ICT in Schools 2007
Draft Report

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Contents

1.0 Executive Summary

Introduction and background

Since 1993, the IT industry has carried out a survey of Information and Communications Technology (ICT) in New Zealand schools every one to two years[1]. These surveys have been undertaken in co-operation with the Ministry of Education and with the support of other government agencies. As in 2005, the Trustees of the 2020 Communications Trust agreed to coordinate the research.

Research New Zealand was first commissioned in 1994 (then known as BRC Marketing & Social Research) 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, including the use of networks, software in use by schools, and ICT related equipment and its teaching applications.
- Internet access and usage.
- ICT planning and funding in schools.
- E-learning developments.
- Professional development for teachers and principals.
- Principals' attitudes towards the use of ICT in schools.
- ICT in schools and the wider community.
- Use of social software.

[1] Work previously carried out by Telecom Education Foundation (TEF) between 1993 and 1996, Information Technology Advisory Group (ITAG) between 1998 and 1999, and The Learning Centre Trust of New Zealand (TLCT) between 2001 and 2003.

Research approach and methodology

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

1. The **Equipment** questionnaire concerned ICT equipment and its use (answered by a staff member who had a good knowledge of computing and telecommunications equipment).

2. The **Principals'** questionnaire concerned professional development, ICT planning, management and use in the school, spend on ICT, and attitudes towards ICT.

Questionnaires were sent to 971 schools (470 primary and 501 secondary) on 24th August 2007. This year, for the first time all schools were offered the opportunity to participate on the Internet. Each questionnaire contained a web address to the survey, as well as unique logins and passwords for each school. The cut off date for the questionnaires was 21st September 2007, at which stage 278 completed Equipment questionnaires and 316 completed Principals' questionnaires had been received either by post or online. The response rates were 29 percent and 33 percent respectively.

Included in the sample of 971 schools were all 104 Māori Medium schools, of which 22 Principals' and 20 Equipment questionnaires were returned. The response rates for Māori Medium schools were 21 percent for the Principals' questionnaire and 19 percent for the Equipment questionnaire.

It is also important to note that survey results may show slightly more use of ICT 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 the survey.

All results may be subject to non-response bias, which is an unknown that cannot be calculated. Caution should therefore be used when interpreting these survey results.

Major findings of the 2007 survey

Outlined below are several major findings of the 2007 ICT in Schools survey. More detail is provided in the main findings of this report, which follows.

Internet access and connectivity

- Nearly all schools have access to the Internet (100 percent of secondary and Māori Medium schools, 99 percent of primary schools). Overall, schools more commonly reported 80 percent or more of their computers were connected to the Internet.
- Most schools also have an Internet safety policy or strategy (99 percent primary, 98 percent of secondary and 100 percent of Māori Medium schools.
- Three quarters of secondary schools (75 percent) have both Internet monitoring and filtering, compared with 52 percent of primary schools and 66 percent of Māori Medium schools.
- Most schools use a high-speed (broadband) Internet connection (86 percent of secondary, 84 percent of both primary and Māori Medium schools).

Awareness of KAREN

- Less than a third of school principals were aware of KAREN (Kiwi Advanced Research and Education Network) (30 percent of secondary, 16 percent of Māori Medium and 12 percent of primary schools).

Computer access, usage and networking

- The ratio of computers to students is now one computer for every three secondary students, and one computer per four primary school students.
- More than one-in-four schools (27 percent) mostly run computers three years old or older. For these schools the old computers account for more than three-quarters of all their computers. There is also evidence that Māori schools are less likely to have new machines.
- A total of 80 percent of schools can be described as 'networked' (80 percent or more classrooms are linked by cable). This year's results also revealed that nearly one-in-four (23 percent) of all schools are networked wirelessly (in at least 80 percent of the school's classrooms).

Professional development

- Principals are continuing to give priority to ICT professional development (ICT PD). Over two thirds of principals (69 percent) indicated that they had attended an ICT professional development programme during the last 12 months and a similar proportion (66 percent) intend to participate in further professional development during the next 12 months.
- Teacher professional development is receiving a similar high priority with 69 percent of all schools indicating that at least half of their teachers would be participating in ICT PD during the next 12 months.

- The majority of school principals were participating or had participated in the Principal Laptops initiative (97 percent of primary, 94 percent of secondary and 90 percent of Māori Medium schools).

- Up to 92 percent of primary, 95 percent of secondary and 98 percent of Māori Medium schools reported participating in the TELA Teacher Laptops programme.

- Continuing the trend from earlier years, an increasing proportion of principals report efficiency and quality improvements in curriculum delivery through the use of ICT (70 percent of primary and 72 percent of secondary schools report efficiency gains and 68 percent of primary and 77 percent of secondary schools report quality improvements).

School web sites

- While there has been some change in the proportion of secondary schools with web sites (90 percent cf. 85 percent in 2005)[2], the proportion of primary schools has increased noticeably (67 percent cf. 50 percent in 2005).

- In 29 percent of all schools with web sites, responsibility for updating the web site is still in the hands of the ICT support technician.

e-learning

- Schools are demonstrating a strong interest in e-learning, with the technology infrastructure largely already in place. In particular, schools are pursuing e-learning to provide staff and students access to e-mail services and make learning or teaching material available.

ICT spending

- The proportion of schools' ICT spending from their Operations Grants is ten percent for both primary and secondary schools and 11 percent among Māori Medium schools.

- The TELA laptops for teachers programme has had a major impact on accessibility of laptops for schools, and has become the primary source of schools' laptops. Desktop computers are mostly purchased or leased from a reseller.

[2] Throughout the report "cf." is used as an abbreviation for the Latin word *confer*, meaning "compare".

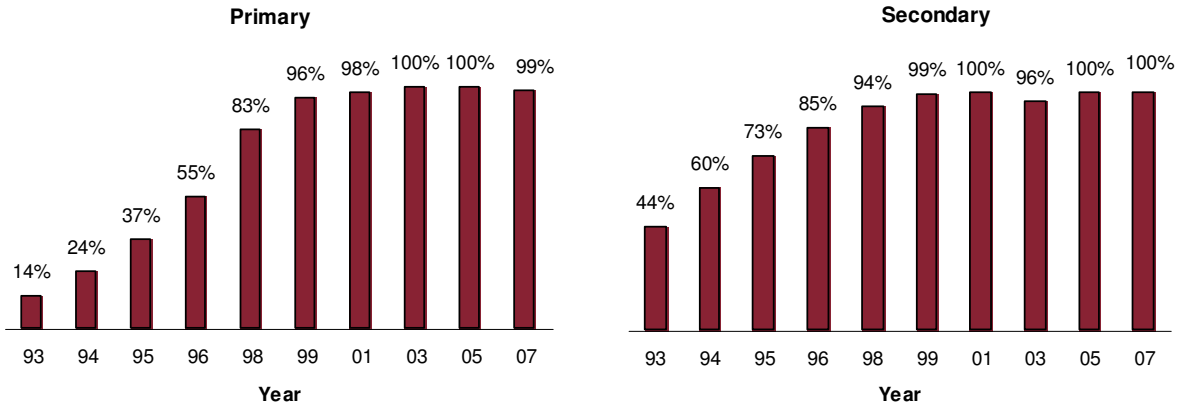
Findings: Internet access, infrastructure, and usage

The Internet

- All secondary and Māori Medium schools (100 percent) and nearly all primary schools (99 percent) are now online (Graph 1).

Graph 1: Percentage of schools online (1993-95: with modem; 1996-99, 2001, 2003, 2005, 2007: with Internet access)

E-Q6 How many of the total computers in your school connect to the Internet (either through a network or modem)?



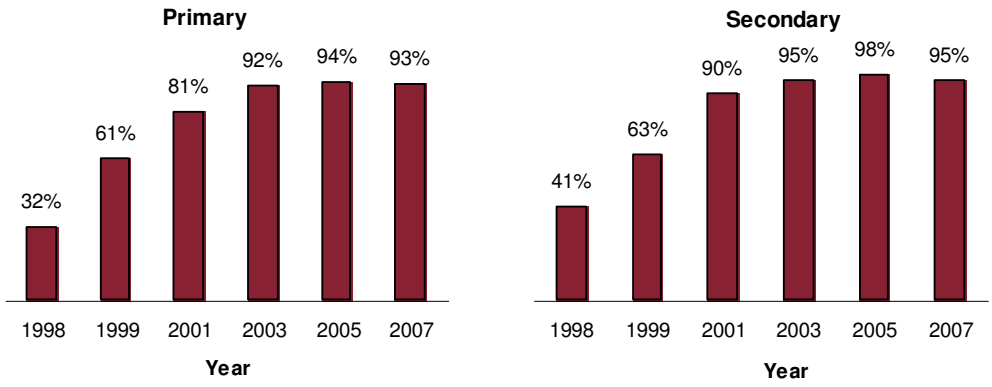
Base: primary (n=131), secondary (n=147).

- Furthermore, when considering the proportion of computers with the ability to connect to the Internet, schools most frequently reported that 80 percent or more of their computers could do so (92 percent secondary, 86 percent primary and 83 percent of Māori Medium schools).

- As shown in Graph 2, nearly all principals report they use e-mail at least once a day.

Graph 2: Percentage of principals using e-mail at least daily

P-Q3a How often do you personally use each of the following Internet services (either at home or school): e-mail?



Base: primary (n=154), secondary (n=162).

- Reported usage of e-mail was higher among teachers than students. Up to 65 percent of all schools reported that at least three quarters of their teaching staff used e-mail during a week, while the corresponding figure among students was 17 percent.

Internet access for students

- All schools, except one percent of primary schools, had at least one area where students could use computers with Internet capability. The most common place for accessing the Internet among secondary schools was in the library (93 percent) while among primary and Māori Medium schools it was in the classrooms (94 percent and 80 percent respectively).

- The school curriculum areas with the most computer and Internet use were Computer Studies, Social Science, Mathematics and English.

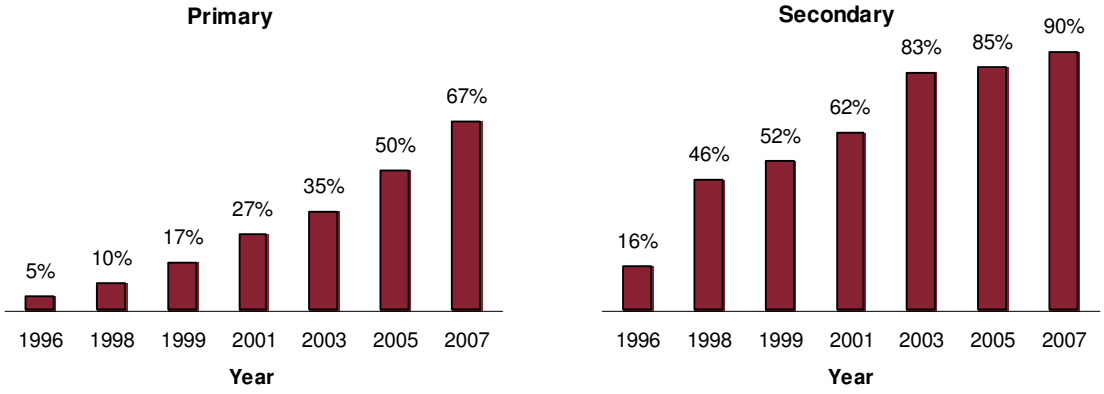
- In secondary and Māori Medium schools, the students' access to social software sites was most frequently managed by the school blocking the sites (44 percent and 45 percent respectively), whereas in primary schools the sites were blocked by an Internet Service Provider (34 percent).

Web sites

- The number of primary and secondary schools with school web sites has increased (Graph 3). Also, 58 percent of Māori Medium schools now have a web site, compared with 49 percent in 2005.

Graph 3: Percentage of schools with web sites

E-Q39 Does your school have a website?



Base: primary (n=131), secondary (n=147).

- Only four percent of secondary, eight percent of primary and 12 percent of Māori Medium schools do not plan to have a web site.

Local networking

- Overall, 80 percent of schools surveyed had 80 percent or more of their classrooms networked. Wireless networking technology has begun to have an impact (based on total sample) with nearly one-quarter (23 percent) of schools reporting that 80 percent or more of their classrooms were networked wirelessly.

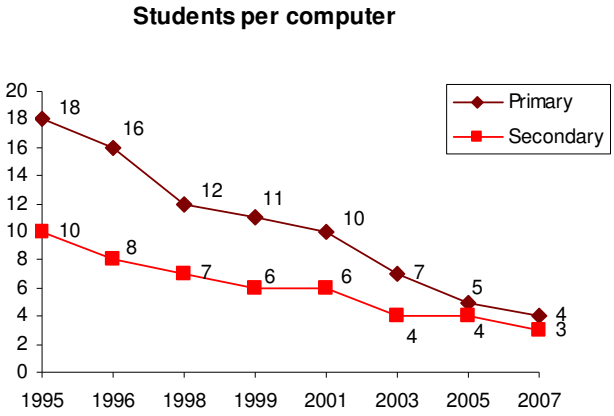
- Few schools did not use any networking software (six percent of primary, two percent of secondary and Māori Medium schools).

Computer numbers and types

- The ratio of students per computer continues to improve (Graph 4). Reported numbers show there was one computer for four primary school students and one computer for three secondary school students.

Graph 4: Average number of students per computer (in total)

E-Q1 In total, how many computers are there in your school?



Base: primary (n=103), secondary (n=116).

- With the exclusion of computers used mainly for administration, the ratio of students per computer continues to look favourable: five primary school students per computer and three in secondary schools.

- Students were the main users of computers in all schools (57 percent of secondary, 50 percent of primary and 44 percent of Māori Medium schools).

- Computers in schools continued to more often be PCs (90 percent of secondary, 88 percent of Māori Medium and 79 percent of primary schools), followed by Apples/Macs (20 percent of primary and nine percent of both secondary and Māori Medium schools).

Software

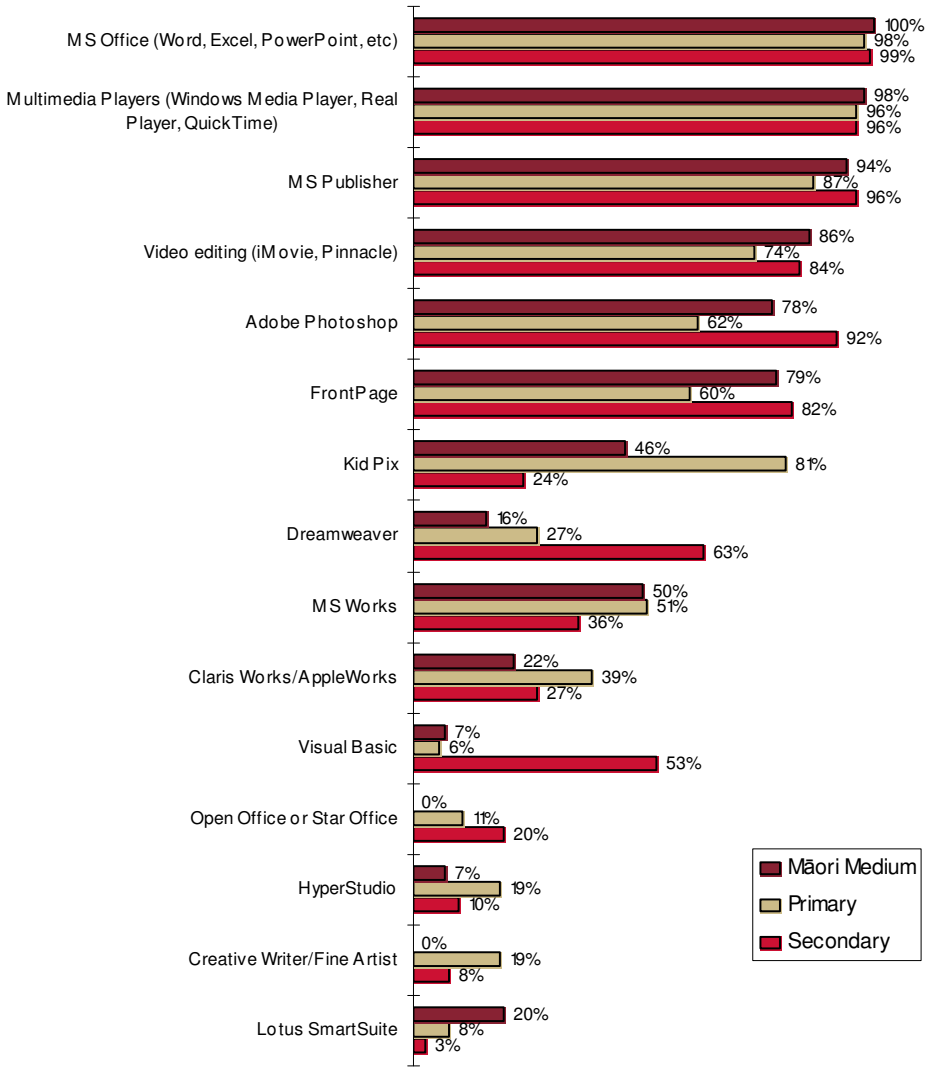
- Of the various software packages running on at least one computer, most schools reported they had MS Office, Multimedia Players and MS Publisher (Graph 5).

- Eighty-two percent of Māori Medium schools used software that supports macron use for Te Reo Māori, while it was only used by 46 percent of secondary and 21 percent of primary schools.

- Schools were also asked about anti-virus software. Most used eTrust (82 percent of Māori Medium, 79 percent of secondary and 63 percent of primary schools) or Norton Antivirus (25 percent of primary, 18 percent of secondary and 16 percent of Māori Medium schools).

Graph 5: Software in schools (running on at least a few computers)

E-Q34 Roughly what percentage of your school's computers run the following software packages?



Base: primary (n=95), secondary (n=118), Māori Medium (n=12*).
*Caution: low base number of schools – results are indicative only.

Use of ICT equipment

- For lesson delivery, schools often reported the use of DVD players/recorders, CD-ROMs, digital still cameras, video players, data projectors and digital video cameras. For lesson planning and administration purposes, laptop and desktop computers were most often used.

Findings: Refurbishing and disposing of computers

- Awareness of the computer-refurbishing scheme Computer Access New Zealand Trust (CANZ) was reasonably high. Seventy percent of Māori Medium school principals had heard of it, as had 69 percent of primary and 63 percent of secondary school principals.

- Among principals that were aware of the scheme, 22 percent of primary and 21 percent of secondary schools had made purchases through it.

- Most frequently schools dispose of their computers by taking them to the landfill (51 percent of primary, 42 percent of secondary and 43 percent of Māori Medium schools) or putting them in storage (31 percent of primary, 26 percent of secondary and 36 percent of Māori Medium schools).

- End of life disposal options for computers are factors in the purchasing decisions at 41 percent of Māori Medium, 27 percent of secondary and 23 percent of primary schools.

- Among all schools, computers appear to be somewhat aged. In 64 percent of Māori Medium schools, at least half of the computers were more than three years old. For primary and secondary schools the proportions with this amount of older computers were 60 percent and 58 percent respectively.

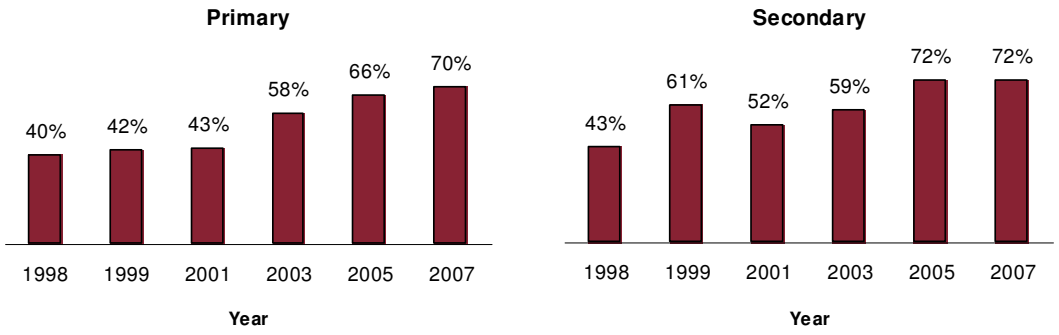
Findings: Principals' perceptions of ICT

Principals' attitudes towards ICT in schools

- Similar numbers of primary and secondary school principals agreed ICT was improving both the efficiency (70 percent and 72 percent respectively) and the quality (68 percent and 77 percent respectively) of curriculum delivery in their school (Graph 6 and Graph 7).

Graph 6: Perceived impact of ICT on *efficiency* of curriculum delivery

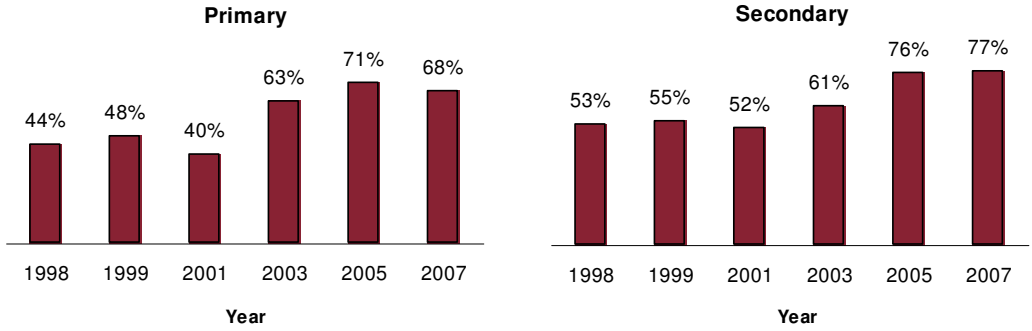
P-Q11b Please indicate the extent to which you agree or disagree with: The integration of ICT is already making major improvements to the efficiency of curriculum delivery at our school. (Percentages show 'agree' or 'strongly agree' responses)



Base: primary (n=154), secondary (n=162).

Graph 7: Perceived impact of ICT on *quality* of curriculum delivery

P-Q11a Please indicate the extent to which you agree or disagree with: The integration of ICT is already making major improvements to the quality of curriculum delivery in our school. (Percentages show 'agree' or 'strongly agree' responses)



Base: primary (n=154), secondary (n=162).

- Slightly fewer numbers of Māori Medium school principals agreed ICT was improving the efficiency (63 percent) and the quality (68 percent) of curriculum delivery in their schools.

Assessment of ICT in the school

- Overall, schools most often assessed the impact of ICT in their schools through feedback provided by teachers (82 percent of primary, 83 percent of secondary and 80 percent of Māori Medium schools).

- The value of ICT was not assessed in 11 percent of primary schools, compared with five percent of Māori Medium and seven percent of secondary schools.

