

Although national monitoring has been designed primarily to present an overall national picture of student achievement, there is some provision for reporting on performance differences among subgroups of the sample. Seven demographic variables are available for creating subgroups, with students divided into two or three subgroups on each variable, as detailed in Chapter 1 (p5).

The analyses of the relative performance of subgroups used an overall score for each task, created by adding scores for the most important components of the task.

Where only two subgroups were compared, differences in task performance between the two subgroups were checked for statistical significance using t-tests. Where three subgroups were compared, one way analysis of variance was used to check for statistically significant differences among the three subgroups.

Because the number of students included in each analysis was quite large (approximately 450), the statistical tests were quite sensitive to small differences. To reduce the likelihood of attention being drawn to unimportant differences, the critical level for statistical significance was set at $p = .01$ (so that differences this large or larger among the subgroups would not be expected by chance in more than one percent of cases). For team tasks, the critical level was raised to $p = .05$, because of the smaller sample size (120 teams, rather than about 450 students).

For the first three of the seven demographic variables, statistically significant differences among the subgroups were found for less than 10 percent of the tasks at both year 4 and year 8. For the remaining four variables, statistically significant differences were found on more than 10 percent of the tasks at one or both levels. In the report below, all “differences” mentioned are statistically significant (to save space, the words “statistically significant” are omitted).

School Size

Results were compared from students in larger, medium size, and small schools (exact definitions were given in Chapter 1).

For year 4 students, there were no differences among the three subgroups on any of the twenty-one tasks, or on questions of the *Information Skills Survey*.

For year 8 students, likewise, there were no differences among the three subgroups on any of the twenty-eight tasks, or on questions of the *Information Skills Survey*.

School Type

Results were compared for year 8 students attending full primary schools and year 8 students attending intermediate schools. A difference among the three subgroups was found on just one of the twenty-eight tasks. Students from intermediate schools scored higher than did students from full primary schools on Bird Mat

(p25). Intermediate school students also gave more positive responses to two questions of the *Information Skills Survey* (p47): how often they had to find information for a study [research topic/project] (question 1), and how often they had a really interesting study for which they had to find information (question 2).

Community Size

Results were compared for students living in communities containing over 100,000 people (main centres), communities containing 10,000 to 100,000 people (provincial cities), and communities containing less than 10,000 people (rural areas).

For year 4 students, there were no differences among the three subgroups on the twenty-one tasks. There was a difference on one question of the *Information Skills Survey*: students from provincial cities were most positive and students from main centres least positive about how much they liked sharing with others the information they found (question 6).

For year 8 students, there were differences among the three subgroups on two of the twenty-eight tasks. Students from provincial cities scored lowest on *Disasters* (p31) and *Link Task 8* (p35). There were no differences on questions of the *Information Skills Survey*.

Zone

Results achieved by students from Auckland, the rest of the North Island, and the South Island were compared.

For year 4 students, there was a difference among the three subgroups on one of the twenty-one tasks. Students from the South Island scored highest and students from Auckland scored lowest on *Link Task 5* (p35). There were no differences on questions of the *Information Skills Survey*.

For year 8 students, there were differences among the three subgroups on four of the twenty-eight tasks. Students from Auckland scored lowest on *Bird Mat* (p25) and *New Zealand Encyclopedia* (p34), while students from the rest of the North Island scored highest on *Kiwi* (p32) and *Kingston* (p33) – the two tasks that simulated searching the world wide web. There were no differences on questions of the *Information Skills Survey*.

Gender

Results achieved by male and female students were compared.

For year 4 students, there were no differences between boys and girls on any of the nineteen tasks. However, boys and girls differed in their ratings for two questions of the *Information Skills Survey* (p47). Girls expressed greater enjoyment of hunting for information (question 4) and writing down what they found out (question 7).

For year 8 students, there were differences between boys and girls on seven of the twenty-five tasks. Girls scored higher than boys in all cases. The tasks involved were: *Clown Show* (p15), *Bird Mat* (p25), *Link Task 6* (p35), *Link Task 8* (p35), *Chimps and Orang-utans* (p39), *Worm Farm* (p42) and *Link Task 9* (p45). Boys and girls also differed in their ratings for two questions of the *Information Skills Survey* (p47). Like year 4 girls, year 8 girls expressed greater enjoyment of hunting for information (question 4) and writing down what they found out (question 7).

