2020 Communications Trust

Digital Technologies in New Zealand Schools

2014 REPORT

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

OCTOBER 2014

InternetNZ

what just changed

THE SCIENCE LEARNING HUB SPARKING FRESH THINKING www.sciencelearn.org.nz

Microsoft Be what's next.

N4L Network for Learning

Te Puni Kōkiri REALISING MĀORI POTENTIAL

Chorus

hp

MINISTRY OF EDUCATION Te Tāhuhu o te Mātauranga

research NEW ZEALAND

Digital Technologies in School
2014 Report

October 2014

Confidential

Digital Technology in schools
2014 Report

PREPARED FOR 2020 Communications Trust

PREPARED BY Mark Johnson
Annita Wood
Pip Sutton

CONTACT DETAILS Mark Johnson
Research New Zealand
Phone 04 499 3088
www.researchnz.com

PROJECT NUMBER #4562-00

Contents

1.0	**Executive Summary**	**5**
2.0	**Introduction and method**	**9**
2.1	Background	9
2.2	Methodology	10
3.0	**Strategic planning and digital technologies**	**14**
3.1	ICT Strategic Plan	14
3.2	Policies on personal digital devices for learning	17
3.3	Feedback from students on technology for learning at school	19
3.4	Philanthropic support	20
4.0	**Digital technologies for learning**	**21**
4.1	Digital tools for student learning	21
4.2	Digital devices for student learning	26
4.3	Future-focused digital technologies for learning	38
4.4	Barriers to use of digital technologies in schools	46
5.0	**Internet access and safety**	**50**
5.1	Student access to social software sites	50
5.2	Student access to the Internet at home	52
5.3	Cyber safety	54
5.4	Awareness of obligations under the Copyright Amendment Act 2011	56
6.0	**Te Reo Māori resources**	**57**
6.1	Software to support macron use	57
6.2	Māori language resources	58
6.3	Factors limiting schools from utilising online Māori language resources	60
7.0	**Impact of digital technologies**	**62**
7.1	Student participation in eLearning activities	62
7.2	The role of digital technologies in teaching and learning	69
7.3	Teacher professional development	75
7.4	Pond (Network for Learning portal)	78
7.5	Stages of adoption of digital technologies – teachers	80
8.0	**Digital technologies expenditure**	**82**
8.1	ICT expenditure as percentage of Operations Grant	82
8.2	Changes to schools' spending on digital technology in 2014	86

9.0	**Digital equipment and technology stocktake**	**91**
9.1	Computers in schools	91
9.2	Operating systems used	97
9.3	Brands of digital equipment used by schools	100
10.0	**Procurement and disposal of digital technologies**	**109**
10.1	Factors influencing purchasing decisions	109
10.2	Preferred means for procuring digital technologies and services	110
10.3	Disposal of obsolete digital devices	113
11.0	**School network management**	**114**
11.1	Current network infrastructure to support student learning	114
11.2	Network for Learning (N4L)	117
11.3	Network management and cloud computing services	120
11.4	Technical support for teachers	125
12.0	**Community Engagement using digital technologies**	**127**
12.1	Use of digital technologies to communicate with wider community/whānau	127
12.2	Access to school technologies by community/whānau	129
12.3	School collaboration with internet providers for community access	130

1.0 Executive Summary

Outlined below are several major findings of the 2014 Digital Technologies in Schools survey. Further details and other findings can be found in the main body of the report.

ICT planning

- Roughly three-quarters of schools (73 percent) had an ICT Strategic Plan for the development and use of digital technologies by school staff and to support student learning. Most frequently, schools with an ICT Strategic Plan reported that it already covered:
  - Professional teacher development (86 percent of all schools with a plan)
  - Equipment and software upgrades (83 percent)
  - Network infrastructure (82 percent).
- Smaller proportions of principals at schools with ICT Strategic Plans reported that their plan currently covered pedagogy (77 percent, with a further 21 percent saying they were planning to include it in their Strategic Plan in the future), and/or change management (54 percent, with 34 percent planning to incorporate change management into their plan in the future).
- Four-in-ten principals (41 percent) at schools with ICT Strategic Plans reported that their plan currently included a policy for personal digital devices for learning, while a further 33 percent said they were currently developing/planning such a policy.
- Just over four-in-ten (44 percent) principals reported that their school had asked for feedback from students on the use of technology for learning at school, while almost half (48 percent) said they planned to do so.

Digital devices – access and use

- Fifty-six percent of principals reported that more than half of all students had access to a personal digital device for learning; 23 percent reported that all students in their school had such a device.
- Primary schools were significantly more likely to provide school-owned portable computers for students to use in class (83 percent), than were secondary schools (71 percent). Primary schools were also significantly more likely to provide tablets for student use in class than were secondary schools (73 percent and 50 percent, respectively).
- Student (or parent) ownership of digital devices for learning is still in its infancy, however, with only two percent of schools reporting that all students owned their devices.

Use of technologies in learning

- The use of future-focused technologies is still at an early stage of adoption, with less than 10 percent of schools using such technologies as 3D printing and interactive video.

- However, there is stronger interest among schools in relation to the use of future-focused learning applications, particularly TED talks, online assessments, gamification and Khan Academy.

- The costs of digital technologies (noted by 95 percent of principals) and online services (82 percent) continue to be identified as the biggest barriers to their use by schools. Large proportions of principals expressed concerns in relation to the speed of technological change (82 percent) and professional development of staff (80 percent) as being barriers as well.

- In contrast, less than half of all principals noted issues such as the use of Internet safety, managing student usage of technologies or the integration of such technologies into the curriculum as being barriers for their school.

- Challenges remain in relation to students having Internet access at home, with 14 percent of schools reporting that less than half of all their students have such access, while just three percent reported that all students in their school have Internet access at home.

- The survey also identified a 'decile-related' divide, in relation to students having access to the Internet at home:

    - Decile 4-6 and Decile 7-10 schools were significantly more likely to estimate that at least three quarters (75 percent or more) of the school's students have Internet access at home (45 percent and 85 percent, respectively), compared with just 15 percent of Decile 1-3 schools.

    - In contrast, 19 percent of Decile 1-3 schools estimated that less than one quarter of their students had Internet access at home, as compared to only two percent of Decile 4-6 schools and none of Decile 7-10 schools.

Te reo Māori resources

- Less than half of all schools are using online Māori language resources, with lack of knowledge (noted by 58 percent of principals) and/or lack of information about such resources (35 percent) being the principal barriers limiting schools' use of such resources to support Māori language learning.

Impact of digital technologies

- New Zealand students have a high level of engagement with some types of e-learning activities, with 94 percent of schools reporting that students are using online learning resources and/or online learning games. However less than half of schools reported that students are currently participating in online collaborative networks.

- One-third of principals reported that digital technologies were having quite a significant impact on raising student achievement in their school, while 45 percent of principals said it was having a moderate impact. Less than 10 percent of principals reported feeling such technologies were having little or no impact on raising student achievement levels.

- Over 70 percent of principals agreed that digital technologies were positively affecting teaching and learning in areas such as: enabling access to quality learning resources and information online for teachers and students; providing new opportunities for teacher professional development; improving teacher practice; and making learning more relevant and engaging for students.

- Online resources such as Wikipedia, wickED, Newspapers in Education and the Science Learning Hub are being used weekly by at least some students in more than 40 percent of schools. However, such resources are not being used extensively.

Teacher professional development

- Only 14 percent of schools feel that all of their teachers have the necessary skills to effectively manage student use of personal digital devices for learning, though 41 percent of principals reported that more than half of their teachers had such skills.

- Forty-five percent of principals acknowledged science-specific teacher professional development (PD) as being important.

- POND appears to be making waves among schools, with 71 percent principals reporting that teachers at their school had already registered to use POND or were planning to do so in the next 12 months.

- The results of this year's survey suggest that teachers have moved backward somewhat in relation to the six stages of ICT adoption, compared with previous years' surveys. However, this is likely a reflection of the significant and ongoing changes and development that have occurred recently in relation to digital technologies and in particular access to and use of personal digital devices for student learning.

Equipment stocktake

- The number of school-owned computers per student remains plateaued at one computer per three students, and remains unchanged since 2011.

- There is also some early indication that personal ownership of digital devices may be having an impact on school expenditure on school-owned computers for student learning, particularly among decile 8, 9 and 10 secondary schools where students are more likely to own portable digital devices.

- While 45 percent of schools reported having computers using Windows 8 as an operating system and 79 percent reporting having computers with Windows 7, 35 percent reported they have computers which use Windows XP, which is no longer supported by Microsoft.

- iPad is the most popular tablet computer (86 percent of schools reported having tablet computers that use iPad OS, compared to around 30 percent of schools having tablets using Android or Windows operating systems).

- Reflecting the high proportions of schools with at least one iPad device, three-quarters of schools reported having an Apple computing device.

- Most schools are disposing of obsolete digital equipment responsibly by taking part in e-waste collection events and/or taking obsolete devices to a recycler, however nearly 20 percent are still disposing of old equipment in landfills.

Network infrastructure

- Eighty-seven percent of schools reported that WiFi access is available in all classrooms, but only 36 percent had tested their wireless infrastructure with large numbers of students.

- Over half of schools (54 percent) reported that their school is already using a UFB/RBI connection, while a further 13 percent said the school had a UFB/RBI connection, but that it was not being used yet.

- Approximately one-in-four responding schools (27 percent) reported they had registered for Network for Learning (N4L) and were already connected, while 58 percent said they had registered but were not connected yet. However, almost three-quarters of schools (72 percent) reported their teachers needed further professional development support in using digital technologies for teaching and learning, in order to better take advantage of the benefits of N4L.

- Overall half of all schools are already using some cloud computing services, with Google mail, Google apps and student management systems being the most frequently used.

Community engagement

- Schools are making extensive use of digital technologies to communicate with families, including publishing information on the school's website (91 percent) and emails occurring between teachers and parents (87 percent).

- Only a small proportion of schools provide access to their ICT equipment for parents (14 percent) and/or the wider community (16 percent).

- While schools have started to collaborate with local Internet providers for the purpose of providing Internet access for their communities by sharing the school's fibre connection (six percent) and a further 14 percent are planning to do this in the future, two thirds reported they need more information or have not yet decided on the issue.

2.0 Introduction and method

2.1 Background

Since 1993, the IT industry has carried out a survey of Information and Communications Technology (ICT or digital technologies) 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 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 commissions in 1994 (then known as BRC Marketing & Social Research to conduct the research. Previous years' surveys have focused on key developments in the uptake of digital technology and infrastructural aspects, such as network configuration and procurement of IT equipment and services. The 2011 survey had a particular focus on schools' readiness for ultra-fast broadband (UFB) and rural broadband initiative (RBI) roll-outs.

For the current survey, the information objectives of the survey were reviewed, and the survey questionnaires were revised significantly, to better reflect the significant changes that have occurred in the digital technology space since 2011, and to make the survey shorter and easier for schools to complete.

As a result of these changes, as well as changes to the survey methodology (discussed below), the 2014 *Digital Technology in Schools Survey* creates a new benchmark, against which schools' progress in the implementation and usage of digital technologies for the purposes of student learning can be tracked and assessed. Therefore, with the odd exception (e.g. the number of students per computer in schools), references to and comparisons with historic survey results are not made in this report.

Areas of special focus in this report are:

- Strategic planning in relation to digital technologies
- Student access to personal digital devices for learning
- Digital technologies being used for the purposes of student learning
- Internet access and safety
- Digital Te Reo Māori resources being used
- The impact of digital technologies on student learning and teacher professional development

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

- Community engagement by schools through the use of digital technologies.

Also covered in the report are sections relating to: types of computers and digital equipment held by schools; school network management and digital technology procurement and disposal practices.

2.2 Methodology

2.2.1 Changes in surveying method

In previous iterations of the ICT in Schools Survey (now repositioned and named *Digital Technologies in Schools Survey*) the survey was conducted as two self-completion paper questionnaires (one for principals and one for staff dealing with ICT equipment and infrastructure), which were posted to schools to complete and return in a reply-paid envelope.

The sampling method used for these surveys was to send out questionnaires to a random selection of primary schools, along with all secondary schools from the Ministry of Education's database. In several iterations, all Māori Medium schools were included in the sample as well.

The governments' UFB and RBI roll-out to schools will be completed by the end of 2015 and given the significant recent changes in access to digital technologies for learning, the decision was made this year to shift to an online surveying approach (with schools being given the option of downloading PDF versions of the survey questionnaires, which could then be posted, faxed or scanned and emailed back).

The move to using a primarily online surveying method also allowed for a change from a sampling approach to a census approach, wherein all schools were invited to participate in the survey. The combination of shifts in the survey's information objectives (discussed above) and changes to the data collection and sampling methodologies used for the 2014 survey, in effect breaks the 'time series' with previous iterations of the survey, making this year's survey a new benchmark against which schools' progress in the implementation and usage of digital technologies for the purposes of student learning can be tracked and assessed.

Surveying method

As noted above, all schools listed on the Ministry of Education's database for this year's survey were given the opportunity to participate in the research. An initial letter inviting each school to participate was sent on 6 June 2014, using 2020 Trust letterhead. The letter included information on how to access the online survey and a unique login and password that was school-specific. The letter also advised that the school could download PDF versions of the two survey questionnaires from the website, and return completed questionnaire to Research New Zealand.

A second 'reminder' letter, containing the same information, was sent to all schools that had not completed the survey by 25 June 2014. In both letters schools were asked to complete the survey by 7 July 2014, and advised that those schools that did so would be placed in a prize draw for a set of ten HP Chromebooks.

After receiving a number of requests from schools to extend the survey to the end of school holidays, Research New Zealand sent an email to all schools that had not completed the survey by 10 July advising them that the survey cut-off date had been extended to 17 July 2014. For the purposes of further encouraging schools to complete the survey by that date, an additional prize draw of five HP Chromebooks was offered.

2.2.2 Participation rate, weighting and margins of error

Of the 2,463 schools invited to complete the survey, 494 completed the Principals survey and 302 completed the Equipment survey. A total of 619 schools completed at least one of the two survey questionnaires, a participation/completion rate of 25 percent.

Based upon Ministry of Education data, the 619 schools have a combined school roll of 217,372 students, out of the 729,634 students enrolled in New Zealand's schools (29.8 percent).

The survey results have been weighted to reflect the proportions of primary and secondary schools, based on how they are identified on the Ministry of Education's database, with composite schools being treated as secondary schools.

The maximum margin of error, at the 95 percent confidence estimate, for results based on the Principals survey is ± 4.0 percent. This means that were 50 percent of all schools to report that the cost of digital technology was a barrier to its use for learning in schools, for example, we are 95 percent confident that the true result among all schools is likely to be in the range of 46 percent and 54 percent.

The maximum margin of error, at the 95 percent confidence estimate, for results based on the Equipment survey is ± 5.6 percent.

Any proportional results for all schools which are some distance from the 50 percent mark, e.g. 70 percent or 30 percent, attract smaller margins of error than the maximum margin of error, and results based upon sub-samples (i.e. sub-groups of interest) such as primary schools, or by school decile band (see below) will have larger maximum margins of error.

2.2.3 Analysis and reporting

All results presented in this report are based on the total sample of valid responses to each question, i.e. where schools have opted to not answer a particular question, they have not been factored into calculating the results for that question. Therefore the base numbers in the different tables in this report and its appendices will vary from question to question.

Most frequently, this situation arises in schools' responses to some of the Equipment survey questions, e.g. future purchasing and leasing intentions in relation to specific types of digital technology.

In each section, the primary focus of the discussion is on the 'all schools' weighted result. At the end of each section, statistically significant differences between primary and secondary schools are commented on. Also commented on are significant differences between school decile bands:

Deciles 1-3, Deciles 4-6 and Deciles 7-10. Complete sets of tables of the breakdown of the survey results by school type and decile band can be found in Appendix B to this report.

In relation to statistically significant differences, just because a difference between two sub-groups is statistically significant, it does not mean that it is significantly different in meaningful terms.

This issue becomes particularly evident when dealing with small percentages. For example, when comparing a result of zero or one percent for primary schools, against a result of two or three percent for secondary schools, the difference may be significant in a statistical sense, but is unlikely to be meaningful from a policy perspective. As such when this is the case, we have used our judgement and not commented on every single statistically significant difference, but only those believed to be likely relevant to the reader.

Interpretation

Percentages as reported have been rounded up or down to the nearest percentile. Throughout the report, the occasional finding for a categorical response will indicate a zero percent result in relation to a particular finding. This, however, does not necessarily imply that no schools selected the category in their response, but rather less than 0.5 percent of schools did.

All tables in the body of the report show the weighted 'all schools' result, along with the results for primary schools, secondary schools, Māori Medium schools and Special schools. However, due to the very small sub-samples of responding Māori Medium and Special schools, the reader should not assume that those results have any statistical accuracy. While the results for Māori Medium schools and Special schools are shown in this tables, this is because they contribute to the 'all schools' result. They should be treated with caution, or at best as indicative only, and we have not included them as sub-groups in any of the charts.

2.2.4 Limitations of the data

It is important to note that the results to any survey, even one based upon a 'census' approach, first and foremost represent the views and practices of the achieved sample. While confidence estimates can be applied to those results, they assume that the achieved sample is representative of the population of interest, in relation to the survey's information objectives. That is, they do not take into account any non-response bias.

Bias in results may occur if schools which are more active in using digital technology have a disproportionately higher tendency to respond to the survey, due to their higher levels of engagement with the survey's subject matter. Due to a lack of knowledge about non-responding schools and how they might differ from responding schools in relation to key issues covered in the survey, it is not possible, unfortunately, to adjust for this bias statistically and factor it into our analysis and reporting of the results.

As part of the preparation of this report, however, the propensity to respond/not respond among primary versus secondary schools was examined, as well as by school decile band. This was done by looking at the distribution of the achieved sample in relation to the proportions of those types of schools among all schools.

In relation to the Principals survey, the proportions of responding schools by school type (except for Māori Medium schools) and school deciles were similar to those of the greater population of interest.

In relation to the Equipment survey, secondary schools were more likely to respond than were primary schools, therefore there may be some response bias reflected in the Equipment survey results. Some of the individual school deciles are slightly under-represented in the achieved sample for the Equipment survey, i.e. Deciles 1, 6 and 7, while deciles 8 and 10 are slightly over-represented. However, the distribution of responding schools by Decile Bands, i.e. 1-3, 4-6 and 7-10 is similar to that of all schools.

As noted above, a disproportionately small sub-sample of Māori Medium schools is found in the achieved samples for both the Principals and Equipment surveys. Therefore we are not in the position to comment with any statistical confidence on the use of digital technologies by Māori Medium schools, based on our survey. If there is a significant desire to gain a better understanding of the use of digital technologies by Māori Medium schools, further research with those schools is merited.

3.0 Strategic planning and digital technologies

This part of the report examines the proportions of schools that have an ICT Strategic Plan in place, and policies in relation to personal digital devices for learning.

3.1 ICT Strategic Plan

Principals were asked whether their school had an ICT Strategic Plan for the development and use of digital technologies by school staff and to support student learning (Table 1). Seventy-three percent of schools had such a plan at the time of the survey (72 percent of primary schools and 80 percent secondary schools).

Table 1:

P-Q1. Does your school have an ICT Strategic Plan for the deployment and use of digital technologies?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	492	379	95	12**	6**
Weighted base =	492	380	94	12**	6**
	%	%	%	%	%
Yes	73	72	80	58	50
No	26	27	20	42	50
Don't know	1	1	0	0	0
Total	100	100	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, principals at schools with an ICT Strategic Plan were asked whether the plan covered a number of key aspects, including pedagogy, change management and teacher professional development (Table 2). Most frequently, schools with an ICT Strategic Plan reported that it already covered:

- Professional teacher development (86 percent of all schools with a plan)
- Equipment and software upgrades (83 percent)
- Network infrastructure (82 percent).

Smaller proportions of principals at schools with ICT Strategic Plans also reported it currently covered pedagogy (77 percent, with a further 21 percent saying they were planning to include it in their Strategic Plan in the future), and/or change management (54 percent, with 34 percent planning to incorporate change management into their plan in the future).

Table 2:

P-Q2. Does the school's ICT Strategic Plan take into account the following aspects?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Pedagogy					
Unweighted base =	359*	273	76	7**	3**
Weighted base =	359*	274	75	7**	3**
Already does this	77	78	76	57	100
Planning to do this	21	21	24	29	0
Not planning to do this	1	1	0	0	0
Don't know	0	0	0	14	0
Total	100	100	100	100	100
Change management					
Unweighted base =	358*	272	76	7**	3**
Weighted base =	358*	273	75	7**	3**
Already does this	54	50	70	57	67
Planning to do this	34	36	25	29	33
Not planning to do this	8	10	4	0	0
Don't know	4	5	1	14	0
Total	100	100	100	100	100
Equipment and software upgrades					
Unweighted base =	360*	274	76	7**	3**
Weighted base =	360*	275	75	7**	3**
Already does this	83	82	86	72	67
Planning to do this	16	16	13	28	33
Not planning to do this	1	1	1	0	0
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Teacher professional development					
Unweighted base =	359*	273	76	7**	3**
Weighted base =	359*	274	75	7**	3**
Already does this	86	88	79	86	100
Planning to do this	13	11	20	14	0
Not planning to do this	1	1	1	0	0
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Network infrastructure					
Unweighted base =	359*	273	76	7**	3**
Weighted base =	359*	274	75	7**	3**
Already does this	82	82	87	57	67
Planning to do this	14	14	11	43	33
Not planning to do this	3	3	3	0	0
Don't know	1	1	0	0	0
Total	100	100	100	100	100

Totals may not sum to 100% due to rounding.
*Sub-sample based on those schools having an ICT Strategic Plan.

Significant differences by school type

Primary versus secondary schools

While there were no statistically significant differences between primary and secondary schools in relation to having an ICT Strategic Plan, secondary schools with such a plan in place were significantly more likely to report that it covered change management (70 percent, compared with 50 percent of primary schools).

Decile bands

Decile 7-10 schools were significantly more likely to report having an ICT Strategic Plan (82 percent) than were Decile 1-3 or Decile 4-6 schools (63 percent and 69 percent, respectively).

Where schools had an ICT Strategic Plan, Decile 7-10 schools were significantly more likely to report it currently covers pedagogy (84 percent) and teacher professional development (92 percent), than were Decile 4-6 schools (68 percent and 77 percent, respectively).

Decile 7-10 schools were also significantly more likely to report the plan covers equipment and software upgrades (87 percent) than were Decile 1-3 schools (75 percent).

3.2 Policies on personal digital devices for learning

Principals at schools that had ICT Strategic plans were asked whether it currently included a policy for personal digital devices for student learning (Table 3). Four-in-ten principals (41 percent) at schools with ICT Strategic Plans reported that it currently included such a policy, while a further 33 percent said they were currently developing/planning such a policy. However, one-in-five schools (22 percent) said their ICT Strategic Plan did not include a policy for personal digital devices for students learning.

Table 3:

P-Q3. Does your ICT Strategic Plan include a policy for personal digital devices for learning?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	359*	273	76	7**	3**
Weighted base =	359*	274	75	7**	3**
	%	%	%	%	%
Yes	41	37	55	43	33
No	22	27	5	14	0
We are currently developing/ planning such a policy	33	32	37	43	67
Not interested in creating such a policy	3	3	1	0	0
Don't know	2	2	1	0	0
Total	100	100	100	100	100

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

As a follow-up question, the sub-sample of principals, at schools that had ICT Strategic Plans but did not include a policy on personal devices for learning, were asked whether they expected to introduce such a policy within the next two years (Table 4).

Over half of the principals in question (55 percent) reported planning to do so, with 11 percent reporting this would happen within the year and 44 percent reporting the introduction of such a policy would happen within the next two years.

Table 4:

P-Q4. Do you expect to introduce a policy on personal devices for learning within the next two years?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	79*	74	4**	1**	0**
Weighted base =	79*	74	4**	1**	0**
	%	%	%	%	%
Yes this year	11	11	25	0	0
Yes within two years	44	43	50	100	0
No	25	27	0	0	0
Not interested in creating such a policy	4	4	0	0	0
Don't know	15	15	25	0	0
Total	100	100	100	100	100

Total may not sum to 100% due to rounding.
*Sub- sample based on those respondents who don't have a strategic plan that covers personal digital devices.
**Caution: low base number of respondents - results are indicative only.

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report their ICT Strategic Plan included a policy for personal digital devices for learning (55 percent and 37 percent, respectively).