Stage of teacher adoption of ICT in schools

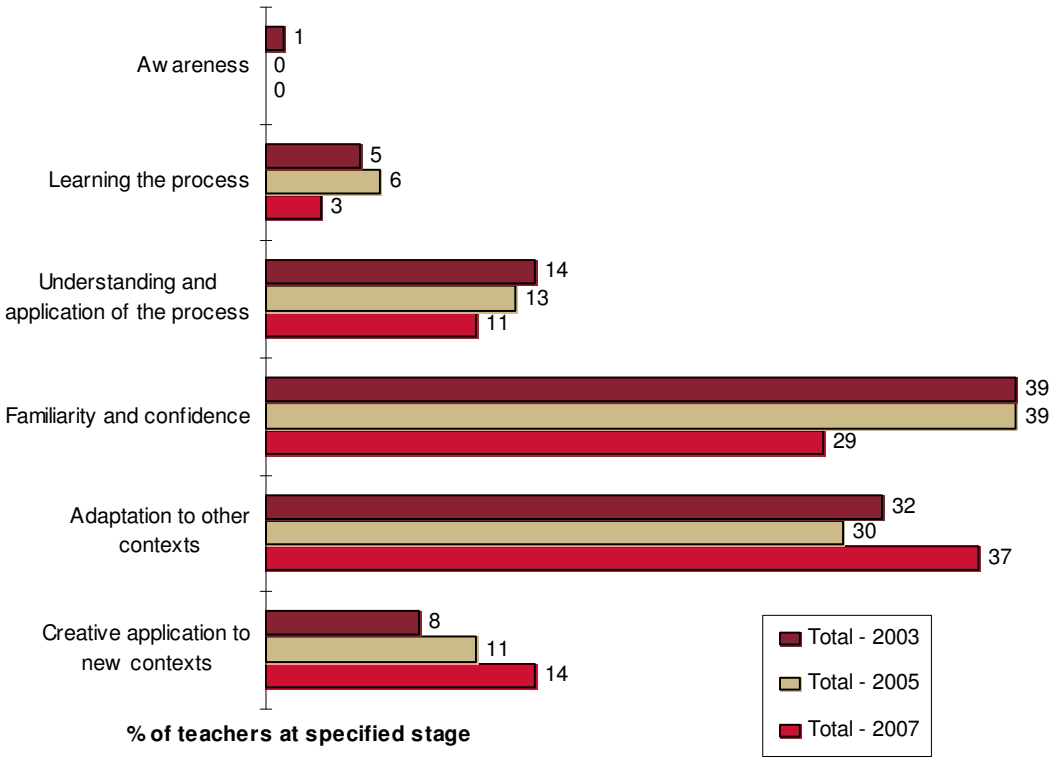
- In terms of defining stages for the adoption of ICT[3], principals more often believed their teachers were in the *adaptation to other contexts* (32 percent of Māori Medium, 36 percent of primary and 38 percent of secondary schools) and *familiarity and confidence* (30 percent of secondary, 29 percent of primary and 23 percent of Māori Medium schools) stages.

Graph 8 overleaf the relative stages of teacher adoption of ICT in schools from 2003 to 2007.

[3] Through adapting a research instrument: Gerald Knezek and Rhonda Christensen (November 1999), "Stages of Adoption for Technology in Education", *Computers in New Zealand Schools*.

Graph 8: Teachers' adoption of ICT in schools

P-Q32 There are six stages in the adoption of technology (as identified by 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.



Base: 2007 (n=316), 2005 (n=285), 2003 (n=314).
Note: Special schools have been omitted from calculations in all years.

2.0 Introduction and objectives

Since 1993, the IT industry has carried out a survey of Information and Communications Technology (ICT) in New Zealand schools every one to two years[4]. These surveys have been undertaken in co-operation with the Ministry of Education and with the support of other government agencies. As in 2005, the Trustees of the 2020 Communications Trust agreed to coordinate the research.

Research New Zealand was first commissioned in 1994 (then known as BRC Marketing & Social Research) 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, including the use of networks, software in use by schools, and ICT related equipment and its teaching applications.
- Internet access and usage.
- ICT planning and funding in schools.
- E-learning developments.
- Professional development for teachers and principals.
- Principals' attitudes towards the use of ICT in schools.
- ICT in schools and the wider community.
- Use of social software.

The underlying methodology and many of the questions of previous surveys were repeated this year, enabling several trends to be measured. However, several questions are asked for the first time this year. These new questions reflect the objectives of the sponsors funding the survey and the continued changes in ICT since 1993.

[4] Work previously carried out by Telecom Education Foundation (TEF) between 1993 and 1996, Information Technology Advisory Group (ITAG) between 1998 and 1999, and The Learning Centre Trust of New Zealand (TLCT) between 2001 and 2003.

3.0 Methodology

3.1.1 Sampling and response rates

The sample was a random selection of primary and all secondary schools from the Ministry of Education's database. This year 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 over-sampling of Māori Medium schools. Weights used are detailed in Appendix A.

Response rates and incentive

For the first time, both surveys were also available to be completed on the Internet. Questionnaires were sent to 971 schools (470 primary and 501 secondary) on 24th August 2007. The cut off date for the questionnaires was 21st September 2007.

Composite schools (e.g. Area schools) were classified as "secondary" for this survey. Reminder letters were sent to those schools that had not returned their questionnaires by 19th September 2007.

By 25th October 2007, **278** completed Equipment questionnaires and **316** completed Principals' questionnaires had been received, giving response rates of 29 percent and 33 percent respectively. Response rates were similar for secondary schools (29 percent response rate for Equipment, 32 percent Principals) and for primary schools (28 percent Equipment, 33 percent Principals). The number of Equipment questionnaires returned by post was 214 and 249 for the Principals' questionnaire. Among those using the online option, 64 completed the Equipment questionnaire and 67 the Principals' questionnaire.

Included in the sample of 971 schools were all 104 Māori Medium schools, of which 22 Principals' and 20 Equipment questionnaires were returned. Of the 22 Principals' questionnaires returned, 14 were from Te Kura Kaupapa Māori schools, 7 from Bilingual schools, and 1 from a Secondary Māori Boarding school. Of the 20 Equipment questionnaires returned, 10 were from Te Kura Kaupapa Māori schools, 8 from Bilingual schools, and 2 from Secondary Māori Boarding schools. Due to the small sample sizes, these school types have been combined into Māori Medium schools. Therefore, the response rates for Māori Medium schools are 21 percent for the Principals' questionnaire and 19 percent for the Equipment questionnaire.

The response rates overall were probably helped considerably by the substantial prizes offered by one of the survey sponsors (asnet Technologies Limited provided two wireless Polycom SoundStation2W conferencing phones for a prize draw and all schools that completed a questionnaire online also went into a prize draw for ten SKYPE-certified Polycom Communicators).

As explained later, the incentives were used as an attempt to maximise the response rate thus reducing non-response bias.

3.1.2 Reporting and interpretation

Margins of error

Indicative 'margins of error'[5] for most results are six percent to 20 percent (plus or minus), as shown in Table 1. For example, if a result shows that around 50 percent of secondary schools' principals have responded in a certain way, then 19 times out of 20 the true value lies between 43 percent and 57 percent. Margins of error are higher for Māori Medium schools (Table 1).

Table 1: Maximum margins of error

	Equipment questionnaire	Principals' questionnaire
Primary schools	8.6%	7.8%
Secondary schools	7.2%	6.6%
Māori Medium schools	19.7%	18.6%

Of note, 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 some questions. Such margins of error would have to be calculated separately for each question, which has not been done.

Reporting

All results presented in this report are based on the total sample of returned questionnaires. Where a response was not provided where one was expected, one cannot begin to assume what the response may or may not have been. Hence all results are based on the responses received and "no responses" are not included in the analysis and reporting. However, where results are compared with those from previous years, "no responses" are included because they were included in previous years.

Interpretation

Throughout the report, some findings indicate a zero percent response calculated for schools. This, however, does not necessarily imply no schools answered this response, but rather these responses are less than 0.5 percent and have been rounded down to zero.

Given the different sampling framework applied and weighting scheme used, comparisons with previous surveys should be treated with caution and are indicative only.

Given the low sample of Māori Medium schools (n=22 answering the Principals' and n=20 answering the Equipment questionnaire), their findings should be treated with caution and are at best indicative.

[5] Technically, these are 95 percent confidence intervals assuming the true proportion is 50 percent. Margins of error decrease where the true proportion is far from 50 percent, e.g. 10 percent or 90 percent. As the samples represent proportions of the school populations, margins of error are calculated differently. If it were not for this, margins of error would otherwise be slightly higher than those achieved in this survey.

Bias

It is important to note that these results may show a little more use of ICT 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 the survey.

Non-response bias

As the objective of any sampling scheme is to obtain a body of data that can be interpreted as representative of the population of interest, it is unfortunate that some sample members become non-respondents. This may include:

- A refusal to respond.
- A lack of ability to respond.
- The appropriate person required to complete a questionnaire being unavailable.

All results may therefore be subject to a non-response bias. However, the seriousness of non-response bias is unknown as it depends on the extent of the non-response, as well as how the non-respondents differ from the respondents, particularly on key questions of interest. The non-response bias is an unknown that cannot be calculated. Caution should therefore be used when interpreting these results.

However, Research New Zealand has taken all feasible steps to minimise the extent of non-response bias through:

- Availability of the online option to complete questionnaires in addition to the paper questionnaires sent to all schools.
- The use of reminder/follow-up letters to the main sample to raise potential interest in the survey topic.
- Testing the design and placement of survey questions through peer reviews.
- An incentive to complete the questionnaires (two Polycom SoundStation2 conferencing phones from asnet Technologies Limited).

3.1.3 Questionnaires

For this survey, two questionnaires were used and were based on those used in 2005. This approach of using two separate questionnaires ensured specific questions were answered by a person who could most easily and accurately answer them (as well as keeping questionnaire length within generally tolerable limits). The two questionnaires are briefly explained below:

1. The **Equipment** questionnaire concerned ICT equipment and its use (answered by a staff member who had a good knowledge of computing and telecommunications equipment).

2. The **Principals'** questionnaire concerned professional development, ICT planning, management and use in the school, spend on ICT, and attitudes towards ICT.

Where the intent was to map and measure trends over time, similar questions were asked to previous surveys. Conversely, various questions were changed, omitted, or added for reasons including the following:

- Change of sponsors, reflected in the change in focus of some questions.
- 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?"
- Changes and development of new ICT policies, e.g. participation in Kaupapa Ara Whakawhiti Matauranga initiative, formal policies and initiatives for the use of recycled computers in schools, disposal of computers, and awareness of the Kiwi Advanced Research and Education Network.

The Equipment and Principals' questionnaires have been included as Appendix B.

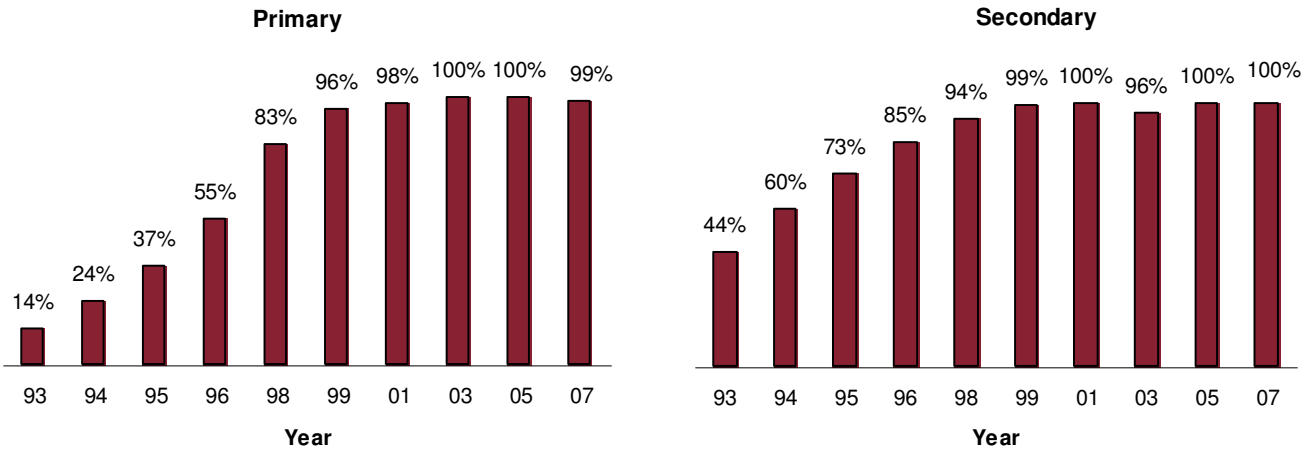
4.0 The Internet

4.1 Internet access

All secondary and nearly all primary schools reported that they had an Internet connection. Furthermore, among responses from Māori Medium schools, 100 percent reported having an Internet connection (Graph 9).

Graph 9: Percentage of schools online (1993-95: with modem; 1996-99, 2001, 2003, 2005, 2007: with Internet access)

E-Q6 How many of the total computers in your school connect to the Internet (either through a network or modem)?



Base: primary (n=131), secondary (n=147).

The table below (Table 2) provides a more detailed picture of Internet access within schools. Among primary, secondary, and Māori Medium schools, it was most frequently reported that 80 percent or more of their computers were connected to the Internet (92 percent secondary, 86 percent primary and 83 percent of Māori Medium schools).

Table 2: Percentage of computers connected to the Internet

E-Q6 How many of the total computers in your school connect to the Internet (either through network or modem)?

Base =	Primary 131 %	Secondary 147 %	Māori Medium 20* %
Less than 20%	2	0	0
20-39%	1	2	0
40-79%	10	6	17
80-100%	86	92	83
Don't know	1	0	0
No response	0	1	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

The most frequently mentioned connection type was an ADSL modem (Table 3). This was reported by 73 percent of primary schools, 69 percent of secondary schools and 75 percent of Māori Medium schools. Wireless Internet connections were also utilised by some primary schools (12 percent) and secondary schools (15 percent). Notably, only a small percentage of schools were still using Dial up modems (primary, secondary and Māori Medium all five percent).

Table 3: Internet connection type

E-Q7 What type(s) of connections do your school's computers use to connect to the outside world?

Base =	Primary 127 %	Secondary 146 %	Māori Medium 20* %
Dial up modem	5	5	5
ADSL	73	69	75
ISDN	6	1	0
Cable modems/ routers	6	10	12
Fibre loop	3	5	0
Frame relay	0	2	0
Unbundled Bit Stream	1	1	0
Satellite Internet	5	2	5
Wireless Internet	12	15	2
Other	8	5	2
Don't know	2	0	11

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

4.2 Internet usage

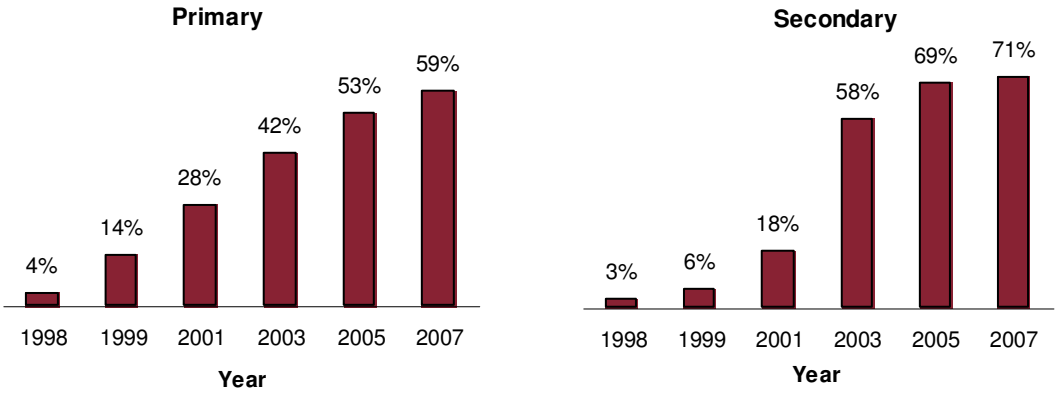
4.2.1 Usage by students, teaching and administration staff

As might be expected, with the increase in computer literacy, there has been an increase in the use of e-mail among the school teachers. The graph below (Graph 10) depicts reported usage of e-mail during a typical school week among full-time teaching staff.

Specifically, 71 percent of secondary schools reported that at least three quarters of their teachers used e-mail in a typical school week, compared with 59 percent of primary schools and 62 percent of Māori Medium schools.

Graph 10: Percentage of schools with 75 percent or more of their teaching staff using Internet e-mail weekly

P-Q4a During a typical school week, roughly what percentage of full-time teaching staff at your school use each of the following Internet services: e-mail?



Base: primary (n=154), secondary (n=162).

Student usage of e-mail was lower than for teachers. Nearly a third (31 percent) of secondary schools believed at least three quarters of their students used e-mail in a typical week, whereas only three percent was claimed in primary schools and six percent in Māori Medium schools.

Internet usage was also measured through other resources available to teachers. In terms of the Te Kete Ipurangi (TKI) web site, at least four out of five of all schools had one or more of their teachers accessing the site in a typical school week (93 percent Māori Medium schools, 88 percent primary, 82 percent secondary). The next most common Internet services, used by one or more of the teachers weekly, were closed online communities (56 percent Māori Medium, 54 percent secondary and 48 percent primary) and social software (49 percent secondary, 43 percent Māori Medium and 36 percent primary). In contrast, chat rooms, open online forums, ListServ, video conferencing and the NZ Biotechnology Portal were not commonly used among teachers. Teachers also did not frequently access the following websites: Any Questions, Index New Zealand Online, EPIC, Digistore, Studyit and WickED.

More often than not, estimates for numbers of students using these latter types of Internet resources were *none* or *don't know*. However, the following resources did receive some access, according to the school principals. Up to 41 percent of secondary schools believed at least one of their students accessed the TKI web site during a typical school week, compared with 38 percent of Māori Medium schools and 32 percent of primary schools. Secondary schools also reported that at least one student in a typical school week accessed Studyit (42 percent), Index New Zealand (INNZ) Online (41 percent), EPIC (34 percent) and online forums (32 percent).

Students at Māori medium schools frequently accessed Te Ara Encyclopaedia (58 percent compared with 37 percent of secondary and 28 percent of primary schools) and WickED (51 percent compared with 35 percent of secondary and 37 percent of primary schools). Also, 36 percent of Māori Medium schools stated that at least one of their students accessed the Any Questions Internet service in a typical school week.

4.2.2 Usage of social software

New to this survey was the examination of types of social software used at schools for educational purposes and whether they have been simply *accessed* (read or viewed only) or used to actively *participate* (create or publish own entries). When principals were asked what software their school used, it was reported that 31 percent of principals, 33 percent of teaching staff and 26 percent of students had *accessed* Wikipedia. The second most popular type of social software used and *accessed* for educational purposes was YouTube (16 percent of principals, 18 percent of teachers and 13 percent of students). Google Video had also been *accessed* by 11 percent of principals, while 15 percent reported their school's teachers *accessed* it (compared with only eight percent of students).

In comparison, for the purpose of *participating* (creating an entry), Skype was the most common software type among principals (eight percent) and teaching staff (seven percent). Principals reported that among their school's students, Bebo was most frequently used for this purpose (ten percent). Notably though, 80 percent of those principals who answered this question claimed they did not personally use social software for educational purposes, whereas 56 percent had not accessed the software at all.

There were not many differences between school types in their use of social software, especially for the principals' personal usage.

However, among teachers and students, secondary and Māori Medium schools sometimes had a higher estimated usage of the software sites than at primary schools. More teachers at secondary and Māori Medium schools *accessed* the site YouTube (20 percent and 21 percent respectively, compared with 16 percent of primary schools), as well as using it to *participate* (both ten percent, compared with one percent of primary).

This same trend occurred among students with those at 18 percent of secondary and 23 percent of Māori Medium schools having *accessed* YouTube (compared with eight percent of primary schools) and students at ten percent of secondary schools having used it to *participate* (compared with one percent of primary and no Māori Medium schools). This same pattern was also found among students for the sites Bebo, My Space and MSN.

4.2.3 Student usage of computers with Internet

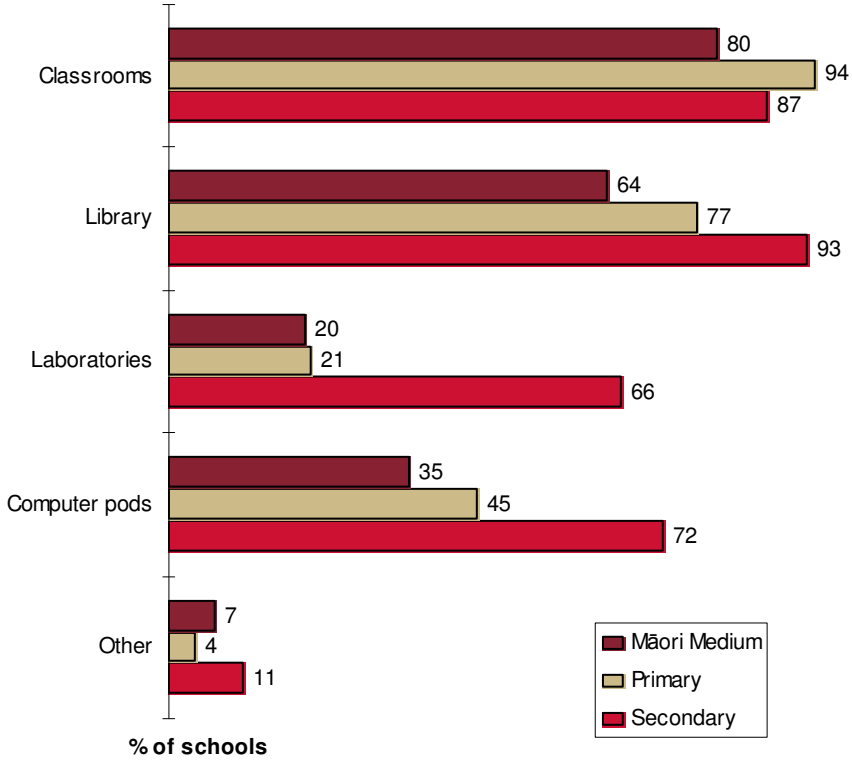
Areas of school with access

This year principals were also asked to provide information about where in the school students were able to use the Internet (see Graph 11 below). Of note, overall, schools said there was at least one area where students could use computers with Internet capability (only one percent of primary schools answered *none*). In secondary schools, the most common place for accessing the Internet was in the library (93 percent). For primary and Māori Medium schools, access was most frequently found in the classrooms (94 percent and 80 percent respectively).

Laboratories with access to the Internet were more frequently found in secondary schools (66 percent compared with 21 percent of primary and 20 percent of Māori Medium schools) as well as computer pods (72 percent compared with 45 percent of primary and 35 percent of Māori Medium schools).

Graph 11: Areas in schools with access to Internet

P-Q7 Where in your school do students have access to computers with Internet capability?



