6 Technology Survey

Overview: Technology is highly popular with students at both years, but more so at year 8. The results here are consistent with the findings over the years in NEMP reports that for year 8 students, only physical education is a more popular subject area. This seems particularly relevant at this time as there is a concern among educators in New Zealand about the lack of enthusiasm toward school in general seen by students in years 7 and 8. Technology is a subject area where the enthusiasm remains high. The survey results also show that there is an increase in the use of tools and in the actual designing and making of objects in school at year 8 (as compared to year 4). However, the construction of objects in the home at year 8 shows a decline from 2004, with a concomitant rise in the use of computers.

Attitudes and Motivation

The national monitoring assessment programme recognises the impact of attitudinal and motivational factors on student achievement in individual assessment tasks. Students' attitudes, interests and liking for a subject have a strong bearing on progress and learning outcomes. Students are influenced and shaped by the quality and style of curriculum delivery, the choice of content and the suitability of resources. Other important factors influencing students' achievements are the expectations and support of significant people in their lives, the opportunities and experiences they have in and out of school, and the extent to which they have feelings of personal success and capability.

Technology Survey

The national monitoring technology survey sought information from students about their perceptions of their achievement and potential in technology. Students were also asked about their involvement in technology-related activities within school and beyond. The survey was administered to both year 4 and year 8 students in independent format, with teacher help readily available. Six questions (one in nine parts) asked students to select a response on a three or four-point rating scale. The responses

to these six questions are summarised in the two tables adjacent. The first of the rating questions was unchanged from 1996 and 2000, so comparative figures for the earlier surveys are also presented for that question. The remaining five questions were unchanged from the 2004 survey, and so results are presented from 2004 and 2008

The results show that a majority of year 4 students enjoy doing technology at school, think they are good at it, and want to do more. A large majority (86%) gave a favourable response to the question, "How much do you like technology at school?" This result is up from 81% in 2004, and similar to the 2000 and 1996 results. Students were less enthusiastic about how much they thought they actually learned about technology in school. Slightly less than half thought they learned "heaps" or "quite a lot", almost unchanged from 2004. Only a third thought that they did really good things in technology in school "heaps" or "quite a lot". Three quarters of the students thought they were good at technology and nine out of ten students (90%) wanted to do as much or more technology in school.

When asked to indicate how often they engaged in various technological activities at school (from a list of nine such activities), year 4 students identified

making things and checking how good their ideas were most often, followed by designing things, and changing things to improve them.

Year 8 students are even more enthusiastic about technology in school than year 4 students. Fully 95% of students said they enjoyed technology in school, with 57% giving the highest rating on this question. Additionally, 92% think that they are good at technology, and 96% would like to do the same amount or more technology in school. Like the year 4 students, only 45% believe their class often does really good things in school, however, 72% believe they learn either "heaps" or "quite a lot" about technology in school. The results for 2008 are similar to the results for 2004.

When asked to indicate their perceptions of the frequency of nine different aspects of technological activity at school, year 8 students identified making and designing things, learning how to use tools and equipment, and checking how good their ideas were as the most common activities, followed by changing things to improve them and finding and using information to help make decisions. The pattern of responses is fairly consistent with the 2004 results. It is interesting to note differences here with the year 4 results, particularly in using tools (48% to 80%), and designing things (57% to 81%).

YEAR 4 TECHNOLOGY SURVEY RESPONSES 2008 (2004) [2000] {1996}

1. How much do you like doing technology at school?

😃	🙂	😐	😠
55 (47) [56] {57}	32 (34) [29] {38}	7 (14) [9] {4}	5 (5) [6] {1}

2. How much do you think you learn about technology at school?

heaps	quite a lot	some	very little
20 (18)	29 (29)	34 (45)	18 (8)

3. Would you like to do more or less technology at school?

more	about the same	less
58 (45)	32 (41)	10 (14)

4. How often does your class do really good things in technology?

heaps	quite a lot	sometimes	never
12 (13)	21 (26)	57 (37)	10 (24)

5. How good do you think you are at technology?

😃	🙂	😐	😠
32 (23)	42 (49)	18 (19)	7 (9)

6. How often do you do these things in technology at school?

	heaps	quite a lot	sometimes	never
a. think about how technology affects people	16 (18)	24 (26)	42 (39)	17 (17)
b. find and use information to help make decisions	21 (17)	30 (29)	39 (40)	9 (14)
c. make visits or have visitors to help learn about technology	15 (16)	18 (18)	39 (35)	28 (31)
d. design things	31 (35)	26 (26)	30 (27)	13 (12)
e. try to find out what people want, need or like	17 (18)	22 (23)	43 (40)	18 (19)
f. change things to improve them	31 (24)	24 (26)	34 (33)	12 (17)
g. make things	41 (43)	28 (26)	23 (26)	8 (5)
h. learn how to use tools and equipment	24 (25)	24 (20)	34 (35)	18 (20)
i. check how good our ideas or designs are	31 (29)	31 (28)	24 (31)	13 (12)