Student Ethnicity

Results achieved by Māori and non-Māori students were compared.

For year 4 students, there were differences in performance on six of the nineteen tasks. In each case, non-Māori students scored higher than Māori students. The tasks for which differences were found were: *Clown Show* (p15), *NZ's Forest World* (p22), *Whereabouts?* (p21), *Which Book (Y4)?* (p26), *Link Task 5* (p35) and *Link Task 9* (p45). There were no differences on questions of the *Information Skills Survey*.

For year 8 students, there were differences of performance between Māori and non-Māori students on fourteen of the twenty-five tasks. In each case, non-Māori students scored higher than Māori students. Because of the number of tasks involved, the specific tasks will not be listed here, but it should be noted that no tasks in Chapter 3 showed differences. There were no differences between Māori and non-Māori students on questions of the *Information Skills Survey*.

Socio-Economic Index

Schools are categorised by the Ministry of Education based on census data for the census mesh blocks where children attending the schools live. The SES index takes into account household income levels, categories of employment, and the ethnic mix in the census mesh blocks. The SES index uses ten subdivisions, each containing ten percent of schools (deciles 1 to 10). For our purposes, the bottom three deciles (1-3) formed the low SES group, the middle four deciles (4-7) formed the medium SES group, and the top three deciles (8-10) formed the high SES group. Results were compared for students attending schools in each of these three SES groups.

For year 4 students, there were differences among the three subgroups on nine of the twenty-one tasks: seven in Chapter 4 and just one each in Chapters 3 and 5. This pattern suggests that most differences relate to knowledge about books and how to search for information, rather than the ability to think about and use information. Because of the number of tasks showing differences, the specific tasks will not be listed here. In each case, performance was lowest for students in the low SES group. Students in the high SES group generally performed

better than students in the medium SES group, but in most cases these differences were small. There was also a difference on one question of the *Information Skills Survey* (p47), with students from low SES schools reporting greater enjoyment of hunting for information (question 4).

For year 8 students, there were differences among the three subgroups on twenty of the twenty-eight tasks, spread fairly evenly across Chapters 3, 4 and 5. Because of the number of tasks involved, the specific tasks will not be listed here. In each case, performance was lowest for students in the low SES group. In most cases, students in the high SES group also performed better than students in the medium SES group. On the *Information Skills Survey* (p47), there was a difference on one question. Students from low SES schools reported less experience of using a computer catalogue in a library (question 9) — 57 percent of low decile students reported this experience, compared to 79 percent of medium and high decile students.

Summary

Statistically significant differences of task performance among the subgroups based on school size, school type or community size occurred for very few tasks (in all cases less than 10 percent of the tasks). There were differences among the three geographic zone subgroups on four tasks (19 percent) for year 4 students, but only one task (3 percent) for year 8 students. There were no differences in task performance for year 4 girls and boys, but girls performed better than boys on 28 percent of the year 8 tasks. Compared to boys, girls at both levels indicated greater enjoyment of searching for information and also for writing down what they find out. Non-Māori students performed better than Māori students on 31 percent of the year 4 tasks, increasing to 56 percent for the year 8 tasks. The SES index based on school deciles showed the strongest pattern of differences, with differences on 43 percent of tasks for year 4 students and 71 percent of tasks for year 8 students.

Compared to the previous assessments four years earlier (1997), there are some noteworthy differences. The 1997 year 4 students showed differences in task performance between boys and girls on 30 percent of the tasks and between Māori and non-Māori students on 55 percent of the tasks. These differences are maintained for the same cohort four years later, now at year 8 level, and are also similar to the year 8 results from 1997. The 2001 year 4 students, in contrast, show no differences in task performance for boys and girls, and differences between Māori and non-Māori students on only 31 percent of the tasks. These are substantial reductions in disparities between boys and girls and between Māori and non-Māori students.