

COMPUTERS IN HOMES

The Tuhoe Education Authority Schools Project

Report on the first six to twelve months of connectivity Clusters One and Two



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Introduction

In this report we hear about the impact of providing computer technology and free access to the internet in the homes of 130 families living in the valleys of the Tuhoe Education Trust through the voices¹ of school principals and staff, children, parents and whanau.

Voices of principals

"I don't think we or the parents would be there today without the computers in homes project. Really because we have only got so much time in school to teach the children and there is never enough. The learning has gone from here to right up there. It's huge. Families have taken a great leap. So having them in the home has probably been the best thing because what you've got is parent's support of the learning, tracking right alongside the children, and now the parents have actually branched off and gone off..... to buy their own digital camera and transfer photos to school newsletters by email.....It's communicating backwards and forwards, home and school."

Voices of teachers

"There were big barriers to overcome. You had to be really supportive to parents...It was actually quite a big workload to be honest"

Voices of children

"In our house we have a half hour each. Mainly on the school evenings. We're not home in the weekends. I don't get many turns because I am meant to be after my brother and he takes ages. My dad he does it every night and sometimes in the day when we are at school"

Voices of parents and whanau

"You are in control as long as you know what to do. That's where you need training. It's hard to learn for yourself and teenagers don't spend enough time showing you. If you tell them to slow down they turn around and so oh you're so dumb. It's like this aunty and while I am busy looking at the screen she goes away at the keys."

"Sometimes you can watch TV programmes on the net. This computer is a bit slow, the images break up. Sky's becoming interactive and I can see them trying to take over the whole computer set-up in New Zealand, having it all on one machine....we won't need to have all these different technologies and accounts in the future. Don't know if that is beneficial or not"

¹ The researcher (Barbara Craig) and Computers in Homes National co-ordinator (Clare Coman) would like to thank all those in the Tuhoe Education authority whose encouragement, help and very warm hospitality made this research possible. We also thank all those who agreed to take part in these interviews for their openness and honesty in talking about what they had enjoyed about the computers but also what had frustrated them but most of all we thank you for being such wonderful storytellers and for asking really incisive questions. We enjoyed our conversations with you all and were 'knocked off our feet' by what many of you had accomplished in a very short time.

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Research methodology

The intent of this report is to present a picture of the impact of a home computer and internet access on the lives of these families and whanau, schools and communities, a picture drawn entirely through the voices and in the words of the participants. This report documents the process of implementing the project but also organizes some of the views expressed in the research interviews by theme. These themes may be useful discussion points for those involved in education in the Tuhoe rohe district. The report avoids making direct comparisons with the outcomes of the Computer in Homes projects in urban settings, in recognition of the geographical rural isolation of these communities but also in the words of one participant that ‘things need to be done the valley way here’.

Participants’ views were tape-recorded in very open-ended exploratory interviews with the researchers. These interviews were transcribed and excerpts from these transcriptions are the voices heard throughout the report. Some of these excerpts have been ‘tidied’ in that ‘ums’ and repetitions of words have been removed, as have any identifying names or references to other local people. Some sections of tapes were difficult to transcribe accurately, so in some cases a paraphrase is used instead of direct quotes.

These interviews were conducted over a three-day period in November 2002. Seven schools were involved in the first stages of the TEA computers in Homes project, three schools in Cluster One and four schools in Cluster Two. At the time of these interviews the project had not yet been rolled out into the Cluster three schools. Computers were being trucked into that rohe that very same week. Cluster One had had their computers for more than a year but Cluster Two for barely six months and one of those schools still did not have their internet connections up and running.

The researcher had initially attended the launch of the project at Kutarerere Marae and met some of those involved that day. The first official research visit to the schools and whanau took place in September 2002 when she was introduced to the school communities by TEA researchers and policy staff. The purpose of this first visit was to negotiate entry and fully informed consent from all concerned to take part in the research. This visit was also over a three day period meeting with groups of parents at the school during the day and then again in the evening for those who were working. The researcher used a Powerpoint presentation to talk about the research that had already been conducted with families in the urban projects and participants were able to ask questions and meet her informally over a cup of tea afterwards. Letters of introduction, consent forms and interview schedules were handed out before the actual research took place². Ethical approval to conduct the research was granted by the Victoria University Ethics Committee.

Families and whanau who agreed to be interviewed could either participate in a group interview at the school, with other parents whose children attended

² See attached research instruments

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that school, or could ask to be interviewed as a family or whanau in the privacy of their own home. The TEA Computers in Homes co-ordinator set up the final interview times and places with the help of the school principals. Parents in five schools (two smaller schools from Cluster one combined parents into just the one group interview) opted to participate in a whole group interview at the school. In three of these schools the children from these families also spoke to the researchers about their use of the home computer as a group. These focus group discussions led to some very interesting issues being debated among the families. There are then four transcripts of parent focus groups and three transcripts of children's focus group discussions.

Parents in two schools opted for individual interviews, some at school and some at home and these interviews included the children, grandparents and other extended family. Not all agreed to having the interview tape-recorded but were happy for the researcher to take notes. In all 7 whanau interviews were conducted. In five of the schools the principal was interviewed and the teacher responsible for ICT in the curriculum.