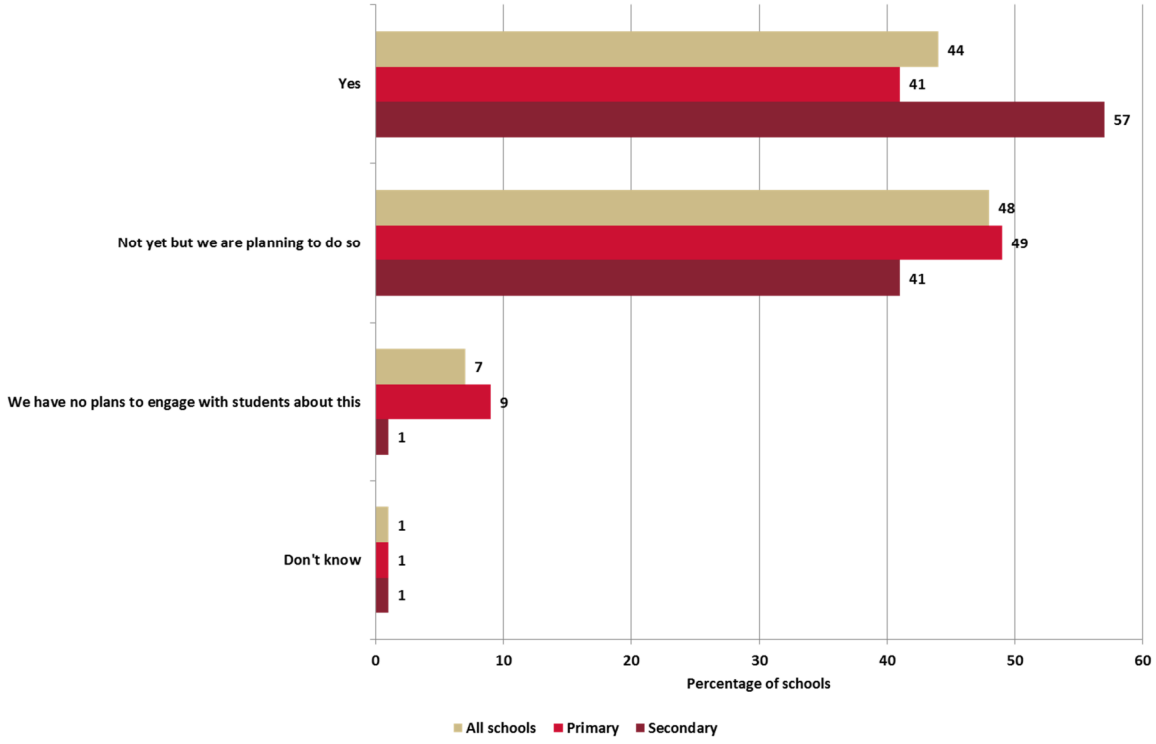
Decile bands

There were no statistically significant differences in relation to the above results when viewed by Decile band.

3.3 Feedback from students on technology for learning at school

All principals were asked whether their school had asked for feedback from students on their use of technology for learning at school (Figure 1). Just over four-in-ten (44 percent) reported they had, while almost half (48 percent) said they planned to do so. Seven percent of principals, however, said that their school had no plans to engage with students about their use of technology for learning in school.

Figure 1: Proportions of school that have asked students for feedback on use of technology for learning



Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to have sought feedback from students on their use of technology for learning at school (57 percent, compared with 41 percent of primary schools).

Decile bands

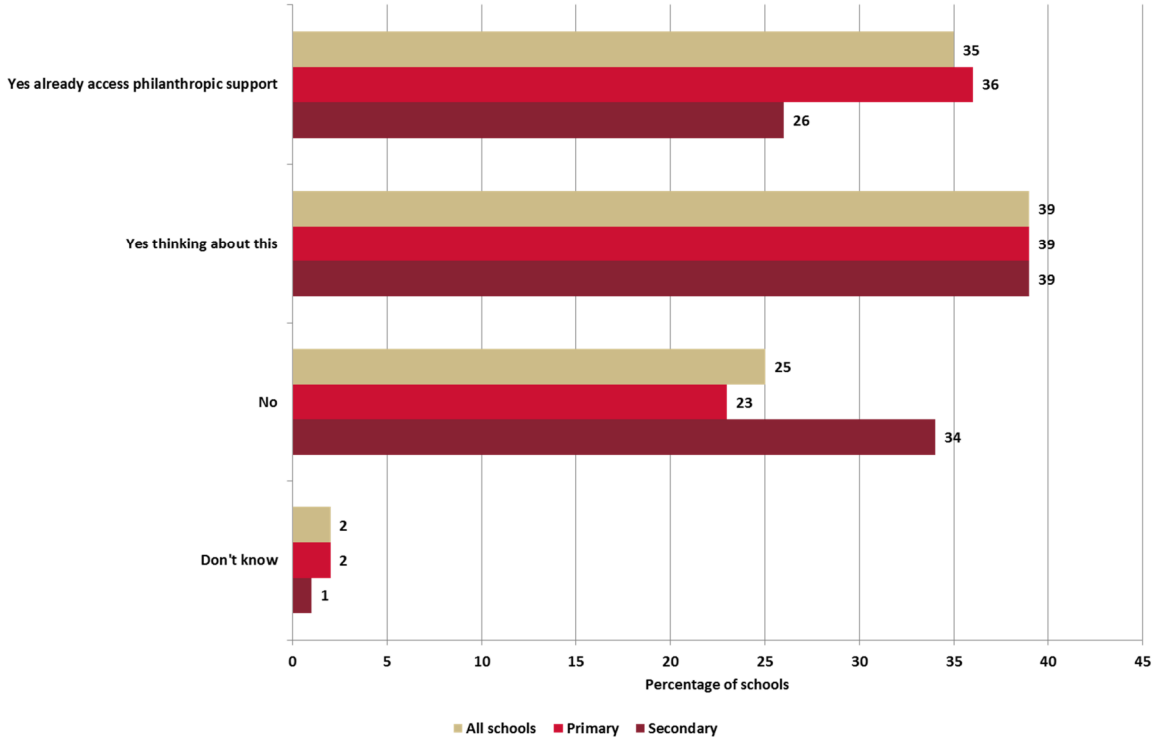
Decile 7-10 schools were significantly more likely to have sought feedback from students on their use of technology for learning at school (49 percent), than were Decile 4-6 schools (37 percent).

3.4 Philanthropic support

Principals were asked whether their school had considered accessing philanthropic support, such as funding from community trusts or businesses, for learning with digital technologies (Figure 2).

Thirty-five percent of principals reported their school already accesses philanthropic support, and a further 39 percent said their school was thinking about. However, one-in-four principals said they were not currently doing so, nor had they thought about it.

Figure 2: Proportions of schools that have accessed philanthropic support for learning with digital technologies



Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to have accessed philanthropic support already for learning with digital technologies (36 percent), than secondary schools (26 percent).

Decile bands

Decile 1-3 schools were significantly more likely to have accessed philanthropic support already for learning with digital technologies (44 percent), than Decile 7-10 schools (31 percent).

4.0 Digital technologies for learning

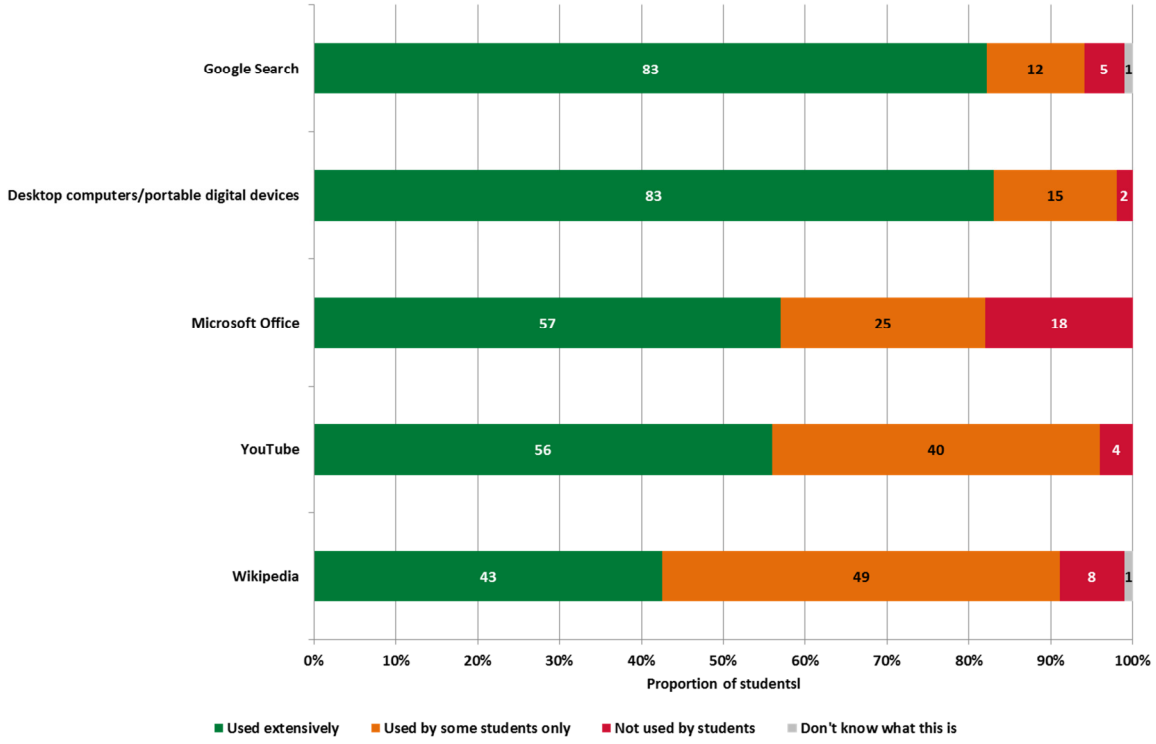
This chapter examines the use of digital tools at schools by students, and students' access to personal digital devices for learning.

4.1 Digital tools for student learning

All principals were asked if students in their schools were using a range of digital tools for learning purposes (Figure 3). Based upon principals' responses to the question, students in New Zealand schools appear to be using the following tools extensively for learning:

- Desktop computers and/or portable digital devices (noted by 83 percent of principals)
- Google search (83 percent)
- Microsoft Office (57 percent)
- YouTube (56 percent)
- Wikipedia (43 percent).

Figure 3: Digital technologies used extensively (40 percent or greater) by students for learning



As shown in Figure 4, relatively high proportions of principals also reported that a number of tools were being used, but only by some students:

- Skype (noted by 55 percent of principals)
- Wikipedia (49 percent; see Figure 3 above)
- Blogger/BlogSpot (47 percent)
- YouTube (40 percent; see Figure 3 above)
- Google Drive/Docs (39 percent, an additional 37 percent reported students use Google Drive/Docs extensively)
- Dropbox (34 percent)
- Prezi (34 percent).

Figure 4: Digital technologies used by some students only (30 percent or greater) by students for learning

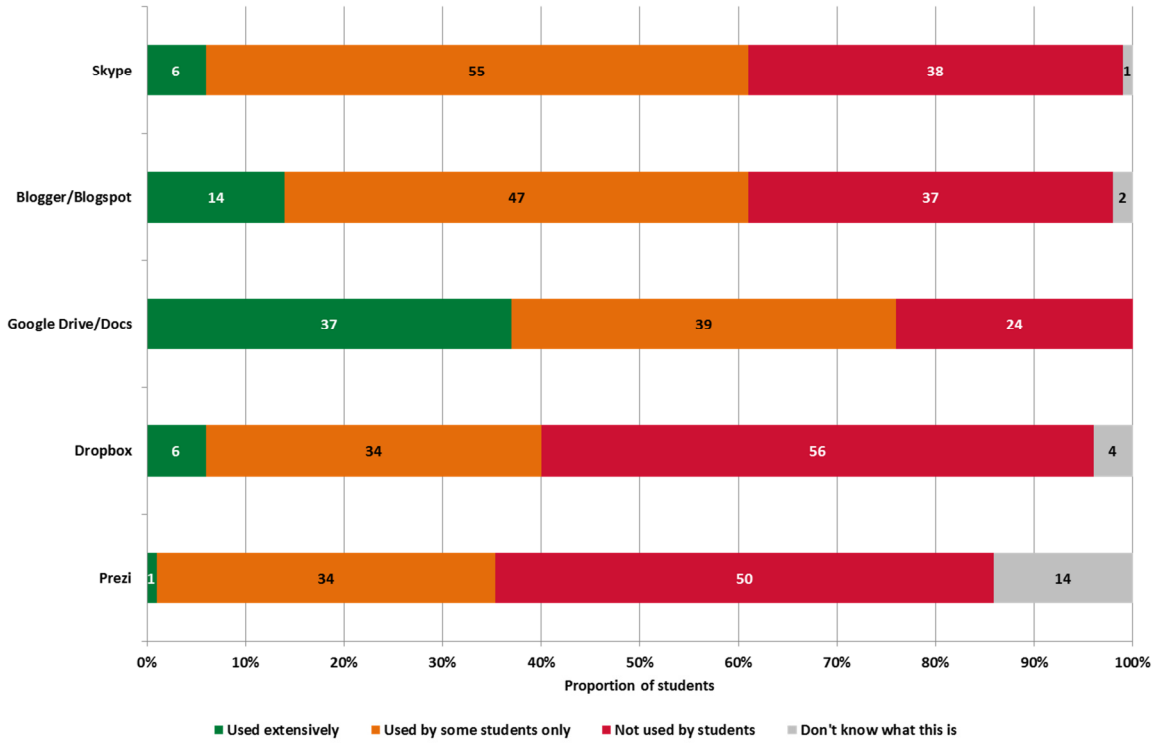


Table 5 overleaf details other digital tools less frequently used for learning.

Table 5:

P-Q7. Do students at your school use any of the following digital tools for learning? (used less frequently)

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Evernote					
Unweighted base =	465	353	94	12**	6**
Weighted base =	465	354	93	12**	6**
Used extensively	2	2	1	8	0
Used by some students only	16	11	36	8	0
Not used by students	70	75	46	67	100
Don't know what this is	13	12	17	17	0
Total	100	100	100	100	100
Facebook					
Unweighted base =	468	355	95	12**	6**
Weighted base =	468	356	94	12**	6**
Used extensively	8	3	28	8	0
Used by some students only	23	17	43	42	50
Not used by students	68	80	28	42	50
Don't know what this is	1	1	0	8	0
Total	100	100	100	100	100
Google+ Hangouts					
Unweighted base =	464	353	94	12**	5**
Weighted base =	464	354	93	12**	5**
Used extensively	4	4	3	0	0
Used by some students only	17	11	35	50	0
Not used by students	60	63	47	33	100
Don't know what this is	20	21	15	17	0
Total	100	100	100	100	100
LinkedIn					
Unweighted base =	468	357	93	12**	6**
Weighted base =	468	358	92	12**	6**
Used extensively	0	1	0	0	0
Used by some students only	4	2	13	17	0
Not used by students	91	94	83	67	100
Don't know what this is	4	3	4	17	0
Total	100	100	100	100	100
Moodle					
Unweighted base =	464	353	93	12**	6**
Weighted base =	464	354	92	12**	6**
Used extensively	9	4	30	17	0
Used by some students only	11	8	20	25	0
Not used by students	75	82	48	58	100
Don't know what this is	5	6	1	0	0
Total	100	100	100	100	100
Office 365					
Unweighted base =	465	354	94	12**	5**
Weighted base =	465	355	93	12**	5**
Used extensively	7	4	17	8	0
Used by some students only	11	8	18	25	40
Not used by students	74	79	59	50	60
Don't know what this is	9	9	6	17	0
Total	100	100	100	100	100

continued…

Table 5: (continued)

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Office Web Apps					
Unweighted base =	462	350	94	12**	6**
Weighted base =	462	351	93	12**	6**
Used extensively	5	3	11	17	0
Used by some students only	15	11	31	17	17
Not used by students	71	77	51	42	83
Don't know what this is	9	9	7	25	0
Total	100	100	100	100	100
SkyDrive					
Unweighted base =	458	347	93	12**	6**
Weighted base =	458	348	92	12**	6**
Used extensively	2	1	5	0	0
Used by some students only	13	7	32	25	17
Not used by students	70	76	48	58	83
Don't know what this is	16	16	14	17	0
Total	100	100	100	100	100
Slideshare					
Unweighted base =	466	354	94	12**	6**
Weighted base =	466	355	93	12**	6**
Used extensively	3	4	1	0	0
Used by some students only	26	23	38	25	0
Not used by students	59	62	46	42	100
Don't know what this is	12	11	15	33	0
Total	100	100	100	100	100
WordPress					
Unweighted base =	463	351	94	12**	6**
Weighted base =	463	352	93	12**	6**
Used extensively	4	3	4	8	0
Used by some students only	25	22	38	8	0
Not used by students	60	63	46	50	100
Don't know what this is	12	12	12	33	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report that their students extensively use the following digital tools, in descending order: Microsoft Office (81 percent and 51 percent, respectively), Wikipedia (63 percent and 38 percent, respectively), Google Drive/Docs (49 percent and 35 percent, respectively), Moodle (30 percent and 4 percent, respectively), Facebook (28 percent and three percent, respectively), and Office 365 (17 percent and four percent, respectively).

Decile bands

Decile 7-10 schools were significantly more likely to report that students used desktop computers/portable digital devices extensively (88 percent), than were Decile 4-6 schools (79 percent). Decile 7-10 schools were also significantly more likely than Decile 1-3 schools to report students used Google Search extensively (87 percent compared with 77 percent of Decile 1-3 schools).

In contrast, Decile 4-6 schools were significantly more likely to report students used Microsoft Office extensively (65 percent), than were Decile 7-10 schools (53 percent).

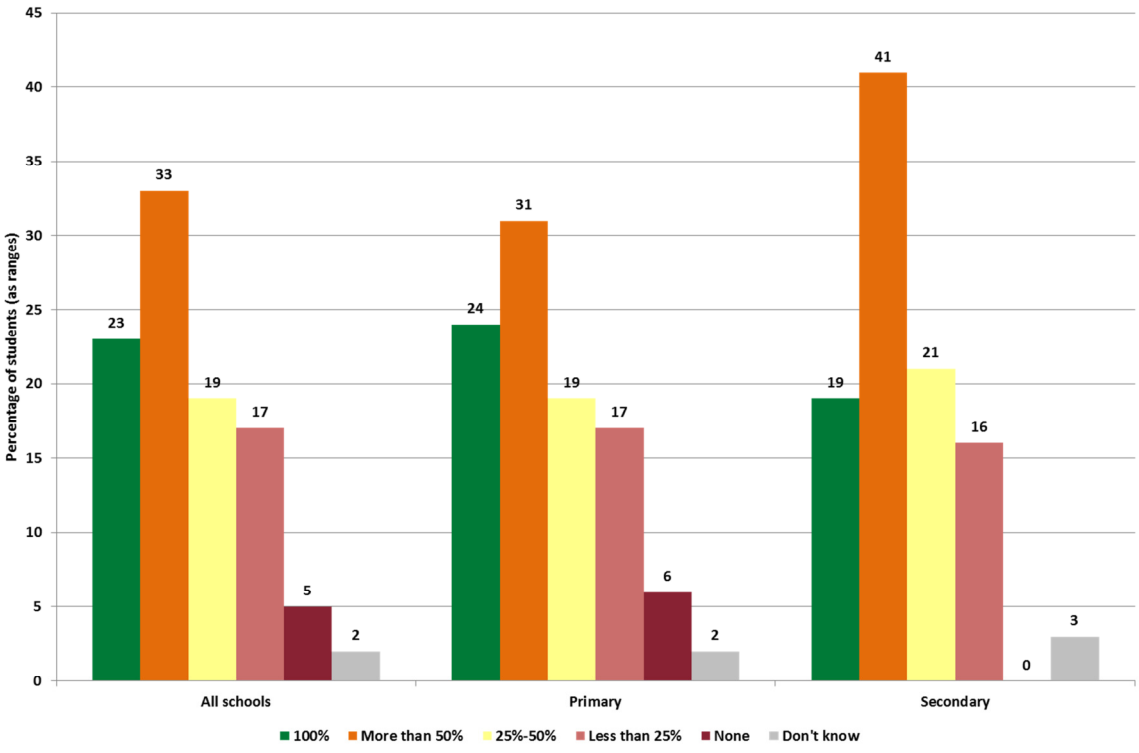
4.2 Digital devices for student learning

4.2.1 Student access to personal digital devices for learning

An area of significant focus of the 2014 Digital Technologies in Schools survey was the availability and usage of personal digital devices for student learning. All principals were asked what percentage of students in their school have access to personal digital devices for the purposes of learning (not necessarily personally owned by students or their families; Figure 5).

Almost a quarter of principals (23 percent) reported that all students at their school have access to personal digital devices, while a further 33 percent said that more than 50 percent of students have access. However, 17 percent of principals reported that less than 25 percent of all students have such a device for the purposes of learning in school, while five percent reported that no students have a device.

Figure 5: Percentage of students in school with access to personal digital devices for learning



As a follow-up question, principals were asked how often students in their school were using personal digital devices in class (Table 6).

Twenty-five percent of principals reported that during a typical school week, students use such devices in all classes, while a similar proportion (24 percent) said this was happening in most classes. One-in-five principals, however, reported that students never use such devices in class during a typical week, while 31 percent reported they are only used in a few classes.

Table 6:

P-Q11. During a typical school week, how often are students using personal digital devices?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	484*	371	95	12**	6**
Weighted base =	484*	372	94	12**	6**
	%	%	%	%	%
Never	20	24	4	8	0
In a few classes	31	24	55	50	17
In most classes	24	22	35	17	17
In all classes	25	29	5	25	67
Don't know	1	1	1	0	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report students never use personal digital devices for learning in a typical week (24 percent), than were secondary schools (four percent). However, significantly more primary schools also reported personal digital devices were used in all classes in a typical week (29 percent, compared with five percent of secondary schools).

In contrast, secondary schools were significant more likely to report that in a typical school week students use personal digital devices in a few classes (55 percent) or most classes (35 percent), compared with 24 percent and 22 percent of primary schools, respectively.

Decile bands

Decile 7-10 schools were significantly more likely to report that students use personal digital devices for learning in a typical week in all classes (32 percent), than were students in Decile 1-3 or 4-6 schools (22 percent and 18 percent, respectively).

In contrast, Decile 4-6 schools were significantly more likely to report that students use personal digital devices for learning in a few classes in a typical week (40 percent), compared with 28 percent of Decile 1-3 schools and 26 percent of Decile 7-10 schools.

4.2.2 Types of personal digital devices being used by students in schools

In order to gain a better understanding of what percentage of students in schools have access to different types of personal digital devices for learning, respondents completing the Equipment Survey were asked to estimate what proportions of students in different age groups have access to particular types of personal digital devices (see Table 7, Table 8 and Table 9).

Junior Years (0-6)

While 83 percent of principals whose schools have Junior Years students (0-6) reported none of those students had access to smartphones, 38 percent said at least half of the school's Junior Years students had access to portable computers (e.g. laptops, netbooks and chromebooks). A similar proportion (36 percent) reported at least half of the school's Junior Years students had access to tablets or iPads.

Middle Years (7-8)

Sixty-seven percent of principals whose schools have Middle Years students (7-8) reported none of those students had access to smartphones. However, 39 percent said at least half of the school's Middle Years students had access to portable computers (e.g. laptops, netbooks and chromebooks), while 31 percent reported at least half of the school's Middle Years students had access to tablets or iPads.

Senior Years (9-13)

In contrast to Junior Years students, significantly fewer principals whose schools have Senior Years students (9-13) reported none of those students had access to smartphones (55 percent). However, smaller proportions said at least half of the school's Senior Years students had access to portable computers (e.g. laptops, netbooks and chromebooks; 30 percent), while 19 percent reported at least half of the school's Senior Years students had access to tablets or iPads.

Table 7:

E-Q8. For each of the following age levels, what proportion of your school's students have access to a personal digital device for learning at school? – Junior Years 0-6

	Total	Primary	Secondary	Māori Medium	Special school
	%	%	%	%	%
Portable computers (e.g. laptops, netbooks, chromebooks)					
Unweighted base =	226	164	37	13**	12**
Weighted base =	238	190	24**	12**	12**
None	34	30	76	37	17
Under 25%	16	16	0	20	33
25%-49%	8	8	5	0	17
50%-74%	7	8	3	11	0
75%-100%	31	34	11	31	25
Don't know	4	4	5	0	8
Total	100	100	100	100	100
Tablets/iPads					
Unweighted base =	225	161	39	13**	12**
Weighted base =	236	187	25**	12**	12**
None	29	26	64	31	0
Under 25%	23	23	13	20	50
25%-49%	7	7	3	6	8
50%-74%	7	7	8	11	0
75%-100%	29	32	8	26	33
Don't know	5	4	5	6	8
Total	100	100	100	100	100
Smartphones					
Unweighted base =	183	124	38	13**	8**
Weighted base =	188	144	25**	12**	8**
None	83	85	76	84	75
Under 25%	8	6	13	10	12
25%-49%	1	1	0	0	0
50%-74%	0	0	0	0	0
75%-100%	2	2	3	0	0
Don't know	7	6	8	6	12
Total	100	100	100	100	100

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

Table 8:

E-Q8. For each of the following age levels, what proportion of your school's students have access to a personal digital device for learning at school? – Middle Years 7-8

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Portable computers (e.g. laptops, netbooks, chromebooks)					
Unweighted base =	208	132	51	13**	12**
Weighted base =	210	153	33	12**	12**
None	33	35	39	16	17
Under 25%	13	10	25	10	25
25%-49%	10	9	8	16	25
50%-74%	8	8	6	17	0
75%-100%	31	34	18	42	25
Don't know	4	4	4	0	8
Total	100	100	100	100	100
Tablets/iPads					
Unweighted base =	206	130	51	13**	12**
Weighted base =	207	151	33	12**	12**
None	32	33	39	31	0
Under 25%	23	20	31	16	50
25%-49%	8	9	8	6	0
50%-74%	6	8	0	6	8
75%-100%	25	25	18	36	33
Don't know	5	5	4	6	8
Total	100	100	100	100	100
Smartphones					
Unweighted base =	180	107	51	13**	9**
Weighted base =	178	124	33	12**	9**
None	67	72	51	73	56
Under 25%	14	12	14	21	33
25%-49%	4	3	12	0	0
50%-74%	4	4	10	0	0
75%-100%	2	2	6	0	0
Don't know	8	7	8	6	11
Total	100	100	100	100	100

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

Table 9:

E-Q8. For each of the following age levels, what proportion of your school's students have access to a personal digital device for learning at school? – Senior Years 9-13

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Portable computers (e.g. laptops, netbooks, chromebooks)					
Unweighted base =	167	62	82	11**	12**
Weighted base =	147	72	53	9**	12**
None	39	74	2	32	0
Under 25%	15	2	32	13	25
25%-49%	9	2	20	0	17
50%-74%	11	3	17	21	17
75%-100%	19	11	24	34	33
Don't know	6	8	5	0	8
Total	100	100	100	100	100
Tablets/iPads					
Unweighted base =	167	62	82	11**	12**
Weighted base =	147	72	53	9**	12**
None	42	74	9	39	0
Under 25%	21	3	41	13	42
25%-49%	9	2	21	7	8
50%-74%	5	3	9	7	0
75%-100%	14	10	11	27	42
Don't know	9	8	10	7	8
Total	100	100	100	100	100
Smartphones					
Unweighted base =	158	56	81	11**	10**
Weighted base =	137	65	53	9**	10**
None	55	89	15	65	40
Under 25%	6	0	9	14	30
25%-49%	9	2	17	7	10
50%-74%	8	0	17	7	10
75%-100%	11	0	30	0	0
Don't know	10	9	12	7	10
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Given the way the previous results are broken down by year bands, no comments have been provided in relation to differences between primary and secondary schools in the proportions of schools' students having access to personal digital devices for learning.

