2020 Communications Trust

ICT in Schools Report 2011

Information & Communications Technology in New Zealand Schools 1993-2011

A Report prepared for the 2020 Communications Trust by Research New Zealand

NOVEMBER 2011

ICT in Schools 2011
Final Report

November 2011

ICT in Schools 2011

November 2011

Final Report

Prepared for:	2020 Communications Trust
Survey Sponsors:	ACTIVboardNZ, asnet Technologies Ltd, Hewlett-Packard New Zealand, InternetNZ, KAREN, Microsoft, the Ministry of Education, Telecom New Zealand, Research New Zealand, Te Puni Kōkiri and 2020 Communications Trust
Prepared by:	Mark Johnson, Joe Hedditch and Ian Yin, Research New Zealand
Project Number:	PN. 4269-00
ISBN:	ISBN 978-0-473-20364-1 (paperback) ISBN 978-0-473-20365-8 (PDF)

Contents

1.0 Executive Summary

Major findings of the 2011 survey

Outlined below are several major findings of the 2011 ICT in Schools survey. More detail is provided in the main body of the report, which follows.

Internet and preparedness to take advantage of ultra-fast broadband opportunities

- Most principals reported that their school needs assistance to take advantage of the opportunities that ultra-fast broadband will afford them. Most frequently this assistance will need to be in the shape of further professional development for teachers, upgrades to ICT equipment and better technical support.

- Only a quarter of secondary schools reported that bandwidth and data caps were not constraining such activities – along with one third of primary schools and 30 percent of Māori Medium schools.

- Overall, the Internet service that is used most frequently is e-mail. Almost all schools reported that staff use e-mail at least once a day. The other most commonly used Internet services include: social networking (e.g. Facebook, Google+, Linkedin), social software (e.g. blogs, wikis, RSS feeds, etc.), closed online communities (password protected) and open online communities.

- The most frequently used TKI resource was NZ Curriculum Online

Impact of the Internet on teaching and learning

- Between two-thirds and three-quarters of schools reported that the Internet has had quite a significant impact.

- However, many useful student resources appear to have low levels of usage. As to whether this is due to lack of awareness or perceived relevance merits further exploration.

Social software

- In all, there as been an increase in the percentage of schools that do not use social software for educational purposes (23 percent of primary schools cf. eight percent in 2009, and 21 percent of secondary schools cf. four percent).

- The most commonly mentioned social software being *accessed* by students include YouTube, Skype, Google Docs and Flickr. Facebook is also used frequently by students in secondary schools for educational purposes.

- In terms of actively creating/publishing content, principals reported that students most frequently use YouTube, Google Docs, Skype and Blogger.com; with secondary students being more likely to access and create/publish content on Facebook than primary school students.

Internet access at home to school online resources

- Most teachers are able to access the Internet at home. Principals' estimates showed that for secondary schools, 90 percent believed at least three-quarters of their teachers have access to the Internet at home. At primary schools the proportion was 94 percent and 69 percent at Māori Medium schools.

- Estimates of student access to the Internet at home differed significantly from estimates of teacher access, however, with students being much less like to have access to the Internet at home.

Internet safety in schools and Netsafe

- In most cases schools were satisfied with the Internet safety resources provided by Netsafe.

- The survey found that schools are more likely to rely on filtering and blocking certain sites than inculcating students with a strong Digital Citizenship ethos.

- Most frequently, primary and secondary schools have strategies in relation to *educating students to develop positive and ethical behaviours in cyberspace* and/or *implementing technologies and policies supporting a safe and secure online environment* for their students.

ICT equipment

- Among primary schools, only one third of the respondents reported that more than half of their school's computers are less than three years old. Among secondary schools, 44 percent of respondents reported that most of their computers are less than three years old, while 46 percent of Māori Medium schools report on average that most (51 percent of more) of their computers are less than three years old.

- One third of primary schools, 47 percent of secondary schools and 50 percent of Māori Medium schools estimated that between 76 percent and 100 percent of their schools' computers are equal to, or better than **1GHz 32-bit or 64-bit dual core processor, 2GB RAM, 80GB hard drive**.

- Forty-five percent of secondary schools reported that they have purchased or leased room-based video conferencing equipment (an increase from 35 percent in 2009). Of those that have purchased video conferencing systems, Polycom is by far the most common system.

ICT use in schools

- Seventy percent of primary schools reported that teachers were using interactive whiteboards in their lesson delivery, compared with 44 percent in 2009. However, the levels of usage among secondary schools remains relatively similar (74 percent in 2011 cf. 70 percent in 2009). Fifty-two percent of Māori Medium schools reported using interactive whiteboards in their lesson delivery in 2011 as well.

- The curriculum areas with highest proportions of computer use are English, Mathematics, Computer Studies and Social Science.

- Imaging devices such as cameras are now the most common digital device available for students to use in class across all school; and while no longer being the most prevalent digital device available for students in classes, the availability of laptops remains high.

- Very few schools, however, make digital devices available for students to take home, with the majority of schools saying that none of their devices are available for this purpose.

- Most secondary school students are allowed to bring their own portable digital devices to school, however, significantly fewer primary students are allowed to bring in such devices.

- Most primary schools (75 percent) and Māori Medium schools (61 percent) do not allow students to connect their own devices to the school network; whereas only 43 percent of secondary schools reported this is the case.

- Around three-quarters of secondary schools are using online resources for supporting Literacy and Numeracy initiatives, while 90 percent of primary schools and 91 percent of Māori Medium schools do so.

- Roughly one third of primary and secondary schools reported they do not use any open source software. However, half of secondary schools reported they do use client-based open source software.

Network

- The majority of schools reported that more than 75 percent of all classrooms are networked.

Externally hosted services

- The externally hosted services that are most frequently being used by schools include: Te Kete Ipurangi, Student Management Systems and e-asTTle.

Technical support

- Among primary schools, about 62 percent or more of the teachers are supported by a technician employed directly by the school, while 78 percent of secondary schools report this is the case.

ICT spending

- On average, all schools spent approximately 11 percent of their total operations grant for 2010 on ICT-related expenditure cf. 10.0 percent in 2008. Secondary schools spent 11.6 percent on ICT on average (cf. 10.6 percent in 2008), compared to 10.5 percent by primary (cf. 9.5 percent in 2008) and 10.6 percent by Māori Medium schools (cf. 9.3 percent in 2008).

- The areas where more schools believed they were likely to increase spending included; purchasing new hardware, technical support and maintenance, consumables, Internet and telephone charges and teacher professional development.

- *Purchase price* and *planned student outcomes* are the most important factors for all school types when procuring ICT equipment.

- The majority of principals report that school management has the most influence in ICT expenditure decisions.

- The majority of both primary and Māori Medium schools are currently, or planning to, bulk purchase many of the services and ICT infrastructure that they use.

- The majority of schools reported that it would be useful or very useful to have computers and other ICT equipment and services centrally procured.

ICT skills and attitudes

- Most schools reported they are already collaborating and sharing good ICT practices within and outside of the school on a local level.

- The barriers that were most commonly identified by schools as limiting the use of ICT included: the cost of ICT equipment, the cost of upgrades, the speed of technological change, and technical support.

- The majority of schools reported that they have an ICT Strategic Plan, and that most frequently the school updated their plan on an annual basis.

- The majority of secondary schools reported they were aware of, and expressed a strong desire to, connect to KAREN. Among those schools that reported being already connected to KAREN, or expressed an interest in doing so, the services that they reported having the greatest levels of interest included: low cost access to commodity Internet services, online resources in other libraries/music, removal of data caps and Ministry of Education services such as TKI and e-asTTle.

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[1]. These surveys have been undertaken in co-operation with the Ministry of Education and with the support of other government agencies and business partners. Since 2005, the 2020 Communications Trust has taken responsibility for coordinating this 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.

A special focus of this report is on schools' readiness for ultra-fast broadband (UFB), given that the Government has prioritised school connections as part of its urban UFB and rural RBI (rural broadband initiative) rollouts. The Government has also recently announced a national Network for Learning (NfL), supporting all schools. Other special areas of focus for this report are:

- 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.
- Internet safety strategies.
- ICT planning and funding in schools.
- eLearning developments.
- Use of online resources.
- Principals' attitudes towards the use of ICT in schools.
- ICT in schools and the wider community.
- Use of social software.
- Procurement of IT equipment and services.

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

[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.

3.0 Methodology

3.1 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 identifiable Māori Medium schools were included in the sample as well.

Response rates and incentive

Questionnaires were sent to 983 schools on 24 August 2011. Included in the sample of 983 schools were all 112 Māori Medium schools, from which 18 Equipment and 20 Principals' questionnaires and were returned.

The initial cut off date for the return of questionnaires was 7 October 2011. This date was subsequently extended to 2 November, at which stage 299 completed Equipment questionnaires and 317 completed Principals' questionnaires had been received. The response rates were 30 percent and 32 percent respectively. The response rates among Māori Medium schools were 18 percent for the Principals' questionnaire and 16 percent for the Equipment questionnaire.

The overall response rates were probably helped considerably by the substantial prizes offered by three of the survey sponsors – a choice of one of the following options, each of which was valued at $10,000 retail: Polycom HDX 6000 View High Definition Video Conferencing System (including a high definition 42 inch flat screen monitor), offered by asnet Technologies Limited; a prize package of HP products (including desktops, laptops and netbooks), offered by HP New Zealand; and a premium Promethean interactive whiteboard, offered by ACTIVboardNZ.

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

3.2 Reporting and interpretation

Weighting and margins of error

Statistical weighting was used so that the results for any 'all schools' figures in the report accurately reflect the true proportions of primary and secondary schools[2].

Indicative 'margins of error'[3] for most results are eight percent to as high as 26 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 we are 95 percent certain the true value lies between 42 percent and 58 percent. Note that margins of error are higher for Māori Medium schools, and given the small achieved sample of such schools, any results and comparisons with primary and secondary schools should be viewed with a certain degree of caution.

Table 1: Maximum margins of error

	Equipment questionnaire	Principals' questionnaire
Primary schools	7.8%	7.6%
Secondary schools	8.8%	8.7%
Māori Medium schools	25.9%	24.5%

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 combined with varying degrees of non-response to such questions. Such margins of error would have to be calculated separately for each finding, 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 in general.

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 in some cases these responses are less than 0.5 percent and have been rounded down to zero.

Given the changing sampling frameworks from survey to survey over time and changing weighting schemes applied to each survey's findings to reflect changes in the sampling frameworks, comparisons with previous surveys should be treated with caution and are indicative only.

[2] In previous years, weightings also took into account the oversampling of Māori Medium schools. However, due to the poor response rate by – and small achieved samples of – such schools, they have little impact on the unweighted or weighted total results. Given the high degree of uncertainty as to the representativeness of the achieved sample of Māori Medium schools in relation to their sector, for total school figures their responses have been weighted based upon their proportions of primary and secondary schools.

[3] 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. ten 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.

As noted above, given the low sample of Māori Medium schools (n=20 maximum answering the Principals' and n=18 maximum answering the Equipment questionnaire), their findings should be treated with caution and are at best indicative.

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 which are more active in using ICT have a disproportionately high tendency to respond to the survey, due to their higher levels of engagement with the survey's subject matter.

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.
- Low levels of engagement with the subject matter of the survey.
- The appropriate person required to complete a questionnaire being unavailable.
- The complexity and length of the survey questionnaires.

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 in relation to key questions of interest. The non-response bias is an unknown that cannot be calculated. This should therefore be borne in mind when interpreting the results.

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

- 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, in the form of a prize draw for a substantive amount of ICT equipment, as noted earlier in this chapter.

3.3 Questionnaires

For this survey, two questionnaires were used and were based on those used in 2009. The approach of using two separate questionnaires ensures 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). Where possible the questionnaires were left unchanged from 2009, enabling several trends to be measured. However, some questions are asked for the first time this year and some of the historic questions were updated or dropped. These changes reflect the objectives of the sponsors funding the survey and the continued changes in ICT since 1993.

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.

4.0 The Internet

This section of the report deals with the Internet and how schools are making use of it. More specifically it relates to the types of Internet connections that they have, the use of the Internet by both students and teachers, and the integration of the Internet into the curriculum.

4.1 Internet connection

4.1.1 Connection type

All schools were asked what type of connections they use to connect to the Internet. The most frequently mentioned connection type was an ADSL connection (Table 2 below). This was reported by 40 percent of primary schools, 37 percent of secondary schools and 27 percent of Māori Medium schools. The second most frequently mentioned connection type was ADSL 2+, reported by 19 percent of primary schools, 28 percent of secondary schools and 18 percent of Māori Medium schools.

As was found in 2009, only a small percentage of schools are still using dial up connections (zero percent of primary, one percent of secondary and seven percent of Māori Medium schools). No schools reported that they were not connected to the Internet. The biggest change in how schools connect to the Internet was seen in the increased number of schools that connect via ADSL 2+ (19 percent of primary schools cf. with 9 percent in 2009, 28 percent of secondary schools cf. 13 percent in 2009)[4].

Another particular change of note is the decrease in schools with wireless Internet connections (19 percent of primary schools in 2011 cf. 50 percent in 2009, 14 percent of secondary schools cf. 26 percent in 2009).

[4] Due to the relatively small sub-sample of Māori Medium schools, statistical comparisons with previous year's surveys have not been made.

Table 2: Internet connection type

E-Q8. Please think about your school's connection to the Internet. What type(s) of connections do your school's computers use to connect to the outside world?

	Primary	Secondary	Māori Medium
Base =	155	125	18**
	%	%	%
ADSL	40	37	27
ADSL 2+	19	28	18
Other Wireless (e.g. Wifi, WiMAX)	19	14	34
Fibre cable	16	27	14
Satellite	10	1	7
Coaxial cable	7	2	0
Digital Microwave Radio (DMR)	3	2	0
Dial up	0	1	7
Other	3	7	0
Don't know	7	2	14
No connection to the Internet	0	0	0

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

4.1.2 Internet Service Provider

The most popular Internet service Provider is currently Telecom, used by 39 percent of primary schools, 35 percent of secondary schools and 25 percent of Māori Medium schools.

Some of the other most common ISPs include Watchdog Corp (used by 10 percent of primary schools, seven percent of secondary schools and 14 percent of Māori Medium schools), Vodafone (used by 21 percent of Māori Medium schools) and SNAP (used by 10 percent of secondary schools).

A number of schools reported using an Internet service other than the ones covered by the questionnaire framework, and their responses appear in the 'Other' category. Usually this related to the use of a local regional loop (e.g. Wellington Loop, WIC Dunedin, etc.).

Table 3: Internet Service Provider

E-Q8a. Who is your school's main Internet Service Provider?

Base =	Primary 155 %	Secondary 124 %	Māori Medium 18** %
Telecom/Schoolzone	39	35	25
Watchdog Corp	10	7	14
Vodafone	6	3	21
InSPire	5	6	7
Orcon	5	8	0
TelstraClear	5	6	0
Xtra	3	1	0
CallPlus	3	2	0
Slingshot	2	1	0
SNAP	0	10	2
Compass Communications	2	0	0
DTS	1	1	0
FX Networks	1	2	0
ICONZ	1	0	7
Woosh	2	0	0
Airnet	1	2	0
Farmside	2	0	0
Pacific Net	1	2	0
Other	12	14	18
Don't know	1	1	7
Total	100	100	100

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

4.2 Ultra-fast broadband initiatives

4.2.1 Participation in ultra-fast broadband initiatives

While a small proportion of schools are already participating in the urban ultra-fast broadband (UFB) initiative (six percent of primary schools, 10 percent of secondary schools and seven percent of Māori Medium schools), larger proportions expect to participate in the UFB initiative, within the next year.

Similarly, while a small proportion of schools are already participating in the rural broadband initiative (RBI) (three percent of primary schools and seven percent of Māori Medium schools), larger proportions expect to be participating in an RBI initiative within the year.

These findings equate to 31 percent of primary schools, 36 percent of secondary schools and 36 percent of Māori Medium schools participating in either the UFB or RBI initiative by the end of 2012.

However, it should be noted that the high degree of non-response suggests there may be low levels of understanding of what these initiatives are.

Table 4: Ultra-fast broadband initiative participation – primary schools

P-Q4. Which ultra-fast broadband initiative is your school already participating in, or which one will you be participating in…[primary]

Base n=168	Already have a connection %	This year %	Next year %	Within 5 years %	Don't know %	No response %
Urban ultra-fast broadband (UFB)	6	5	5	15	21	48
Rural broadband initiative (RBI)	3	7	5	1	10	75
Rural broadband initiative Phase 2	0	1	3	2	8	87
Rural broadband initiative Remote Schools	1	1	0	0	9	90
Independent UFB connection	3	0	0	0	8	89
Don't know	5	2	1	0	14	79

Total may not sum to 100% due to rounding.

Table 5: Ultra-fast broadband initiative participation – secondary schools

P-Q4. Which ultra-fast broadband initiative is your school already participating in, or which one will you be participating in… [secondary]

Base n=120	Already have a connection %	This year %	Next year %	Within 5 years %	Don't know %	No response %
Urban ultra-fast broadband (UFB)	10	6	9	14	9	52
Rural broadband initiative (RBI)	0	7	4	6	2	81
Rural broadband initiative Phase 2	1	0	1	7	2	90
Rural broadband initiative Remote Schools	0	0	0	1	2	98
Independent UFB connection	4	1	2	0	2	92
Don't know	2	3	1	0	6	88

Total may not sum to 100% due to rounding.

Table 6: Ultra-fast broadband initiative participation – Māori Medium

P-Q4. Which ultra-fast broadband initiative is your school already participating in, or which one will you be participating in… [Māori Medium]

Base n=129	Already have a connection %	This year %	Next year %	Within 5 years %	Don't know %	No response %
Urban ultra-fast broadband (UFB)	7	0	15	9	7	63
Rural broadband initiative (RBI)	7	7	0	7	9	72
Rural broadband initiative Phase 2	0	0	0	4	7	89
Rural broadband initiative Remote Schools	0	0	0	0	7	93
Independent UFB connection	2	0	0	0	7	91
Don't know	0	0	0	0	26	74

Total may not sum to 100% due to rounding

4.2.2 Support needed to take advantage of ultra-fast broadband opportunities

Most principals reported that their school needs assistance to take advantage of the opportunities that ultra-fast broadband will afford them. Most frequently this assistance will need to be in the shape of further professional development for teachers (52 percent of primary schools, 64 percent of secondary schools and 63 percent of Māori Medium schools), upgrades to ICT equipment (55 percent of primary schools, 50 percent of secondary schools and 49 percent of Māori Medium schools) and better technical support (50 percent of primary schools, 42 percent of secondary schools and 44 percent of Māori Medium schools).

Table 7: Assistance required to take advantage of ultra-fast broadband opportunities

P-Q5. With the approaching deployment of ultra-fast broadband to all schools, which of the following best describes your school's needs to take advantage of this opportunity?

Base =	Primary 166 %	Secondary 125 %	Māori Medium 19** %
Our teachers will need further professional development support	52	64	63
We will need better technical support	50	42	44
We need more information about online resources	38	46	35
We need help to upgrade our ICT equipment	55	50	49
We need student achievement exemplars using ICTs	36	43	63
We need funding/new hardware	5	3	0
Other	1	2	7
We don't need any support; our school is ready for UFB	14	10	7
We are not sure what we are going to use UFB for	2	2	0

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

4.3 Internet access for students in schools

Areas of school with Internet access

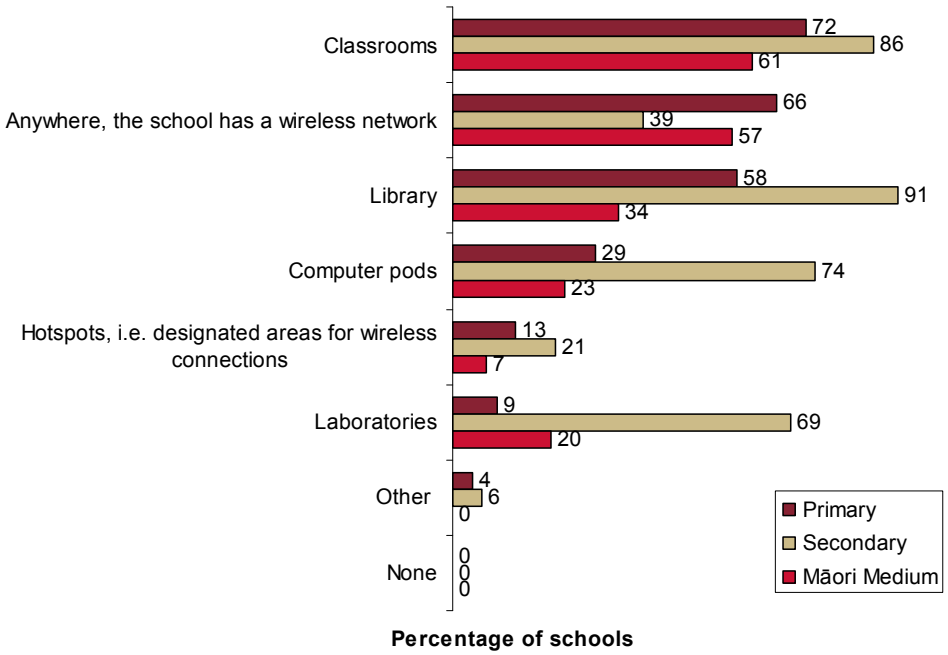
Principals were also asked to provide information about where in the school students are able to use the Internet. Of note, all of the schools said there was at least one area where students are able to use computers with Internet capability. For primary and Māori Medium schools, the most common place for accessing the Internet is in classrooms (72 percent and 61 percent respectively), while in secondary schools access is most frequently found in the library (91 percent) or in classrooms (86 percent).

As was the case in 2009, computer pods with access to the Internet are more frequently found in secondary schools (74 percent compared with 29 percent of primary and 23 percent of Māori Medium schools), as are computers in laboratories (69 percent of secondary schools compared with nine percent of primary and 20 percent of Māori Medium schools).

In contrast, secondary schools are less likely to report students can access the Internet anywhere within the schools through a wireless connection (39 percent, compared to 69 percent of primary and 57 percent of Māori Medium schools).

Graph 1: Areas in schools with access to Internet

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



Bases: primary n=156, secondary n=125 and Māori Medium n=18**
**Caution: low base number of schools - results are indicative only.

4.4 Bandwidth or data cap constraints

Principals were asked to identify if bandwidth or data caps imposed by their school's Internet service provider constrained teaching and learning activities in the school. Of note, only a quarter (23 percent) of secondary schools reported that bandwidth and data caps were not constraining such activities – along with one third of primary schools and 30 percent of Māori Medium schools.

Most frequently, primary schools report constraints in relation to the *use of the Internet by students for information gathering,* followed by *teacher use of online teaching learning resources* and *student access to online learning and teaching resources*.

Roughly six out of 10 secondary schools reported constraints in relation to the same activities, whereas the activities impacted the most within Māori Medium schools were *to be able to access distance learning and teaching opportunities* and *teacher participation in online professional development programmes.*

Table 8: Impacts of bandwidth or data cap on teaching and learning activities in schools

P-Q39. Are the bandwidth or data caps of your current Internet service constraining any of the following teaching and learning activities in your school?

Base =	Primary 128 %	Secondary 109 %	Māori Medium 15** %
Use of the Internet by students for information gathering	54	59	30
Teacher use of online teaching and learning resources	48	58	36
Student access to online learning resources	48	58	27
To be able to access distance learning and teaching opportunities (e.g. video conferencing)	40	51	61
Staff ICT professional development	40	45	36
Teacher participation in online professional development programmes	40	40	48
Administration efficiencies	40	38	36
Teachers engaging in online professional forums/ dialogue	30	39	27
Students publishing online	27	36	24
Connecting to community, cultural or heritage sites (e.g. libraries, marae, museums)	26	33	42
Bandwidth and data caps are not constraining any teaching and learning activities in our school	33	23	30

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

4.5 Internet usage

4.5.1 Staff Internet usage

Principals were asked to estimate how often they or other full-time staff members make use of certain Internet services (either at home or at school) for educational purposes.

Overall the Internet service that is used by far the most frequently is e-mail. Almost all schools reported that staff use e-mail at least once a day (99 percent of each school type).

While email is the Internet service that is accessed most regularly on a daily basis, some of the other Internet services are still popular among schools but are not accessed as regularly. In order to calculate the regularity with which schools make use of each of the services, a simple standardised weighting scheme was applied. In the scheme each principal that said an Internet service was used *More than once a day* was given a weight of four (4). Similarly, services that were accessed *approximately once a day* were given a weight of three (3) and so on. Where schools *never* use a service or did not provide a response, they were given a weighting of zero (0).

All of the responses were then added together to provide a total and then divided by the total number of respondents per school. The subsequent figure was then multiplied by 100 to create relevant indexes for comparative purposes between school types. The results are outlined in Table 9.

