

The Learning Centre Trust Report

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THE LEARNING
CENTRE TRUST
OF NEW ZEALAND



Information
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Technology
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Schools
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September 2001



ICT in Schools 2001
Final report

September 2001

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1. Executive Summary

1.1 Introduction and background

This survey was commissioned by The Learning Centre Trust of New Zealand (TLCT), and continues on from research conducted in 1998 and 1999 by the Information Technology Advisory Group (ITAG). The basis of that research was work previously carried out by Telecom Education Foundation (TEF) between 1993 and 1996.

BRC Marketing & Social Research was first commissioned in 1999 to conduct research into various aspects of ICT in schools. This current survey builds on the information from the previous surveys and covers some of the key developments and issues with ICT in schools policy. These include:

- School ICT infrastructure, particularly use of networks
- Internet access and usage
- ICT planning and funding in schools:
- Professional development for teachers
- Use of Te Kete Ipurangi (TKI) web site
- Resourcing and technology use in Māori Medium schools

1.2 Research approach and method

The sample consisted of a random sample of primary and secondary schools in New Zealand. This year, the sample also consisted of all Māori Medium schools in New Zealand. Each school was sent two questionnaires:

1. The **Equipment** questionnaire concerned information and communication technology equipment and use (answered by a staff member who had a good knowledge of computing and telecommunications equipment).
2. The **Principal's** questionnaire concerned professional development (including the *Principals First: First Principles* workshops, and planned teacher development), ICT planning and management, and attitudes towards recycled computers.

Questionnaires were sent to 600 schools (512 primary and 89 secondary) on 7th June 2001. The cut off date for the questionnaires was 27th July 2001, at which stage 402 completed Principal's questionnaires and 396 Equipment questionnaires had been received. The response rates were 67% and 66% respectively.

Included in the sample of 600 schools were all 99 Māori Medium schools, of which 38 Principal's and 38 Equipment questionnaires were returned. Of the 38 returns, 30 were from Te Kura Kaupapa Māori schools, and 8 from Te Wharekura schools. Due to the small sample size, these two school types have been combined into Māori Medium schools. Therefore, the response rate for Māori Medium schools is 38% for both questionnaires.

Throughout the report, Māori Medium schools will be compared to primary schools for two reasons.

1. The majority of Māori Medium schools in New Zealand are Te Kura Kaupapa Māori (the equivalent of primary)
2. In terms of size, Māori Medium schools more closely reflect that of primary schools rather than secondary.

Due to the 62% non-response for Māori Medium schools, the results for these schools may be subject to non-response bias, which is an unknown that cannot be calculated. Caution should therefore be used when interpreting these results.

The high response rates overall were probably helped considerably by the substantial prizes offered by one of the survey sponsors (a \$8,200 WebStation and a \$1,700 SoundStation both from asnet Technologies Limited).

Despite these high response rates, it is important to note that these results may show a little more use of information and communication technology in schools than is actually the case. This bias in the results may occur if schools more active in using ICT disproportionately tended to respond to our survey.

A copy of the Equipment and Principal questionnaires has been included as Appendix A.

1.3 Major findings of the 2001 survey

Below are the 5 major findings of the 2001 ICT in Schools survey. Full details about each finding can be found in the Findings section and in the main body of the report.

1. Almost all schools now have access to the Internet (98% primary and 100% secondary).
2. New Zealand primary schools have more access to the Internet than UK primary schools (98% c.f. 88%). In terms of networking within schools, New Zealand primary schools are significantly more advanced with 74% being networked compared with only 52% of Britain primary schools¹.
3. The ratio of computers to students is now one computer for every **6** secondary students, and one computer per **10** primary students. In Māori Medium schools, the ratio of computers is one computer per **10** students.
4. Use of Te Kete Ipurangi (TKI) web site has significantly increased from 19% overall in 1999 to 79% and 78% for secondary and primary schools respectively. Similarly, 70% of Māori Medium schools use the TKI web site at least once a week.
5. Schools with home pages tend to have them updated by teachers or ICT Support Technicians rather than encouraging children to be responsible for this task.

¹ British Educational Suppliers Association (BESA), (June 2000), *ICT in UK State Schools Survey 2001*.

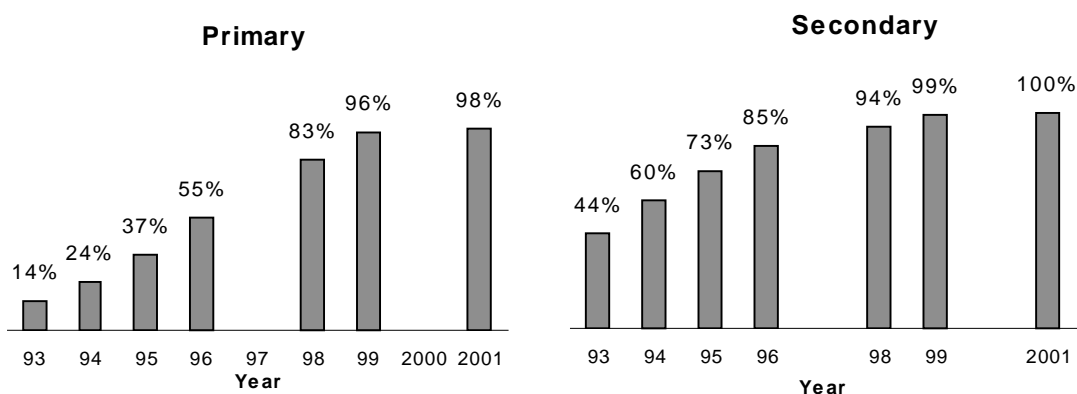
1.4 Findings: Internet access, infrastructure, and usage

1.4.1 The Internet

- New Zealand primary schools more commonly have access than do their UK counterparts. A survey of UK schools conducted by the British Educational Suppliers Association (BESA) in June 2000 reported that 88% of primary schools and 99% of secondary schools had access to the Internet.²
- Fully 98% of primary schools and 100% of secondary schools reported having access to the Internet (Graph 1).
- There are slightly fewer Māori Medium schools with Internet access than primary schools (89% c.f. 98%).

To compare the findings for Internet access found in this survey with external research, some of the key findings were compared with a Te Puni Kokiri report *'Māori Access to Information Technology'*.³ Although these figures are not directly comparable, they highlight important issues in ICT for Māori. According to the Te Puni Kokiri report, 46% of Māori have access to the Internet. This compares with 89% of Māori Medium schools with Internet access. The higher percentage in Māori Medium schools, reflects the greater resources of institutions compared with individuals. It may also indicate that, as learning institutions, Māori Medium schools have a brief to keep their students as up-to-date as possible. This early exposure to technology may flow through to increase the Internet and technology adoption rates of Māori.

Graph 1: Percentage of schools online (1993-95: with modem; 1996-99: with Internet access)



² We are making a comparison with UK data simply because comparable UK data now exists, rather than because the UK case is a benchmark or particularly worthy of following.

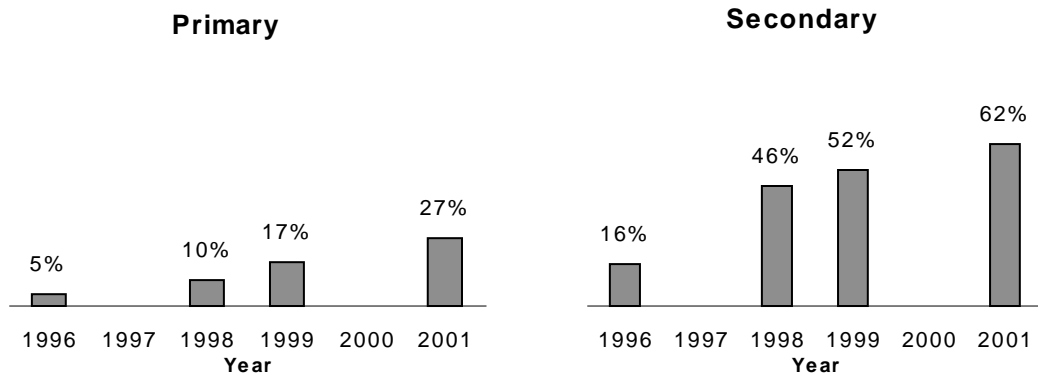
³ Te Puni Kokiri (2001), *Māori access to Information Technology*.

- Usage of e-mail and the World Wide Web is generally low among students, but slightly higher among teaching staff. About two-thirds of primary and secondary schools reported that 25% or more of their staff use e-mail or the World Wide Web during a typical school week, but only a small number (29% for e-mail, 45% World Wide Web) of schools claimed that a quarter or more of their students use these services.
- Results for Māori Medium schools are consistent with primary schools with regards to both e-mail and use of the World Wide Web by staff and students. Two-thirds (60%) of Māori Medium schools indicate that at least 25% of their teaching staff use e-mail during a school week (65% for primary). Just over half (59%) of Māori Medium schools have at least 25% of staff using the World Wide Web, compared with 64% for primary.
- One-quarter (24%) of Māori Medium schools have 25% or more of their students using e-mail (29% primary).
- Use of the World Wide Web by 25% or more of students in a week was higher for primary schools than Māori Medium schools (44% c.f. 24% respectively).

1.4.2 Home pages

- Two-thirds (62%) of all secondary schools have a home page on the World Wide Web, but it is still less common for primary schools to have one (27%). Māori Medium schools are less likely to currently have a home page than primary schools (5% c.f. 27%).
- Around 35% of primary and 29% of secondary schools are developing home pages. Similarly, 36% of Māori Medium schools are currently developing a web site, however over half (56%) of Māori Medium schools are not developing a home page at all.
- Around two-thirds (66%) of schools with home pages update them monthly or less often, and 22% of schools with home pages claimed to update them weekly. In 41% of schools with web sites, teachers most commonly update the home page.
- Of the 33% of schools currently with a home page, over two-thirds (68% primary, 74% secondary) have them hosted on a New Zealand host outside their school.
- Of the 33% of schools with web sites, 18% of primary schools and only 2% of secondary schools have their own web server.

Graph 2: Percentage of schools surveyed with home pages



- Principals' use of e-mail has increased since 1999. Most of primary and secondary principals (around 95%) reported using e-mail at least weekly (compared with around 80% in 1999). Three-quarters (77%) of Māori Medium school principals use e-mail at least weekly, which is lower than primary school principals (95%).
- Many principals (84% primary, 89% secondary) also claimed to use the World Wide Web at least once a week (compared with 70% primary and 62% secondary in 1999). Around half (53%) of Māori Medium school principals use the World Wide Web, which is much lower than their primary school counterparts.

1.4.3 Local networking

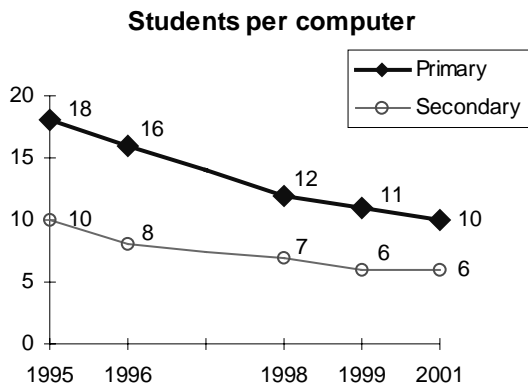
- Schools, particularly secondary schools that tend to be larger, are increasingly networked. Most secondary schools (95%) and an increasing number of primary schools (74%) have some or all classrooms networked. The BESA 2000 survey reported that 97% of secondary and 52% of primary schools in Britain were networked.
- The percentage of Māori Medium schools that are networked is comparable with the level of networking found in primary schools (79%).
- With networking becoming more common in schools, particularly secondary schools, the question of whether a school has network connections becomes less important than the extent of networking within a school. This survey found that about half (49%) of all schools are "fully networked" - that is, 80% or more of their classrooms were linked by cabling to other rooms.
- Forty-percent (40%) of Māori Medium schools are "fully networked" (52% primary)

- Of those schools with networks, the majority (98%) of secondary schools and 83% of primary schools have PC networking software. Windows NT is most commonly used (used by 51% of secondary schools and 32% of primary schools with networking software). The next most commonly used was Novell Netware, used by 33% of secondary, followed by Windows 2000 software used by 31% of secondary schools.
- The majority of Māori Medium schools (91%) have networking software. Again, Windows NT is commonly used. Māori Medium schools also use Windows 2000.

1.4.4 Computer numbers and types

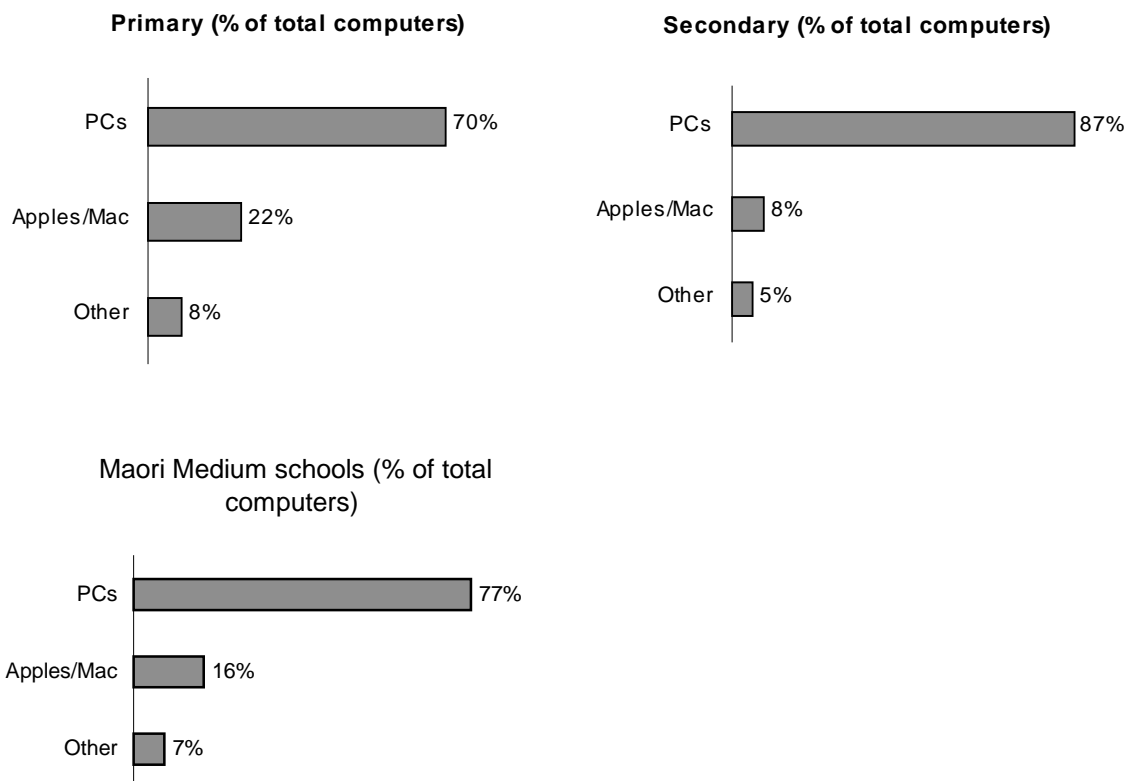
There are slightly more computers used in schools now than in 1999 (Graph 3).

Graph 3: Computer numbers continue to improve



- Excluding computers used mainly for administration, there was one computer per **10** students in primary schools (compared with one per **11** in 1999), and one computer per **6** students in secondary schools, which has not changed since the last survey in 1999. The ratio of students to computers for Māori Medium schools is one computer per **10** students.
- PCs (“IBM-compatible”) remained the most common computer type (Graph 4). Primary schools also had a large number of Apples/Macs. Māori Medium schools have more PCs than primary schools (77% c.f. 70%).