Decile bands

Junior Years 0-6

Decile 4-6 schools were significantly more likely to report that none of their year 0-6 students have access to portable computers (e.g. laptops, netbooks, chromebooks), than were Decile 1-3 schools (43 percent and 26 percent, respectively).

Both Decile 7-10 and 1-3 schools were significantly more likely to report between 75 percent and 100 percent of their year 0-6 students had access to portable computers (38 percent and 33 percent, respectively), than were Decile 4-6 schools (17 percent).

Middle Years 7-8

Decile 4-6 schools were significantly more likely to report that none of their students have access to smartphones for learning at school (76 percent), than were Decile 7-10 schools (59 percent).

Senior Years 9-13

Both Decile 7-10 and 4-6 schools were significantly more likely to report between 75 percent and 100 percent of their year 0-6 students had access to smartphones for learning at school (22 percent and 11 percent, respectively) when compared with Decile 1-3 schools; none of whom reported between 75 percent and 100 percent of their year 0-6 students had access to smartphones for learning.

4.2.3 Provision of school-owned digital devices for students

Respondents to the Equipment Survey were asked whether their school provides school-owned digital devices for students to use in class (Table 10).

Eighty-percent of responding schools reported that they provide portable computers, such as laptops, netbooks and chromebooks. A similar proportion (83 percent) reported students have access to school-owned imaging devices/cameras. Sixty-nine percent of schools also reported they provide students with school-owned tablets.

Among the 52 percent who reported 'other' digital devices were provided by the school for student use in class, it is assumed that in most cases the devices in question are desktop computers. This assumption is based on a finding, reported in more detail later in this report (see Section 0) that all responding schools reported the school owned or leased desktop computers (PCs and/or Apples).

Table 10:

E-Q7a. Does your school provide school-owned digital devices for students to use in class?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	299	190	84	13**	12**
Weighted base =	299	220	55	12**	12**
	%	%	%	%	%
Portable computers (e.g. laptops, netbooks, chromebooks)	80	83	71	79	83
Tablets	69	73	50	53	83
Imaging devices (e.g. cameras)	83	84	75	84	92
Other digital devices	52	53	44	69	58
None of the above	8	8	7	16	8
Don't know	2	2	5	0	0

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

As a follow-up question, respondents to the Equipment Survey were asked whether the school provides school-owned digital devices for students to take home (Table 11).

Seventy-six percent of the respondents said that none of the school-owned digital devices were available for students to take home. However, very small proportions of schools allow students to take home imaging devices such as digital cameras (eight percent of responding schools), portable computers (e.g. laptops, netbooks and/or chromebooks; seven percent), and/or tablets (four percent).

Table 11:

E-Q7b. Does your school provide school-owned digital devices for students to take home?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	262	161	77	12**	12**
Weighted base =	260	187	50	11**	12**
	%	%	%	%	%
Portable computers (e.g. laptops, netbooks, chromebooks)	7	7	3	12	8
Tablets	4	4	0	6	17
Imaging devices (e.g. cameras)	8	7	16	0	0
Other digital devices	3	3	6	0	0
None of the above	76	78	71	71	67
Don't know	9	8	10	17	17

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to provide school-owned portable computers for students to use in class (83 percent), than were secondary schools (71 percent). Primary schools were also significantly more likely to provide tablets for student use in class than were secondary schools (73 percent and 50 percent, respectively).

Decile bands

There were no statistically significant differences of note in relation to the above findings when viewed by school decile.

4.2.4 Student ownership of personal digital devices

Another objective of the 2014 Digital Technology in Schools Survey was to identify what proportion of students were using devices that they or their family personally owned (Table 12).

Forty-four percent of principals reported that none of the digital devices used by students at schools were personally owned, while 31 percent said less than 25 percent of digital devices being used by students at school were owned by them personally.

Table 12:

P-Q10. What percentage of digital devices used by students at school are personally owned?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	486	373	95	12**	6**
Weighted base =	486	374	94	12**	6**
	%	%	%	%	%
None	44	54	4	50	50
Less than 25%	31	29	38	33	50
25%-50%	11	9	19	17	0
More than 50%	10	5	34	0	0
100%	2	2	4	0	0
Don't know	1	1	1	0	0
Total	100	100	100	100	100

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

Primary versus secondary schools

Primary schools were significantly more likely to report that none of the digital devices used by students for learning were personally owned (54 percent), compared with just four percent of secondary schools.

Secondary schools were significantly more likely than primary schools to report that 50 percent or more of the digital devices used by students at the school were personally owned (38 percent and seven percent, respectively).

Decile bands

Decile 1-3 schools were significantly more likely to report that none of the digital devices used by students for learning were personally owned (57 percent), than were Decile 4-6 and Decile 7-10 schools (39 percent and 40 percent, respectively).

Decile 7-10 schools were significantly more likely to report that 50 percent or more of the digital devices used by students at the school were personally owned (18 percent), than were Decile 1-3 and Decile 4-6 schools (six percent and 10 percent, respectively).

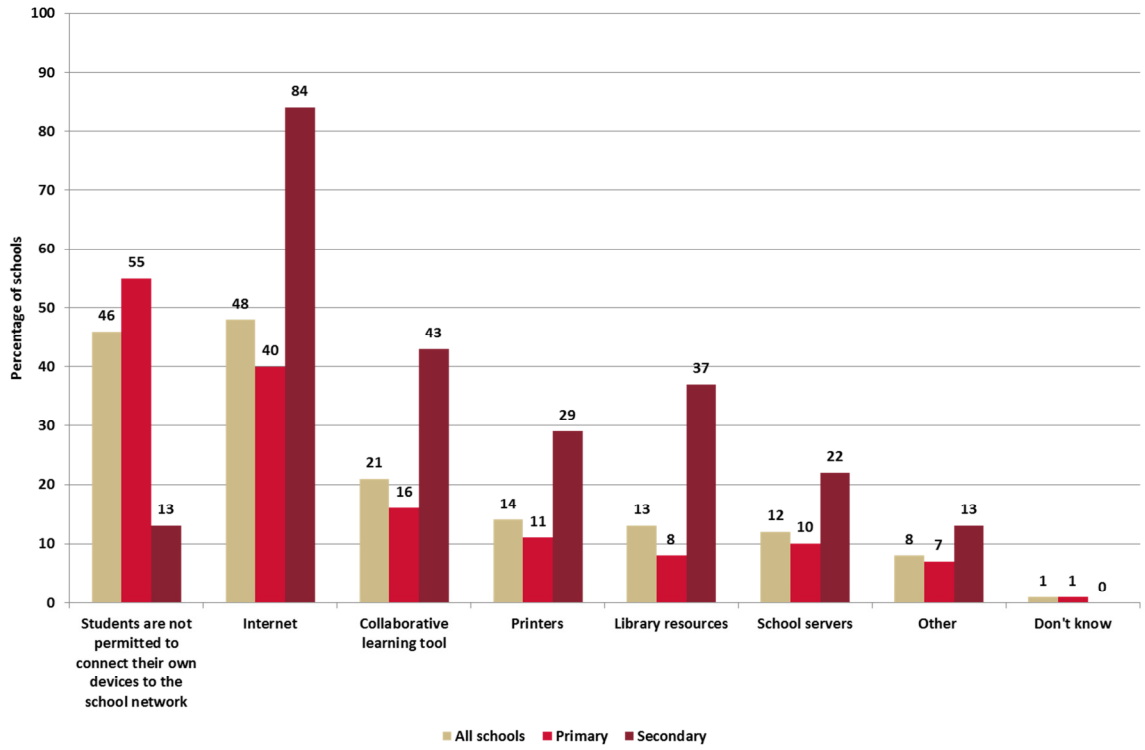
4.2.5 Student access to school network for use of own portable devices

Respondents to the Equipment Survey were asked whether students were allowed to access the school network, using their own portable digital devices (Figure 6).

While 46 percent of respondents reported students are not permitted to connect their own portable digital devices to the school network, a similar proportion (48 percent) said students could access the Internet through the school network from their own digital devices. Twenty-one percent said students could access collaborative learning tools with their own devices through the schools network.

Smaller proportions said students could access the school's servers (12 percent), library resources (13 percent), and/or printers (14 percent) using their own portable digital devices.

Figure 6: Student access to the school network using their own portable digital devices



Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report students were allowed to access the following resources through the school network, using their own digital devices:

- Internet (84 percent of secondary schools and 40 percent of primary schools)
- Collaborative learning tools (43 percent and 16 percent, respectively)
- Library resources (37 percent and eight percent, respectively)
- Printers (29 percent and 11 percent, respectively)
- School servers (22 percent and 10 percent respectively).

Decile bands

Decile 7-10 schools were significantly more likely than Decile 1-3 schools to report students were allowed to access the Internet through the school network using their own digital devices (60 percent and 31 percent, respectively).

.

4.3 Future-focused digital technologies for learning

4.3.1 Future-focused learning technologies

An objective of the 2014 Digital Technologies in Schools survey was to benchmark the degree to which recent developments in digital technologies are being taken up by schools for the purposes of student learning.

Respondents to the Equipment Survey were presented with a list of recent developments in digital technology, such as 3D printing and wearable technology, and asked whether the school was currently using the technology in question, was planning to start using it within the next 12 months, or would consider using it at some time in the future.

As detailed in Table 13 overleaf, while current up-take of these technologies in schools is very low (ranging from zero to 10 percent depending upon the technology in question), larger proportions of schools reported planning to use a number of the technologies for learning purposes within the next 12 months.

Most frequently, schools currently use/plan to use the following technologies within the next 12 months:

- 3D printing (reported as being currently in use, or planned to be in use within 12 months by 17 percent of responding schools)
- Interactive video (15 percent)
- Augmented reality (13 percent)
- 3D visualization/interaction (10 percent)
- Voice activated devices (10 percent).

Table 13:

E-Q29. Which of the following future-focused learning technologies does your school use?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
3D printing					
Unweighted base =	279	178	78	13**	10**
Weighted base =	279	206	51	12**	10**
Already using	10	4	38	0	0
Planning to use in 12 months	7	6	15	0	0
Would consider using in future	59	62	44	43	80
Not interested in using	16	19	3	16	20
Don't know what this is	8	9	0	42	0
Total	100	100	100	100	100
3D visualisation/interaction					
Unweighted base =	274	175	76	13**	10**
Weighted base =	274	203	50	12**	10**
Already using	5	3	14	0	0
Planning to use in 12 months	5	4	7	0	10
Would consider using in future	57	55	66	53	60
Not interested in using	16	19	5	6	20
Don't know what this is	17	18	8	42	10
Total	100	100	100	100	100
Augmented Reality					
Unweighted base =	275	176	76	13**	10**
Weighted base =	275	204	50	12**	10**
Already using	9	10	4	0	10
Planning to use in 12 months	4	3	7	0	0
Would consider using in future	43	39	64	33	50
Not interested in using	14	14	11	0	30
Don't know what this is	31	34	14	67	10
Total	100	100	100	100	100
Gesture activated devices					
Unweighted base =	275	176	76	13**	10**
Weighted base =	275	204	50	12**	10**
Already using	3	2	8	6	0
Planning to use in 12 months	2	2	3	0	0
Would consider using in future	55	52	70	37	80
Not interested in using	15	16	13	16	0
Don't know what this is	24	27	7	42	20
Total	100	100	100	100	100
Haptics (providing physical sensation through digital devices)					
Unweighted base =	275	176	76	13**	10**
Weighted base =	275	204	50	12**	10**
Already using	1	1	4	0	0
Planning to use in 12 months	1	1	1	6	0
Would consider using in future	49	45	62	27	100
Not interested in using	15	16	20	0	0
Don't know what this is	33	38	13	67	0
Total	100	100	100	100	100

continued…

Table 13: (cont.)

E-Q29. Which of the following future-focused learning technologies does your school use?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Interactive video					
Unweighted base =	277	177	77	13**	10**
Weighted base =	277	205	50	12**	10**
Already using	7	6	16	0	0
Planning to use in 12 months	8	10	4	6	10
Would consider using in future	63	60	75	57	80
Not interested in using	5	7	1	0	0
Don't know what this is	16	18	4	37	10
Total	100	100	100	100	100
LTE/4G Mobile services					
Unweighted base =	276	176	77	13**	10**
Weighted base =	276	204	50	12**	10**
Already using	4	3	6	6	10
Planning to use in 12 months	3	4	0	0	10
Would consider using in future	54	52	68	43	50
Not interested in using	15	15	18	10	20
Don't know what this is	23	27	8	42	10
Total	100	100	100	100	100
Virtual Assistants					
Unweighted base =	276	177	76	13**	10**
Weighted base =	276	205	50	12**	10**
Already using	2	2	0	6	0
Planning to use in 12 months	3	3	3	0	0
Would consider using in future	55	50	76	47	50
Not interested in using	14	15	5	10	30
Don't know what this is	27	29	16	37	20
Total	100	100	100	100	100
Virtual Laboratories					
Unweighted base =	274	175	76	13**	10**
Weighted base =	274	203	50	12**	10**
Already using	3	2	4	0	10
Planning to use in 12 months	4	4	5	6	0
Would consider using in future	59	55	76	47	70
Not interested in using	11	13	3	10	0
Don't know what this is	23	26	12	37	20
Total	100	100	100	100	100
Voice activated devices					
Unweighted base =	276	177	76	13**	10**
Weighted base =	276	205	50	12**	10**
Already using	6	5	8	11	20
Planning to use in 12 months	4	5	3	0	0
Would consider using in future	67	64	80	47	80
Not interested in using	10	11	4	10	0
Don't know what this is	13	15	5	31	0
Total	100	100	100	100	100

continued…

Table 13: (cont.)

E-Q29. Which of the following future-focused learning technologies does your school use?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Wearable Technology (e.g. Google Glass)					
Unweighted base =	275	176	76	13**	10**
Weighted base =	275	204	50	12**	10**
Already using	0	0	0	0	0
Planning to use in 12 months	3	2	3	6	10
Would consider using in future	60	56	79	53	70
Not interested in using	18	20	12	10	20
Don't know what this is	19	22	7	31	0
Total	100	100	100	100	100

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

4.3.2 Future-focused learning applications

As a follow-up question, schools were asked whether they were currently using, planning to use in the next 12 months, or would consider using sometime in the future, a range of future-focused learning applications, such as digital textbooks and online assessments (Table 14 overleaf).

Unlike the relatively low up-take of recently developed future-focused technologies, the survey's findings indicate that schools were much more likely to be using a number of future-focused-learning applications already, including:

- TED Talks Education (noted by 48 percent of schools responding to the Equipment Survey)
- Online assessments (43 percent)
- Games and gamification (35 percent)
- Khan Academy (33 percent)
- Digital textbooks (26 percent).

Table 14:

E-Q30. Which of the following future-focused learning applications does your school use?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Digital textbooks					
Unweighted base =	275	175	77	13**	10**
Weighted base =	275	203	50	12**	10**
Already using	26	23	39	30	20
Planning to use in 12 months	11	10	14	17	0
Would consider using in future	48	50	43	27	50
Not interested in using	8	9	3	0	20
Don't know what this is	8	8	1	26	10
Total	100	100	100	100	100
eHealth/mHealth applications					
Unweighted base =	272	173	76	13**	10**
Weighted base =	272	201	50	12**	10**
Already using	3	2	5	0	10
Planning to use in 12 months	1	1	0	11	0
Would consider using in future	47	41	74	37	40
Not interested in using	9	10	4	0	20
Don't know what this is	40	45	17	52	30
Total	100	100	100	100	100
Games and gamification					
Unweighted base =	276	177	76	13**	10**
Weighted base =	276	205	50	12**	10**
Already using	35	32	45	36	40
Planning to use in 12 months	9	9	12	6	10
Would consider using in future	36	37	34	27	20
Not interested in using	6	7	5	0	0
Don't know what this is	14	15	4	31	30
Total	100	100	100	100	100
Khan Academy					
Unweighted base =	275	175	77	13**	10**
Weighted base =	275	203	50	12**	10**
Already using	33	31	49	10	20
Planning to use in 12 months	4	3	6	6	10
Would consider using in future	28	29	27	17	10
Not interested in using	5	6	1	0	10
Don't know what this is	30	30	16	67	50
Total	100	100	100	100	100
Learner analytics					
Unweighted base =	274	175	76	13**	10**
Weighted base =	274	203	50	12**	10**
Already using	4	2	13	0	0
Planning to use in 12 months	6	6	9	0	0
Would consider using in future	42	41	50	33	50
Not interested in using	5	6	4	0	0
Don't know what this is	43	46	24	67	50
Total	100	100	100	100	100

continued...

Table 14: (cont.)

E-Q30. Which of the following future-focused learning applications does your school use?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Massive Open Online Course (MOOC)					
Unweighted base =	273	174	76	13**	10**
Weighted base =	273	202	50	12**	10**
Already using	3	2	8	0	0
Planning to use in 12 months	4	4	8	0	0
Would consider using in future	42	37	61	33	50
Not interested in using	8	10	3	0	0
Don't know what this is	43	47	21	67	50
Total	100	100	100	100	100
Online assessment					
Unweighted base =	274	175	76	13**	10**
Weighted base =	274	203	50	12**	10**
Already using	43	47	32	31	20
Planning to use in 12 months	7	7	7	0	10
Would consider using in future	37	31	53	38	60
Not interested in using	3	3	1	0	10
Don't know what this is	11	11	8	30	0
Total	100	100	100	100	100
TED Talks Education					
Unweighted base =	277	177	77	13**	10**
Weighted base =	277	205	50	12**	10**
Already using	48	48	53	42	40
Planning to use in 12 months	8	10	5	6	0
Would consider using in future	23	21	31	11	40
Not interested in using	3	3	1	6	0
Don't know what this is	17	18	9	36	20
Total	100	100	100	100	100

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

Significant differences by school type[2]

Primary versus secondary schools

Future-focused technologies

Secondary schools were significantly more likely than primary schools to report that they were already using the following future-focused technologies: 3D printing (38 percent and four percent, respectively), interactive video (16 percent and six percent, respectively) and 3D visualisation/interaction (14 percent and three percent, respectively).

Secondary schools were also significantly more likely than primary schools to report they were planning to use 3D printing in the next 12 months (15 percent and six percent, respectively).

Future-focused learning applications

Secondary schools were significantly more likely than primary schools to report they were using the following future-focused learning applications: digital textbooks (39 percent and 23 percent, respectively), Khan Academy (49 percent and 31 percent, respectively, and learner analytics (13 percent and two percent, respectively).

Primary schools were significantly more likely than secondary schools to report they were using online assessments already (47 percent and 32 percent, respectively).

Decile bands

Future-focused technologies

Decile 7-10 schools were significantly more likely to be already using: 3D printing (16 percent, compared with four percent of Decile 1-3 schools), 3D visualisation/interaction (eight percent, compared with one percent of Decile 1-3 schools), augmented reality (14 percent, compared with three percent of Decile 1-3 schools and six percent of Decile 4-6 schools), and LTE4G Mobile services (seven percent, compared with one percent of Decile 4-6 schools).

Decile 7-10 schools were also significantly more likely than Decile 4-6 schools to report they were planning to use 3D visualisation/interaction within 12 months (six percent and one percent, respectively).

In contrast, Decile 1-3 schools were significantly more likely to be planning to use virtual laboratories within 12 months, than were Decile 7-10 schools (nine percent and two percent, respectively).

[2] Note: There are a number of statistically significant differences in relation to consideration, non-consideration or lack of knowledge (i.e. "don't know") between primary schools and secondary schools, and between school decile. However, in this section we have concentrated on statistically significant differences in relation to current use and planned use in the next 12 months.

Future-focused learning applications

Decile 4-6 and 7-10 schools were significantly more likely to be using Khan Academy already (34 percent and 44 percent, respectively), than were Decile 1-3 schools (17 percent). However, a further eight percent of Decile 1-3 schools reported they planned to be using Khan Academy in the next 12 months.

Decile 7-10 schools were also significantly more likely to be using online assessments (55 percent) than were Decile 1-3 or 4-6 schools (29 percent and 38 percent, respectively). However, 11 percent of Decile 4-6 schools reported planning to do so in the next 12 months.

Decile 7-10 schools were significantly more likely to be using TED Talks (55 percent) and/or learner analytics (seven percent), than were Decile 1-3 schools (37 percent and one percent, respectively).

4.4 Barriers to use of digital technologies in schools

There are a number of barriers which can impede the uptake and use of digital technologies in schools for student learning purposes, including the costs of equipment, professional development of staff, as well as how to best manage student usage of such technologies.

Principals were presented a list of potential barriers to the uptake and use of digital technologies and asked to rate each as to whether it was “not a barrier”, “somewhat of a barrier” or “a major barrier (Table 15 overleaf).

The most frequent by identified barriers (by 50 percent of principals or more) included:

- Cost of digital technology equipment (identified by 95 percent of principals as a major barrier or somewhat of a barrier for their school)
- Cost of upgrades (92 percent)
- Cost of online services (82 percent)
- Speed of technological change (82 percent)
- Professional development of staff (80 percent)
- Extracting value for money (77 percent)
- Technical support (76 percent)
- Network infrastructure (62 percent)
- Insufficient knowledge about such technologies to make decisions (60 percent).

In contrast, more than half of all principals identified the following issues as not being a barrier for their school to uptake and use new digital technologies:

- Internet safety (identified as not being a barrier by 55 percent of principals)
- Managing student usage of such technologies (55 percent)
- Integration into the curriculum (54 percent).

Table 15:

P-Q23. To what extent do the following create a barrier to the use of digital technologies in your school?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Cost of digital technology equipment					
Unweighted base =	472	362	94	11**	5**
Weighted base =	472	363	93	11**	5**
Not a barrier	4	4	7	9	0
Somewhat of a barrier	34	33	38	36	60
A major barrier	61	64	54	55	40
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Cost of upgrades					
Unweighted base =	471	361	94	11**	5**
Weighted base =	471	362	93	11**	5**
Not a barrier	8	8	9	9	0
Somewhat of a barrier	44	42	51	36	80
A major barrier	48	50	40	55	20
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Cost of online services					
Unweighted base =	471	361	94	11**	5**
Weighted base =	471	362	93	11**	5**
Not a barrier	18	16	24	27	0
Somewhat of a barrier	56	55	59	36	80
A major barrier	26	29	17	36	20
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Extracting value for money					
Unweighted base =	471	361	94	11**	5**
Weighted base =	471	362	93	11**	5**
Not a barrier	20	21	17	9	0
Somewhat of a barrier	57	54	62	91	100
A major barrier	20	21	19	0	0
Don't know	4	4	2	0	0
Total	100	100	100	100	100
Integration into the curriculum					
Unweighted base =	471	361	94	11**	5**
Weighted base =	471	362	93	11**	5**
Not a barrier	54	61	30	45	40
Somewhat of a barrier	41	36	57	55	60
A major barrier	5	3	13	0	0
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Internet safety					
Unweighted base =	471	361	94	11**	5**
Weighted base =	471	362	93	11**	5**
Not a barrier	55	55	53	55	40
Somewhat of a barrier	42	42	43	45	60
A major barrier	3	3	4	0	0
Don't know	0	0	0	0	0
Total	100	100	100	100	100

continued…

Table 15: (cont.)

P-Q23. To what extent do the following create a barrier to the use of digital technologies in your school?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Managing student usage					
Unweighted base =	472	362	94	11**	5**
Weighted base =	472	363	93	11**	5**
Not a barrier	55	55	53	55	60
Somewhat of a barrier	40	39	44	45	40
A major barrier	5	5	3	0	0
Don't know	0	1	0	0	0
Total	100	100	100	100	100
Network infrastructure					
Unweighted base =	471	361	94	11**	5**
Weighted base =	471	362	93	11**	5**
Not a barrier	39	40	35	27	0
Somewhat of a barrier	39	35	51	18	80
A major barrier	23	24	14	55	20
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Professional development among staff					
Unweighted base =	472	362	94	11**	5**
Weighted base =	472	363	93	11**	5**
Not a barrier	20	21	16	18	0
Somewhat of a barrier	58	59	55	45	80
A major barrier	22	20	29	36	20
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Technical support					
Unweighted base =	472	362	94	11**	5**
Weighted base =	472	363	93	11**	5**
Not a barrier	24	22	34	9	20
Somewhat of a barrier	51	52	47	54	60
A major barrier	25	26	19	37	20
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Speed of technological change					
Unweighted base =	471	361	94	11**	5**
Weighted base =	471	362	93	11**	5**
Not a barrier	18	17	21	18	0
Somewhat of a barrier	60	60	60	64	80
A major barrier	22	23	19	18	20
Don't know	0	0	0	0	0
Total	100	100	100	100	100
Insufficient knowledge to make decisions					
Unweighted base =	469	360	94	10**	5**
Weighted base =	469	361	93	10**	5**
Not a barrier	39	39	43	10	40
Somewhat of a barrier	51	51	51	80	20
A major barrier	9	10	6	10	40
Don't know	0	0	0	0	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report the cost of online services and network infrastructure were major barriers to using digital technologies in their school (29 percent and 24 percent, respectively), than were secondary schools (17 percent and 14 percent, respectively). However, secondary schools were significantly more likely to report that network infrastructure was somewhat of a barrier (51 percent, compared with 35 percent of primary schools).