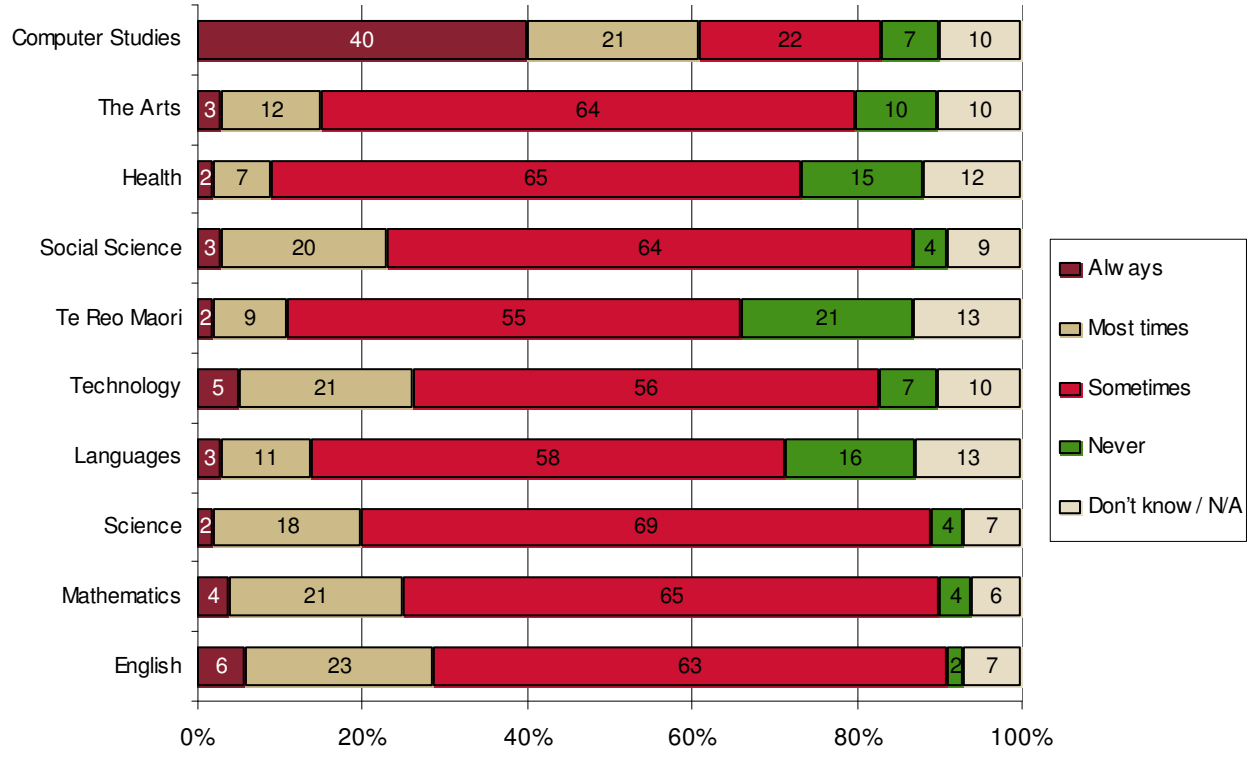
Base: primary (n=150), secondary (n=155), Māori Medium (n=22*).
*Caution: low base number of schools - results are indicative only.

Frequency of use in curriculum areas

It was also of interest how often students were using the computers and the Internet for each of their curriculum areas. Results based on the total sample of schools showed that in a typical school week, computers were mostly being used at least *sometimes* for nearly all subjects (Graph 12). The areas with highest proportions of computer use were Computer Studies, Social Science, Science, Mathematics and English. Those areas with the lowest proportions were Te Reo Māori, Languages and Health.

Graph 12: Frequency of computer or Internet use in curriculum areas (n=297)

P-Q8 During a typical school week, how often are students using computers and the Internet in the following curriculum areas?



When the results were analysed by school type, only a few differences were found. Primary school students were more likely to *never* use computers or the Internet for Languages (25 percent compared with eight percent for both secondary and Māori Medium schools). In Computer Studies, however, students at secondary schools were more likely to *always* use computers (64 percent compared with 11 percent primary and 40 percent at Māori Medium schools). For Te Reo Māori, Māori Medium schools had a higher proportion of students who *always* use the computers and Internet (19 percent compared with four percent primary and no students at secondary schools).

4.2.4 Computer access at home

The respondents were also asked to estimate computer and Internet access at home, for both teachers and students.

The table below (Table 4) shows that most teachers are able to access computers at home. Estimates showed that for primary schools, 95 percent of principals believed at least half of their teachers had access to a computer at home. At secondary schools this proportion was 90 percent and 84 percent at Māori Medium schools.

Table 4: Teachers' access to a computer at home

E-Q9a Please estimate the proportion of teachers with computer access at home.

Base =	Primary 129 %	Secondary 145 %	Māori Medium 20* %
10%–24%	1	0	2
25%–49%	1	3	9
50%–74%	6	4	5
75%–99%	27	53	5
100%	62	33	74
Don't know	3	8	5
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Estimates of student access to computers at home differed (Table 5) as fewer schools estimated that a large proportion of their students had computer access at home. Just under two-thirds (65 percent) of secondary schools believed at least half of their students had access to a computer, as did 61 percent of primary schools. For Māori Medium schools, only 34 percent estimated 50 percent or more of their students had access to a computer at home.

Table 5: Students' access to a computer at home

E-Q9c Please estimate the proportion of students with computer access at home.

Base =	Primary 126 %	Secondary 144 %	Māori Medium 19* %
1%–9%	1	1	10
10%–24%	9	5	10
25%–49%	11	9	7
50%–74%	29	23	24
75%–99%	30	38	10
100%	2	4	0
Don't know	19	19	39
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

The average estimated proportion of students with access to a computer at home among primary schools was 63.1 percent while among secondary schools it was 69.6 percent[6]. This in turn equates to about 278,700 primary and 219,900 secondary students who have access to a computer at home. Conversely, about 163,000 primary and 96,100 secondary students do not have such access.

As might be expected, high Internet access followed on from high computer access (Table 6). Similar to computer access, 90 percent of primary, 86 percent of secondary and 72 percent of Māori Medium school equipment administrators believed at least half of their school's teachers had access to the Internet at home.

Table 6: Teachers' use of the Internet at home

E-Q9b Please estimate the proportion of teachers with Internet access at home.

Base =	Primary 127 %	Secondary 143 %	Māori Medium 20* %
None	0	0	0
1%–9%	0	1	12
10%–24%	2	0	0
25%–49%	2	1	0
50%–74%	10	9	11
75%–99%	40	67	31
100%	40	10	30
Don't know	6	11	17
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Reflecting the lower estimation of home computer access among students, Internet access was also assumed to be much lower for students than it was for teachers. Just over half (54 percent) of primary schools and 64 percent of secondary schools estimated that at least half of their students had Internet access at home, whereas for Māori Medium schools this percentage was only 21 percent (Table 7 overleaf).

[6] Caution: the calculated averages are based on the midpoints of estimated ranges given by respondents – the results are indicative only. Reminder: Special schools were excluded from this year's survey, and therefore the estimated number of students with computers at home does not include students from this type of schools. Given the small sub-sample of Māori Medium schools, further analysis is not performed.
Also, while not directly comparable, according to Statistics New Zealand's 2005 Census, 71 percent of all households with school-aged children (households with at least one dependent child aged 5-18 years) had access to Internet at home in 2005. This ranged from 87 percent at North Shore City to just 40 percent in Opotiki District.

Table 7: Students' use of the Internet at home

E-Q9d Please estimate the proportion of students with Internet access at home.

Base =	Primary 128 %	Secondary 143 %	Māori Medium 20* %
1%–9%	5	1	19
10%–24%	9	9	9
25%–49%	13	7	7
50%–74%	29	25	12
75%–99%	23	35	9
100%	2	4	0
Don't know	19	19	43
Total	100	100	100

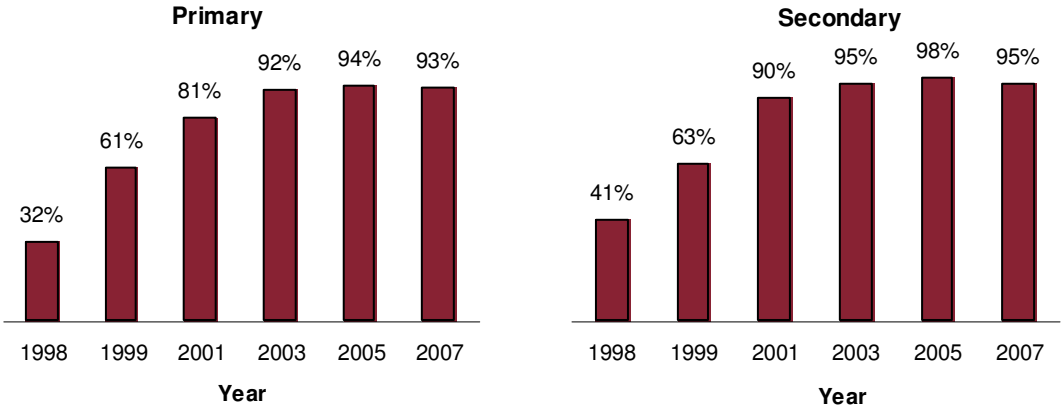
Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

4.2.5 Principals' usage

The daily usage of e-mail for principals has remained relatively constant over the past four years (Graph 13 below). Nearly all (95 percent) secondary principals reported using e-mail daily, either at home or school. Among primary school principals this percentage was 93 percent and 96 percent among those at Māori Medium schools. As shown in Table 8 below, only three percent of primary and one percent of secondary school principals reported *never* using e-mail.

Graph 13: Percentage of principals using e-mail at least daily

P-Q3a How often do you personally use each of the following Internet services (either at home or school): e-mail?



Base: primary (n=154), secondary (n=162).

Table 8: Use of e-mail by principals

P-Q3a How often do you personally use each of the following Internet services (either at home or school): e-mail?

	Primary	Secondary	Māori Medium
Base =	154	162	22**
	%	%	%
Once a month or less	1	0	0
Approx once a week	1	1	0
Approx once a day	8	4	5
More than once a day	85	91	91
Never	3	1	0
No response	3	3	5
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Principals accessed the Te Kete Ipurangi (TKI) web site most frequently on a weekly basis: over half (54 percent) of primary principals accessed the site approximately once a week, followed by 36 percent of secondary principals and 33 percent of Māori Medium school principals. The Leadspace website was also most commonly accessed about once a week, with 40 percent of primary principals, 39 percent of secondary principals and 22 percent of Māori Medium school principals.

Other Internet services or resources available to principals were used less often. Many principals reported they never used NZ Biotechnology Portal (94 percent of the total sample answered *never*), Any Questions website (89 percent), Index New Zealand Online (85 percent), chat rooms (82 percent), Digistore (82 percent), EPIC (75 percent), ListServ (68 percent), social software (68 percent) and video conferencing (57 percent).

In contrast, the following Internet services were most frequently reported being used approximately once a month or less: Education Gazette online (51 percent), Principals' Electronic Network (49 percent), closed online learning communities (46 percent) and the LeadSpace web site (37 percent).

There were few major differences between the school types. While principals at primary and Māori Medium schools most frequently accessed open online forums once a month or less (45 percent and 80 percent respectively) more frequently secondary principals said they *never* accessed it (43 percent).

4.2.6 Individual e-mail addresses

There has been little change from previous results in the proportion of secondary school teachers with individual e-mail addresses. However, more primary school teachers now appear to have their own personal account. These are, nevertheless, less likely to be provided to students (see Table 9).

Over four in five (84 percent) secondary schools have provided all their teachers with an email address (cf. 82 percent in 2005), followed by Māori Medium (79 percent unchanged) and primary schools (67 percent cf. 55 percent in 2005)[7].

Sixty percent of secondary schools reported that all their students had an email address provided by the school (cf. 49 percent in 2005). This was followed by Māori Medium schools (38 percent cf. 21 percent in 2005) and primary schools (12 percent cf. 11 percent in 2005).

Table 9: Individual e-mail addresses provided and funded by the school

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

	Teachers			Students		
	Primary	Secondary	Māori Medium	Primary	Secondary	Māori Medium
Base =	128	147	20**	123	143	20*
	%	%	%	%	%	%
None	20	2	17	71	20	47
1%-9%	3	3	2	6	5	6
10%-24%	0	1	0	6	6	9
25%-49%	1	0	0	1	1	0
50%-74%	2	1	0	2	4	0
75%-99%	7	9	2	0	3	0
100%	67	84	79	12	60	38
Don't know	0	1	0	2	1	0
Total	100	100	100	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

[7] Note that in 2005 'no responses' were included in the analyses.

4.3 School web sites

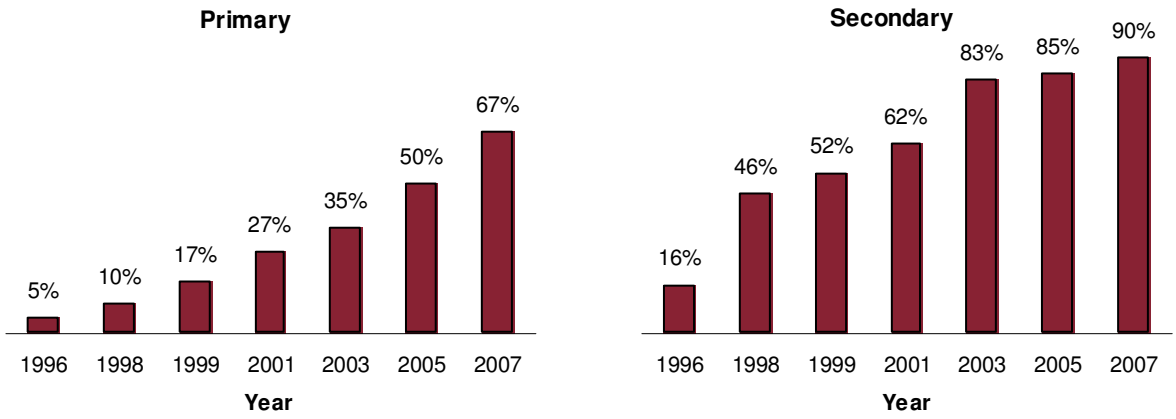
The prevalence of school web sites appears to have increased since 2005, particularly among primary schools (Graph 14).

Up to 90 percent of secondary schools reported having a web site, as did 67 percent of primary schools and 58 percent of Māori Medium schools (cf. 49 percent in 2005).

Also, 30 percent of Māori Medium schools have started to develop one, as have almost one quarter (24 percent) of primary schools. Only 8 percent of primary schools did not have a web site and were not developing one (cf. 25 percent in 2005), as well as 12 percent of Māori Medium schools (same as in 2005).

Graph 14: Percentage of schools with web sites

E-Q39 Does your school have a website?



Base: primary (n=131), secondary (n=147).

Among schools with web sites, primary and secondary schools appear to be similar in their reported frequency of updating their web site (Table 10)[8].

[8] Due to the small sub-sample of Māori Medium schools, further analysis of Māori Medium school web sites is not performed.

Table 10: Frequency of updating school web site

E-Q40 How often is your school's website updated?

Base =	Primary 81 %	Secondary 134 %
Daily	6	14
Weekly	42	39
Monthly or less often	43	37
Not at all	6	5
Don't know	3	4
Total	100	100

Total may not sum to 100% due to rounding.
Sub-sample based on schools that have a website.

Also explored this year were hosting, responsibility for updating, and the intended use of the school's web site.

Hosting of web sites among primary and secondary schools was more often a New Zealand host (65 percent primary, 69 percent secondary schools) or the school's own web server (22 percent primary and 23 percent of secondary schools).

The responsibility for updating the web site was more commonly a shared task (Table 11). Among primary schools, this was more frequently performed by a teacher (37 percent), the principal (30 percent) and a computer teacher (26 percent); while in secondary schools this is done by an ICT support technician (31 percent), a computer teacher (27 percent) and the administration staff or secretary (21 percent).

Table 11: Person updating school web site

E-Q42 Who updates your website?

Base =	Primary 84 %	Secondary 132 %
Principal	30	3
Computer teacher	26	27
Other teacher	37	17
Library staff	7	3
Students	6	4
ICT support technician	25	31
Web design company	6	14
Administration staff/ Secretary	20	21
Other	16	13
Don't know	2	2

Total may exceed 100% because of multiple response.
Sub-sample based on schools that have a website.

As shown in Table 12, among schools with web sites, their use centred on promoting the school and its activities (92 percent secondary and 89 percent primary), communicating with the school community (77 percent secondary and 80 percent primary), and in the case of secondary schools, attracting students from overseas (74 percent compared with 29 percent primary).

Table 12: Web site use

E-Q43 And finally, how is your school's website used?

	Primary	Secondary
Base =	84	132
	%	%
As a means to communicate with my school community	80	77
To promote the school and its activities	89	92
To attract students from overseas	29	74
To showcase students' work	44	20
Other	6	6
Don't know	2	1

Total may exceed 100% because of multiple response.
Sub-sample based on schools that have a website.

4.4 Internet monitoring & filtering and safety features

4.4.1 Internet monitoring and filtering

With the increased usage of computers and access to the Internet in New Zealand schools, Internet monitoring and filtering is of greater importance.

As shown in Table 13, the majority of secondary and Māori Medium schools utilised both monitoring and filtering (75 percent and 66 percent respectively), while just over half (52 percent) of primary schools utilised both. A sizeable proportion of primary schools (23 percent) only have Internet filtering (compared with 11 percent of secondary and 18 percent of Māori Medium schools).

Table 13: Internet monitoring and filtering

E-Q25 Does your school currently have Internet Monitoring or filtering?

Base =	Primary 129 %	Secondary 145 %	Māori Medium 20* %
Yes, we have Internet monitoring	17	14	13
Yes, we have Internet filtering	23	11	18
Yes, we have both Internet monitoring and filtering	52	75	66
No	5	1	2
Don't know	3	0	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Among those primary schools that did utilise Internet monitoring, filtering or both, the most commonly mentioned software used was *Watchdog* (46 percent) and *Schoolzone* (37 percent). For secondary and Māori Medium schools *Schoolzone* was the most frequently utilised (48 percent and 58 percent respectively), followed by *Watchdog* (19 percent and 28 percent respectively). For secondary schools, *Surf Control* was also relatively frequently used (ten percent).

4.4.2 Internet safety features

Principals were also asked what Internet safety features their school had in place, with nearly all primary, secondary and Māori Medium schools reporting they had an Internet safety policy or strategy (99 percent, 98 percent and 100 percent respectively) (Table 14). Over half of all schools also had in place periodic audits of stored material and computer use histories as well as information for parents and caregivers.

Table 14: Internet safety features that schools have in place

P-Q14 Which of the following Internet safety features does your school have in place?

	Primary	Secondary	Māori Medium
Base =	152	156	22*
	%	%	%
Internet safety policy or strategy	99	98	100
Internet safety online and print resources promoted	53	52	33
Periodic audits of stored material & computer use histories	58	68	64
Information for parents and caregivers	70	72	67
Other	10	6	5
None	1	0	0

Total may exceed 100% because of multiple response.
**Caution: low base number of schools - results are indicative only.

4.4.3 Managing student access

Principals were asked about what policies their school had in place to manage the students' access to social software sites. Among primary schools, seven percent had no specific policies for this, compared with one percent of secondary schools and no Māori Medium schools (Table 15 below). Principals at secondary and Māori Medium schools most frequently reported the school blocking the sites to all students (44 percent and 45 percent respectively), whereas those at primary schools most often reported the sites being blocked by an Internet Service Provider (34 percent).

Table 15: Managing student access to social software

P-Q6 What policies, if any, does your school have for managing student access to social software sites?

	Primary	Secondary	Māori Medium
Base =	147	152	22*
	%	%	%
Open to all students	2	1	0
Open to some students	2	5	0
Blocked by school to all students	28	44	45
Blocked by Internet Service Provider	34	24	26
Monitored access	23	21	22
Other	3	4	7
There are no such specific policies	7	1	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

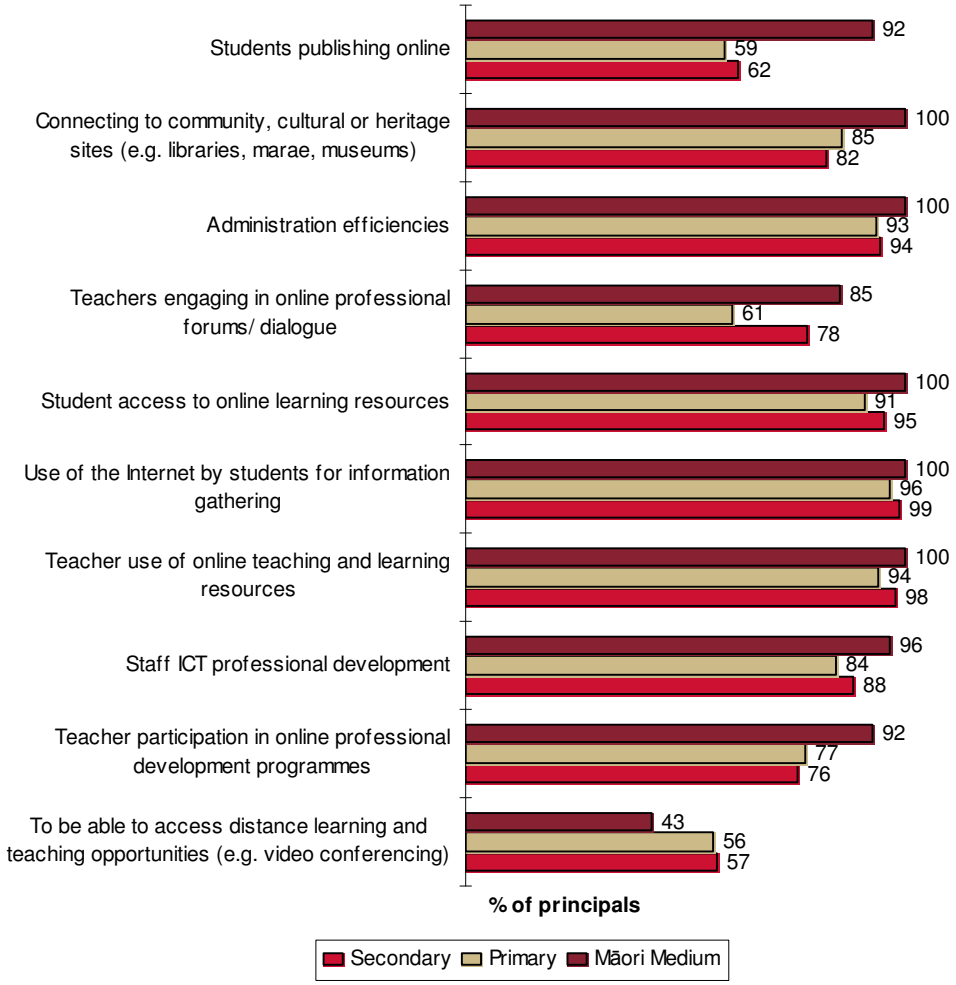
4.5 Broadband connections

With the increased proliferation of broadband connections, the role that these can play in New Zealand schools is beneficial. All New Zealand schools now have the option of connecting to a 512 Kbps high-speed (broadband) Internet connection through the Project Probe initiative. The majority of schools have taken advantage of this opportunity with 86 percent of secondary schools and 84 percent of both primary and Māori Medium schools reporting they have a high-speed Internet connection of 512Kbps or higher.