Why Computers in Homes in TEA schools?

The latest census data³ shows that the large urban regions of Wellington and Auckland have the highest rates of internet access in the home in the country (just on 45%), whereas rural areas have only 37% of homes with access. Groups with the lowest rates are those with incomes between \$10,000 and \$15,000 (1 in 9), those living in Housing New Zealand rentals (1 in 10) and 1 in 9 families of Maori ethnicity (do not have access to telephone or the internet for communication. Statistics show that Gisborne and the West Coast have the least number of connections (25%) and the statistics for these valleys are very likely similar.

"This is a low socio-economic area. The lowest of the low socio. Limited employment opportunities. There's no surplus income to go into debt to purchase something. Some families have thought about it, it's something they want but it's that vicious kind of circle. They're not in a position to do it, and they're stuck where they're at. Some families may group together and pool, do it that way. Other families realize they can do it. I talked about it in depth. They're going to have an opportunity to do online learning. Said that because of where we are geographically and the community socially, the only way you are going to get ahead financially is to go online and use your computer as a work tool and work from home online. So there's a big want for it, a demand for it. There's a lack of personal resources, economics."

Interview with school staff

There are certainly some local households with new computers ("she's on some flash machine") and with printers, scanners and other peripherals. Other families have built their own cheaper computers from parts. These 'pioneers' have been a great help to the project families

Setting up the projects in the schools

³ Who has access to the internet? 2001 census Snapshot 2 www.stats.govt.nz

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Selecting families

School principals, in consultations with teachers involved with ICT, made decisions about which families should be invited to participate and how best to provide technical support and training for these families. Key criteria were having a child aged 8 (from the Computers in Homes guidelines), not having a computer at home and wanting to participate. Families without computer experience but with connected phone lines into their homes were given priority in all the schools. There just was not enough money in the project money to fund new telephone connections.

Some people hadn't even turned them on before. It was something their children had told them about... they had that technological fear that if you touch it, it might break. It took some parents a while to overcome those restraints"

Most schools had more eligible families than they had computers to distribute so those who seemed most keen to learn were given the first computers and the others were put on to the waitlist.

"We put them through a training course and marked off those who came most regularly and could check off basic skills that they had mastered".



Telephone connections a barrier to participation

These schools all made a decision to ask families to return their computers once the 6 months free internet access had expired so that they could be passed on to other families. Unfortunately some families had to return the computers before the end of the six months as they could not meet telephone payments. On the other hand others who were keen managed to get the telephone put on in time to receive a home computer in the second batch. Some managed this by sharing phone costs (and the computer) with grandparents and other whanau in the home.

"Sadly what went badly for some families was the fact that they wanted to keep their computers in their homes and they couldn't afford the phone bill. It wasn't so much the \$40 a month connection but the

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extra toll calls. You know, we've got a phone, I wonder how Aunty's getting on in Auckland."

Telephone costs are a concern. In one interview a parent had received a very large phone bill from Telecom which he was unable to understand and was concerned it might have had something to do with going online through Actrix. Trying to sort it out had been very difficult, *"You know with Telecom they can be quite rude. They said well somebody's using your phone....then I started worrying that all this playing around with the computer, overseas, maybe those sites are costing me money"*.

So it is not just the set-up costs that are a barrier to use, but ongoing costs of being online.

Training

Providing access is only the first step in overcoming the digital divide. Training and technical support are key to the success of any project like this. Research shows that for any project like this to show any concrete social outcomes or benefits then no more than one-third of the funding should go to technology itself. The bulk should go into training and supporting people to use the technology⁴.

Parent training

All the schools managed to organize the introductory training with relative ease:

"The first 12 months were really good. We were really blossoming and we had a little thing going in exchange with Tom Law...But that's where we felt a wee bit sad for our people in that we didn't have any ongoing training facility".

What has proved more of a headache for the schools and burden for the staff is being able to provide more advanced training and technical support for these recycled machines.

Most parents were first time computer users. Some had used computers at the Kohanga Reo with their younger children and some had computers at work.

Initial training

The Cluster One schools combined efforts to provide an initial training programme to all their parents using "ex-students with computer skills and some of the staff". The advantage of this approach was that there were several trainers in the room who could support each other and there was always someone who could answer whatever questions came up from the parents. It also proved a good way of parents getting to know each other and supporting each other. Everyone had the full list of family emails addresses so that they could communicate with each other after classes had finished and help each other.

Cluster Two schools have likewise had their staff train parents at school on the Computers -in -Homes machines before they are taken home. By the time they took their computers home parents felt confident with the keyboard (mainly through playing games), could save word processing work to files and could

⁴ *From access to outcomes; Raising the Aspirations for Technology Initiatives in Low-Income Communities* Morino Institute 2001 p. 14 www.morino.org

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competently set the computer up, turn it on and off and find applications on the desktop.

“The initial excitement was learning how to type, change fonts, introducing colour into their writing even though they had no way of printing it in colour. It was the word processing that they had a lot of fun with at the beginning and emailing was fun too”.

Ongoing training demands

From the initial 5 or 6 introductory training sessions at the school ongoing training for the parents has mostly consisted in: sending emails to staff for help; bringing the computer down to the school; or asking a staff member to come up home and help them. In particular parents have needed help with learning how to save files on to disk (to free up memory or take work to the school for printing) and help with email and the internet.