Secondary schools were significantly more likely to report that the integration of digital technologies into the curriculum was a major barrier (13 percent) or somewhat of a barrier (57 percent), than were primary schools (three percent and 36 percent, respectively).

Decile bands

Decile 4-6 schools were significantly more likely to report that the cost of digital technology equipment was a major barrier to using digital technologies in their school (68 percent), than were Decile 7-10 schools (54 percent), while being less likely than Decile 7-10 schools to report it was somewhat of a barrier (28 percent and 40 percent, respectively).

Decile 1-3 schools were significantly more likely to identify the cost of upgrades (54 percent) and/or the cost of online services (34 percent) as major barriers, than were than Decile 7-10 schools (42 percent and 23 percent, respectively).

Decile 4-6 schools were significantly more likely to identify extracting value for money as being a major barrier to using digital technologies in their school (25 percent), than were Decile 7-10 schools (15 percent). Decile 4-6 schools were also significantly more likely to identify integrating digital technologies into the curriculum as being a major barrier (nine percent) compared with three percent of both Deciles 1-3 and 7-10 schools.

Decile 4-6 schools were also significantly more likely to report that professional development of staff was a major barrier (32 percent) than were Decile 1-3 and 7-10 schools (with 18 percent of both decile groups reporting it was a major barrier).

Relatedly, Decile 4-6 schools were significantly less likely to report professional development of staff as being somewhat of a barrier (51 percent) when compared with Decile 7-10 schools (62 percent of which reported professional development of staff as being somewhat of a barrier.

5.0 Internet access and safety

This chapter examines schools views and policies on managing student access to the Internet and Internet safety.

5.1 Student access to social software sites

All principals were asked what policies their school has for managing student access to social software sites (Table 16).

Just seven percent of principals reported their school did not have any such policies. Most frequently, principals reported their school had the following policies in place to manage such access:

- Social software sites being blocked by the school to all students (32 percent of schools)
- Social software sites being blocked by the school's Internet provider (27 percent of schools)
- Monitored access to social software sites (19 percent).

Table 16:

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

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	483*	370	95	12**	6**
Weighted base =	483*	371	94	12**	6**
	%	%	%	%	%
Open to all students	5	4	7	8	0
Open to some students	7	4	14	25	0
Blocked by school to all students	32	29	41	33	50
Blocked by Internet Service Provider	27	31	15	8	33
Monitored access	19	20	15	17	17
Other	3	2	7	0	0
There are no such specific policies	7	9	1	8	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to report that access to social software sites was open to all students in the school (14 percent), than were primary schools (four percent). However, secondary schools were also significantly more likely than primary schools to report that access to social software sites was blocked by the school to all students (41 percent and 29 percent, respectively).

In contrast, primary schools were significantly more likely than secondary schools to report that student access to social software sites was blocked by their Internet service provider (31 percent and 15 percent, respectively).

Decile bands

With the exception that Decile 7-10 schools were significantly more likely to report that access to social software sites was open to all students (seven percent, compared with just one percent of Decile 4-6 schools), there were no statistically significant differences in relation to the findings when viewed by school decile band.

5.2 Student access to the Internet at home

In order to provide an indication of the proportion of students who have Internet access at home, respondents to the Equipment Survey were asked to provide an estimate of what percentage of the school's students were likely to have such access (Table 17).

Eight-in-ten respondents reported that 50 percent or more of the school's students had access to the internet at home, with 53 percent estimating that 75 percent or more of the school's students had access.

Table 17:

E-Q5. Please estimate the proportion of your school's students who have Internet access at home.

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	299	190	84	13**	12**
Weighted base =	299	220	55	12**	12**
	%	%	%	%	%
None	0	0	0	6	0
1%-9%	2	1	1	10	17
10%-24%	4	4	1	16	0
25%-49%	8	8	5	33	8
50%-74%	27	27	20	36	42
75%-99%	50	51	64	0	17
100%	3	3	6	0	0
Don't know	6	6	2	0	17
Total	100	100	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, respondents were asked on what grounds they had based their estimate of the proportions of students with internet access at home (Table 18).

Two-thirds (66 percent) said that it was a rough estimate, based upon their knowledge of the local school community, while one-in-five (22 percent) reported that the school had surveyed students and/or their parents about the issue.

Table 18:

Q6. In Question 5 above, how did you estimate the proportion of students with internet access in their homes?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	299	190	84	13**	12**
Weighted base =	299	220	55	12**	12**
	%	%	%	%	%
Rough estimate based on knowledge of school community	66	67	61	74	58
Survey of students/parents	22	21	29	20	17
Other	8	8	8	6	8
Don't know	4	4	2	0	17
Would rather not say	0	0	0	0	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to estimate that 75 percent or more of the school's students have Internet access at home (70 percent, compared with 54 percent of primary schools).

Decile bands

Decile 4-6 and Decile 7-10 schools were significantly more likely to estimate that 75 percent or more of the school's students have Internet access at home (45 percent and 85 percent, respectively), than were Decile 1-3 schools (15 percent).

In contrast, 19 percent of Decile 1-3 schools estimated that less than one quarter of their students had Internet access at home, as compared to only two percent of Decile 4-6 schools and none of Decile 7-10 schools.

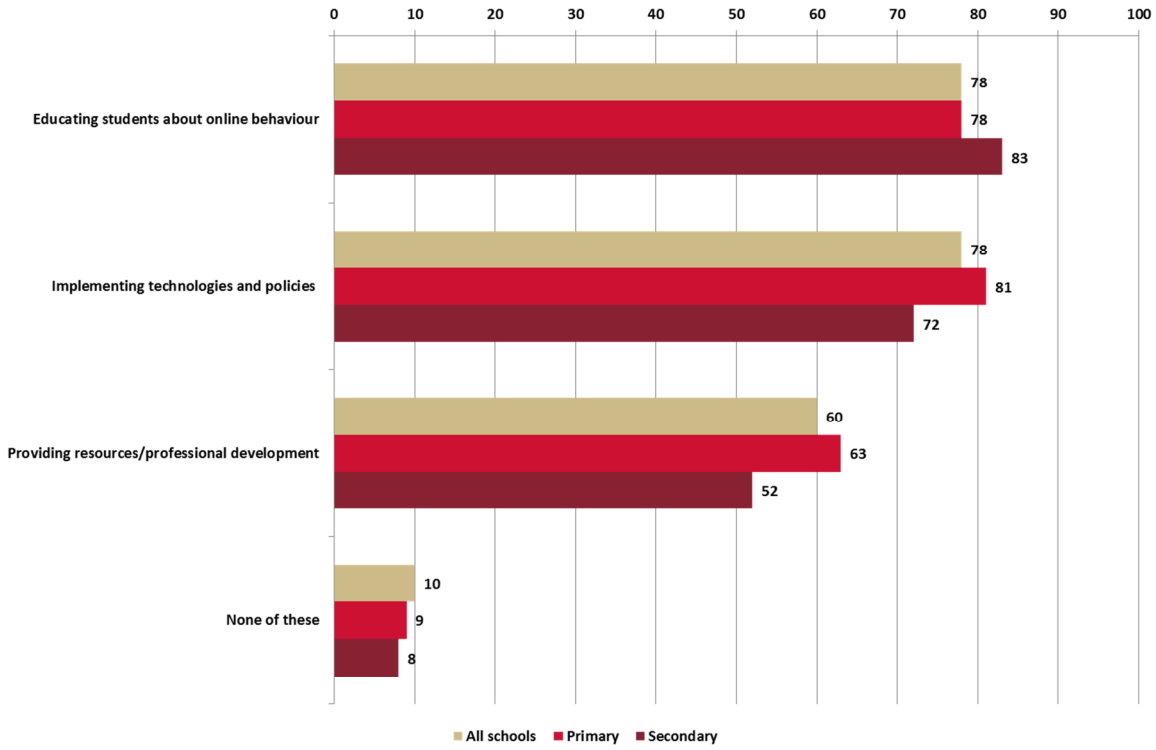
5.3 Cyber safety

Cyber safety of students can be an area of particular concern both for schools and students' parents. All principals were asked about a number of possible strategies their school currently had in place (Figure 7).

Over three-quarters of principals (78 percent) reported their school's strategies included educating students to develop positive, ethical behaviours in cyberspace. While the same proportion reported the school's strategies included implementing technologies and policies supporting a safe and secure online environment for students (78 percent).

Sixty percent of principals reported their school had provided digital citizenship resources and professional development for teachers to address the issue of cyber safety. However, 10 percent of principals reported that their school did not have any of the above strategies in place to ensure safe internet access and cyber safety by students.

Figure 7: Cyber safety for students – strategies currently in place



Significant differences by school type

Primary versus secondary schools

There were no statistically significant differences in relation to cyber safety strategies when comparing primary and secondary schools.

Decile bands

Decile 7-10 schools were significantly more likely to report having the following strategies in place: educating students to develop positive, ethical behaviours in cyberspace (85 percent, compared with 71 percent of Decile 1-3 schools and 74 percent of Decile 4-6 schools), provision of digital citizenship resources and professional development for teachers (70 percent, compared with 49 percent of Decile 1-3 schools and 54 percent of Decile 4-6 schools).

Decile 7-10 schools were also significantly more likely to report implementing technologies and policies supporting a safe and secure online environment (84 percent), than were Decile 1-3 schools (69 percent).

5.4 Awareness of obligations under the Copyright Amendment Act 2011

Copyright Infringement has been a topical issue in recent years, and can include such behaviours as downloading of 'pirated' videos and music, to students and/or staff plagiarising the work of others and/or not properly citing sources of information in their written work.

In relation to this issue, all principals were asked how aware they felt they were in relation to their obligations under the Copyright (Infringing File Sharing) Amendment Act 2011 (Table 19).

Fifty percent of principals reported they were fully aware of their obligations under the Act, while 48 percent said they were somewhat aware of their obligations.

Table 19:

P-Q14a. How aware are you of your obligations under the Copyright (Infringing File Sharing) Amendment Act 2011?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	483	370	95	12**	6**
Weighted base =	483	371	94	12**	6**
	%	%	%	%	%
Fully aware of my obligations	50	48	58	50	67
Somewhat aware of my obligations	48	49	42	42	33
Have not heard of the Copyright Amendment Act 2011	2	3	0	8	0
Total	100	100	100	100	100

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

Significant differences by school type

There were no statistically significant differences of note, in relation to the above findings when comparing primary and secondary schools, or different decile bands.

6.0 Te Reo Māori resources

This chapter examines knowledge and use of various Te Reo Māori resources that are available to schools in New Zealand.

6.1 Software to support macron use

All principals were asked whether the softwares used at their school support macron use for Te Reo Māori (Table 20). Just under half of the principals (47 percent) reported that the school's software supported macron use.

Table 20:

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

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	480	368	94	12**	6**
Weighted base =	480	369	93	12**	6**
	%	%	%	%	%
Yes	47	39	71	75	50
No	21	25	10	17	0
Don't know	32	36	19	8	50
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly less likely than secondary schools to report the software they use supports macron use for Te Reo Māori (39 percent and 71 percent respectively).

Decile bands

There were no statistically significant differences in relation to support for macron use when viewed by school decile band.

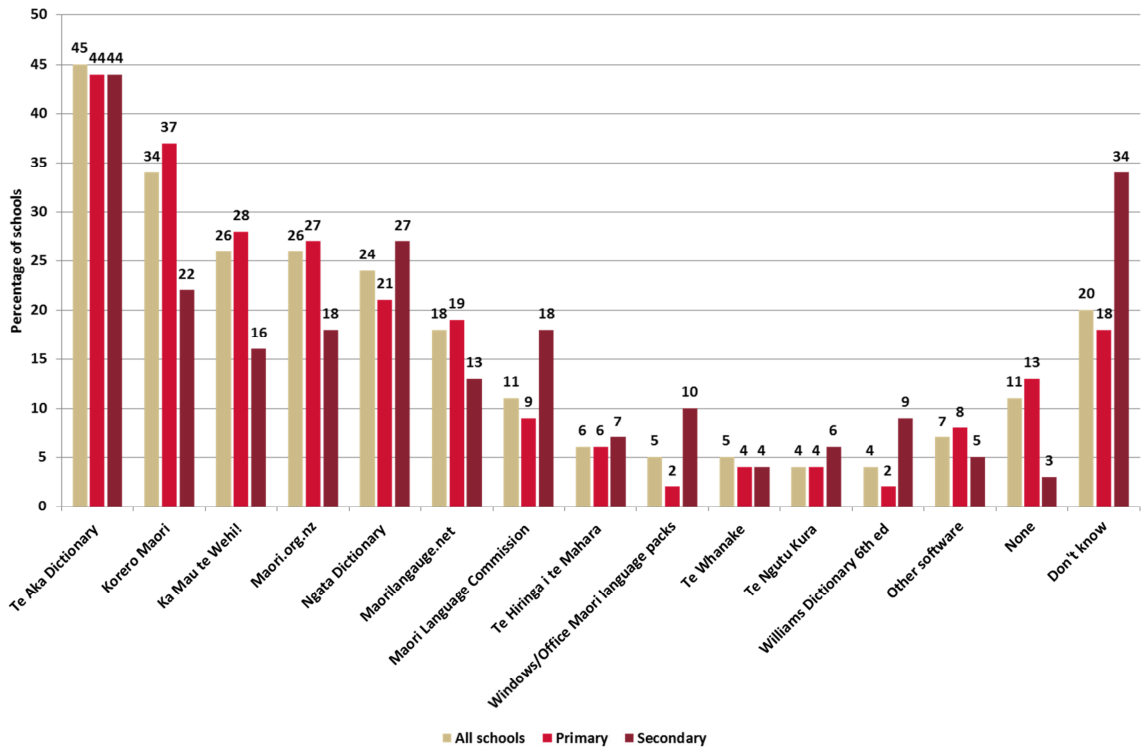
6.2 Māori language resources

Principals were presented with a list of Māori language online resources and asked which of those resources were currently being used by the school to support Māori language learning (Figure 8).

Most frequently, principals reported that the following resources were being used by their school to support Māori language learning:

- Te Aka Dictionary (noted by 45 percent of principals as being used by their school).
- Korero Māori (34 percent)
- Ka Mau te Wehi! (26 percent)
- Māori.org.nz (26 percent)
- Ngata Dictionary (24 percent).

Figure 8: Percentages of schools using Māori language online resources



As a follow-up question, Principals were presented with a list of Māori language apps and asked which of them were currently being used by the school to support Māori language learning (Table 21).

Just under half of principals (48 percent) reported that their school was not currently using any of the apps on the list, while 29 percent said they did not know what, if any, apps were being used.

When such apps were being used, most frequently these were Hika Lite (noted as being used by 13 percent of principals) and Te Kura Māori (10 percent).

Table 21:

P-Q17. Which of the following Māori language apps does your school use to support Māori language learning?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	477*	367	93	12**	5**
Weighted base =	477*	368	92	12**	5**
	%	%	%	%	%
Te Kura Māori (Apple and Android)	10	9	11	42	0
Hika Lite (Apple and Android)	13	14	12	17	0
Hika Explorer http://hikagroup.com/Hika-App/	3	2	3	17	0
The Math machine (iPad only)	2	2	0	17	0
Māori date (Apple only)	2	3	0	8	0
Other	2	2	1	8	0
None	48	52	30	50	100
Don't know	29	26	47	0	0

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to be using Korero Māori (37 percent) and Ka Mau te Wehi (28 percent), than were secondary schools (22 percent and 16 percent, respectively).

Secondary schools were significantly more likely to be using the Māori Language Commission (18 percent) and Māori Language packs for Windows and Office (10 percent), than were primary schools (nine percent and two percent, respectively).

In relation to Māori Language apps, primary schools were significantly more likely to report not using any (52 percent), than were secondary schools (30 percent).

Decile bands

There were no statistically significant differences of note in relation to the use of Māori language apps when viewed by school decile band.

6.3 Factors limiting schools from utilising online Māori language resources

In order to gain a better understanding about what factors, if any, limit schools from utilising online Māori language resources to support Māori language learning, principals were asked to state these factors (Table 22).

Based upon the survey findings, lack of knowledge (noted by 58 percent of principals) and/or lack of information about such resources (35 percent) are the principle barriers limiting schools from utilising online Māori language resources to support Māori language learning. In addition, the cost of Māori language resources was a limiting factor for 12 percent of principals.

Table 22:

P-18. What factors limit your school from utilising online Māori language resources to support Māori language learning?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	480*	369	94	12**	5**
Weighted base =	480*	370	93	12**	5**
	%	%	%	%	%
Don't know about them	58	61	44	67	40
Lack of information about resources	35	37	30	25	40
Cost of the resources	12	12	12	25	0
Lack of Māori language resources in general	9	9	5	17	0
Does not fit with current curriculum	5	4	6	0	60
Quality of the content	5	6	2	17	0
Lack of variety of resources	3	2	4	25	0
No internet in classrooms	3	2	7	8	0
Lack of resources (technical and/or financial)	2	2	4	0	0
Insufficient teacher knowledge/ confidence to use existing resources	2	2	5	0	0
Other	2	2	3	0	0
None	8	8	9	8	0
Don't know	6	4	13	0	0
No response	0	0	1	0	0

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to report that a lack of internet in classrooms was a factor limiting the school from utilising online Māori language resources to support Māori language learning (seven percent, compared with two percent of primary schools).

Decile bands

Decile 1-3 and Decile 4-6 schools were significantly more likely to identify the cost of resources as being a factor limiting the school from utilising online Māori language resources to support Māori language learning (16 percent for both decile bands), than Decile 7-10 schools (seven percent).

Both Decile 1-3 and Decile 4-6 schools were significantly more likely to report that the lack of internet in classrooms was a limiting factor (six percent and five percent), respectively compared with none of the Decile 7-10 schools.

Decile 1-3 and Decile 7-10 schools were significantly more likely to report a lack of Māori language resources in general as being a limiting factor (15 percent and eight percent, respectively), than were Decile 4-6 schools (four percent).

7.0 Impact of digital technologies

This chapter examines what eLearning activities students in New Zealand schools currently participate in, the impact of digital technologies on student learning, as well as the role such technologies play in teaching and student learning.

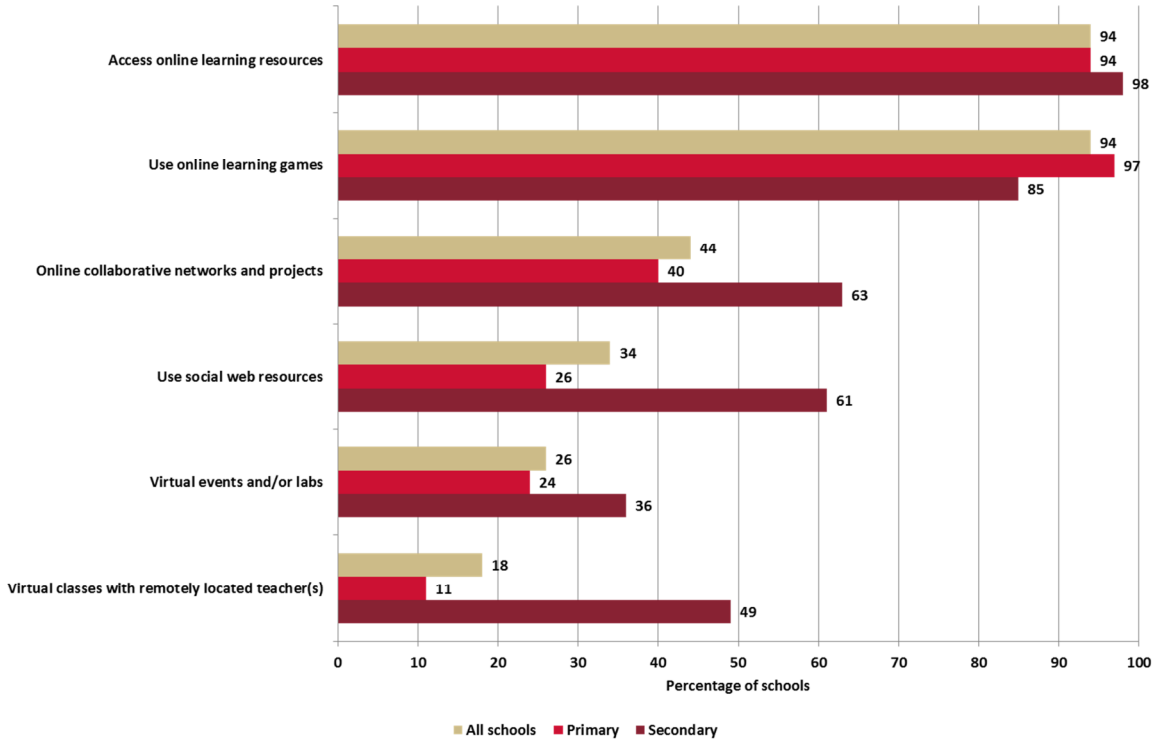
7.1 Student participation in eLearning activities

All principals were presented with a list of different eLearning activities and asked which their students currently participate in (Figure 9). Most frequently, principals identified the following as eLearning activities students in their school currently participate in:

- Accessing online learning resources (noted by 94 percent of principals as being used by students in their school)
- Using online learning games (94 percent)
- Online collaborative networks and projects (44 percent)
- Accessing social web resources (34 percent).

Fewer principals reported that students were currently participating in virtual events/labs (26 percent) and/or virtual classes with remotely located teachers (18 percent).

Figure 9: Percentages of schools with students participating in specific eLearning activities



Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary school's to report that their students were participating in the following eLearning activities:

- Participating in online collaborative events (63 percent and 40 percent, respectively).
- Using social web resources (61 percent and 26 percent, respectively).
- Participating in virtual classes with remotely located teacher(s) (49 percent, compared with 11 percent).
- Participating in virtual events and/or labs (36 percent compared with 24 percent, respectively).

In contrast, primary schools were significantly more likely to report students use online learning games (97 percent), than were secondary schools (85 percent).

Decile bands

Decile 7-10 schools were significantly more likely than Decile 1-3 and Decile 4-6 schools to report that their students were participating in the following eLearning activities:

- Participating in virtual events and/or labs (33 percent, compared with 19 percent and 20 percent of Decile 1-3 and Decile 4-6 schools, respectively).
- Participating in online collaborative events (56 percent, compared with 36 percent and 33 percent of Decile 1-3 and Decile 4-6 schools, respectively).

Decile 7-10 schools were also significantly more likely than Decile 1-3 schools to report their students were using online learning games (97 percent and 90 percent, respectively).

7.1.1 Impact of digital technologies on student learning

All principals were asked what impact digital technologies were having on raising student achievement in their schools (Table 23).

Approximately one-third reported that digital technologies were having quite a significant impact on raising student achievement in their school, while 45 percent of principals said it was having a moderate impact. Fifteen percent, however, did not know, while nine percent of principals felt it was having very little impact currently.

Table 23:

P-Q20. What impact on raising student achievement are digital technologies having in your school?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	478	368	94	11**	5**
Weighted base =	478	369	93	11**	5**
	%	%	%	%	%
None	0	0	1	0	0
Very little impact	9	8	14	27	0
A moderate Impact	45	44	50	45	0
Quite a significant impact	31	33	20	27	100
Don't know	15	15	15	0	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report digital technologies were having quite a significant impact on student achievement (33 percent), than were secondary schools (20 percent).

Decile bands

Both Decile 1-3 and Decile 7-10 schools were significantly more likely to report digital technologies were having quite a significant impact on student achievement (35 percent and 36 percent, respectively), than were Decile 4-6 schools (20 percent).

In contrast, Decile 4-6 schools were more likely to report digital technologies were having a moderate impact (58 percent), than were Decile 1-3 and Decile 7-10 schools (44 percent and 37 percent, respectively).

As a follow-up question, principals were asked to what extent they agreed or disagreed that digital technologies were positively affecting teaching and learning (Table 24 overleaf). Notably, between 71 percent and 90 percent principals agreed or strongly agreed with all of the statements, in relation to the extent with which digital technologies were affecting teachers and students in their school:

- Digital technologies enable access to quality learning resources and information online for teachers (90 percent of principals agreed or strongly agreed with this statement)
- Digital technologies offer new opportunities for professional development (89 percent)
- Digital technologies enable access to quality learning resources and information online for students (88 percent)
- Digital technologies make learning more relevant and engaging for students (87 percent)
- Digital technologies enable more personalised teaching and learning (81 percent)
- Digital technologies are important to improving teacher practice (74 percent)
- The integration of digital technologies is improving learning outcomes (71 percent)
- The integration of digital technologies is making improvements to the efficiency of curriculum delivery at our school (67 percent).

Table 24:

P-Q21. The following statements are about the role of digital technologies in teaching and learning. Please indicate the extent to which you agree or disagree with each?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
The integration of digital technologies is improving learning outcomes					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	1	1	3	0	0
2	4	4	2	18	0
3	19	20	15	9	20
4	40	38	53	27	20
5 - Strongly agree	31	32	23	36	60
Don't know	5	6	3	9	0
Total	100	100	100	100	100
The integration of digital technologies is making improvements to the efficiency of curriculum delivery at our school					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	1	1	2	0	0
2	5	4	7	18	0
3	23	24	18	27	0
4	41	40	45	36	80
5 - Strongly agree	26	28	22	9	20
Don't know	3	2	5	9	0
Total	100	100	100	100	100
Digital technologies are important to improving teacher practice					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	2	2	3	9	0
2	5	4	4	9	20
3	18	20	14	9	20
4	40	38	48	18	40
5 - Strongly agree	34	34	31	45	20
Don't know	1	2	0	9	0
Total	100	100	100	100	100
Digital technologies enable access to quality learning resources and information online for teachers					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	2	1	2	9	0
2	2	2	2	9	0
3	5	5	3	9	20
4	32	32	34	9	40
5 - Strongly agree	58	59	57	54	40
Don't know	1	1	1	9	0
Total	100	100	100	100	100

continued…

Table 24: (cont.)