When asked about the benefits of high-speed connections, most school principals indicated that a 512Kbps Internet connection would be somewhat useful, or very useful for each of the specific online activities detailed below (Graph 15).

Graph 15: Perceived benefits of 512kps Internet connection

P-Q28 How useful is this high-speed Internet connection in each of the following activities in your school?



Base: primary (n=114), secondary (n=118), Māori Medium (n=14*).
Sub-sample based on those currently using a high-speed Internet connection.
Percentages based on those reporting 512Kbps connection as somewhat/very useful for each activity.
*Caution: low base number of schools – results are indicative only.

Awareness of KAREN (Kiwi Advanced Research and Education Network) was tested for the first time in the current survey. Results showed that principals at secondary schools had higher levels of awareness of the network (30 percent) when compared with those at primary (12 percent) and Māori Medium schools (16 percent).

Principals who were aware of KAREN (n=65) were then asked if their school would be interested in connecting up to it. Of those who were aware, 64 percent of primary and 85 percent of secondary school principals reported interest[9].

[9] Due to the small sub-sample of Māori Medium schools that were aware of KAREN, further analysis was not performed.

5.0 ICT Equipment

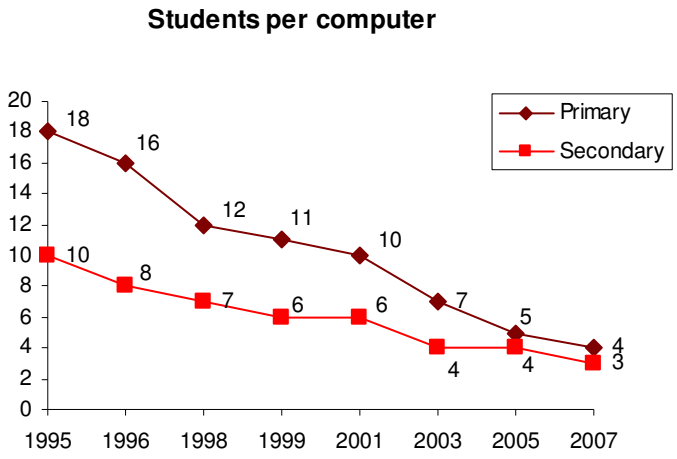
5.1 Computer numbers and types

5.1.1 Total school computers

Graph 16 shows the continuing downward trend in the number of students per computer in primary schools and a slight levelling off for secondary schools[10]. Including all computers, there was one computer per four students in primary schools and one computer per three students in secondary schools.

Graph 16: Average number of students per computer (in total)

E-Q1 In total, how many computers are there in your school?



Base: primary (n=103), secondary (n=116).

Perhaps a more accurate measurement of the above ratio, as performed in the previous study, is the exclusion of computers used mainly for administration. In taking this approach, there were, on average, five students per computer in primary schools, followed by three in secondary schools.

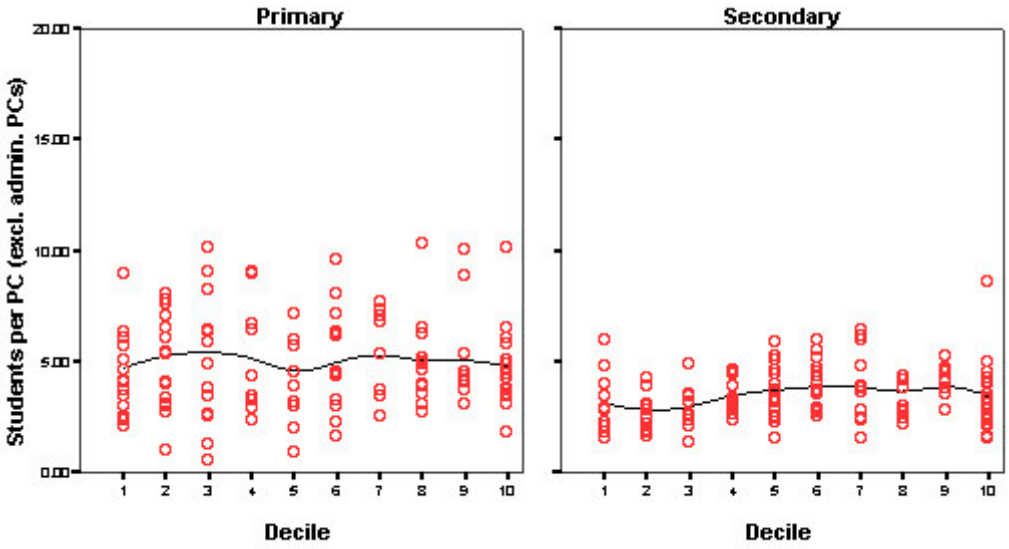
As in earlier surveys, the relationship between the socio-economic status (SES) decile provided for each school by the Ministry of Education, and the number of students per computer at each school, was investigated (Graph 17). Overall, the number of students per computer remained fairly stable across the different deciles[11]. Although, there is some evidence that suggests there is a lower number of students per computer in middle decile primary schools. However, this was not

[10] Ratio was calculated as = Total number of computers for schools surveyed divided by school roll as of 2006 roll data provided by the Ministry of Education. Due to small sub-samples, results for Māori Medium schools have not been presented.

[11] Note that the graph below has had computers mainly used for administration removed from its calculation.

the case for secondary schools. In fact, in higher decile secondary schools there was a slightly higher tendency to have more students per computer than in the lower deciles[12].

Graph 17: Students per computer BY socio-economic decile (primary & secondary schools)[13]



Main users of computers

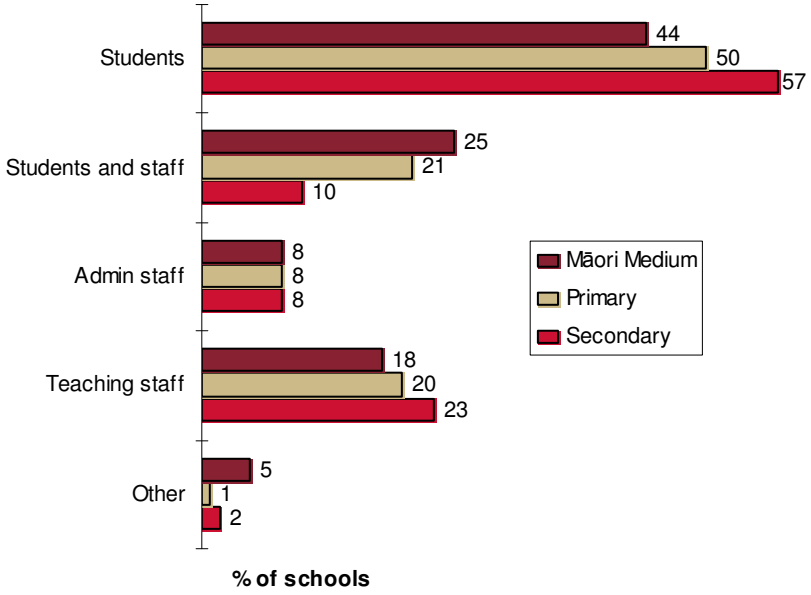
Across all surveyed school types, students were the main users of computers in schools: 57 percent secondary, 50 percent primary and 44 percent Māori Medium schools (Graph 18). It is also worth noting that at primary and Māori Medium schools, the computers were more likely to have a dual purpose than at secondary schools. In one quarter of primary schools and 21 percent of Māori Medium schools, the computers were shared between the staff and students, compared with ten percent of secondary schools.

[12] 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.

[13] The relationship for Māori Medium schools was not investigated due to a small sub-sample.

Graph 18: Main users of computers

E-Q2 And how many of these total computers are used mainly by students; administrative staff; teaching staff; students and staff; others?



Base: primary (n=131), secondary (n=147), Māori Medium (n=20*).
*Caution: low base number of schools – results are indicative only.

Age of computers

Among all schools, computers appear to be somewhat aged (Table 16). In 64 percent of Māori Medium schools, at least half of the computers were more than three years old. For primary and secondary schools the proportions with this amount of older computers were 60 percent and 58 percent respectively.

Table 16: Percentage of computers more than three years old

E-Q4 Approximately how many of the total computers are MORE than 3 years old?[14]

Base =	Primary 126 %	Secondary 141 %	Māori Medium 19* %
25% or less	15	17	8
26% to 50%	24	25	28
51% to 75%	34	29	29
76% to 100%	26	29	35
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

[14] In the questionnaire the question asked how many computers are LESS than three years old. Results have been recoded here and percentages reported are based on those that are MORE than 3 years old.

Computers meeting/exceeding basic specification

Across all school types, however, more than half of the schools estimated that over 50 percent of their computers met the basic specification of **Pentium III, 1GHz, 128MB, 20GB hard drive** (Table 17):

Nearly three-quarters (74 percent) of secondary schools estimated more than half of their computers met this specification:

- *51 percent to 75 percent of computers equal to or better than basic specification* (20 percent).
- *76 percent to 100 percent of computers equal to or better than basic specification* (54 percent).

As did 72 percent of Māori Medium schools:

- *51 percent to 75 percent of computers equal to or better than basic specification* (39 percent).
- *76 percent to 100 percent of computers equal to or better than basic specification* (33 percent).

And 53 percent of primary schools:

- *51 percent to 75 percent of computers equal to or better than basic specification* (18 percent).
- *76 percent to 100 percent of computers equal to or better than basic specification* (35 percent).

Table 17: Percentage of computers meeting or exceeding basic specification

E-Q5 How many computers in your school are equal to or better than the specification below? ***Pentium III, 1GHz, 128MB, 20GB hard drive***

Base =	Primary 95 %	Secondary 137 %	Māori Medium 16* %
25% or less	20	9	0
26% to 50%	27	17	29
51% to 75%	18	20	39
76% to 100%	35	54	33
Total	100	100	100

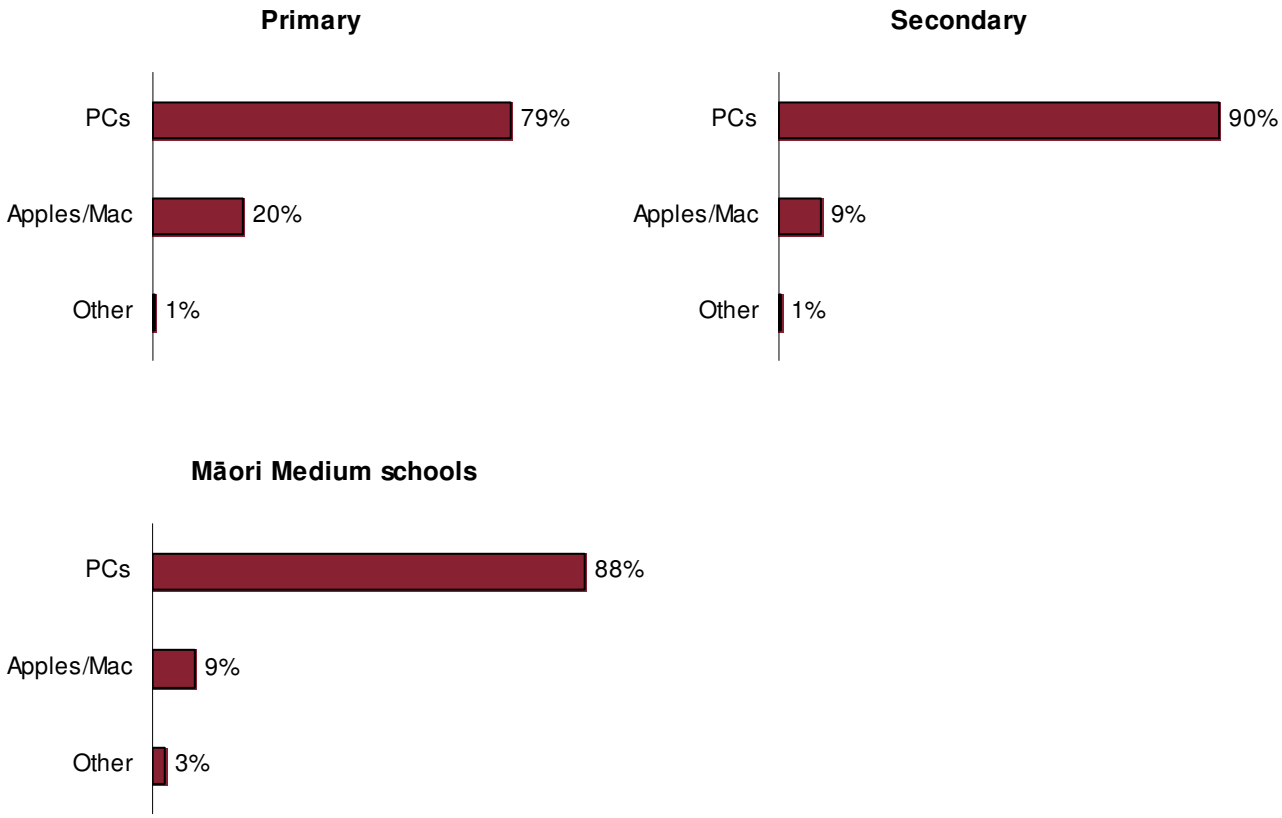
Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Computer types

Among all school types, PCs were the most common type of computers the schools had (Graph 19). In particular, this was the case in secondary schools where nearly all (90 percent) of their computers were PCs. However, primary schools reported 20 percent of their computers as being Apples/Macs.

Graph 19: Types of computers used (percentage of total computers: desktops and laptops)

E-Q3 How many computers of each of the following types does your school have?



Base: primary (n=131), secondary (n=147), Māori Medium (n=20*).
*Caution: low base number of schools – results are indicative only.

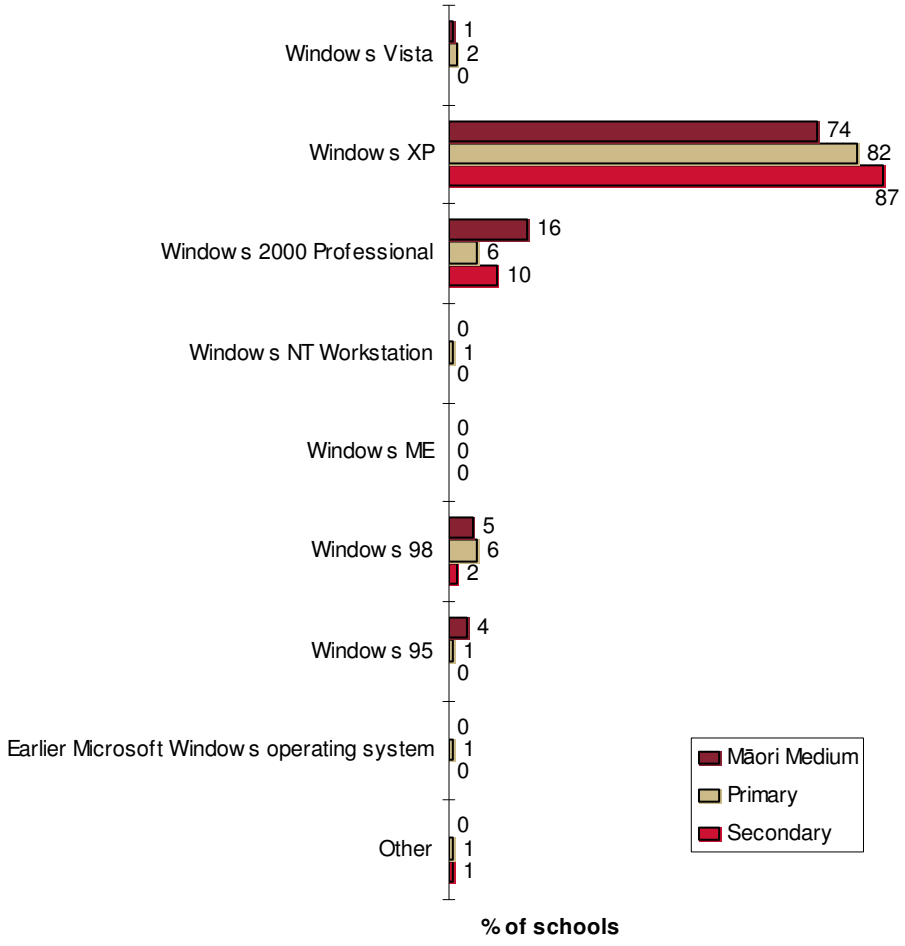
PC Operating systems

Among schools with computers described as PCs, Windows XP was by far the most common operating system (87 percent secondary, 82 percent primary and 74 percent of Māori Medium schools) (Graph 20).

Windows 2000 Professional was also used by 16 percent of Māori Medium, ten percent of secondary and six percent of primary schools.

Graph 20: Operating systems on PCs

E-Q3a Please give the numbers of these computers with each type of Operating System.



Base: primary (n=122), secondary (n=143), Māori Medium (n=18*).
*Caution: low base number of schools – results are indicative only.

5.2 ICT equipment use

ICT equipment use in schools was further measured through the investigation of other equipment types and their use in lesson delivery, lesson planning and preparation, and administration.

Focusing first on lesson delivery (Table 18), all schools reported frequently using DVD players/recorders, CD-ROMs, digital still cameras, video players, data projectors and digital video cameras (between 93 and 97 percent of schools).

Laptop and desktop computers were more commonly employed for lesson planning and preparation (Table 19), together with CD burners/writers (between 73 and 97 percent of schools).

For administration purposes, schools also most often used laptop and desktop computers as well as facsimile machines (between 50 and 90 percent of schools) (Table 20).

Table 18: ICT equipment used for lesson delivery

P-Q2A To your knowledge, do any teachers in your school use any of the following technologies in their Lesson delivery (either in the classroom or elsewhere in the school)?

Lesson delivery	Primary	Secondary	Māori Medium
Base =	151	161	22*
	%	%	%
Desktop computers	80	66	57
Laptop computers	83	94	74
Facsimile machines	27	12	32
Room-based audio conferencing (e.g. Polycom SoundStation)	10	24	17
Desktop audio conferencing (e.g. Polycom Communicator)	5	13	8
Room-based video conferencing (e.g. Sony/Polycom)	3	29	8
Desktop video conferencing (e.g. Polycom/Skype/MSN)	5	13	12
Audiographics (technologies combining voice and graphics simultaneously) for distance learning	3	13	8
Video players	93	95	92
DVD players/recorders	95	98	92
CD-ROMs	95	98	95
Digital still cameras	96	97	97
Digital video cameras	89	96	79
Scanners	39	60	52
CD-DVD burners/writers	46	63	49
Webcams	15	30	17
Portable Digital Assistants (PDAs) or other handheld device	2	7	10
Mobile telephone technology (e.g. sms and/or WAP capable)	7	10	12
Tablet PCs	5	22	8
Interactive whiteboards	34	55	23
Data projectors	89	97	87
VCR or PVR (video players/recorders)	74	90	75

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

Table 19: ICT equipment used for lesson planning and preparation

P-Q2B To your knowledge, do any teachers in your school use any of the following technologies in their Lesson planning and preparation (either in the classroom or elsewhere in the school)?

Lesson planning and preparation	Primary	Secondary	Māori Medium
Base =	150	161	22*
	%	%	%
Desktop computers	78	89	95
Laptop computers	97	97	97
Facsimile machines	33	25	45
Room-based audio conferencing (e.g. Polycom SoundStation)	1	7	5
Desktop audio conferencing (e.g. Polycom Communicator)	1	5	0
Room-based video conferencing (e.g. Sony/Polycom)	1	14	0
Desktop video conferencing (e.g. Polycom/Skype/MSN)	1	7	8
Audiographics (technologies combining voice and graphics simultaneously) for distance learning	1	5	0
Video players	41	54	32
DVD players/recorders	46	64	32
CD-ROMs	56	76	55
Digital still cameras	66	80	62
Digital video cameras	56	80	50
Scanners	56	80	50
CD-DVD burners/writers	61	84	65
Webcams	8	12	8
Portable Digital Assistants (PDAs) or other handheld device	4	12	10
Mobile telephone technology (e.g. sms and/or WAP capable)	9	14	7
Tablet PCs	3	21	8
Interactive whiteboards	18	38	15
Data projectors	45	64	47
VCR or PVR (video players/recorders)	30	49	23

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

Table 20: ICT equipment used for administration

P-Q2C To your knowledge, do any teachers in your school use any of the following technologies in their Administration (either in the classroom or elsewhere in the school)?