Graph 4: Hardware types/brands (% of total computers)

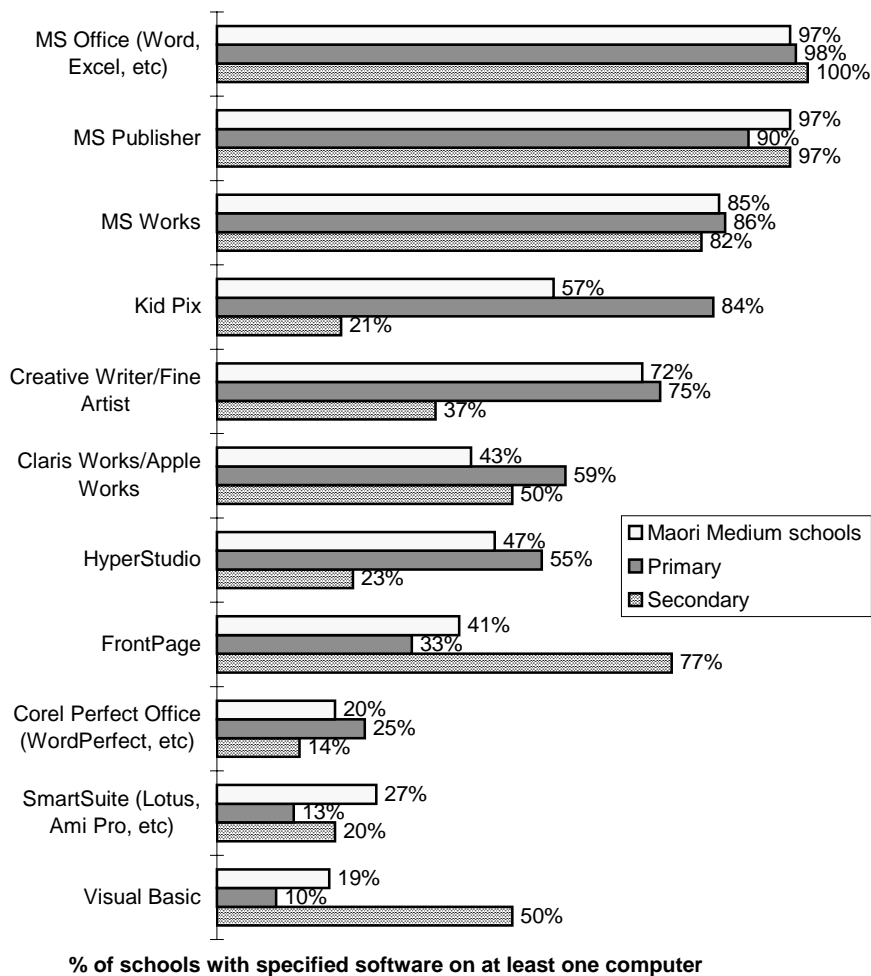


- Over half of all schools' computers are more than three years old (58% of primary schools' computers, 68% for secondary, 62% Māori Medium schools).

1.4.5 Software

- Microsoft software is very commonly used. Their standard productivity tools (MS Office, MS Publisher, and MS Works) are used in most schools (Graph 5). More detailed analysis shows even greater presence: 75% of secondary schools and 60% of primary schools reported that MS Office is running on at least half of their computers.
- MS Publisher has clearly been successful in primary schools, with 67% having it on 50% or more of their computers.
- Māori Medium schools have high use of Microsoft software.

Graph 5: Software in schools (running on at least 1 computer)



Schools continue to have a wide range of curriculum support/reference materials on CD-ROM for students' use. In particular, Encarta is in most schools (90% primary, 93% secondary), most have some New Zealand-specific reference CD-ROMs (53% primary, 66% secondary), and 64% of primary schools had Magic School Bus CDs.

Compared with primary schools, Māori Medium schools have far fewer CD-ROM curriculum support/reference materials. Thirteen percent (13%) of Māori Medium schools indicated that they have no reference material on CD-ROM.

1.4.6 Technical support

- Primary schools tend to have fewer forms of technical support than secondary schools. The most common form of support is a supplier guarantee/ warranty (70% of secondary and 65% of primary schools had this).
- Few schools have external support contracts (37% secondary, 24% primary). More secondary schools than primary schools (48% compared with 39%) directly employ technicians.
- Secondary schools are also more likely to have a staff member with a special time allowance for computing support and training (41% of secondary had such a staff member compared with 24% of primary schools).
- More primary schools than secondary schools make use of parent volunteers (22% compared with 1%).
- One-fifth (21%) of Māori Medium schools directly employ a technician as opposed to 39% of primary schools.

1.5 Findings: ICT management & planning, professional development

1.5.1 Principals First: First Principles Workshops

- The most common actions principals have taken to improve ICT management after the workshops are:
 1. Establishing a strategic ICT plan (81% primary, 73% secondary, 74% Māori Medium schools).
 2. Writing a school ICT policy (74% primary, 65% secondary, 74% Māori Medium schools).
 3. Establishing ICT-specific professional development policies (66% primary, 62% secondary, 54% Māori Medium schools).
- Another common action taken by principals was forming an ICT committee or action group within their own school (60% secondary, 68% primary, 61% Māori Medium schools).
- Around 34% of principals 'mainly' or 'totally' attributed an established strategic plan to the workshops.

1.5.2 Principals' attitudes towards recycled computers

- Sixty percent (60%) of primary school principals and 70% of secondary principals were aware of the Computer Access New Zealand Trust recycling scheme (CANZ). Over half (55%) of Māori Medium schools had heard of the scheme.

- Twenty percent (20%) of secondary schools, and only 7% of primary schools have purchased recycled computers through CANZ. One-fifth (19%) of Māori Medium schools have purchased recycled computers from CANZ.
- One-third (36%) of principals said they would “probably” or “definitely” consider purchasing computer equipment through CANZ. This figure is also similar for Māori Medium schools (35%).

1.5.3 Professional development

- As in 1999, relatively more primary than secondary school teachers had attended ICT-related professional development programmes over the last 12 months (58% of primary principals reported at least half of their teachers attending, compared with 42% of secondary principals).
- Over half of principals from both Māori Medium schools indicated that over 50% of their teachers attended an ICT-related course in the last 12 months (56%), which is comparable to the results for primary.
- More teachers are expected to attend such programmes during the next 12 months (74% of primary principals and 55% of secondary principals expect half or more of their teachers to take part).
- Around three-quarters (77%) of Māori Medium school principals expect more than 50% of their teachers to attend such ICT programmes in the next 12 months.

2. Introduction and objectives

This survey was commissioned by The Learning Centre Trust of New Zealand (TLCT), and continues on from research conducted in 1998 and 1999 by the Information Technology Advisory Group (ITAG). The basis of that research was work previously carried out by Telecom Education Foundation (TEF) between 1993 and 1996.

BRC Marketing & Social Research was first commissioned in 1999 to conduct research into various aspects of ICT in schools. This current survey builds on the information from the previous surveys and covers some of the key developments and issues with ICT in schools policy. These include:

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- Resourcing and technology use in Māori Medium schools

The underlying method and many of the questions of previous surveys were repeated this year, enabling several trends to be measured. However, many questions are asked for the first time this year. The new questions reflect the objectives of the sponsors funding the survey and also the continued changes in ICT since 1999.

3. Method

3.1 General

The sample consisted of a random sample of primary and secondary schools in New Zealand. This year, the sample also consisted of all of Māori Medium schools in New Zealand. Each school was sent two questionnaires:

1. The **Equipment** questionnaire concerned information and communication technology equipment and use (answered by a staff member who had a good knowledge of computing and telecommunications equipment).
2. The **Principal's** questionnaire concerned professional development (including the *Principals First: First Principles* workshops, and planned teacher development), ICT planning and management, and attitudes towards recycled computers.

This approach of using two separate questionnaires ensured that specific questions were answered by the person who could most easily and accurately answer them (as well as keeping questionnaire length within generally tolerable limits).

Questionnaires were sent to 600 schools (512 primary and 89 secondary) on 7th June 2001. The cut off date for the questionnaires was 27th July 2001. Composite schools (e.g., Area schools) were classified as "secondary" for this survey. Reminder letters and copies of the questionnaires were sent to those schools that had not returned their questionnaires by 6th July 2001.

By 27th July, **396** completed Equipment questionnaires and **402** completed Principal's questionnaires had been received, giving response rates of 67% and 66% respectively. Response rates were slightly higher from secondary schools (69% response rate for Equipment, 70% Principals) than from primary schools (65% Equipment, 66% Principals).

Included in the sample of 600 schools were all 99 Māori Medium schools, of which 38 Principal's and 38 Equipment questionnaires were returned. Of the 38 returns, 30 were from Te Kura Kaupapa Māori schools, and 8 from Te Wharekura schools. Due to the small sample size, these two school types have been combined into Māori Medium schools. Therefore, the response rate for Māori Medium schools is 38% for both questionnaires.

Throughout the report, Māori Medium schools will be compared to primary schools for two reasons.

1. The majority of Māori Medium schools in New Zealand are Te Kura Kaupapa Māori (the equivalent of primary)
2. In terms of size, Māori Medium schools more closely reflect that of primary schools rather than secondary.

Due to the 62% non-response for Māori Medium schools, the results for these schools may be subject to non-response bias, which is an unknown and cannot be calculated. Caution should therefore be used when interpreting these results.

Despite these high response rates, it is important to note that these results may show a little more use of information and communication technology in schools than is actually the case. This bias in the results may occur if schools more active in using ICT disproportionately tended to respond to our survey.

The Equipment and Principal questionnaires have been included as Appendix A.

3.2 Sampling

The sample was a random selection of primary and secondary schools from the Ministry of Education's database. Unlike previous years, all Māori Medium schools were included in the sample, with particular interest in ICT in these schools.

Statistical weighting was used so that the results in the report accurately reflect New Zealand schools in total and are not biased because of the oversampling of Māori Medium schools. Weights used are in Appendix B.

Respondents to the Principal's questionnaire were mainly male and highly experienced (Table 1).

Table 1: Respondents (Principals)

Q12. Are you a female/male?

Q14. How many years of teaching experience (including being a principal) have you completed?

<i>Unweighted base</i>	Primary <i>n=345</i> %	Secondary <i>n=57</i> %
Gender (Q12)		
Female	40	35
Male	58	65
No response	1	0
Total	100	100
Years of teaching experience (Q14)		
0-5	3	1
6-10	7	8
11-20	23	23
21 or more	66	68
No response	1	0
Total	100	100

Note: Components may not always add to 100% exactly because of rounding.

3.3 The questionnaires

The two questionnaires were designed using the 1999 questionnaire as a starting point. The majority of questions were kept identical in order to monitor trends over time accurately. Various questions were changed however for reasons including the following:

1. Change of sponsors (with greater focus, for example, on networking rather than printers).
2. More is expected of schools using ICT. Basic measures such as "How many schools are connected to the Internet?" are no longer adequate for measuring the effectiveness of schools' use of ICT. The key question is changing from "Have they got, e.g., Internet access?" to "What are they doing with it?"
3. Greater comparability with international data. Some questions were altered to be more consistent with overseas surveys. We now have access to several UK and US surveys. Thus, even greater comparability can be achieved in future NZ surveys.
4. Development of new ICT policies, e.g., the *Principals First: First Principles* workshops, formal policies and initiatives for the use of recycled computers in schools.

3.4 Margins of error

“Margins of error”⁴ for most results are 6% to 14% (plus or minus), as shown in Table 2. For example, if a result shows that around 50% of secondary schools principals have responded in a certain way, we are confident that the true value lies between 36% and 64%. Margins of error are higher for secondary schools and Māori Medium schools (Table 2).

Table 2: Margins of error (approximate)

	Equipment questionnaire	Principal's questionnaire
Primary schools	5.9%	5.7%
Secondary schools	13.5%	14.3%
Māori Medium schools	12.6%	12.6%

Margins of error can be much larger where questions ask for numerical estimates (e.g., the number of PCs) rather than circling a number on a scale as required by most questions. Such margins of error would have to be calculated separately for each question if this was seen as worthwhile.

⁴ Technically, these are 95% confidence intervals assuming the true proportion is 50%. Margins of error decrease where the true proportion is far from 50%, e.g., 10% or 90%.

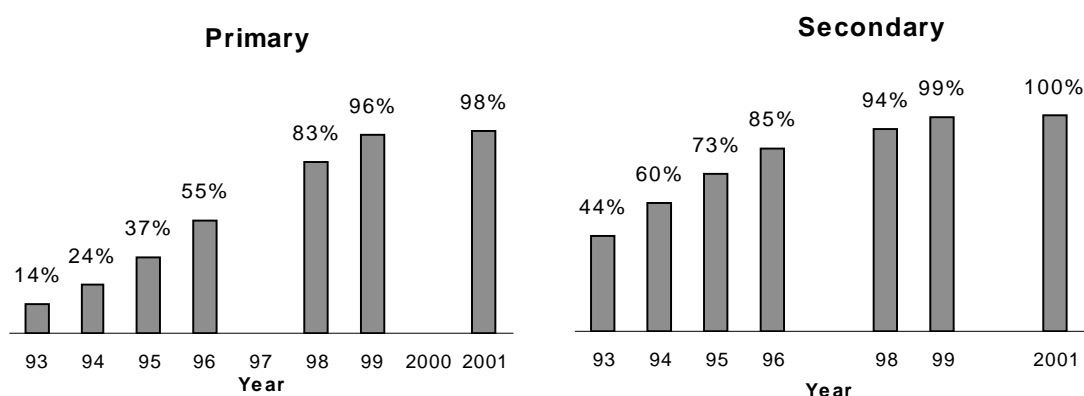
4. The Internet

4.1 Internet access

The majority of schools now have some form of access to the Internet. Fully 98% of primary schools and 100% of secondary schools reported having Internet access

- There are slightly fewer Māori Medium schools with Internet access than primary schools (89% c.f. 98%).

Graph 6: Percentage of schools online (1993-95: with modem; 1996-01: with Internet access)



Internet access in New Zealand schools (in terms of simple access, not necessarily distribution of access) is at a similar level to that of public schools in USA (where 94% of primary schools and 98% of secondary schools are connected to the Internet).⁵ By contrast, New Zealand primary schools more commonly have access than their UK counterparts.⁶ A recent survey of UK schools found that 88% of primary schools and 99% of secondary schools had access to the Internet.⁷

⁵ National Center for Education Statistics, (February 2000), *Stats in Brief - Internet Access in U.S. Public Schools and Classrooms: 1994-99*.

⁶ Historically, there has been a paucity of international data concerning Internet access. We are comparing our results to USA and UK data simply because such data is now available rather than because either country necessarily represents an example for New Zealand to follow.

⁷ British Educational Suppliers Association (BESA), (June 2000), *ICT in UK State Schools Survey 2001*.

Of course, simply having some form of access to the Internet does not indicate how widespread Internet access and usage is throughout a school. Thus, we also gather information about where access was available, the form of this access (via a network or modem), and about usage.

The first point to note is that the overall Internet access figure drops when access from individual classrooms is considered. Table 3 shows that the distribution of Internet access throughout a school is quite varied. In particular, 61% of secondary schools have 25% or less of their classrooms connected to the Internet. A substantial proportion (54%) of primary schools have 80% or more of their classrooms connected. The proportion of classrooms with Internet access has improved since 1999 (Table 4).

Almost half (45%) of Māori Medium schools have less than 25% of their classrooms connected to the Internet, compared with only 29% of primary schools.

The number of schools with administration computers connected to the Internet has steadily improved since 1998, with 99% of secondary and 92% of primary schools with at least one administration computer connected to the Internet in 2001. The majority (91%) of Māori Medium schools also have Internet connection through at least one administration computer.

Table 3: Percentage of classrooms with access to the Internet

Q5. How many classrooms in your school (including computer labs) usually have a computer with access to the Internet? Do not count a library/resource centre.

	Primary <i>n</i> =336 %	Secondary <i>n</i> =57 %	Māori Medium schools <i>n</i> =38 %
<i>Unweighted base</i>			
None	18	5	21
1 - 25%	11	56	24
26 - 79%	12	15	8
80 - 100%	54	9	34
No response	6	15	13
Total	100	100	100

Note 1: Components may not always add to 100% exactly because of rounding.

Note 2: Base = all schools (i.e., including those not connected).

Table 4: Internet access—administration and classroom: 1998, 1999, 2001

Does your school have access to the Internet?

How many classrooms in your school (including computer labs) usually have a computer with access to the Internet? Do not count a library/resource centre.