The other most commonly used Internet services, based upon their weighted usage include:

- Social networking (e.g. Facebook, Google+, Linkedin) (77 percent of primary, 74 percent of secondary and 91 percent of Māori Medium schools' staff members accessing the Internet service at least once a month or more frequently).
- Social software (e.g. blogs, wikis, RSS feeds, etc.) (82 percent of primary, 90 percent of secondary and 79 percent of Māori Medium schools).
- Closed online communities (password protected) (72 percent of primary, 85 percent of secondary and 74 percent of Māori Medium schools).
- Open online communities (e.g. public discussion forums) (66 percent of primary, 84 percent of secondary and 67 percent of Māori Medium schools).

Table 9: Weighted index of Internet services

P-Q7 How often do you personally or your full-time teaching staff use each of the following Internet services (either at home or at school) for educational purposes?

Base =	Primary 168 weighted	Secondary 127 weighted	Māori Medium 20** weighted
Email	394	395	393
Social networking (e.g. Facebook, Google+, Linkedin)	196	198	239
Social software (e.g. blogs, wikis, RSS feeds, etc.)	186	215	174
Closed online communities (password protected)	129	170	131
Open online communities (e.g. public discussion forums)	101	155	131
ListServ (distribution lists/mailing lists)	78	171	56
Web conferencing	67	100	73
Chat rooms	64	94	59
Video conference	61	128	80
Simulations	29	76	8
Bookmarking	157	128	140

Note: all figures are calculated by assigning weights to each Internet service: services used more than once a day were given a weight of four, services used approximately once a day were given a weight of three, services used approximately once a week were given a weight of two, services used once a month or less were given a weight of one, and services never used were given a weight of zero.

**Caution: low base number of schools - results are indicative only.

Principals were also asked to estimate how often they themselves or other full-time staff members make use of certain web resources (either at home or at school) for educational purposes. Overall the web resource that is by far the most frequently used by primary and secondary schools, based upon its weighted usage, is Wikipedia (93 percent of primary schools, 97 percent of secondary schools and 63 percent of Māori Medium schools).

The other most commonly used resources include:

- Google Earth (91 percent of primary, 94 percent of secondary and 70 percent of Māori Medium schools report staff members accessing the web resource at least once a month or more frequently).
- Education Gazette online (98 percent of primary, 98 percent of secondary and 80 percent of Māori Medium schools)[5].
- Newspapers in Education (NIE) (76 percent of primary, 74 percent of secondary and 58 percent of Māori Medium schools).
- wickED (69 percent of primary, 66 percent of secondary and 74 percent of Māori Medium schools).

[5] Note: the resource appears to be accessed more frequently then others, but the percentages quoted represent schools that have staff accessing it at least once a month and do not take into account the weighted frequency of usage by staff.

Table 10: Weighted index of web resources

P-Q7a How often do you personally or your full-time teaching staff use each of the following specific web resources (either at home or at school) for educational purposes?

Base =	Primary 168 weighted	Secondary 124 weighted	Māori Medium 20** weighted
Wikipedia www.wikipedia.org	199	255	146
Google Earth www.google.com/earth	158	219	139
Education Gazette online www.edgazette.govt.nz	157	195	135
Newspapers in Education (NIE) www.nieonline.co.nz	108	126	81
wickED www.wicked.org.nz	108	105	131
PrometheanPlanet.com www.prometheanplanet.com	91	71	46
Te Ara www.teara.govt.nz	79	122	90
The Science Learning Hub www.sciencelearn.org.nz	66	139	60
Any Questions www.anyquestions.co.nz	62	70	58
Studyit www.studyit.org.nz	46	165	70
NZ Biotechnology Learning Hub www.biotechlearn.org.nz	22	102	22
Interface Online www.nz-interface.co.nz	84	109	54

Note: all figures are calculated by assigning weights to each web resource: services used more than once a day were given a weight of four, services used approximately once a day were given a weight of three, services used approximately once a week were given a weight of two, services used once a month or less were given a weight of one, and services never used were given a weight of zero.

**Caution: low base number of schools - results are indicative only.

4.5.2 Te Kete Ipurangi (TKI)

Almost all principals surveyed reported that they and the teachers at their schools used Te Kete Ipurangi (TKI).

Table 11: Use of TKI

P-Q8. Have you or teachers at your school used TKI (Te Kete Ipurangi)?

Base =	Primary 167 %	Secondary 126 %	Māori Medium 20** %
Yes	99	98	100
No, but we are planning to in the next 12 months	1	1	0
Don't know	1	1	0
Total	100	100	100

Total may not sum to 100% due to rounding.

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

As was done with Internet services and web resources, principals were asked to report how frequently staff at their schools used various TKI resources. Please note that the approach taken to analyse these results was similar to that discussed above. The most frequently used TKI resource, based upon weighted frequency of use as reported by principals, was NZ Curriculum Online (98 percent of primary schools, 99 percent of secondary schools and 90 percent of Māori Medium schools).

The other most commonly used resources include:

- Resources for students (96 percent of primary, 97 percent of secondary and 93 percent of Māori Medium schools report staff members accessing the web resource at least once a month or more frequently).
- Learning areas (93 percent of primary, 91 percent of secondary and 95 percent of Māori Medium schools).
- Assessment Online (94 percent of primary, 96 percent of secondary and 80 percent of Māori Medium schools).
- Digistore (89 percent of primary, 87 percent of secondary and 60 percent of Māori Medium schools).

Table 12: Weighted index of TKI resources

P-Q8a How frequently do you or teachers in your school use each of the following TKI resources?

Base =	Primary 164 weighted	Secondary 117 Weighted	Māori Medium 20** weighted
NZ Curriculum Online	184	222	195
Resources for students	181	220	215
Learning areas	171	211	208
Assessment Online	165	219	158
Digistore	155	136	120
Down the Back of the Chair	121	79	130
Educational Leaders News	105	125	108
EPIC	90	152	77
School directory	68	91	82
Māori -medium education	67	110	259
Pacific education	59	71	68
Te Marautanga o Aotearoa	51	90	189
Well being after the earthquakes	49	69	35
GoDairy! Education	34	51	12
Search cloud	28	88	87
Index New Zealand (INNZ)	22	98	15
Secondary Curriculum and NCEA	8	255	30

Note: all figures are calculated by assigning weights to each TKI resource: services used more than once a day were given a weight of four, services used approximately once a day were given a weight of three, services used approximately once a week were given a weight of two, services used once a month or less were given a weight of one, and services never used were given a weight of zero.

**Caution: low base number of schools - results are indicative only.

4.5.3 Impact of the Internet on teaching and learning

Respondents to the principals' questionnaire were asked to assess the impact the Internet is having on teaching and learning in their school. Notably, between 65 percent and three-quarters of schools reported that the Internet has had quite a significant impact, while 28 percent of primary schools, 25 percent of secondary schools and 17 percent of Māori Medium schools stated that it has had a moderate impact (Table 13).

Table 13: Impact of ICT on teaching and learning

P-Q41. What impact is the Internet having on teaching and learning in your school?

	Primary	Secondary	Māori Medium
Base =	165	125	20**
	%	%	%
None	0	0	7
Very little impact	7	1	7
A moderate impact	28	25	17
Quite a significant impact	65	74	70
Don't know	1	1	0
Total	100	100	100

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

4.5.4 Student Internet usage

Principals were also asked to estimate what proportion of students at their school make use of certain Internet services during a typical school week. Table 14 shows the percentage of schools at which principals estimate that either no students use each service or approximately 50 percent or more of students use service in question.

In general, secondary schools students are more likely to be making use of Internet services than primary school students.

Overall, the Internet services that are by far the most frequently used by students are e-mail, Wikipedia and social networking software.

Fifty-nine percent of secondary school principals reported that more than half of their students are using e-mail during a typical school week, while 11 percent of Māori Medium schools and ten percent of primary schools also reported that 50 percent or more of their students are making use of e-mail during a typical school week.

A fifth of primary schools (19 percent) report that more than half of their students are using social networking software during a typical school week, compared to 22 percent of secondary schools and 15 percent of Māori Medium schools.

Wikipedia is most frequently used by secondary school students – 43 percent of secondary principals reported that 50 percent of more of their students use the service, compared with 19 percent of primary schools and 16 percent of Māori Medium schools.

Notably, many useful student resources appear to have low levels of usage. As to whether this is due to lack of awareness or perceived relevance merits further exploration.

Table 14: Student usage of Internet services

P-Q10. During a typical school week, roughly what percentages of students use each of the following Internet services at school?

Base =	Primary 167		Secondary 116		Māori Medium 20**	
	None %	About 50% or more %	None %	About 50% or more %	None %	About 50% or more %
Wikipedia	20	19	3	43	51	16
Social software (e.g. blogs, wikis, RRS feeds, etc.)	38	19	15	22	52	15
E-mail	30	10	7	59	33	11
Google Earth	26	9	11	21	56	16
Bookmarking	54	9	42	11	70	7
Closed online learning communities	64	9	30	11	79	0
Newspapers in Education (NIE)	42	6	30	3	67	7
wickED	46	6	34	3	44	7
Promethean Planet	74	6	53	1	84	7
Social networking (e.g. Facebook, Google+, Linkedin)	73	5	41	23	72	13
Any Questions (www.anyquestions.co.nz)	55	4	33	6	77	7
Studyit	70	3	8	13	86	0
Office Web apps	80	3	56	8	88	0
Simulations	76	3	37	3	98	0
Te Ara	69	2	35	3	63	14
Chat rooms	84	1	41	12	86	2
Open online communities (e.g. public discussion forums)	83	1	30	8	84	2
Web conferencing	80	1	46	7	74	0
Video conferencing	80	1	31	6	61	0
Live@edu	87	1	57	5	100	0
ListServ (distribution lists/mailing lists)	93	1	51	4	93	0
SkyDrive	88	1	53	4	98	0
Education Gazette online	90	1	75	2	86	0
NZ Biotechnology Learning Hub	84	1	39	2	91	0
The Science Learning Hub	69	0	33	3	91	0

Total may exceed 100% because of multiple responses.

Note: bases vary due to non-response to some questions; bases shown are the maximum base across all of the different Internet services noted.

** Caution: low base number – results are indicative only.

4.6 Social software

4.6.1 Staff usage of social software

Principals were then asked more specifically about the social software used at schools by staff for educational purposes and whether they have been simply *accessed* (read or viewed only) or used to actively *participate* (create or publish own entries).

In all, there as been an increase in the percentage of schools that do not use social software for educational purposes (23 percent of primary schools cf. eight percent in 2009, and 21 percent of secondary schools cf. four percent).

The level of non-usage of social software for educational purposes among Māori Medium schools (18 percent) is similar to that reported by primary and secondary schools in 2011.

Of those who use social software for educational purposes, the most popular types being accessed include YouTube, Skype, Google Docs and Facebook (Table 15).

Fewer schools are making use of social software for creating or publishing their own entries. However, where this is being done, the social software that are used most commonly included Google Docs and YouTube.

Table 15: Accessing social software

P-Q11. If you personally or your full-time teaching staff use social software for educational purposes, what kind of social software do you use?

	Primary		Secondary		Māori Medium	
Base =	Accessed 147 %	Created/ published 84* %	Accessed 109 %	Created/ published 81* %	Accessed 16** %	Created/ published 12** %
YouTube	62	54	58	56	47	63
Skype	39	42	47	47	47	73
Google Docs	31	60	34	62	13	47
Facebook	26	39	33	59	21	80
Flickr	24	25	26	30	16	33
Twitter	18	23	17	30	3	20
RSS feeds	16	18	24	19	3	20
Blogger.com	16	33	15	20	0	33
Dropbox	14	20	17	26	8	23
MSN	12	10	17	7	16	0
Bing	12	7	15	5	0	10
Office Web Apps	8	10	11	9	11	3
Google Plus	7	8	15	14	16	23
My Space	6	2	11	5	8	0
Zoomr	6	5	5	2	8	10
SkyDrive	5	2	7	7	0	0
Bebo	5	5	6	4	8	10
Office 365 (Live@edu)	5	6	6	6	0	0
Digg	5	8	3	1	0	0
Second life	5	2	2	2	8	0
Pbwiki.com	4	4	5	5	8	0
Kodak Photoshare	3	5	10	6	8	0
Esnips	3	2	6	0	8	10
Zoomin.co.nz	3	2	4	2	0	0
Podomatic	3	2	2	1	0	10
Wikispaces	3	5	0	0	0	0
There.com	2	1	1	0	0	0
Sharepoint	1	4	8	7	0	0
Other	3	5	2	6	8	10
Do not use social networks for educational purposes	23	N/A	21	N/A	18	N/A

Total may exceed 100% because of multiple responses.

*Created/published bases exclude those schools that do not use social networks for educational purposes.

**Caution: low base number of schools - results are indicative only.

4.6.2 Student usage of social software

Student usage of social software for educational purposes was also examined. Around a third of primary and secondary principals reported that the students at their school do not use social software for educational purposes (Table 17 overleaf), while two-thirds of Māori Medium principals reported this is the case.

The most commonly mentioned social software being *accessed* by students include YouTube (50 percent of primary schools and 51 percent of secondary schools), Skype (22 percent of primary schools and 17 percent of secondary schools), Google Docs (13 percent of primary schools and 22 percent of secondary schools) and Flickr (13 percent of primary schools and 22 percent of secondary schools). Facebook is also used frequently by students in secondary schools for educational purposes (26 percent).

In terms of actively creating/publishing, principals reported that students most frequently use YouTube, Google Docs, Skype and Blogger.com.

When further examined by school type, other than secondary students being more likely to access and create/publish content on Facebook, there were no significant differences between primary and secondary school students.

4.6.3 Policies on student access to social software

Principals were asked about what policies their school has in place to manage students' access to social software sites. Among Māori Medium schools, 13 percent have no specific policies for this, compared with zero percent of secondary schools and two percent of primary schools (Table 16 below). Principals at primary and secondary schools most frequently reported the school blocking such sites to all students (34 percent and 46 percent respectively); whereas those at Māori Medium schools most often reported it was blocked by their Internet service provider (37 percent).

Table 16: Ways schools manage student access to social software

P-Q13 What policies, if any, does your school have for managing student access to social software sites?

	Primary	Secondary	Māori Medium
Base =	166	126	20**
	%	%	%
Blocked by school to all students	34	46	28
Monitored access	28	17	4
Blocked by Internet Service Provider	26	15	37
Open to some students	4	9	0
Open to all students	2	7	15
Partial block	2	4	0
Other	1	2	2
There are no such specific policies	2	0	13
Total	100	100	100

Total may not sum to 100% due to rounding.

**Caution: low base number of schools - results are indicative only.

Table 17: Accessing social software

P-Q12. If students at your school use social software for educational purposes, what kind of social software do they use?

	Primary		Secondary		Māori Medium	
	Accessed	Created/ published	Accessed	Created/ published	Accessed	Created/ published
Base =	147	52*	101	67*	14**	7**
	%	%	%	%	%	%
YouTube	50	48	51	51	15	40
Skype	22	27	17	28	15	67
Google Docs	13	31	22	46	26	13
Flickr	13	17	19	16	9	20
Blogger.com	12	33	8	22	0	20
Facebook	7	10	26	43	6	33
Bing	6	2	7	9	0	7
Twitter	5	4	12	24	3	27
Google Plus	5	6	8	7	3	0
MSN	3	4	12	10	12	27
My Space	3	2	7	9	0	0
RSS feeds	3	0	7	9	0	7
Office 365 (Live@edu)	3	4	3	7	0	7
Wikispaces	3	6	0	0	0	0
Dropbox	2	0	8	6	0	0
SkyDrive	2	2	6	12	0	0
Bebo	2	2	5	6	0	0
Office Web Apps	2	6	3	3	3	0
Zoomr	2	0	2	1	9	27
Podomatic	2	4	1	1	0	0
Sharepoint	1	0	5	6	0	7
Kodak Photoshare	1	4	4	6	0	0
Pbwiki.com	1	0	4	1	0	0
Second life	1	0	2	1	0	0
Digg	1	0	1	0	0	0
Esnips	1	0	0	1	9	27
Zoomin.co.nz	1	0	0	0	0	0
There.com	1	0	0	0	0	0
Other	6	15	3	6	9	20
Do not use social software at school	33	N/A	32	N/A	65	N/A

Total may exceed 100% because of multiple responses.

*Created/published bases exclude those schools that do not use social networks for educational purposes.

**Caution: low base number of schools - results are indicative only.

4.7 Internet access at home and remote access to school online resources

4.7.1 Computer access at home

Principals were asked to estimate computer access at home, for both teachers and students. The table below (Table 18) shows that most teachers have access to computers at home. Principals' estimates showed that for secondary schools, 94 percent believed at least three-quarters of their teachers have access to a computer at home. At primary schools, the proportion was 96 percent and 91 percent at Māori Medium schools.

Table 18: Teachers' access to a computer at home

E-Q9A. Please estimate the proportion of teachers with computer access at home.

Base =	Primary 155 %	Secondary 124 %	Māori Medium 18** %
1%–9%	0	1	0
10%–24%	0	0	7
50%–74%	1	0	2
75%–99%	17	43	21
100%	79	51	70
Don't know	3	6	0
Total	100	100	100

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

Estimates of student access to computers at home differed significantly from estimates of teacher access (Table 19). Seventy-five percent of secondary schools believed at least half of their students have access to a computer, as did 74 percent of primary schools. For Māori Medium schools, only 53 percent estimated that half or more of their students have access to a computer at home.

Table 19: Students' access to a computer at home

E-Q9C. Please estimate the proportion of students with computer access at home.

Base =	Primary 153 %	Secondary 123 %	Māori Medium 18** %
1%–9%	1	1	14
10%–24%	3	2	9
25%–49%	11	9	23
50%–74%	32	25	14
75%–99%	39	50	39
100%	3	0	0
Don't know	10	13	2
Total	100	100	100

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

4.7.2 Internet access at home

Principals were also asked to estimate Internet access at home, for both teachers and students. The table below (Table 20) shows that most teachers are able to access computers at home. Principals' estimates showed that for secondary schools, 90 percent believed at least three-quarters of their teachers have access to the Internet at home. At primary schools the proportion was 94 percent and 69 percent at Māori Medium schools.

Table 20: Teachers' access to Internet at home

E-Q9B. Please estimate the proportion of teachers and students with and Internet access at home.

	Primary	Secondary	Māori Medium
Base =	155	124	18**
	%	%	%
1%–9%	0	1	7
50%–74%	3	2	25
75%–99%	35	64	30
100%	59	26	39
Don't know	3	7	0
Total	100	100	100

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

As with computer access, estimates of student access to the Internet at home differed significantly from estimates of teacher access, with students being much less like to have access to the Internet at home (Table 21). Seventy-two percent of secondary schools believed at least half of their students have access to a computer, as did 69 percent of primary schools. For Māori Medium schools, only 39 percent estimated that half or more of their students have access to the Internet at home[6].

Table 21: Students' access to Internet at home

E-Q9D. Please estimate the proportion of teachers and students with Internet access at home.

	Primary	Secondary	Māori Medium
Base =	154	122	18**
	%	%	%
1%–9%	2	2	14
10%–24%	5	5	23
25%–49%	14	8	23
50%–74%	32	29	23
75%–99%	34	43	16
100%	3	0	0
Don't know	10	14	2
Total	100	100	100

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

[6] It should be noted that in most cases, schools have estimated the number of students with access to computers and the Internet at home based upon knowledge of the local community (65 percent of primary schools, 64 percent of secondary and 68 percent of Māori Medium schools). Roughly one-in-four primary and secondary schools (both at 27 percent), have actually undertaken survey's of students/parents to ascertain computer and Internet access at home, while 30 percent of Māori Medium schools reported having done so.

4.7.3 Remote access of school online resources

Schools were also asked whether students or their families were able to access the school network remotely, and if so, what they were using the remote access for.

More than two thirds (69 percent) of secondary schools, and 61 percent of primary and Māori Medium schools reported that students or their parents are able to access the school network remotely. Most frequently, students and their parents are able to access school news/the school website and/or resources for parents to support their children's learning.

Table 22: Students and parents access to school network from home

E-Q11. What resources, if any on your school network are students/parents able to access from their homes?

Base =	Primary 155 %	Secondary 123 %	Māori Medium 18** %
Parent portal (learning progress and attendance information)	9	20	4
Resources for parents to support their children's learning	29	18	23
Library resources	6	10	0
School news/School website	48	54	45
E-learning system i.e. Moodle, LMS	1	10	0
Other network resources	5	11	2
Don't know	1	1	7
Parents and children are not able to access the school network remotely	39	31	39

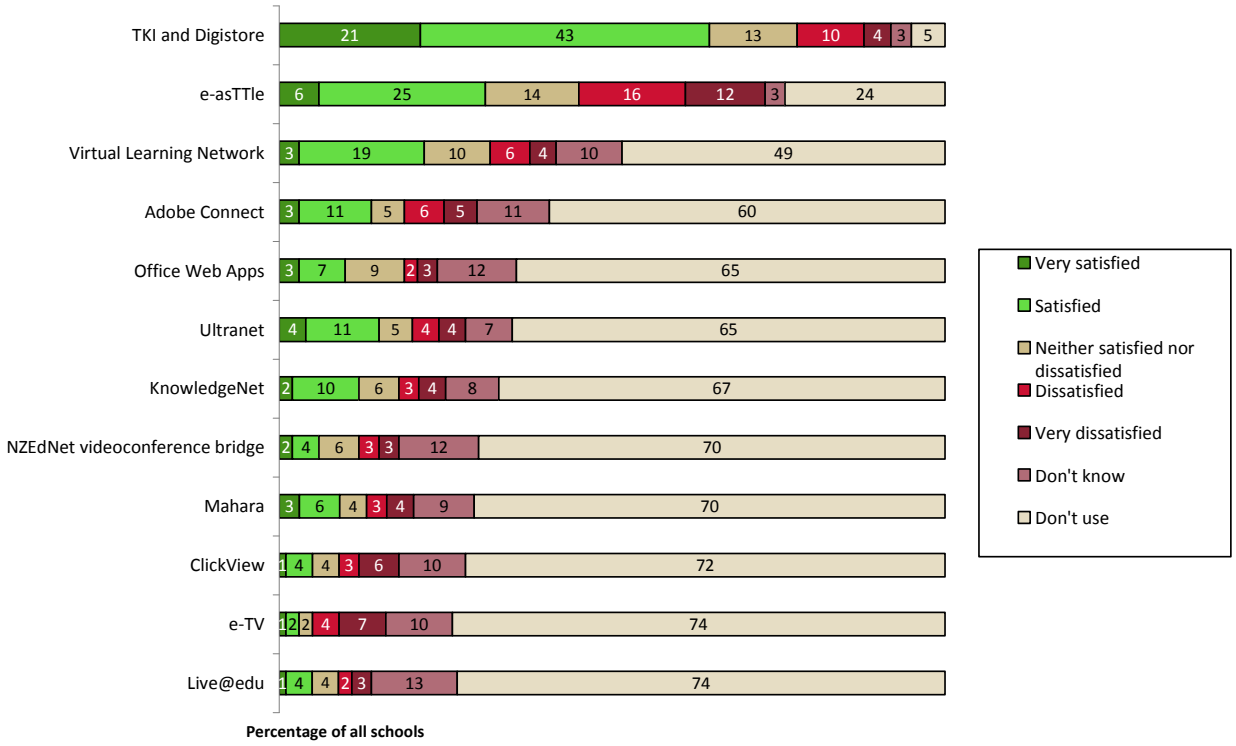
Total may exceed 100% because of multiple responses.
**Caution: low base number of respondents-results are indicative only.

4.8 Satisfaction with Internet connection in accessing online services

Principals were asked how satisfied they were with their current Internet connection in accessing a range of online services. Notably, with the exception of the Virtual Learning Network, e-asTTle and TKI and Digistore, the majority of schools do not currently access most of the services in question.

Among the services that are being accessed, satisfaction with accessing TKI and Digistore was relatively high, with 64 percent of school principals reporting they were satisfied with their Internet connection to the service.

Graph 2: Satisfaction with accessing online services



Base (all schools n=317)

4.9 Internet safety

Principals were asked what Internet safety strategies their school has in place – with all primary, secondary and Māori Medium schools reporting they have an Internet safety strategy (Table 23).

The survey found that schools are more likely to rely on filtering and blocking certain sites than inculcating students with a strong Digital Citizenship ethos. The majority of primary, secondary and Māori Medium schools reported utilising Internet filtering (94 percent, 98 percent and 85 percent respectively), while almost all secondary schools (97 percent), and most primary and Māori Medium schools (93 percent and 80 percent respectively) also report having Internet safety policies and/or agreements in place.

Two thirds of primary and secondary schools reported they teach cybersafety skills to their students (only 30 percent of Māori Medium schools reported they did this). Roughly one-in-five primary schools and secondary schools promote Digital Citizenship concepts (18 percent and 20 percent, respectively), while 13 percent of Māori Medium schools reported teaching the concepts to their students as well.

Table 23: Internet safety strategies

E-Q26. Which of the following Internet safety strategies does your school employ?