P-Q21. The following statements are about the role of digital technologies in teaching and learning. Please indicate the extent to which you agree or disagree with each?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Digital technologies enable access to quality learning resources and information online for students					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	2	1	3	9	0
2	2	2	2	0	0
3	7	7	5	27	20
4	36	37	36	0	60
5 - Strongly agree	52	52	52	54	20
Don't know	1	1	1	9	0
Total	100	100	100	100	100
Digital technologies offer new opportunities for professional development					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	2	1	3	18	0
2	2	2	1	0	0
3	6	6	4	0	20
4	34	35	32	27	20
5 - Strongly agree	55	54	59	45	60
Don't know	1	1	1	9	0
Total	100	100	100	100	100
Digital technologies make learning more relevant and engaging for students					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	2	1	3	9	0
2	2	2	2	9	0
3	8	8	11	9	20
4	31	29	37	27	20
5 - Strongly agree	56	59	46	36	60
Don't know	1	1	1	9	0
Total	100	100	100	100	100
Digital technologies enable more personalised teaching and learning					
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
1 - Strongly disagree	2	1	3	9	0
2	4	4	3	9	0
3	13	13	14	18	0
4	33	33	34	18	40
5 - Strongly agree	48	49	45	36	60
Don't know	1	1	1	9	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to just agree (a rating of '4 out of 5') that the integration of digital technologies is improving learning outcomes (53 percent), than were primary schools (38 percent).

Primary schools were significantly more likely to strongly agree (a rating of '5 out of 5') that digital technologies make learning more relevant and engaging for students (59 percent), than were secondary schools (46 percent).

Decile bands

Decile 1-3 schools were significantly more likely to strongly agree that the integration of digital technologies is improving learning outcomes (37 percent), than were Decile 4-6 schools (24 percent).

In contrast, Decile 1-3 schools were significantly more likely to disagree (a rating of '2 out of 5') that digital technologies are important to improving teacher practice (10 percent), than were Decile 7-10 schools (one percent).

Decile 1-3 schools were significantly less likely to strongly agree that digital technologies enable access to quality learning resources and information for teachers (46 percent), than were Decile 4-6 or Decile 7-10 schools (60 percent and 65 percent, respectively).

Decile 1-3 schools were also significantly less likely to strongly agree that digital technologies enable access to quality learning resources and information for students (45 percent), than were Decile 7-10 schools (58 percent).

7.2 The role of digital technologies in teaching and learning

7.2.1 Usage of online resources by students in schools

All principals were presented with a list of online resources and asked to what extent they were being used by students in a typical week (Table 25 overleaf).

Generally, most principals reported that the resources were not being used extensively by students on a weekly basis, with one exception; thirty-two percent said that Wikipedia was being used extensively by their students on a weekly basis.

In many cases, however, principals noted that several of the resources were being used by some students in the school on a weekly basis. Below is a list of those resources with details as to which are being used by some students on a weekly basis and which are being used by students extensively:

- Wikipedia (noted by 57 percent of principals as being used by some students each week, with 32 percent reporting it was used extensively on a weekly basis)
- wickED (used by some students in 40 percent of schools, and be used extensively in 33 percent of schools)
- Newspapers in Education (used by some students in 46 percent of schools, and used extensively in six percent of schools)
- The Science Learning Hub (used by some students in 41 percent of schools, being used extensively in one percent of schools).

Table 25:

P-Q8. During a typical school week, roughly to what extent do students use each of the following online education services at your school?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Education Gazette online (www.edgazette.govt.nz)					
Unweighted base =	484	371	95	12**	6**
Weighted base =	484	372	94	12**	6**
Used extensively	2	1	4	0	0
Used by some students only	2	1	5	8	0
Not used by students	92	95	82	83	83
Don't know/NA	4	3	8	8	17
Total	100	100	100	100	100
The Science Learning Hub (www.sciencelearn.org.nz)					
Unweighted base =	483	370	95	12**	6**
Weighted base =	483	371	94	12**	6**
Used extensively	1	1	2	8	0
Used by some students only	41	36	65	25	0
Not used by students	45	52	15	42	83
Don't know/NA	12	11	18	25	17
Total	100	100	100	100	100
NZ Biotechnology Learning Hub (www.biotechlearn.org.nz)					
Unweighted base =	482	370	94	12**	6**
Weighted base =	482	371	93	12**	6**
Used extensively	1	0	2	0	0
Used by some students only	16	9	41	25	0
Not used by students	66	76	27	50	83
Don't know/NA	18	14	30	25	17
Total	100	100	100	100	100
Any Questions (www.anyquestions.co.nz)					
Unweighted base =	482	370	94	12**	6**
Weighted base =	482	371	93	12**	6**
Used extensively	2	1	3	0	0
Used by some students only	34	32	44	34	17
Not used by students	44	49	24	42	67
Don't know/NA	20	18	29	25	17
Total	100	100	100	100	100
PrometheanPlanet.com (www.prometheanplanet.com)					
Unweighted base =	483	371	94	12**	6**
Weighted base =	483	372	93	12**	6**
Used extensively	4	4	2	0	0
Used by some students only	24	23	29	17	0
Not used by students	54	57	39	50	83
Don't know/NA	19	16	30	33	17
Total	100	100	100	100	100
Newspapers in Education (NIE) (www.nieonline.co.nz)					
Unweighted base =	485	373	94	12**	6**
Weighted base =	485	374	93	12**	6**
Used extensively	6	5	9	0	0
Used by some students only	46	46	48	34	17
Not used by students	40	43	24	42	67
Don't know/NA	9	6	19	25	17
Total	100	100	100	100	100

continued…

Table 25: (cont.)

Q8. During a typical school week, roughly to what extent do students use each of the following online education services at your school?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
wickED (www.wicked.org.nz)					
Unweighted base =	484	372	94	12**	6**
Weighted base =	484	373	93	12**	6**
Used extensively	3	3	4	8	0
Used by some students only	40	42	38	33	0
Not used by students	41	44	28	42	83
Don't know/NA	15	12	30	17	17
Total	100	100	100	100	100
Studyit (www.studyit.org.nz)					
Unweighted base =	484	371	95	12**	6**
Weighted base =	484	372	94	12**	6**
Used extensively	2	1	11	0	0
Used by some students only	25	15	66	33	0
Not used by students	55	66	11	50	83
Don't know/NA	18	19	13	17	17
Total	100	100	100	100	100
Wikipedia (www.wikipedia.org)					
Unweighted base =	486	373	95	12**	6**
Weighted base =	486	374	94	12**	6**
Used extensively	32	27	53	42	0
Used by some students only	57	61	43	33	50
Not used by students	9	10	0	17	33
Don't know/NA	3	2	4	8	17
Total	100	100	100	100	100
Te Ara (www.teara.govt.nz)					
Unweighted base =	483	370	95	12**	6**
Weighted base =	483	371	94	12**	6**
Used extensively	4	2	7	25	0
Used by some students only	27	23	41	33	0
Not used by students	48	54	24	33	83
Don't know/NA	22	21	27	8	17
Total	100	100	100	100	100

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

Significant differences by school type

As noted previously, extensive usage of most of the various online sources is low, with most being used on a weekly basis by only some students. This section examines the significant differences, by school type, in relation to schools reporting that no students are currently using certain online resources during a typical school week.

Primary versus secondary schools

Principals of primary schools were significantly more likely than principals of secondary schools to report that the following online learning resources were not used during a typical school week by students at their schools:

- Education Gazette (reported by 95 percent of primary school principals as not being used, compared with 82 percent of secondary principals).
- NZ Biotechnology Learning Hub (76 percent and 27 percent, respectively).
- Studyit (66 percent and 11 percent, respectively).
- PrometheanPlanet.com (57 percent and 39 percent, respectively).
- Te Ara (54 percent and 24 percent, respectively).
- The Science Learning Hub (52 percent and 15 percent, respectively).
- Any Questions (49 percent and 24 percent, respectively).
- wickED (44 percent and 28 percent, respectively).
- Newspapers in education (43 percent and 24 percent, respectively).

Decile bands

Decile 4-6 schools were significantly more likely to report that The Science Learning Lab was not used by students in a typical week than were Decile 7-10 schools (51 percent compared with 40 percent).

Decile 1-3 and Decile 4-6 schools were significantly more likely to report that Any Questions was not used by students in a typical week (51 percent and 50 percent, respectively), than were Decile 7-10 schools (36 percent).

7.2.2 Usage of e-Portfolio systems by staff/students

Respondents to the Equipment Survey were asked whether staff/students in their school use e-Portfolio systems, and if so, which ones (Table 26).

More than half of the respondents (58 percent) reported that none of the school's students or staff were using such systems. The most frequently identified e-Portfolio systems that were being used by staff/students were My Portfolio (16 percent of all responding schools), Ultranet (10 percent) and/or Moodle (eight percent).

Table 26:

E-Q25. Do your staff/students use e-Portfolio systems?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	275	175	77	13**	10**
Weighted base =	275	203	50	12**	10**
	%	%	%	%	%
Moodle	8	1	39	0	10
KnowledgeNet	4	4	6	0	0
My Portfolio (Mahara)	16	11	36	10	20
My Classes	0	0	0	0	0
Office 365 (Live@edu)	6	2	22	0	20
Ultranet	10	10	13	0	0
Other	2	2	0	6	0
None	58	66	21	67	60
Don't know	8	9	5	17	0

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report the following e-Portfolio systems were being used by staff/students: Moodle (39 percent and one percent, respectively), My Portfolio (36 percent and 11 percent, respectively), and Office 365 (Live@edu) (22 percent and two percent, respectively).

In contrast, 66 percent of primary schools reported that no staff/students were using an e-Portfolio system (compared with 21 percent of secondary schools).

Decile bands

There were no statistically significant differences in relation to the above findings when viewed by school decile band.

7.2.3 Usage of Learning Management systems by schools

Equipment Survey respondents were also asked whether their school was using any Learning Management Systems, and if so what those systems were (Table 27).

While 47 percent of respondents reported that their school was not using such a system currently, and seven percent did not know, 46 percent identified at least one such system was in use at their school. Where this was the case, the most frequently identified systems included Ultranet (noted by 12 percent of responding schools) and/or Moodle (10 percent).

Ten percent of the respondents also identified a number of other Learning Management Systems that were being used, but their frequency of use did not exceed the two percent threshold. In some cases, they identified software or cloud-based systems that are not technically a 'Learning Management System' per se, such as Office 365. These have all been grouped together with 'Other'.

Table 27:

E-Q26. Which of the following Learning Management Systems does your school use?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	278	178	78	12**	10**
Weighted base =	278	206	51	11**	10**
	%	%	%	%	%
KnowledgeNET	5	4	6	0	0
Moodle	10	2	45	0	10
Ultranet	12	11	18	0	0
MUSAC	3	3	0	11	10
eTap	4	5	0	0	0
Hapara (Google app)	2	2	0	0	0
Google apps (other)	5	5	5	0	0
Other	10	9	14	0	10
None	47	53	19	45	50
Don't know	7	6	3	44	20

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to report Moodle was being used as a Learning Management System (45 percent), than were primary schools (two percent).

Decile bands

There were no statistically significant differences in relation to the above findings when viewed by school decile band.

7.3 Teacher professional development

7.3.1 Teacher management of personal digital devices for learning

All principals were asked what proportion of teachers at their school have the skills to effectively manage the use of personal digital devices for learning in classes (Table 28). While only one percent of principals reported that none of the teachers in their school have such skills, 14 percent felt that all of their teachers currently have the skills to effectively manage the use of personal digital devices for learning in schools. Forty-one percent reported more than 50 percent of the teachers in their school had the skills to do so.

Table 28:

P-Q12. What proportion of teachers at your school has the skills to effectively manage the use of personal digital devices for learning in classes?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	485	372	95	12**	6**
Weighted base =	485	373	94	12**	6**
	%	%	%	%	%
None	1	1	0	0	0
Less than 25%	17	17	19	25	0
25%-50%	25	22	40	17	17
More than 50%	41	41	39	58	83
100%	14	17	2	0	0
Don't know	1	2	0	0	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Principals of primary schools were significantly more likely than those of secondary schools to report that 100 percent of teachers at the school have the skills to effectively manage the use of personal digital devices for learning in classes (17 percent and two percent, respectively). In contrast, principals in secondary schools were also significantly more likely than their peers in primary schools to report that between 25 and 50 percent of teachers at the school had the skills to do so (40 percent and 22 percent, respectively).

Decile bands

Decile 7-10 schools were significantly more likely than Decile 4-6 schools to report that more than 50 percent of teachers at their school have the skills to effectively manage the use of personal digital devices for learning in classes (47 percent and 33 percent, respectively). In contrast Decile 4-6 schools were significantly more likely than Decile 7-10 to report this was the case for between 25 and 50 percent of the schools teachers (33 percent and 21 percent, respectively).

7.3.2 Science-specific teacher professional development

All principals were asked how important science-specific teacher professional development (PD) was to them, when planning PD activities for their school (Table 29).

While fifteen percent of principals reported that it was not very important given the school's other priorities, 45 percent said it was important or very important. Just over one-third (37 percent said it was somewhat important).

Table 29:

P -Q22a. Teacher professional development (PD) can be generic or subject specific. How important will science-specific PD be, when planning PD activities for your school?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	473*	363	94	11**	5**
Weighted base =	473*	364	93	11**	5**
	%	%	%	%	%
Not very important - our school has other priorities	15	16	10	18	60
Somewhat important	37	37	36	27	40
Important	26	26	29	9	0
Very important - science is a key priority for us	19	18	23	45	0
Don't know	3	3	2	0	0
Total	100	100	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, all principals were asked what form(s) of science-specific PD were most appealing for their schools (Table 30).

Most principals reported that a blend of online and face-to-face delivery methods would be most appealing to them for their schools (noted by 72 percent of the respondents). Forty-six percent reported face-to-face delivery was most appealing to them, while 28 percent expressed a preference for access to online communities, 28 percent also identified online access to an expert was appealing.

Twenty-four percent felt that structured online courses, such as webinars or MOOCs, were an appealing delivery method for science-specific PD.

Table 30:

P-Q22b. Which form of science-specific PD delivery would be most appealing for your school?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	473	363	94	11**	5**
Weighted base =	473	364	93	11**	5**
	%	%	%	%	%
Face-to-face	46	47	41	46	20
Online communities (e.g. Virtual Learning Network)	28	25	37	55	20
Structured online courses (e.g. webinars, MOOCs)	24	20	38	45	20
Online access to an expert (e.g. by email or through video conferencing)	28	24	40	45	20
A blend of online and face-to-face delivery methods	72	71	82	64	40
None of the above	1	1	0	9	20
Don't know	5	5	5	0	0

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

Significant differences by school type

Primary versus secondary schools

There were no statistically significant differences of note in relation to the importance of science-specific PD when planning PD activities for the school, between primary and secondary schools.

However, secondary schools were significantly more likely than primary schools to report the following delivery methods were most appealing:

- A blend of online and face-to-face delivery methods (82 percent and 71 percent, respectively).
- Online access to an expert (49 percent and 24 percent, respectively).
- Structured online course (38 percent and 20 percent, respectively).
- Online communities (37 percent and 25 percent, respectively).

Decile bands

Decile 7-10 schools were significantly more likely to report online access to an expert was most appealing (31 percent), than Decile 4-6 schools (21 percent).

Decile 7-10 schools were also significantly more likely to report a blend of online and face-to-face delivery methods were most appealing (78 percent), than Decile 1-3 schools.

7.4 Pond (Network for Learning portal)

The Network for Learning (N4L) portal, Pond, is an online platform which aims to bring together New Zealand teachers, students, school administrators and educational content and services providers.

> *By connecting with and following other educators who share a mutual interest or speciality teaching subject, users have the opportunity to share best practices and learn from their peers, growing their own networks as well as the strength of the Pond community as a whole.*[3]

All principals were asked if teachers at their school had registered to obtain access to Pond (Table 31). One quarter of principals (24 percent) reported that teachers at their school had already registered and a further 47 percent said they were planning to in the next 12 months. However, 19 percent of principals reported that they did not know whether teachers at their school had registered for access to Pond yet, while a further 10 percent said they had no intentions of doing so in the next 12 months.

Table 31:

P-Q22. Pond, the Network for Learning portal, is an online environment providing educational content and services. Have teachers at your school registered to obtain access to Pond?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	474	364	94	11**	5**
Weighted base =	474	365	93	11**	5**
	%	%	%	%	%
Yes, teachers have registered for Pond	24	20	41	0	0
No, but we are planning to in the next 12 months	47	50	37	45	60
No, and we are not planning to in the next 12 months	10	10	5	27	20
Don't know	19	20	16	27	20
Total	100	100	100	100	100

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

[3] Source: http://www.n4l.co.nz/pond/, accessed 4 September 2014.

Significant differences by school type

Primary versus secondary schools

Principals of secondary schools were significantly more likely to report the school's teachers have registered for Pond (41 percent), than were those of primary schools (20 percent). However, more primary school principals reported they were planning to do so in the next 12 months (50 percent, compared with 37 percent of secondary school principals).

Decile bands

Decile 7-10 schools were significantly more likely to report the school's teachers have registered for Pond (31 percent), than were Decile 1-3 and Decile 4-6 schools (17 percent and 19 percent, respectively).

7.5 Stages of adoption of digital technologies – teachers

For a number of years, the Digital Technologies in School Survey has sought to track teachers' progress in relation to the six stages (Table 32) of adoption of digital technologies. This is done with an adapted instrument based on the research of Gerald Knezek and Rhonda Christensen.[4]

Table 32: Six stages of adoption of ICT, as identified by G Knezek and R. Christensen

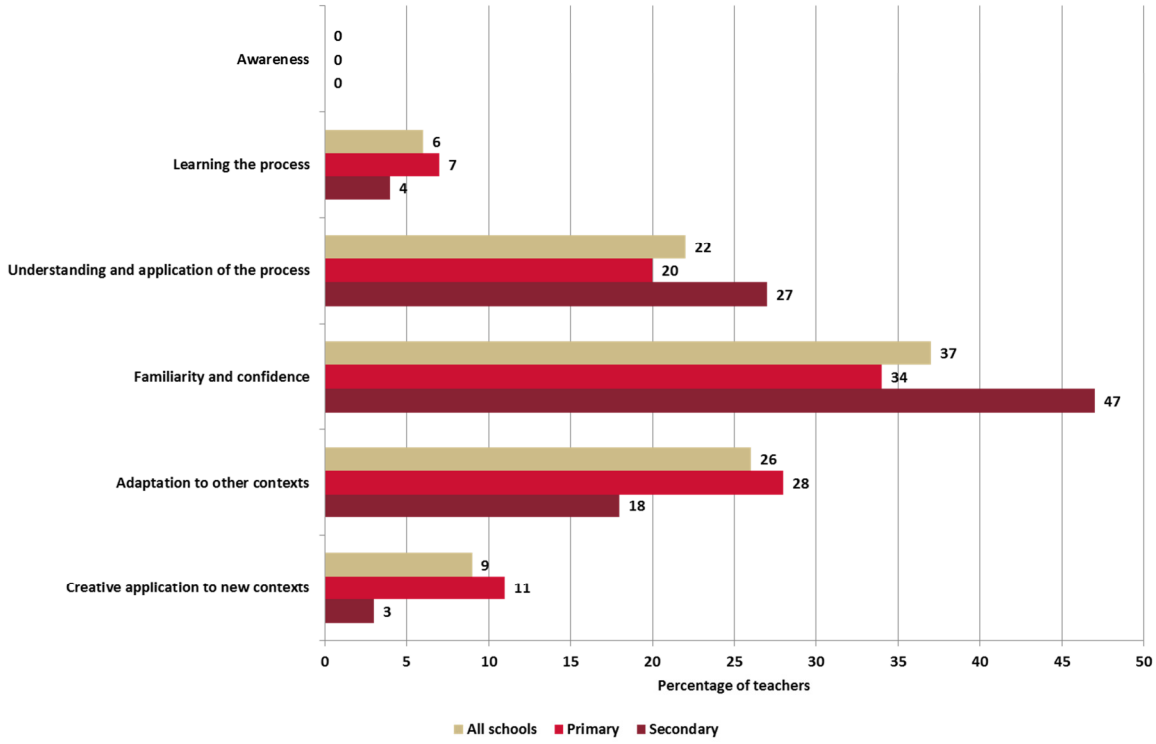
Awareness They are aware of digital technologies but have not used them - perhaps they're even avoiding them.
Learning the process They are currently trying to learn the basics. They are often frustrated using computers and the internet. They lack confidence when using computers.
Understanding the application of the process They are beginning to understand the process of using digital technologies and can think of specific tasks in which they might be useful.
Familiarity and confidence They are gaining a sense of confidence in using digital technologies for specific tasks. They are starting to feel comfortable using digital technologies.
Adaptation to other contexts They think about digital technologies as tools to help them and are no longer concerned about it as technology. They can use digital technologies in many applications and as instructional aids.
Creative application to new contacts They can apply what they know about digital technologies in the classroom. They can use them as an instructional tool and integrate them into the curriculum.

As detailed in Figure 10 overleaf, most teachers in surveyed New Zealand schools (72 percent) are in one of the later three stages of adoption of digital technologies – familiarity and confidence (37 percent), adaption to other contexts (26 percent) or creative application to new contexts (nine percent). However, roughly one-in-four principals reported that most teachers in their school were either in the learning stage (six percent), or understanding the application of the process stage (22 percent).

As noted previously in the introduction to this report, the current year's survey is not directly comparable to previous iterations, due to changes in sampling and surveying methodology. However, the results of this year's survey suggests that teachers have moved backward somewhat in relation to the six stages of ICT adoption, with larger proportions reported as being in Stage 3 (22 percent, compared with five percent in 2011) and smaller proportions being reported as being at Stage 6 (nine percent, compared with 19 percent in 2011). This is likely a reflection of the significant changes and development that has occurred since the previous survey, in relation to digital technologies, especially personal digital devices for learning.

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

Figure 10: Teachers' adoption of digital technologies in school



Significant differences by school type

Primary versus secondary schools

Secondary school principals were significantly more likely than their peers in primary schools to report that most teachers were currently at Stage 4 (familiarity and confidence) in relation to the adoption of digital technology (47 percent and 34 percent, respectively).

In contrast, significantly more primary schools (28 percent) than secondary schools (18 percent) reported most teachers were now at Stage 5 (adaptation to other contexts).

Primary schools were also significantly more likely than secondary schools (11 percent and three percent, respectively) to report that most teachers were at Stage 6 (creative application to new contexts).

Decile bands

Decile 1-3 schools and Decile 7-10 schools were significantly more likely to report that most teachers were currently at Stage 5 (29 percent), than were Decile 4-6 schools (18 percent).

Decile 4-6 schools were more likely than Decile 1-3 schools to report that most teachers were at Stage (45 percent and 29 percent, respectively).

8.0 Digital technologies expenditure

This chapter examines schools ICT expenditure as a percentage of their Operations Grant.

8.1 ICT expenditure as percentage of Operations Grant

All principals were asked what the total amount of their school's Operations Grant for 2013 was. While roughly one-in-four principals reported they did not know or would rather not say, the remainder provided details of their 2013 Operations Grant. This information has been grouped in dollar bands as detailed below (Table 33).

The majority of responding schools (63 percent) reported an Operations Grant of $400,000 or less, while 25 percent said their school received a grant of between $400,001 and $1,000,000. A small proportion (12 percent) reported grants of more than $1,000,000 for the 2013 operations year.

Table 33:

P-Q24. What was the total amount of your school's Operations Grant for 2013?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	344*	283	53	6**	2**
Weighted base =	344*	284	52	6**	2**
	%	%	%	%	%
$100,000 or below	16	19	2	17	0
$100,001 - $200,000	20	23	6	33	0
$200,001 - $400,000	27	30	6	33	50
$400,001 - $600,000	15	17	9	0	0
$600,001 - $1,000,000	10	8	23	17	0
$1,000,001 - $1,500,000	5	2	15	0	50
$1,500,001 or more	7	1	40	0	0
Total	100	100	100	100	100

Total may not sum to 100% due to rounding.
*Sub-sample based on those respondents who provided the amount of their school's Operations Grant for 2013.
**Caution: low base number of respondents - results are indicative only.

As a follow-up question, all principals were asked to estimate what proportion of their Operations Grant was used for expenditure on different digital technologies and related services (Table 34).

Fifty-nine percent of schools reported spending between one and 10 percent of their Operations Grant on digital technologies including spending on hardware, leases, equipment and technical support. The majority of schools, however, reported spending five percent or less of their Operations Grant on the following: Internet access (70 percent), online learning resources (74 percent) and/or school-funded PLD for staff in using digital technologies (69 percent).