Does your school have any computers available for administration connected to the Internet? (Ministry of Education Census 2001 Q7a)

	1998 Primary <i>n</i> =169 %	1999 Primary <i>n</i> =174 %	2001 Primary <i>n</i> =336 %	1998 Secondary <i>n</i> =110 %	1999 Secondary <i>n</i> =92 %	2001 Secondary <i>n</i> =57 %
Any access	83	96	98	94	99	100
Access in at least 1 classroom	55	70	95	60	79	85
Access for administration computer	44	76	92	67	91	99

Note: Base = all schools.

Fully 49% of secondary schools and 26% of primary schools have 80% or more of their computers connected to the Internet. Almost half (45%) of Māori Medium schools have 80% or more of their computers connected to the Internet, which is 19% more with primary schools (Table 5).

Table 5: Percentage of computers connected to the Internet

Q1. How many computers in your school connect to the Internet (either through a network or a modem)?

	Primary <i>n</i> =338 %	Secondary <i>n</i> =58 %	Māori Medium schools <i>n</i> =38 %
Less than 20%	15	8	13
20–39%	15	9	5
40–79%	41	32	34
80% or more	26	49	45
No response	3	3	3
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Similar numbers of computers have network connections to the Internet (Table 6). Almost one-third (29%) of Māori Medium schools have more than 80% of their computers connected to the Internet, compared with 18% of primary schools.

Table 6: Percentage of computers connecting to the Internet through a network

Q2. How many computers in your school connect to the Internet through a network (not directly though a modem)?

	Primary <i>n</i> =337 %	Secondary <i>n</i> =57 %	Māori Medium schools <i>n</i> =38 %
Unweighted base			
None	37	3	31
1–39%	11	19	11
40–79%	32	35	19
80% or more	18	43	29
No response	2	0	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

4.1.1 Internet browsers used

Only 7% of all schools use the most recent versions of either Internet Explorer or Netscape Navigator (Table 7). Almost half (47%) of primary schools use Internet Explorer 5.x, compared with only 27% of Māori Medium schools. Fifteen-percent (15%) of Māori Medium schools use Internet Explorer 3.x..

Of the schools that used two or more types of browsers equally, the browsers used tended to be a mix of Internet Explorer and Netscape Navigator, and of various versions.

Table 7: Type of Internet browser used

Q12. Which of the following types of browser software is most commonly used in your school?

	Primary <i>n</i> =338 %	Secondary <i>n</i> =58 %	Māori Medium schools <i>n</i> =38 %
Internet Explorer 3.x	6	1	15
Internet Explorer 4.x	12	5	11
Internet Explorer 5.x	47	90	27
Internet Explorer 6.x	8	2	11
Netscape Navigator 3.x	2	0	5
Netscape Navigator 4.x	7	0	5
Netscape Navigator 5.x	3	1	0
Netscape Navigator 6.x	0	0	3
Two or more used equally	3	0	5
Other	3	0	0
Don't know	3	0	3
No response	3	0	5
Skipped, school has no access	2	0	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

4.2 Internet usage

4.2.1 Usage by students, teaching and administration staff

Despite nearly all schools now having access to the Internet, usage levels are generally low, particularly for students.

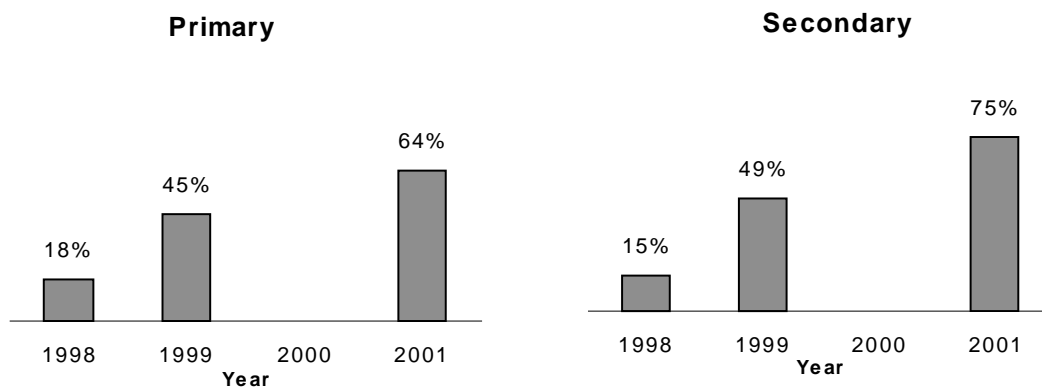
However, there has been a substantial increase since 1999 in the number of teaching staff using the Internet (World Wide Web or e-mail) during a typical school week, particularly in secondary schools.

About two-thirds of primary and secondary schools reported that 25% or more of their staff use e-mail or the World Wide Web during a typical school week, but only a small number (29% for e-mail, 45% World Wide Web) of schools claimed that a quarter or more of their students use these services.

Results for Māori Medium schools are consistent with primary schools with regards to both e-mail and use of the World Wide Web by staff and students. Two-thirds (60%) of Māori Medium schools indicate that at least 25% of their teaching staff use e-mail during a school week (65% for primary). Just over half (59%) of Māori Medium schools have at least 25% of staff using the World Wide Web, compared with 64% for primary.

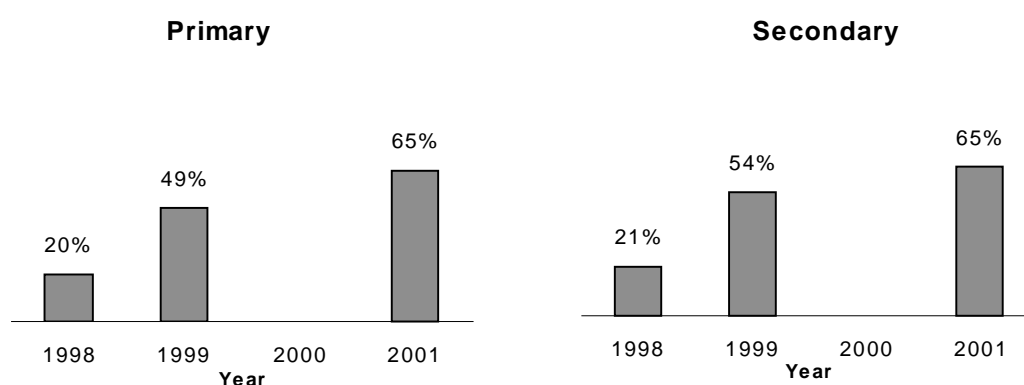
Graph 7: Percentage of schools with 25% or more of their teaching staff using the World Wide Web weekly

During a typical school week, roughly what percentage of full-time teaching staff at your school use ...Internet World Wide Web



Graph 8: Percentage of schools with 25% or more of their teaching staff using Internet e-mail weekly

During a typical school week, roughly what percentage of full-time teaching staff at your school use ...Internet e-mail



More than three-quarters of schools (78% Primary and 79% Secondary) claimed to have at least one teaching staff member using Te Kete Ipurangi during a typical school week. This is a significant increase from the previous years survey (19% overall).

Similarly, 70% of Māori Medium schools have at least one staff member using Te Kete Ipurangi once a week.

Student usage of the World Wide Web and Internet e-mail has grown since 1998 (particularly in secondary schools), although it continues to lag behind usage by teaching staff. Fully 36% of secondary schools and 29% of primary schools reported that at least 25% of their students used Internet e-mail during a typical school week (14% for all schools in 1998). One-quarter (24%) of Māori Medium schools have 25% or more of their students using e-mail (29% primary).

Usage of the World Wide Web was higher, with 54% of secondary and 44% of primary schools claiming that a quarter or more of their students used it in a typical school week (36% secondary, 27% primary in 1999). Use of the World Wide Web by 25% or more of students in a week was higher for primary schools than Māori Medium schools (44% c.f. 24% respectively).

Staff and student usage of computers and the Internet at home was also determined. Table 8 shows that around three-quarters of all schools estimate that over 50% of their teachers access a computer at home.

The percentage of teachers from Māori Medium schools with access to a computer at home is less than primary schools (53% c.f. 71% with more than 50% of teachers with computer access at home). However, 32% of Māori Medium schools estimate that all their teachers have access, compared with 21% of primary schools.

However, only around 20% of schools believe that 50% or more of students have access to a computer at home.

Only 8% of Māori Medium schools estimate that 100% of students have access at home, compared with 24% of primary schools.

Two-thirds (61%) of primary schools and 57% of secondary schools estimate that 50% or more of their teaching staff have access to the Internet at home.

Just under half (49%) of Māori Medium schools estimate that 50% or more of their teachers have Internet access at home, which is less than their primary school counterparts.

Table 8: Teachers use of a computer at home

Q8a. Estimate the proportion of teachers with computer access at home.

	Primary	Secondary	Māori Medium schools
<i>Unweighted base</i>	<i>n=338</i>	<i>n=58</i>	<i>n=38</i>
	%	%	%
None	3	0	8
0 – 9%	5	0	13
10 – 24%	3	3	3
25% - 49%	11	17	8
50 – 74%	24	33	13
75 – 99%	26	28	8
100%	21	9	32
Don't know	3	7	0
No response	2	3	6
Not connected	2	0	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 9: Students access to a computer at home

Q8a. Estimate the proportion of students with access to a computer at home.

	Primary	Secondary	Māori Medium schools
<i>Unweighted base</i>	<i>n=338</i>	<i>n=58</i>	<i>n=38</i>
	%	%	%
None	2	0	8
0 – 9%	13	7	23
10 – 24%	20	17	16
25% - 49%	20	24	19
50 – 74%	19	16	8
75 – 99%	5	5	0
100%	0	0	0
Don't know	16	24	8
No response	5	7	8
Not connected	2	0	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 10: Teachers use of the Internet at home*Q8a. Estimate the proportion of teachers with Internet access at home.*

	Primary <i>n</i> =338 %	Secondary <i>n</i> =58 %	Māori Medium schools <i>n</i> =38 %
None	4	0	15
0 – 9%	6	0	8
10 – 24%	5	10	6
25% - 49%	16	21	11
50 – 74%	28	31	13
75 – 99%	20	21	8
100%	13	5	24
Don't know	4	9	0
No response	2	3	6
Not connected	2	0	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

4.2.2 Principals' usage

Principals are using the World Wide Web and Internet e-mail more frequently than in 1999 (Graph 9 and Graph 10). Most principals reported using e-mail at least weekly. Fewer used the World Wide Web at least weekly (Table 11).

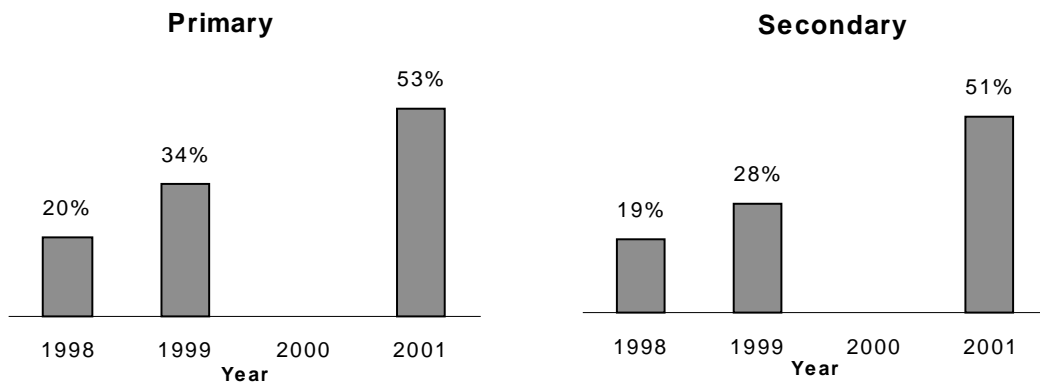
Principals from primary schools use e-mail on a weekly basis more than Māori Medium school principals (94% c.f. 77%) (Graph 16). Similarly, 79% of principals from primary schools report using the World Wide Web at least weekly compared with just over half of Māori Medium school principals (53%) (Table 12).

Half (50%) of secondary school and 38% of primary school principals use the Te Kete Ipurangi web site at least once a week.

Around half of principals from Māori Medium schools (47%) use the Te Kete Ipurangi web site at least once a week, which is slightly higher than primary school principals.

Use of other Internet services such as chat rooms, Internet online discussion forums, and ListServ was minimal. Only 6% of principals used chat rooms and Internet online discussion forums weekly, while 7% used ListServ weekly. Around 70% of all schools had never used these services.

Graph 9: Percentage of principals using the World Wide Web at least daily



Graph 10: Percentage of principals using Internet e-mail at least daily

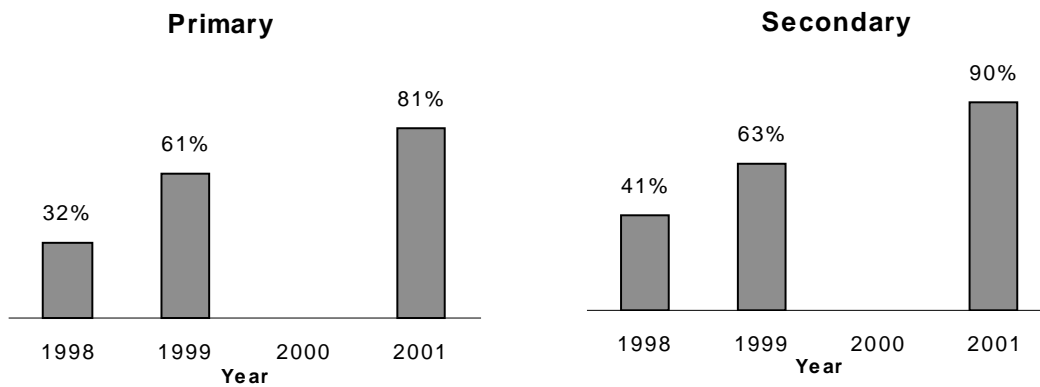


Table 11: Use of the Internet by principals (Email)

Q2 (Principal's questionnaire). How often do you personally use each of the following Internet services (either at home or school)?

	E-mail		
	Primary	Secondary	Māori Medium schools
<i>Unweighted base</i>	<i>n=345</i> %	<i>n=57</i> %	<i>n=38</i> %
Never	3	0	15
Once a month or less	2	4	5
Approx. once a week	14	6	0
Approx. once a day	35	28	21
More than once a day	45	62	56
No response	1	0	3
Total	100	100	100

Table 12: Use of the Internet by principals (WWW)

Q2 (Principal's questionnaire). How often do you personally use each of the following Internet services (either at home or school)?

	World Wide Web		
	Primary	Secondary	Māori Medium schools
<i>Unweighted base</i>	<i>n=345</i> %	<i>n=57</i> %	<i>n=38</i> %
Never	4	4	18
Once a month or less	11	7	16
Approx. once a week	29	38	11
Approx. once a day	33	29	18
More than once a day	17	21	24
No response	5	1	13
Total	100	100	100

4.2.3 Administration computers

Fully 99% of secondary and 92% of primary schools have at least one administration computer connected to the Internet. Similarly, 93% of Māori Medium schools have at least one administration computer connected to the Internet (91%).

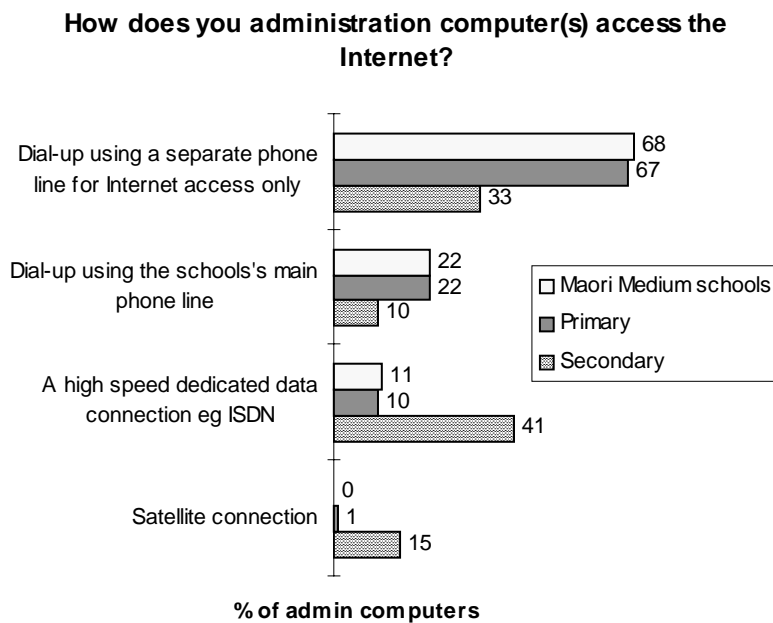
Two-thirds (67%) of primary and 33% of secondary schools have administration computers with access to the Internet through a *dial-up using a separate phone line for Internet access only*.