Base =	Primary 167 %	Secondary 128 %	Māori Medium 20** %
Internet filtering	94	98	85
Internet safety policies and/or agreements	93	97	80
Active monitoring or reviewing of ICT use	72	83	61
Providing Information for parents and caregivers	71	76	72
Teaching cybersafety skills to students	67	67	30
Specific cybersafety professional development for staff	38	41	24
Digital Citizenship concepts	18	20	13
Other	1	1	0
None	0	0	0
Don't know	0	0	0

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

Among those primary schools and Māori Medium schools that utilise Internet monitoring or filtering, the most commonly mentioned software used are *Watchdog* (59 percent) or *Schoolzone* (27 percent of primary schools that utilise Internet monitoring or filtering and 20 percent of Māori Medium schools). Secondary schools were equally likely to use *Schoolzone* software (38 percent) or *Watchdog* (37 percent).

4.9.1 Usage of and satisfaction with Netsafe

As a follow-up question about Internet safety strategies, principals were asked a series of questions regarding Netsafe.

The survey found that in most cases primary and secondary schools were satisfied or very satisfied with the Internet safety resources provided by Netsafe (68 percent and 66 percent respectively), while only 40 percent of Māori Medium schools reported being satisfied.

Table 24: Satisfaction with Internet safety resources provided by Netsafe

P-Q26b. How satisfied are you with Internet safety resources provided by Netsafe?

Base =	Primary 162 %	Secondary 125 %	Māori Medium 20** %
Very satisfied	32	26	20
Satisfied	36	40	20
Neither satisfied nor dissatisfied	17	13	13
Dissatisfied	2	3	13
Very dissatisfied	0	0	2
Don't know	13	18	33
Total	100	100	100

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

Fifty-four percent of primary schools and 52 percent of secondary schools reported they use Netsafe resources once a month or less, while nine percent and 14 percent respectively report using it more frequently. Māori Medium schools were equally as likely to report they never use Netsafe's resources (37 percent) or only once a month or less frequently (also 37 percent).

Table 25: Netsafe resources – frequency of use

P-Q26c. How often does your school use Netsafe resources?

Base =	Primary 161 %	Secondary 121 %	Māori Medium 19** %
Never	11	4	37
Once a month or less	54	52	37
Approx once a week	6	10	0
Approx once a day	2	3	0
More than once a day	1	1	0
Don't know	25	30	26
Total	100	100	100

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

Most frequently, primary and secondary schools have strategies in relation to *educating students to develop positive and ethical behaviours in cyberspace* and/or *implementing technologies and policies supporting a safe and secure online environment* for their students. Of note, secondary schools are more likely to have implemented technologies and policies to support a safe and secure online environment (69 percent cf. 51 percent of primary schools and 33 percent of Māori Medium schools).

Table 26: Netsafe strategies

P-Q26d. Netsafe has developed a framework for cybersafety in schools. Does your school have strategies in relation to the following areas?

Base =	Primary 159 %	Secondary 121 %	Māori Medium 19** %
Educating students to develop positive, ethical behaviors in cyberspace	55	64	31
Provision of digital citizenship resources and professional development for teachers	21	28	20
Implementing technologies and policies supporting a safe and secure online environment	51	69	33
None of these	28	19	42

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

4.9.2 Copyright (Infringing File Sharing) Amendment Act 2011

On 1 September 2011 the new Copyright (Infringing File Sharing) Amendment Act 2011 came into effect. Principals were asked how aware they were about their obligations under the new Act.

As detailed in Table 27, while most principals reported they have heard of the Act, the majority of principals at primary and secondary schools felt they were only somewhat aware of their obligations. In contrast, the results suggest that more Māori Medium schools principals are fully aware of their obligations.

Table 27: Awareness of obligations under the new Copyright (Infringing File Sharing) Amendment Act 2011

P-Q26e. How aware are you of your obligations under the new Copyright (Infringing File Sharing) Amendment Act 2011, due to take effect on 1 September 2011?

Base =	Primary 165 %	Secondary 126 %	Māori Medium 20** %
Have not heard of the Copyright Amendment Act 2011	15	7	35
Somewhat aware of my obligations	57	59	14
Fully aware of my obligations	28	34	52
Total	100	100	100

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

5.0 ICT equipment and usage

This section of the report identifies what types of ICT equipment staff and students have access to and examines how ICT equipment is used.

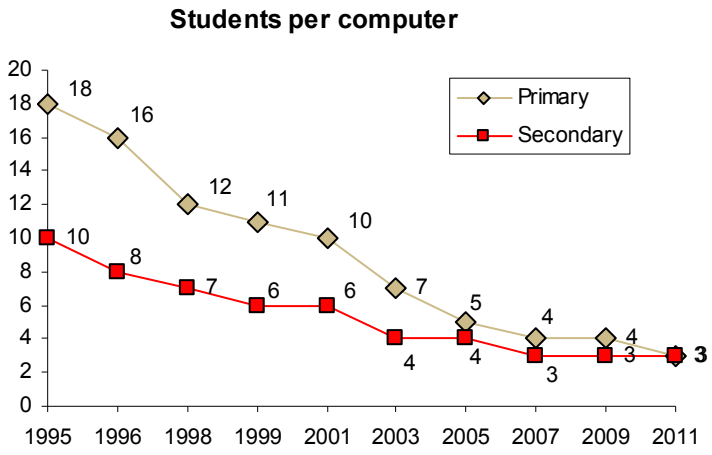
5.1 ICT equipment

5.1.1 Computer equipment

The graph below shows the number of students per computer in both primary schools and secondary schools[7]. Including all computers, there is approximately one computer per three students in both primary and secondary schools. These figures are equivalent to those reported in 2007 and 2009.

Graph 3: Average number of students per computer (in total)

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



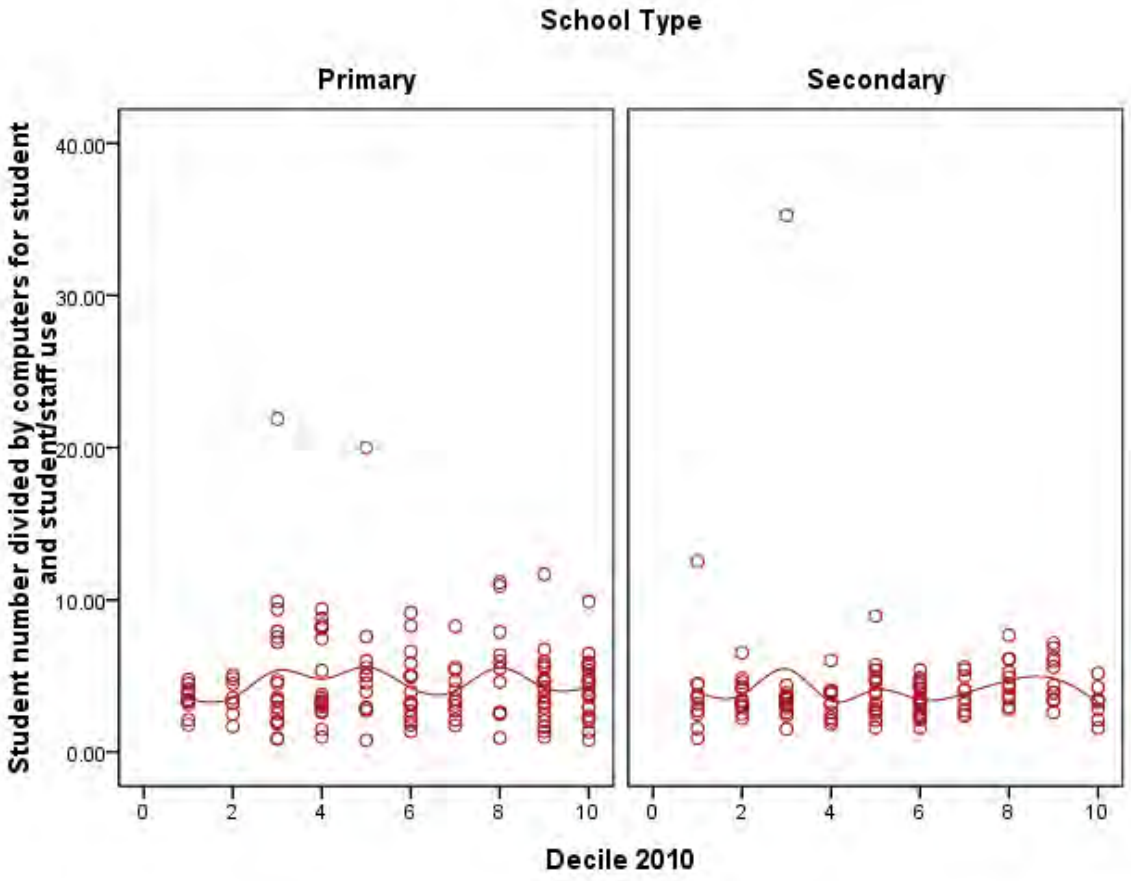
Base primary n=152, secondary n=125

When all computers that are used mainly by teaching or administrative staff only were removed from the equation, there are, on average, five students per computer in primary schools and four students per computer in secondary schools.

[7] Ratio was calculated as the total number of computers for schools surveyed divided by school roll as of 2010 roll data sourced from the Ministry of Education's website. Due to small sub-samples, and to maintain comparability with results from years wherein Māori Medium schools were not over-sampled, Māori Medium schools have not been presented in the above figures.

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 4). Overall, the survey found that the number of students per computer remained fairly stable across the different deciles[8], although there is some evidence that suggests there are slightly lower numbers of students per computer in schools at both the lowest and highest deciles, decile seven among primary schools and deciles four and six among secondary schools.[9].

Graph 4: Students per computer by socio-economic decile (primary & secondary schools)[10]



Base: primary (n=156), secondary (n=125).

[8] Note that the graph above has had computers used mainly by teachers and for administration removed from its calculation.

[9] The line in the graph is a flexible line of best fit, which will show curves, as well as straight-line relationships. Its general lack of slope or large spikes indicates the lack of a strong relationship between decile and the ratio of students to computers.

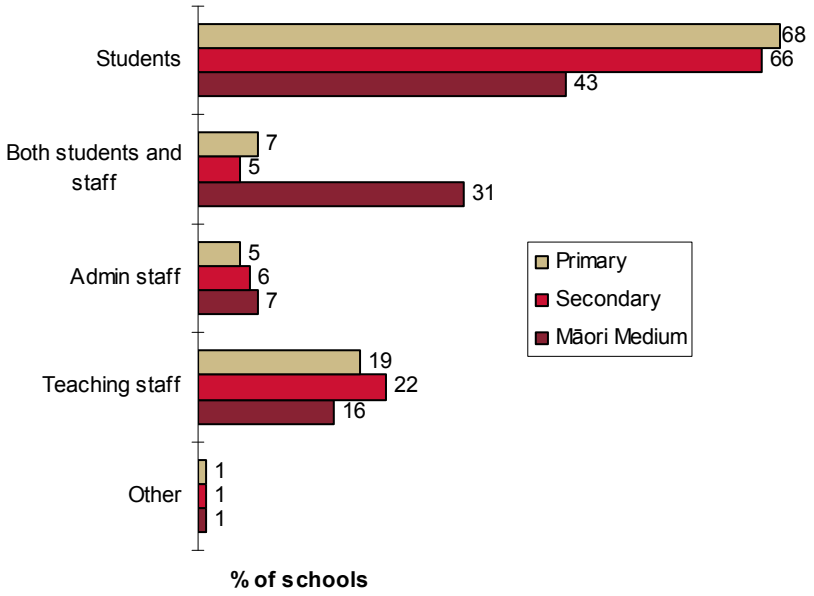
[10] The relationship for Māori Medium schools was not investigated due to a small sub-sample and for consistency with previous surveys.

Main users of computers

Across all surveyed school types, students were the main users of computers in schools (Graph 5): 68 percent and 66 percent of primary schools and secondary schools respectively and 43 percent in Māori Medium schools.

Graph 5: 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=140), secondary (n=124), Māori Medium (n=17**).
Only schools whose responses added to 100 percent are included.
**Caution: low base number of schools – results are indicative only.

Age of computers

Among primary schools, only one third (34 percent) of the respondents reported that most (at least 51 percent) of their school's computers are less than three years old (Table 28). To put this in context, the corresponding figure in 2009 was 60 percent. This suggests that the average age of most school computers may be increasing.

Among secondary schools, 44 percent of respondents reported that most of their computers are less than three years old, compared with 39 percent in 2009.

In 2011, 46 percent of Māori Medium schools report on average that most (51 percent of more) of their computers are less than three years old.

Table 28: Percentage of computers less than three years old

E-Q5 Approximately how many of the total computers are LESS than 3 years old?

Base =	Primary 149 %	Secondary 121 %	Māori Medium 17** %
25% or less	29	12	36
26% to 50%	38	44	17
51% to 75%	16	22	24
76% to 100%	17	22	22
Total	100	100	100

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

Computers meeting/exceeding basic specification

All schools were asked to comment on the number of computers in their school that were equal or better than the following specifications: **1GHz 32-bit or 64-bit dual core processor, 2GB RAM, 80GB hard drive**. In all, n=220 schools provided an answer to this question, of which 34 percent of primary schools, 47 percent of secondary schools and 50 percent of Māori Medium schools estimated that between 76 percent and 100 percent of their schools' computers are equal to, or better than, these specifications (Table 28).

Furthermore:

- Roughly two-thirds (68 percent) of secondary schools reported that more than half of their computers meet this specification:
- As did 64 percent of Māori Medium schools:
- And 63 percent of primary schools:

Table 29: Percentage of computers meeting or exceeding basic specification

E-Q6 How many computers in your school are equal to or better than the specification below?
1GHz 32-bit or 64-bit dual core processor, 2GB RAM, 80GB hard drive

Base =	Primary 101 %	Secondary 109 %	Māori Medium 10** %
25% or less	20	8	36
26% to 50%	18	24	0
51% to 75%	29	21	14
76% to 100%	34	47	50
Total	100	100	100

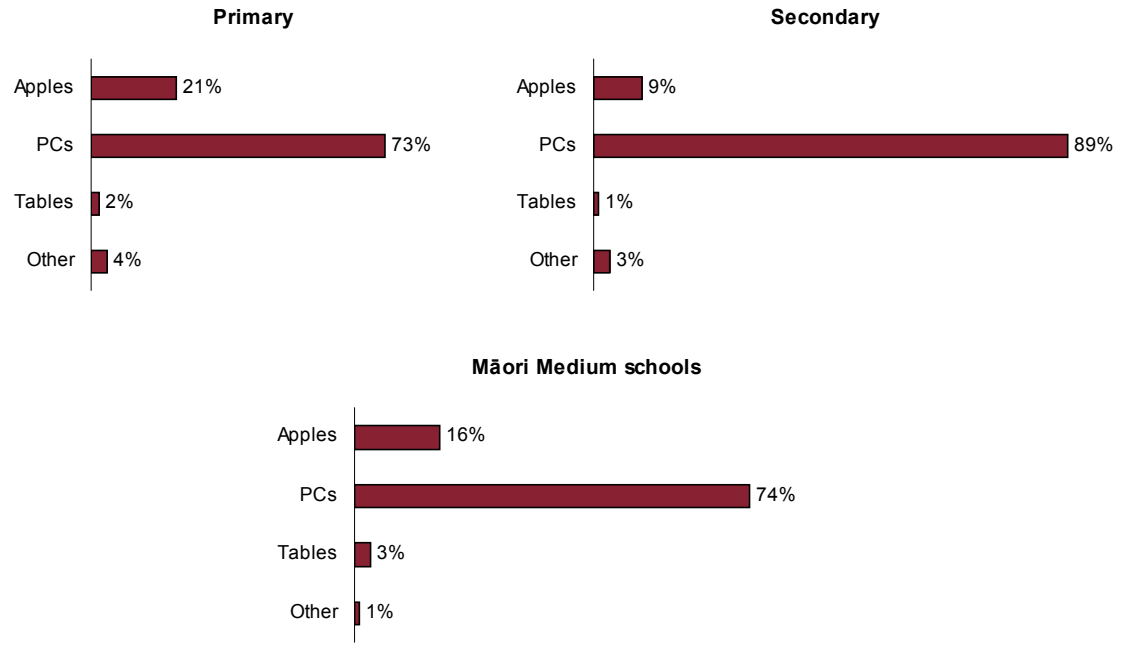
Total may not sum to 100% due to rounding.
**Caution: low base number of schools - results are indicative only.

Computer types

Among all school types, PCs continue to be the most common type of computers found in schools (Graph 6), and the proportions that report using Apples/Macs compared with PCs remains unchanged relative to the 2009 survey. The 2011 findings also indicate that some schools have begun adding Tablets to their computer inventories.

Graph 6: 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?



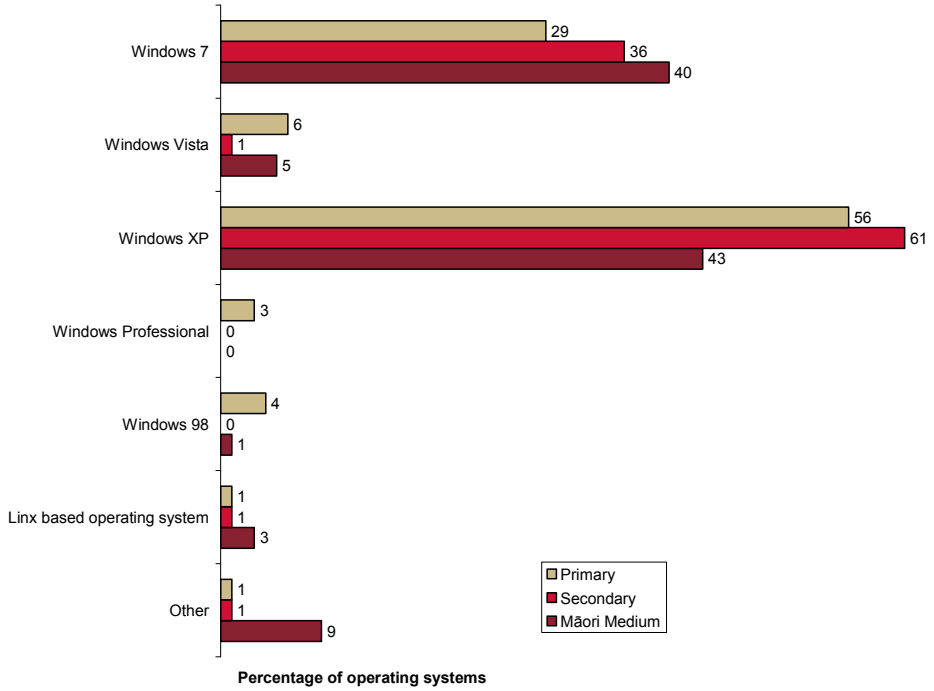
Base: primary (n=154), secondary (n=125), Māori Medium (n=18**).
**Caution: low base number of schools – results are indicative only.

Computer operating systems

Among schools with computers described as PCs, Windows XP remains the most common operating system (61 percent of secondary, 56 percent primary of and 43 percent of Māori Medium schools) (Graph 7). Windows 7 has replaced Windows Vista as the second most common operating system (29 percent of primary schools, 36 percent of secondary schools and 40 percent of Māori Medium schools).

Graph 7: Operating systems on PCs

E-Q3b Please give the numbers of these computers with each type of operating system.



Base: primary (n=141), secondary (n=122), Māori Medium (n=15**).
**Caution: low base number of schools – results are indicative only.

5.1.2 Other ICT equipment

Data projectors

Respondents to the Equipment questionnaire were asked to identify how many classrooms their school had in total, and how many of those were equipped with a dedicated data projector. Two-thirds (68 percent) of secondary schools and 56 percent of primary schools reported that more than half of their classrooms are equipped with a data projector, while only four percent of secondary schools have no data projectors in classrooms permanently. In contrast, 41 percent of Māori Medium schools reported that there are no data projectors in classrooms (Table 30).

Table 30: Proportion of classrooms equipped with dedicated data projector

E-Q26 How many of these classrooms are equipped with a dedicated data projector (i.e. one that stays in the classroom permanently)?

	Primary	Secondary	Māori Medium
Base =	153	118	18**
	%	%	%
None	14	4	41
0%-25%	12	8	30
26%-50%	18	20	9
51%-75%	20	23	7
75%-99%	26	36	14
100%	10	9	0
Total	100	100	101

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

Interactive whiteboards

Respondents to the Equipment questionnaire were also asked how many classrooms were equipped with an interactive whiteboard. Half of Māori Medium schools reported that they have no interactive whiteboards (56 percent), compared with 31 percent of primary schools and 20 percent of secondary schools.

Table 31: Proportion of classrooms equipped with an interactive whiteboard

E-Q27b How many of these classrooms are equipped with an interactive whiteboard?

	Primary	Secondary	Māori Medium
Base =	152	24	10**
	%	%	%
None	31	20	56
1%-25%	14	67	17
26%-50%	20	6	11
51%-75%	20	3	11
76%-99%	9	2	6
100%	5	3	0
Total	99	100	100

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

Video conferencing equipment

Forty-five percent of secondary schools reported that they have purchased or leased room-based video conferencing equipment (an increase from 35 percent in 2009) and nine percent of Māori Medium schools report that they have also purchased or leased room-based video conferencing equipment. Only one percent of primary schools reported this.

Of those that have purchased video conferencing systems, Polycom is by far the most common system.

Table 32: Purchase and leasing of video conferencing equipment

E-Q37. Has your school purchased or leased room-based video conferencing equipment?

	Primary	Secondary	Māori Medium
Base =	149	122	18**
	%	%	%
Yes	1	45	9
No	98	52	91
We plan to acquire such equipment during the next 12 months	0	2	0
Don't know	1	1	0
Total	100	100	100

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

When asked how they conduct desk-top video conferencing, the majority of schools reported using Skype (70 percent of primary schools, 64 percent of secondary schools and three-quarters of Māori Medium schools (Table 33)). Reflecting the above finding that many secondary schools have purchased or leased room-based video conferencing equipment, and that most frequently the equipment used is a Polycom unit, 35 percent of secondary schools reported they conduct desktop videoconferencing using the Polycom CMA Desktop system.

Table 33: Desk-top videoconferencing equipment

E-Q36. Does your school use desk-top video conferencing equipment?

	Primary	Secondary	Māori Medium
Base =	111	95	16**
	%	%	%
Polycom CMA Desktop	4	35	5
Scopia Desktop	0	1	0
LifeSize Desktop	0	0	0
Marratech	0	0	0
Adobe Connect	5	16	18
Skype	70	64	74
Other	2	1	0
No/None	11	4	16
Don't know	14	9	0

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

Types of activities that schools use video conferencing for at least once a year or more include:

- Teacher professional development (59 percent of secondary, 57 percent of Māori Medium and 38 percent of primary schools).
- Students talking to students in other schools (52 percent of secondary, 32 percent of primary and 30 percent of Māori Medium schools).
- Virtual classroom (with remote teacher) (47 percent of secondary, 23 percent of Māori Medium and 14 percent of primary schools).
- Virtual field trips (43 percent of secondary, 28 percent of primary and 19 percent of Māori Medium schools).
- Providing access to the local community (30 percent of secondary, 17 percent of Māori Medium and eight percent of primary schools).
- Overseas students communicating with their families (20 percent of secondary and 10 percent of primary schools).

Classroom speech reinforcement equipment

Schools were also asked whether they had purchased classroom speech reinforcement equipment. While 18 percent of primary schools and one third of Māori Medium schools (34 percent) reported that they had, only seven percent of secondary schools reported that they had done so. Of those that have purchased systems, Soundfield followed by Redcat were the most frequently reported brands.

Table 34:

E-Q39. Has your school purchased classroom speech reinforcement equipment?

Base =	Primary 146 %	Secondary 121 %	Māori Medium 18** %
Yes	18	7	34
No	81	87	64
We plan to acquire such equipment during the next 12 months	1	1	2
Don't know	0	6	0
Total	100	100	100

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

Learner response systems

Learner response systems are an interactive technology that allow teachers to engage with students and easily assess their achievement (even shy or non-participatory students) by allowing students to respond to questions by using an easy to use ICT-enabled keypad device. A small number of responding primary schools (n=33) and secondary schools (n=31) reported having at least one such system in their school. Most frequently, these systems were reported to be an Activboard, eInstruction or Promethean system.

5.2 Current use and intended purchasing of ICT equipment

5.2.1 Desktop, laptop and netbook computers

Table 35 shows the various brands of desktop, laptop and notebook computers that primary, secondary and Māori Medium schools have currently, as well as those they intend to purchase or lease in the next 12 months[11].

Currently, schools most commonly have Hewlett Packard/Compaq (72 percent of primary, 76 percent of secondary and 76 percent of Māori Medium schools), Toshiba (62 percent of primary, 63 percent of secondary and 55 percent of Māori Medium schools), or Apple computers (44 percent of primary, 61 percent of secondary and 71 percent of Māori Medium schools).