Table 34:

P-Q25. Approximately how much of your school's 2013 Operations Grant did you school spend on digital technologies and services?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Digital technologies (this includes spending on hardware, leases, equipment and technical support)					
Unweighted base =	453	347	92	9**	5**
Weighted base =	453	348	91	9**	5**
None	0	0	0	0	0
1%-5%	23	24	17	33	40
6%-10%	36	37	30	22	40
11%-15%	16	16	20	11	0
16%-20%	6	7	2	0	0
More than 20%	5	4	5	22	20
Don't know	14	11	25	11	0
Total	100	100	100	100	100
Internet Access					
Unweighted base =	452	346	92	9**	5**
Weighted base =	452	347	91	9**	5**
None	3	3	2	0	0
1%-5%	67	68	64	56	80
6%-10%	11	12	7	22	20
11%-15%	3	3	3	11	0
16%-20%	2	2	0	0	0
More than 20%	1	1	0	0	0
Don't know	14	11	24	11	0
Total	100	100	100	100	100
Online learning resources					
Unweighted base =	452	346	92	9**	5**
Weighted base =	452	347	91	9**	5**
None	11	10	12	33	40
1%-5%	63	67	52	33	40
6%-10%	6	6	7	11	20
11%-15%	2	1	2	0	0
16%-20%	1	2	0	0	0
More than 20%	1	1	0	0	0
Don't know	15	12	27	22	0
Total	100	100	100	100	100
School-funded PLD for staff in using digital technologies					
Unweighted base =	453	347	92	9**	5**
Weighted base =	453	348	91	9**	5**
None	15	17	8	33	0
1%-5%	54	55	52	33	80
6%-10%	12	13	10	0	0
11%-15%	3	3	3	11	0
16%-20%	2	2	1	0	20
More than 20%	1	1	1	11	0
Don't know	13	10	25	11	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely than secondary schools to report that none of their Operations Grant for 2013 was spent on school-funded PLD for staff in using digital technologies (17 percent and eight percent, respectively).

Decile bands

Decile 4-6 schools were significantly more likely than Decile 7-10 schools to report that none of their Operations Grant for 2013 was spent on school-funded PLD for staff in using digital technologies (11 percent and 21 percent, respectively).

In contrast Decile 7-10 schools were significantly more likely to report spending between six and 10 percent of their operations grant on school-funded PLD for staff in using digital technologies (18 percent), than were Decile 1-3 and 4-6 schools (eight percent and seven percent, respectively).

8.1.1 Key influencers for school expenditure on digital technology

All principals were asked to identify, from a list, which parties have the most influence on their schools expenditure on digital technologies (Table 35).

Ninety percent of principals identified school management as having the most influence, distantly followed by the schools ICT staff (47 percent), and/or the school's Board members (46 percent).

One-in-five also reported that providers of external professional advice had the most influence, while the same proportion (20 percent) said the school's students had the greatest influence on its expenditure on digital technologies.

Table 35:

P-Q26. From the list below, who has the most influence on your school's expenditure on digital technologies?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	455	347	93	10**	5**
Weighted base =	455	348	92	10**	5**
	%	%	%	%	%
School management	90	90	88	90	100
ICT staff	47	44	56	30	100
Board members	46	48	39	50	60
External professional advice	20	20	20	20	0
Students	20	20	22	40	0
Community	13	14	9	20	0
Ministry of Education	8	8	6	20	20
Teachers	2	2	2	10	0
Other	2	2	0	20	0

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report that ICT staff had the most influence on the school's expenditure on digital technologies (56 percent compared with 44 percent).

Decile bands

Decile 1-3 and Decile 7-10 schools were significantly more likely to report external professional advice had the most influence on the school's expenditure on digital technologies (26 percent and 22 percent, respectively), than were Decile 4-6 schools (10 percent).

Decile 7-10 schools were significantly more likely than Decile 4-6 schools to report their community had the most influence (17 percent and nine percent, respectively).

8.2 Changes to schools' spending on digital technology in 2014

Principals were also asked to report whether they anticipated spending more, less or the same amount on digital technologies and services in 2014, as they did in 2013 (Table 36 overleaf).

In most cases, more than half of all principals expected to spend roughly the same amount in 2014 as they did in 2013 on the following digital technologies and services:

- Consumables (e.g. printer paper, ink etc.; 65 percent)
- Software (61 percent)
- Subscriptions to online services (58 percent)
- Leasing of hardware (56 percent)
- Payments for remotely hosted services, e.g. offsite back-ups (54 percent)
- Teacher release time relating to digital technologies PLD (50 percent).

In relation to hardware acquisition, 47 percent of principals reported they expect to spend less on the purchase of desktop computers in 2014 than they did in 2013. However, 49 percent said they expected their school would be spending more to purchase portable computers. Thirty-nine percent also reported they expect to spend more in 2014 to purchase tablets than they did in 2013.

Table 36:

P-Q27. In relation to your school's spend on digital technologies in 2013, do you anticipate spending more, less or the same amount in 2014?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Purchase of desktop computers					
Unweighted base =	452	345	92	10**	5**
Weighted base =	452	346	91	10**	5**
Less	47	49	42	30	60
Same	25	20	41	20	40
More	11	11	7	40	0
None	16	19	7	10	0
Don't know	1	0	3	0	0
Total	100	100	100	100	100
Purchase of portable computers (e.g. laptops, netbooks, chromebooks)					
Unweighted base =	451	344	92	10**	5**
Weighted base =	451	345	91	10**	5**
Less	15	15	17	10	20
Same	28	28	33	10	20
More	49	51	41	60	60
None	7	6	7	20	0
Don't know	1	0	2	0	0
Total	100	100	100	100	100
Purchase of tablets					
Unweighted base =	452	345	92	10**	5**
Weighted base =	452	346	91	10**	5**
Less	17	15	23	10	0
Same	24	24	22	20	60
More	39	42	28	50	40
None	17	17	21	20	0
Don't know	3	2	7	0	0
Total	100	100	100	100	100
Subscriptions to online services					
Unweighted base =	451	344	92	10**	5**
Weighted base =	451	345	91	10**	5**
Less	6	6	5	0	0
Same	58	60	55	30	80
More	28	27	32	40	20
None	4	4	2	30	0
Don't know	3	3	5	0	0
Total	100	100	100	100	100
Lease of hardware					
Unweighted base =	450	343	92	10**	5**
Weighted base =	450	344	91	10**	5**
Less	11	11	11	20	0
Same	56	57	54	20	100
More	18	19	14	30	0
None	12	10	16	30	0
Don't know	2	2	4	0	0
Total	100	100	100	100	100

continued…

Table 36: (cont.)

P-Q27. In relation to your school's spend on digital technologies in 2013, do you anticipate spending more, less or the same amount in 2014?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Software					
Unweighted base =	451	344	92	10**	5**
Weighted base =	451	345	91	10**	5**
Less	12	13	8	10	0
Same	61	60	66	30	80
More	19	18	20	40	20
None	5	6	1	20	0
Don't know	3	3	5	0	0
Total	100	100	100	100	100
Technical support and maintenance (both hardware and software)					
Unweighted base =	452	345	92	10**	5**
Weighted base =	452	346	91	10**	5**
Less	5	4	7	10	0
Same	58	57	62	40	40
More	36	37	29	40	60
None	1	1	0	10	0
Don't know	1	1	2	0	0
Total	100	100	100	100	100
Consumables (e.g. printer paper, ink)					
Unweighted base =	452	345	92	10**	5**
Weighted base =	452	346	91	10**	5**
Less	16	14	25	10	0
Same	65	66	58	80	80
More	18	19	15	0	20
None	0	0	0	10	0
Don't know	0	0	2	0	0
Total	100	100	100	100	100
Teacher PLD for digital technologies (including advisors paid to visit school)					
Unweighted base =	452	345	92	10**	5**
Weighted base =	452	346	91	10**	5**
Less	6	6	4	0	0
Same	49	49	48	30	80
More	38	37	41	50	20
None	5	5	3	20	0
Don't know	3	3	3	0	0
Total	100	100	100	100	100
Teacher release time relating to digital technologies PLD					
Unweighted base =	452	345	92	10**	5**
Weighted base =	452	346	91	10**	5**
Less	5	5	5	10	0
Same	50	52	42	20	60
More	38	35	43	60	40
None	6	6	3	10	0
Don't know	2	1	5	0	0
Total	100	100	100	100	100

continued…

Table 36: (cont.)

P-Q27. In relation to your school's spend on digital technologies in 2013, do you anticipate spending more, less or the same amount in 2014?

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Purchase of network infrastructure technologies					
Unweighted base =	451	344	92	10**	5**
Weighted base =	451	345	91	10**	5**
Less	16	17	12	10	0
Same	37	33	48	30	80
More	40	41	37	40	20
None	5	6	0	20	0
Don't know	3	3	3	0	0
Total	100	100	100	100	100
Internet charges					
Unweighted base =	452	345	92	10**	5**
Weighted base =	452	346	91	10**	5**
Less	29	28	38	10	0
Same	46	46	46	70	40
More	21	23	12	20	60
None	1	1	0	0	0
Don't know	2	2	4	0	0
Total	100	100	100	100	100
Payments for remotely hosted services, e.g. offsite backups					
Unweighted base =	451	344	92	10**	5**
Weighted base =	451	345	91	10**	5**
Less	9	10	8	10	0
Same	54	54	54	40	60
More	16	15	20	0	40
None	14	14	12	30	0
Don't know	7	7	7	20	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report they expected to spend the same on the purchase of desktops computers in 2014 as they did in 2013 (41 percent and 20 percent, respectively). In contrast, primary schools were significantly more likely to report they expected to spend more on the purchase of tablets (42 percent), than were secondary schools (28 percent).

Secondary schools were also significantly more likely to report they expected to spend less on consumables in 2014, than primary schools (25 percent and 14 percent, respectively), while being more likely to report they expected to spend about the same on the purchase of network infrastructure technologies (48 percent and 33 percent, respectively).

Decile bands

Decile 1-3 schools were significantly more likely to report they expected to spend more on desktop computers in 2014 than in 2013, when compared with Decile 4-6 schools (15 percent and seven percent, respectively). Decile 1-3 schools were also more likely than Decile 7-10 schools to expect spending more on the purchase of portable computers (e.g. laptops, netbooks, chromebooks; 59 percent and 42 percent, respectively).

Reflecting the expected increases in spending on desktop and portable computers Decile 1-3 schools were less likely to report a decrease in spending on consumables (nine percent) than were Decile 4-6 and 7-10 schools (19 percent of both decile groups reported they expect to spend less on consumables).

Decile 7-10 schools were significantly more likely than Decile 4-6 schools to report they expect to spend more on Teacher PLD for digital technologies (43 percent and 31 percent, respectively).

9.0 Digital equipment and technology stocktake

This section of the report identifies what types of digital technology equipment staff and students have access to in schools.

9.1 Computers in schools

Respondents to the Equipment Survey were asked to state the number of computers (leased or owned by the school) that the school currently holds. They were asked to include all desktop, laptops, netbook and tablet computers available for use by administrators, teachers, and students that have been provided by the school. Computers and digital devices to be excluded from this computer stocktake exercise were broken equipment, obsolete equipment for which the school no longer has compatible software, smartphones and any items privately owned by parents, staff or students.

Based on the counts provided by each school, and information about the number of students the ratio of students to computers can be calculated. Figure 11 overleaf details the average number of students per computer over time, since 1995, for primary and secondary schools.

Notably, the average number of students per computer in secondary schools has remained static, at roughly three students per computer, since the 2007 ICT in schools survey. The number of students per computer in primary schools reached the same level (roughly three students per computer on average) in 2011 and remains unchanged in 2014.

As in earlier surveys, the relationship between the socio-economic status (SES) decile for each school and the number of students per computer at each school was investigated as well. Overall the survey suggests that the number of students per computer in primary schools across the different deciles, as indicated by the dark trend line on each figure, is fairly stable.

The trend line for secondary schools, however, indicates a slight increase in the average number of students per school-owned computer among secondary schools in decile 8, 9 and 10 schools. This may in part be a function of students in higher decile schools being more likely to own a portable digital device than students in lower decile schools.

Figure 11: Number of students per school-owned computer 1995-2014

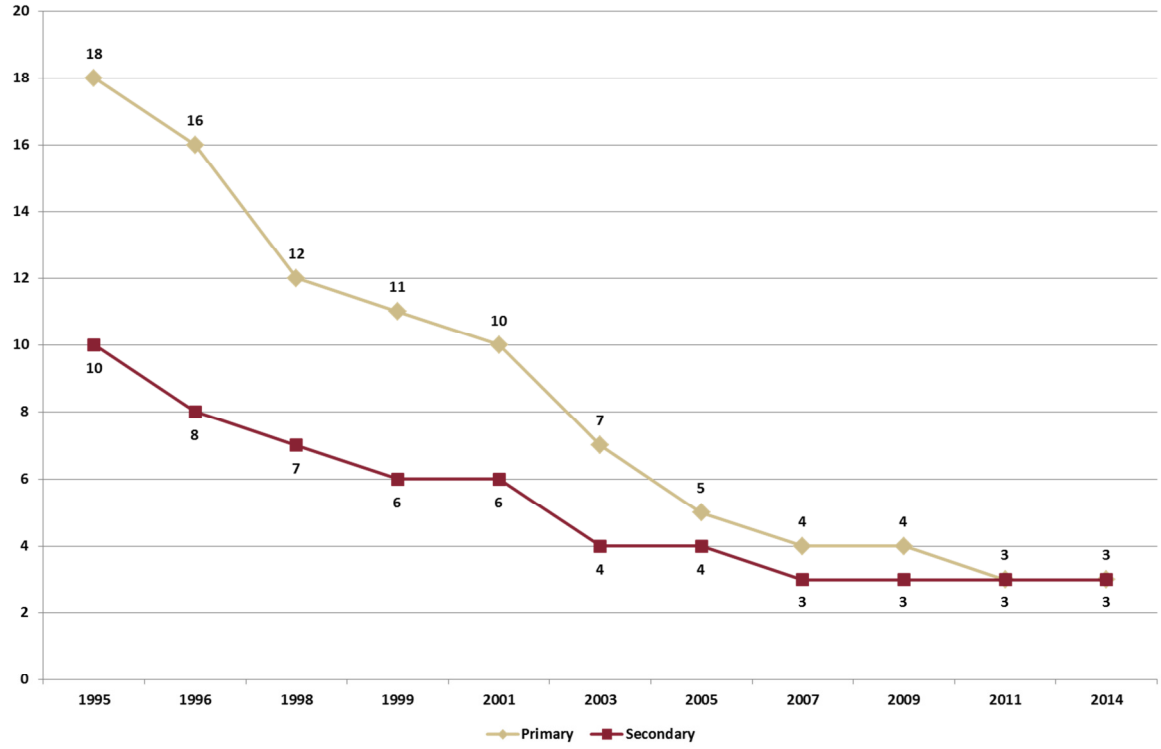
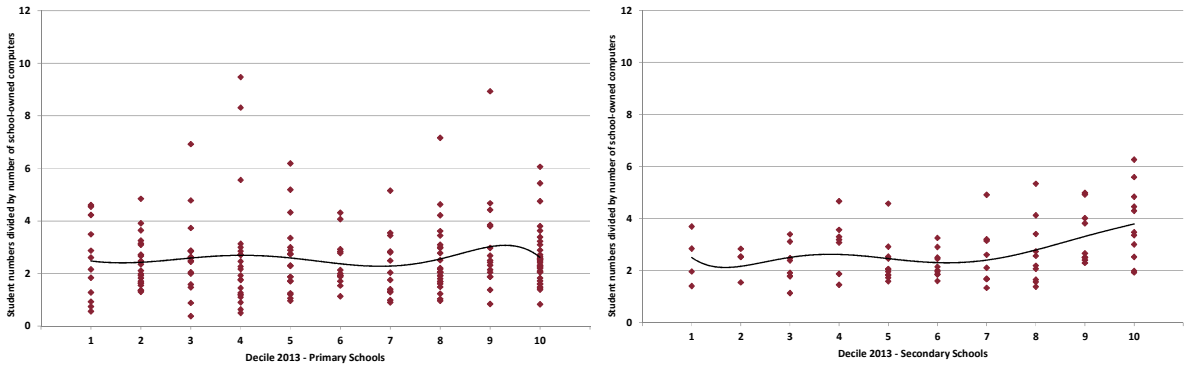


Figure 12: Students per school-owned computer by socio-economic decile (primary and secondary schools)



9.1.1 Proportions of different types of school-owned computers in schools

Respondents to the Equipment Survey, were asked to estimate what proportions of different types of computers their school had (Figure 13).

Thirty-nine percent of responding schools reported 50 percent or more of their computing devices were desktops (PC and Apple), while 33 percent estimated 50 percent or more of their devices were laptops. Twelve percent of schools estimated that 50 percent or more of their computing devices were tablets.

Figure 13: Types of school-owned computers

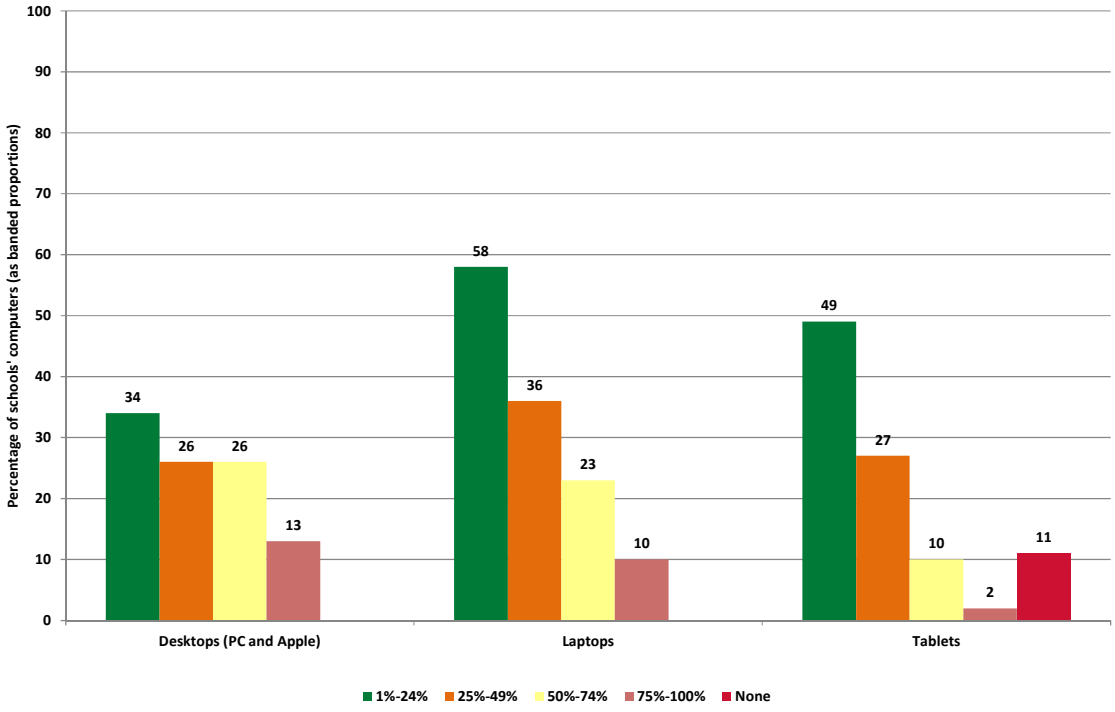


Table 37:

E-Q2. Please estimate the proportions of the school's different types of computers.

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
Desktops (PCs and Apples)					
Unweighted base =	299	190	84	13**	12**
Weighted base =	299	220	55	12**	12**
None	0	1	0	0	0
1%-9%	15	19	1	10	8
10%-24%	19	21	13	6	25
25%-49%	26	28	17	37	25
50%-74%	26	22	40	31	33
75%-99%	13	9	29	16	8
100%	0	1	0	0	0
Total	100	100	100	100	100
Laptops (excluding tablets)					
Unweighted base =	299	190	84	13**	12**
Weighted base =	299	220	55	12**	12**
None	0	1	0	0	0
1%-9%	8	8	8	10	8
10%-24%	23	22	32	6	8
25%-49%	36	35	39	57	33
50%-74%	23	25	12	16	33
75%-99%	10	9	8	11	17
100%	0	0	0	0	0
Total	100	100	100	100	100
Tablets/iPads					
Unweighted base =	299	190	84	13**	12**
Weighted base =	299	220	55	12**	12**
None	11	9	15	27	0
1%-9%	27	21	57	10	17
10%-24%	22	23	18	10	42
25%-49%	27	32	7	27	33
50%-74%	10	12	2	26	8
75%-99%	2	3	0	0	0
100%	0	1	0	0	0
Total	100	100	100	100	100

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

9.1.2 Percentage of computing devices owned/leased

Respondents to the Equipment Survey were asked to estimate the proportion of the school's computers that were currently leased (Table 38).

Roughly one quarter of schools (27 percent) reported they either did not have any leased computers (11 percent), or that between one and nine percent of the schools computers were currently leased (16 percent). A similar proportion (28 percent) reported that at least 50 percent of the schools computers were currently leased.

Table 38:

E-Q3. Please estimate the proportion of the school's computers that are currently leased.

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	300	191	84	13**	12**
Weighted base =	300	221	55	12**	12**
	%	%	%	%	%
None	11	10	13	10	17
1%-9%	16	19	10	6	0
10%-24%	30	30	31	37	17
25%-49%	15	14	13	26	25
50%-74%	14	14	12	0	33
75%-99%	11	9	18	16	8
100%	3	3	4	6	0
Don't know	0	1	0	0	0
Would rather not say	0	1	0	0	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to report between 50 percent or more of the school's computing devices were desktop computers (69 percent), than primary schools (32 percent).

In contrast, primary schools were significantly more likely to report 50 percent or more of the schools computing devices were laptops (34 percent), compared with 20 percent of secondary schools.

Primary schools were also significantly more likely to report a significant proportion of the school's computing devices were tablets (47 percent reported 25 percent or more of the schools computing devices were tablets, compared with nine percent of secondary schools).

Secondary schools were significantly more likely than primary schools to report that more than 75 percent of the school's computers were currently leased (22 percent and 12 percent, respectively).

Decile bands

Decile 1-3 schools were significantly more likely than Decile 7-10 schools to report that 75 percent or more of the schools computing devices were desktop computers (20 percent compared with eight percent).

Decile 7-10 schools were significantly more likely than Decile 4-6 schools to report between 25 percent and 49 percent of the schools computing devices were laptops (43 percent and 28 percent, respectively).

Decile 1-3 schools were significantly less likely than Decile 4-6 schools to report between 25 percent and 49 percent of the schools computing devices were tablets (19 percent and 32 percent, respectively).

Decile 1-3 and 4-6 schools were significantly more likely to report between 10 and 24 percent of the school's computers were leased (37 percent and 36 percent, respectively), than were Decile 7-10 schools (22 percent).

Decile 7-10 schools were significantly more likely than Decile 1-3 schools to report that none of the schools computers were leased (14 percent and six percent, respectively).

9.2 Operating systems used

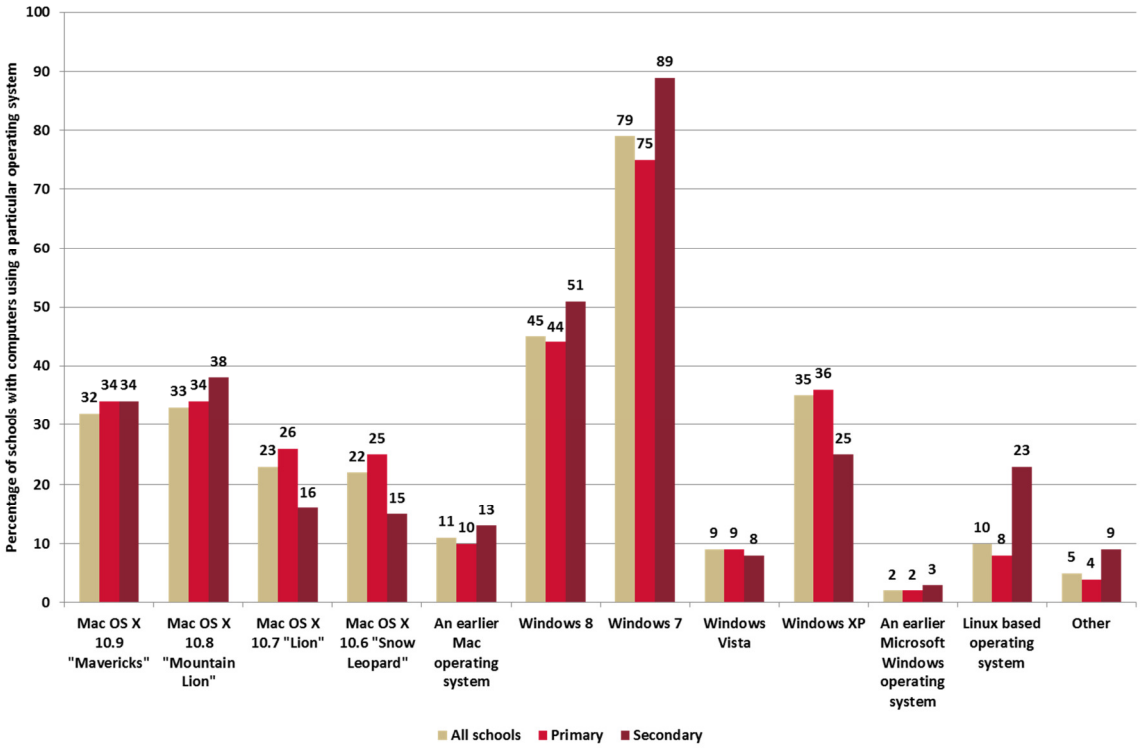
9.2.1 Desktop and laptop computers

Respondents were asked to identify, from a list, all of the operating systems currently being used on the schools' desktop and/or laptop computers (Figure 14).

The most frequently used operating system being used by schools on desktop and laptop computers was Windows 7 (noted by 79 percent of all respondents). Of note, approximately one third of schools reported they have computers using Windows XP (35%), which ceased being supported by Microsoft in April 2014.