Secondary schools have a significantly higher incidence of Internet access through a *high-speed dedicated data connection* than primary schools (41% c.f. 10%).

Fifteen-percent (15%) of secondary schools have *satellite connection* to the Internet for their administration computers compared with only 1% of primary schools.

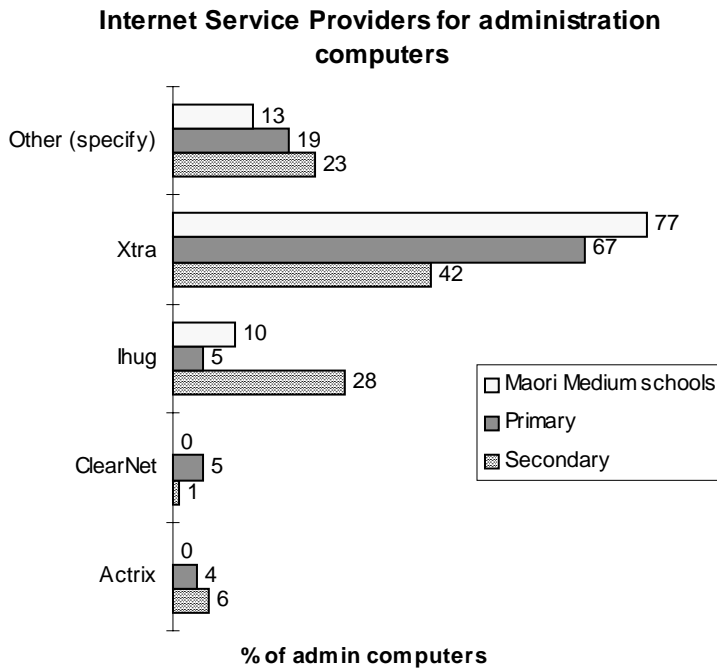
Māori Medium schools use virtually identical Internet connections as primary schools.

Graph 11: Types of Internet access for administration computers



Xtra is the most commonly used Internet provider for administration computers, particularly in Māori Medium schools (77%), and primary schools (67%). Secondary schools, whilst still having a high use of Xtra, use lhug more than primary schools (28% c.f. 5%).

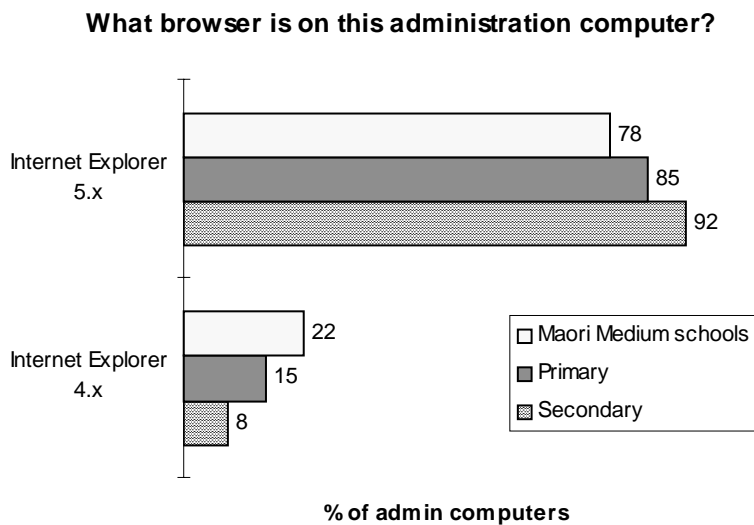
Graph 12: Internet Service Providers used on administration computers



Internet Explorer 5.x is the Internet browser most widely used for administration computers by both primary and secondary schools (85% and 92% respectively).

Three-quarters (78%) of Māori Medium schools also use Internet Explorer 5.x, and subsequently use the older version slightly more than primary schools.

Graph 13: Internet Service Providers used on administration computers



4.2.4 Individual e-mail addresses

Few teaching staff and even fewer students had individual e-mail addresses provided and funded by the school (Table 13). The highest levels are found among secondary school staff, where 48% of schools reported that all their teachers had individual e-mail addresses.

Only one-fifth (18%) of Māori Medium schools indicate that 100% of their school teachers have individual e-mail addresses. This compares with 33% of primary schools.

The percentages of students in primary schools with individual e-mail addresses is lower than both secondary and Māori Medium schools, with 82% of primary schools having no individual e-mail addresses for students (Table 14).

Table 13: Individual e-mail addresses provided and funded by the school (teachers)

Q8a,b. About what proportion of teachers have an individual Internet e-mail address provided and funded by the school (i.e., not private e-mail addresses)?

	Teachers		
	Primary	Secondary	Māori Medium schools
<i>Unweighted base</i>	<i>n=338</i>	<i>n=58</i>	<i>n=38</i>
	%	%	%
None	47	19	55
1%–9%	9	14	5
10%–24%	2	4	6
25%–49%	2	4	0
50%–74%	1	4	0
75%–99%	3	5	3
100%	33	48	18
Don't know	1	0	0
No response	1	1	3
Skipped, school has no access	2	0	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 14: Individual e-mail addresses provided and funded by the school (students)

Q8a,b. About what proportion of students have an individual Internet e-mail address provided and funded by the school (i.e., not private e-mail addresses)?

Unweighted base	Students		Māori Medium schools n=38 %
	Primary n=338 %	Secondary n=58 %	
None	82	57	69
1%–9%	1	14	0
10%–24%	0	1	3
25%–49%	1	7	3
50%–74%	2	0	5
75%–99%	1	0	3
100%	4	17	5
Don't know	2	2	0
No response	5	5	3
Skipped, school has no access	2	0	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

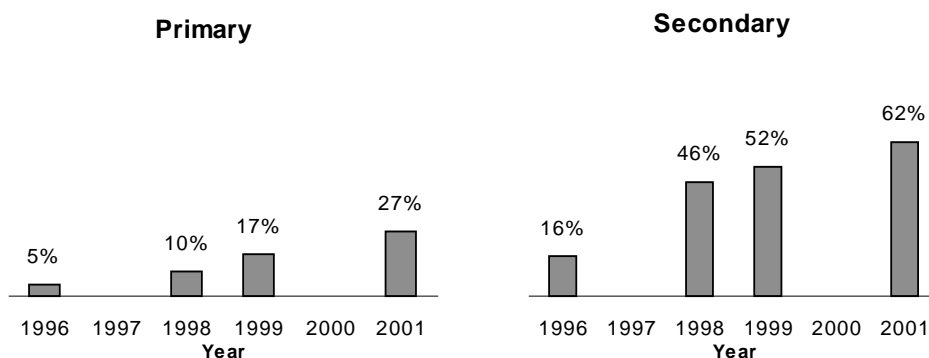
4.3 School home pages

Two-thirds (62%) of secondary schools have a home page on the World Wide Web, but it is still less common for primary schools to have one (27%) (Graph 14). One-third (34%) of schools without a home page claimed to be developing one.

Only 5% of Māori Medium schools surveyed currently have a home page, which is lower than primary schools.

Around one-third of Māori Medium schools (36%) are currently developing a web site, however of importance is that over half (56%) of Māori Medium schools are not developing a home page at all.

Graph 14: Percentage of schools surveyed with home pages



Although it is relatively common for schools to have home pages, schools that have them seem to rarely update them (Table 15). Of the schools that had home pages, roughly two-thirds (63%) reported updating them monthly or less often. Disturbingly, over 12% of the schools with Web pages did not update them at all.

Due to the small sub-sample size of Māori Medium schools with home pages, analysis is not possible.

Table 15: Frequency of updating school home page

Q26a. About how often is the school home page updated?

	Primary <i>n=70</i> %	Secondary <i>n=30*</i> %	Māori Medium schools <i>n=2*</i> <i>n**</i>
Daily	2	4	0
Weekly	27	11	0
Monthly or less often	47	72	1
Not at all	16	2	0
Don't know/no response	8	11	1
Total	100	100	2*

Note: Base = schools currently with a home page.

*Caution: low base number of respondents—results are indicative only.

** % are not given due to extremely small sub-sample sizes.

Of the schools with Web pages, many had them hosted on a New Zealand host outside their school (68% of primary schools with web page, 74% secondary). However 18% of primary schools with home pages and only 2% of secondary schools with home pages have their own web server.

Particularly in secondary schools, teachers most commonly updated the school's home page (38% of secondary schools with home pages, 43% of primary schools with home pages). One-third (34%) of secondary schools with Web pages has them updated by an ICT Support Technician. In roughly a quarter of primary schools with web pages, students, computer support technicians, and the principal updated the home page.

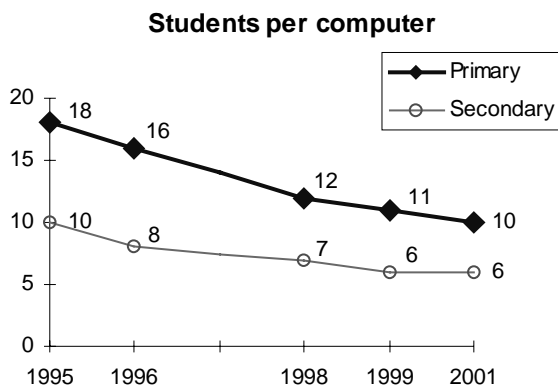
5. ICT Equipment

5.1 Computer numbers and types

5.1.1 Total school computers

There are slightly more computers used in schools now than in 1998 (Graph 15). Including all computers, there was one computer per **10** students in primary schools. In secondary schools, the ratio is now one computer per **6** students.⁸

Graph 15: Students per computer (in total)



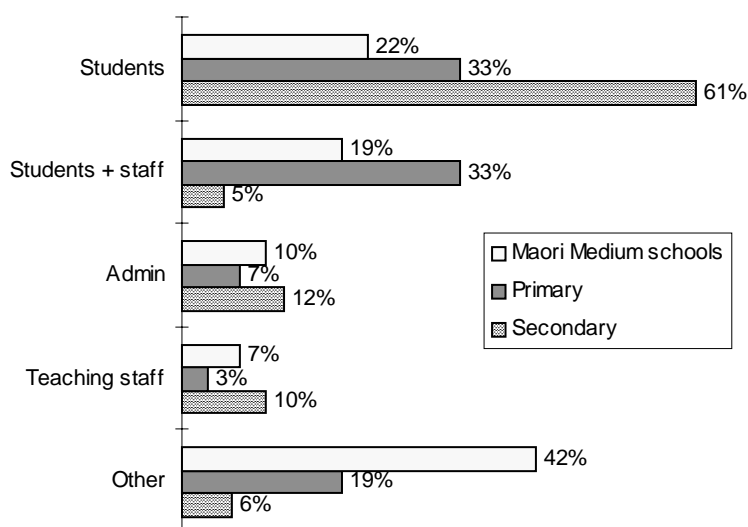
Excluding computers used mainly for administration, there was one computer per **12** students in primary schools (compared with one per 13 in 1999) and one computer per **7** students in secondary schools (one per 7 in 1999). The ratio of students to computers for Māori Medium schools is one computer per **10** students.

Students remain the main users of schools' computers. As observed in previous surveys, the different nature of primary schools leads to many more computers being shared by students and staff (Graph 16). For Māori Medium schools, there was a high level of *Other* use of computers. This high level is as a result of schools overlapping the use of their computers with students, staff, and administration. Therefore, the figures for students and for staff may not necessarily reflect the actual usage of computers in these schools.

⁸ Ratio was calculated as = Total number of computers for schools surveyed (Q20; Equipment questionnaire) / school roll as of July 2001 as provided by the Ministry of Education.

Graph 16: Main users of computers

Q22. About how many of these are in use mainly by students? Mainly for administration? Equally by students and staff? Mainly by teaching staff (not admin)?



Over half of the computers used in schools are more than three years old (58% of primary schools' computers, 68% of secondary, 62% Māori Medium schools).

Half (53%) of secondary schools and one-third (35%) of primary schools estimate that at least 50% of their total schools computers meet the basic specification of **Pentium I, 166MHz, 64MB, 2GB hard drive**.

One-third (35%) of Māori medium schools estimate that at least 50% of their schools computers meet this specification, showing no difference to that of primary schools.

Table 16: Percentage of computers meeting basic specification

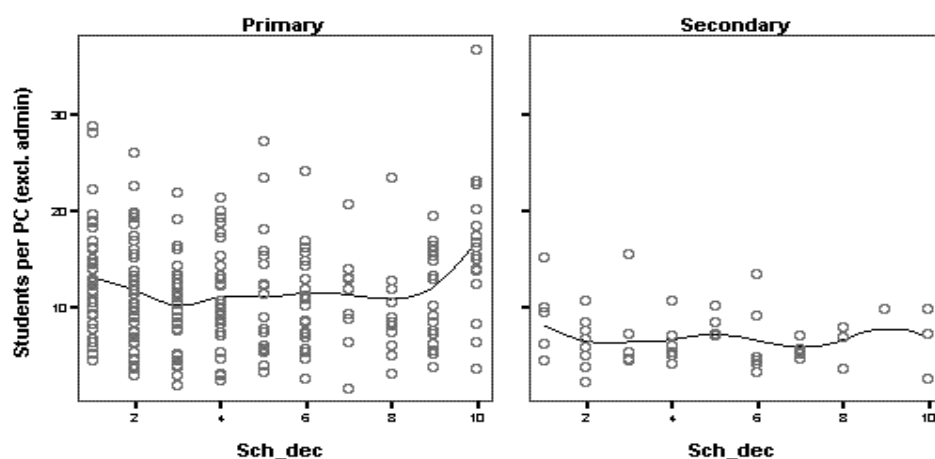
Q21. What percentage of the computers in your school is **equal to or better than** the following basic specification? **Pentium I, 166MHz, 64MB, 2GB hard drive**

	Primary n=338 %	Secondary n=56 %	Māori Medium schools n=38 %
25% or less	19	18	13
25% to 50%	17	21	8
51% to 75%	14	20	11
76% to 100%	21	33	24
No response	5	4	19
Don't know	24	5	26
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

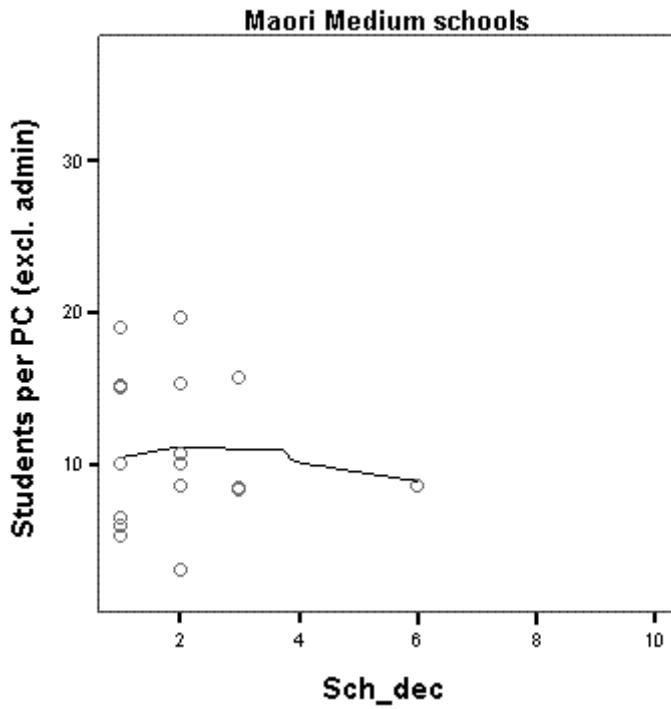
As in earlier TEF surveys, and as was shown in the ICT in Schools report from 1999, there was no strong simple pattern that “richer” schools owned more computers. We examined the relationship between the socio-economic status (SES) decile provided for each school by the Ministry of Education and the number of students per computer at each school. No strong relationship was found (Graph 17 and Graph 18).⁹ This result is consistent with a Ministry of Education administrative survey in 1996, which received answers from nearly all schools (rather than a sample as in this survey). Of course, there are likely to be more substantial differences between schools in terms of computers owned by students or their families.

