craig & Das (ibid)
[32] The Marae is the meeting area of the hapu (extended family) base, its buildings, courtyard and surrounds.
[33] Craig, B. (2002) (ibid).
[34] Outgoing principal of Panmure Bridge School, Rod Bright's final report (2002).
[35] 2020 Communications Trust Development Strategy (2003-2005).

The success of Computers In Homes is not disputed, but the task of consolidating the programme into Governmental policy has not been achieved. To date, Computers In Homes has been almost exclusively funded by the New Zealand Ministry of Education, yet other Government departments have benefited by our outcomes falling in line with their strategic planning goals. CIH is just beginning a working partnership with the NZ Housing Corporation by setting up two new projects in deprived areas, as part of their community development plan. The possibilities for the schools, the families and the communities are quite simply revolutionary. There are undreamed of possibilities, such as parents teleworking and undertaking online study from home, pupils who see technology as part of their future and who have had their literacy and higher learning skill enhanced. All this in communities seen as the most deprived in New Zealand.[36]

The last word however goes to one of the newest CIH parents in her recent email:
Hello Precious, it has taken a bit of time to get everything up and running but here we are. Would like to thank you and the team for the hard work and behind the scene work that is required to go into such a project as this, thank you for the opportunity. I was thinking about what to write and the one thing I would like to say "You are believing in people like me and many others who may not otherwise been in this privileged position. I will be a success story and do not make that statement brazenly." As you sow into others lives and bring a portion of the picture in to being, may the lord guard and keep you, and bless your going out and coming in. Arohanui, Regina'. [37]

Websites associated with this publication:
www.computersinhomes.org.nz
www.2020.org.nz
www.vic-link.co.nz
www.tuhoeeducation.co.nz
www.tpk.govt.nz
www.minedu.govt.nz

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[36] Based on comments of Ashley Blair, former principal Cannons Creek School, Project Champion and 2020 Communications Trustee.
[37] Das, D. (ibid) with Regina's permission.