“In the beginning people would ask things like, where do I save this and do I leave this turned on? And then it moved on to, how do I save this email that’s arrived with a ski photo on to disk, so that it’s not taking up space on my computer. Or, I emptied the history, threw away something I wanted and can I get it back”.

“If there have been problems we have asked them to bring their CPU in and we’ve sat here and said it’s got too much on the desktop so let’s file things in files and sort of train them like that.”

This has been quite a burden on the staff in many of the schools and as many of the parents’ needs and questions are the same the staff found themselves going into homes and doing the same mini lesson, for example on how to save an image from the net to a file, over and over again. One way of coping with this is getting parents comfortable with helping each other and “that has actually worked out quite well because parents started emailing among themselves”. As the computers have been passed on to other families training has been parent-to-parent: “if your computer is going to someone down the road we suggest they invite them up and train them before handing the computer over”.

Technical support

“There have been technical faults from the time that it started”.

Principal

“We get power surges and the internet’s very slow especially when you download stuff. There’s no guarantee you’ll even get it by the morning”

Parent

All the schools had reliable local technical support, through the local college and other educational initiatives (such as KAWN). They could either drop off CPUs at the local college and have them back in a fairly short turnaround time or get parents to leave machines at the school for the technician to look at them.

Parents and staff talked at length about problems the local technicians were not able to resolve and which had caused a great deal of frustration. There was just one school without problems and they said: “*All the families have*

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told us that it makes so much difference if they know that the computer is going to go". Just one machine out of 18 in this school had to be sent back to the recycler in Auckland for new parts as a power surge had damaged the CPU.

However almost all the other participants dwelt at length on a range of technical hassles - they had encountered -in their interviews. Most felt frustrated that they could not depend on fast reliable access to email and the internet from their homes.

- All experienced problems with the external modems of the recycled Macs. One school solved this by keeping the Macs at school and putting only computers with internal modems in the homes.
- Even the internal modems seemed to malfunction in some of the valleys. It is difficult to know if the fault is in the machine or the phone lines.

"I'd ring a technician and he'd say the fault is the state of the line and that kind of thing. I'd say the office computer is staying online for 3 or 4 hours whereas the home computers were cutting out every 10 minutes or so. We couldn't figure it out".

- There were problems with some phone connections, with electric fences and with power surges that frustrated many families.

.. "there came a lot of frustrations and the families eventually started to pull out because of that and they lost that initial excitement".

Some schools also had power problems and were hoping Project Probe would solve their difficulties.

- Some schools complained that the recycled computers arrived without all of the Microsoft software installed on them and they had to bring in technicians to install Outlook and Explorer by "borrowing programmes from the school". This had greatly delayed getting email and the internet into these homes and put a huge work demand on the technician. It was very frustrating having the computers arrive not up and ready to run.
- Some families had problems with viruses and the annoyance of losing their files

"It was cool. Then I did that stupid thing when downloading this free email thing and that's when it went bung..it did the whole operating system and killed the whole lot....lost all our files...my daughter had some really good stories on there that she'd saved"

Other families could not always understand where the viruses had come from but talking to them lots of whanau used the computer when they were not home, " have a communal home.we never lock doors".

"When it came to my home it had a contaminated system. It had a bad virus in it. I think it's a problem with the computers being secondhand"

- Some families waited months before letting anyone know the computer was not going, some fearing that they had broken the machine

"I am very cautious because I am frightened that things will break and if I can avoid paying money. It's best if it doesn't have to be fixed".

- Some families get whanau to try and help them sort out their problems

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“One of my boys, whanau, upgraded my friends and then he took for ages trying to do it to mine. Yours is too blinking slow, he said. He took some of the programmes off the desktop and stored them away. Made it a bit faster”

- Spam can also slow the machines right down.. Several families complained about being able to send but not receive emails. When interviewing one family at their home who had this problem we found 600 emails backed up on the server, nearly all Spam sent from gambling and shopping sites the family had visited. Another family told us they had found 1000 messages backed up on the server and were not able to receive any mail until they had downloaded all those in small batches and deleted them.
- Some downloaded screensavers that slowed the machines down: *“Sent these sheep over to my computer and they’re jumping, romping all around and when I was trying to wipe it off I dumped everything, couldn’t use it for my business thing at all”*
- Others complained that handing computers around the community every six months led to problems of inheriting machines with viruses from downloaded sites or machines with pornography and other objectionable materials on their hard-drives. They wanted their machines cleaned up completely before letting their children use them.

“there were illicit sites on there from the first family so we sent it back”



- Finally, a lack of printers in the home was a barrier to some uses of the computer, even with a printer available at the school.
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What is the impact of the computer on people's everyday lives?

Computers are used by extended family members and whanau

"I have got lots of mokopuna that come over. They come over all the time when the computer is on. All their pictures from Kid Pix are there. There is one 4 year old, goes straight into the net and on to games. Can't even talk properly".

"The whole community comes over to use it. Play cards. They found this computer game and they put it on and gradually the game was killing everything on the machine".