Graph 17: Students per computer BY socio-economic decile (primary & secondary)



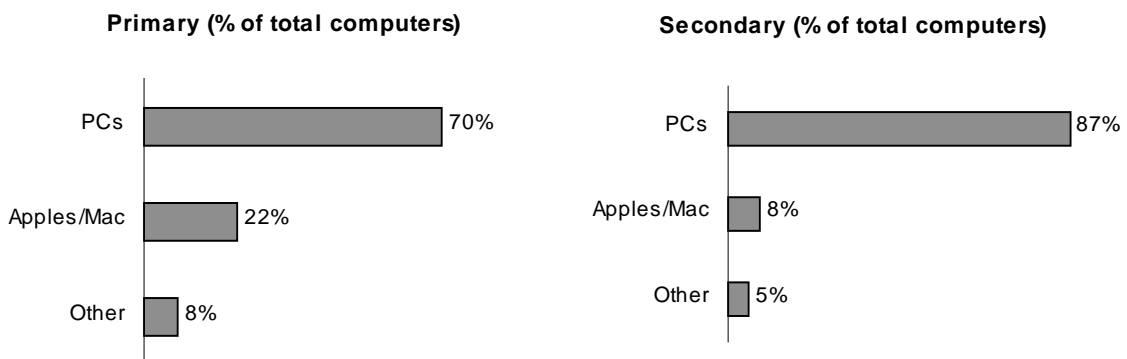
⁹ The line in the graph is a flexible line of best fit, which will show curves as well as straight-line relationships. Its flat nature indicates the lack of a strong relationship between decile and the ratio of students to computers.

Graph 18: Students per computer BY socio-economic decile (primary & secondary)

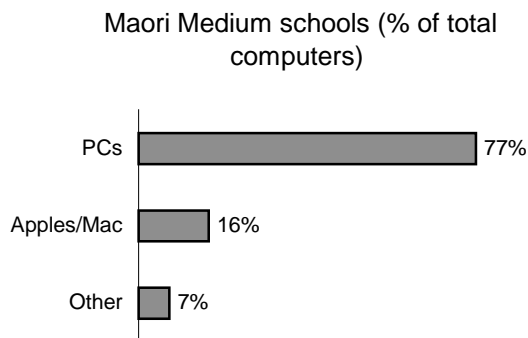


PCs (“IBM-compatible”) remained the most commonly used computer type (Graph 19). Primary schools also had a large number of Apples/Macs. There was little difference in types of computers used between Māori Medium schools and primary schools, however Māori Medium schools tend to use slightly more PCs (Graph 19).

Graph 19: Types of computers used (percentage of total computers)



Graph 20: Types of computers used (percentage of total computers)



5.1.2 Computer access for principals

Most principals (83% primary, 86% secondary) had access to a computer for their own use **at home** (by comparison, 78% of primary principals had access at home in 1999). Similar numbers had access in their office at school (Table 17). Most principals also had access in other classrooms or elsewhere in the school (e.g., library).

Three-quarters (76%) of Māori Medium school principals have access to a computer at home.

Access to a personal computer in their office at work was higher for Māori Medium schools (89%) than primary schools (82%).

Those principals with access to computers at their school were asked whether the computers are **networked to other school computers**. Of these principals, secondary principals had clearly greater access to networked computers (Table 17 and Table 18).

Just over half (55%) of Māori Medium school principals with access to a computer in their office had that computer networked compared with 75% of primary school principals.

More Māori Medium school principals had access to a computer in a computer lab/suite than primary principals (60% c.f. 39%).

Table 17: Principals' access to computers

Q4. Do you have access to a computer for your own use in any of these locations?

If you do, please state if the computers you have access to are "networked" with other school computers.

	Primary		Secondary	
	Access	Networked	Access	Networked
	<i>n=340</i>		<i>n=53</i>	
<i>Unweighted base</i>	%	%	%	%
At home	83	na	86	na
In principal's office at school	82	75	95	94
In one or more classrooms	92	66	83	96
A computer suite/lab/pod	39	75	81	100
Elsewhere in the school (e.g., in an office, library or resource room)	82	68	83	96

Table 18: Principals' access to computers

Q4. Do you have access to a computer for your own use in any of these locations?

If you do, please state if the computers you have access to are "networked" with other school computers.

	Maori Medium schools	
	Access	Networked
	<i>n=38</i>	
<i>Unweighted base</i>	%	%
At home	76	na
In principal's office at school	89	55
In one or more classrooms	81	67
A computer suite/lab/pod	60	79
Elsewhere in the school (e.g., in an office, library or resource room)	78	49

5.2 ICT equipment use

In addition to the widespread use of fax machines and telephones in teaching, many principals (especially secondary principals) were aware that teachers in their school used digital cameras and scanners for teaching purposes (Table 19). Speakerphones were used in slightly less than half of the schools, while audio- and video- conferencing equipment, and web cam were much less common. CD Burners were used in 39% of secondary schools.

Generally Māori Medium schools had similar usage of ICT equipment to primary schools, however one-third (32%) of Māori Medium schools use audio conferencing equipment compared with only 11% of primary schools. One-fifth (20%) of Māori Medium schools also used video conferencing equipment far more than primary schools (1%) (Table 19).

Table 19: ICT equipment used

Q1 (Principals questionnaire). To your knowledge, do any teachers in your school use any of the following technologies in their teaching (either in the classroom or elsewhere in the school)?

	Primary <i>n</i> =342 %	Secondary <i>n</i> =57 %	Māori Medium school <i>n</i> =38 %
	<i>Unweighted base</i>		
Facsimile machine	95	90	87
Telephone for one-to-one conversations	92	89	85
Digital camera	84	95	76
Scanner	64	96	63
Speaker phone for audioconferencing	39	44	43
Audioconferencing equipment (e.g., SoundStation)	11	22	32
CD burner	8	39	10
Audiographics for distance learning	2	6	5
Videoconferencing equipment (e.g., PictureTel/Polycom)	1	17	20
Web cam	1	11	0
None of the above	1	1	3

Note: Total exceeds 100% because of multiple response.

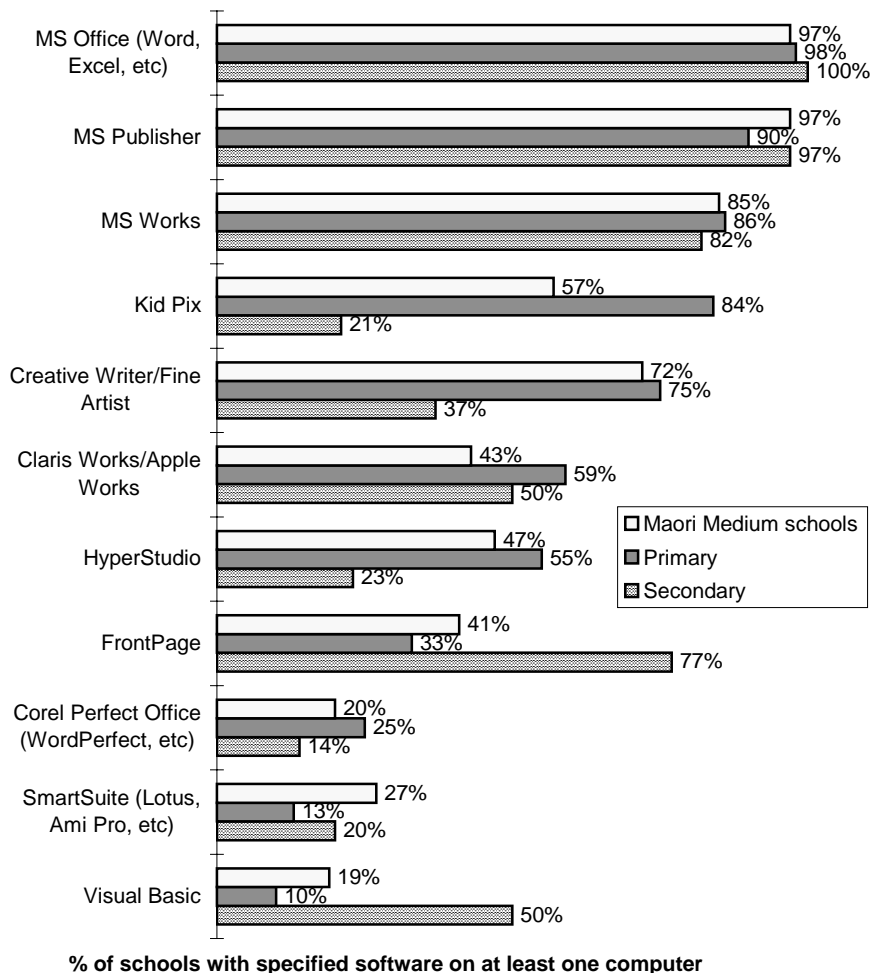
5.3 Software

As expected, Microsoft software is very commonly used. Their standard productivity tools (MS Office, MS Publisher, and MS Works) are used in most schools (Graph 21). Use of Kid Pix has increased, from 50% of primary and 20% of secondary schools in 1999. Creative Writer/Fine Artist has increased in use since 1999 (used by 46% of primary and 25% of secondary in 1999).

FrontPage is used far more by secondary schools (77%) than primary (33%) and Māori Medium schools (41%).

Māori Medium schools also have high use of Microsoft software. Kid Pix is used more by primary schools (84%) than Māori Medium schools (57%), as is Claris Works/Apple Works (Graph 21). SmartSuite however, is used more by Māori Medium schools than primary (27% c.f. 13%).

Graph 21: Software in schools (running on at least one computer)

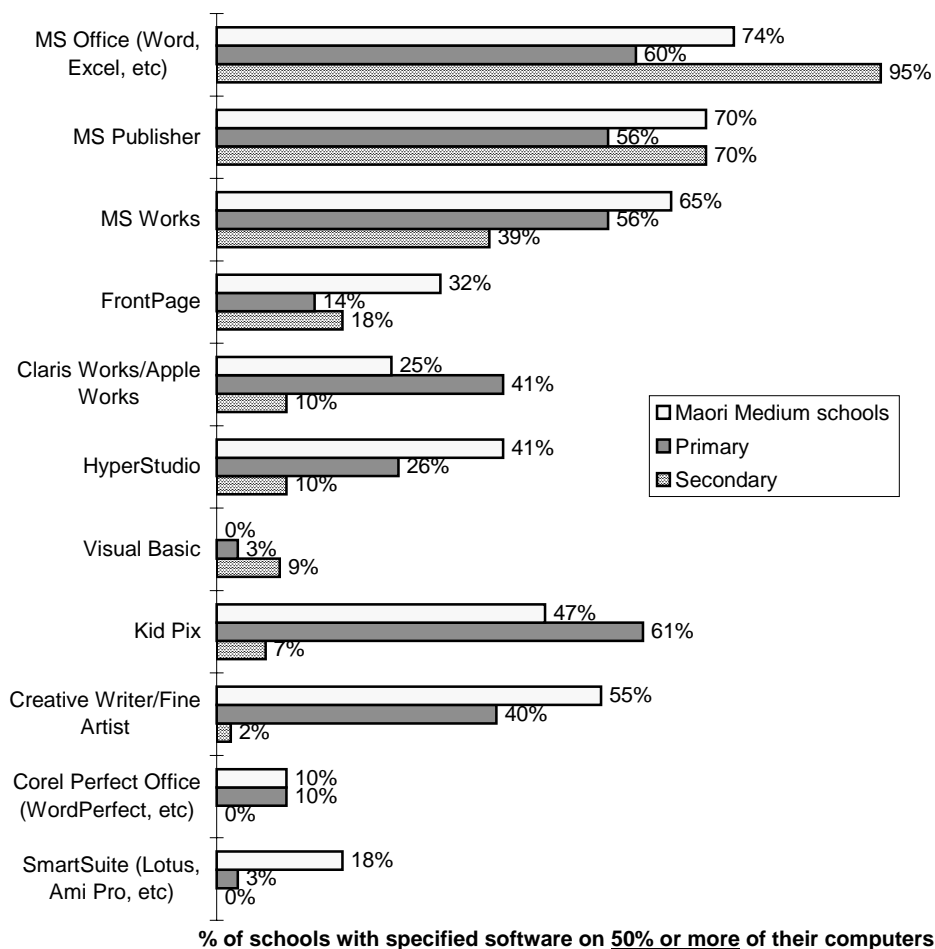


More detailed analysis shows that Microsoft has an even greater presence. Fully 95% of secondary schools and 60% of primary schools reported that MS Office was running on at least half of their computers (Graph 22). MS Publisher has been similarly successful.

Kid Pix and Claris Works/Apple Works have clearly been successful in primary schools: with 61% and 40% of primary schools respectively have these programmes on half or more of their computers.

Māori Medium schools seem to have a wider use of Microsoft programmes compared with primary schools. For almost all of the programmes shown in Graph 22, Māori Medium schools have a higher concentration of these programmes on their computers.

Graph 22: Software—percentage of schools with programme running on at least 50% of their computers



We also asked schools in what format they would find acceptable to receive text documents from external sources. Not surprisingly (given the prevalence of Microsoft Office), most schools were able to receive text documents in Word 6 and Word 97 formats (Table 20). Other noted formats were Word 2000 (50% primary and 55% secondary), and PDF format (46% primary and 83% secondary).

There is little difference between Māori Medium schools and primary schools for preferred file formats.

Table 20: Acceptable formats for receiving text documents

Q19. If an outside organisation wanted to send you a lengthy, formatted text document to read, what formats would you find **acceptable**?

	Primary <i>n</i> =338 %	Secondary <i>n</i> =58 %	Māori Medium schools <i>n</i> =38 %
PDF (Adobe Acrobat)	46	83	43
Microsoft Word 6 (Office 95)	83	95	87
Microsoft Word 97 (Office 97)	77	95	84
Microsoft Word 2000	50	55	58
MS rich text format	24	59	29
HTML format	35	64	40
Don't know	5	0	3
No response	2	1	5

Note: Total may exceed 100% because of multiple response.

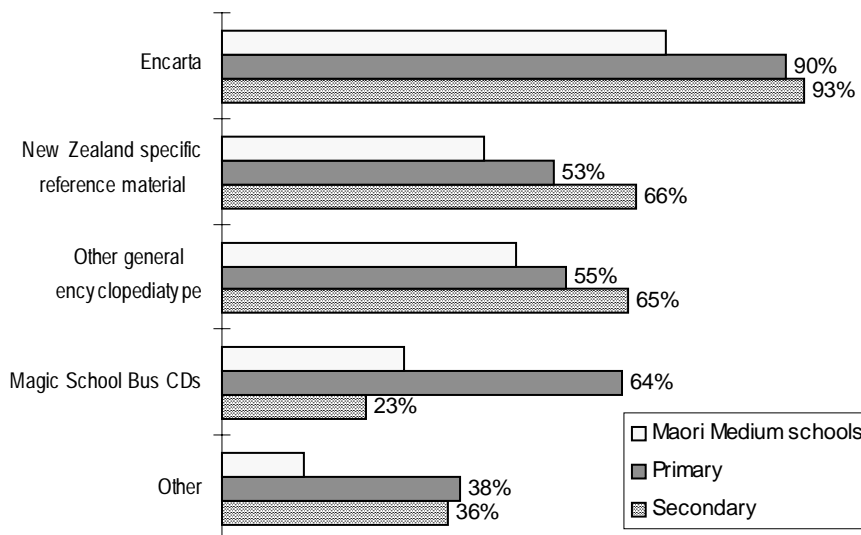
5.4 Support material on CD-ROM

Many different curriculum support/reference CD-ROMs were available for student use. Microsoft's presence in schools is reflected in the widespread use of Encarta, and of Magic School Bus CDs in primary schools.

Most schools had some form of encyclopaedia on CD-ROM. There was a very diverse range of CD-ROMs mentioned in the "Other" category, rather than a few common favourites.

Compared with primary schools, Māori Medium schools have far fewer CD-ROM curriculum support/reference materials. Thirteen percent (13%) of Māori Medium schools indicated that they have no reference material on CD-ROM.