Administration	Primary	Secondary	Māori Medium
Base =	151	160	22*
	%	%	%
Desktop computers	74	87	80
Laptop computers	87	92	74
Facsimile machines	85	87	70
Room-based audio conferencing (e.g. Polycom SoundStation)	6	15	24
Desktop audio conferencing (e.g. Polycom Communicator)	5	12	20
Room-based video conferencing (e.g. Sony/Polycom)	1	19	8
Desktop video conferencing (e.g. Polycom/Skype/MSN)	2	13	13
Audiographics (technologies combining voice and graphics simultaneously) for distance learning	1	6	8
Video players	14	15	12
DVD players/recorders	18	15	10
CD-ROMs	25	33	28
Digital still cameras	38	43	32
Digital video cameras	24	38	27
Scanners	42	58	33
CD-DVD burners/writers	42	58	38
Webcams	2	12	0
Portable Digital Assistants (PDAs) or other handheld device	11	38	23
Mobile telephone technology (e.g. sms and/or WAP capable)	24	40	25
Tablet PCs	6	18	3
Interactive whiteboards	7	13	0
Data projectors	42	50	30
VCR or PVR (video players/recorders)	16	22	13

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

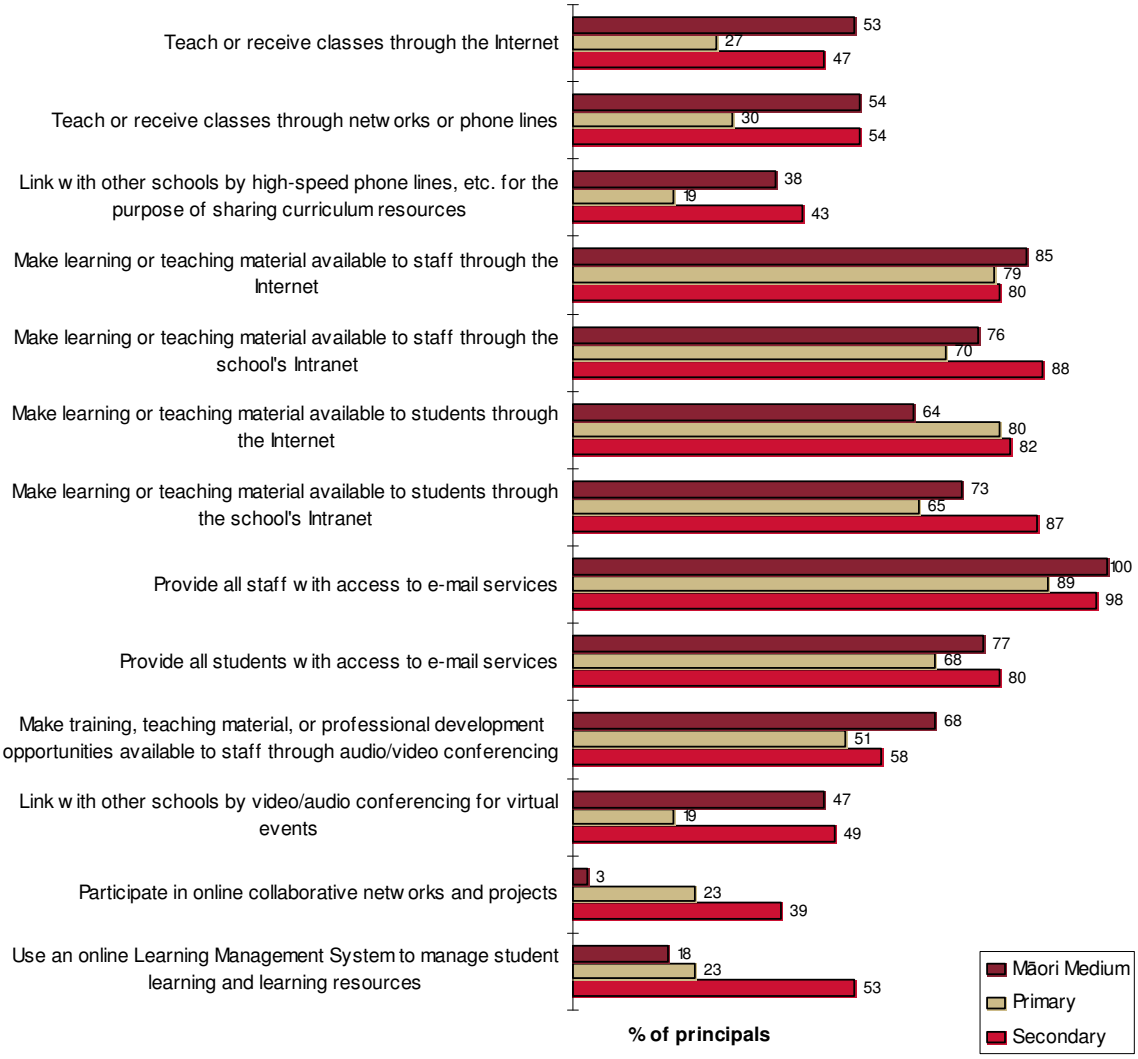
5.2.1 E-learning

As a term, e-learning includes learning through the use of the Internet, e-mail, audio conferencing, video conferencing, the sharing of a school's intranet, and web streaming to share classes and information across distance and/or time. Principals were asked to identify the types of e-learning currently in place at their school (Graph 21) and how frequently they occur.

Schools were more often pursuing e-learning to provide all staff with access to e-mail services (100 percent of Māori Medium, 98 percent of secondary and 89 percent of primary schools), but it was also used to provide e-mail to the students (80 percent secondary, 77 percent Māori Medium and 68 percent of primary schools). Also common was making learning or teaching materials available to teachers and students through the Internet and intranet.

Graph 21: E-learning activities taking place

P-Q10 Which of the following e-learning activities or practices does your school currently do, and how frequently?



Base: primary (n=138), secondary (n=139), Māori Medium (n=17*).
Percentages based on those reporting their school does the activity once a year or less to once a day (excludes never).
*Caution: low base number of schools – results are indicative only.

The frequencies of these e-learning activities were also investigated. Generally, the e-learning activities were provided more frequently at secondary schools, particularly the learning and teaching material for staff and students through the Internet and intranet. Material was provided to the staff through the *intranet* once a day at 42 percent of secondary schools (cf. 23 percent of primary and 30 percent of Māori Medium schools). This was made available to the students daily at 40 percent of secondary schools, 22 percent of primary and 19 percent of Māori Medium schools.

Principals reported that their staff were given access to e-mail services daily at 93 percent of secondary schools, compared with 85 percent of primary and 87 percent of Māori Medium schools. This service was also given to the students daily at 69 percent of secondary schools, 41 percent of primary and 59 percent of Māori Medium schools.

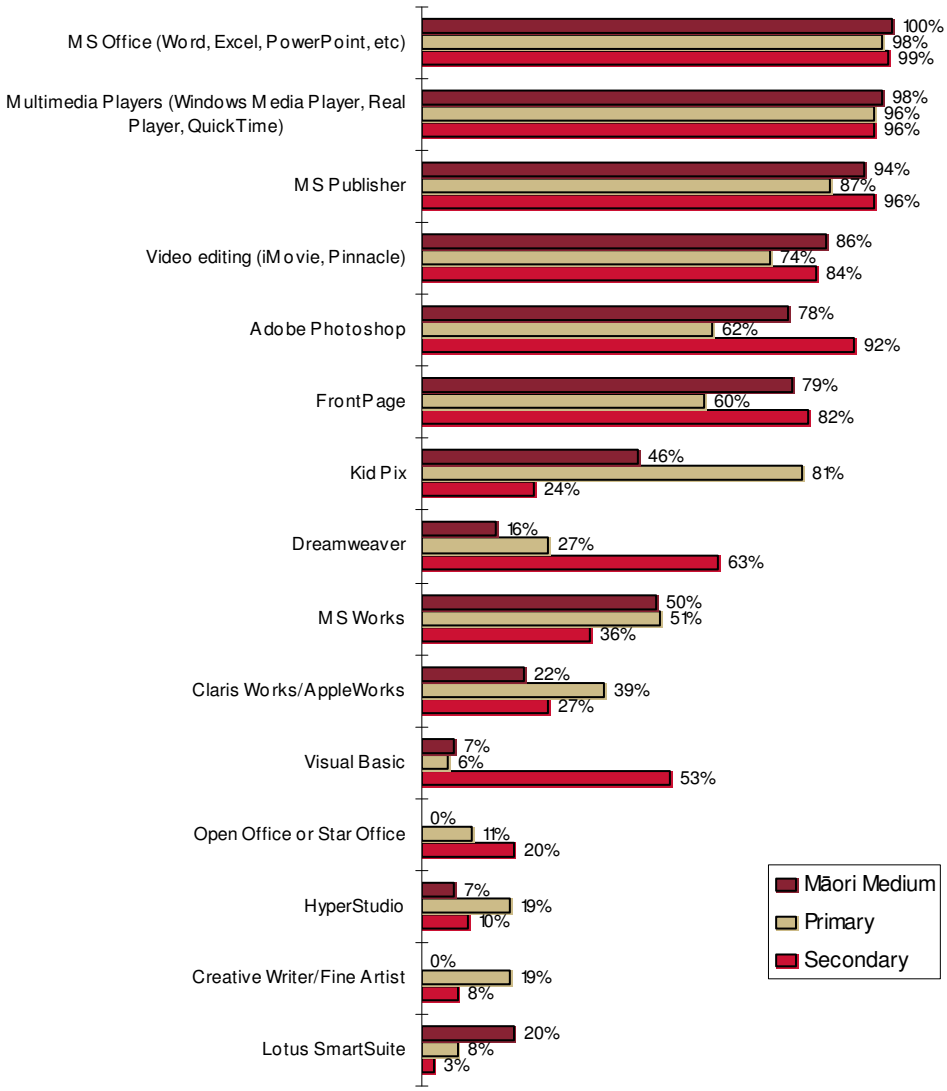
5.3 Software

Of the various software packages, almost all schools (100 percent Māori Medium, 99 percent secondary and 98 percent of primary schools) had MS Office installed on at least one of their computers (Graph 22). Almost just as frequently used were Multimedia Players (98 percent of Māori Medium, and 96 percent of both primary and secondary schools). MS Publisher and video editing were also commonly installed on computers across all school types.

Points of difference among schools included the higher usage of Kid Pix, MS Works and Claris Works/ Apple Works in primary schools. Secondary schools appear to more often have Adobe Photoshop, Dreamweaver, Visual Basic and Open Office or Star Office installed on at least one of their computers when compared with primary and Māori Medium schools.

Graph 22: Software in schools (running on at least a few computers)

E-Q34 Roughly what percentage of your school's computers run the following software packages?



Base: primary (n=95), secondary (n=118), Māori Medium (n=12*).
*Caution: low base number of schools – results are indicative only.

An additional question was asked of principals this year to determine whether or not schools used software that supports macron use for Te Reo Māori. Eighty-two percent of Māori Medium schools reported they did use this type of software, whereas it was used by only 46 percent of secondary and 21 percent of primary schools. Over half (52 percent) of principals at the primary schools and 35 percent at secondary schools reported they were not aware if this software was used or not (Table 21).

Table 21: Software that supports macron use for Te Reo Māori

P-Q25 Does the software used at your school support macron use for Te Reo Māori?

Base =	Primary 140 %	Secondary 151 %	Māori Medium 20* %
Yes	21	46	82
No	27	18	13
Don't know	52	35	5
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

5.3.1 Choosing software

This year it was also of interest how the schools were making their decisions about which software to use. Principals were asked who has the most influence in choosing the software. As shown in Table 22, at primary and Māori Medium schools, management was the most influential (74 percent and 87 percent respectively) closely followed by the ICT staff (71 percent and 50 percent respectively). At secondary schools, however, the ICT staff were the most influential in the decision making (81 percent), followed by the school management (62 percent).

Table 22: Influence on school's software choice

P-Q26 From the list below, who has the most influence on your school's choice of software?

	Primary	Secondary	Māori Medium
Base =	147	153	20*
	%	%	%
Board members	14	10	29
School management	74	62	87
ICT staff	71	81	50
External professional advice	32	24	29
Government discounts	9	16	16
Ministry of Education	27	27	39

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

5.3.2 Anti-virus software

Also examined was the use of anti-virus software (Table 23). For about four out of five secondary (79 percent) and Māori Medium schools (82 percent) as well as 63 percent of primary schools, eTrust was the most common software to use. Also frequently used was Norton antivirus, mentioned by one-quarter of primary schools (25 percent) but only by 18 percent of secondary and 16 percent of Māori Medium schools. Nineteen percent of primary, 16 percent of Māori Medium and ten percent of secondary schools also used AVG.

It is worth noting that none of the secondary schools reported using no anti-virus software, compared with five percent of primary and seven percent of Māori Medium schools.

Table 23: Anti-virus software used

E-Q24 Which of the following anti-virus software are used in your school?

Base =	Primary 129 %	Secondary 143 %	Māori Medium 20* %
AVG	19	10	16
eTrust	63	79	82
MacAfee	1	2	0
Norton Antivirus	25	18	16
Sophos	0	1	0
No anti-virus software used	5	0	7
Other	11	11	0
Don't know	2	0	0

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

5.4 Accessing support material

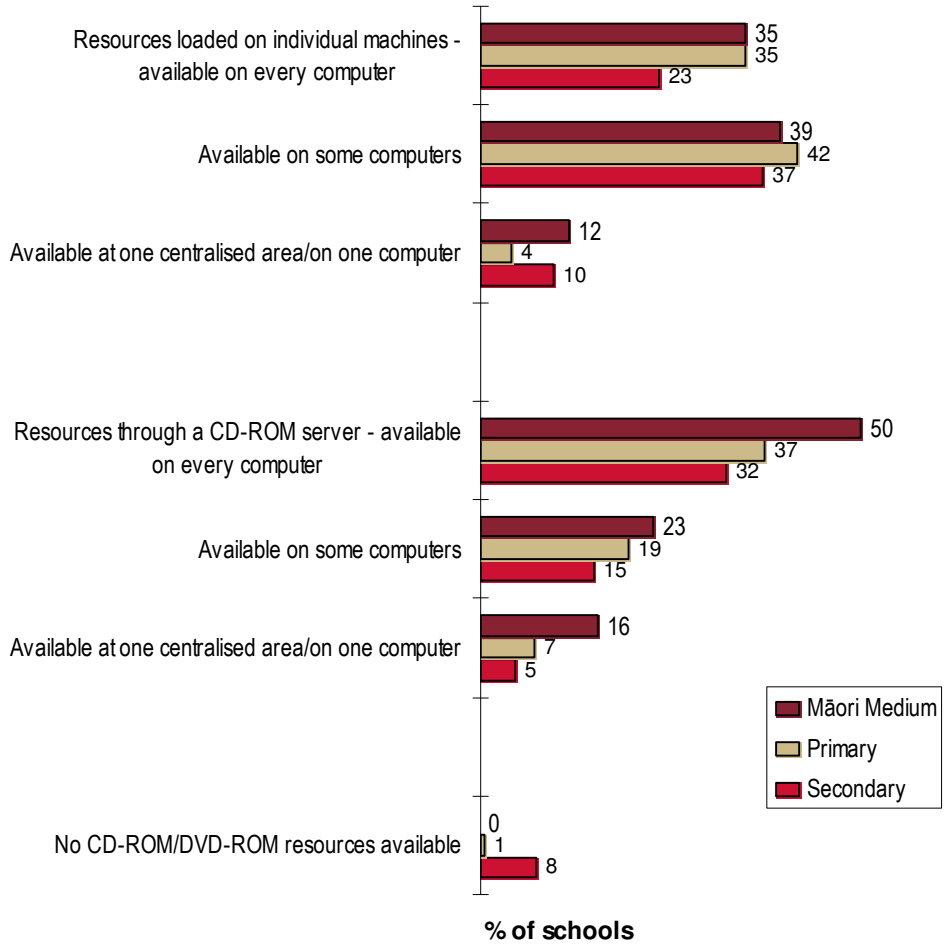
5.4.1 Accessing support material on CD-ROM/DVD-ROM

Many different curriculum support/reference CD-ROMs or DVD-ROMs (encyclopaedias, databases, learning software, etc.) are available to supplement student learning. Schools were asked to identify how these were delivered and accessed by teachers and students in their school (Graph 23).

More often, schools had CD-ROM and/or DVD-ROM resources loaded individually onto some of their computers (42 percent primary, 39 percent Māori Medium and 37 percent of secondary schools). For those who utilised central servers that made resources available to every computer, it was more common among Māori Medium schools (50 percent), than primary (37 percent) and secondary schools (32 percent).

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

E-Q38 Which of the following best describes how CD-ROM or DVD-ROM resources are delivered and accessed by teachers and students in your school?



Base: primary (n=131), secondary (n=147), Māori Medium (n=20*).
*Caution: low base number of schools – results are indicative only.

5.4.2 Preferred medium to receive materials

All principals were asked about their preferred medium to receive different materials. Overall, schools preferred receiving all material types online. Table 24, Table 25 and Table 26 below show the preferences reported by principals for the different school types.

Table 24: Preferred medium to receive materials by Primary schools

P-Q33 And finally, in which medium do you prefer to receive the materials listed below: Primary

Primary schools	Learning materials for students	Teacher professional development materials	Library reference material	Admin
n=143	%	%	%	%
CD ROM	26	14	19	9
DVD	28	28	22	14
Online	46	58	60	76
Total	100	100	100	100

Total may not sum to 100% due to rounding.

Table 25: Preferred medium to receive materials by Secondary schools

P-Q33 And finally, in which medium do you prefer to receive the materials listed below: Secondary

Secondary schools	Learning materials for students	Teacher professional development materials	Library reference material	Admin
n=141	%	%	%	%
CD ROM	16	13	13	12
DVD	32	29	21	19
Online	52	58	66	69
VHS	0	0	1	0
Total	100	100	100	100

Total may not sum to 100% due to rounding.

Table 26: Preferred medium to receive materials by Māori Medium schools

P-Q33 And finally, in which medium do you prefer to receive the materials listed below: Māori Medium

Māori Medium	Learning materials for students	Teacher professional development materials	Library reference material	Admin
n=19*	%	%	%	%
CD ROM	37	26	30	29
DVD	23	34	13	8
Online	40	40	57	63
Total	100	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

5.5 Networking Infrastructure

5.5.1 Local network cabling

Schools were asked about their network, its extent and use. Among individual school types, over four out of five primary schools (84 percent) can be described as being 'networked' (by cable), as can 81 percent of Māori Medium schools and 77 percent of secondary schools (Table 27).

Table 27: Percentage of classrooms with cable network

E-Q30 How many of these classrooms are networked (using cable)?

Base =	Primary 125 %	Secondary 131 %	Māori Medium 19* %
None	5	2	0
1-20%	3	7	0
21-79%	8	14	19
80% or more	84	77	81
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

When compared against results from the previous survey in 2005, more schools now have their classrooms networked. Over one third of primary (33 percent) and Māori Medium schools (32 percent) and 13 percent of secondary schools have a wireless network in at least 80 percent of their classrooms (cf. 10 percent, 19 percent and 10 percent respectively in 2005). Less than half of primary (45 percent) and secondary schools (47 percent) have no wireless network whatsoever, while this figure for Māori Medium schools is 58 percent.

Table 28: Percentage of classrooms with wireless network

E-Q31 How many of these classrooms have a wireless network?

Base =	Primary 120 %	Secondary 130 %	Māori Medium 20* %
None	45	47	58
1-20%	6	24	7
21-79%	16	16	2
80% or more	33	13	32
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

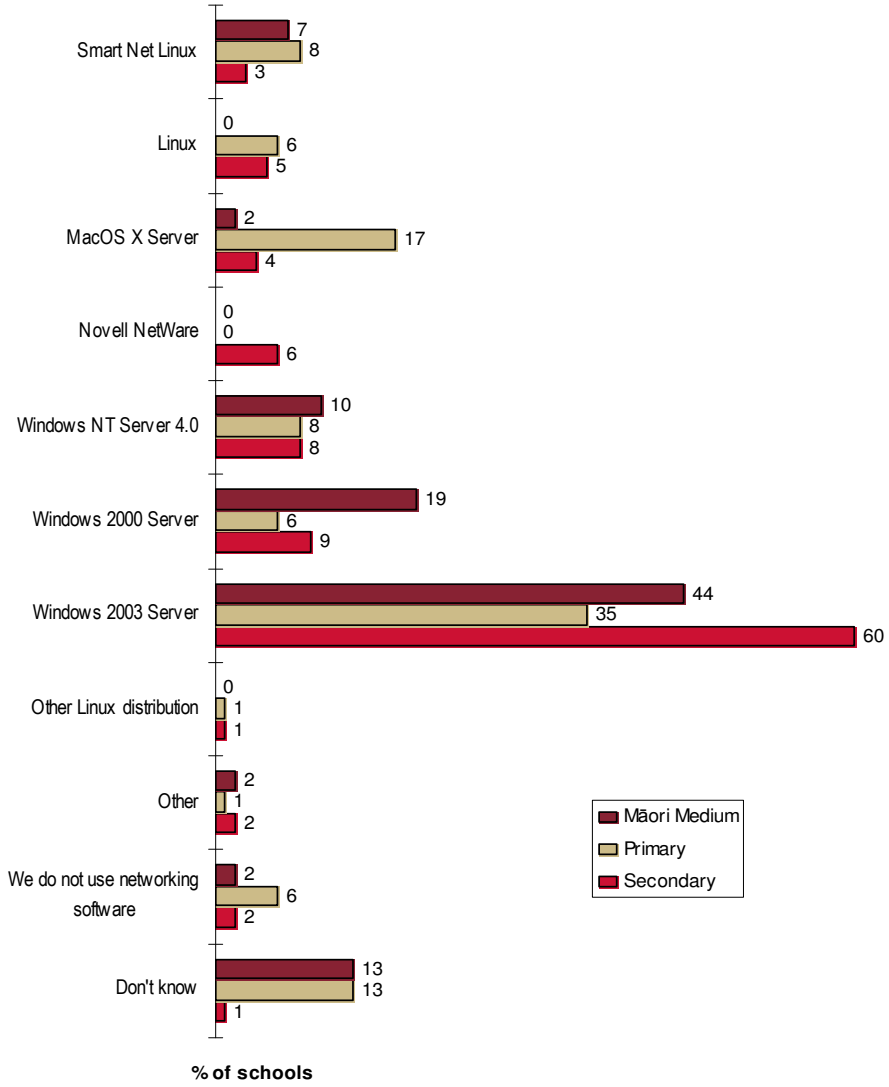
5.5.2 Networking software

Six percent of primary schools reported that they did not use networking software compared with two percent of both Māori Medium and secondary schools. A sizeable proportion of primary and Māori Medium schools (both 13 percent) also did not know the types of networking software they used, while only one percent of secondary schools did not know (Graph 24).

All schools most frequently reported using Windows 2003 Server (60 percent secondary, 44 percent Māori Medium and 35 percent of primary schools). Windows 2000 Server was also commonly used by Māori Medium schools (19 percent compared with six percent primary and nine percent of secondary schools) and MacOS X Server by primary schools (17 percent compared with four percent secondary and two percent of Māori Medium schools).

Graph 24: Networking software

E-Q36 Which of the following types of networking software does your school use?



Base: primary (n=129), secondary (n=144), Māori Medium (n=20*).
*Caution: low base number of schools – results are indicative only.

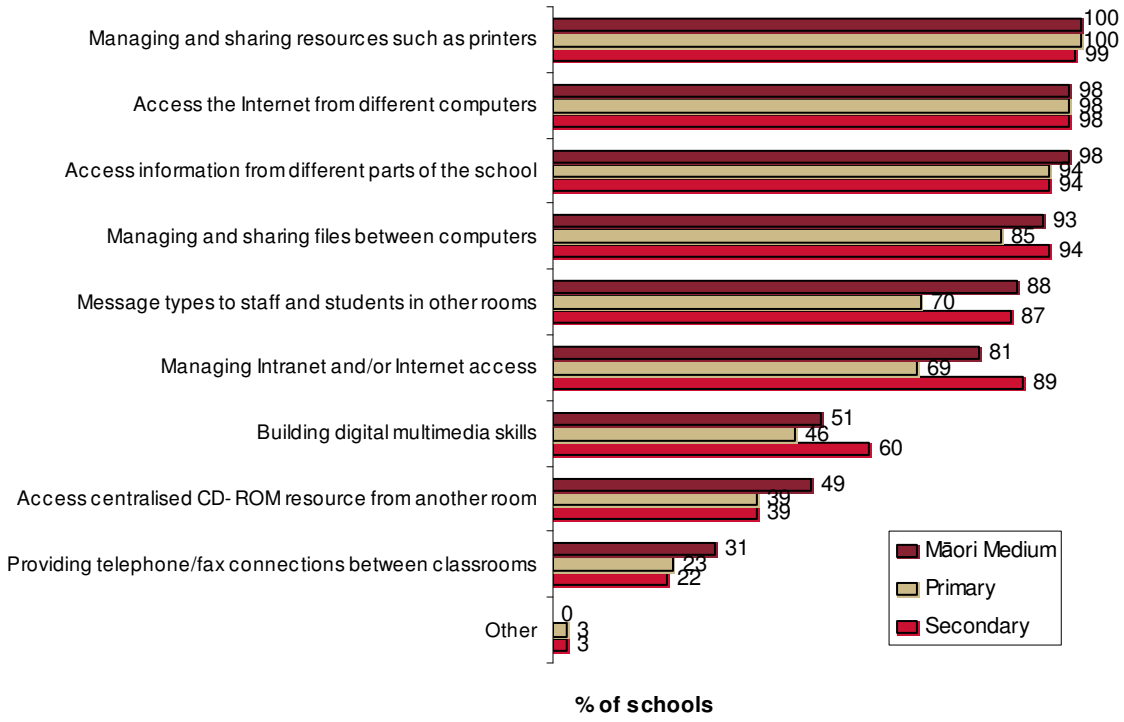
5.5.3 Uses of network

As seen earlier, many schools have undergone the decision to network their computers. Graph 25 presents some of the advantages networking offers and the uptake of each between primary, secondary and Māori Medium schools. Schools commonly employed their network to:

- Manage and share resources (100 percent primary and Māori Medium; 99 percent of secondary schools).
- Enable access to the Internet from different computers (98 percent of all primary, secondary and Māori Medium schools).
- Access the same information from different parts of the school (94 percent of primary and secondary schools; 98 percent of Māori Medium schools).