"Just three of us at home. I got a few whanau boys and stuff that come around. Wrestling. Usually while I'm at work they'll come over during the day and thrash it to bits".



"I am glad we have got a computer, more so for the children, for their schooling. I have just learnt the basics, jumping from the pen to that thing. My typing skills are not that good, I think my wife said I am too heavy handed but if I can get sort of above that I can get started".

Father

What are they actually using the computers for?

“I thrash the email button. I’m in there all the time. I go into the internet and do a lot of traveling plans and stuff like that. I have a go now and then with the games. But mainly it’s just jacking about in the internet.” (Parent)

“We all use it. I use it for my assignments. Just recently we hooked onto the internet and Nessie showed me how to search out information. My oldest daughter knows what she is doing. The two youngest ones play the games, the mathematical ones, the educational ones on the machine. The next door neighbour, the moko, the grandchild, comes over and plays but he doesn’t know how to shut it down so I have to watch him... Most of our household uses it everyday”.

“I generally use it just for email. I’ve got a daughter over in Australia. I am very cautious about the internet. I’m frightened of going into the wrong places. I do enjoy a game of cards on it if I’m being honest..... I monitor the mokopuna on it while they are using it because it is in the kitchen”.

“About 7 of us in the family use it. Games, games and more games. The kids were doing games and paints and the notepad. The little one just does games and paints. Then the next, ten year old, is into writing short stories and emailing her friends. The 13 year old has a look on the net for games and uses the paints. The older one uses it for homework and gets the school newsletter sent. Yes, we use it for anything. The father uses it a few times looking on the net.... But our time was consumed by the computer. We tried to make it that the kids had half an hour each but it wasn’t long enough. By the time they found something it was time for the next one’s turn... Good to have a computer in the house. I email the Kohanga and the school. I was off sick from work for a while and I used to email everyone just to say we were still home.... I send emails to all sorts of people, people I meet at all sorts of meetings and that. We were sometimes getting emails from those like R18 places, mine arrive in the middle of the night so usually before breakfast I go in and take them off before the kids see them.”

Being connected is the key to the success of Computers in Homes with these families which is why they felt so extremely frustrated when technical problems prevented them from getting online. Email and searching for information are the two most popular activities with the parents in this project and knowing that most people in urban areas of New Zealand just take it for granted as part of everyday living adds to their feeling of exclusion.

Table:

Most popular activities

Adults	Kids	US adults,2000 ⁵ as comparison
Email to whanau	Games	Web surfing
Websurfing	Drawing (young kids)/music lyrics (older kids)	Email
Finding information for work (paid,volunteer local Trusts etc)	Email	Finding hobby information
Wordprocessing/ BOT minutes/ assignments	Teens – MSN instant messaging	Reading news
Searching for information about courses	Searching for homework projects	Finding entertainment information
Finding Maori sites/culture	Writing stories and assignments	Buying online
Finding hobby information/music	Typing tutor	
Searching genealogy/whakapapa	Searching for children’s sites and joining clubs	Finding travel information
Chatrooms	Searching for hobbies, recipes, sport especially	Using MSN instant messaging
	Searching for Maori sites	Finding medical information
Typing tutor	Webbrowsing (older kids only)	Playing games

Kids’ Use of the Computers

Games

It was mainly the younger children who talked about games and they were referring to the educational games that came on the computers. Some older children were looking on the net for other games and some had downloaded games on to the machines.

“Thomas is supposed to be here now talking to you people but he would be home using it (the computer). He’s found some sites now where you can set up houses with things, contents in it, it’s a kind of virtual reality and on the screen he can animate it and make things move”.

With faster newer machines it is very likely more of the older kids would have talked about playing games.

“Maybe if it was an up-to-date computer we could get into the virtual reality games that are on the net”.

There were different games on the Macs than the PCs and the Mac games were far more popular with the children. Those families with Macs had CD drives and were able to load more games on as they kids got bored with the ones that came with the machine. The parents were shown in training how to

⁵ Source: UCL Internet Report Surveying the Digital Future (US)

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copy from the CD to the harddrive and could borrow educational CDs from school to use with their children at home. The parents felt comfortable with children playing games that had been recommended through the school.

Children's sites

"My eldest son has signed up with cookie time and he has got a membership. He can't join himself because he is too young. So they send me an email to see if it's ok..."

Pokemon sites were also popular at the time and kids said they enjoyed getting newsletters from these sites by email.

Homework and assignment writing

The younger children mainly searched for information for school projects that involved finding information and then writing up a report that they could email back to school to have printed there. A lot of them had learnt how to copy pictures and graphics from the net into their work. They were also quite competent with copying their files onto a floppy disk to take to school.

"Countries and populations and capitals"

The two high school children we talked to said that they used search engines to find information for school essays and speeches. However they did not use the Word processor to write their assignments as they were not sure that they could send their work to school and print it out there. Part of their hesitation was that the school bus was often late and there would not be time to print it before class. They are keen on having a printer at home. One had gained credit for this work and attributed it to finding such good information on the net, things difficult to find in books.

Drawing pictures

Children were really enjoying drawing with KidPix and Clarisworks but were disappointed not to have a printer to print out their works. Some of the slowness of the computers was partly to do with the number of drawings saved to files on the hard-drive, especially in families with a number of young children using the computer.