Graph 23: Curriculum support/reference materials on CD-ROM



5.5 Networking and cabling

With networking becoming more common in schools, particularly secondary schools, the question of whether a school has network connections becomes less important than the extent of networking within a school. This survey found that about 49% of all schools are “fully networked” - that is, 80% or more of their classrooms were linked by cabling to other rooms (Table 21).

Forty-percent (40%) of Māori Medium schools are “fully networked” (52% primary)

Table 21: Percentage of classrooms networked to other rooms

	Primary <i>n</i> =338 %	Secondary <i>n</i> =58 %	Māori Medium schools <i>n</i> =38 %
None	24	5	19
1–20%	5	25	8
21–79%	12	28	18
80% or more	52	36	40
No response	7	6	16
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Three-quarters (76%) of primary schools and 65% of secondary schools expected all of their classrooms to be networked to other rooms in 12 months time.¹⁰ However, 12% of primary schools did not expect any of their classrooms to be networked to other rooms in 12 months time.

Similarly, three-quarters of Māori Medium schools (77%) plan to be “fully networked” within the next 12 months (that is, 80% or more of their classrooms will be linked by cabling to other rooms).

Fifteen-percent (15%) of Māori Medium schools did not plan to have any networking completed in the next 12 months, which is the same figure as now.

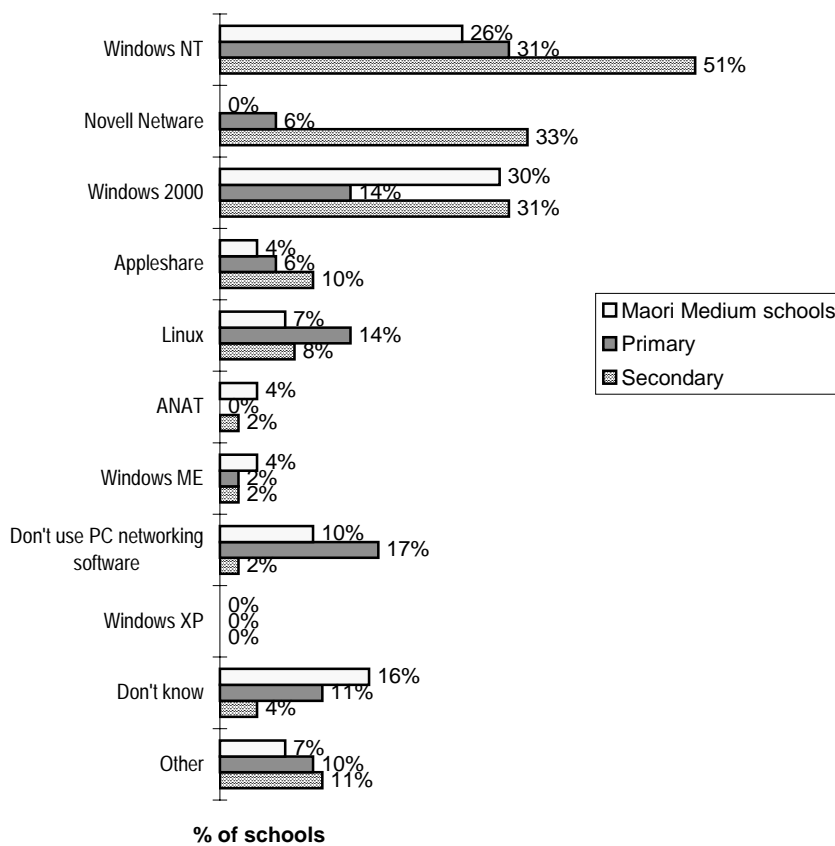
¹⁰ These figures are ‘intentions’ - whether they become reality remains to be seen.

Of those schools with networks, the majority (98%) of secondary schools and 83% of primary schools have PC networking software.

Windows NT is the most noted networking software used by both primary and secondary schools (used by 51% of secondary schools and 31% of primary schools with networking software). Secondary schools also used Novell Netware and Windows 2000 software, whilst primary schools continue to utilise Linux networking software (Graph 24).

The majority of Māori Medium schools (91%) have networking software. Again, Windows NT is commonly used. Māori Medium schools also use Windows 2000.

Graph 24: Networking and e-mail software



5.6 Current use and intended purchasing–ICT equipment

Due to the small sub-sample size of Māori Medium schools who answered questions in this section, results for Māori Medium schools will not be presented, however the tables in this section will be included as Appendix D for these schools.

Table 22 shows the proportion of various brands of PCs/IBM compatible computers that schools currently have, and intend to purchase over the next 12 months. Both primary and secondary schools currently have more Compaq brand PC computers (20% and 16% respectively). Primary schools also currently use Ipex computers (10%).

Looking at intended purchases within the next 12 months, primary schools intend to purchase more Compaq PC computers (34%), whilst secondary schools intend to purchase IBM computers (15%), Acer PCs (10%), and also Itec PCs (10%). Both primary and secondary schools noted high proportions of *Other* PC/IBM compatible computers that were currently in use and also intending to purchase. A review of the *Other* brands revealed a large mixture of various other brands available.

Table 22: Proportion of schools which currently have and intend to purchase these brand of PCs/IBMs

Q9. Thinking about all of the PCs/IBM compatible computers in your school, how many of each of the following brands do you have, or plan to purchase in the next 12 months?

<i>Unweighted base</i>	Primary		Secondary	
	A. Have in current use <i>(n=280)</i> %	B. Intend to purchase in next 12 months <i>(n=84)</i> %	A. Have in current use <i>(n=56)</i> %	B. Intend to purchase in next 12 months <i>(n=21)</i> %
Acer	5	3	4	10
Advantage	1	2	1	0
Atec	4	4	2	0
Compaq	20	34	16	3
Cyclone	1	2	2	0
Dell	2	0	4	8
Digital	3	1	3	0
Edge/KTX	6	8	4	0
Gateway/PC Direct	4	2	2	0
Hewlett-Packard	5	4	1	0
IBM	9	6	9	15
Ipex	10	0	1	0
Itec	2	2	4	10
Mitac	1	0	0	0
NEC	0	0	1	0
Silicone Systems	1	0	0	0
TL Systems	1	0	0	0
TMC	2	3	3	8
Total Peripherals	2	0	3	0
Ultra	2	0	1	0
Other	57	29	57	47
Total	100	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Base=all schools who have PCs/IBM compatible computers (60 schools did not answer this question)

Around one-third of schools currently do not have a laptop/notebook PC. The main brands of laptop computers currently in use by both primary and secondary schools are Toshiba, Compaq, and Acer. Laptop/notebook PCs to be bought within the next 12 months are also these three main brands, apart from Compaq in secondary schools.

Table 23: Proportion of schools which currently have and intend to purchase these brand of laptop/notebook PCs.

Q10. Of all the PCs used in your school that are laptop/notebook PCs, how many of each of the following brands do you have, or plan to purchase in the next 12 months?

<i>Unweighted base</i>	Primary		Secondary	
	A. Have in current use <i>(n=145)</i> %	B. Intend to purchase in next 12 months <i>(n=26)</i> %	A. Have in current use <i>(n=48)</i> %	B. Intend to purchase in next 12 months <i>(n=6*)</i> %
Acer	18	15	16	17
Compaq	26	27	21	0
Cyclone	1	0	0	0
Dell	0	0	0	0
Digital	0	0	0	0
Edge/KTX	0	0	0	0
Gateway/PC Direct	2	0	0	0
Hewlett-Packard	0	0	1	0
IBM	8	15	3	17
Mitac	0	0	0	0
NEC	1	0	3	0
Toshiba	27	23	45	50
Total Peripherals	0	0	1	0
Other	16	19	10	17
Total	100	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Caution: low base number of respondents—results are indicative only.

**Approximately 30% of schools do not have any laptop/notebook PCs

Schools were also asked the brand of PC server currently in use and also the brand of any PC servers to be purchased within the next 12 months. Approximately one-quarter of schools do not currently have a PC server.

Of those schools that do have a PC server, both primary and secondary schools currently have mainly Compaq PC servers, followed by IBM servers.

PC servers to be purchased within the next months are also mainly Compaq, IBM, and Hewlett-Packard for primary schools, and IBM, Hewlett-Packard, and Dell PC servers for secondary schools.

Table 24: Proportion of schools which currently have and intend to purchase these brand of PC servers.

Q11. Of all the PCs currently used in your school, how many of each of the following PC servers do you have, or plan to purchase in the next 12 months?

<i>Unweighted base</i>	Primary		Secondary	
	A. Have in current use <i>(n=214)</i> %	B. Intend to purchase in next 12 months <i>(n=17*)</i> %	A. Have in current use <i>(n=50)</i> %	B. Intend to purchase in next 12 months <i>(n=8*)</i> %
Acer	4	6	8	12
Advantage	3	0	1	0
Atec	5	6	1	0
Compaq	17	24	21	0
Cyclone	3	0	2	0
Dell	4	0	2	12
Digital	3	0	1	0
Edge/KTX	6	0	2	0
Gateway/PC Direct	4	6	1	0
Hewlett-Packard	5	12	5	0
IBM	11	18	11	12
Mitac	3	0	1	0
NEC	3	0	1	0
Toshiba	3	0	3	0
Total Peripherals	4	0	1	0
Other	24	29	42	63
Total	100	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Caution: low base number of respondents—results are indicative only.

**Approximately 25% of schools do not have any PC servers

6. Professional development and support

6.1 *Principals First: First Principles* workshops

The *Principals First: First Principles* workshops were one day workshops designed to develop principals' ability to plan for and manage the implementation of ICT in their school. Table 25 shows that around three-quarters of principals from all schools had attended a workshop between 1999 and 2001.

Half (53%) of principals from Māori Medium schools have not attended a *Principals First* workshop, which is a much higher non-attendance rate than their primary counterparts.

Table 25: Principals attendance of Principals First Workshops

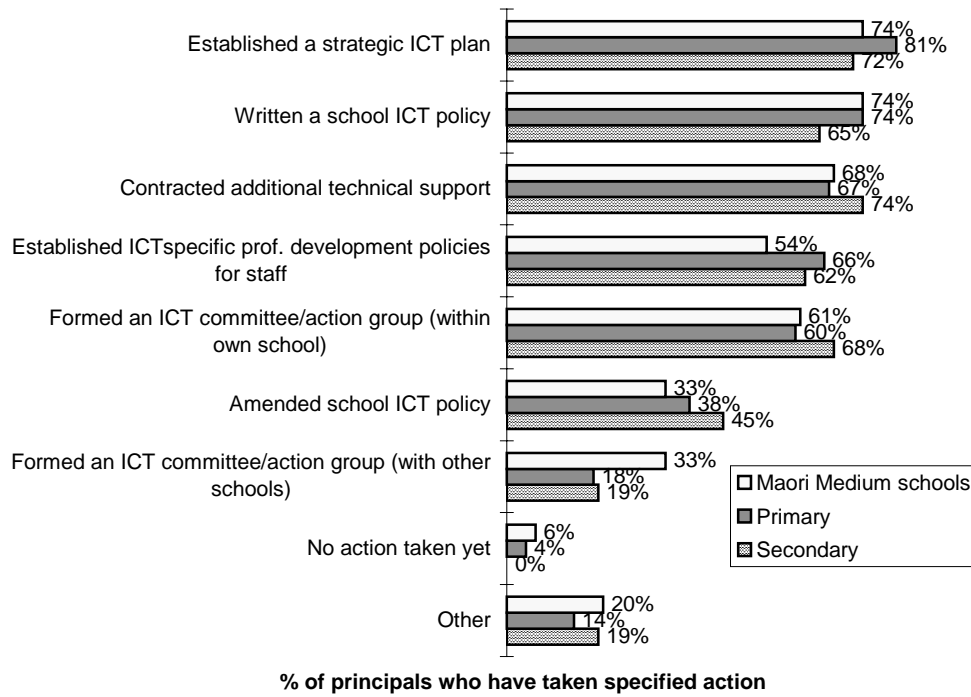
Q5a. In which year/s did you attend the Principal First workshop

	Primary <i>n</i> =345 %	Secondary <i>n</i> =57 %	Māori Medium schools <i>n</i> =38 %
1999	47	61	21
2000	21	5	16
2001	3	6	3
Did not attend a workshop	25	23	53
Don't know	3	0	0
No response	2	5	8
Total	100	100	100

Graph 25 shows the actions principals took to improve ICT management after the workshops. The most common were:

1. Establishing a strategic ICT plan
2. Writing a school ICT policy
3. Contracted additional technical support; and
4. Establishing ICT-specific professional development policies.

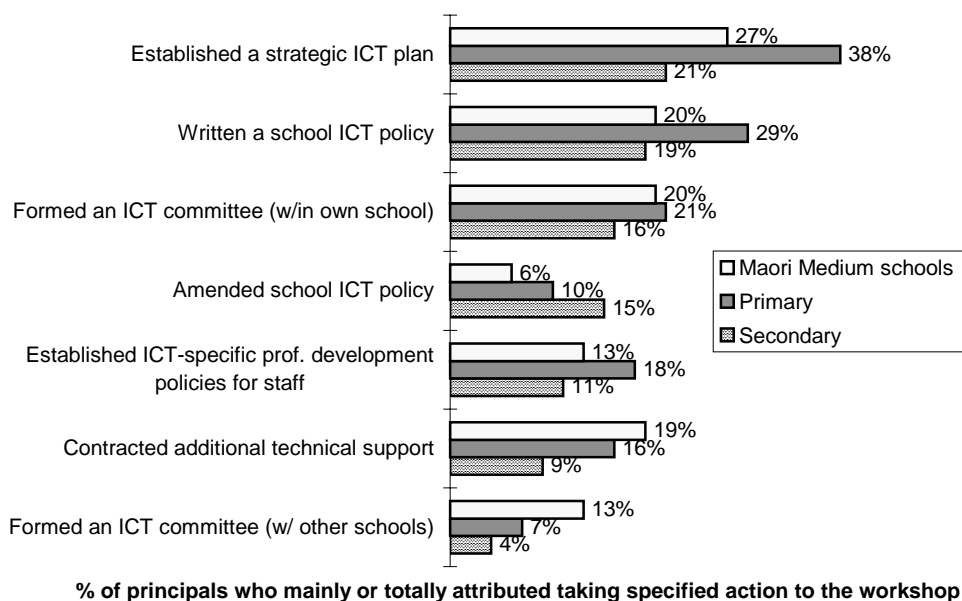
Graph 25: Actions taken since workshops to improve ICT management



To further measure the impact of the *Principals First* workshops, we also asked principals to rate the extent to which the actions taken to improve ICT management could be attributed to the workshops. Many principals attributed establishing a strategic ICT plan or writing a school ICT policy to the workshop (Graph 26). This is expected, as one of the workshop's intended outcomes was that attending principals would develop an action plan for implementing ICT in their school.

Overall, the actions Māori Medium schools attributed to the workshops were similar to that of primary schools. Like both primary and secondary schools, Māori Medium schools attributed *establishing a strategic ICT plan* to the workshops the most.

Graph 26: Impact of *Principals First* workshops



6.1.1 Learning needs after the workshops

Principals who attended the workshops were asked what areas of ICT management (whether covered in the workshops or not) they would most like to learn more about.

For further analysis, the comments made by principals were coded into themed groups (Table 26).

Overall, the main areas that schools would like more information about include *networking*, *technical support*, and *integration of ICT and Internet into the classroom*. Secondary schools are particularly interested to learn more about *Intranets* (40%), whilst Māori Medium schools are mainly interested in *networking* (40%) and *evaluating the effectiveness of ICT in learning* (21%).

Table 26: Learning needs after the workshops

Q5d. What areas of ICT management, whether they were covered in the workshops or not, would you like to learn more about?

	Primary <i>n</i> =157** %	Secondary <i>n</i> =28** %	Māori Medium schools <i>n</i> =10* %
Networking	17	23	40
Technical support	15	10	0
Integration of ICT and Internet into classroom	12	12	10
Funding	11	0	0
Hardware/software maintenance	11	4	19
Evaluating the effectiveness of ICT in learning	10	1	21
Web design and development	9	3	10
Strategic planning	5	7	10
Intranets	4	40	10
Audio-visual conferencing	3	3	0
Other	21	21	10
Total	-	-	-

- Note: Total may exceed 100% because of multiple response.

*Caution: low base number of respondents—results are indicative only.