Graph 25: What schools use the network for

E-Q32 Which of the following do you use your network for?



Base: primary (n=128), secondary (n=144), Māori Medium (n=20*).
*Caution: low base number of schools – results are indicative only.

External access

Another advantage of having a network is the ability to access it remotely. Three out of five secondary schools (60 percent) reported their network had the means to be accessed remotely by students and/or teachers, followed by 49 percent of Māori Medium and 44 percent of primary schools.

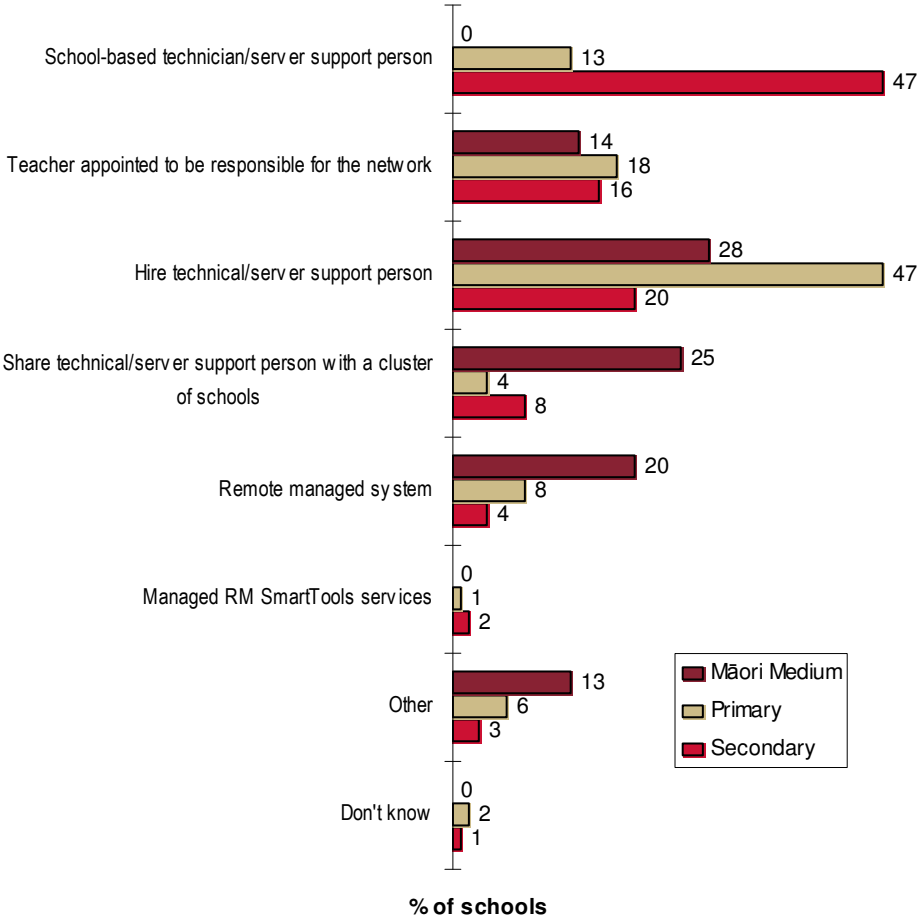
5.5.4 Network management

As shown in Graph 26, secondary schools mostly managed their school networks by a school-based technician (47 percent compared with 13 percent primary and no Māori Medium schools), whereas primary schools and Māori Medium schools predominantly hired an external technician (47 percent and 28 percent respectively compared with 20 percent of secondary schools).

Also common for Māori Medium schools was sharing a technician with a cluster of other schools (25 percent compared with eight percent secondary and four percent of primary schools) as well as using a remote managed system (20 percent compared with eight percent primary and four percent of secondary schools).

Graph 26: How network is managed

E-Q37 How is your school network managed, whether internally by a school based support person or by an external managed service provider?



Base: primary (n=129), secondary (n=143), Māori Medium (n=19*).
*Caution: low base number of schools – results are indicative only.

5.6 Technical support

Table 29 overleaf shows the proportions of schools that have about 50 percent or more of their teaching staff (as well as *none*) using various types of technical support[15]. At primary and secondary schools, similar types of support were the most common but the variation lay in the emphasis placed on each.

Among primary schools, about 50 percent or more of the teachers were most commonly supported by:

- A technician employed directly by the school (57 percent of schools).
- A staff member with special time allowance (of less than 10 hours per week) for computing support and training (40 percent).
- External support contract (36 percent).
- Supplier guarantee/warranty (26 percent).

About 50 percent or more of the teachers at secondary schools most frequently employed the following technical support methods:

- A technician employed directly by the school (77 percent of schools).
- A staff member with special time allowance (of less than 10 hours per week) for computing support and training (41 percent).
- A staff member with special time allowance (10 or more hours per week) for computing support and training (25 percent).
- External support contract (22 percent).

[15] Given the small sub-sample of Māori Medium schools, their results are not presented here.

Table 29: Sources of technical support

*E-Q33 What proportion of your teachers use the following sources of technical support? **(About 50% or more** or **none)***

	Primary		Secondary	
Base =	89		98	
	None	About 50% or more	None	About 50% or more
	%	%	%	%
Student support (e.g. Tech Angels)	43	20	45	4
Supplier guarantee/warranty	29	26	34	18
External support contract (paid in advance, extra cost)	40	36	48	22
Staff from other schools	39	7	48	8
Staff member with special time allowance for computing support and training (less than 10 hours per week)	50	40	30	41
Staff member with special time allowance for computing support and training (10 or more hours per week)	75	17	64	25
Technician (employed directly by school)	29	57	14	77
Technician (employed directly by a cluster of schools)	86	5	87	3
The Ministry of Education's ICT helpdesk (0800 ICT help)	20	12	29	5
Parent volunteer	61	10	93	2
Managed services	80	9	73	8
Remote service management	69	12	64	11
Online video conference support	91	1	77	3
Other 0800 network support (not the Ministry's 0800 ICT help)	73	2	67	2
Other 0800 help (not network support or the Ministry's 0800 ICT help)	80	1	75	2
Other	85	2	69	11

Total may exceed 100% because of multiple response.

5.7 Current use and intended purchasing of ICT equipment

5.7.1 Desktop computers

Table 30 shows the various brands of desktop computers that primary and secondary schools have currently, as well as intent to purchase and lease in 12 months' time[16].

Schools more commonly had Compaq/Hewlett Packard desktops (35 percent primary and 23 percent secondary), followed by Apple desktops (23 percent primary and 11 percent secondary schools).

Intended purchases in 12 months' time also included Compaq/Hewlett Packard and Apple desktop computers as frequently mentioned types. Thirty-two percent of primary and 21 percent of secondary schools reported they were planning to purchase Compaq/Hewlett Packard desktop computers.

A similar trend occurred with intended leases in the next 12 months for secondary schools. Nearly a third (31 percent) of secondary schools planned to lease computers with the brand Compaq/Hewlett Packard, 14 percent to lease Apple and 13 percent to lease Lenovo/IBM. Schools providing *Other* responses supplied a 'mixed bag' of desktop types.

[16] Given the small sub-sample of Māori Medium schools and also primary schools that *intend to lease* desktop computers, their results are not presented here.

Table 30: Proportion of schools, which currently have and intend to purchase and lease these brands of desktop computers

E-Q11A, Q11B & Q11C Of the computers used in your school that are desktop computers, how many of each of the following brands do you (a) have currently and (b) plan to purchase or (c) lease in the next 12 months?

	Primary		Secondary		
	A. Have in current use	B. Intend to purchase in next 12 months	A. Have in current use	B. Intend to purchase in next 12 months	C. Intend to lease in next 12 months
Base =	115*	34**	139*	64**	29^***
	%	%	%	%	%
Acer	8	6	6	9	3
Apple	23	31	11	15	14
Atech	0	0	1	0	4
Cyclone	2	0	1	1	0
Dell	11	8	10	5	4
Hewlett Packard (HP)/Compaq	35	32	23	21	31
Insite/Itec	1	0	4	3	4
Lenovo/IBM	1	3	8	0	13
R1 All-in-One	0	0	2	8	8
TMC	1	0	1	1	0
Ultra	1	3	4	0	0
Other	16	16	30	36	19
Total	100	100	100	100	100

Total may not sum to 100% due to rounding.
^Caution: low base number of schools – results are indicative only.
*One percent of primary and secondary schools report not having any desktop computers.
**19 percent of primary and 22 percent of secondary schools report not planning to purchase any desktop computers.
***34 percent of secondary schools report not planning to lease any desktop computers.

As shown in Table 31, purchasing computers through a re-seller was the most common method of acquiring desktops for all schools (58 percent secondary, 45 percent primary and 44 percent of Māori Medium schools). Purchasing through a retail store was an acquisition method used by 40 percent of Māori Medium schools (compared with 30 percent primary and 21 percent of secondary schools). A sizeable proportion of schools also purchased/leased their desktop computers online (19 percent primary, 15 percent secondary and 14 percent of Māori Medium schools).

Table 31: Method of purchase/lease of desktop computers

E-Q12 How do you purchase/lease desktop computers?

	Primary	Secondary	Māori Medium
Base =	121	146	20*
	%	%	%
Retail store	30	21	40
Reseller	45	58	44
On-line	19	15	14
Leasing organisation	11	13	23
Other	15	10	2
Don't know	2	3	5

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

5.7.2 Laptop computers

Similar to desktop computers, both primary and secondary schools often reported currently owning (37 percent secondary and 21 percent primary), or intending to lease (33 percent secondary and primary) Compaq/Hewlett Packard laptops or notebooks. Also, as shown in Table 32, 22 percent of primary schools and only seven percent of secondary schools currently own Apple laptops or notebooks, while 35 percent plan to lease these in the next 12 months (compared with 12 percent of secondary schools)[17]. Note that because of small sub-samples, results for *intend to purchase* have not been presented.

However, the most popular brand of laptop has been Toshiba. Almost half of primary (49 percent) and secondary schools (47 percent) own Toshiba laptops or notebooks. Just as many secondary schools (47 percent) also intend to lease these in the next 12 months as well as 32 percent of primary schools.

Table 32: Proportion of schools, which currently have and intend to purchase and lease these brands of laptops/notebooks

E-Q13A, Q13B & Q13C Of the computers used in your school that are laptops/notebooks, how many of each of the following brands do you (a) have currently and (b) plan to purchase or (c) lease in the next 12 months?

	Primary		Secondary	
	A. Have in current use	C. Intend to lease in next 12 months	A. Have in current use	C. Intend to lease in next 12 months
Base =	124*	26^**	138*	59**
	%	%	%	%
Acer	2	0	2	0
Apple	22	35	7	12
Asus	0	0	2	0
Dell	1	0	2	0
Hewlett Packard (HP)/Compaq	21	33	37	33
Insite	0	0	0	3
Lenovo/IBM	0	0	2	3
Sony	2	0	0	2
Toshiba	49	32	47	47
Other	1	0	1	1
Total	100	100	100	100

Total may not sum to 100% due to rounding.
^Caution: low base number of schools - results are indicative only.
*Two percent of primary and four percent of secondary schools report not having any laptops/notebooks.
**One percent of primary and secondary schools report not planning to lease any laptops/notebooks.

When asked how the laptops/notebooks are purchased or leased (Table 33), the most common response across all schools was the TELA laptops for teachers programme (48 percent Māori Medium, 45 percent secondary and 38 percent of primary schools). Also popular was the online method (33 percent primary, 32 percent secondary and 31 percent of Māori Medium schools). However, using a reseller was the second most preferred method for Māori Medium schools (34 percent compared with 24 percent secondary and 19 percent of primary schools).

[17] Due to small sub-sample, data has been omitted for Māori Medium schools.

Table 33: Method of purchase/lease of laptops/notebooks

E-Q14 How do you purchase/lease laptops/notebooks?

Base =	Primary 126	Secondary 141	Māori Medium 19*
	%	%	%
Retail store	13	8	14
Reseller	19	24	34
On-line	33	32	31
TELA Teacher Laptops	38	45	48
Other	10	8	2
Don't know	2	4	0

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

5.7.3 Servers

Similarly, ownership and intended purchases of servers was asked of schools. Again Compaq/Hewlett Packard (34 percent primary and 35 percent of secondary schools) featured frequently for current server ownership among both primary and secondary schools[18]. A sizeable proportion of primary schools currently use Apple servers (20 percent), compared with only five percent of secondary schools. Note that due to small sub-samples for *intend to lease*, results are not presented, as well as *intend to purchase* for primary schools.

Compaq/Hewlett Packard was again frequently reported when secondary schools were asked about their intended server purchases (40 percent) followed by Lenovo/IBM (22 percent).

A review of the *Other* responses again revealed a mixture of various server brands.

Table 34: Proportion of schools, which currently have and intend to purchase and lease these brands of servers

E-Q17A, Q17B & Q17C Of the servers used in your school, how many of each of the following brands do you (a) have currently and (b) plan to purchase or (c) lease in the next 12 months?

	Primary	Secondary	
	A. Have in current use	A. Have in current use	B. Intend to purchase in next 12 months
Base =	105*	137*	43**
	%	%	%
Acer	13	3	2
Apple	20	5	4
Cyclone	1	2	0
Dell	4	6	4
Hewlett Packard (HP)/Compaq	34	35	40
Insite/Itec	3	4	2
Lenovo/IBM	4	15	22
Total Peripherals	0	0	0
Ultra	1	7	5
Other	20	22	20
Total	100	100	100

Total may not sum to 100% due to rounding.
*Nine percent of primary and one percent of secondary schools report not having any servers.
**Six percent of secondary schools report not planning to purchase any servers.

[18] Due to small sub-sample, data has been omitted for Māori Medium schools.

5.7.4 Monitors

Of the monitors used with the school computers, the most common brand at primary schools that has either a CRT or LCD screen was Hewlett Packard (17 percent with CRT and 20 percent with LCD screens). The results in Table 35 also revealed Philips (14 percent with CRT and LCD screens) and Apple (13 percent with CRT and 15 percent with LCD screens) were frequently mentioned brands[19].

Among secondary schools, however, Philips monitors were the most likely to be used (33 percent with CRT and 31 percent with LCD screens), followed by Hewlett Packard (ten percent with CRT and 14 percent with LCD screens). Also, 11 percent of secondary schools mentioned Dell CRT screens and six percent Dell LCD screens.

[19] Due to the small sub-sample of Mäori Medium schools answering questions about monitors, their results have not been presented.

Table 35: Proportion of schools, which currently have CRT and LCD screens on these brands of monitors

E-Q15 Of the monitors used with computers in your school, how many of each of the following brands do you currently have that have CRT or LCD screens?

	Primary		Secondary	
	Have CRT screens	Have LCD screens	Have CRT screens	Have LCD screens
Base =	101*	63**	122*	119**
	%	%	%	%
3M	1	0	1	1
Acer	5	11	4	5
AOC	2	5	1	6
Apple	13	15	5	4
Asus	0	0	0	0
BenQ	0	0	0	0
Compaq	12	6	8	1
Dell	7	2	11	6
Digital	2	0	0	0
DSE	0	2	0	0
Gateway	0	0	0	0
Hewlett Packard (HP)	17	20	10	14
Lenovo/IBM	0	0	5	2
LG Electronics	1	1	0	1
Microtek	0	0	0	0
Mitsubishi	1	0	0	0
Panasonic	0	1	0	0
PC Direct	2	0	1	0
Philips	14	14	33	31
Samsung	1	4	2	1
Sony	1	0	0	0
Toshiba	3	1	1	2
View sonic	3	2	4	10
Other	16	15	13	14
Total	100	100	100	100

Total may not sum to 100% due to rounding.
*Two percent of primary and one percent of secondary schools report not having any monitors with CRT screens.
**Two percent of primary and one percent of secondary schools report not having any monitors with LCD screens.

As shown in Table 36, more secondary schools are certain about their plans to purchase or lease CRT monitors in the next 12 months than primary schools (36 percent plan to purchase over 20 CRT monitors, compared with two percent of primary schools). When asked about LCD screens however, the majority of schools did not know how many they would be purchasing or leasing. There were not many differences between the plans of primary and secondary schools for LCD purchasing, except more secondary schools answered *none* (15 percent compared with eight percent of primary schools).

Table 36: Number of CRT and LCD monitors planning to purchase or lease

E-Q16 How many monitors are you planning to purchase or lease in the next 12 months?

	CRTs		LCDs	
	Primary	Secondary	Primary	Secondary
Base =	85	123	66	69
	%	%	%	%
None	5	4	8	15
1-20	27	17	4	4
21-40	1	19	0	4
41-90	1	13	2	2
91-140	0	4	0	0
Don't know	66	44	87	76
Total	100	100	100	100

Total may not sum to 100% due to rounding.

5.7.5 Printer copiers

Primary and secondary schools more often had Hewlett Packard printer copiers than any other brand (27 percent secondary and 25 percent of primary schools)[20].

As detailed in Table 37, the next most common printer copier brands in secondary schools were Minolta (18 percent) and Fuji Xerox (12 percent). At primary schools, these were Canon (16 percent) and Brother (14 percent). Note that the results for *intend to purchase* and *lease* have not been presented because of small sub-samples.

Table 37: Proportion of schools, which currently have and intend to purchase and lease these brands of printer copiers

E-Q18A, Q18B & Q18C Of the printer copiers used in your school, how many of each of the following brands do you (a) have currently and (b) plan to purchase or (c) lease in the next 12 months?

	Primary	Secondary
	A. Have in current use	A. Have in current use
Base =	123*	141*
	%	%
Brother	14	8
Canon	16	11
Epson	2	2
Fuji Xerox	7	12
Hewlett Packard (HP)	25	27
Kyocera	2	4
Lexmark	2	1
Minolta	13	18
Oki	2	0
Panasonic	2	0
Ricoh	9	8
Total Peripherals	0	0
UBIX	1	4
Other	4	4
Total	100	100

Total may not sum to 100% due to rounding.
*Three percent of primary and no secondary schools report not having any printer copiers.

[20] Due to small sub-sample, data has been omitted for Māori Medium schools.

5.7.6 Data projectors

In relation to data projectors, most frequently schools reported currently owning Sony data projectors (38 percent primary and 32 percent of secondary schools)[21].

As shown in Table 38, Sony was also the brand most likely to be purchased or leased within the coming 12 months (48 percent primary and 31 percent of secondary schools).

Panasonic, Toshiba and Epson data projectors were also reasonably popular across both school types. Note that the results for *intend to lease* have not been presented because of small sub-samples.

Table 38: Proportion of schools, which currently have and intend to purchase and lease these brands of data projectors

E-Q19A, Q19B & Q19C Of the data projectors used in your school, how many of each of the following brands do you (a) have currently and (b) plan to purchase or (c) lease in the next 12 months?

	Primary		Secondary	
	A. Have in current use	B. Intend to purchase in next 12 months	A. Have in current use	B. Intend to purchase in next 12 months
Base =	111*	27^**	139*	48**
	%	%	%	%
Acer	7	8	10	10
BenQ	0	0	1	0
Canon	1	0	3	3
Dell	1	4	1	2
Epson	7	11	11	18
Hewlett Packard (HP)	6	4	4	4
Infocus	0	0	1	0
Lenovo/IBM	0	0	1	0
Mitsubishi	5	0	3	0
Panasonic	15	4	9	2
Sony	38	48	32	31
Toshiba	11	11	10	12
Other	11	11	15	21
Total	100	100	100	100

Total may not sum to 100% due to rounding.
^Caution: low base number of schools - results are indicative only.
*Nine percent of primary and two percent of secondary schools report not having any data projectors.
**Five percent of primary and four percent of secondary schools report not planning to purchase any data projectors.

It was also found that, on average, secondary schools had the highest percentage of classrooms with data projectors (24 percent). Primary schools had 12 percent and Māori Medium schools had only 5 percent of classrooms equipped with data projectors.

Secondary and primary schools on average had interactive whiteboards within seven percent of their classrooms, compared with four percent of Māori Medium schools.

[21] Due to small sub-sample, data has been omitted for Māori Medium schools.

5.7.7 Video conferencing equipment

Over one quarter (27 percent) of secondary schools reported they had purchased or leased room-based video conferencing equipment (compared with 19 percent of Māori Medium and two percent of primary schools). As Table 39 shows, only a small proportion of schools plan to acquire this equipment over the next 12 months (one percent primary, three percent secondary and no Māori Medium schools).

Table 39: Purchasing or leasing of room-based video conferencing equipment

E-Q22 Has your school purchased or leased room-based video conferencing equipment?

	Primary	Secondary	Māori Medium
Base =	128	141	20*
	%	%	%
Yes	2	27	19
No	97	69	81
We plan to acquire such equipment during the next 12 months	1	3	0
Don't know	0	1	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Those respondents who reported their schools had purchased or leased this equipment were asked what type of system it was. Among secondary schools, 90 percent of the video conferencing equipment was Polycom and the other 10 percent was Tandberg. Due to the small sub-sample sizes of primary and Māori Medium schools that have purchased or leased room-based video conferencing equipment, further analysis was not performed for these school types.

5.8 Influential factors relating to ICT equipment

5.8.1 Purchasing decisions

Purchase price was the most frequently mentioned most important factor for both primary and secondary schools when purchasing or leasing ICT equipment (20 and 21 percent respectively). However, reliability was of equal importance to secondary schools (also at 21 percent). As shown in Table 40 below, *reliability* was also considered the most important among Māori Medium schools (36 percent).