Writing stories

The younger children really like to see themselves in print.

"They like to write stories and use their imagination and put the border line around their stories and they think they have accomplished something great".

" My youngest daughter really wants to know about her family and where she comes from. So she has written it up. My son is in the process of printing it. He has no patience for games. He does a lot of printing and art on the writing."

Typing tutor

A number of the children said that Mavis Beacon was one of their favourite programmes.

"Typing. They're really keen to learn. She taught me how to use those ABCs. I let her teach me. So I just learnt to type with her and the typing programme"

Email

"I email all my mates as far as Auckland and down in Ashburton. You go bang, bang and about five minutes later you get a reply. It's awesome" (kid)

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“The kids usually email all their work back to school and print it out. I don’t know how to do that yet”.

“They send emails to whanau, to Ruatoria but mainly up in Auckland with their parents based up there and the parents send emails right back. They have all got computers”.

MSN

Teenagers want to get into MSN as it is much more instant chatting than email.

“It was taking 7 minutes for my friend’s email to get from there to here and that’s why I started MSN. Now we just talk and a window pops up so you know who is online. Heaps faster”.

Some of the parents had problems with the teenagers in the chatrooms. One mother said she was quite glad that the computer went down while her teenagers were still living in the house as that kept them out of the chatrooms.

Internet

Music

“She’s really into her music stuff. I saw her downloading some of the latest music and everything. Now we’re looking at something like a CD burner or something like that. Maybe in the longterm”.

Adults’ use of the computer

Email

“It’s good for contacting people who are far away. It’s cheap. I never ring my sister in Australia”.

One family goes to family across the road who have a Webcam that they can use to talk to family in the UK and Australia and in Wellington.

“We’ve got a great gran at home and she’s bedridden. We can email our local nurse and she can contact us later if we are worried about something. Hard to catch her on the phone you see”.

Chatrooms

“My uncle wants to set up a chatroom with all my cousins I haven’t seen or heard from since they were like babies. Starting to learn how to do that. They’re all over New Zealand” (mother)

“I was chatting to an Indian in Alaska – right in the heart of Alaska, about three times. But it took a long time. You had to write a paragraph and stop and wait about 5 minutes, write another paragraph. Then stop”.

“Instead of email I do quite a lot of MSN, just chatting away to the neighbours there and my sister across the valley”.

The Internet

Whakapapa search

“We usually go to Google and do a search for family. Kids showed us”

“Been trying to find out a bit of genealogy about my family. My grandfather comes from England but he died in the war. He’s a bit of a mystery really..But a lot of the sites you have to have accounts, only a certain amount is free”

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Study

There was agreement that you get much better grades if you process your assignments for courses on the computer.

"How come your essays look like that? I got a computer at home"

"I have managed to get some stuff because to a limit you can access the Turnbull library in Wellington and mostly the Wellington and Auckland archives. Unless you are a member then you need a password but I got some stuff. Then there are university students who put their papers on the net and there is more there than you can use".

One father is feeling he has almost enough knowledge to fix relative's computers but would like to go further than that:

"I wouldn't mind doing training. Computers. I looked at the Open Polytechnic. I could probably do that on the computer".

Hobbies

"Space. I am quite intrigued with space. The deep universe. It's a lot better out there than it is here. The birthplace of stars. It's really intrigued me. Something I wouldn't have bothered with if I didn't have the opportunity. Opened my eyes up to different things"

Culture and language

Searches include looking up designs for indigenous tattoos, downloading images and history of Maori carving and art and looking at the Website www.maori.com.

"It's just all about Maori. It's got everything on it. You don't need to go nowhere after that. Then they have virtual tours and their screen savers were good to download till I found that that uses up a lot of bytes".

Others liked visiting other indigenous sites:

"I liked the Afro-American ones. Those I found were the interesting one. They had things in common with us people over here"

Internet addresses from TV

"We look up recipe from Food in a Minute and the kids look up things they see on What Now"

Several families talked about getting cooking recipes off the net, especially their teenage daughters.

Sports and news

"When you live far away it's hard to get a paper. NZOOM is more up to date"

"Because we don't get Sky or anything and I can still follow the game and see who is winning, and the Warriors. They sort of come up on Stuff."

A number of families were following the America's Cup online.

Work-related information

"I've looked up autistic syndrome. I did a lot of learning on that that I didn't get from the course work sent me to. I got a lot more advanced stuff from the net"

"I run a little farm and one of the things I grow is raspberries. I was into North Carolina State University the other night and got up to pages and pages on how to grow raspberries..."

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Entertainment

Some families visit the slot machines on the internet but do not spend any money and are aware of the dangers of gambling online. Some look up the latest TAB listings online. Some look up movie and video previews online.

What they do not do

There were only two participants who felt comfortable with putting personal details up on the net and these were both young adults in households.

Internet banking

Most parents were hesitant to put personal details on the internet and feared getting too much advertising if they did.