Of those that are intending to purchase computers in the next 12 months, 49 percent of primary and 21 percent of secondary schools report they are planning to purchase Apple computers, and 37 percent and 27 percent of primary and secondary schools, respectively, intend to purchase Hewlett Packard/Compaq computers.

Most frequently, schools that reported they intend to lease computers in the next 12 months said they would lease Apple or Hewlett Packard/Compaq computers.

The majority of computers included in the 'other' category throughout this section are most often described by respondents as "Custom-built" or an "Unknown Brand".

[11] Given the small sub-sample of Māori Medium schools that *intend to lease* or *purchase* computers, their results are not presented here.

Table 35: Proportion of schools which currently have, intend to purchase and intend to lease these brands of desktop, laptop and netbook computers

E-Q15A, Q15B & Q15C Of the computers used in your school (this includes desktop computers, laptops and 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			Māori Medium
	Have in current use	Intend to purchase in next 12 months	Intend to lease in next 12 months	Have in current use	Intend to purchase in next 12 months	Intend to lease in next 12 months	Have in current use
Base =	147	49	33	119	48	44	16**
	%	%	%	%	%	%	%
Acer	32	8	3	31	6	0	21
Apple	44	49	45	61	21	27	71
Asus	12	2	0	20	4	2	16
Atech	0	0	0	2	0	0	0
Cyclone	4	2	0	18	6	2	0
Dell	21	0	0	27	13	9	10
HP/Compaq	72	37	33	76	27	52	76
Insite/Itec/MSI	10	0	0	17	2	2	5
Lenovo/IBM	7	0	0	23	6	0	18
Motorola	0	0	0	0	0	0	0
R1 All-in-One	1	0	0	15	4	0	8
Samsung	3	0	0	1	0	0	8
Sony	1	0	0	1	0	0	0
TMC	1	0	0	4	2	0	0
Toshiba	62	10	18	63	10	48	55
Ultra	1	0	0	3	0	0	0
Other	28	12	3	47	29	7	26

Total may exceed 100% due to multiple responses.
**Caution: low base number of schools – results are indicative only.

5.2.2 Servers

Similarly, schools were asked about their ownership of servers. Hewlett Packard/Compaq (41 percent of primary and 50 percent of secondary schools) featured frequently for current server ownership among both primary and secondary schools. Other popular brands for servers include IBM, Dell and Apple.

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

Table 36: Proportion of schools which currently have specific brands of servers

E-Q18A, Q18B & Q18C 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	Māori Medium
	Have in current use	Have in current use	Have in current use
Base =	138	117	14**
	%	%	%
Acer	17	8	0
Apple	19	10	12
Cyclone	0	1	0
Dell	6	19	9
HP/Compaq	41	50	28
Insite/Itec	1	10	12
IBM	15	36	34
Total Peripherals	0	1	0
Ultra	1	2	0
Other	20	32	31

Total may exceed 100% due to multiple responses.
**Caution: low base number of schools – results are indicative only.

5.2.3 Monitors

Among primary schools, the most common brands of monitors with LCD screens are Hewlett Packard (43 percent), Philips (25 percent) and Acer (21 percent), while the most common brands with CRT screens are Hewlett Packard (40 percent) and Philips (26 percent).

Among secondary schools, the most common brands of monitors with LCD screens include View sonic (46 percent), Philips (45 percent) and Hewlett Packard (41 percent), while the most common brands with CRT screens are Philips (46 percent), Hewlett Packard (28 percent) and View sconic (24 percent).

Table 37: Proportion of schools, which currently have CRT and LCD screens on these brands of monitors

E-Q17 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		Māori Medium	
	Have CRT screens	Have LCD screens	Have CRT screens	Have LCD screens	Have CRT screens	Have LCD screens
Base =	96	97	74	103	7**	13**
	%	%	%	%	%	%
3M	1	0	3	0	0	0
Acer	15	21	9	18	6	9
AOC	5	11	9	28	40	17
Apple	16	16	15	24	6	26
Asus	2	3	7	9	0	0
BenQ	2	3	1	9	0	0
Compaq	12	6	23	10	27	17
Dell	14	19	22	21	27	17
Digital	2	0	1	0	0	0
DSE	1	2	0	1	0	0
Gateway	0	0	0	0	0	0
Hewlett Packard	40	43	28	41	27	60
Lenovo/IBM	6	5	4	11	20	9
LG Electronics	6	7	1	19	40	0
Microtek	0	0	0	1	0	0
Mitsubishi	1	0	0	0	0	0
Panasonic	0	4	0	1	0	0
PC Direct	2	0	3	2	0	0
Philips	26	25	46	45	27	23
Samsung	6	12	9	11	0	26
Sony	1	2	1	2	0	0
Toshiba	7	12	4	12	20	26
View sonic	6	16	24	46	0	17
Other	17	13	22	17	27	34

Total may exceed 100% due to multiple responses.
**Caution: low base number of schools – results are indicative only.

5.2.4 Printer copiers

As detailed in Table 38, the most common brands of printer copiers at primary schools are Minolta (36 percent), Ricoh (29 percent) and Hewlett Packard (19 percent). Among secondary schools the most frequently reported brands are Hewlett Packard (39 percent) and Minolta (32 percent). Among those Māori Medium schools that completed an Equipment questionnaire, the most commonly reported brands were Cannon and Minolta, followed by Hewlett Packard and Epson. Note that the results for *intend to purchase* and *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 printer copiers

E-Q19A, Q19B & Q19C 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	Māori Medium
	Have in current use	Have in current use	Have in current use
Base =	149	122	17**
	%	%	%
Brother	16	31	17
Canon	15	21	54
Epson	2	8	24
Fuji Xerox	9	25	22
Hewlett Packard (HP)	19	39	24
Kyocera	4	5	2
Lexmark	1	4	7
Minolta	36	32	46
Oki	3	9	10
Panasonic	1	2	7
Ricoh	29	23	12
Sharp	8	6	7
Toshiba	8	7	2
Total Peripherals	0	1	0
UBIX	1	0	0
Other	5	4	22

Total may exceed 100% due to multiple responses.
**Caution: low base number of schools – results are indicative only.

5.2.5 Data projectors

As detailed in Table 39, the most common brands of data projectors used at primary schools are Sanyo (41 percent), Sony (33 percent) and Epson (26 percent). Among secondary schools the most frequently reported brands are Sony (54 percent) and Sanyo (47 percent). Among those Māori Medium schools that completed an Equipment questionnaire, the most commonly reported brands were Epson and Sony. Note that the results for *intend to purchase* and *intend to lease* have not been presented because of small sub-samples.

Table 39: Proportion of schools, which currently have and intend to purchase these brands of data projectors

E-Q20A, Q20B & Q20C 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	Māori Medium
	Have in current use	Have in current use	Have in current use
Base =	140	119	16**
	%	%	%
Acer	7	29	16
BenQ	4	4	16
Canon	6	11	10
Dell	2	5	0
Epson	26	37	34
Hitachi	2	3	0
HP	4	6	10
Infocus	1	3	8
Lenovo/IBM	0	1	0
Mitsubishi	4	8	0
Panasonic	19	32	18
Promethean	12	5	8
Sanyo	41	47	18
Sony	33	54	21
Toshiba	14	21	10
Viewsonic	8	25	16
Other	6	11	8

Total may exceed 100% due to multiple responses.
**Caution: low base number of schools – results are indicative only.

5.3 ICT use in schools

5.3.1 Lesson planning, preparation and delivery

To gauge ICT use in schools, staff usage of various ICT equipment for lesson planning and lesson delivery was investigated further. The survey found that laptop and desktop computers are the most commonly employed types of ICT equipment for lesson planning and preparation (Table 40), as well as lesson delivery (Table 41), with secondary schools being significantly more likely to report the usage of desktop computers than primary schools.

Schools also frequently mentioned using data projectors for lesson delivery. The survey results also suggest that there has been an increase in the usage of interactive whiteboards amongst primary schools. For example, in 2011, 45 percent of primary schools reported that teachers were using interactive whiteboards in their lesson planning and preparation, compared with 29 percent in 2009. In contrast the usage of interactive whiteboards for lesson planning and preparation appears to have decreased within secondary schools, wherein 29 percent reported using data projectors for planning and preparation compared with 47 percent in 2009.

Table 40: ICT equipment used for lesson planning and preparation

P-Q6b. To your knowledge, do any teachers in your school use any of the following technologies in either their lesson delivery or lesson preparation (either in the classroom or elsewhere in the school)?

Base =	Primary 166 %	Secondary 126 %	Māori Medium 20** %
Laptop computers	98	99	100
Desktop computers	64	91	85
Data projectors	48	40	50
Interactive whiteboards	45	29	24
Video/DVD players	37	53	43
Document cameras/visualisers	23	25	33
Tablets (e.g. TouchPad, iPad, Windows tablets)	14	33	9
Netbook computers	13	25	9
Smartphones (mobile phones with email & Internet access)	11	26	6
Other portable digital devices (e.g. iPod, iTouch, mobile phone)	9	29	24
Room-based or Desktop video conferencing (e.g. Polycom/Tandberg)	2	16	13
Room-based or Desktop audio conferencing (e.g. Polycom SoundStation)	2	6	6
Learner response systems (e.g. ActivExpression, ActiVote)	2	4	0
Speech reinforcement systems (e.g. ActivSound, Soundfield)	2	2	20
Game consoles (e.g. Playstation, Xbox, Wii)	1	1	0
None of the above	1	0	0

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

Table 41: ICT equipment used for lesson delivery

P-Q6a. To your knowledge, do any teachers in your school use any of the following technologies in either their lesson delivery or lesson preparation (either in the classroom or elsewhere in the school)?

	Primary	Secondary	Māori Medium
Base =	164	127	18**
	%	%	%
Data projectors	92	98	86
Laptop computers	86	96	86
Video/DVD players	84	94	79
Desktop computers	77	83	90
Interactive whiteboards	70	74	52
Document cameras/visualisers	35	54	40
Netbook computers	27	41	17
Speech reinforcement systems (e.g. ActivSound, Soundfield)	22	8	29
Tablets (e.g. TouchPad, iPad, Windows tablets)	16	29	24
Other portable digital devices (e.g. iPod, iTouch, mobile phone)	14	33	17
Room-based or Desktop video conferencing (e.g. Polycom/Tandberg)	7	37	14
Room-based or Desktop audio conferencing (e.g. Polycom SoundStation)	9	25	14
Smartphones (mobile phones with email & Internet access)	7	24	5
Learner response systems (e.g. ActivExpression, ActiVote)	7	11	2
Game consoles (e.g. Playstation, Xbox, Wii)	5	9	2
None of the above	0	0	0

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

5.3.2 Digital devices available in schools

All schools were asked whether they make laptops or other digital devices available to students to use in class or to take home.

Replacing laptops, imaging devices such as cameras are now the most common digital device available for students to use in class across all school types (81 percent of primary schools, 76 percent of secondary schools and 73 percent of Māori Medium schools).

While no longer being the most prevalent digital device available for students in classes, the availability of laptops remains high (available to students in class at 69 percent of primary schools, 53 percent of secondary schools and 79 percent of Māori Medium schools).

Very few schools make digital devices available for students to take home, with the majority of schools saying that none of their devices are available for this purpose (89 percent of primary schools, 71 percent of secondary and 98 percent of Māori Medium schools) (Table 43).

Table 42: Digital devices available to students to use in class

E-Q12a. Does your school make laptops or other digital devices available to students to use in class?

Base =	Primary 156 %	Secondary 123 %	Māori Medium 18** %
Laptops	69	53	79
Netbooks	22	37	14
Tablets	13	2	16
Imaging devices, e.g. cameras	81	76	73
Other digital devices	46	25	59
None of the above	10	8	14
Don't know	0	0	0

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

Table 43: Digital devices available to students to take home

E-Q12b. Does your school make laptops or other digital devices available to students to take home?

Base =	Primary 148 %	Secondary 122 %	Māori Medium 18** %
Laptops	3	8	2
Netbooks	2	5	0
Tablets	2	1	2
Imaging devices, e.g. cameras	10	17	2
Other digital devices	2	2	2
None of the above	89	71	98
Don't know	0	0	0

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

5.3.3 Student-owned digital devices allowed in school and used for educational purposes

Most secondary school students are allowed to bring their own portable digital devices to school (87 percent of secondary schools allow students to bring a laptop, 77 percent allow mobile phones and 75 percent allow students to bring their portable music players – Tablets such as iPads and TouchPads are allowed much less frequently) (Table 44).

However, significantly fewer primary students are allowed to bring in such devices. No commentary is provided on Māori Medium schools, due to the very small sub-sample of principals who answered the question.

Among those schools that allow students to bring their own portable digital devices to school, laptops are the main type of digital devices that are subsequently used for educational purposes (Table 45). Secondary schools are more likely than primary schools to report that Netbooks, Tablets and Mobile phones are used for educational purposes.

Table 44: Digital devices allowed in school

P-Q17a Which of the following devices are students allowed to have at school?

	Primary	Secondary	Māori Medium
Base =	72	114	7**
	%	%	%
Mobile phones	47	77	47
Laptops	64	87	47
Netbooks	36	68	47
Tablets (e.g. iPad, TouchPad, Windows tablets)	38	62	47
Portable Music players (iPod, MP3 Player)	39	75	82

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

Table 45: Digital devices used in education

P-Q17b Which of the following devices are used for educational purposes?

	Primary	Secondary	Māori Medium
Base =	53	100	10**
	%	%	%
Mobile phones	6	47	17
Laptops	85	97	83
Netbooks	32	71	8
Tablets (e.g. iPad, TouchPad, Windows tablets)	23	56	4
Portable Music players (iPod, MP3 Player)	25	39	33

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

Most primary schools (75 percent) and Māori Medium schools (61 percent) do not allow students to connect their own devices to the school network, whereas only 43 percent of secondary schools reported this is the case (Table 46).

Most frequently, when secondary students are allowed to bring their own digital devices to school they are given access to the school's Internet connection (52 percent of secondary schools cf. 39 percent of Māori Medium schools and only 15 percent of primary schools).

Table 46: Network resources that can be accessed by students' own portable digital devices

E-Q14. Are students allowed to access the school network using their own portable digital devices? If yes which resources are they able to access?

Base =	Primary 130 %	Secondary 122 %	Māori Medium 18** %
Internet	15	52	39
School servers	5	17	9
Library resources	2	10	0
Printers	6	16	11
Collaborative learning tool	2	12	9
Students have no need	3	0	0
Other	2	3	0
Students are not permitted to connect their own devices to the school network	75	43	61
Don't know	5	1	0

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

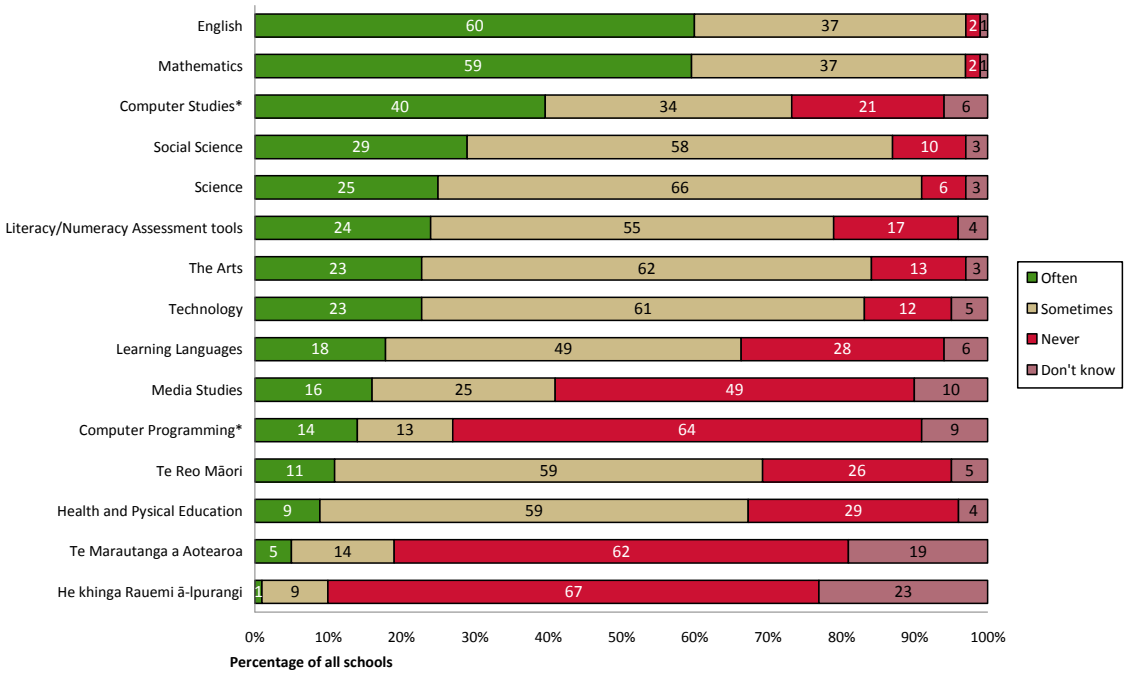
5.4 Frequency of ICT use in curriculum

It is also of interest to understand how often students are using the computers and the Internet for various curriculum areas. Results based on the total sample of schools showed that in a typical school week, computers are being used at least *sometimes* for most subjects (Graph 8).

The areas with highest proportions of computer use are English, Mathematics, Computer Studies and Social Science. Those areas with the lowest proportions are Te Reo Māori, Health and Physical Education Te Marautanga o Aotearoa and He Kohinga Rauemi ā-Ipurangi

Graph 8: Frequency of computer or Internet use in curriculum areas for all school types

P-Q14 During a typical school week, how often are students using computers and the Internet in the following curriculum areas?



Base: all schools (n=311)
*It is assumed the large percentage of schools that answered "never" to Computer Science and Computer Programming mean that the course is not offered.

When viewed by school type, the following key differences were found:

- Secondary school students are more likely than primary school and Māori Medium school students to often use computers while studying Computer Studies, Computer Programming Technology, Learning Languages, Social Sciences, Media Studies and The Arts.

- In addition, secondary school students are more likely to sometimes use computers or the Internet while studying Mathematics and/or English.

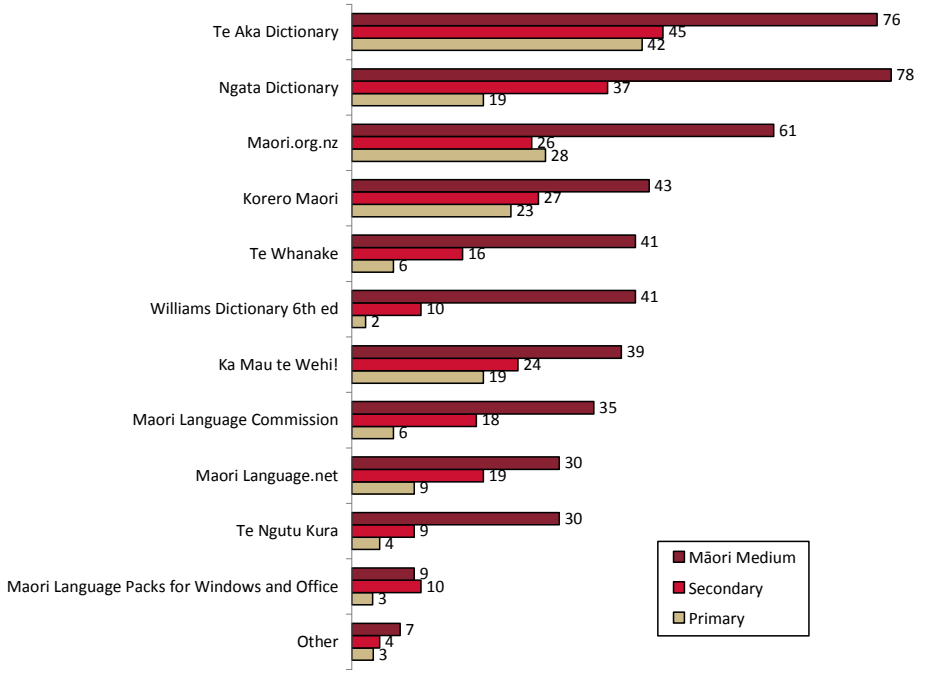
5.4.1 Māori language resources

Principals were asked which online Māori language resources their school is making use of to support Māori language learning (Graph 9). More than three-quarters of all Māori Medium schools report accessing Te Aka and Ngata Dictionaries. Other resources that are used frequently in Māori Medium schools include Maori.org.nz, Kōrero Māori and Te Whanaka.

While access amongst primary and secondary schools was significantly lower across all resources, of note is the increase in primary and secondary schools using the Te Aka Dictionary (42 percent of primary schools and 45 percent of secondary schools cf. 23 percent and 31 percent respectively in 2009). Usage of the Ngata Dictionary (37 percent cf. 26 percent in 2009) has also increased significantly among secondary schools.

Graph 9: Percentage of schools using specific Māori Language resources

P-Q16 Which of the following online resources does your school use to support Māori language learning?



Base: primary (n=163), secondary (n=125), Māori Medium (n=19**).
**Caution: low base number of schools – results are indicative only.

When asked what factors limit their school's use of online Māori language resources, primary principals most frequently mentioned that they were unaware of these resources (58 percent) (Table 47). Other reasons frequently mentioned by both primary and secondary school principals include *lack of information about resources* and a *lack of Māori language resources in general.*

Of note, Māori Medium school principals also mentioned frequently that they were unaware of these resources (36 percent), or mentioned a lack of information about Māori language resources in general (36 percent). However, around a third of Māori Medium school principals reported that no factors limit their school from utilising online Māori language resources (31 percent).

Table 47: Factors limiting use of online Māori language resources

Q16a. What factors limit your school from utilising online Māori language resources to support Māori language learning?

	Base =	Primary 165 %	Secondary 107 %	Māori Medium 19** %
Don't know about them		58	36	36
Lack of information about resources		27	21	36
Lack of Māori language resources in general		10	12	33
Cost of the resources		7	14	18
Lack of variety of resources		7	11	9
Quality of the content		6	6	13
Does not fit with current curriculum		5	5	0
Lack of Māori teaching staff		2	6	7
No offer		2	1	0
Few/no Māori students		1	3	0
No Internet in classrooms		1	7	0
Other		3	2	0
None		8	12	31
Don't know		6	16	0

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

5.4.2 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 10) and how frequently they occur.

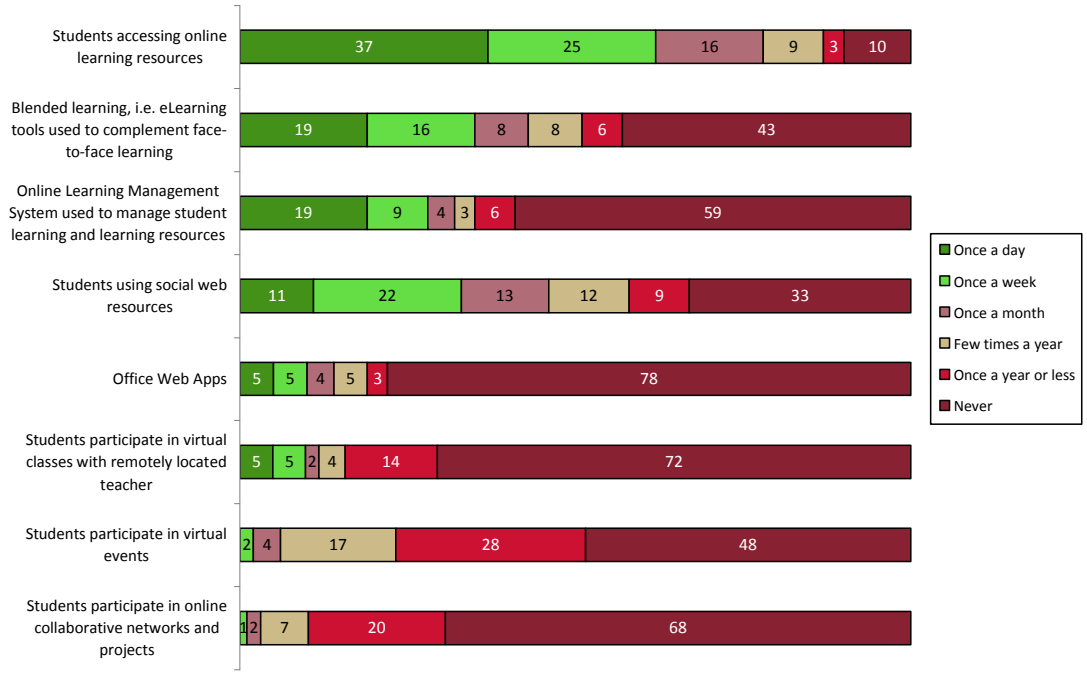
Most frequently, schools reported using the following e-learning activities at least once a month or more frequently: students accessing online learning resources (80 percent of all schools reported this occurred at least once a month); students using social web resources (67 percent); blended learning (57 percent) and online learning management systems (41 percent).