Similar proportions of schools reported having computers using either Mac OSX Mavericks (32 percent) or Mac OSX Mountain Lion (33 percent).

Figure 14: Percentage of schools using particular operating systems – desktops and laptop computers



Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to report having computers using Windows 7 as an operating system (89 percent), than primary schools (75 percent).

Secondary schools were also significantly more likely than primary schools to report having computers using a Linux-based operating system (23 percent compared with eight percent).

Decile bands

Decile 7-10 schools were significantly more likely than Decile 1-3 schools to report having computers using Mac OS X 10.9 “Mavericks” (40 percent and 21 percent, respectively) and/or Mac OS X 10.8 “Mountain Lion” (40 percent and 23 percent, respectively).

In contrast, both Decile 1-3 and 4-6 schools were significantly more likely to report having computers using Windows 7 an operating system (84 percent and 85 percent, respectively), than were Decile 7-10 schools (71 percent).

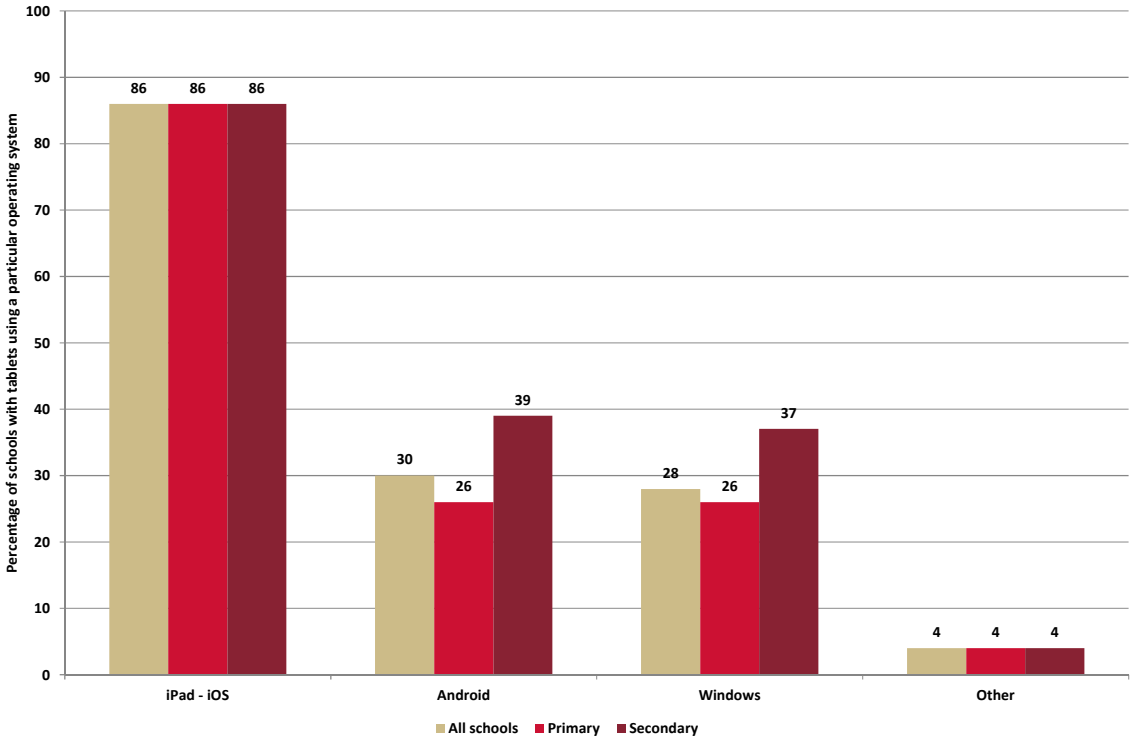
Decile 4-6 schools were also significantly more likely to report having computers using the now unsupported operating system Windows XP (43 percent), than Decile 7-10 schools (28 percent).

9.2.2 Tablets

Respondents that reported their school had currently leased or owned tablet computers were asked to identify, from a list, what operating systems were being used on those tablets (Figure 15).

The most frequently used operating system being used by schools on tablet computers was iPad IOS (noted by 86 percent of all respondents), while smaller proportions of schools reported having tablets that used Android (30 percent) or Windows (28 percent) as an operating system.

Figure 15: Percentage of schools using particular operating systems – tablets



Significant differences by school type

Primary versus secondary schools

There were no statistically significant differences in relation to the above findings between primary schools and secondary schools.

Decile bands

Decile 7-10 schools were significantly more likely to report having tablet computers using iPad – iOS as an operating system (91 percent), than Decile 1-3 schools (76 percent).

9.3 Brands of digital equipment used by schools

9.3.1 Brands of computing devices owned/leased and future purchase/lease plans

Respondents to the Equipment Survey were asked to identify from a list those brands of computing devices where the school currently has at least one such device, including desktop computers, laptops, netbooks and tablets that their school currently owns (Table 39). Likely reflecting the large proportion of schools that reported owning tablets using iPad IOS, the most frequently identified computer brand was Apple (noted by 76 percent of respondents), closely followed by Hewlett Packard/Compaq (73 percent of all schools).

Over one-half of all schools reported having devices made by Toshiba (56 percent); 36 percent have Acer-branded computer devices, while a quarter of schools reported having computing devices made by Dell (24 percent).

Table 39:

E-Q10a. Of all the computing devices owned by your school (this includes desktop computers, laptops, netbooks and tablets), for each of the following brands identify those brands where the school currently has at least one such device?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	289*	182	82	13**	12**
Weighted base =	288*	211	53	12**	12**
	%	%	%	%	%
Apple	76	76	74	69	92
Hewlett Packard (HP)/Compaq	73	71	82	53	83
Toshiba	56	53	60	58	83
Acer	36	37	38	26	25
Dell	24	20	35	20	33
Microsoft	20	19	23	17	17
Samsung	20	19	26	6	33
Asus	15	14	16	31	17
Lenovo/IBM	14	9	30	20	8
Sony	6	5	4	16	17
Cyclone	4	2	7	6	8
Insite/Itec/MSI	3	2	5	10	0
R1 All-in-One	3	2	5	10	0
Ultra	1	1	4	0	0
Other	8	8	9	6	8

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to report having Dell (35 percent) or Lenovo/IBM brand computing devices (30 percent), than were primary schools (20 percent of which reported having Dell devices and nine percent of which had Lenovo/IBM devices).

Decile bands

Decile 1-3 schools were significantly less likely to report having Apple computing devices (58 percent), than Decile 4-6 and 7-10 schools (80 percent and 85 percent, respectively).

Decile 1-3 and Decile 7-10 schools were significantly more likely to report having Lenovo/IBM devices (16 percent and 17 percent, respectively), than Decile 4-6 schools (six percent).

Decile 4-6 schools, however, were significantly more likely to report having Toshiba computing devices than were Decile 7-10 schools (66 percent compared with 49 percent).

9.3.2 Purchase/leasing intentions of schools

Respondents to the Equipment Survey were also asked about their computing devices' leasing/purchasing intentions in the future (Table 40). In relation to the results in Table 40, caution should be exercised by the reader when interpreting these findings, as roughly two-thirds of all respondents opted to not answer this particular question.

Half reported they intended to lease or purchase an Apple computing device (49 percent), while 31 percent said they intended to acquire a Hewlett Packard/Compaq computing device. Sixteen percent, however said they had no intention of leasing or purchasing computing devices in the foreseeable future.

Table 40:

E-Q10b. Of all the computing devices owned by your school (this includes desktop computers, laptops, netbooks and tablets), which of the following brands do you plan to lease/purchase?

	Total
Unweighted base =	97*
Weighted base =	96*
	%
Apple	49
Hewlett Packard (HP)/Compaq	31
Toshiba	18
Samsung	13
Acer	12
Dell	10
Microsoft	8
Asus	6
Lenovo/IBM	6
Sony	3
Atech	2
Cyclone	2
Insite/Itec/MSI	2
Motorola	2
R1 All-in-One	2
TMC	2
Ultra	2
Other	10
No computing devices	16

Total may exceed 100% because of multiple responses.
*Sub-sample. Only one-third of respondents opted to indicate their leasing/purchasing intentions in relation to computing devices.

Significant differences by school type

Due to the small sub-samples involved, further analysis of these results by school type or decile band is not possible.

9.3.3 Monitors with LCD screens owned/leased and future purchase/lease plans

Respondents to the Equipment Survey were asked to identify the different brands of LCD screen monitors that the school had at the time of surveying (Table 41).

Approximately one-half of responding schools reported having Hewlett Packard/Compaq/Digital LCD monitors (48 percent), distantly followed by Apple (26 percent), Viewsonic (25 percent), Dell (23 percent), Acer (22 percent) and Philips (21 percent). Between 11 percent and 14 percent of schools also reported having LCD screen monitors made by Samsung, Toshiba, AOC and LG Electronics.

Five percent of responding schools reported not having any monitors with LCD screens.

Table 41:

E-Q12a. Of the monitors used with computers in your school, which of the following brands do you currently have that have LCD screens?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	282	181	78	13**	10**
Weighted base =	282	210	51	12**	10**
	%	%	%	%	%
Hewlett Packard (HP)/Compaq/Digital	48	47	51	43	50
Apple	26	25	29	37	10
Viewsonic	25	20	42	11	40
Dell	23	21	33	20	20
Acer	22	22	27	20	20
Philips	21	19	35	10	20
Samsung	14	10	27	21	0
Toshiba	14	15	13	6	10
AOC	13	10	24	21	10
LG Electronics	11	10	17	6	20
Lenovo/IBM	8	6	14	20	0
Panasonic	8	8	8	16	10
Asus	7	6	6	16	10
Sony	5	6	5	0	0
BenQ	3	2	5	0	0
3M	1	1	1	0	0
DSE	1	1	0	0	0
Gateway	1	1	0	0	0
Mitsubishi	1	1	1	0	0
Other	4	5	3	0	0
School does not have any LCD monitors	5	6	1	10	10

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

Respondents to the Equipment Survey were also asked about their school's intentions to lease or purchase monitors with LCD screens in the future (Table 42). However, in relation to the results in Table 42, caution should be exercised when interpreting these findings as most respondents opted to not answer this particular question.

Thirty-one percent of the sub-sample said they intended to acquire Hewlett Packard/Compaq monitors, while 25 percent reported they intended to acquire Apple monitors.

Table 42:

E-Q12b. Of the monitors used with computers in your school, which of the following brands do you currently plan to lease/purchase?

	Total
Unweighted base =	42*
Weighted base =	40*
	%
Hewlett Packard (HP)/Compaq/Digital	31
Apple	25
Viewsonic	21
Dell	19
AOC	14
Samsung	14
Acer	8
Asus	7
LG Electronics	6
Philips	6
Sony	6
BenQ	5
Gateway	5
Lenovo/IBM	5
Toshiba	5
3M	2
DSE	2
Microtek	2
Mitsubishi	2
Panasonic	2
PC Direct	2
Other	7

Total may exceed 100% because of multiple responses.

Significant differences by school type

Due to the small sub-samples involved, further analysis of these results by school type or decile band was not possible.

9.3.4 Servers

Respondents to the Equipment Survey were asked to identify what brand or bands of servers the school was using currently (Table 43).

Most frequently, responding schools reported having a Hewlett Packard/Compaq server on site (35 percent), while 21 percent reported having an Apple-built server. Twenty percent of respondents said they had an IBM-branded server.

Seven percent of responding schools reported they did not have a server onsite, while three percent said they had a server that was 'custom-built' around the school's needs. Nine percent of the respondents reported having an 'other' brand of server, but in most cases the brand was not specified.

Table 43:

E-Q13. Of the servers used in your school, how many of each of the following brands do you currently own/lease? (Note: reported as the proportion of schools having at least one server of each particular brand)

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	267*	175	71	13**	8**
Weighted base =	269*	203	46	12**	8**
	%	%	%	%	%
Hewlett Packard (HP)/ Compaq	35	31	51	36	38
Apple	21	21	24	26	0
IBM	20	15	42	21	25
Acer	11	14	6	0	0
Dell	8	6	17	20	12
Insite/Itec	1	0	4	6	0
Cyclone	0	0	3	0	0
Ultra	0	0	3	0	0
Other	9	11	0	10	12
No servers	7	7	4	11	25
Custom built server	3	3	0	10	0
Don't know	2	3	1	0	0

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report having servers made by ACER (15 percent), than secondary schools (six percent).

Secondary schools were significantly more likely than primary schools to report having the following brands of servers: Hewlett Packard/Compaq (52 percent and 34 percent, respectively), IBM (43 percent and 16 percent, respectively), and/or Dell (17 percent and six percent, respectively).

Decile bands

Decile 7-10 schools were significantly more likely to report having an Apple server (31 percent), than Decile 1-3 and 4-6 schools (14 percent and 17 percent, respectively).

Decile 4-6 schools were significantly more likely than Decile 7-10 schools to report having a Hewlett Packard/Compaq server (48 percent and 33 percent, respectively).

9.3.5 Printers and copiers

Respondents to the Equipment Survey were asked to identify what brand or brands of printer copiers the school was using currently (Table 44).

One-third of responding schools reported they had at least one Minolta printer copier on site (33 percent). The second (25 percent) and third (20 percent) most frequently reported printer copier brands were Ricoh and Brother, respectively.

Between 15 and 17 percent of schools also reported having printer copiers made by Canon, Fuji Xerox and/or Hewlett Packard.

Table 44:

E-Q14. Of the printer and copiers used in your school, how many of each of the following do you currently own/lease? (Note: reported as the proportion of schools having at least one printer copier of a particular brand)

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	276*	178	76	13**	9**
Weighted base =	276*	206	50	12**	9**
	%	%	%	%	%
Minolta	33	35	26	33	33
Ricoh	25	25	21	11	44
Brother	20	14	32	37	56
Canon	17	15	16	36	44
Fuji Xerox	15	11	33	20	0
Hewlett Packard (HP)	15	12	21	31	11
Sharp	8	11	3	0	0
Toshiba	6	7	3	0	11
Epson	4	3	7	6	22
Oki	3	2	4	6	0
Kyocera	2	1	11	0	0
Lexmark	1	0	3	6	11
Panasonic	0	1	0	0	0
Other	4	4	3	0	11

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report having the following brands of printers: Fuji Xerox (33 percent compared with 11 percent), Brother (32 percent and 13 percent respectively) and/or Kyocera (11 percent and one percent, respectively).

Primary schools were significantly more likely than secondary schools to report having Sharp printers (11 percent and three percent, respectively).

Decile bands

Decile 7-10 schools were more likely to report having Fuji Xerox printers (20 percent) than Decile 4-6 schools (nine percent), and/or Epson printers (five percent, compared with only one percent of Decile 4-6 schools).

Decile 4-6 schools were significantly more likely to report having Minolta printers (51 percent) than Decile 7-10 schools (26 percent).

10.0 Procurement and disposal of digital technologies

This chapter details the factors schools take into account when making digital technology-related purchasing decisions, as well as the disposal of obsolete technology.

10.1 Factors influencing purchasing decisions

Schools were asked to identify which factors most influenced purchasing decisions when acquiring ICT equipment. This was done by presenting respondents to the Equipment Survey with a list of various factors and asking them to identify the most important, second most important and third most important factor.

Table 45 overleaf 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* and *planned student outcomes* (both 18 percent) are the factors that have the greatest importance in making such decisions, followed by *reliability* (12 percent).

Table 45: Most important factors (weighted and scaled)

E-Q15. From the following list, please identify in the table below the top three factors in order of importance, that influence you the most in your purchasing decisions when acquiring ICT equipment.

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	283*	182	78	13**	10**
Weighted base =	283*	211	51	12**	10**
	%	%	%	%	%
Purchase price	18	17	19	19	12
Planned student outcomes	18	19	11	15	10
Reliability	12	12	13	2	19
Quality	9	9	10	7	12
Known brand	6	6	8	0	9
Length of warranty and support	5	5	5	12	0
Built to order or configured to suit	4	3	5	12	10
School purchasing policy	4	5	3	1	3
Flexible financing or leasing	4	4	1	5	2
Lower total cost of ownership	4	4	6	7	0
Highly specified	3	2	4	4	3
Interoperability/unified system or solution	3	4	2	3	3
Relationship with reseller	3	2	4	5	3
Availability of specific resources	2	2	2	0	3
Relationship with vendor	2	2	3	4	2
Availability of professional development	1	1	2	0	0
Other	1	1	1	0	0
Total	100	100	100	100	100

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

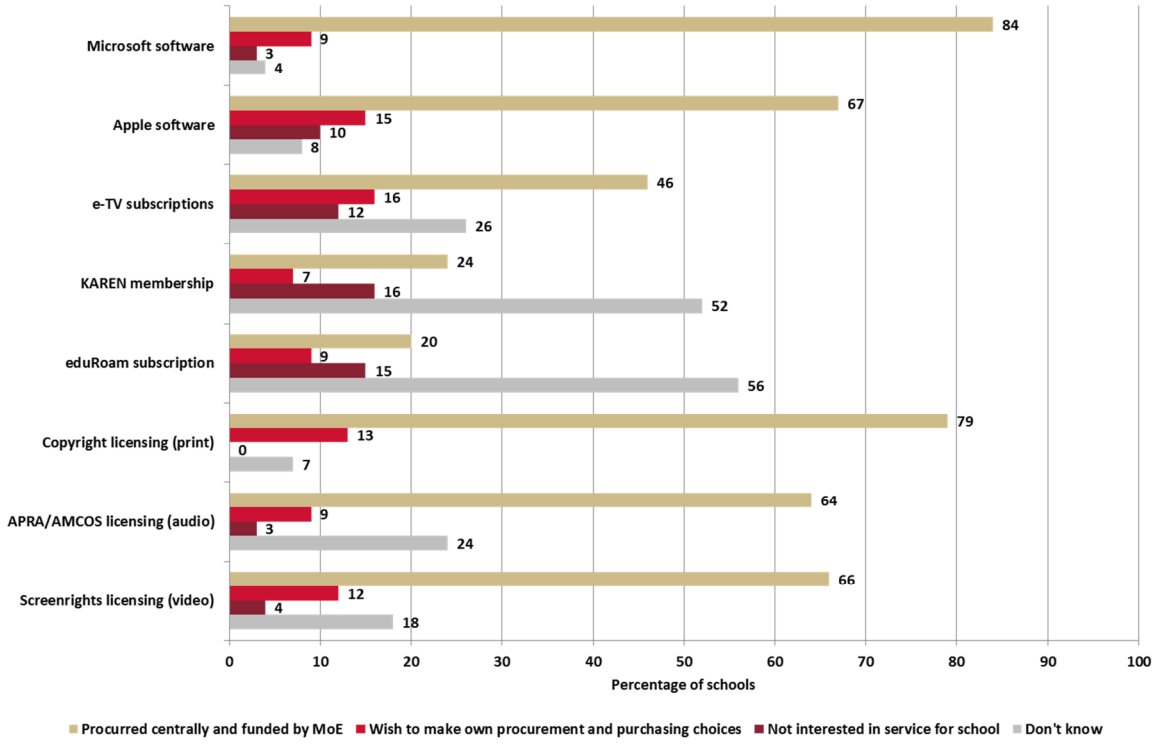
10.2 Preferred means for procuring digital technologies and services

Respondents to the Equipment Survey were asked about their preferences in relation to procurement and purchasing various digital technologies-related services (Figure 16). Most frequently, schools felt that the following services should be procured centrally and funded by the Ministry of Education:

- Microsoft software (84 percent of responding schools)
- Copyright licensing of print materials (79 percent)
- Apple software (67 percent)
- Screenrights licensing (66 percent)
- APRA/AMCOS licensing for audio materials (64 percent).

Smaller proportions of schools expressed preferences in relation to e-TV subscriptions, KAREN membership and eduRoam subscriptions; however this is due in part to the larger proportions of schools reporting they currently did not know.

Figure 16: Procurement preferences for different digital technologies-related services



Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report that the following services should be procured centrally and funded by the Ministry of Education:

- Screenrights licensing (76 percent compared with 66 percent).
- APRA/AMCOS licensing (74 percent and 61 percent, respectively).
- eTV subscriptions (58 percent and 44 percent, respectively).
- KAREN membership (42 percent and 20 percent, respectively).

Decile bands

Decile 1-3 and Decile 4-6 schools were significantly more likely to prefer that Microsoft software was procured centrally and paid for by the Ministry (90 percent and 88 percent, respectively) than Decile 7-10 schools (77 percent).

Decile 7-10 schools were significantly more likely to prefer the following services be procured centrally and funded for by the Ministry:

- Screenrights licensing (78 percent, compared with 62 percent of Decile 1-3 schools and 51 percent of Decile 4-6 schools).
- APRA/AMCOS licensing (77 percent, compared with 56 percent of Decile 1-3 schools and 54 percent of Decile 4-6 schools).
- e-TV subscriptions (58 percent, compared with 41 percent of Decile 1-3 schools and 30 percent of Decile 4-6 schools).
- KAREN membership (31 percent, compared with 17 percent of Decile 1-3 schools and 19 percent of Decile 4-6 schools).
- eduRoam subscription (23 percent, compared with 11 percent of Decile 4-6 schools).

Decile 7-10 schools were significantly more likely to report they preferred making their own procurement and purchasing decisions in relation to Apple software (20 percent), than Decile 1-3 schools (10 percent).

10.3 Disposal of obsolete digital devices

Respondents to the Equipment Survey were asked how their school disposes of computers and other digital devices that are no longer of use to the school (Table 46).

More than half of responding schools (55 percent) reported taking part in e-waste collection events, while just over one-third recycle and/or refurbish their obsolete devices.

Smaller proportions reported using such as options as landfill (19 percent), storage (15 percent) and/or a supplier 'Take Back' programme (14 percent). Just five percent of schools reported they donate devices that are considered obsolete for school purposes to the community/students/parents/other schools.

Table 46:

E-Q17. How does your school dispose of computers and other digital devices that are no longer of any use?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	281	180	78	13**	10**
Weighted base =	281	209	51	12**	10**
	%	%	%	%	%
We take part in e-waste collection events	55	56	54	43	60
Recycling/ refurbishment	37	37	32	42	50
Landfill	19	19	18	30	20
In storage	15	15	21	6	10
Supplier 'Take Back'	14	14	17	27	0
Donate to community/students/ parents/other school	5	5	9	0	0
Sell	1	1	1	0	0
Other	2	1	4	0	0
Never had to dispose	3	3	1	0	0
Don't know	3	3	5	0	10

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

Significant differences by school type

Primary versus secondary schools

There were no statistically significant differences in relation to the disposal of computers and digital devices between primary and secondary schools.

Decile bands

Decile 4-6 and Decile 7-10 schools were significantly more likely to report disposing of computers and digital devices by sending them to a landfill (27 percent and 20 percent, respectively), than Decile 1-3 schools (10 percent).

11.0 School network management

This section of the report looks at schools' network management practices.

11.1 Current network infrastructure to support student learning

Respondents to the Equipment Survey were asked to detail how their school's current network infrastructure supports students' learning with personal digital learning devices (Table 47 overleaf).

WiFi

Eighty-seven percent of responding schools reported WiFi access was available in all classrooms, while 63 percent said it was also available in the school library and other shared learning spaces. Fifty-five percent also reported WiFi access was available in outside areas of the school that were frequented by students.

Approximately one-third of respondents (36 percent) reported that the WiFi capability at their school was extremely robust and had been tested with large numbers of students. Slightly more respondents (39 percent) felt their school's WiFi capability was robust, but also reported it had not been tested with large numbers of students. One-in-five schools said their school had limited WiFi capability (22 percent).

School Network Upgrade Programme (SNUP)

Two-thirds of responding schools (65 percent) reported that the school had been SNUPed already, while one-in-five (22 percent) expected this would occur during the next 12 months.

UFB/RBI

Over half of respondents to the Equipment Survey (54 percent) reported that their school is using a UFB/RBI connection, while a further 13 percent said the school had a UFB/RBI connection, but that it was not being used yet.

Fourteen percent of responding schools reported that their school is expecting to be connected to the Internet by a UFB/RBI connection sometime during the next 12 months, while nine percent were not sure when this would occur. A similar proportion (10 percent) did not know whether or not the school had a UFB/RBI connection.

Table 47:

E-Q18 For the following aspects, please detail how your school's current network infrastructure supports students learning with personal digital learning devices.

	Total %	Primary %	Secondary %	Māori Medium %	Special school %
WiFi Access					
Unweighted base =	281	180	78	13**	10**
Weighted base =	281	209	51	12**	10**
Outside areas frequented by students	55	54	71	53	10
All classrooms	87	89	82	84	70
Selected classrooms only	7	4	12	20	20
Library and other shared learning spaces	63	63	74	42	30
None	6	7	4	6	0
WiFi Capability in school is...					
Unweighted base =	282	181	78	13**	10**
Weighted base =	282	210	51	12**	10**
Extremely robust and tested with large numbers of students	36	36	42	31	10
Robust but not tested with large numbers of students	39	38	45	31	50
Limited capacity	22	23	9	37	40
Don't really know	3	3	4	0	0
Total	100	100	100	100	100
School Network Upgrade Programme (SNUP)					
Unweighted base =	282	181	78	13**	10**
Weighted base =	282	210	51	12**	10**
School has been SNUPed	65	64	69	73	50
School will be SNUPed during next 12 months	22	25	13	10	10
No date yet for SNUP	9	7	10	11	40
Don't know	4	4	8	6	0
Total	100	100	100	100	100
UFB/RBI					
Unweighted base =	281	180	78	13**	10**
Weighted base =	281	209	51	12**	10**
School is using UFB/RBI connection	54	52	68	47	40
UFB/RBI connection at school but not being used	13	17	4	6	0
We are expecting a UFB/RBI connection during the next 12 months	14	13	12	16	40
We don't know when the UFB/RBI infrastructure will reach our school	9	8	10	16	10
Don't know	10	11	6	16	10
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly less likely than secondary schools to report that WiFi access to support students' learning was available in outside areas frequented by students (54 percent), than secondary schools (71 percent).