Table 40: Most important factors when purchasing/leasing ICT equipment

E-Q20a From the following list, please identify the top three factors in order of importance, that influence you the most in your purchasing decisions when buying/leasing ICT equipment? ***(Most important)***

Base =	Primary 130 %	Secondary 141 %	Māori Medium 20* %
Purchase price	20	21	26
Reliability	16	21	36
Quality	15	11	7
Built to order or configured to suit	10	8	9
School purchasing policy	13	6	14
Lower total cost of ownership	3	11	0
Known brand	8	2	0
Relationship with vendor	4	5	5
Flexible financing or leasing	3	3	2
Relationship with reseller	2	4	0
Highly spec'ed	1	3	0
Length of warranty and support	2	2	0
Other	1	2	0
Don't know	1	0	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

As shown in Table 41, *purchase price* was not only the most important factor, but was also the second most important factor to all school types (17 percent primary, 18 percent secondary and 23 percent Māori Medium schools).

Table 41: Second most important factors when purchasing/leasing ICT equipment

E-Q20b From the following list, please identify the top three factors in order of importance, that influence you the most in your purchasing decisions when buying/leasing ICT equipment? ***(Second most important)***

Base =	Primary 129 %	Secondary 139 %	Māori Medium 20* %
Purchase price	17	18	23
Reliability	15	15	10
Quality	15	11	14
Built to order or configured to suit	6	6	0
School purchasing policy	3	5	19
Lower total cost of ownership	0	7	2
Known brand	10	5	7
Relationship with vendor	3	4	0
Flexible financing or leasing	6	4	6
Relationship with reseller	2	5	0
Highly spec'ed	7	4	0
Length of warranty and support	14	15	14
Other	1	0	5
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

The third most important factor among primary schools was *reliability* at 20 percent (Table 42). For secondary schools the third most important factor was *length of warranty and support* (17 percent) while among Māori Medium schools this was *relationship with reseller* (23 percent).

Table 42: Third most important factors when purchasing/leasing ICT equipment

E-Q20c From the following list, please identify the top three factors in order of importance, that influence you the most in your purchasing decisions when buying/leasing ICT equipment? ***(Third most important)***

Base =	Primary 127 %	Secondary 138 %	Māori Medium 20* %
Purchase price	18	13	21
Reliability	20	15	0
Quality	4	7	5
Built to order or configured to suit	5	8	5
School purchasing policy	6	4	5
Lower total cost of ownership	4	5	14
Known brand	12	7	11
Relationship with vendor	7	4	9
Flexible financing or leasing	3	6	0
Relationship with reseller	8	9	23
Highly spec'ed	5	3	0
Length of warranty and support	5	17	7
Other	3	1	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Table 43 presents a summary of the factors by giving them weights depending on whether they were ranked first, second or third most important. The weightings reveal that in order of importance, purchase price, reliability and quality are the most important to primary and secondary schools when purchasing or leasing desktop computers. Among Māori Medium schools, however, the school purchasing policy was considered more important than quality.

Table 43: Weighted factors when purchasing/leasing ICT equipment

E-Q20a-c From the following list, please identify the top three factors in order of importance, that influence you the most in your purchasing decisions when buying/leasing ICT equipment?

	Primary	Secondary	Māori Medium
Base =	127	138	20*
	%	%	%
Purchase price	19	19	24
Reliability	16	18	21
Quality	13	10	9
Built to order or configured to suit	8	7	5
School purchasing policy	9	5	14
Lower total cost of ownership	2	9	3
Known brand	9	4	4
Relationship with vendor	4	5	4
Flexible financing or leasing	4	4	3
Relationship with reseller	3	5	4
Highly spec'ed	4	3	0
Length of warranty and support	7	9	6
Other	1	1	2
Total	100	100	100

Total may not sum to 100% due to rounding.
Note: all figures are calculated by assigning weights to all factors: the first most important factor was given a weight of three, second a weight of two and third a weight of one.
*Caution: low base number of schools - results for Māori Medium schools are indicative only.

5.8.2 Challenges to managing ICT infrastructure

In regards to deploying and managing ICT infrastructure and equipment, the *cost of ICT equipment* was most frequently mentioned as being the greatest challenge for all schools (81 percent of Māori Medium, 68 percent of primary and 49 percent of secondary schools) as detailed in Table 44.

Table 44: First greatest challenge in deploying and managing ICT infrastructure and equipment

E-Q21a And from the following list, please identify the three greatest challenges in order of importance, that your school faces in deploying and managing ICT infrastructure and equipment? ***(First greatest challenge)***

	Primary	Secondary	Māori Medium
Base =	126	140	20*
	%	%	%
Costs of ICT equipment	68	49	81
Technical support	14	10	5
Professional development	6	7	5
Network infrastructure	4	7	2
Costs of upgrades	2	8	0
Managing student usage	2	7	0
Integration into the curriculum	3	3	7
Internet bandwidth	0	3	0
Internet safety	1	1	0
Other	0	4	0
Don't know	1	0	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

The second greatest challenge varied across school types (Table 45). At primary schools, *costs of upgrades* and *technical support* were equally challenging (both 23 percent). Among secondary schools, the *cost of ICT equipment* was also the second most challenging (19 percent) and at Māori Medium schools it was the *cost of upgrades* (35 percent).

Table 45: Second greatest challenge in deploying and managing ICT infrastructure and equipment

E-Q21b And from the following list, please identify the three greatest challenges in order of importance, that your school faces in deploying and managing ICT infrastructure and equipment? ***(Second greatest challenge)***

	Primary	Secondary	Māori Medium
Base =	124	138	20*
	%	%	%
Costs of ICT equipment	8	19	2
Technical support	23	14	18
Professional development	9	12	13
Network infrastructure	17	12	7
Costs of upgrades	23	17	35
Managing student usage	5	9	14
Integration into the curriculum	8	8	7
Internet bandwidth	1	6	0
Internet safety	4	3	2
Other	3	1	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

The third greatest challenge identified by all schools was *technical support* (35 percent Māori Medium, 28 percent primary and 18 percent secondary schools). However, as seen in Table 46, this was followed closely by *professional development*, which was reported to be as equally challenging in secondary schools.

Table 46: Third greatest challenge in deploying and managing ICT infrastructure and equipment

E-Q21c And from the following list, please identify the three greatest challenges in order of importance, that your school faces in deploying and managing ICT infrastructure and equipment? ***(Third greatest challenge)***

	Primary	Secondary	Māori Medium
Base =	123	137	20*
	%	%	%
Costs of ICT equipment	11	13	2
Technical support	28	18	35
Professional development	23	18	30
Network infrastructure	8	9	0
Costs of upgrades	11	10	9
Managing student usage	2	12	2
Integration into the curriculum	13	7	10
Internet bandwidth	3	10	2
Internet safety	1	2	9
Don't know	0	1	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

When the factors were given weights that depend on their ranking of first, second and third most challenging (Table 47), results became more straightforward. *Cost of ICT equipment* was evidently the most challenging to all school types in deploying and managing ICT infrastructure and equipment, followed by *technical support* and *cost of upgrades*.

Table 47: Weighted challenges in deploying and managing ICT infrastructure and equipment

E-Q21a-c And from the following list, please identify the three greatest challenges in order of importance, that your school faces in deploying and managing ICT infrastructure and equipment?

Base =	Primary 123 %	Secondary 137 %	Māori Medium 20* %
Costs of ICT equipment	39	33	42
Technical support	19	13	14
Professional development	10	11	12
Network infrastructure	9	9	3
Costs of upgrades	11	11	13
Managing student usage	3	9	5
Integration into the curriculum	6	5	8
Internet bandwidth	1	5	0
Internet safety	2	2	2
Other	1	2	0
Don't know	1	0	0
Total	100	100	100

Total may not sum to 100% due to rounding.
Note: all figures are calculated by assigning weights to all factors: the first most important factor was given a weight of three, second a weight of two and third a weight of one.
*Caution: low base number of schools - results are indicative only.

6.0 Use of ICT to communicate with whānau

In terms of the ways ICT is used at schools to communicate with the wider community/whānau, most schools reported using telephones (88 percent primary, 91 percent secondary and 90 percent of Māori Medium schools) as the main means of communication (Table 48).

Many secondary schools also mentioned publishing information on the school's web site (85 percent compared with 65 percent of primary and 22 percent of Māori Medium schools), as well as e-mail between teachers and parents (79 percent compared with 63 percent of primary and 58 percent of Māori Medium schools).

Table 48: Schools with at least one of the below new technologies

P-Q9 How is ICT used at your school to communicate with the wider community/whānau?

Base =	Primary 147 %	Secondary 155 %	Māori Medium 22* %
Publishing information on the school's website	65	85	22
Emailing Newsletters	57	57	67
Email between teachers and parents	63	79	58
Student/Parent access to school servers from their homes	16	23	8
Telephones	88	91	90
Text messaging (e.g. for truancy)	17	32	52
Voice messaging Absence Lines	38	50	50
Blogs or other social networking services	5	8	0
Other	5	6	8

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

7.0 Professional development and support

7.1 Online support for principals and teachers

7.1.1 Learning management systems

A sizeable proportion of all schools report they do not use any Learning Management Systems (60 percent primary, 37 percent secondary and 58 percent of Māori Medium schools). Though secondary and primary schools appear to have used more of a mix of different Learning Management Systems than Māori Medium schools (Table 49).

Table 49: Learning Management Systems in use

E-Q35 Which of the following Learning Management Systems does your school use?

Base =	Primary 121 %	Secondary 141 %	Māori Medium 20* %
MindSpring	0	10	19
Moodle	4	12	0
BlackBoard	1	4	0
KnowledgeNET	13	9	0
SchoolZone/myclasses	3	9	0
UltraNET	2	4	0
Other	6	12	5
None	60	37	58
Don't know	13	8	19

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

7.2 Professional development

Professional development programmes exist for helping teachers to integrate the use of ICT into learning and teaching processes. When asked whether they had attended a professional development programme, over two-thirds of all principals had done so over the past 12 months. Specifically, 72 percent of secondary principals reported having done so, as did 66 percent of primary and 65 percent of Māori Medium school principals. Also, over the next 12 months, two-thirds of all principals intend to take part in such a programme (63 percent of secondary, 69 percent of primary, and 77 percent of Māori Medium schools).

Principals were also asked to indicate the proportion of their schools' teaching staff that have attended such courses in the past 12 months (Table 50). Over half of primary (60 percent) and secondary schools (61 percent) had 50 percent or more of their teaching staff attend a course in the 12 months previous to the survey, compared with 41 percent of Māori Medium schools. Also, up to 16 percent of primary and 30 percent of Māori Medium schools' principals reported that none of the teachers at their school have participated in such a programme over the past 12 months, compared with seven percent of secondary school principals.

Table 50: Teacher attendance at ICT-related professional development courses in last 12 months

P-Q13a About what percentage of the teachers at your school have participated in such a programme over the past 12 months?

	Primary	Secondary	Māori Medium
Base =	150	154	22*
	%	%	%
None	16	7	30
1%–9%	11	14	23
10%–24%	6	10	8
25%–49%	7	8	0
50%–74%	11	13	18
75%–99%	13	17	5
100%	36	31	18
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Expected attendance at an ICT professional development course of 50 percent or more teachers was higher for programmes taking place over the next 12 months (Table 51). Primary schools most commonly expected future attendance to be higher (72 percent compared with 66 percent secondary and 60 percent Māori Medium schools). Given the low levels of prior attendance by 50 percent or more teachers among Māori Medium schools, it is of a concern that these schools also expected the lowest future attendance.

Table 51: Expected teacher attendance at ICT-related professional development courses over next 12 months

P-Q13c About what percentage of the teachers at your school would you expect to participate in professional development programmes that integrate ICT into learning and teaching processes over the next 12 months?

Base =	Primary 149 %	Secondary 155 %	Māori Medium 22* %
None	4	1	0
1%–9%	1	4	7
10%–24%	8	16	18
25%–49%	5	8	12
50%–74%	9	16	18
75%–99%	9	14	3
100%	54	36	39
Don't know	9	4	3
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

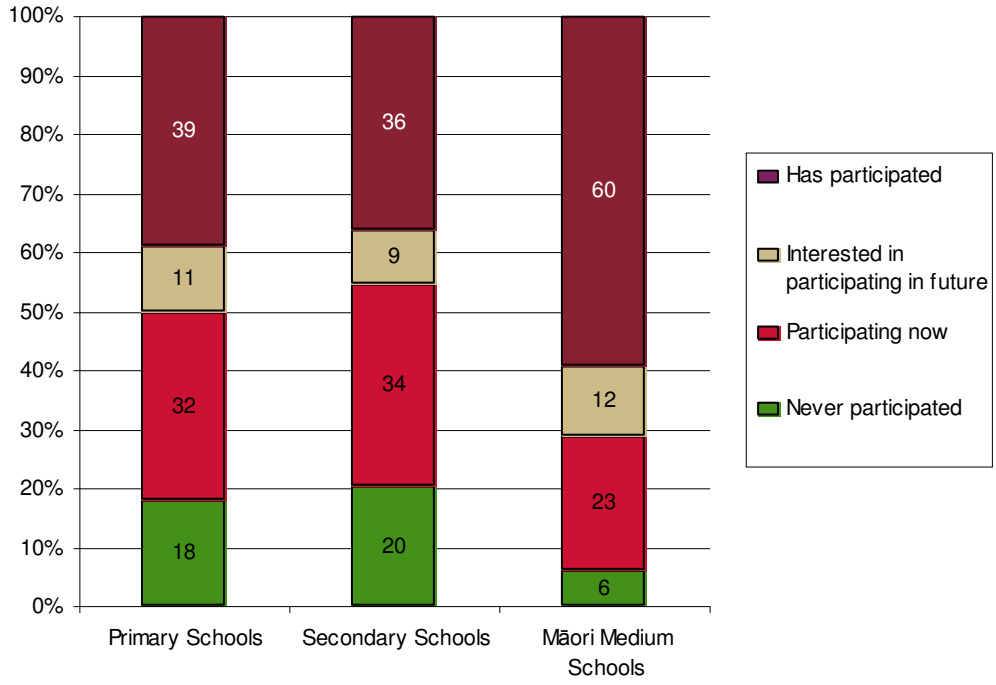
7.3 Participation in professional development cluster and other ICT initiatives

7.3.1 Information and Communication Technology Professional Development (ICTPD) cluster

As shown in Graph 27 below, 18 percent of primary schools and 20 percent of secondary schools have never participated in an ICTPD cluster, compared with just six percent of Māori Medium schools. Up to 60 percent of Māori Medium schools reported they have participated in the past but no longer do so now, compared with 39 percent for primary and 36 percent for secondary schools.

Graph 27: Participation in ICTPD cluster

P-Q1a Which of the following ICT initiatives is your school participating in (or has participated in): ICTPD cluster?



Base: primary (n=143), secondary (n=140), Māori Medium (n=18*).
*Caution: low base number of schools – results are indicative only.

7.3.2 Principal Laptops and TELA Teacher Laptops

Nearly all primary schools (97 percent) were participating or had participated in the Principal Laptops initiative, compared with 94 percent of secondary and 90 percent of Māori Medium schools. Only two percent of primary schools had never participated in the scheme, as had three percent of Māori Medium and four percent of secondary schools.

A similar proportion of schools also reported participating in the TELA Teacher Laptops programme, with 92 percent of primary schools, 95 percent of secondary and 98 percent of Māori Medium schools.

Other ICT initiatives

Table 52, Table 53 and Table 54 show the levels of participation in other ICT initiatives among primary, secondary and Māori Medium schools.

Table 52: Participation in other ICT initiatives by Primary schools

P-Q1 Which of the following ICT initiatives is your school participating in (or has participated in): Primary?

Primary schools	PEN	Refurbished Computers	Digital Opportunities	Living Heritage	Positive Computing for Parents/ Caregivers	e-learner Clusters	School Network Upgrade
n=112	%	%	%	%			
Participating now	45	18	16	6	6	6	20
Has participated	25	14	6	4	2	4	29
Interested in participating in future	8	6	20	11	11	16	11
Never participated	21	62	58	79	80	74	39
Total	100	100	100	100	100	100	100

Total may not sum to 100% due to rounding.

Table 53: Participation in other ICT initiatives by Secondary schools

P-Q1 Which of the following ICT initiatives is your school participating in (or has participated in): Secondary?

Secondary schools	PEN	Refurbished Computers	Digital Opportunities	Living Heritage	Positive Computing for Parents/ Caregivers	e-learner Clusters	School Network Upgrade
n=108	%	%	%	%			
Participating now	46	17	21	2	6	22	18
Has participated	23	11	15	4	3	7	19
Interested in participating in future	5	5	16	13	13	15	12
Never participated	26	66	49	80	78	56	51
Total	100	100	100	100	100	100	100

Total may not sum to 100% due to rounding.

Table 54: Participation in other ICT initiatives by Māori Medium schools

P-Q1 Which of the following ICT initiatives is your school participating in (or has participated in): Māori Medium?

Māori Medium	PEN	Refurbished Computers	Digital Opportunities	Living Heritage	Positive Computing for Parents/ Caregivers	e-learner Clusters	School Network Upgrade
n=14*	%	%	%	%			
Participating now	52	37	18	4	4	18	31
Has participated	24	32	10	10	4	17	19
Interested in participating in future	6	19	35	31	38	31	20
Never participated	18	11	37	56	54	34	30
Total	100	100	100	100	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

8.0 ICT planning and administration

8.1 Spending overview

8.1.1 2006 Operations Grant

All principals were asked to provide the total amount of their school's Operations Grant for 2006 (Table 55). Results suggest secondary schools receive larger grants than primary and Māori Medium schools.

Table 55: Total Operations Grant for 2006

P-Q16 What was the total amount of your school's Operations Grant for 2006?

Base =	Primary 105 %	Secondary 98 %	Māori Medium 14* %
$100,000 or below	12	3	0
$100,001-$200,000	26	1	26
$200,001-$400,000	29	5	34
$400,001-$600,000	16	18	34
$600,001-$1,000,000	6	28	0
$1,000,001-$1,500,000	6	28	7
$1,500,001 or more	6	17	0
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

8.1.2 Spending as a proportion of the 2006 Operations Grant

Table 56 below shows the average proportions of the 2006 Operations Grant that was spent on staffing, building, ICT and other areas. Across all school types, most of the spending from the Grant was spent on staffing or other areas that were not included in the list provided, whereas ICT made up a relatively small proportion of the spending (ten percent for both primary and secondary schools and 11 percent for Māori Medium schools).

The ICT spend ranged between no money put into the area (reported by three schools) to 50 percent (reported by one school). Two thirds of all schools (67 percent) reported an ICT spend of ten percent or less.

Table 56: Spending of 2006 Operations Grant

P-Q17 Approximately what proportion of your school's 2006 Operations Grant did your school spend in each of the areas listed below?

	Primary	Secondary	Māori Medium
Base =	96	86	11*
	%	%	%
Staffing	42	39	36
Building	16	17	14
ICT	10	10	11
Other	34	38	43
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

8.2 Anticipated expenditure on ICT in 2007

Principals were also asked their perceptions of their school's ICT spending in the same areas over the months of January to December 2007 when compared with 2006 (Table 57 overleaf).

For the current year, all schools were more likely to believe that more will be spent on:

- Internet and telephone charges (55 percent primary, 47 percent secondary and 40 percent Māori Medium schools reported *More*).
- Consumables (54 percent primary, 46 percent secondary and 26 percent Māori Medium schools).
- Technical support and maintenance (47 percent primary, 46 percent secondary and 30 percent Māori Medium schools).
- Purchasing new hardware (43 percent primary, 34 percent secondary and 23 percent Māori Medium schools).
- Teacher professional development (40 percent primary, 38 percent secondary and 44 percent Māori Medium schools).

More secondary school principals than those from primary and Māori Medium schools anticipated a higher amount of spending in 2007 on the following:

- Software (28 percent secondary, 20 percent primary and 6 percent Māori Medium schools).
- Lease of other hardware (25 percent secondary, 20 percent primary and 18 percent Māori Medium schools).
- School lease costs of laptop/notebook computers via the Teacher Laptops programme (24 percent secondary, 21 percent primary and seven percent Māori Medium schools).

Table 57: Anticipated spending on various ICT equipment in 2007 compared with the 2006 year

P-Q18 And do you anticipate your spending in each area to be more, less, or the same amount in 2007?

Base =	Primary 90 %	Secondary 98 %	Māori Medium 15* %
Purchase of new hardware			
Less	19	13	38
Same	38	52	38
More	43	34	23
Total	100	100	100
Purchase of new laptop/notebook computers			
Less	30	27	56
Same	43	57	23
More	27	16	21
Total	100	100	100
Purchase of new audio conferencing and/or video conferencing equipment			
Less	34	36	40
Same	48	44	44
More	18	19	16
Total	100	100	100
School lease costs of laptop/notebook computers via the Secondary Teacher laptops programme			
Less	19	11	36
Same	61	65	57
More	21	24	7
Total	100	100	100
Purchase of second-hand computers through approved CANZ schemes			
Less	52	50	81
Same	44	46	16
More	4	4	3
Total	100	100	100
Lease of other hardware			
Less	33	23	38
Same	47	52	44
More	20	25	18
Total	100	100	100
Software			
Less	13	9	25
Same	67	63	69
More	20	28	6
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

Base =	Primary 90 %	Secondary 98 %	Māori Medium 15* %
Technical support and maintenance (both hardware and software)			
Less	7	4	0
Same	46	50	70
More	47	46	30
Total	100	100	100
Consumables			
Less	2	2	0
Same	45	52	74
More	54	46	26
Total	100	100	100
Teacher professional development (including advisors paid to visit school)			
Less	11	5	9
Same	49	56	48
More	40	38	44
Total	100	100	100
Teacher release time			
Less	7	6	9
Same	64	65	66
More	30	29	25
Total	100	100	100
Internet & telephone charges			
Less	2	8	16
Same	43	45	44
More	55	47	40
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

8.3 Assessment of ICT

All principals were asked how they assess the value of ICT. Overall, the value of ICT was most often determined by feedback from teachers (82 percent of primary, 83 percent of secondary and 80 percent of Māori Medium schools), followed by students (63 percent of primary, 67 percent of secondary and 68 percent of Māori Medium schools) (Table 58).

The third most frequently utilised method of measuring the value of ICT for primary and secondary schools was the school's ICT Strategic Plan (61 percent of primary and 64 percent of secondary schools), while for Māori Medium schools, this was feedback from parents or whānau (60 percent).

While only five percent of Māori Medium and seven percent of secondary schools reported that the value of ICT was not assessed in their school, the proportion was 11 percent among primary schools.

Table 58: Assessing value of ICT in schools' teaching and learning

P-Q12 How do you assess the value of ICT in your school's teaching and learning?