Generally, e-learning activities were provided more frequently at secondary schools, including:

- *Using Online Learning Management System* (e.g. Moodle or KnowledgeNet) *to manage student learning and learning resources* (43 percent of secondary schools reported this occurs every day and only 22 percent said that it never occurs)
- *Students participate in online collaborative networks and projects* (20 percent of secondary schools reported this occurs a few times a year and only 45 percent that it never occurred).
- *Students participating in virtual classes with a remotely located teacher* (18 percent of secondary schools reported this occurs every day and 15 percent that it occurred once a week).
- *Students participating in virtual events* (13 percent of secondary schools reported this occurs once a month, while only 32 percent reported it never occurs).

Graph 10: E-learning activities taking place at least once a year

P-Q18 Which of the following e-learning activities or practices does your school currently do, and how frequently?



Base: all schools (n=304).
Base numbers may vary due to non-response.

5.4.3 Numeracy and Literacy

All schools were asked whether or not they were using online resources to support new initiatives focused on Literacy and Numeracy at their school. As shown below in Table 48, around three-quarters of secondary schools are using online resources for supporting Literacy and Numeracy initiatives, while 90 percent of primary schools and 91 percent of Māori Medium schools do so.

Table 48: Usage of online Literacy and Numeracy initiatives

P-Q9. Is your school using any online resources to support new initiatives focused on Literacy and Numeracy?

	Primary	Secondary	Māori Medium
Base =	166	125	20**
	%	%	%
Yes	90	77	91
No, but we are planning to in the next 12 months	3	9	2
No	7	9	7
Don't know	1	6	0
Total	100	100	100

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

As a follow-up question, those who reported that they were using online resources to support Literacy and Numeracy learning were asked which sources they were using (Table 49).

The survey found that roughly six in ten primary schools are using Literacy Learning progressions and/or NZ Maths2. Secondary schools were more likely to be using Mathletics, followed by Literacy Learning progressions.

While indicative only, due to the small sample size, the survey suggests that Māori Medium schools are more likely to use NZ Maths 2, Mathletics and Literacy Learning progressions.

Table 49: Online resources used to support literacy and numeracy learning

Q9a. What specific online resources are you using to support literacy and numeracy learning?

Base =	Primary 149 %	Secondary 93 %	Māori Medium 18** %
Literacy Learning progressions	64	55	40
NZ Maths2	62	28	55
Literacy Online	44	46	29
Figure it Out	42	19	21
Mathletics	47	62	45
Math Buddy	1	0	5
None of these	1	0	7
Other	6	5	7

Total may exceed 100% because of multiple responses.
*Sub-sample based on those whose school use any online resources to support new initiatives focused on Literacy and Numeracy.

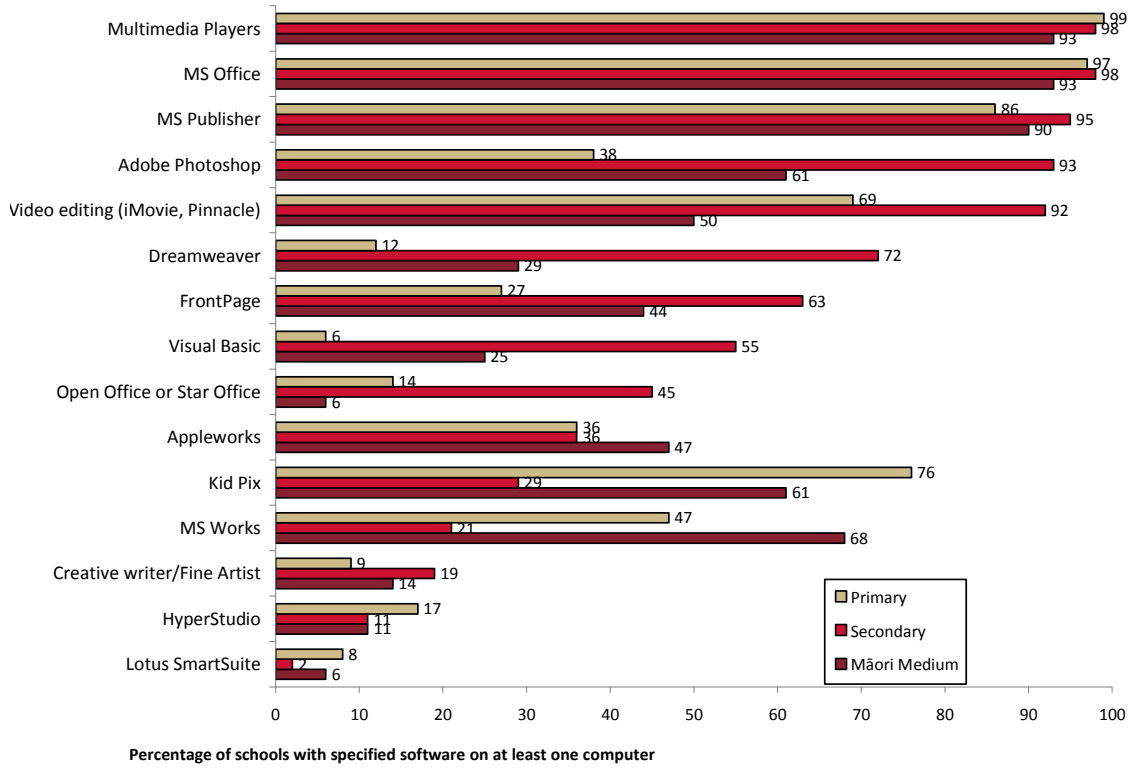
5.5 Software

Of the various software packages, almost all schools (97 percent of primary schools, 98 percent of secondary schools and 93 percent of Māori Medium schools) have MS Office installed on at least one of their computers (Graph 11). Almost used as frequently are Multimedia Players (99 percent of primary schools, 98 percent of secondary schools and 93 percent of Māori Medium schools).

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

Graph 11: Software in schools on at least one computer

E-Q43 Roughly what percentage of your school's computers run the following software packages?



Base: primary (n=145), secondary (n=140), Māori Medium (n=23**).
**Caution: low base number of schools – results are indicative only.

5.5.1 Use of e-Portfolio systems

Schools were presented with a list of e-Portfolio systems, such as Moodle, KnowledgeNet or My Portfolio and asked if any of their staff or students used them. While roughly a quarter of the schools did not answer the question, of those who did, Ultranet and KnowledgeNet are the two most frequently used systems in primary schools. Moodle and My Portfolio (Mahara) are the systems of choice among secondary schools.

While indicative only due to the small sample, Māori Medium schools most frequently identified Moodle.

Table 50: e-Portfolio systems usage

E-Q44. Do your staff/students use e-Portfolio systems?

	Primary	Secondary	Māori Medium
Base =	68	97	11**
	%	%	%
Moodle	7	52	45
KnowledgeNet	21	11	10
My Portfolio (Mahara)	18	45	3
My Classes	0	4	0
Office 365 (Live@edu)	1	6	0
Ultranet	28	20	14
Don't know	34	7	41

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

5.5.2 Learning management systems

Schools were then asked more specifically about what learning management systems they are currently using.

Secondary schools are the most likely group to report that they are using one or more of the learning management systems that they were asked about. Only 22 percent of secondary schools reported that they are not using any learning management systems compared with 50 percent of primary schools and 42 percent of Māori Medium schools. A number of schools reported they were using a learning management system other than one of the main four (Knowledgenet, Moodle, Myclasses and Ultranet).

Table 51: Learning management systems software used

E-Q45 Which of the following Learning Management Systems does your school use?

Base =	Primary 136 %	Secondary 120 %	Māori Medium 16** %
KnowledgeNET	11	9	0
Moodle	1	45	17
Myclasses	0	3	0
Ultranet	18	19	0
Other	15	5	10
None	50	22	42
Don't know	4	2	38

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

5.5.3 Anti-virus software

Also examined further was the use of anti-virus software (Table 52). The most common anti-virus software currently being used in schools is the Ministry-funded software Symantec Endpoint Protection (66 percent of primary schools, 76 percent of secondary schools and 39 percent of Māori Medium schools).

It is worth noting that only two percent of secondary, three percent of primary and two percent of Māori Medium schools reported that they are not using any anti-virus software.

Table 52: Anti-virus software used

E-Q41 Which anti-virus product does your school use?

Base =	Primary 154 %	Secondary 123 %	Māori Medium 18** %
Symantec Endpoint Protection (SEP) – MOE funded	66	76	39
Norton Antivirus	12	6	25
eTrust	7	4	14
NOD32	5	9	0
AVG	5	5	7
MacAfee	3	1	0
Microsoft Security Essentials	2	6	14
Sophos	1	1	0
Trend	1	2	0
Avast	1	2	0
No anti-virus software used	3	2	2
Other	1	3	0
Don't know	6	1	21

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

5.5.4 Māori language software

A question was included to determine whether or not schools use software that supports macron use for Te Reo Māori. Half of secondary schools reported they do use this type of software (55 percent), and 61 percent of Māori Medium schools are using software that supports macron use. However, only 25 percent of primary schools said they currently use software that supports macron use. (Table 53).

Of note, these results are relatively unchanged from those reported by schools in the 2009 survey, and while the results suggest that usage of software that supports macron use for Te Reo Māori has increased among Māori Medium schools, the increase from 38 percent in 2009 to 61 percent in 2011 is indicative only due to the small sample sizes of Māori Medium schools in both years' results.

Table 53: Software that supports macron use for Te Reo Māori

P-Q15. Does the software used at your school support macron use for Te Reo Māori?

Base =	Primary 163 %	Secondary 127 %	Māori Medium 20** %
Yes	25	55	61
No	30	16	39
Don't know	45	29	0
Total	100	100	100

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

5.5.5 Open source software

A new question was included this year to determine whether or not schools use open source software. Roughly one third of primary and secondary schools reported they do not use such software. However, half of secondary schools reported they do use client-based open source software (52 percent, cf. 15 percent of primary schools) and 28 percent of secondary schools also use server open source software compared with 15 percent of primary schools (Table 54).

While indicative only due to the small sample size, Māori Medium schools were unsure in most cases.

Table 54: Open source software use

E-Q42. Does your school use open source software?

Base =	Primary 155 %	Secondary 123 %	Māori Medium 18** %
We use client open source software	15	52	9
We use server open source software	15	28	32
We don't use open source software	37	33	25
Don't know	37	8	41

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

5.6 Uptake of ICT initiatives

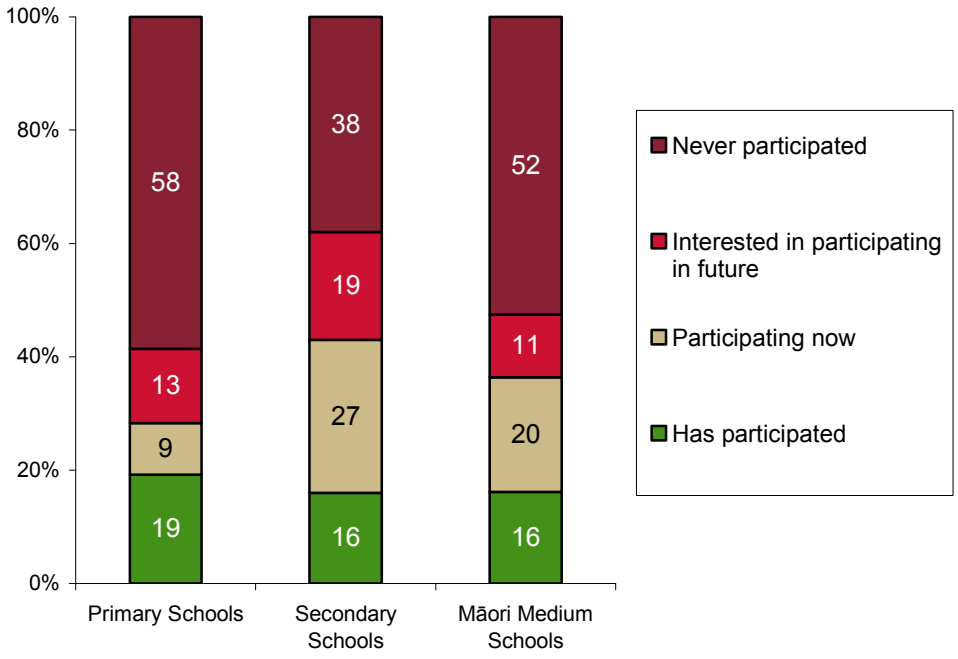
5.6.1 Blended e-Learning Professional Learning and Development (PLD) programme

As shown in Graph 12 below, 58 percent of primary schools and 38 percent of secondary schools have never participated in an ICTPD cluster. Fifty-two percent of Māori Medium schools reported they have never participated either.

Nineteen percent of primary schools reported that they have participated in a blended e-Learning PLD programme in the past, but are no longer doing so. Sixteen percent of secondary schools and Māori Medium schools also reported they have participated in the past but are not currently participating in a blended e-Learning PLD programme.

Graph 12: Participation in blended e-Learning professional learning and development (PLD) programme

P-Q1a Which of the following ICT initiatives is your school participating in (or has participated in): Blended e-Learning PLD programme?



Base: primary (n=134), secondary (n=106), Māori Medium (n=18**).
**Caution: low base number of schools – results are indicative only.

5.6.2 Principal Laptops and TELA Teacher Laptops

Nearly all schools reported that they are participating, or had participated, in the TELA Teacher Laptops initiative (100 percent of Māori Medium schools, 99 percent of primary schools and 98 percent of primary schools). Only one percent of primary and two percent of secondary schools have never participated in the scheme.

5.6.3 Other ICT initiatives

Table 55 through Table 60 show the levels of participation in other ICT initiatives among primary, secondary and Māori Medium schools.

Table 55: 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	e-Maturity Framework project	Living Heritage	Virtual PLD programme	Digi-Advisors programme	School Network Upgrade	Computers in Homes
n=142	%	%	%	%	%	%
Never participated	96	88	85	89	37	73
Participating now	1	1	4	1	15	4
Has participated	3	7	5	4	22	11
Interested in participating in future	0	5	6	6	26	12
Total	100	100	100	100	100	100

Total may not sum to 100% due to rounding.

Table 56: Participation in other ICT initiatives by Primary schools (cont.)

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

Primary	National Education Network	School Loop Aggregation Networks	Virtual Learning Network	Learning Communities Online Handbook	Learning Activity Management System	Te Manawu Pou PLD Programme
n=142	%	%	%	%	%	%
Never participated	85	78	59	86	97	95
Participating now	6	10	18	2	1	2
Has participated	2	0	10	3	0	0
Interested in participating in future	8	12	13	9	2	7
Total	100	100	100	100	100	100

Total may not sum to 100% due to rounding.

Table 57: 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	e-Maturity Framework project	Living Heritage	Virtual PLD programme	Digi-Advisors programme	School Network Upgrade	Computers in Homes
n=117	%	%	%	%	%	%
Never participated	92	91	64	86	15	72
Participating now	0	2	9	2	37	8
Has participated	0	2	13	1	26	7
Interested in participating in future	8	5	14	11	21	13
Total	100	100	100	100	100	100

Total may not sum to 100% due to rounding.

Table 58: Participation in other ICT initiatives by Secondary schools (cont.)

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

Secondary	National Education Network	School Loop Aggregation Networks	Virtual Learning Network	Learning Communities Online Handbook	Learning Activity Management System	Te Manawu Pou PLD Programme
n=117	%	%	%	%	%	%
Never participated	66	63	29	72	83	86
Participating now	9	18	38	6	1	2
Has participated	5	1	12	2	2	0
Interested in participating in future	20	19	20	21	14	12
Total	100	100	100	100	100	100

Total may not sum to 100% due to rounding.

Table 59: 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	e-Maturity Framework project	Living Heritage	Virtual PLD programme	Digi-Advisors programme	School Network Upgrade	Computers in Homes
n=18**	%	%	%	%	%	%
Never participated	92	69	55	74	44	25
Participating now	8	0	17	0	16	9
Has participated	0	0	2	0	9	36
Interested in participating in future	0	31	26	26	30	30
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.

Table 60: Participation in other ICT initiatives by Māori Medium schools (cont.)

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

Māori Medium	National Education Network	School Loop Aggregation Networks	Virtual Learning Network	Learning Communities Online Handbook	Learning Activity Management System	Te Manawu Pou PLD Programme
n=18**	%	%	%	%	%	%
Never participated	80	88	56	84	61	75
Participating now	2	10	12	7	20	0
Has participated	0	0	10	0	0	0
Interested in participating in future	17	2	22	9	18	25
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.

5.7 Disposal of computers

Nearly all schools that were surveyed had at some time disposed of their old computers that were not in use (Table 61). Among primary and secondary schools, the most common method for disposing of school computers is *participation in eDay* (45 percent), followed by *recycling and/or refurbishment* (32 percent of primary schools and 38 percent of secondary schools). Māori Medium schools most frequently reported *recycling and/or refurbishment* (48 percent) followed by *storage* (33 percent).

This year more primary and secondary schools reported taking part in *eDay* to dispose of computers compared with 2009, when 28 percent of primary and 37 percent of secondary schools reported doing so.

Table 61: Method of disposal

P-Q36 How does your school dispose of computers that are no longer of any use?

Base =	Primary 164 %	Secondary 125 %	Māori Medium 20** %
We took part in eDay	45	45	26
Recycling/ refurbishment	32	38	48
Landfill	24	25	28
In storage	19	18	33
We took part in another special collection event	15	8	2
Supplier 'Take Back' (Specify)	12	14	9
Other	9	10	7
Never had to dispose	4	6	2
Don't know	2	1	0

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

Notably, for about one in three primary and secondary schools (30 percent and 33 percent respectively), and more than half of Māori Medium schools (61 percent), "end of life disposal options" are a factor in making computer purchase decisions. These results remain unchanged from those reported in 2009.

Table 62: Consideration of disposal at time of purchase

P-Q37 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 153 %	Secondary 148 %	Māori Medium 22* %
Yes	30	33	61
No	61	63	39
Don't know	9	4	0
Total	100	100	100

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

6.0 Networking

6.1 Schools' internal networks

The majority of schools reported that more than 75 percent of all classrooms are networked (92 percent primary, 65 percent of Māori Medium and 97 percent of secondary schools). Primary schools most frequently reported that all classrooms are networked (82 percent), followed by secondary schools (79 percent) and Māori Medium schools (65 percent).

Staff were also asked to identify how many classrooms had a wireless connection to the school network. Around half of primary and Māori Medium schools reported that all of their classrooms are connected via a wireless network (60 percent and 49 percent respectively), while 32 percent of secondary schools reported that all of their classrooms are wirelessly networked.

There has been a significant decrease since 2009 in the percentage primary schools reporting that none of their classrooms have a wireless connection (15 percent of primary schools cf. 23 percent in 2009). However, there has been no change in the proportion of secondary schools reporting that none of their classrooms are wireless connected (29 percent).

6.1.1 Internal network infrastructure

Respondents were also asked to describe the internal network used in their school (Table 63).

The composition of schools' networks, particularly those of primary and secondary schools, have changed significantly since 2009:

- Only 27 percent of secondary schools reported that they were using a fibre backbone network in 2009, and 85 percent of secondary schools report having fibre backbone networks in place in 2011.
- Similar proportions of primary schools and secondary schools reported having mainly copper based networks (CAT 5+) in 2011 as they did in 2009 (57 percent of primary schools in 2011 cf. 51 percent in 2009, 68 percent of secondary schools in 2011 cf. 70 percent in 2009).

Table 63: Schools' internal network

E-Q30 While of the following best describe your school's internal network?

Base =	Primary 155	Secondary 124	Māori Medium 18**
	%	%	%
Mainly copper based network (CAT 5+)	57	68	27
School-wide wireless network	55	40	45
High-speed network switches (100 MB+)	38	77	36
Fibre backbone	26	85	16
Other	5	5	0
Don't know	14	2	34

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

6.1.2 Network usage

Most commonly, schools reported that they were using their network for the following activities:

- Managing and sharing resources such as printers (97 percent of primary, 100 percent of secondary and of Māori Medium schools).
- Being able to access the Internet from different computers (95 percent of primary, 98 percent of secondary and 100 percent of Māori Medium schools).
- Being able to access the same information from different parts of the school (93 percent of primary schools and Māori Medium schools and 98 percent of secondary schools).
- Managing and sharing files between computers (87 percent of primary, 92 percent of secondary and 79 percent of Māori Medium schools).
- Sending e-mail or other message types to staff and students in other rooms (83 percent of primary, 93 percent of secondary and 79 percent of Māori Medium schools).
- Managing Intranet and/or Internet access (e.g. as a web server) (72 percent of primary, 88 percent of secondary and 79 percent of Māori Medium schools).

Table 64: School's networking usage

E-Q31. Which of the following do you use your internal school network for?

Base =	Primary 156 %	Secondary 124 %	Māori Medium 18** %
Managing and sharing resources such as printers	97	100	100
Being able to access the Internet from different computers	95	98	100
Being able to access the same information from different parts of the school	93	98	93
Managing and sharing files between computers	87	92	79
Send e-mail or other message types to staff and students in other rooms	83	93	79
Managing Intranet and/or Internet access (e.g. as a web server)	72	88	79
Building digital multimedia skills through the connection of digital devices (e.g. digital cameras, microphones, web cams and other multi-media tools)	58	63	66
Access a centralised CD-ROM resource from another room	34	31	52
Providing telephone/fax connections between classrooms	28	33	27
Other	1	1	0
Don't know	0	0	0

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

6.1.3 Type of networking software

The most common types of networking software in use by primary and secondary schools are *Windows 2008 Server* (61 percent of secondary schools and 20 percent primary schools) or *Windows 2003 Server* (54 percent of secondary schools and 24 percent of primary schools).

Twenty-five percent of primary schools and 23 percent of secondary schools reported using *Linux/Smart Net Linux* software. Seventeen percent of primary schools and 12 percent of secondary schools reported that they are using *MacOS X Server* software.

While 14 percent of Māori Medium schools reported that they do not use networking software, 21 percent reported using *Windows 2008 Server* and 16 percent said they are using *MacOS X Server* software.

Table 65: School's networking software

E-Q32. Which of the following types of networking software does your school use?

Base =	Primary 153 %	Secondary 122 %	Māori Medium 18** %
Windows 2008 Server	20	61	21
Windows 2003 Server	24	54	9
Linux/Smart Net Linux	25	23	16
MacOS X Server	17	12	16
Novell NetWare/Open Enterprise Server	1	3	0
Windows NT Server 4.0	7	3	9
Windows 2000 Server	2	2	7
Other Linux distribution	1	6	0
Other	3	3	2
We do not use networking software	1	0	14
Our servers are located offsite	0	0	7
Don't know	12	1	14

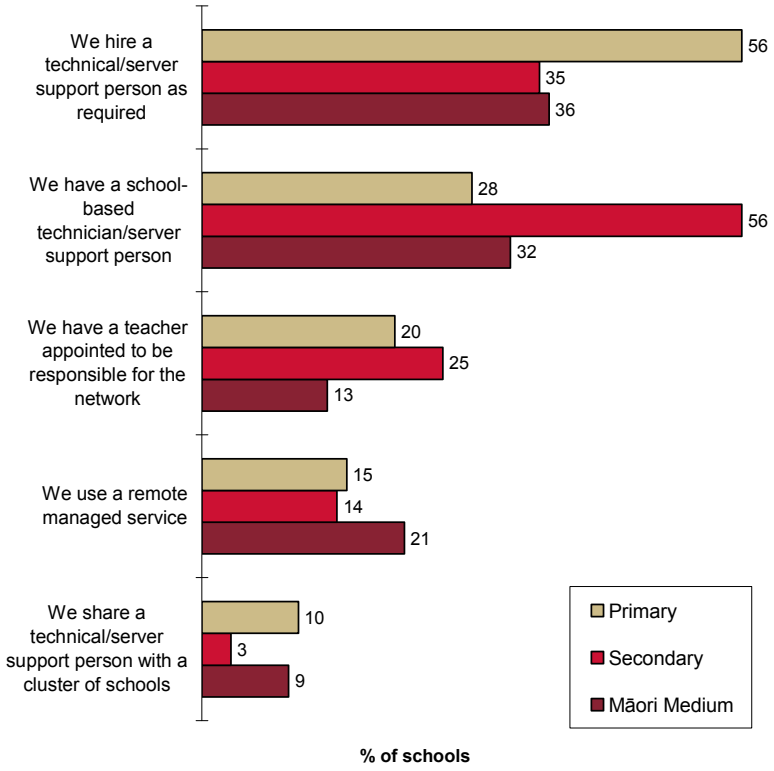
Total may exceed 100% because of multiple responses.
**Caution: low base number of respondents-results are indicative only.

6.1.4 Network management

As shown in Graph 13, secondary schools mostly manage their school networks by a school-based technician (56 percent compared with 28 percent of primary and 32 percent of Māori Medium schools), whereas primary schools and Māori Medium predominantly hire an external technician (56 percent and 36 percent respectively)[12].

Graph 13: How network is managed

E-Q33 How is your school network managed, whether internally by a school based support person or by an external managed service provider?