"I'm too scared to give out my details. I got Spam one time. Don't know how the heck they got my address"

One parent had found Internet banking really helpful: *"I found it was good because when you phone up for the last ten transactions you have to write it all don but with that you can just print it all out"*

Shopping

"Have you ever bought anything across the Internet?" " No doubt it"



Discussion

Skill levels have increased for teachers, parents and whanau and the children through home access

Having a computer at home gives family members much more exposure time than using computers in other kinds of settings such as school, Kohanga Reo or the work place. There is much more opportunity to play around and learn for yourself, to follow your own interests and to try new things without embarrassment.

“In terms of the families most ..had limited exposure and use of computers. When they actually got them in their home some were quite adventurous and the learning curve was steep. One mum who was good at data entry and word processing, that was part of her work. But downloading images and emailing attachments of images, she learnt that through Computers in Homes, and she took off”.

Teacher trainer

Recent research¹ shows that middle-class children enjoy an advantage over lower-income children through hours of computer use at home⁶. Children do not get a lot of hands-on time at school. In one interview the parent pointed out that his eldest daughter probably got exposure of about 4 (on a scale from 1 to 10) at high school, perhaps once a week. The eldest child, now left school, had no exposure at school, but he hopped on the home computer and learnt all the things he liked like downloading music. The youngest child had access at school but only about once a week.

The teachers also said that their skill levels had greatly increased, through training the parents and trying to solve some of the technical difficulties that had arisen.

“Myself, my own skill level and technological knowledge increased hugely. And my own use of the internet and email.”

Teacher

Confidence

To believe you can learn

“I don't know whether there is a problem on my behalf but it's something I have to look at is patience which I haven't got. I can watch my children maybe for 10. 15 minutes and everything's gone haywire I just can't seem to follow anymore... We've got a computer in the Kohanga Reo and just to sit in front of it 5 or maybe 10 minutes I just lose patience. I think it is something for me to work on, the computer in the home”

⁶ See *The new economy revisited: an initial analysis of the digital divide among financially disadvantaged families* : Smith Family (Australia) Report 2002 and “Homework drives broadband” Sue Lowe April 23 2003 Roy Morgan Research, Australia

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to ask for help

“There were a couple of people that are really reluctant, it’s a perceived confidence barrier....they didn’t realize that it was a process that everyone went through. They identify the problem as them, not the fact that they are still learning. They think they can solve it and sit in front of the computer all day trying to fix something....A lack of confidence and a lack of knowledge. “

to help others

“Sometimes the most unlikely children that you know did not have confidence prior were affected positively....As a teacher I capitalized on it because I made those children teach other children – slow down, show her, nobody goes on until we can all do this”

Being part of a group through participating in a project with others in the community meant parents and other adults could learn together and help each other. Confidence was slowly gained by seeing others struggling with the same problems and understanding that it was part and parcel of mastering this new technology, rather than a lack of ability on their part. A number of parents were starting to see possibilities of finding employment in this field, as their confidence increased. They started to understand that there is a real demand for technical expertise in this field.

One on one training

Training needs to meet local needs. None of these families had felt very successful following any more structured computer training they had signed up for (mainly through WINZ). What seemed to work best was one on one help, learning to do something that the parent had immediate use for.

The trainers were not sure that going into the homes to deliver one-on-one training was the best approach:

what you will find is, if they had one to one here (at school) they would show up like that. But I think you’ll find one to one in their homes when they’ve got six kids and one’s in nappies, it’s distracting. And some parents have said they enjoyed coming to the computer classes because it gave them a couple of hours away from home”.

The schools that had been running training on the school computers reported lots of parent involvement in their schools.

The other advantage of delivering the training by teachers at school was that it provides a chance for parents and teachers to converse. One principal explained that she does not see a lot of the parents, that they are very shy and that they had themselves gone to that school, left early and were reluctant to come back through the doors. Another principal said the best approach would be to offer parent training at school during school hours so that the kids could see their parents learning and understand that education is a lifelong process. Bringing parents into the school like this would get the kids motivated and the parents keen to get involved in their children’s education, hopefully encouraging them onto the Board of Trustees and other roles in the school.

Some of the parents however liked having one on one instruction in the home.

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“Hey I want help now! It’s hard to get your questions answered in a group. And I don’t have a car and would have to catch a ride with a mate from way up the valley to get to a class”.

Inter-generational learning

One theme that came through over and over again in the interviews was the importance of bringing the grandparents into the picture. It’s the grandparents who are with the children most of the time. Research shows that for the older generation the internet’s main uses are email to whanau and following hobbies⁷.

One mother talked about finding information off the net for her mother’s main hobby which is gardening. Her mother lacked the confidence to get on and search the net for herself so she gets her to come over and look at them on screen.

“Obviously I am not the gardener but my mother was making me check out all these certain plants. Because we had no printer I had to write it out for her I’m no gardener. If you can’t eat them, to me they’re no good.”

One grandmother talked about needing help to open all the email that she is receiving from her family. Her family want to communicate with her that way.

“I have a son and three grandchildren. They’re mokos. They keep sending out mail and if I don’t reply....they send out another. They sent a happy birthday for the koro yesterday and I hadn’t even opened it up and last night they rang and said man haven’t you opened your mail and I said no, why? Oh we sent koro a happy birthday. That’s what I would like, actually trained one on one training”.

Grandparents find it quite difficult trying to learn from the instructions of their mokopunas, who just go too fast for them.