Primary schools were significantly more likely to report that the schools WiFi capability was of limited capacity than secondary schools (23 percent compared with nine percent).

Secondary schools were significantly more likely than primary schools to report using an UFB/RBI connection (68 percent and 52 percent, respectively), while primary schools were more likely to report having an UFB/RBI connection that was not being used (17 percent, compared with just four percent of secondary schools).

Primary schools were also significantly more likely to report that the school would be SNUPed during the next 12 months (25 percent), than secondary schools (13 percent).

Decile bands

Decile 1-3 schools were significantly less likely to report having WiFi access in the library and other shared spaces (50 percent), than Decile 4-6 and 7-10 schools (68 percent and 69 percent, respectively).

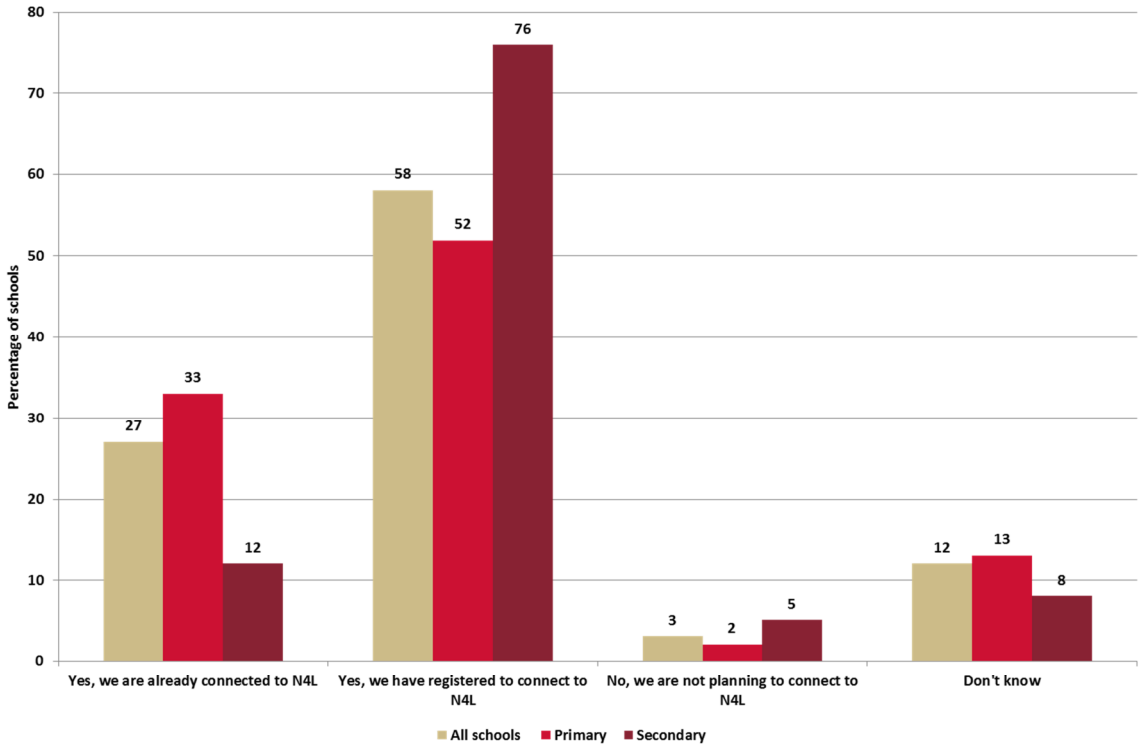
Decile 1-3 schools were also more likely to report no WiFi access to support students' learning (12 percent), than Decile 7-10 schools (three percent).

Decile 7-10 schools were significantly more likely to report that their school's WiFi capability was extremely robust and had been tested with large numbers of students (44 percent), than Decile 1-3 schools (25 percent)

11.2 Network for Learning (N4L)

Network for Learning (N4L) provides a managed network service for schools with free uncapped Internet access. Respondents to the Equipment Survey were asked whether their school was registered to connect to N4L (Figure 17). Approximately one-in-four responding schools (27 percent) reported they had registered for N4L and were already connected, while 58 percent said they had registered but were not connected yet.

Figure 17: Proportions of schools registered to connect to N4L



Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report they were already connected to N4L than secondary schools (33 percent compared with 12 percent), while secondary schools were significantly more likely to report they have registered but are not yet connected to it (76 percent, compared with 52 percent of primary schools).

Decile bands

Decile 4-6 and Decile 7-10 schools were significantly more likely to report they were already connected to N4L (27 percent and 36 percent, respectively), than Decile 1-3 schools (14 percent).

Decile 1-3 schools were less likely than Decile 7-10 schools to report they have registered to connect to N4L (52 percent compared with 76 percent).

11.2.1 Support required by schools to take advantage of the benefits of a managed network

As a follow-up question, respondents to the Equipment Survey were presented with a list of options and asked which, if any, applied to their school in order to better take advantage of N4L (Table 48).

Of note, only 11 percent of responding schools reported their school did not need any further support and was ready for N4L. In contrast, approximately three-quarters of schools (72 percent) said their teachers needed further professional development support in using digital technologies for teaching and learning.

Half of responding schools reported they need more information about online resources for teaching and learning (50 percent), while a similar proportion said they needed student achievement exemplars (49 percent).

One-third of schools (34 percent) reported that they need better technical support and help to upgrade their digital technology equipment in order to better take advantage of the benefits of N4L.

Table 48:

E-Q20. With the deployment of N4L's managed network service to all schools, which of the following does your school need in order to better take advantage of the benefits of a managed network?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	282	181	78	13**	10**
Weighted base =	282	210	51	12**	10**
	%	%	%	%	%
Our teachers need further professional development support in using digital technologies for teaching and learning	72	72	76	70	70
We need more information about online resources	50	51	50	64	20
We need student achievement exemplars using digital technologies	49	48	50	69	30
We need better technical support	34	35	28	52	20
We need help to upgrade our digital technology equipment	34	35	22	63	40
Other	9	9	12	11	0
We don't need any further support; our school is ready for N4L	11	10	13	10	20

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report they needed help to upgrade the schools digital technology equipment in order to better take advantage of the benefits of a managed network (35 percent), than secondary schools (22 percent).

Decile bands

Decile 1-3 schools were significantly more likely to report that they needed more information about online resources (63 percent) and/or needing student achievement examples using digital technology (59 percent), than Decile 7-10 schools (42 percent and 43 percent, respectively).

Both Decile 1-3 and Decile 4-6 schools were significantly more likely to report they needed help to update the schools digital technology equipment (41 percent and 40 percent) in order to better take advantage of the benefits of a managed network, than Decile 7-10 schools (26 percent).

11.3 Network management and cloud computing services

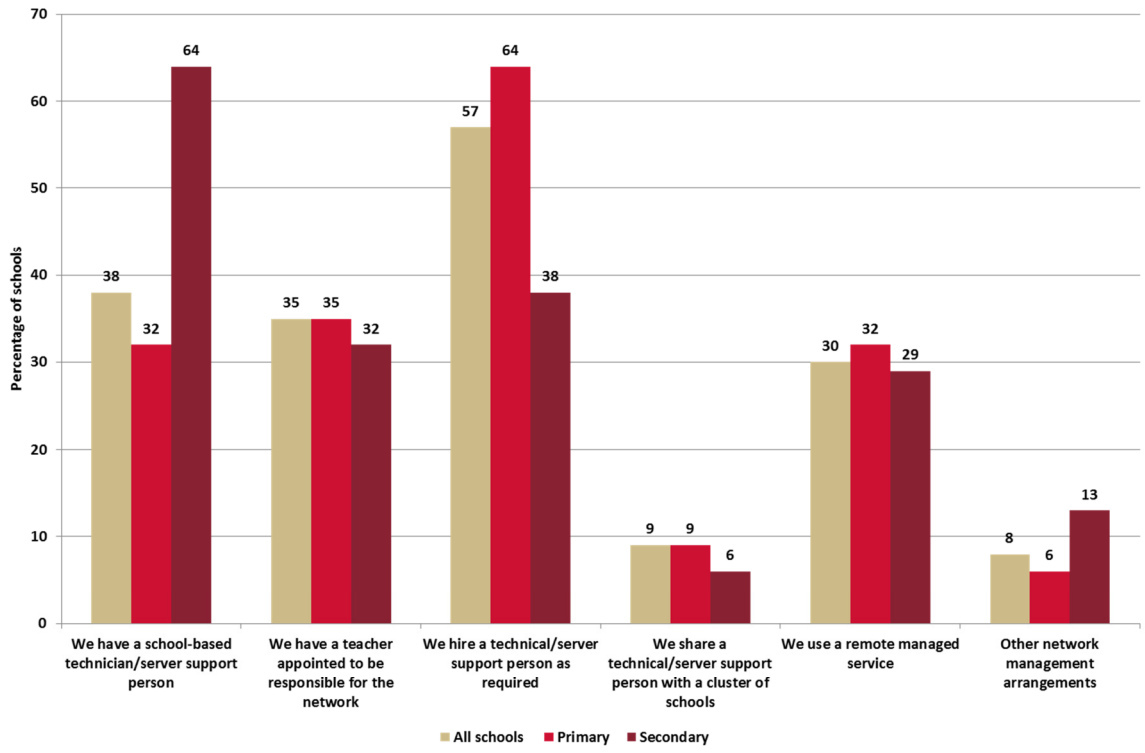
11.3.1 Network management

Respondents to the Equipment Survey were also asked how their school network was managed (Figure 18).

Most frequently, responding schools reported that they hire a technical/server support person as required (57 percent), while smaller proportions said they were using the following arrangements instead, or as well:

- A school-based technical/server support person (38 percent of responding schools)
- A teacher appointed to be responsible for the network (35 percent)
- Using a remote management service (30 percent)
- Sharing a technical/server support person with a cluster of schools (nine percent).

Figure 18: School network management



.

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report that school hires a technical/server report as required (64 percent), than secondary schools (38 percent).

In contrast, secondary schools were more likely than primary schools to report having a school-based technical/server support person (64 percent compared with 32 percent).

Decile bands

Decile 1-3 schools were significantly more likely to report sharing a technical/server support person with a cluster of schools (16 percent), than Decile 4-6 and 7-10 schools (six percent and seven percent, respectively).

11.3.2 Cloud computing services

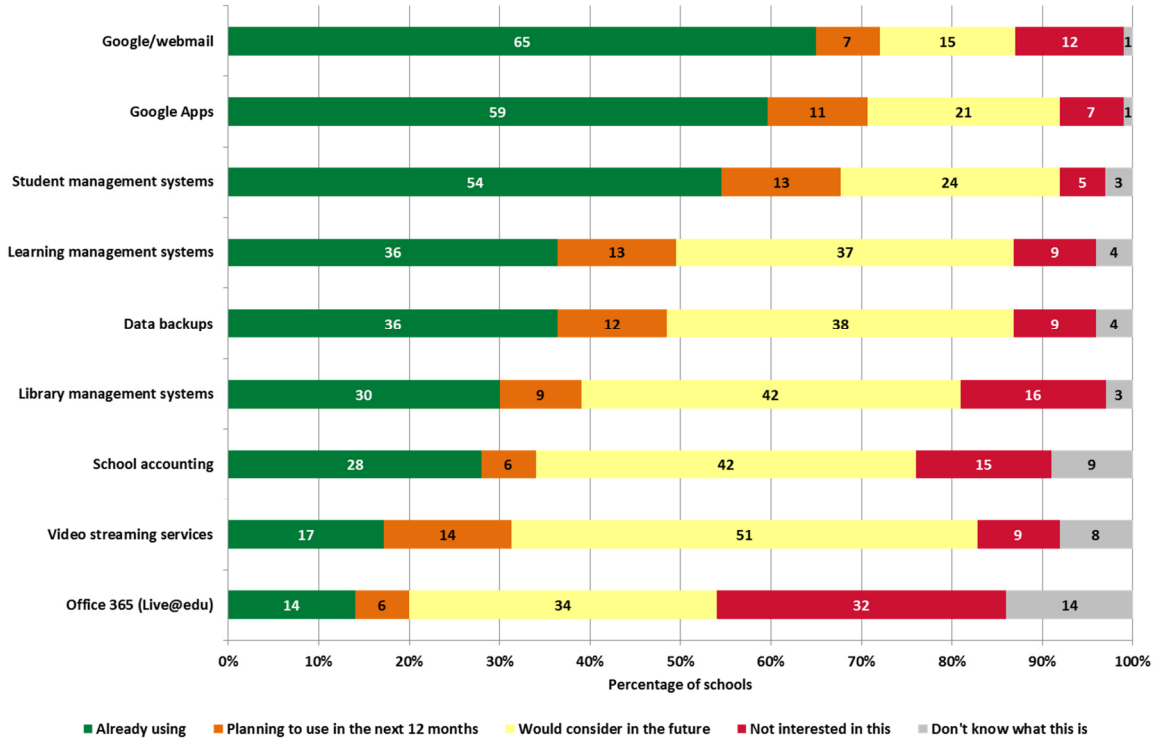
Respondents to the Equipment Survey were presented with a list of cloud-based online computing services and asked whether their school was currently using them or planning to use them in the future (Figure 19).

Most frequently, responding schools reported they were already using the following cloud-based services:

- Google mail or other web mail (already being used by 65 percent of schools)
- Google apps (59 percent)
- Student management systems (54 percent).

Approximately one-third of schools also reported they are currently using cloud-based learning management systems (36 percent), data backups (36 percent) and/or library management systems (30 percent).

Figure 19: Uptake of cloud computing services



Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely to report they were already using student management systems (63 percent), than secondary schools (21 percent).

Secondary schools were significantly more likely than primary schools to report they were already using the following cloud-based applications/services: learning management systems (51 percent compared with 32 percent), video streaming services (34 percent and 13 percent, respectively) and/or Office 365 (Live@edu) (30 percent and nine percent, respectively).

Decile bands

Decile 7-10 schools were significantly more likely than Decile 1-3 schools to report their school was already using Google Apps (68 percent and 47 percent, respectively).

Decile 7-10 schools were significantly more likely than Decile 4-6 schools to report their school was already using a cloud-based school accounting service (34 percent and 21 percent, respectively).

11.3.3 Use of open-source software

Respondents to the Equipment Survey were also asked whether their school currently uses any open-source software (Table 49).[5]

Thirty-five percent of responding schools said they do not use open-source software, and while a similar proportion (36 percent) reported not knowing, 20 percent of schools reported using client open-source software and 15 percent use server open-source software.

Table 49:

E-Q24. Does your school use open-source software?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	280*	180	77	13**	10**
Weighted base =	280*	209	50	12**	10**
	%	%	%	%	%
We use client open source software	20	14	49	0	20
We use server open source software	15	13	25	11	10
We don't use open source software	35	34	30	37	70
Don't know	36	42	14	52	0

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely to report using client open-source software (49 percent) and server open-source software (25 percent), than primary schools (14 percent and 13 percent, respectively).

Decile bands

There were no statistically significant differences in relation to the use of open-source softwares when viewed by school decile band.

[5] Open-source software is computer software that the copyright holder has made the source code available for study, change and distribution to others for any use.

11.4 Technical support for teachers

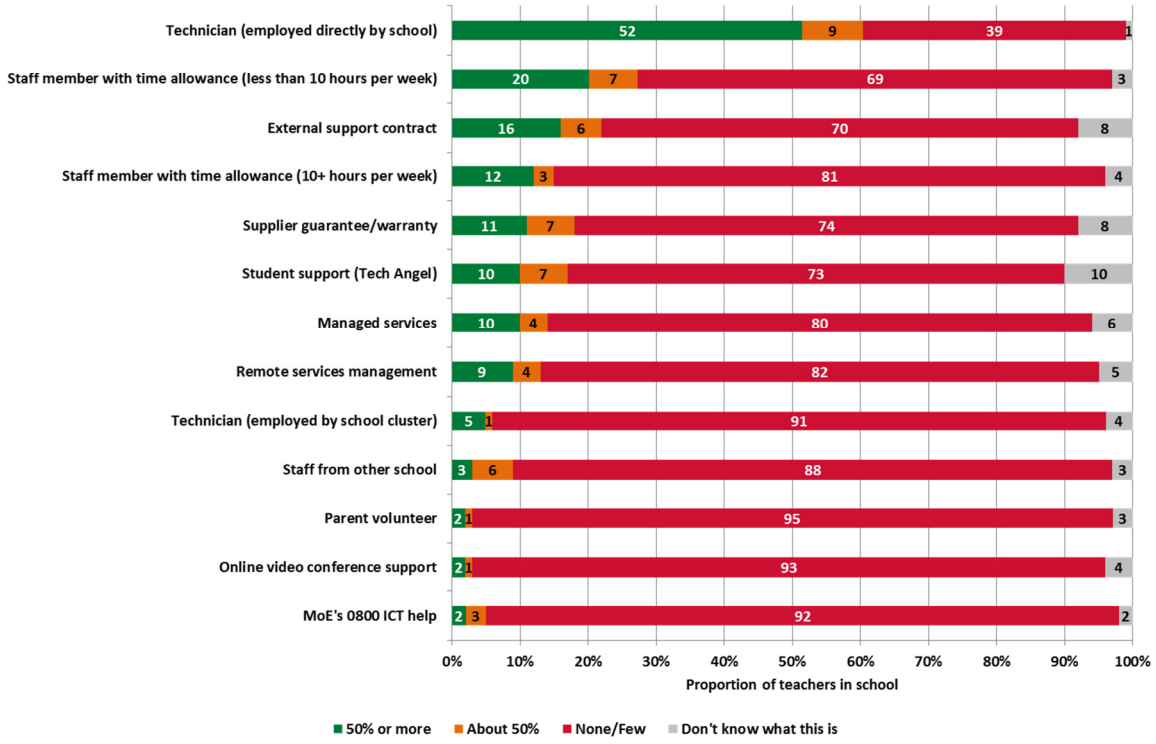
Respondents to the Equipment Survey were asked to estimate the proportions of teachers using different sources of technical support (Figure 20).

Half of responding schools (52 percent) reported that 50 percent or more of teachers at the school receive technical support from a technician employed directly by the school. One-in-five schools reported that 50 percent or more of teachers were supported by staff with a time allowance of less than 10 hours per week to provide ICT training and support to school staff (20 percent).

Other technical support sources used by 50 percent or more of teachers at schools included:

- An external support contract (noted by 16 percent of responding schools)
- A staff member with time allowance of more than 10 hours per week (12 percent)
- Supplier guarantees/warranties (11 percent)
- Student support (e.g. a Tech Angel; 10 percent)
- Managed services (10 percent).

Figure 20: Proportions of teachers using a technical support resource



Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely than secondary schools to report that 50 percent or more of staff use student support, for example, Tech Angel (12 percent compared with 4 percent of secondary schools).

Secondary schools were significantly more likely to report that 50 percent or more of staff used support from a technician employed directly by the school (69 percent), than primary schools (49 percent).

Secondary schools were also significantly more likely to report that 50 percent or more of staff received support under a supplier guarantee/warranty arrangement (20 percent), than primary schools (nine percent).

Decile bands

Decile 4-6 schools were significantly more likely to report that 50 percent or more of staff received support under a supplier guarantee/warranty arrangement (20 percent) than Decile 1-3 and 7-10 schools (seven percent and nine percent, respectively).

Decile 7-10 schools were significantly more likely than Decile 4-6 schools to report that 50 percent or more of staff used support from a technician employed directly by the school (60 percent and 43 percent, respectively).

12.0 Community Engagement using digital technologies

12.1 Use of digital technologies to communicate with wider community/whānau

All principals were asked to identify, from a list, the different digital technologies used at their school to communicate with the wider community/whānau (Table 50). Three-quarters or more of responding principals reported that:

- The school published information on its website (reported by 91 percent of principals)
- Emails were sent between teachers and parents (87 percent)
- The school had an email newsletter (83 percent)
- The school communicated by telephone (including voice messaging; 77 percent).

Table 50:

P-Q28. How are digital technologies used at your school to communicate with the wider community/whānau?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	451*	344	92	10**	5**
Weighted base =	451*	345	91	10**	5**
	%	%	%	%	%
Publishing information on the school's website	91	90	99	20	100
Email between teachers and parents	87	86	95	50	100
Emailing newsletters	83	82	88	60	100
Telephones including voice messaging	77	77	82	60	80
Text messaging (e.g. for truancy)	68	67	71	50	60
Blogs or other social networking services	62	67	47	50	20
Student/Parent access to school servers from their homes	29	22	59	20	0
Parent portals	21	12	60	10	0
Other	5	6	2	10	0
Don't know	0	0	0	10	0

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

Significant differences by school type

Primary versus secondary schools

Secondary schools were significantly more likely than primary schools to report communicating with the wider community/whānau through the following means:

- Publishing information on the school's website (99 percent compared with 90 percent)
- Emails between teachers and parents (95 percent and 86 percent, respectively)
- Parent portals (60 percent and 12 percent, respectively).
- Providing student/parent access to schools servers from their homes (59 percent and 22 percent, respectively).

In contrast, primary schools were significantly more likely to report communicating with the wider community/whānau through blogs or social networking services (67 percent), than were secondary schools (47 percent)

Decile bands

Decile 4-6 and 7-10 schools were significantly more likely to report communicating with the wider community/whānau through the following means:

- Publishing information on the school's website (95 percent and 96 percent), than Decile 1-3 schools (77 percent).
- Emailing newsletters (83 percent and 92 percent, respectively), than 1-3 Decile schools (69 percent), with Decile 7-10 schools being significantly more likely to do so than Decile 4-6 schools as well.
- Emails between teachers and parents (87 percent and 94 percent, respectively), than 1-3 Decile schools (75 percent), with Decile 7-10 schools being significantly more likely to do so than Decile 4-6 schools as well.
- Blogs or social networks (64 percent and 68 percent, respectively), than 1-3 Decile schools (50 percent).
- Providing student/parent access to servers from their homes (31 percent and 33 percent, respectively), than 1-3 Decile schools (20 percent).

Decile 7-10 schools were also more likely to be communicating with the wider community/whānau by telephone, including voice messaging (83 percent) and/or having a parent portal (24 percent), than Decile 1-3 schools (72 percent and 15 percent, respectively).

12.2 Access to school technologies by community/whänau

Respondents to the Equipment Survey were asked what support, if any, the school supplied to parents or the community for the purposes of ICT training (Table 51). Almost three-quarters of schools reported they did not provide any such support to the community or parents for the purposes of ICT training. However, 16 percent of schools reported they provide ICT training for their wider school community and 14 percent provide parents with access to ICT equipment.

Table 51:

E-Q28. Which of the following does your school supply for the purposes of community/parent training?

	Total	Primary	Secondary	Māori Medium	Special school
Unweighted base =	281*	180	78	13**	10**
Weighted base =	281*	209	51	12**	10**
	%	%	%	%	%
Parents have access to school ICT equipment	14	16	4	36	0
We provide ICT training for our wider school community	16	17	14	10	10
None	72	70	82	58	80
Don't know	3	3	4	6	10

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely than secondary schools to report that parents have access to school ICT equipment for the purposes of community/parent training (16 percent compared with four percent).

Secondary schools were significantly more likely than primary schools to report the school did not provide any such support (82 percent, compared with 70 percent of primary schools).

Decile bands

Both Decile 1-3 and Decile 4-6 schools were significantly more likely to report parents have access to school ICT equipment for the purposes of community/parent training (20 percent and 18 percent, respectively), than Decile 7-10 schools (seven percent). Decile 1-3 schools were also significantly more likely than Decile 4-6 schools to report they provided ICT training to the wider school community (23 percent and nine percent, respectively).

In contrast, Decile 7-10 schools were significantly more likely to report the school did not provide any such support (80 percent), than Decile 1-3 schools (63 percent).

12.3 School collaboration with internet providers for community access

The Ministry of Education has released guidelines enabling schools to collaborate with local wireless Internet providers for the purpose of providing internet access for their communities by sharing the schools fibre connection.

Respondents to the Equipment Survey were asked whether their school had collaborated with a local wireless Internet provide in order to share the school's fibre connection with their community (Table 52).

Just six percent of responding schools reported they were already providing their community access to the school's fibre connection with a local wireless Internet provider, while 14 percent said they were planning to do so. A further 14 percent said they were not interested in providing such access.

Two-thirds of responding schools reported they would need more information to decide, or haven't yet decided, whether to provide access to their fibre connection, to their community (66 percent).

Table 52:

E-Q27. The Ministry of Education has recently released guidelines enabling schools to collaborate with local wireless internet providers in providing internet access for their communities, sharing the school's fibre connection. Is your school...?

	Total	Primary	Secondary	Maori Medium	Special school
Unweighted base =	281*	180	78	13**	10**
Weighted base =	281*	209	51	12**	10**
	%	%	%	%	%
Already doing this	6	5	9	10	10
Planning to do this	14	14	14	33	0
Not interested in doing this	14	12	23	10	0
Need more information/haven't decided	66	69	54	47	90
Would rather not say	0	0	0	0	0
Total	100	100	100	100	100

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

Significant differences by school type

Primary versus secondary schools

Primary schools were significantly more likely than secondary schools to report they need more information/have not decided about collaborating, (69 percent compared with 54 percent).

Secondary schools were significantly more likely to report they were not interested in collaborating to provide access for their communities to share the school's fibre connection (23 percent), than primary schools (12 percent).

Decile bands

There were no statistically significant differences in relation to the above findings when viewed by school decile band.

ISBN 978-0-473-30246-7