Base: primary (n=153), secondary (n=124), Māori Medium (n=18**).
Total may exceed 100% because of multiple responses.
**Caution: low base number of schools – results are indicative only.

[12] Results are not comparable to previous years due to many respondents treating the question as a multiple response question.

6.1.5 Satisfaction with externally hosted services

Respondents to the Principals' questionnaire were asked to identify which of a number of externally hosted ICT services their schools use and whether they believed they are *performing satisfactorily* or *could work better with more broadband* (Table 66).

The externally hosted services that are most frequently being used by schools include:

- Te Kete Ipurangi: primary schools – rated by 69 percent as *performing satisfactorily,* while 21 percent felt it *could work better with more broadband*; secondary schools – rated by 53 percent as *performing satisfactorily,* while 25 percent felt it *could work better with more broadband*; Māori Medium schools – rated by 80 percent as *performing satisfactorily,* while nine percent felt it *could work better with more broadband*.

- Student Management System: primary schools – rated by 45 percent as *performing satisfactorily,* while 26 percent felt it *could work better with more broadband*; secondary schools – rated by 18 percent as performing *satisfactorily,* while 13 percent felt it *could work better with more broadband*; Māori Medium schools – rated by 52 percent as *performing satisfactorily* while nine percent felt it *could work better with more broadband*.

- E-asTTle: primary schools – rated by 28 percent as *performing satisfactorily,* while 42 percent felt it *could work better with more broadband*; secondary schools – rated by 29 percent as *performing satisfactorily,* while 49 percent felt it *could work better with more broadband*; Māori Medium schools – rated by 33 percent as *performing satisfactorily* while 17 percent felt it *could work better with more broadband*[13].

- Web mail, such as Google Mail, Hotmail and Office 365: primary schools – rated by 49 percent as *performing satisfactorily,* while 21 percent felt it *could work better with more broadband*; secondary schools – rated by 30 percent as *performing satisfactorily,* while 34 percent felt it *could work better with more broadband*; Māori Medium schools – rated by 53 percent as *performing satisfactorily* while 19 percent felt it *could work better with more broadband*.

The off-site hosted services that were reported as being used the least frequently were: *Live@edu, Office Web Apps, virtualised services, e-portfolios* and *video conferencing.*

[13] Half of those Māori Medium schools who completed the survey reported they do not use the off-site hosted service.

Table 66: Satisfaction with externally hosted services

P-Q38a-m. If you are using externally hosted services, are they performing satisfactorily?

Base =	Primary 155 %	Secondary 118 %	Māori Medium 20** %
Learning Management System			
Don't use off-site hosted service	57	47	71
Performing satisfactorily	25	23	21
Could work better with more broadband	17	30	9
Total	100	100	100
Student Management System			
Don't use off-site hosted service	29	69	31
Performing satisfactorily	45	18	52
Could work better with more broadband	17	30	9
Total	100	100	100
Library Management System			
Don't use off-site hosted service	44	70	65
Performing satisfactorily	39	21	25
Could work better with more broadband	17	10	10
Total	100	100	100
e-asTTle			
Don't use off-site hosted service	30	22	50
Performing satisfactorily	28	29	33
Could work better with more broadband	42	49	17
Total	100	100	100
e-portfolios			
Don't use off-site hosted service	69	43	67
Performing satisfactorily	14	28	8
Could work better with more broadband	17	29	26
Total	100	100	100
Te Kete Ipurangi			
Don't use off-site hosted service	11	22	11
Performing satisfactorily	69	53	80
Could work better with more broadband	21	25	9
Total	100	100	100
Offsite Backups			
Don't use off-site hosted service	59	71	64
Performing satisfactorily	31	16	25
Could work better with more broadband	11	13	11
Total	100	100	100
Virtualised services			
Don't use off-site hosted service	85	71	89
Performing satisfactorily	8	13	0
Could work better with more broadband	7	15	11
Total	100	100	100
Google docs			
Don't use off-site hosted service	42	40	41
Performing satisfactorily	38	31	48
Could work better with more broadband	20	29	12
Total	100	100	100

continued overleaf

Table 66: Satisfaction with externally hosted services (continued)

P-Q38a-m. If you are using externally hosted services, are they performing satisfactorily?

Base =	Primary 155 %	Secondary 118 %	Māori Medium 20** %
Video conferencing			
Don't use off-site hosted service	65	44	40
Performing satisfactorily	15	26	45
Could work better with more broadband	20	30	16
Total	100	100	100
Web mail, e.g. Google Mail, Hotmail, Office 365			
Don't use off-site hosted service	30	35	29
Performing satisfactorily	49	30	53
Could work better with more broadband	21	34	19
Total	100	100	100
Live@edu			
Don't use off-site hosted service	87	86	96
Performing satisfactorily	15	11	0
Could work better with more broadband	8	10	0
Total	100	100	100
Office Web Apps			
Don't use off-site hosted service	77	79	100
Performing satisfactorily	15	11	0
Could work better with more broadband	8	10	0
Total	100	100	100

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

6.2 Technical support

Table 67 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.

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

- A technician employed directly by the school (62 percent of schools).
- A staff member with special time allowance (of less than 10 hours per week) for computing support and training (37 percent).
- External support contract (25 percent).
- Student support (e.g. Tech Angel) (23 percent).

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

- A technician employed directly by the school (78 percent of schools).
- A staff member with special time allowance (of less than 10 hours per week) for computing support and training (46 percent).
- External support contract (21 percent).
- A staff member with special time allowance (10 or more hours per week) for computing support and training (21 percent).

At Māori Medium schools about 50 percent or more of the teachers employ the following technical support methods:

- Managed services (35 percent).
- Remote services management (34 percent).
- External support contract (42 percent).
- A staff member with special time allowance (of less than 10 hours per week) for computing support and training (27 percent).
- A staff member with special time allowance (10 or more hours per week) for computing support and training (25 percent).
- The Ministry of Education's ICT helpdesk (0800 ICT help) (26 percent).

Table 67: Sources of technical support

E-Q35 What proportion of your teachers use the following sources of technical support? ***(About 50% or more or none)***

Base =	Primary 127		Secondary 105		Māori Medium 18**	
	None	About 50% or more	None	About 50% or more	None	About 50% or more
	%	%	%	%	%	%
Student support (e.g. Tech Angels)	35	23	41	11	59	14
Supplier guarantee/warranty	32	18	31	20	29	14
External support contract (paid in advance, extra cost)	49	25	50	21	37	42
Staff from other schools	43	12	36	3	39	7
Staff member with special time allowance for computing support and training (less than 10 hours per week)	49	36	36	46	57	27
Staff member with special time allowance for computing support and training (10 or more hours per week)	75	14	71	21	46	28
Technician (employed directly by school)	20	62	15	78	49	23
Technician (employed directly by a cluster of schools)	79	12	88	2	65	14
The Ministry of Education's ICT helpdesk (0800 ICT help)	25	9	33	4	28	26
Parent volunteer	76	5	93	0	83	9
Managed services	78	6	61	12	63	35
Remote service management	54	14	55	7	54	34
Online video conference support	79	2	67	2	83	0
Promethean 0800 Helpdesk	66	4	83	2	83	9
Other 0800 network support (not the Ministry's 0800 ICT help)	60	3	69	3	57	9
Other 0800 help (not network support or the Ministry's 0800 ICT help)	67	2	76	10	72	0
Other	69	12	63	12	75	19

Total may exceed 100% because of multiple responses.
**Caution: low base number of schools - results are indicative only.
Bases may vary due to non-response.

7.0 ICT spending

This section discusses the expenditure of schools on ICT and ICT-related items. Specifically, this section looks at what proportion of schools' operations grants are being spent on ICT and how this compares with last year, as well as looking at the factors that influence schools' ICT expenditure.

7.1 Spending overview

All principals were asked to provide the total amount of their school's Operations Grant for 2010 so that average ICT spending for all schools could be estimated (Table 68).

Table 68: Total Operations Grant for 2008

P-Q27 What was the total amount of your school's Operations Grant for 2010?

Base =	Primary 132 %	Secondary 97 %	Māori Medium 15** %
$100,000 or below	18	1	18
$100,001-$200,000	21	0	18
$200,001-$400,000	30	3	33
$400,001-$600,000	17	13	33
$600,001-$1,000,000	13	26	18
$1,000,001-$1,500,000	0	29	0
$1,500,001 or more	1	29	9
Total	100	100	129

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

Principals were then asked to estimate how much their school spent on ICT, including hardware, leases, equipment, technical support and Internet access. On average, all schools spent approximately 11 percent of their total operations grant for 2010 on ICT-related expenditure cf. 10.0 percent in 2008. Secondary schools spent 11.6 percent on ICT on average (cf. 10.6 percent in 2008), compared to 10.5 percent by primary (cf. 9.5 percent in 2008) and 10.6 percent by Māori Medium schools (cf. 9.3 percent in 2008).

Principals were also asked to estimate how much their schools spent on Internet access. Primary schools estimated their Internet costs to be about 1.7 percent of their 2010 Operations Grant, while secondary schools estimate they spent 1.3 percent. Māori Medium Schools reported spending less than one percent.

7.2 Anticipated expenditure on ICT in 2011

Principals were asked to estimate their expected ICT spending from January to December 2011 compared with 2010 (Table 69 overleaf).[14]

For the current year, based on the total sample, the areas where more schools believed they were likely to increase spending included:

- Purchasing new hardware (45 percent of primary, 44 percent of secondary and 53 percent of Māori Medium schools reported *more*).
- Technical support and maintenance (both hardware and software) (45 percent of primary, 39 percent of secondary and 41 percent of Māori Medium schools reported *more*).
- Consumables (43 percent of primary, 34 percent of secondary and 70 percent of Māori Medium schools).
- Internet and telephone charges (40 percent of primary, 47 percent of secondary and 30 percent of Māori Medium schools).
- Teacher professional development (37 percent of primary, 32 percent of secondary and 45 percent of Māori Medium schools).

On the other hand, the areas where more schools anticipated spending less during the next year included:

- Purchasing new laptop computers (28 percent of primary, 19 percent of secondary and 40 percent of Māori Medium schools)
- Purchasing of tablets (37 percent of primary, 24 percent of secondary and 52 percent of Māori Medium schools).
- Purchasing new audio/video conferencing equipment (39 percent of primary, 24 percent of secondary and 38 percent of Māori Medium schools).
- Purchasing interactive whiteboards (36 percent of primary, 31 percent of secondary and 44 percent of Māori Medium schools).
- Purchasing learner response systems (30 percent of primary, 39 percent of secondary and 57 percent of Māori Medium schools).
- Purchasing classroom audio enhancement (39 percent of primary, 25 percent of secondary and 48 percent of Māori Medium schools).

[14] For various aspects of ICT spending.

Table 69: Anticipated spending on various ICT equipment in 2011 compared with the 2010 year

P-Q30 In relation to your school's ICT spend in 2010, do you anticipate your spending in each ICT area to be more, less, or the same amount in 2011?

Base =	Primary 158 %	Secondary 151 %	Māori Medium 18** %
Purchase of new hardware			
Less	18	15	18
Same	37	41	30
More	45	44	53
Total	100	100	100
Purchase of laptop computers			
Less	28	19	40
Same	40	53	35
More	32	25	25
Total	100	100	100
Purchase of new netbooks			
Less	40	23	47
Same	43	51	47
More	17	27	6
Total	100	100	100
Purchase of tablets			
Less	37	24	52
Same	44	56	24
More	18	20	24
Total	100	100	100
Purchase of audio conferencing and/or video conferencing equipment			
Less	39	24	38
Same	50	59	49
More	11	18	13
Total	100	100	100
Purchase of interactive whiteboard systems			
Less	36	31	44
Same	35	50	11
More	29	19	44
Total	100	100	100
Purchase of learner response systems			
Less	39	30	57
Same	52	65	33
More	9	4	10
Total	100	100	100
Purchase of classroom audio enhancement			
Less	39	25	48
Same	47	70	42
More	14	5	10
Total	100	100	100
School lease costs of laptop/notebook computers via the TELA scheme			
Less	11	8	19
Same	62	67	54
More	28	25	27
Total	100	100	100

continued overleaf

Table 69: Anticipated spending on various ICT equipment in 2011 compared with the 2010 year (continued)

P-Q30 In relation to your school's ICT spend in 2010, do you anticipate your spending in each ICT area to be more, less, or the same amount in 2011?

Base =	Primary 158 %	Secondary 151 %	Māori Medium 18** %
Subscriptions to online services			
Less	10	4	32
Same	71	77	35
More	19	20	32
Total	100	100	100
Lease of other hardware			
Less	24	11	36
Same	55	72	45
More	21	17	18
Total	100	100	100
Software			
Less	15	7	22
Same	66	6	43
More	19	27	35
Total	100	100	100
Technical support and maintenance (both hardware and software)			
Less	8	7	19
Same	47	54	41
More	45	39	41
Total	100	100	100
Consumables			
Less	8	9	10
Same	49	57	20
More	43	34	70
Total	100	100	100
Teacher professional development (including advisors paid to visit school)			
Less	8	4	25
Same	55	63	30
More	37	32	45
Total	100	100	100
Teacher release time			
Less	9	5	18
Same	64	68	60
More	27	27	22
Total	100	100	100
Internet & telephone charges			
Less	7	6	10
Same	53	47	60
More	40	47	30
Total	100	100	100
Payments for remotely hosted services e.g. offsite backups			
Less	11	5	33
Same	56	65	52
More	32	30	15
Total	100	100	100

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

7.3 Purchasing ICT equipment

7.3.1 Purchasing decisions

Schools were asked to identify which factors influenced their decision making when purchasing or leasing ICT equipment.

Table 70 presents a summary of the factors by giving them weights depending on whether they were ranked first, second or third most important and then scaling the results back to sum to 100 percent.

The weightings reveal that in order of importance, *purchase price* is the most important factor for all school types. For primary schools, the second and third most important factors are *planned student outcomes* and *reliability*; whereas secondary schools rank *reliability* ahead of *planned student outcomes*.

While indicative only due the small sample size, Māori Medium schools rank *planned student outcomes* as being second and *quality* as the third most important factor.

Table 70: Weighted factors when purchasing/leasing ICT equipment

E-Q24 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?

Base =	Primary 148 %	Secondary 120 %	Māori Medium 18** %
Purchase price	21	21	25
Planned student outcomes	15	9	17
Reliability	12	12	9
Known brand	9	8	6
School purchasing policy	7	4	5
Quality	7	8	11
Length of warranty and support	5	6	4
Flexible financing or leasing	4	3	5
Built to order or configured to suit	3	6	8
Lower total cost of ownership	3	4	0
Availability of professional development	3	0	5
Relationship with reseller	3	5	0
Highly spec'ed	2	4	6
Interoperability/unified system or solution	2	3	0
Availability of specific resources	1	1	0
Relationship with vendor	1	4	0
Other	1	1	0
Don't know	0	0	0

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 and then scaling the final result down to a 100 percentage point scale.
**Caution: low base number of schools - results are indicative only.

When asked to identify who had the most influence on ICT expenditure (Table 71), the majority of principals report that school management has the most influence (90 percent of primary, 95 percent of secondary and 100 percent of Māori Medium schools) while more than half of primary and secondary schools report ICT staff also influence expenditure (52 percent and 75 percent respectively) and roughly half of Māori Medium schools believe that students or their board members influence expenditure (51 percent and 49 percent respectively).

Table 71: Influences on school's ICT expenditure

P-Q31. From the list below, who has the most influence on your school's ICT expenditure?

Base =	Primary 163 %	Secondary 125 %	Māori Medium 19** %
School management	90	95	100
ICT staff	52	75	42
Board members	47	39	49
External professional advice	21	24	14
Students	18	22	51
Ministry of Education	13	14	16
Community	11	6	21
Government discounts	4	4	14
Teaching/school staff	1	2	0
Other	1	2	0
None	1	0	0
Don't know	0	0	0

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

Respondents to the Equipment questionnaire were asked about their purchasing and leasing habits. As shown in Table 72, purchasing computers through All of Government (AoG) is the most common method of acquiring desktops for primary and Māori Medium schools (51 percent and 59 percent respectively), while secondary schools most frequently reported purchasing through a reseller (60 percent). Primary schools also mentioned purchasing or leasing computers through a reseller (50 percent), while Māori Medium schools' second most frequent source after AoG was retail stores (54 percent)[15].

Table 72: Method of purchase/lease of computers

E-Q16. How do you purchase/lease computers (this includes desktop computers, laptops, Netbooks and tablets)?

Base =	Primary 154 %	Secondary 124 %	Māori Medium 17** %
All of Government (AoG)	51	42	59
Retail store	34	29	54
Reseller	50	60	32
Online	18	26	19
Other	9	6	2
Don't know	1	0	0

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

[15] Note: results are not comparable to pervious years, due to change in question categories.

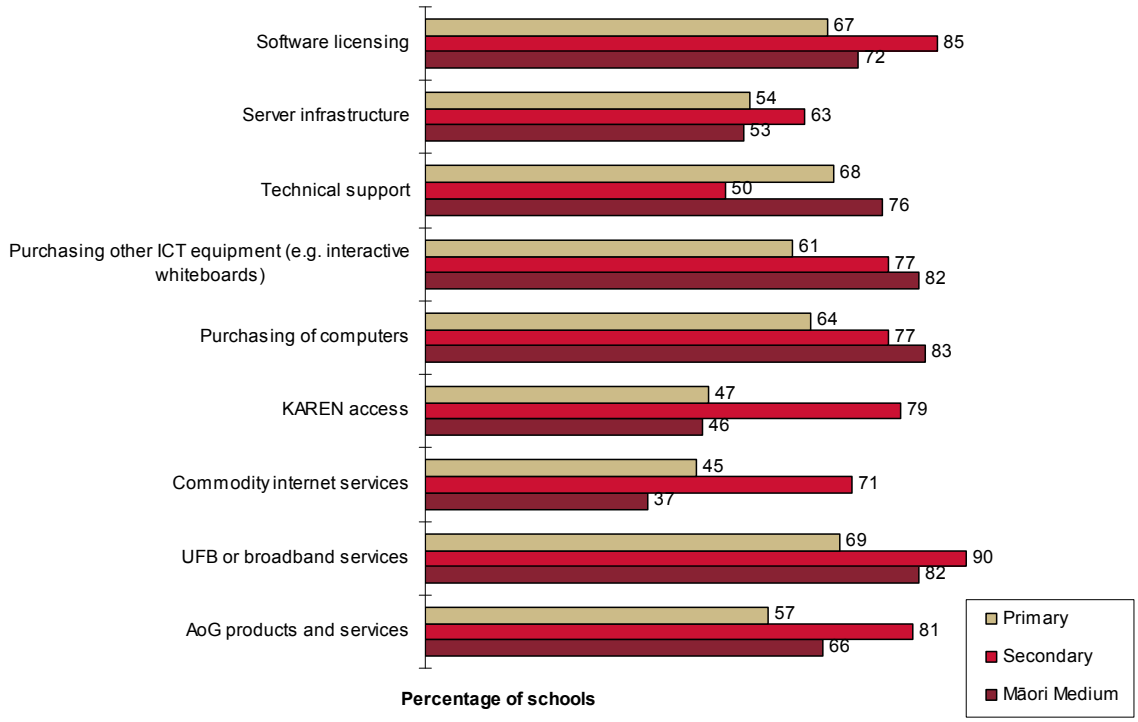
7.3.2 Bulk purchasing

Respondents to the Equipment questionnaire were asked if their school would consider bulk purchasing of particular ICT equipment and services along with other schools in their area. The percentage of respondents who reported that they currently do so, or are planning to do so, is shown in Graph 14 below.

In general, with the exception of KAREN access and commodity Internet services, the majority of both primary and Māori Medium schools are already currently, or are planning to, bulk purchase each of the services and infrastructure in question; and with the exception of technical support (at 50 percent), between 63 percent and 90 percent of secondary schools currently, or are planning to, bulk purchase a large portion of their ICT equipment and services.

Graph 14: Schools who bulk purchase ICT equipment and services or are planning to do so

P-32 Would your school consider bulk purchasing (along with other schools in your area) any of the following? (Includes already do and planning to do)



Base: primary (n=125), secondary (n=117), Māori Medium (n=18**).
**Caution: low base number of schools – results are indicative only.
Bases vary for some items due to non-response.

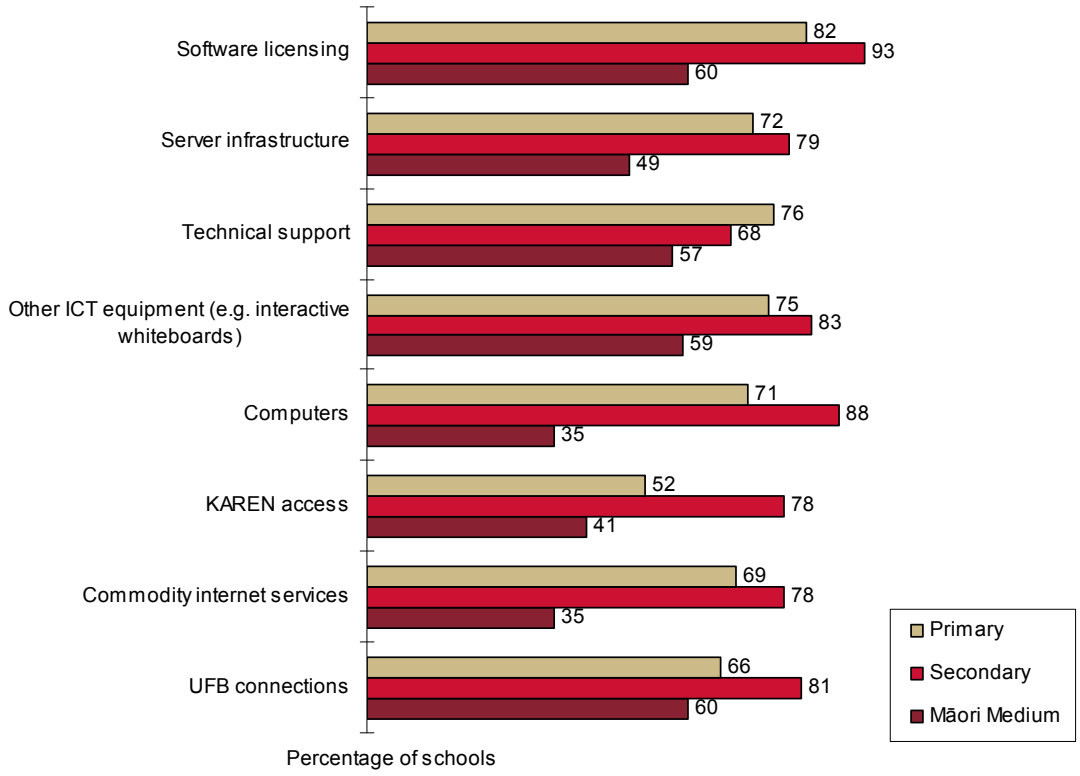
7.3.3 Central procurement

Principals were also asked how useful it would be to have any of these services or equipment procured centrally. The percentage of respondents who agree that it would be *useful* or *very useful* to have these things centrally procured is shown in Graph 15.

While the majority of schools reported that it would be useful or very useful to have computers and other ICT equipment, server infrastructure, technical support, software licensing and broadband access centrally procured, fewer Māori Medium schools believed this would be the case. Both primary schools and Māori Medium schools were much less likely than secondary schools to report that centrally procured KAREN access would be useful (52 percent of primary and 41 percent of Māori Medium schools cf. 78 percent of secondary schools).

Graph 15: Central procurement of ICT equipment and services useful or very useful

P-33 How useful would it be to have any of the following centrally procured? (Includes useful and very useful)



Base: primary (n=150), secondary (n=117), Māori Medium (n=18**).
**Caution: low base number of schools – results are indicative only.
Bases may very due to non-response.

8.0 ICT skills and attitudes

This section of the report examines principals' attitudes towards ICT; the extent to which staff engage with ICT and are involved in ICT professional development; perceived barriers to ICT use; and how the value of ICT is assessed.

8.1 Attitudes to ICT

8.1.1 Principals' attitudes to ICT

Sixty-seven percent of primary and 66 percent of secondary principals agreed that the integration of ICT was already making major improvements to the efficiency of curriculum delivery (Graph 16), while 68 percent of primary and 73 percent of secondary principals agreed the integration of ICT was already making major improvements to the quality of curriculum delivery (Graph 17).