“I have a niece that comes down and uses the computer...Like it’s hard to ask a teenager,,,they will sit down and start dinging away..I’m trying to look but they go too fast. They haven’t got the patience to sort of show me I actually need more training”

Grandmother: *“I’ve been doing the games. I’ve watched my granddaughter. She’s an expert”*

One principal suggested using Maori as the language of communication with the grandparent to try and slow them down but also improve the children’s literacy levels in Maori.

“We had a couple of grandparents online but they gave up because their helpers – the young ones – were moving too fast. If the language of communication was Maori that will slow them down...Most of the children are not bad at both languages but our young parents have a bit of a problem with

⁷ *Community Information and Communications Technology Research Project: Final report* Prepared by Barbara Craig, Bill Dashfield and Ian Thomson Victoria Link Limited, Victoria University of Wellington March 2003

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both – they come here for Maori classes- and our grandparents are best with Maori”.

Internet safety

Not many families had problems. Most set up the computer in a public space so that the parents could monitor younger children’s use of the internet. One or two parents did have problems with their teenagers, either going into inappropriate chatrooms or sites. One family got the school to help them out with their teenager because the younger children ‘were annoyed that their computer was tied up and inappropriately used”.

“The mum was frustrated. The child had accessed something and it just automatically kept coming back up...the only solution was to change the email address and not tell the teenager what it was’.

Need for computers in a rural area

“We moved around a lot as children, and we missed out on a lot of schooling, and it was all in the rural areas. And we got together with my cousins from the city and when they came to school in the rural area we saw that the children from the city were so far advanced. And when the computer comes in it’s a way in the rural area to catch up to the children in the city”

“Computers are essential for the future. We won’t need phone, radio, TV, not even buy a newspaper, don’t have to go to the movies. Good for someone in the country. You don’t miss out on things, get it at the same time as everyone else, don’t have to wait for the paper and TV news.”

Global and local content

One concern in the literature on use of the internet in everyday living is how local cultural expressions are interpreted or received in global interactions⁸. Some of these concerns were expressed by parents and teachers in the interviews. Although parents enjoyed going into global indigenous chatrooms and finding that they shared many experiences with American Indians and other indigenous groups, they were keen to find more local content online. They wanted ‘to live as Maori but participate in the global economy’⁹. Many spoke of the lack of good sites for them to go into, excepting www.maori.com. One teacher said that at training there were three kinds of sites they wanted to go into: music; something related to their culture; or something that might help them with employment. Several children talked about going on the internet to watch Kapa Haka things. Interaction on the net is global. These families did not want to do this, at the expense of losing local content and control.

Some parents were stating to create their own webpages and content online, starting up businesses to sell local art. Another family created a database of their Whakapapa and a list of the lands that the whanau own and share this by email attachment. They also distribute a monthly family newsletter “Purongo’

⁸ See the work of Manuel Castells

⁹ See Mason Durie “The Interface” To live as Maori; To participate in the global economy; To have health and well-being

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which all whanau can contribute to. Several families wanted to download Maori script so that they could more easily write in the Maori language.

Several parents were keen to know how the video conferencing equipment was going to change how education would be delivered to their children. When the teachers were explaining that it will be used to make connections with teachers overseas, say to teach about Hawaii culture, there was some concern on the part of the parents that they would rather their children were learning in the local language, in the local way.

In an interview with one principal where the videoconferencing set-up had not yet been used he explained that it is a matter of connecting up to the right kind of people, that learning in the local context works best with practical hands-on knowledge, not theoretical ideas from the city.

One parent asked the researcher a very penetrating question: "What you are doing in your research, is the government, is it a way of having no schooling anymore, and it all comes through the computer?.....thanks. I thought the government was trying to cut its costs". The local school is very important to families in these communities.

Civic and Local Involvements

One question often asked in the literature is whether the internet isolates people in their homes and disengages them from their community. These families are highly involved in local organizations, using the computer to circulate minutes of school board meetings, preparing books for the Kohanga Reo, designing raffle tickets for local fundraising.

It might be that the internet and email will help them communicate more directly with policymakers at the national level and empower them even more in taking control of things locally. The parent question about the government's intent with computers and videoconferencing equipment and the future of the local schools shows some suspicion of national policy and local interests. Email might be a way of directly confronting policymakers, rather than waiting for someone from Wellington to pass through the district.

Likewise with another parent's suspicions that "*because we are a Maori community let's unload all the secondhand junk here.*" This parent then went on to propose: "*If they're going to put a computers in homes project together I would like to have the opportunity to start on a brand-new computer and to enable my child to advance himself with a printer and scanner*".

Email could enable this parent to put this question and proposition directly to government and perhaps influence policy decisions.

Keeping up

This relates directly to the issue of how to keep up with the latest ICT developments in low-income communities such as these.

"In the short time they have had the computer in the home, the internet itself has upgraded itself 3 times. Because they started on Netscape 4 and now it's 7.2 and their hardware does not cope with it....I think if most of the families had access to the bigger beasts, they would have been away screaming. When I introduced the families to the computer

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I drew an analogy, if you think of cars and you think of a Mini, and then think of the big V8 beast Godzillas out there, well you've got a Mini and it won't go any faster".