	Primary	Secondary	Māori Medium
Base =	149	154	22*
	%	%	%
The school's ICT Strategic Plan	61	64	59
Performance reviews (of teachers)	56	58	32
Student assessment	57	49	50
Feedback from teachers	82	83	80
Feedback from students	63	67	68
Feedback from parents/whānau	48	33	60
Feedback from community	30	23	50
Other	1	2	0
Value of ICT is not assessed in our school	11	7	5

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

9.0 Refurbished computers in schools

9.1 Computer Access New Zealand Trust

There continues to be an interest in giving schools greater access to ICT through helping them buy older computers which have been refurbished and upgraded. One such initiative, the Computer Access New Zealand Trust (CANZ), was set up in early 1999 to co-ordinate such refurbishing.

Awareness of the CANZ computer-refurbishing scheme appeared to be reasonably high among all schools, with 69 percent of primary, 63 percent of secondary and 70 percent of Māori Medium school principals having heard of it[22].

Of the principals who reported they were aware of the scheme, 22 percent of primary and 20 percent of secondary schools have purchased computer equipment through one of CANZ's accredited refurbishers at some time (Table 59). On the other hand, 77 percent of primary and 73 percent of secondary schools that have heard of the CANZ Trust computer-refurbishing scheme, have not purchased computer equipment through any of these CANZ's accredited refurbishers.

Table 59: Number of CANZ's accredited refurbishers the school used to purchase computer equipment at any time

P-Q20 Has your school purchased computer equipment through Computer Access New Zealand Trust's accredited refurbishers: Remarkit (Wellington), The Ark (Auckland), or other organisations?

Base =	Primary 100 %	Secondary 94 %
1 recycler	22	20
3 recyclers	0	1
None	77	73
Don't know	1	5
Total	100	100

Total may not sum to 100% due to rounding.
Sub-sample based on those who have heard of CANZ Trust computer recycling scheme.

As shown in Table 60, of the principals who had heard of the scheme, no primary and only three percent of secondary schools purchased computer equipment through Remarkit (Wellington) in the last 12 months, while seven percent of primary and one percent of secondary schools have done so from The Ark (Auckland).

[22] Due to small sub-sample of Māori Medium schools, further analysis of refurbished computers is not performed.

Table 60: Purchasing computer equipment through CANZ's accredited refurbishers

P-Q20a Has your school purchased computer equipment through Computer Access New Zealand Trust's accredited refurbishers: Remarkit (Wellington), The Ark (Auckland), or Other organisations?

	Remarkit (Wellington)		The Ark (Auckland)		Other organisations	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
Base =	82	85	98	90	75	71
	%	%	%	%	%	%
Yes (in the last 12 months)	0	3	7	1	4	6
Yes (but before the past 12 months)	0	2	11	13	1	1
No	99	88	81	80	92	85
Don't know	1	7	1	5	3	8
Total	100	100	100	100	100	100

Total may not sum to 100% due to rounding.
Sub-sample based on those who have heard of CANZ Trust computer recycling scheme.
Base sizes may be inconsistent with those in Table 59 because not all respondents answered the questions.

Most school principals said they *would not/probably not* consider purchasing refurbished computer equipment in the future (Table 61).

Table 61: Intentions to purchase recycled computers

P-Q22 Would you consider purchasing refurbished computer equipment in the future?

	Primary	Secondary	Māori Medium
Base =	146	153	20*
	%	%	%
Definitely 'no'	19	23	28
Probably 'no'	36	31	8
Probably 'yes'	24	31	43
Definitely 'yes'	10	7	11
Don't know	10	8	11
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

9.2 Disposal of computers

The most common method for disposing the schools' computers once they are no longer of use is taking them to the landfill (51 percent primary, 42 percent secondary and 43 percent of Māori Medium schools). Computers were also often put into storage (31 percent primary, 26 percent secondary and 36 percent of Māori Medium schools) or recycled/refurbished (18 percent primary, 26 percent secondary and 22 percent of Māori Medium schools). Nearly all schools had at some time disposed of their computers that were not in use (Table 62).

Those who said they used *supplier 'take back'*, *recycling/ refurbishment* or *Other* were asked to also specify the company. There were no particular companies that were mentioned frequently, however, it was common for principals to report the computers were sold or donated to students, family or other schools.

Table 62: Method of disposal

P-Q23 How does your school dispose of computers that are no longer of any use?

Base =	Primary 145 %	Secondary 153 %	Māori Medium 19* %
Landfill	51	42	43
Supplier 'Take Back'	11	10	8
Recycling/ refurbishment	18	26	22
In storage	31	26	36
Other	15	17	5
Never had to dispose	4	4	8

Total may exceed 100% because of multiple response.
*Caution: low base number of schools - results are indicative only.

Notably, at about one in four primary and secondary schools (23 percent and 27 percent respectively), end of life disposal options for computers is a factor in the purchase decision, compared with 41 percent of Māori Medium schools.

Table 63: Consideration of disposal at time of purchase

P-Q24 Does your school consider end of life disposal options for your computers at the time of purchase, i.e. is this a factor in your purchase decision?

Base =	Primary 145 %	Secondary 153 %	Māori Medium 20* %
Yes	23	27	41
No	67	63	45
Don't know	10	10	14
Total	100	100	100

Total may not sum to 100% due to rounding.
*Caution: low base number of schools - results are indicative only.

10.0 Teachers' adoption of ICT

By adapting a research instrument described by Knezek and Christensen (1999)[23], principals were asked to identify the stage (see Table 64 below) where they feel most teachers at their school are in with regards to the adoption of ICT.

Table 64: Six stages of adoption of ICT, as identified by G. Knezek and R. Christensen

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 comfortable using the computer.
Adaptation to other contexts They think about the computers 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.

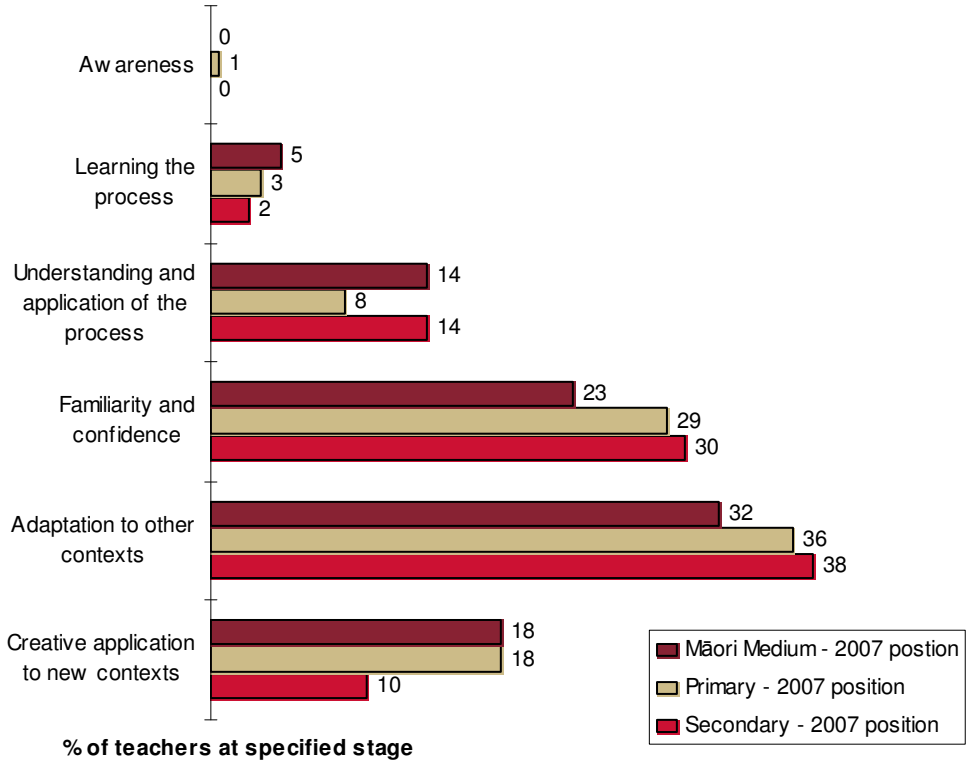
Overall, New Zealand teachers appear to be in the higher levels of ICT adoption (Graph 28 overleaf). All teachers were more likely to be *experiencing adaptation to other contexts* (38 percent secondary, 36 percent primary and 32 percent Māori Medium schools).

Primary and Māori Medium schools were more likely to have most of their teachers in the final stage of *creative application to new contexts* (both 18 percent compared with 10 percent of secondary schools).

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

Graph 28: Teachers' adoption of ICT

P-Q32 There are six stages in the adoption of technology (as identified by 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.



Base: primary (n=154), secondary (n=162), Māori Medium (n=22*).
*Caution: low base number of schools – results are indicative only.

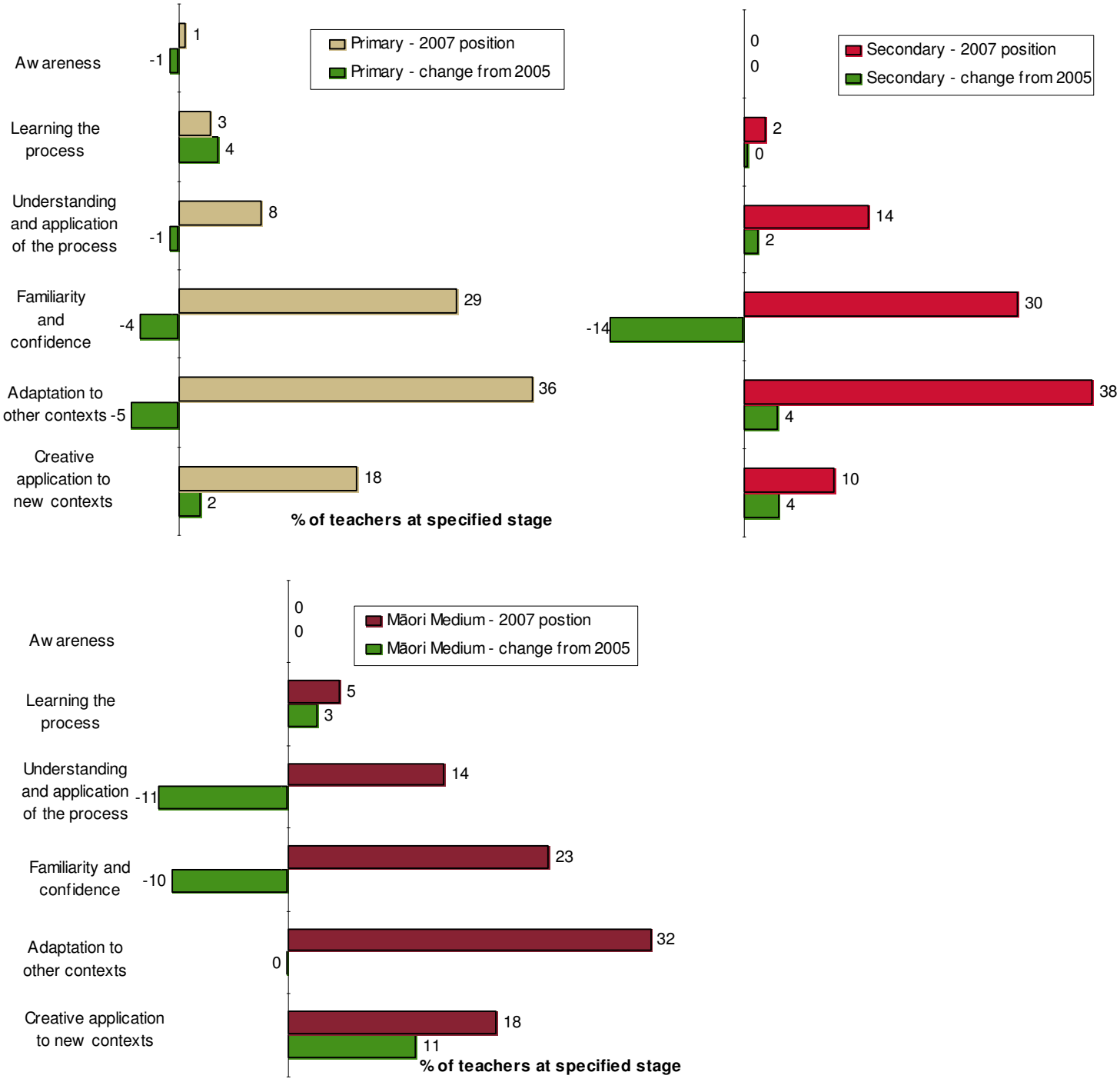
As detailed in Graph 29 overleaf, compared with 2005, changes in primary school teachers' levels of experience were mixed – while *creative application to new contexts* increased by two percent, *adaptation to other contexts* and *familiarity and confidence* decreased by five percent and four percent respectively.

From 2005 to 2007, secondary school teachers appear to have shown more progression through the different stages. There has been a decrease (of 14 percent) in the proportion of secondary teachers at the *familiarity and confidence* stage of adoption. More secondary school principals believed their teachers were at the two later stages (increase of four percent in *adaptation to other contexts* and *creative application to new contexts*).

Among Māori Medium schools, there was a similar trend of a decrease in teachers at the middle stages and an increase for later stage (increase of 11 percent in *creative application to new contexts*).

Graph 29: Changes in teachers' adoption of ICT from 2005

P-Q32 There are six stages in the adoption of technology (as identified by 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.



Base: primary (n=154), secondary (n=162), Māori Medium (n=22*).
*Caution: low base number of schools – results are indicative only.

11.0 Principals' attitudes about the value of ICT

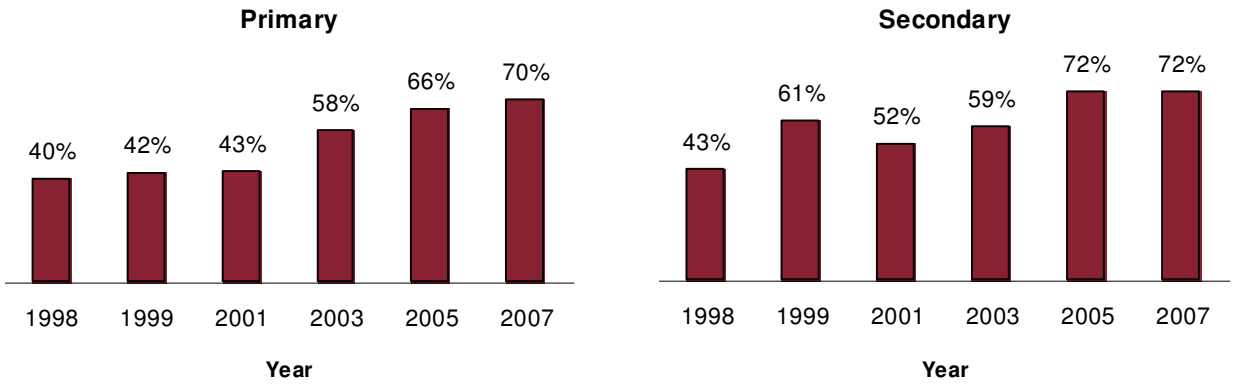
Principals' attitudes towards the role of ICT in teaching and learning appear to remain positive. In comparison with previous years, positive attitudes appear to have increased or remained relatively the same.

Among primary and secondary principals, the attitudes towards ICT appear to be mutual. Up to 70 percent of primary and 72 percent of secondary principals agreed the integration of ICT was already making major improvements to the efficiency of curriculum delivery (Graph 30), while 68 percent of primary and 77 percent of secondary principals agreed the integration of ICT was already making major improvements to the quality of curriculum delivery (Graph 31).

Principals of Māori Medium schools were also reasonably favourable towards ICT and curriculum delivery. Sixty-three percent agreed ICT was making head way in the efficiency of curriculum delivery, and 68 percent felt it improved its quality.

Graph 30: Perceived impact of ICT on *efficiency* of curriculum delivery

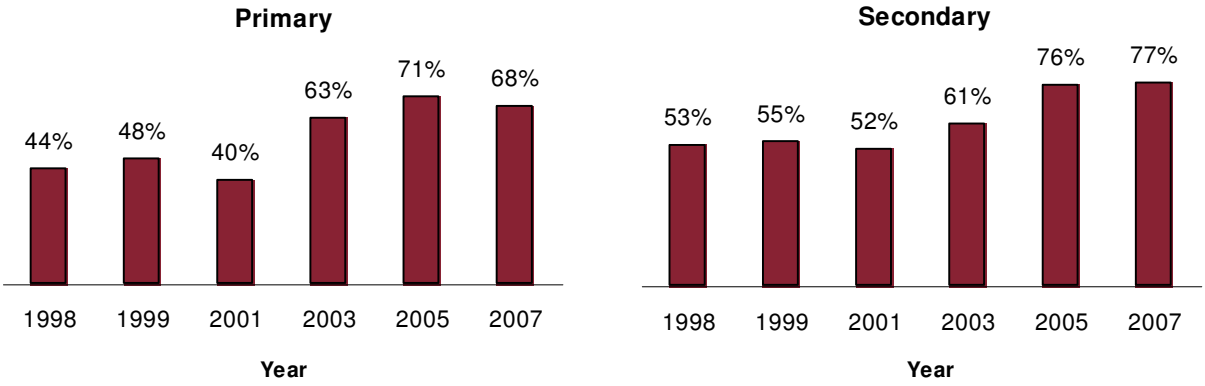
P-Q11b Please indicate the extent to which you agree or disagree with: The integration of ICT is already making major improvements to the efficiency of curriculum delivery at our school. (Percentages show 'agree' or 'strongly agree' responses)



Base: primary (n=154), secondary (n=162).

Graph 31: Perceived impact of ICT on *quality* of curriculum delivery

P-Q11a Please indicate the extent to which you agree or disagree with: The integration of ICT is already making major improvements to the quality of curriculum delivery in our school. (Percentages show 'agree' or 'strongly agree' responses)



Base: primary (n=154), secondary (n=162).

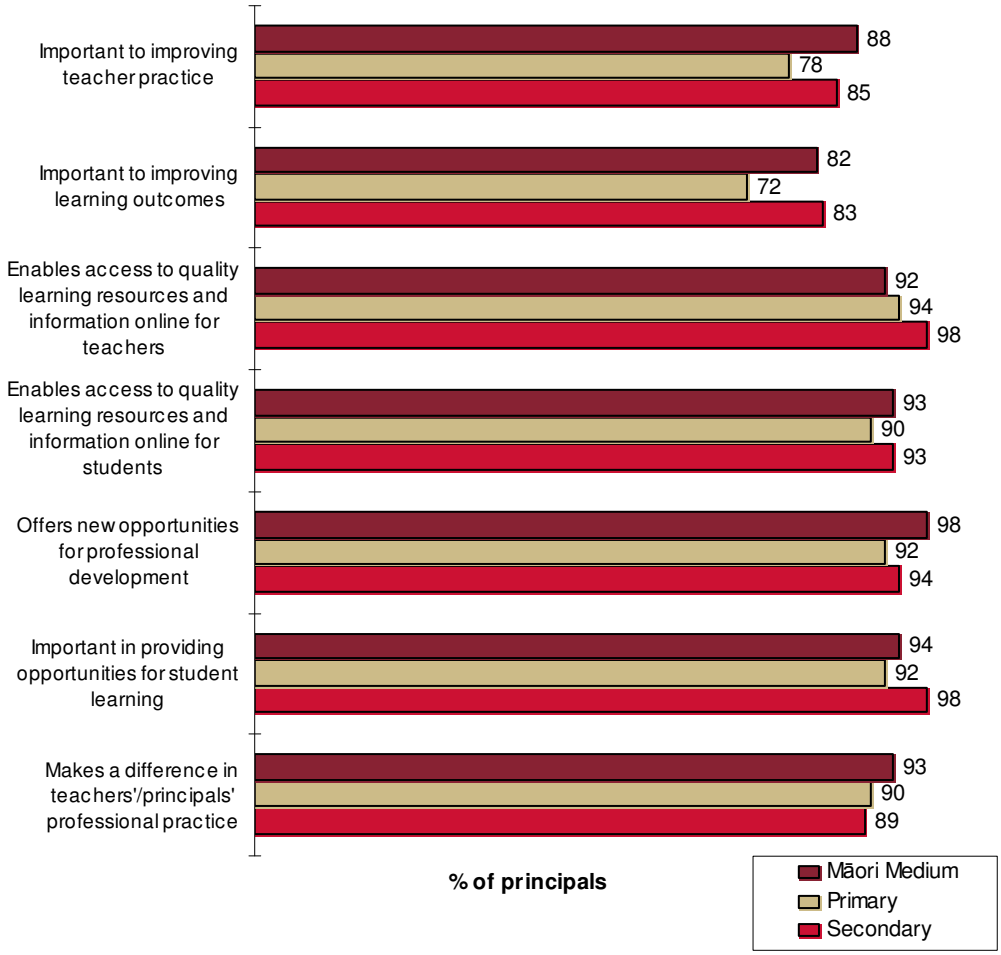
In addition to measuring the previous attitudes, further statements were introduced regarding the role of ICT in teaching and learning. Similarly, principals' attitudes towards these were investigated (Graph 32).

Principals appear to strongly feel ICT benefits teachers as 94 percent of primary, 98 percent of secondary and 92 percent of Māori Medium schools agreed it *enabled access to quality learning resources and information online for teachers*.

Equally strongly felt was ICT's importance in *providing opportunities for student learning* (92 percent of primary, 98 percent of secondary and 94 percent of Māori Medium schools) and in *offering new opportunities for professional development* (92 percent of primary, 94 percent of secondary and 98 percent of Māori Medium schools).

Graph 32: Perceived impact of ICT on further aspects of teaching and learning

P-Q11c-i The following statements are about the role of ICT in teaching and learning. Please indicate the extent to which you agree or disagree with each. (Percentages show 'agree' or 'strongly agree' responses)



Base: primary (n=148), secondary (n=153), Māori Medium (n=21*).
*Caution: low base number of schools – results are indicative only.

Appendix A: Statistical Weighting

Principals' questionnaire

Primary schools

% of Māori students	Sample	Population	Weight
0% - 20%	84	1,137	1.0183
21% - 50%	38	557	1.1027
51% - 99%	20	263	0.9893
100%	12	90	0.5642
Total	154	2,047	

Secondary schools

% of Māori students	Sample	Population	Weight
0% - 20%	111	302	0.8833
21% - 50%	33	109	1.0723
51% - 99% & 100%	18	88	1.5872
Total	162	499	

Equipment questionnaire

Primary schools

% of Māori students	Sample	Population	Weight
0% - 20%	68	1,137	1.0701
21% - 50%	31	557	1.1499
51% - 99%	19	263	0.8858
100%	13	90	0.4430
Total	131	2,047	

Secondary schools

% of Māori students	Sample	Population	Weight
0% - 20%	102	302	0.8722
21% - 50%	30	109	1.0703
51% - 99% & 100%	15	88	1.7283
Total	147	499	

Appendix B: Questionnaires