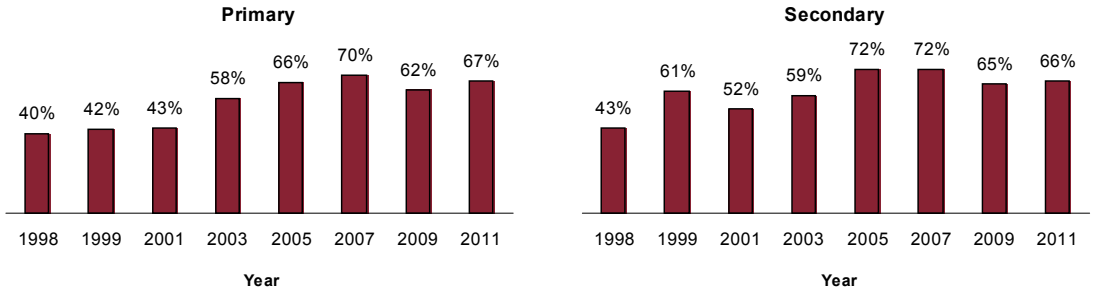
Principals of Māori Medium schools were also reasonably favourable towards ICT and curriculum delivery with 65 percent agreeing that ICT was making headway in the efficiency of curriculum delivery, and 60 percent reporting that it improved its quality.

As shown in Graph 16, the proportion of principals that agree or strongly agree that the integration of ICT is already making major improvements to the efficiency of curriculum delivery is relatively unchanged from 2009.

Similarly, the proportion of principals that agree or strongly agree that the integration of ICT is already making major improvements to the quality of curriculum delivery has not changed significantly either since 2009.

Graph 16: Agreement that ICT impacts *efficiency* of curriculum delivery

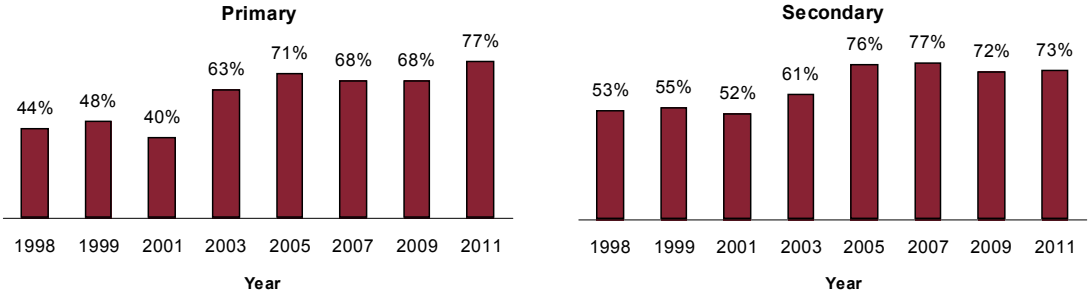
P-Q20b Please indicate the extent to which you agree or disagree with: The integration of ICT is already making major improvements to the efficiency of curriculum delivery at our school.



Base: primary (n=162), secondary (n=121).

Graph 17: Agreement that ICT impacts *quality* of curriculum delivery

P-Q20a 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.



Base: primary (n=163), secondary (n=121).

Further statements were introduced in 2007 regarding the role of ICT in teaching and learning. Graph 18 illustrates the extent to which principals' agree with these statements.

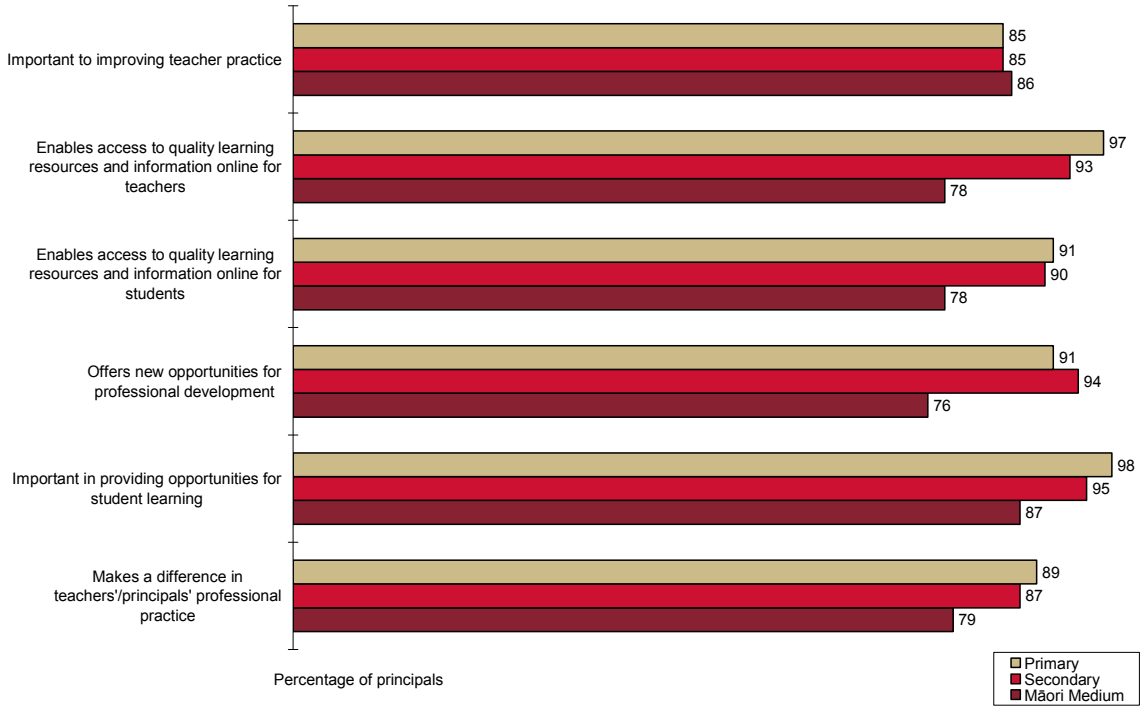
In 2011, the statements that received the highest levels of agreement were:

- *ICT is important in providing opportunities for student learning* (98 percent of primary, 95 percent of secondary, and 87 percent of Māori Medium school principals agree or strongly agree with this statement).
- *ICT is enabling access to quality learning resources and information online for teachers* (97 percent of primary, 93 percent of secondary and 78 percent Māori Medium school principals).
- *ICT offers new opportunities for professional development* (91 percent of primary, 94 percent of secondary and 76 percent of Māori Medium school principals).

Overall, these results are largely unchanged from those reported in 2007 and 2009, and although the results suggest that Māori Medium school principals' agreement levels have dropped since 2009 in relation to some of the statements, due to the small sample size in both 2009 and 2011 the observed differences are not statistically significant.

Graph 18: Agreement that ICT impacts various aspects of teaching and learning

P-Q20c-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 (Includes agree and strongly agree).



Base: primary (n=164), secondary (n=121), Māori Medium (n=20**).
**Caution: low base number of schools – results are indicative only.
Base numbers may vary due to non-response.

8.1.2 Assessing the value of ICT

All principals were asked how they assess the value of ICT. Overall, among primary and secondary schools the value of ICT is most often determined by:

- Feedback from teachers (79 percent of primary and 88 percent of secondary schools);
- Self-review (76 percent of primary and 75 percent of secondary schools);
- Feedback from students (68 percent of primary, 84 percent of secondary and 80 percent of Māori Medium schools) (Table 73).

The fourth most frequently utilised method by primary and secondary schools for assessing the value of ICT for primary and secondary schools is the school's ICT Strategic Plan (64 percent of primary and 64 percent of secondary schools).

Among Māori Medium schools, the most frequently used methods are feedback from parents or whānau (83 percent), feedback from students and teachers (both 80 percent) and self-review (74 percent).

Table 73: Assessing value of ICT in schools' teaching and learning

P-Q23. How do you assess the value of ICT in your school's teaching and learning?

Base =	Primary 168 %	Secondary 122 %	Māori Medium 20** %
Feedback from teachers	79	88	80
Self-review	76	75	74
Feedback from students	68	84	80
The school's ICT Strategic Plan	64	64	61
Student achievement	54	51	63
Feedback from parents/whānau	46	37	83
The school's Charter	47	38	61
Student assessment	43	41	57
Performance reviews (of teachers)	42	45	46
ERO reports	28	39	52
Feedback from community	32	20	61
Other	3	2	0
Value of ICT is not assessed in our school	7	2	0

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

8.1.3 Barriers to ICT in schools

All schools were asked to what extent a number of factors create a barrier to the use of ICT in their school. Graph 19a and Graph 19b overleaf illustrate the extent to which principals believe each factor creates *somewhat of a barrier* or *a major barrier*.

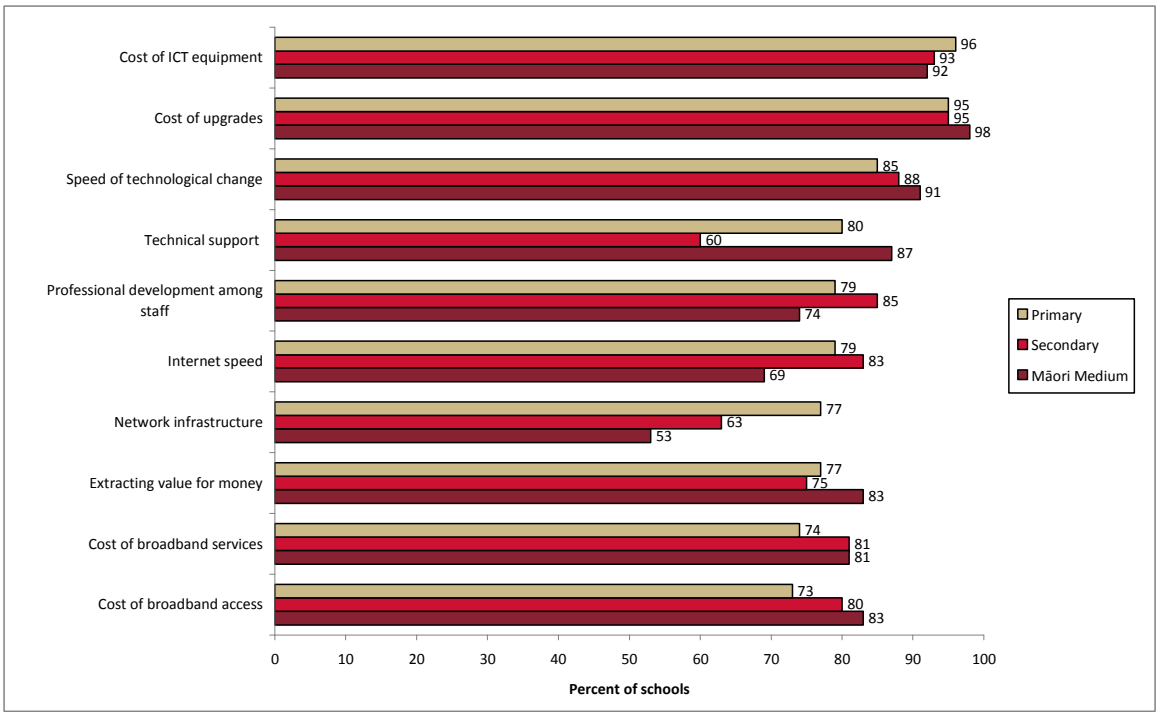
The barriers that were most commonly identified by respondents included:

- The cost of ICT equipment (identified by 96 percent of primary, 93 percent of secondary and 92 percent of Māori Medium schools as a barrier).
- The cost of upgrades (identified by 95 percent of primary, 95 percent of secondary and 98 percent of Māori Medium schools as a barrier).
- The speed of technological change (identified by 85 percent of primary, 88 percent of secondary and 91 percent of Māori Medium schools as a barrier)
- Technical support is an issue for both primary (identified by 80 percent as a barrier) and Māori Medium schools (identified by 87 percent as a barrier).

There were a number of differences between the barriers identified by different school types. Most notably, secondary schools were more likely than both primary and Māori Medium schools to identify managing student usage and integration into the curriculum as barriers to ICT use. Secondary schools were also more likely than primary schools to mention integration into the curriculum. In contrast, primary schools more frequently mentioned network infrastructure and Internet reliability as barriers to the use of ICT in their school.

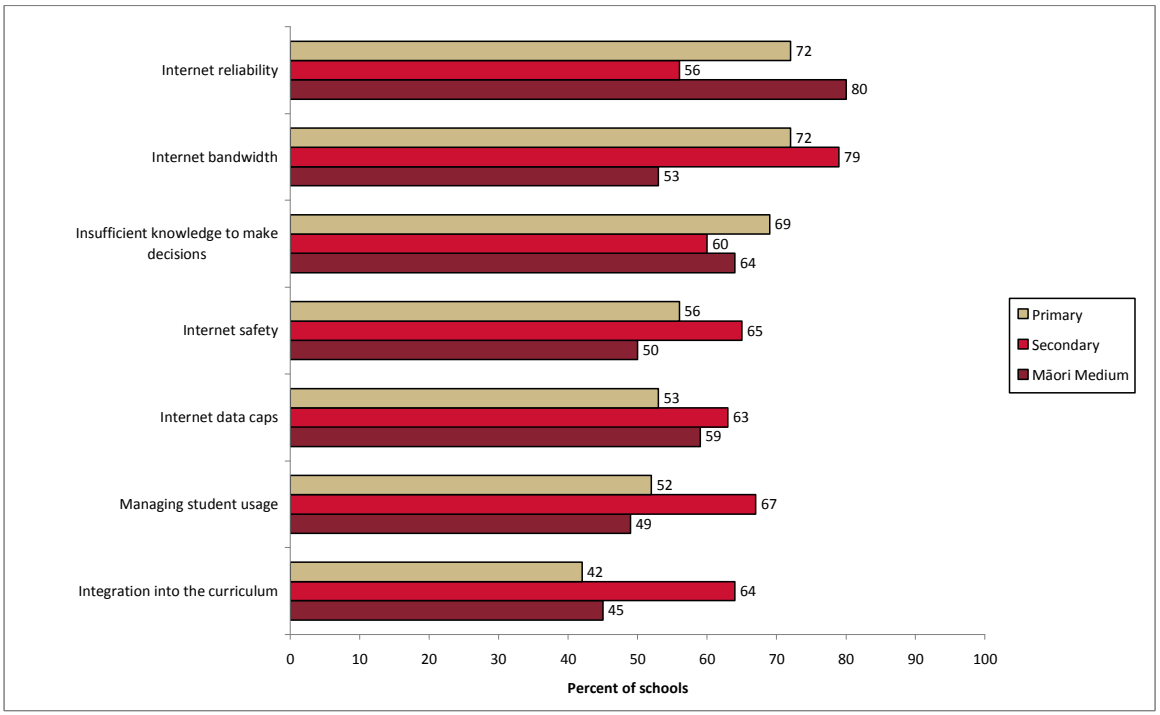
Graph 19a: Perceived barriers to use of ICT in schools

P-Q24 To what extent do the following create a barrier to the use of ICT in your school?



Graph 19b: Perceived barriers to use of ICT in schools (continued)

P-Q24 To what extent do the following create a barrier to the use of ICT in your school?



Base: primary (n=168), secondary (n=127), Māori Medium (n=20**).
**Caution: low base number of schools – results are indicative only.
Base numbers may vary due to non-response.

8.1.4 ICT strategic plans

The majority of schools reported that they have an ICT Strategic Plan (76 percent of primary schools, 80 percent of secondary schools and 63 percent of Māori Medium schools) (Table 74), and that most frequently the school updated their plan on an annual basis (Table 75).

Table 74: ICT Strategic Plans

P-Q21. Does your school have an ICT Strategic Plan?

	Base =	Primary 163 %	Secondary 122 %	Māori Medium 20** %
Yes		76	80	63
No		23	19	37
Don't know		1	2	0
Total		100	100	100

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

Table 75: Updating of ICT Strategic Plans

P-Q22. How often have you updated your ICT Strategic Plan?

	Base =	Primary 120 %	Secondary 97 %	Māori Medium 12** %
Annually		52	42	38
Every 2 years		14	31	35
Every 3-5 years		32	25	11
Never		2	2	15
Total		100	100	100

Total may not sum to 100% due to rounding.
*Sub-sample based on those whose school have an ICT Strategic Plan.
**Caution: low base number of respondents-results are indicative only.

8.2 Usage of KAREN services

Principals were asked if their school was aware of, and would be interested in, connecting to KAREN (the Kiwi Advanced Research and Education Network) or were already connected to it (Table 76). A small number of schools reported that they had already connected. The majority of secondary schools reported they were aware of it and expressed a strong desire to connect to the network (64 percent), while only 34 percent of primary schools and 15 percent of Māori Medium schools reported that they were aware of it and would like to be connected.

Among those schools that expressed an interest in connecting to KAREN, or who are already connected, when asked about which of its available services were of interest to them, most frequently school principals identified: low cost access to commodity Internet services; online resources in other libraries/music; data caps and Ministry of Education services, such as TKI and e-asTTle.

Table 76: Connection to KAREN services

Q40. KAREN (Kiwi Advanced Research & Education Network) offers unconstrained access to a range of online education services. Are you aware of KAREN?

Base =	Primary 161 %	Secondary 125 %	Māori Medium 20** %
Yes, our school is already connected to KAREN	6	12	2
Yes, our school would like to connect to KAREN	34	64	15
No	60	24	83
Total	100	100	100

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

Table 77: Interest in KAREN services

Q40a. How interested are you in each of these?

Base =	Primary 66 %	Secondary 93 %	Māori Medium 4** %
No data caps			
Not at all interested	0	0	0
Somewhat interested	16	7	0
Very interested	67	92	100
Don't know	17	1	0
Total	100	100	100
Low cost access to commodity Internet services			
Not at all interested	0	0	0
Somewhat interested	13	3	0
Very interested	77	93	100
Don't know	10	3	0
Total	100	100	100

continued overleaf

Table 77: Interest in KAREN services (continued)

Q40a. How interested are you in each of these?

	Primary	Secondary	Māori Medium
Base =	66	93	4**
	%	%	%
High definition videoconferencing services			
Not at all interested	0	1	0
Somewhat interested	28	16	0
Very interested	62	80	100
Don't know	10	2	0
Total	100	100	100
Ministry of Education services, e.g. TKI, e-asTTle			
Not at all interested	0	0	0
Somewhat interested	18	11	38
Very interested	74	88	62
Don't know	8	1	0
Total	100	100	100
Video streaming services, e.g. eTV			
Not at all interested	2	0	0
Somewhat interested	27	17	0
Very interested	61	80	100
Don't know	11	3	0
Total	100	100	100
National Library resources			
Not at all interested	0	0	0
Somewhat interested	22	14	0
Very interested	69	85	100
Don't know	9	1	0
Total	100	100	100
Online resources in other libraries/music			
Not at all interested			
Somewhat interested	18	13	0
Very interested	74	85	100
Don't know	8	2	0
Total	100	100	100
Disaster recovery/backup services			
Not at all interested	3	0	0
Somewhat interested	23	26	38
Very interested	64	70	62
Don't know	9	3	0
Total	100	100	100

Total may not sum to 100% due to rounding.
Sub-sample based on those schools that are either connected, or interested in connecting, to KAREN.
**Caution: low base number of schools - results are indicative only.

8.3 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 email (88 percent of primary, 94 percent of secondary and 93 percent of Māori Medium schools), telephones (82 percent of primary, 86 percent of secondary and 81 percent of Māori Medium schools) and publishing information on the school's website as the main means of communication (81 percent of primary, 98 percent of secondary schools).

Secondary schools are more likely than primary schools to have used text messaging e.g. to report truancy (73 percent cf. 51 percent) and student/parent access to school servers from their homes (39 percent cf. 14 percent of primary schools and nine percent of Māori Medium schools).

However, primary schools now report doing the following to a greater extent than they did two years ago:

- Use website to publish information (81 percent cf. 73 percent in 2009 and 65 percent in 2007)
- E-mail (88 percent cf. 79 percent in 2009 and 63 percent in 2007).

Table 78: Schools using ICT technologies to communicate with the wider community/whānau?

Q43. How is ICT used at your school to communicate with the wider community/whānau?

Base =	Primary 165 %	Secondary 126 %	Māori Medium 19** %
Email between teachers and parents	88	94	93
Telephones	82	86	81
Publishing information on the school's website	81	98	47
Emailing Newsletters	78	79	88
Text messaging (e.g. for truancy)	51	73	88
Voice messaging Absence Lines	52	61	26
Blogs or other social networking services	39	30	44
Student/Parent access to school servers from their homes	14	39	9
Parent portals	15	29	12
Parents have access to school ICT equipment	17	12	26
We provide ICT training for our wider school community	13	12	0
Other	4	3	0
Don't know	0	0	0

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

8.4 Teachers' adoption of ICT

By adapting a research instrument described by Knezek and Christensen (1999)[16], principals were asked to identify the stage (see Table 79 below) where they feel most teachers at their school are with regards to the adoption of ICT.

Table 79: 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 continue to be in the higher levels of ICT adoption (Graph 20 overleaf). In all more than four-fifths of both primary and secondary schools report that their teachers are somewhere in between stage four and stage six (86 percent of secondary and 84 percent of primary schools cf. with 66 percent of Māori Medium schools). Overall, these aggregate results are unchanged from 2009.

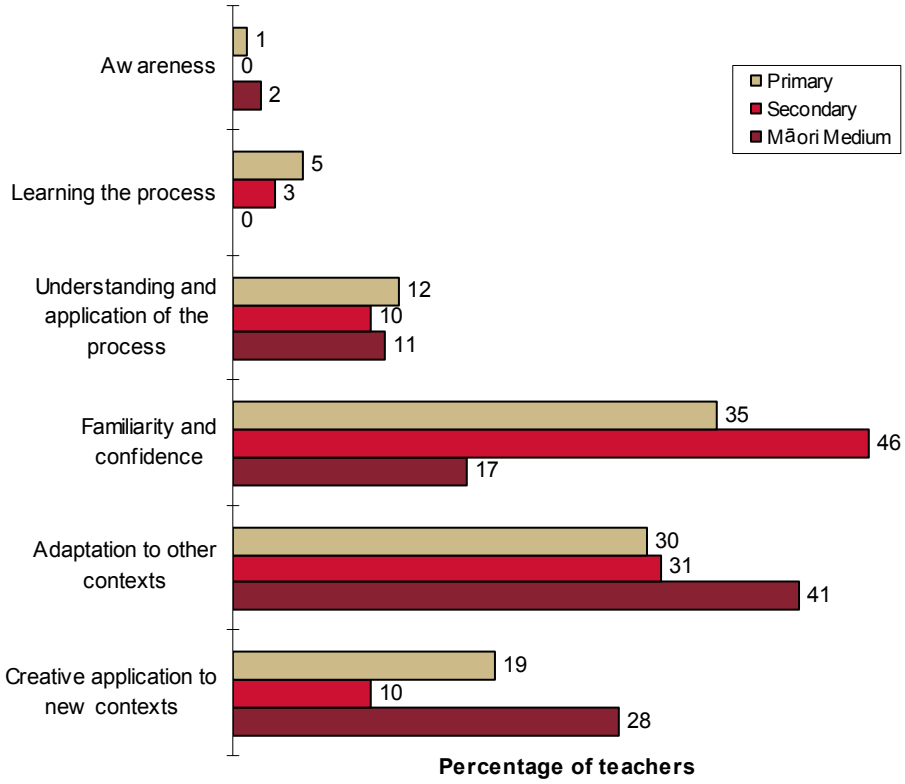
However, as detailed in Graph 21 overleaf, primary school teachers' levels of experience has remained relatively unchanged since 2009, with a slight decrease in teachers at the stage of *creative application to new contexts* (19 percent in 2011 cf. 22 percent in 2009) and a shift to increased levels of *application to other contexts* and *familiarity and confidence.* From 2009 to 2011, secondary and Māori Medium school teachers appear to have experienced a similar shift to that reflected in primary school principals' rankings of their teaching staff.

It should be noted, however, these changes may not necessarily relate to teachers' levels of competence in comparison with 2009, but rather the fact that ICT technology and software capabilities continue to advance at an ever-increasing pace.