The children want the best and the fastest. At school they have printers, scanners, digital cameras and CD Writers and they want all this at home too. Many of them said in their interviews that Play Stations are much more fun than these slow machines but they would love to get into virtual reality games. Many parents want CD Burners for music and cameras for family photos and almost every participant talked about needing a printer at home.

"Just basically living in a society now in which it's (the computer) pretty much sort of like the telephone...It keeps me in contact with everything and you've got to have it working. Yeah, I'll look at upgrading it and get all the extras : scanners and everything, printers"
Parent who has purchased own computer secondhand but faster than the Computer in Homes machines

One group talked about the possibility of having a room in the community with all this equipment that lots of families could share:

"If someone was there to monitor it all the time, knew how to operate it, a community driven one would be good. Where the kids could come and use it and the parents too. And if there was somebody there on hand. .. we don't want viruses on the machines and things popping up on the screen from the adult entertainment sector".

Five parents from Cluster One had purchased their own machines, four relatively fast, and one very limited but adequate for word-processing.

Alienation and Everyday Activities

Another question raised in other research is whether a computer at home takes people away from their everyday activities and alienates them from family and community.

In interviews with the children they said they very rarely spent time on the computer in the weekend and what they really like to do are sports, playing in the garden, spending time with my whanau, playing games on the Playstation, watching rugby on the TV, watching videos, mostly being outside if the weather is good and then having to do their chores and their homework.

Work

There were a number of parents who used home computer for work purposes, not necessarily to work from home (although some were interested in setting up online businesses) but finding information that could help them at work. One mother works at the Pacific Health Services using a computer there where she receives email about different health services but in the evenings she often goes on the net to look for other kinds of work-related information.

One parent is running a trade business online *"just dealing around and trading and I make the money back and buy something else, trading games for the Play Station right now"*. This father goes on to explain that he *"can keep up with all the city, you know, being in a rural area I can keep up with the city guys up there and see what they are doing. Don't need big shops or anything. Just deal online"*.

Online learning

Several parents expressed interest in learning online. Some of them could see how they could combine that with the work they were currently doing

“ I want some certificates and things. That is one of the things I was really looking for on the net. Courses and stuff like that. It was really hard to try and get NZ ones, you’ve always got America. Just breaking it down to get NZ and then just the Bay of Plenty.”

The Future Is The Next Generation

The dream is for a much larger proportion of the community to come online and through increased communication grow economically and also in links between people in these valleys.



“We’re hoping a lot more grandparents will come on because it will certainly open up channels of communication a bit more with the families. Then we’ve got quite a few Pakeha families around here and the older parents like the shop owner with his children living in America. We said to him, don’t worry about the telephone because you always forget things on the telephone. Get a computer and type a letter and send it. So that’s what we are hoping to do with the computers down the track... ..We’re hoping for a school Website to put all our school newsletters straight into the computers in the homes, we’re hoping that we can get the children to run it”.

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This principal then went on to talk about using the computer to open up employment opportunities in the valley where there a lot of talented artists living in remote areas. She saw the potential for a communal Website selling their art globally, bringing new sources of income into the area without anyone needing to move into the cities. The view shared by most participants is that the future lies with intergenerational communication, that the older generation will grow with the children and that these children are the future.



The Way Forward

Key issues to resolve

1. Connectivity: fast and reliable access to the internet
2. Multi-media equipment that makes possible working and learning online

ⁱ **Comparative Australian Study**

Key findings of the Smith family study

- Considering the importance of having home Internet access for children's educational performance, the fact that almost three-quarters of students in this study did not use the Internet at home is of concern, particularly given that almost half of a comparable Australian population have home Internet access. Finding ways to increase the home access of low-income families to the Internet should therefore remain a policy priority for all sectors (government, private and nonprofit) aiming to bridge the digital divide.
- Previous studies have shown that the level of parental education is strongly associated with factors such as investment in resources that promote learning. Having access to the Internet and computers is now a key educational resource that influences educational outcomes. This has at least two further implications:

1. The costs of these resources, as with other educational costs in general, are increasingly being pushed onto individual families. This further compounds the problem for families in financial disadvantage who often struggle to meet the basic costs of their children's education. It therefore reinforces the need for programs such as Learning for Life, which aim to assist families in financial disadvantage, to meet some of the costs associated with their children's education;

2. Policies aimed at bridging the digital divide should not only focus on reducing the cost of ICT but also on ensuring that programs that provide appropriate parenting support also emphasise the educational importance of having home access to computers and the Internet. This may mean that access and training programs should focus just as much on parents as they do with children. Once again, the dual-generation approach (focus on parents and children) of programs such as Learning for Life provide an appropriate framework within which to embed such initiatives.

Finally, schools are important in closing or levelling the access gap, as most students use computers and the Internet at school. Reinforcing the role of parental education, however, the likelihood of students using the Internet at school also increased in line with the educational level of their parents. Greater research and policy attention needs to be given to the role of schools, teachers and parents in the bridging of the digital divide.

<http://www.onlineopinion.com.au/2002/Dec02/Mclaren&Zappala.htm>

The new economy revisited: an initial analysis of the digital divide among financially disadvantaged families : Smith Family (Australia) Report 2002