**About 55% of schools did not answer this question.

6.2 Professional development

Primary school principals and teachers seemed more likely than their secondary school counterparts to attend professional development programmes aimed at helping teachers integrate the use of ICT into the learning and teaching processes. Māori Medium schools also have a higher level of attending programmes for professional development in ICT (Table 27 and Table 28).

Roughly two-thirds of all principals had attended such programmes in the last 12 months (64% primary, 38% secondary). Half (51%) of principals from Māori Medium schools attended a programme in the last 12 months, however this level of attendance is lower than primary schools.

More principals intended to attend similar programmes in the next 12 months (73% primary, 49% secondary). These intended attendance levels are slightly lower than in 1999.

Principals from Māori Medium schools had a higher intention to attend such a programme within the next 12 months than primary schools principals (87% c.f. 73%).

Principals also reported high levels of attendance at such courses among their staff in the last 12 months (Table 27). Over half of primary schools and Māori Medium schools reported that 50% or more of their teachers had attended ICT-related professional development courses. However, in a one-fifth of both primary schools and Māori Medium schools, no teachers had taken part in such programmes in the last 12 months.

Table 27: Teacher attendance at ICT-related professional development courses in last 12 months

Q6b. About what percentage of your teachers have attended such a programme over the last 12 months?

	Primary <i>n</i> =345 %	Secondary <i>n</i> =57 %	Māori Medium schools <i>n</i> =38 %
None	18	2	20
1–9%	9	19	5
10–24%	10	15	5
25–49%	6	21	13
50–74%	11	9	19
75–99%	13	15	8
100%	34	18	29
No response	1	0	0
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

As found in 1998 and 1999, **expected** attendance of staff in the next 12 months was considerably higher (Table 28).

Primary school expect a higher proportion of teachers to attend an ICT-related programme within the next 12 months, with half (49%) expecting 100% of their teachers to attend a course. Māori Medium schools also have a higher expectation of teachers attending these type programmes within the next 12 months, with almost two-thirds (64%) expecting all of their teachers to attend such a course.

Table 28: Expected teacher attendance at ICT-related professional development courses over next 12 months

Q6d. About what percentage of your teachers would you expect to take part in any teacher development programmes in this area over the next 12 months?

	Primary <i>n</i> =345 %	Secondary <i>n</i> =57 %	Māori Medium schools <i>n</i> =38 %
<i>Unweighted base</i>			
None	2	0	3
1–9%	4	2	5
10–24%	7	19	8
25–49%	7	18	3
50–74%	15	12	5
75–99%	10	19	8
100%	49	24	64
Don't know	7	5	5
No response	1	1	0
Total	100	100	100

6.3 Technical support

Technical support has historically been a problem area for many schools working with ICT. The sources of support that primary and secondary schools drew on were similar to those found in 1999 (Table 29). The main points to note are:

- Most schools (65% primary, 70% secondary) had at least a supplier guarantee/warranty as a source of support.
- More secondary schools than primary directly employ computer support technicians.
- Secondary schools also utilise a staff member with time allowance (less than 10 hrs per week).
- More primary than secondary made use of parent volunteers.
- Overall, Māori Medium schools have less support in almost all areas than primary schools,
- One-fifth (21%) of Māori Medium schools employ a technician as opposed to 39% of primary schools.

Table 29: Sources of technical support

Q28. Which of the following sources of technical support does your school have?

	Primary	Secondary	Māori Medium schools
<i>Unweighted base</i>	<i>n=338</i>	<i>n=58</i>	<i>n=38</i>
	<i>%</i>	<i>%</i>	<i>%</i>
Supplier guarantee/warranty	65	70	53
Technician (employed directly by school)	39	48	21
External support contract (paid in advance, extra cost)	24	37	19
Staff member with time allowance (<u>less</u> than 10 hrs per week)	24	41	18
Parent volunteer	22	1	15
0800 network support	14	6	18
Staff from other schools	9	2	11
Staff member with time allowance (<u>more</u> than 10 hrs per week)	4	19	5
Other	17	13	21
None	2	0	5
No response	2	0	0

Note: Total may exceed 100% because of multiple response.

7. ICT planning and administration

7.1 Spending overview

Overall, spending patterns were similar to those found in 1999. Roughly half of schools' expenditure on ICT was on the purchase of hardware (Table 30). This is slightly less for Māori Medium schools that spend 35% on purchase of hardware. Spending on professional development (including teacher release time) accounted for about 10% of schools' ICT expenditure.

Table 30: Average percentage of school spending in different areas of ICT

Q11 (Principal's questionnaire). In the last 12 months, *about* how much do you think your school spent on ICT in the following areas? Exclude equipment obtained free.

<i>Unweighted base</i>	Primary	Secondary	Māori Medium schools
	<i>n=309**</i>	<i>n=55**</i>	<i>n=13*</i>
	<i>Average %</i>	<i>Average %</i>	<i>Average %</i>
Purchase of hardware (incl. cabling, computers, peripherals, upgrades and replacements)	48	43	35
Lease of hardware	8	13	12
Software	6	7	8
Technical support and maintenance (both hardware & software)	9	15	12
Consumables	8	6	10
Teacher professional development (incl. Advisors paid to visit school)	8	3	8
Teacher release time	4	3	3
Internet & telephone charges	9	8	12
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

** Around 10% of principals did not answer this question.

** Around 65% of Māori Medium school principals did not answer this question.

7.2 Student Management Systems

Use of Student Management Systems, for the purposes of student roll data returns was evident more so in secondary than in primary schools (93% c.f. 68%). This is consistent with results found in the 1999 survey.

Just under half (47%) of Māori Medium schools have a Student Management System, which is much lower than primary schools (68%).

8. Recycled computers in schools

There is a growing interest in giving schools greater access to ICT through helping them buy older computers which have been refurbished and upgraded, i.e., recycled. One such initiative, the Computer Access New Zealand Trust (CANZ), was set up in early 1999 to co-ordinate such recycling.

When asked about CANZ, two-thirds (60%) of primary principals and 70% of secondary principals were aware of the CANZ computer-recycling scheme. Over half (55%) of Māori Medium schools had heard of the scheme.

Twenty percent (20%) of secondary schools, and only 7% of primary schools have purchased recycled computers through CANZ. One-fifth (19%) of Māori Medium schools have purchased recycled computers from CANZ.

One-third (36%) of principals said they would “probably” or “definitely” consider purchasing computer equipment through CANZ. This figure is also similar for Māori Medium schools (35%) (Table 31).

Table 31: Intentions to purchase recycled computers through CANZ

Q8c. Would you consider purchasing computer equipment through the Computer Access NZ Trust recycling scheme?

	Primary <i>n</i> =345 %	Secondary <i>n</i> =57 %	Māori Medium schools <i>n</i> =38 %
Definitely 'no'	10	10	8
Probably 'no'	27	30	24
Probably 'yes'	31	29	34
Definitely 'yes'	4	11	0
Don't know	27	19	29
No response	2	1	5
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

8.1.1 Allocation of specific computers to specific tasks

A situation in which recycled computers are thought to be quite useful is where a computer is needed only to perform specific tasks, such as word-processing and spreadsheets, or general Internet browsing (rather than having all computers able to perform all tasks).

Table 32 indicates that roughly 35% of schools already allocate specific computers to specific tasks, most commonly Internet use and word/text processing.

Māori Medium schools do not devote computers to specific tasks as much as primary schools (77% c.f. 61%).

Table 32: Allocation of specific computers to specific tasks

Q13. Does your school allocate specific computers to be used only for any of the following? For example, one computer is used for Internet only.

	Primary <i>n</i> =338 %	Secondary <i>n</i> =58 %	Māori Medium schools <i>n</i> =38 %
We do not devote computers to specific tasks	61	65	77
Internet use	10	7	15
Multimedia/creative activities	6	5	15
Word/text processing, or using spreadsheets	10	12	12
We do dedicate computers to specific tasks, but not to the task listed above	22	15	9
Don't know	1	0	0
No response	3	3	3

Note: Total may exceed 100% because of multiple response.

9. Teachers' adoption of ICT

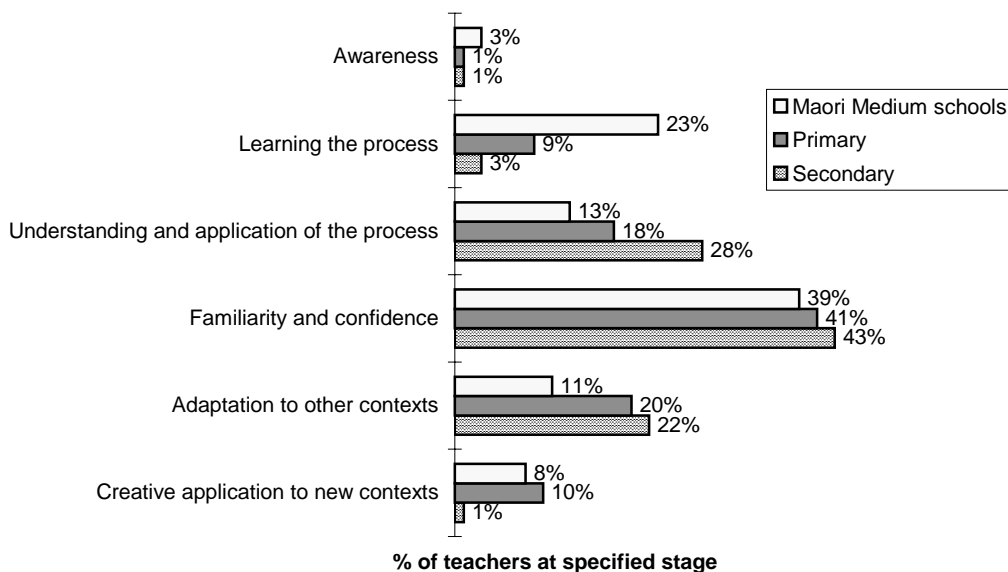
In addition to providing statistics such as the percentage of schools with Internet access or the proportion of classrooms fully networked, this survey also aimed to measure the extent to which ICT is actually integrated into the teaching and learning process.

To do this we adapted a research instrument described by Knezek and Christensen (1999).¹¹ Our survey asked principals to indicate at which of six stages of ICT adoption they felt most of their teachers were at. (Table 33 describes the six stages.) As Graph 27 shows, most teachers are in the 'middle' stages of ICT adoption.

Overall, more teachers in Māori Medium schools are in the early stages of ICT adoption than primary schools. One-quarter (23%) of Māori Medium schools teachers are *learning the process*, compared with 9% for primary schools.

Subsequently, primary schools are more advanced in the further stages of ICT adoption.

Graph 27: Teachers' adoption of ICT



¹¹ Gerald Knezek and Rhonda Christensen (November 1999), "Stages of Adoption for Technology in Education", *Computers in New Zealand Schools*.

Table 33: Stages of adoption of ICT

Q10. Six stages in the adoption of technology have been identified (e.g., Knezek and Christensen, Computers in New Zealand Schools, Nov 1999). Please read the descriptions of each of the six stages. Circle the stage where you feel most teachers at your school are in the adoption of ICT.

Awareness

They are aware of ICT but have not used it - perhaps they're even avoiding it.

Learning the process

They are currently trying to learn the basics. They are often frustrated using computers. They lack confidence when using computers.

Understanding and application of the process

They are beginning to understand the process of using ICT and can think of specific tasks in which it might be useful.

Familiarity and confidence

They are gaining a sense of confidence in using the computer for specific tasks. They are starting to feel confident using the computer.

Adaptation to other contexts

They think about the computer as a tool to help them and are no longer concerned about it as technology. They can use it in many applications and as an instructional aid.

Creative application to new contexts

They can apply what they know about ICT in the classroom. They can use it as an instructional tool and integrate it into the curriculum.

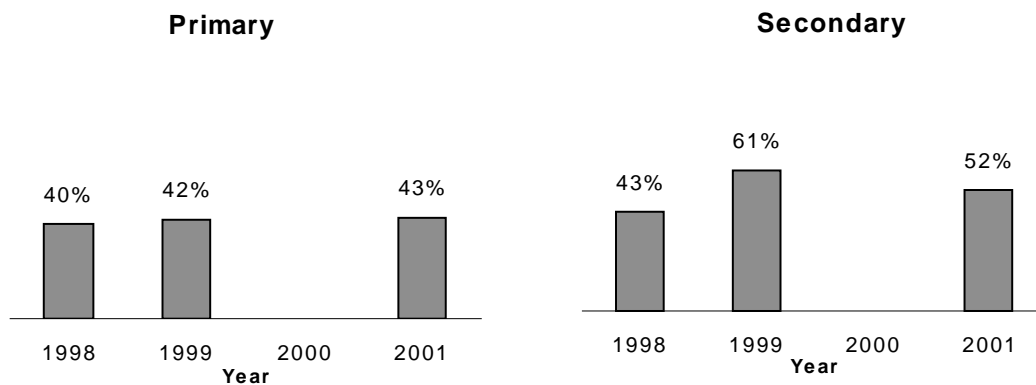
10. Principals' attitudes about the value of ICT

Favourable attitudes towards ICT in schools were relatively widespread among responding principals. However, overall attitudes to using ICT in schools are slightly lower generally to those found in 1999 (Graph 28 and Graph 29). Secondary school principals appear to perceive both greater *efficiency* and *quality* benefits in using ICT in curriculum delivery than do their primary school counterparts (Graph 28 and Graph 29).

Forty-two percent (42%) of Māori Medium schools feel that ICT has improved the *quality* of teaching in their schools. This is similar to the response from primary schools, as were the views about the improvement to the *efficiency* of teaching due to ICT (37% Māori Medium schools c.f.43% primary).

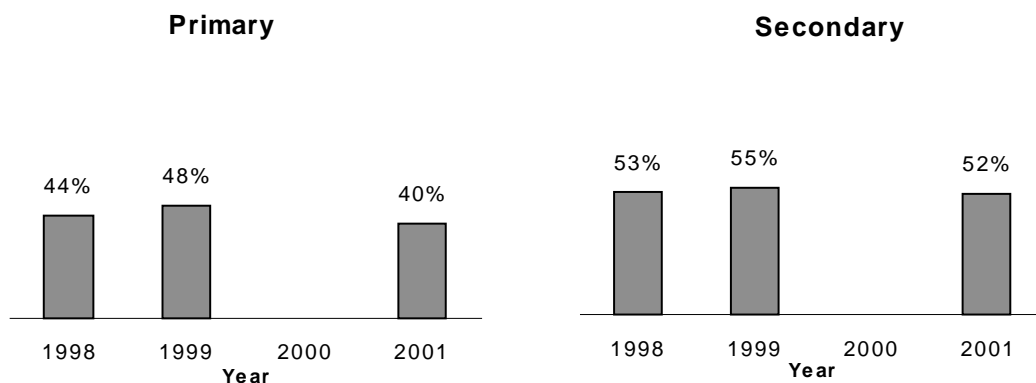
Graph 28: Perceived impact of ICT on *efficiency* of curriculum delivery

Percentage of principals agreeing or strongly agreeing with the statement "ICT is already making major improvements to the *efficiency* of curriculum delivery at our school"



Graph 29: Perceived impact of ICT on *quality* of curriculum delivery

Percentage of principals agreeing or strongly agreeing with the statement "ICT is already making major improvements to the *quality* of curriculum delivery at our school"



Appendix A: Questionnaires

Appendix B: Statistical weighting

Principal's questionnaire**Primary**

% of Māori students	Sample	Population	Weight
0% - 20%	111	1273	1.758
21% - 50%	107	609	0.873
51% - 99%	97	257	0.406
100%	30	76	0.388
Total	345	2215	

Secondary

% of Māori students	Sample	Population	Weight
0% - 20%	21	253	1.847
21% - 50%	19	97	0.783
51% - 99%	9	34	0.579
100%	8	23	0.441
Total	57	407	

Equipment questionnaire**Primary**

% of Māori students	Sample	Population	Weight
0% - 20%	105	1273	1.826
21% - 50%	105	609	0.874
51% - 99%	98	257	0.395
100%	29	76	0.395
Total	337	2215	

Secondary

% of Māori students	Sample	Population	Weight
0% - 20%	24	253	1.588
21% - 50%	18	97	0.812
51% - 99%	8	34	0.640
100%	8	23	0.433
Total	58	407	

Appendix C: Verbatim report for Q5d (Principals)

Q5d. What areas of ICT management, whether they were covered in the workshop or not, would you most like to learn more about?