YEAR 8 TECHNOLOGY SURVEY RESPONSES 2008 (2004) [2000] {1996}

1. How much do you like doing technology at school?

😃	🙂	😐	😠
57 (55) [57] {45}	38 (37) [36] {48}	4 (6) [6] {6}	0 (2) [1] {1}

2. How much do you think you learn about technology at school?

heaps	quite a lot	some	very little
19 (18)	53 (52)	26 (29)	3 (1)

3. Would you like to do more or less technology at school?

more	about the same	less
56 (46)	40 (49)	4 (5)

4. How often does your class do really good things in technology?

heaps	quite a lot	sometimes	never
9 (11)	36 (36)	50 (42)	5 (11)

5. How good do you think you are at technology?

😃	🙂	😐	😠
26 (20)	66 (63)	7 (15)	1 (2)

6. How often do you do these things in technology at school?

	heaps	quite a lot	sometimes	never
a. think about how technology affects people	24 (22)	30 (26)	37 (43)	9 (9)
b. find and use information to help make decisions	20 (19)	42 (41)	35 (33)	4 (7)
c. make visits or have visitors to help learn about technology	14 (12)	19 (18)	41 (41)	26 (29)
d. design things	51 (42)	30 (31)	17 (23)	2 (4)
e. try to find out what people want, need or like	14 (15)	36 (31)	43 (43)	8 (11)
f. change things to improve them	30 (26)	37 (36)	29 (32)	5 (6)
g. make things	54 (55)	27 (29)	17 (14)	3 (2)
h. learn how to use tools and equipment	49 (48)	31 (28)	17 (20)	4 (4)
i. check how good our ideas or designs are	32 (26)	36 (39)	29 (30)	3 (5)

The remaining three survey questions were open-ended, inviting students to give written or spoken responses. For each question, the students' responses were categorised into several categories, as indicated on the adjacent page.

What is technology?

At the beginning of the survey, students were asked what they thought technology was. Up to four different responses could be recorded for each student. The table adjacent categorises both year 4 and year 8 responses into eight categories. Comparisons are made to student responses in the 2004 survey. Since this question required coding of answers, somewhat more variability in response over years might be expected as compared to questions where students are simply ticking their preferences.

WHAT IS TECHNOLOGY?	year 4 2008 ('04)	year 8 2008 ('04)
hi-tech equipment/ computers	34 (33)	37 (38)
science	26 (13)	14 (6)
making and designing	19 (18)	24 (36)
learning about equipment	4 (2)	7 (6)
meeting needs, solving problems	4 (4)	13 (11)
inventing	3 (4)	5 (6)
workshop subjects	2 (9)	25 (32)
other appropriate	2 (6)	3 (15)

Some students had trouble answering this open-ended question, with 26% of year 4 students, and 16% of year 8 students not providing a response. Other students were able to come with several ideas about what technology was (thus the year 8 totals sum to more than 100%). Year 4 students felt that technology was the use of hi-tech equipment and computers, designing and making things, and generally some aspect of science. Year 8 students gave similar responses, although they were somewhat more likely to mention workshop subjects (woodworking, cooking, metalworking) and less likely to say science. Patterns of response were roughly similar to 2004, with the exception of science being listed more frequently as being an aspect of technology.

What do you require to be good at technology?

Students were asked "what are three things a person needs to be able to do to be really good at technology?" Their responses were categorised into eight categories and are summarised in the table adjacent.

For both year 4 and year 8 students, the most common responses fell into three categories:

- have lots of knowledge or practise a lot
- good personal, interpersonal and communication skills, such as listening and teamwork
- good at making, building, using equipment, measuring, working with hands

For year 8 students only, having good imagination or ideas was also a quite prominent category.

WHAT IS REQUIRED TO BE GOOD AT TECHNOLOGY?	year 4 2008 ('04)	year 8 2008 ('04)
have lots of knowledge or practise a lot	38 (23)	37 (28)
good personal, interpersonal and communication skills, (e.g. listening, teamwork)	22 (23)	49 (39)
good at making, building, using equipment, measuring, working with hands	17 (29)	18 (38)
good at other appropriate skills	13 (9)	21 (15)
good at using computers	10 (6)	6 (6)
good at science, maths, or other related subjects	7 (9)	9 (5)
good at solving problems	5 (2)	6 (3)
good imagination or ideas	4 (7)	19 (21)

It is interesting to note that in comparison to 2004, "have lots of knowledge or practise a lot" increased substantially in terms of perceived importance, and "good at making building, using equipment…" decreased in perceived importance.

What sort of technology things do you do in your own time – when not at school?

Students were asked what sort of technology things they did in their own time. Their responses were categorised into six categories.

For year 4 students "Construction" was the most popular category with 29% of students responding with a related comment. The next two most popular activities were:

- computer (27%)
- electronics – tv, video, games (21%).

In 2004, the corresponding figures were 41%, 18% and 19%.

For year 8 students, the following four categories received almost identical ratings:

- computers (33%)
- construction (32%)
- electronics – TV, video, games (31%)
- cooking or sewing (31%)

In 2004, the corresponding figures were 24%, 49%, 33% and 38%. The most dramatic shift is away from construction (49% to 32% at year 8, and 41% to 29% at year 4). Picking up most of the difference here appears to be greater computer use.