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

Graph 20: Teachers' adoption of ICT

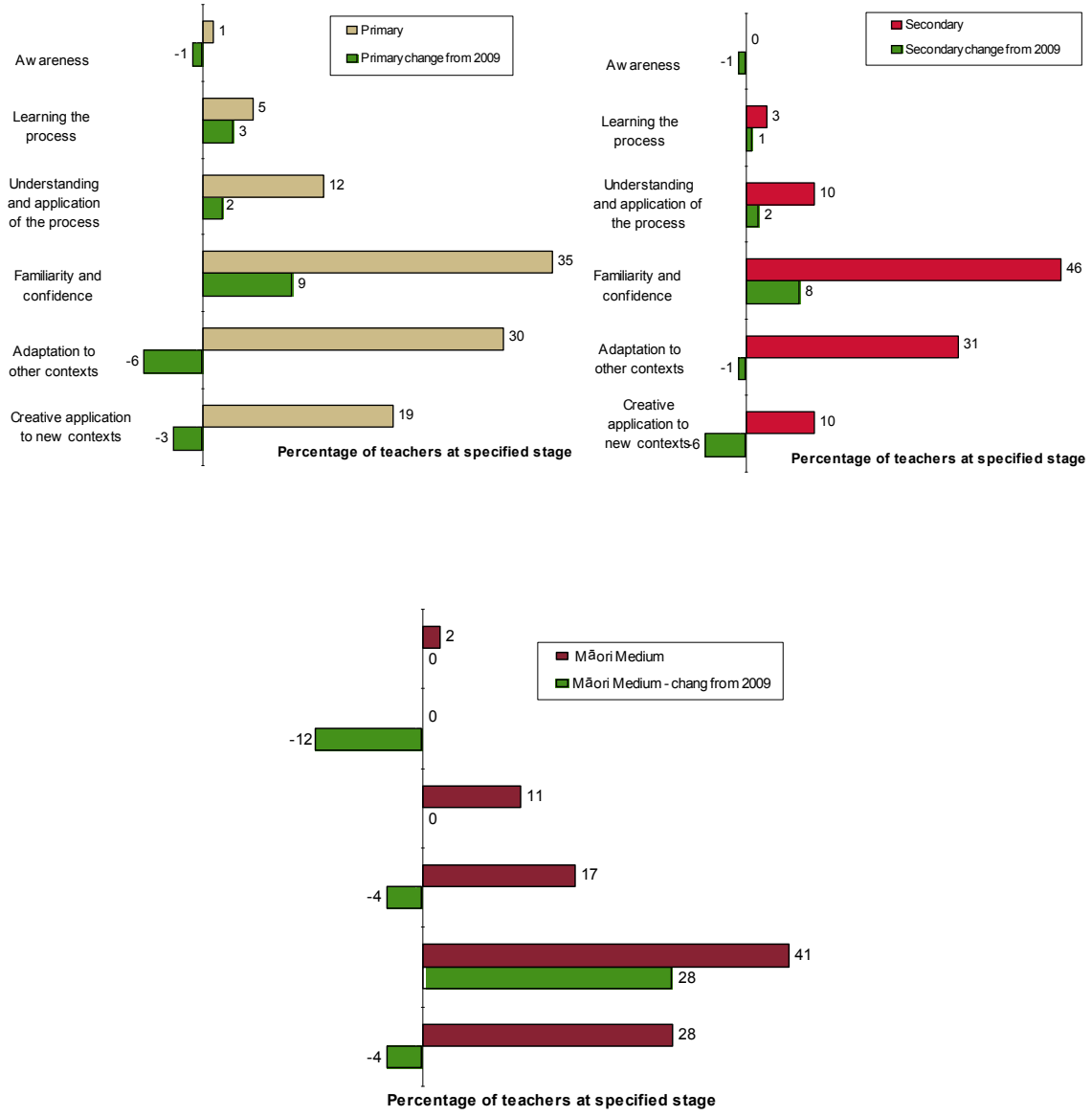
P-Q46 There are six stages in the adoption of technology (as identified by Knezek and Christensen, Computers in New Zealand Schools, Nov 1999). Please read the descriptions of each of the six stages. Circle the stage where you feel most teachers at your school are in the adoption of ICT.



Base: primary (n=165), secondary (n=124), Māori Medium (n=20**).
**Caution: low base number of schools – results are indicative only.

Graph 21: Changes in teachers' adoption of ICT from 2009

P-Q46 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=165), secondary (n=124), Māori Medium (n=20**).
**Caution: low base number of schools – results are indicative only.

8.5 Sharing good ICT practice

This year, for the first time, respondents completing the Principals' questionnaire were asked whether their staff were sharing good ICT practices within and outside of the school. Most frequently, schools reported that they are already collaborating and sharing on a local level (58 percent of primary schools, 72 percent of secondary schools and 43 percent of Māori Medium schools).

Fewer schools reported that they were collaborating on a national or international level. However, at 37 percent, secondary schools were significantly more likely than other schools to be collaborating and sharing on a national level (37 percent cf. 14 percent of primary and Māori Medium schools.

Table 80: Sharing of good ICT practice

P-Q25a-c. Which of the following is your school already doing or would you like to do…?

	Primary	Secondary	Māori Medium
Base =	163	123	20**
	%	%	%
Collaborating and sharing on a local level			
Already doing this	58	72	43
Would like to do this	40	28	50
Not interested in doing this	2	0	7
Total	100	100	100
Collaborating and sharing on a national level			
Already doing this	14	37	14
Would like to do this	68	60	86
Not interested in doing this	18	3	0
Total	100	100	100
Collaborating and sharing on an international level			
Already doing this	3	14	8
Would like to do this	59	67	85
Not interested in doing this	38	19	8
Total	100	100	100

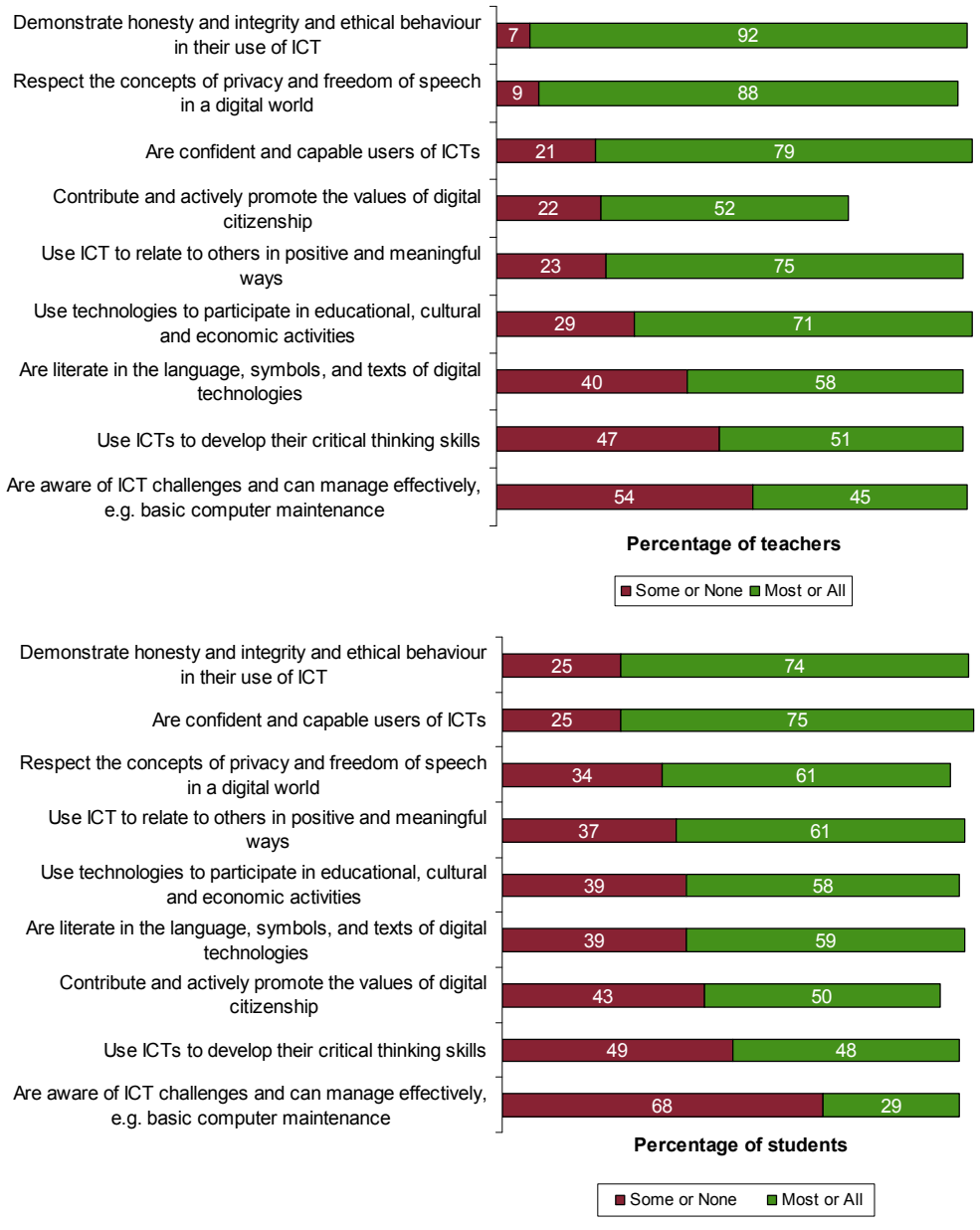
Total may not sum to 100% due to rounding.
**Caution: low base number of schools - results are indicative only

8.6 Digital citizenship

A 'digital citizen' is someone who displays confidence in the use of information and communication technologies (ICT) and knows how to use them in an ethical manner. We asked principals to identify how many teachers and students at their schools could be classified as digital citizens. Schools with 'most' or 'all' of their teachers/students exhibiting digital citizen characteristics are more likely to be ready to take advantage of ultra-fast broadband than those with 'some' or 'none'. The graph below gives an illustration of all schools and the differences in digital citizenship competencies between teachers and students. Corresponding figures broken down by school type can be found on the pages overleaf. Please note that the results omit 'don't know' responses.

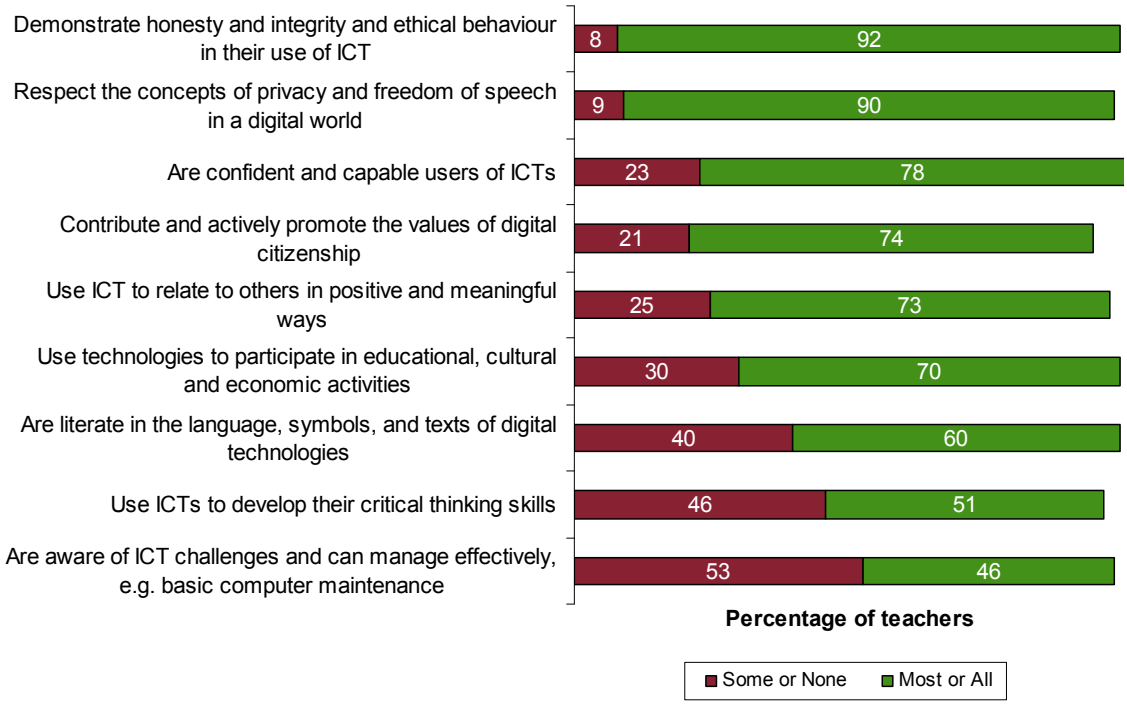
Graph 22: Digital citizen characteristics – all schools

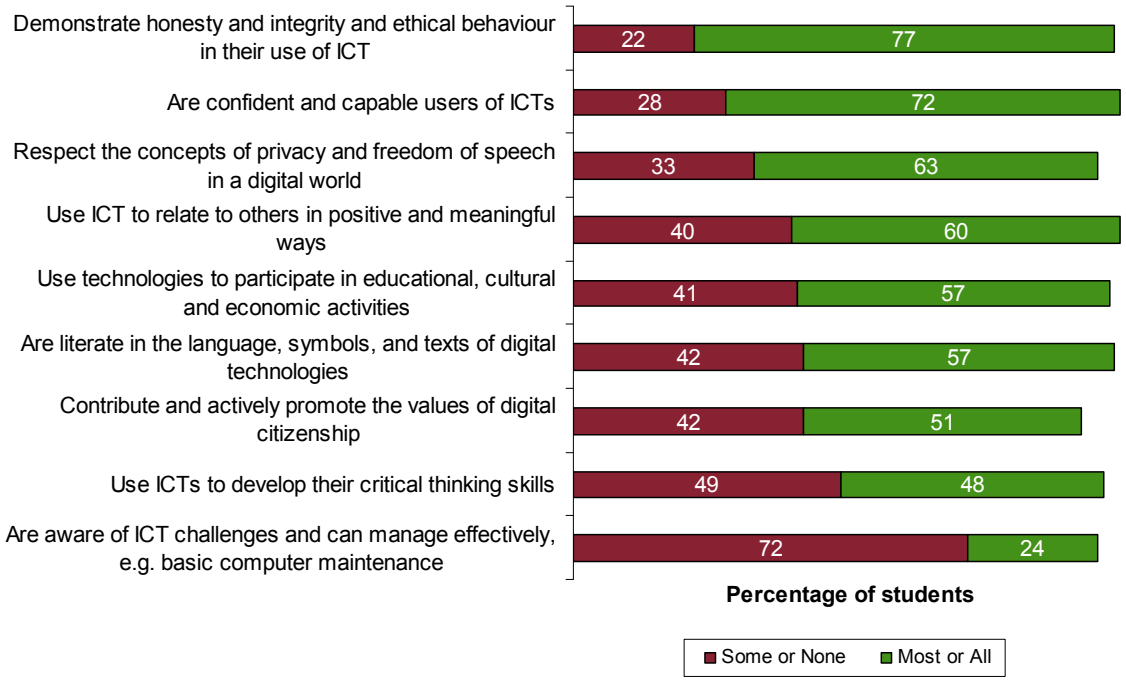
P-Q44 A "digital citizen" is someone who displays confidence in the use of ICT and knows how to use it in an ethical matter. To the best of your knowledge, how many of the teachers/students in your schools exhibit the following characteristics?



Graph 23: Digital citizen characteristics – primary schools

P-Q44 A "digital citizen" is someone who displays confidence in the use of ICT and knows how to use it in an ethical matter. To the best of your knowledge, how many of the teachers/students in your schools exhibit the following characteristics?

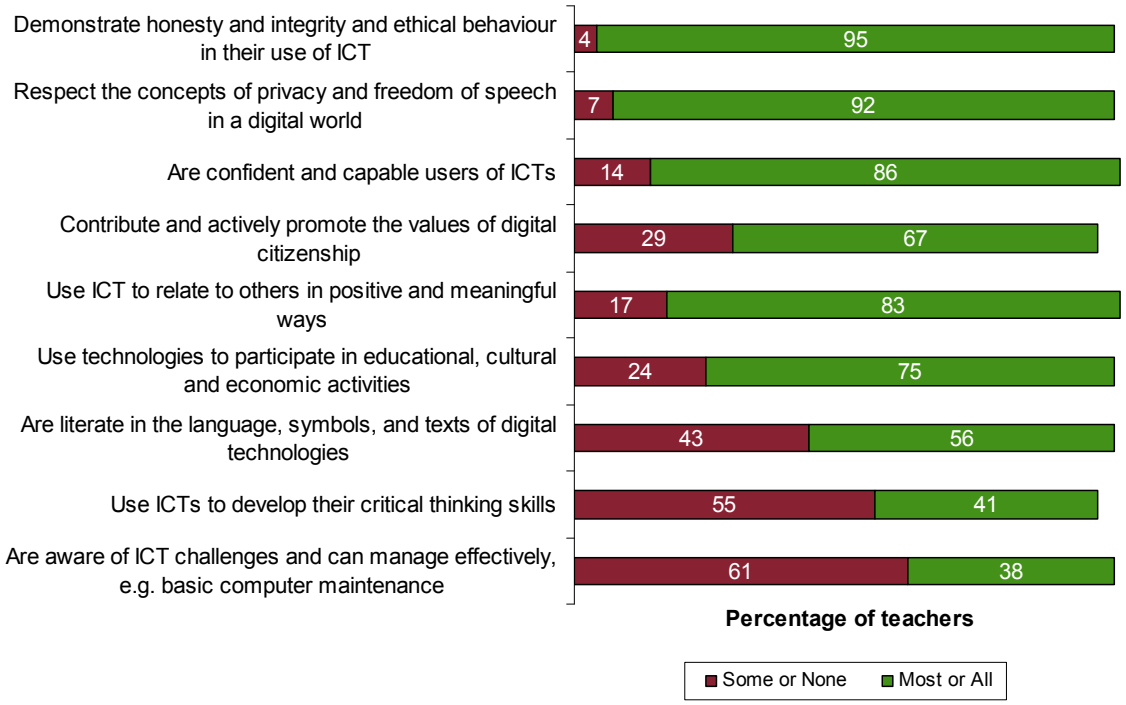


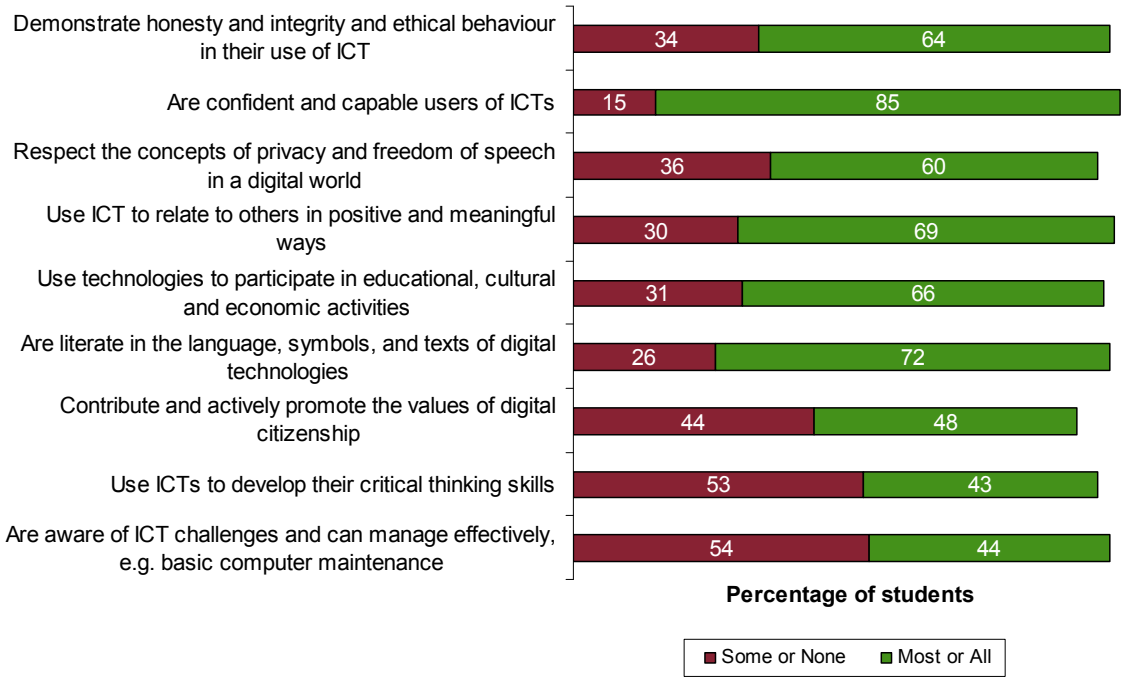


Base: primary (n=165), secondary (n=123), Māori Medium (n=20**).
**Caution: low base number of schools – results are indicative only.

Graph 24: Digital citizen characteristics – secondary schools

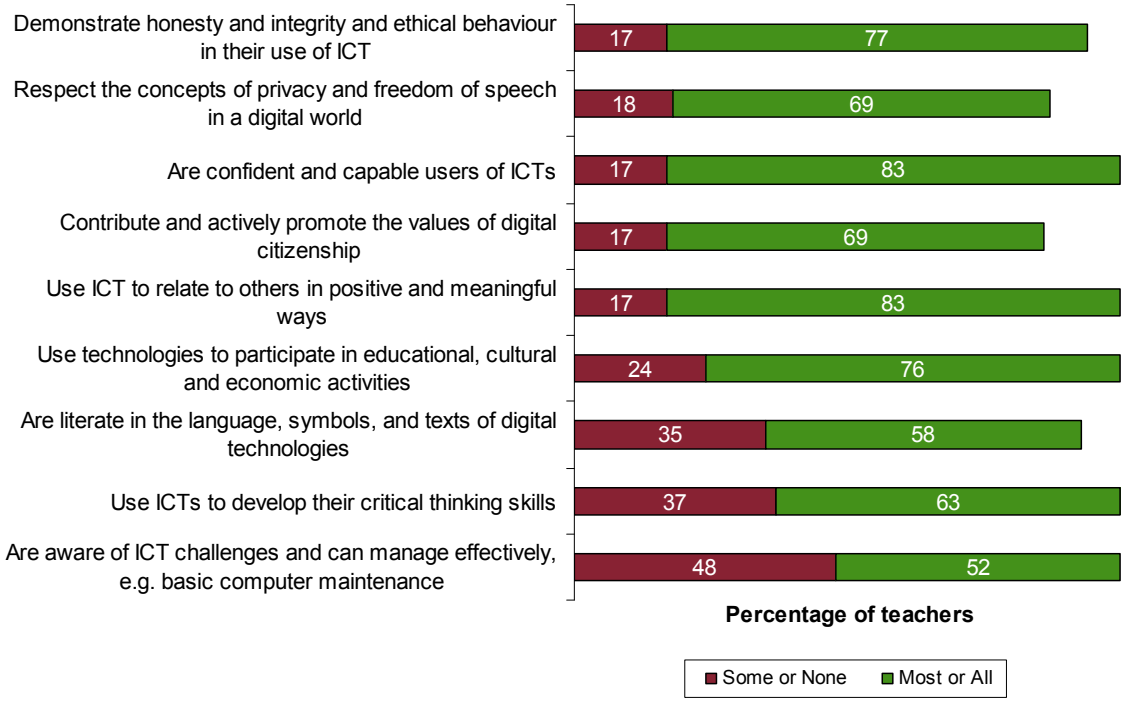
P-Q44 A "digital citizen" is someone who displays confidence in the use of ICT and knows how to use it in an ethical matter. To the best of your knowledge, how many of the teachers/students in your schools exhibit the following characteristics?

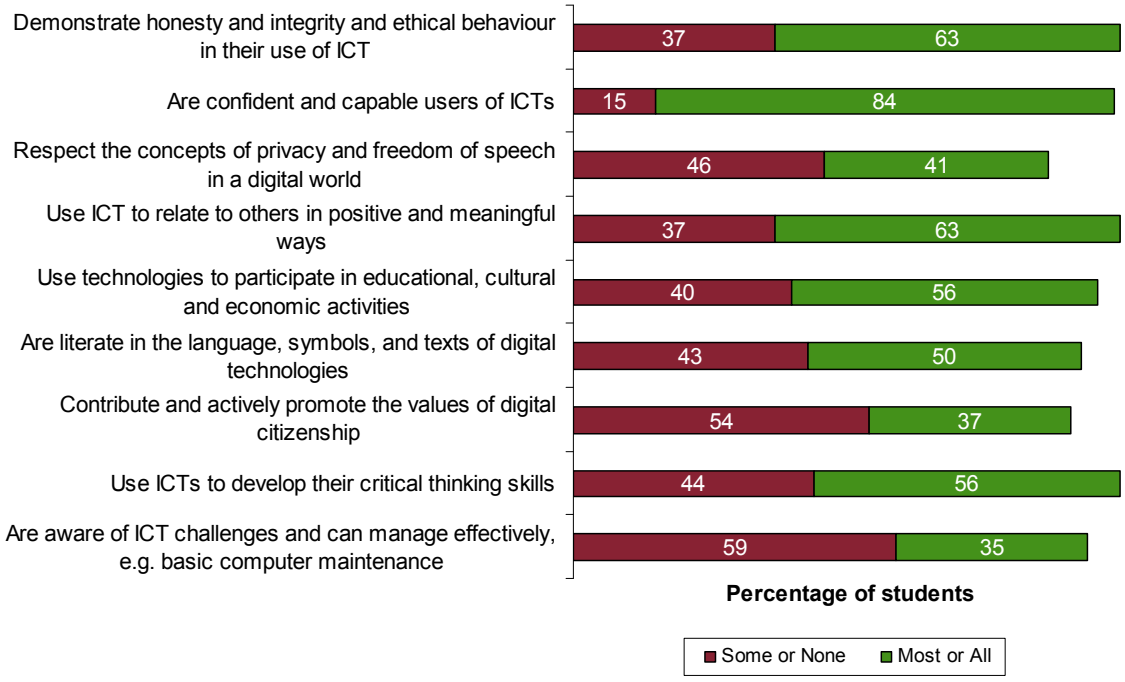




Graph 25: Digital citizen characteristics – Māori Medium schools

P-Q44 A "digital citizen" is someone who displays confidence in the use of ICT and knows how to use it in an ethical matter. To the best of your knowledge, how many of the teachers/students in your schools exhibit the following characteristics?





ISBN 978-0-473-20364-1