Networking

Setting up and managing a network.

How to manage change in a school.

Computer Systems Management.

Security issues, funding of systems management.

Strategic planning. Information on developments within educational contexts e.g. effective soft/hardware for video conferencing.

Management of Internet use. School intranet. How to make the dollar go further.

Networking with another school and audio-conferencing.

Placing teaching and learning resources on a website. Effectively networking our school which as many prefabs. Pushing ICT professional development for teachers on an ongoing basis.

Time management strategies around computer management.

Maintenance of network system, and integration of ICT across the curriculum.

Effective use of the network. Using ICT to enhance learning. Best practices for developing staff skills.

Managing the technical areas.

Integration into curriculum areas, related time management.

Good WWW sites - curriculum, management. Professional development.

Network maintenance.

Network Trouble shooting.

Professional development for Excel databases and how to develop interactive templates.

Networking our school computers.

Networking computers. Internet safety - net names etc. Internet safety policy.

Hardware/ Asset management.

Intranet systems management. Curriculum integration of the Internet. Best practice staff personal development.

Networking.

Areas to develop further. To network existing computers to the main server (pros and cons). Using one main printer rather than individual ones in each classroom. (pros and cons).

Networking.

Classroom management of computer time. Staff training on site.

Running a network - trouble shooting. Advisory to go to, so you are not reliant on businesses advising you on what you need.

Professional development. Strategic planning. Teacher Development programmes to integrate ICT into the learning and teaching process at all the curriculum areas.

Data management.

Management of Networks. Net access safety.

The best software for schools, that is networking.

Pupil files. Distance Professional Development.

Security, improving the speed of computer networks.

Networking to all classrooms, Internet access for all children and developing a school web page.

Internet access across the network. Integration of ICT into learning and teaching processes.

Networking capabilities and intranets.

Networking system, LAN systems. Latest development.

Managing, the financial demands ICT is by far the biggest demand on our finances.

Most effective practices for teachers new on to networks.

Technical support, technicians work as with isolation this has been our biggest problem. Management of files and programmes.

More effective use of search facilities on the net. How to use scanner and digital camera.

Trouble-shooting technical problems.

Re management. What is a reasonable level of budget annually to meet everyone's needs - priorities - minimum of where the school is at.

Intranets

Intranet used for classroom leaving.

Intranet possibilities. Protocols, user guides, firewalls etc.

School intranet. Data shows.

Integration into the curriculum.

Eye movie, better use of Internet.

Intra netting.

Internet

Intra net

Setting up Intranets.

The Internet and mail.

Management of Internet use. School intranet. How to make the dollar go further.

Integration into curriculum areas, related time management.

Intranet systems management. Curriculum integration of the Internet. Best practice staff personal development.

Establishing an intranet and ensuring staff use it, integrating ICT in the T/L processes. Ensuring appropriate technical support to manage the network.

Integration of ICT and Internet into the classroom

Ideas for promoting use of ICT in classroom programmes.

Safe use of the Internet by students and staff.

Regular updating of developments, which will enhance teaching and learning.

Strategies for managing ICT learning in the classroom setting. Professional development for ICT lead teacher in the school.

Use of ICT in improving Learning Outcomes for children.

ICT usefulness in curriculum delivery - effective use of Internet access for school in a controlled way.

Best programmes and hardware available for Internet link up and in school. Networking for an IMAC School.

How learning technologies can be used in the classroom using the Internet video- conferencing to cover the essential learning area.

Assessment of students ICT abilities and training of staff using a common programme. How to keep everyone up to speed and collecting the correct data.

I.C.T. as part of school management and administration.

Using ICT to collate school data.

-Cost effective leasing - replacements - effective models for supporting Curriculum learning using ICT - Schools/ literature - CWSA models for ICT toolbox use.

Classroom use of Internet

The maintenance and ongoing cost expenditure of ICT in a school.

Further technical knowledge. Enhancing the links that curriculum integration can make in the ICT development.

Integration of ICT across the curriculum. Management of ICT learning across multi-levels.

Integration of ICT Technologies in classrooms use of Internet in schools - Internet

Practical timetabling hints for using ICT. Class use of Internet.

Effective use of the network. Using ICT to enhance learning. Best practices for developing staff skills.

Networking our school computers.

Professional development. Strategic planning. Teacher Development programmes to integrate ICT into the learning and teaching process at all the curriculum areas.

Strategic planning

Planning/PD

Strategic Planning.

I would like some strategies to ensure teachers get to grips with the new technologies and use them in classrooms.

Documentation, approaches and strategies.

Strategic planning (5yr) with goals in line with NAGS/NRCS.

Business planning ie replacement costs. Advice on how to handle multitudinous IT companies when I understand very little. I believe \$10,000's of taxpayers money is being wasted through Principals ignorance - a scandal.

Accessing on line teaching resources and support material and strategic planning examples from other schools.

Strategic planning. Information on developments within educational contexts e.g. effective soft/hardware for video conferencing.

Time management strategies around computer management.

Professional development. Strategic planning. Teacher Development programmes to integrate ICT into the learning and teaching process at all the curriculum areas.

Audio-video conferencing systems

Video conferencing and audiographics.

Video Conferencing.

Development of digital camera to C.D saving to laptop presentations.

Video movies.

Strategic planning. Information on developments within educational contexts e.g. effective soft/hardware for video conferencing.

Networking with another school and audio-conferencing.

How learning technologies can be used in the classroom using the Internet video- conferencing to cover the essential learning area.

Evaluating the effectiveness of ICT in learning

ICT - specific PD policies for staff.

Staff training, assisting reluctant teachers to use ICT (Note, depends on reliability of system to a degree).

Planning to ensure all teachers incorporate ICT into their planning in all curriculum areas.

*Provision of sufficient funding to meet ICT objectives and to maintain ICT.
Principal PD, visits to sites for example in action of "good" practice with ICT in classroom/admin.*

The integration of ICT into curriculum areas and developing an ICT 'steps' programme.

Web page design, curriculum integration through ICT.

Funding for an ICT specialist on staff with no other attachments to their job description and who is employed full time.

ICT for multi-disabled students.

Integrating ICT into curriculum areas. Technical support.

Using ICT in an integrated way - simple/practical activities.

I think that I would just like to know how to best utilise all this technology to our advantage i.e school, children, whanau.

Professional Development of staff.

ICT funding (extra).

The best ways of providing individually appropriate PD for all staff given their differing competency with ICT.

Use of ICT in improving Learning Outcomes for children.

*Continuation own personal ICT development and knowledge to lead staff/students/BOT. Knowledge of software/hardware/technical knowledge.
Trouble shooting. Self-practice and specific skills for students.*

Funding

How can a school possibly afford what is required on decile 10 funding. Our funding is simply not fair at present. We cannot afford a suite or the maintenance and improvement money required to sustain IT.

Financing ICT on a "shoe string" budget.

Resourcing - and new technologies available. How are we supposed to fund keeping up to date with the pathetic amount of money provided for the purpose?

Planning for the future, percentage of budget.

Obtaining additional resources/ funding.

Re management. What is a reasonable level of budget annually to meet everyone's needs - priorities - minimum of where the school is at.

Who provides cost effective, specialised person specific training for teachers who are just learning how to use computers.

Funding audible for programmes. Equipment and hardware purchases.

How to fund it.

Linkage to curriculum/classroom teaching. Keeping us with the cost of technology, how to get the money????

Economical ways of funding.

Funding adequately to meet our needs and expectations of MOE/ERO.

Funding of hardware, lease versus purchase.

Technical component. Most cost effective way of using computers.

Purchasing of recycled equipment.

How to gain significant numbers of computers and related hardware out of an almost non-existent budget without having to spend unavailable time chasing money.

Security issues, funding of systems management.

Managing, the financial demands ICT is by far the biggest demand on our finances.

Hardware/software

Independent (of sales comparisons) advisors or hardware and software.

Hardware/software maintenance.

The licensing of software.

Using computers for teaching and learning. How to keep up to date with hardware and software without huge costs. Technical support that doesn't cost megabucks. How to not waste time with these looks for learning.

Technical support for school ie repairs and maintenance.

Castings for hardware - best use of money

What hardware and software to look for? How do you bring teachers into the "loop" e.g. get them up and going?

What software is available and more website locations for schools.

Future planning - likely length of life of hardware, like the property five year plan.

Being kept up to date with new developments in both hardware and software. Addressing problems.

Continuation own personal ICT development and knowledge to lead staff/students/BOT. Knowledge of software/hardware/technical knowledge. Trouble shooting. Self practice and specific skills for students.

Being able to access more funding to pay for software and professional development for teachers.

Strategic planning. Information on developments within educational contexts e.g. effective soft/hardware for video conferencing.

Hardware/ Asset management.

Funding audible for programmes. Equipment and hardware purchases.

Funding of hardware, lease versus purchase.

How to gain significant numbers of computers and related hardware out of an almost non-existent budget without having to spend unavailable time chasing money.

Technical support

Time allowances (reasonableness) and contracting additional technical support.

Technical aspects and problem solving. How to speed up computer reactions. Integrating computers with the classroom.

Managing and assessing technical support at a reasonable cost. Ongoing time for teacher responsible if ICT support to work with staff. Technical and software available for assessment/reporting. "User friendly".

Administration/ technician support.

Teacher development programme support.

Technical aspects.

Technical (and free technical) support in rural areas. Free resourcing advice.

Technical support - cluster or pay a person. More help in getting this organised.

Economical ways of getting technical support.

Technical support.

Technical support.

Making dollars go further.

It policies related to privacy and copyright.

Staffing to achieve high standards in teaching and learning and to have a technically reliable system.

Establishing an intranet and ensuring staff use it, integrating ICT in the T/L processes. Ensuring appropriate technical support to manage the network.

Technical knowledge.

Technical support. Training so that we can fix problems ourselves.

Technical upskilling.

Technical aspects. Classroom use of stand alone PC's. Motivating staff use. Software such as MUSAC etc.

Effective strategic for implementation in class programmes. Cost effective (for schools) technical support.

Managing the technical areas.

Network maintenance.

Network Trouble shooting.

Technical support, technicians work as with isolation this has been our biggest problem. Management of files and programmes.

Integrating ICT into curriculum areas. Technical support.

Technical component. Most cost effective way of using computers.

Using computers for teaching and learning. How to keep up to date with hardware and software without huge costs. Technical support that doesn't cost megabucks. How to not waste time with these looks for learning.

Technical support for school ie repairs and maintenance.

Web site design and development

Use of internet to develop learning knowledge of pupils in researching information for units and topics. Need upskilling on finding websites, whockng. What sites and how do we use information we have found.

Building websites. Establish web quests based NZ curriculum statements. Integration with visual hang strand.

Websites/Internet. Networking.

Creating a school web site and maintaining it.

Renting versus buying computers. Developing a school programme.

Use of knowledge of a digital camera, scanner, Internet and setting up a web page.

Best classroom practise. Forming web pages.

Getting a school web page up and running.

Establishing Websites.

Developing a home page, web site. Linking with other schools. Learning more about the use of some ICTs, CD Burner, Webcam etc.

Placing teaching and learning resources on a website. Effectively networking our school which as many prefabs. Pushing ICT professional development for teachers on an ongoing basis.

Good WWW sites - curriculum, management. Professional development.

Networking to all classrooms, internet access for all children and developing a school web page.

Web page design, curriculum integration through ICT.

What software is available and more website locations for schools.

Other

None at this stage.

Total school programming.

Using the MUSAC software, I.e. pupil files, classroom manager.

Net protocols. Using CD's for work samples and student records.

Applying for a head school application.

Whether I am making the right choices by considering computers as a tool at this stage.

Global learning.

Professional development.

One to one training over a number of days and no other problems to worry about.

Documentation of data - graphing etc. Creating more effective/interesting formats. Using associated technologies confidently.

More indepth programmes on computer up-dating- planning and programming of.

Where does the money for small rural school come from to cover routine.

Using computers in all curriculum areas.

Programmes to use on the computer.

Cluster or district ICT meetings (like principals first workshop_ at least once a year to update collectively development and new technology.

Caching

Appropriate Websites, programmes.

How principals can use computers to enhance and make their work load easier.

Use in curriculum, how to use the tools across the curriculum and across the years.

How to find what we need. Where to place computers for the best educational use.

Hands on operational training.

The ongoing development of learning support sites. A refinement of search facilities for staff.

Better use of computers as a regular part of the teaching and learning process.

How to use the computer more effectively in a classroom. That benefits/enhances learning.

Monitoring student progress.

Me: Personal tuition on basic computer knowledge - WORD.

Emails for individual children in classroom.

Basic administrative skills for management.

Distance learning with Internet.

Internet/network safety and security.

Politics and Procedures

Independent evaluation of programmes visiting advisors.

Internet safety policies/guidelines. Basic trouble shooting.

Too long ago to remember.

Increasing bandwidth.

Programmes that would assist in data analysis for curriculum review and individualised to the child's needs.

A simplified way of getting advice about making decisions and plans for ICT.

Examples of ICT related to learning area objectives or topics would be useful.

For example, topic study, cartoons. Good websites to visit for information, good drawing programmes, animation programmes.

Multimedia presentations. Database and spreadsheets for record keeping.

Using a suite in contrast, as well as classroom computers.

**Appendix D: Māori Medium schools current and future
PC purchases**

Table 34: Proportion of schools which currently have and intend to purchase these brand of PCs/IBMs

Q9. Thinking about all of the PCs/IBM compatible computers in your school, how many of each of the following brands do you have, or plan to purchase in the next 12 months?

<i>Unweighted base</i>	Maori Medium schools	
	A. Have in current use (n=12*) %	B. Intend to purchase in next 12 months (n=5*) %
Acer	3	11
Advantage	0	0
Atec	7	13
Compaq	21	24
Cyclone	3	0
Dell	2	0
Digital	3	0
Edge/KTX	9	4
Gateway/PC Direct	6	0
Hewlett-Packard	15	6
IBM	15	3
Ipex	0	0
Itec	2	9
Mitac	0	0
NEC	0	0
Silicone Systems	0	0
TL Systems	0	0
TMC	2	0
Total Peripherals	0	0
Ultra	0	0
Other	48	29
Total	100	100

Note: Components may not always add to 100% exactly because of rounding.

Base=all schools who have PCs/IBM compatible computers (60 schools did not answer this question)

*Caution: low base number of respondents—results are indicative only.

Table 35: Proportion of schools which currently have and intend to purchase these brand of laptop/notebook PCs.

Q10. Of all the PCs used in your school that are laptop/notebook PCs, how many of each of the following brands do you have, or plan to purchase in the next 12 months?

<i>Unweighted base</i>	Maori Medium schools	
	A. Have in current use (<i>n=9*</i>) %	B. Intend to purchase in next 12 months (<i>n=2*</i>) %
Acer	18	39
Compaq	12	0
Cyclone	0	0
Dell	3	0
Digital	0	0
Edge/KTX	0	0
Gateway/PC Direct	0	0
Hewlett-Packard	0	0
IBM	5	20
Mitac	0	0
NEC	1	0
Toshiba	42	41
Total Peripherals	3	0
Other	15	0
Total	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Caution: low base number of respondents—results are indicative only.

**Approximately 30% of schools do not have any laptop/notebook PCs

Table 36: Proportion of schools which currently have and intend to purchase these brand of PC servers.

Q11. Of all the PCs currently used in your school, how many of each of the following PC servers do you have, or plan to purchase in the next 12 months?

<i>Unweighted base</i>	Maori Medium schools	
	A. Have in current use (<i>n=7*</i>) %	B. Intend to purchase in next 12 months (<i>n=1*</i>) %
Acer	1	0
Advantage	1	0
Atec	7	100 (<i>n=1</i>)
Compaq	25	0
Cyclone	1	0
Dell	1	0
Digital	1	0
Edge/KTX	1	0
Gateway/PC Direct	1	0
Hewlett-Packard	1	0
IBM	13	0
Mitac	1	0
NEC	1	0
Toshiba	8	0
Total Peripherals	1	0
Other	31	0
Total	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Caution: low base number of respondents—results are indicative only.

**Approximately 25% of schools do not have any PC servers