

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. Nine demographic variables are available for creating subgroups, with students divided into two or three subgroups on each variable, as detailed in Chapter 1 (p4).

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 the first four of the nine demographic variables, statistically significant differences among the subgroups were found for less than 16 percent of the tasks at both year 4 and year 8. For the remaining five variables, relating to student gender and ethnicity, school socio-economic status and school ethnic mix, statistically significant differences were found on a substantial proportion of tasks at one or both levels.

In the report below, all “differences” mentioned are statistically significant differences (to save space, the words “statistically significant” are omitted).

School size

Results were compared from students in larger, medium sized, and small schools (exact definitions were given in Chapter 1). For year 4 students, there were no differences among the subgroups on any of the 13 tasks, nor on any questions of the *Year 4 Art Survey* (p50).

For year 8 students, there were no differences among the subgroups on any of the 13 tasks, but there were differences on two questions of the *Year 8 Art Survey* (p51). Students from larger schools thought that they did really good things in class less often (question 4), but that they had more opportunity to work with clay (question 5g).

School type

Results were compared for year 8 students attending full primary and intermediate schools. A difference was found on just one of the 13 tasks. Students attending intermediate schools scored higher on *Teddy* (p25). There were also differences on three questions of the *Year 8 Art Survey* (p51). Compared to students from intermediate schools, students from full primary schools thought their class did really good things in art more often (question 4), but had less opportunity to make models (question 5f) or work with clay (question 5g).

Zone

Results achieved by students from Auckland, the rest of the North Island, and the South Island were compared. For year 4 students, there were differences among the three subgroups on one of the 13 tasks. Students from Auckland scored highest on *Teddy* (p25). There was also a difference on just one question of the *Year 4 Art Survey* (p50). Students from the South Island felt that their mums or dads were more positive about how good they were at art (question 10).

For year 8 students, there were differences among the three subgroups on two of the 13 tasks. Students from Auckland scored lowest on *Art Objects A* (p40), and *Link Task 4* (p48). Students from the South Island scored highest on *Art Objects A*. There were no differences on any questions of the *Year 8 Art Survey* (p51).

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 was a difference among the three subgroups on one of the 13 tasks. Students from main centres scored highest and students from provincial cities scored lowest on *Teddy* (p25). There were no differences on any questions of the *Year*

4 Art Survey (p50).

For year 8 students, there were differences on two of the 13 tasks. Students from rural areas scored lowest on *Two Paintings* (p38), while students from main centres scored lowest on *Art Objects A* (p40). There were no differences on any questions of the *Year 8 Art Survey* (p51).

Gender

Results achieved by male and female students were compared. For year 4 students, there were differences between boys and girls on two of the 13 tasks. Boys scored higher than girls on *Rainy Day* (p14) and *Link Task 2* (p36). However, girls were more positive than boys on four questions of the *Year 4 Art Survey* (p50): how much they liked doing art at school (question 1), how good their teacher thought they were at art (question 9), how much they liked doing art things in their own time (question 11), and how much they wanted to keep learning about art when they grow up (question 13).

For year 8 students, there were differences between boys and girls on three of the 13 tasks. Girls scored higher than boys on *Link Task 1* (p36), *Link Task 2* (p36) and *Landscapes* (p42). The results on the *Year 8 Art Survey* (p51) exactly paralleled those for the year 4 students, with girls more positive on the same four questions.

Student Ethnicity

Results achieved by Māori and non-Māori students were compared. For year 4 students, there were no differences on any of the 13 tasks, nor on any questions of the *Year 4 Art Survey* (p50).

For year 8 students, there were differences between Māori and non-Māori students on three of the 13 tasks. Non-Māori scored higher than Māori students on *Link Task 1* (p36), *Two Paintings* (p38) and *Landscapes* (p42). However, Māori students gave higher ratings than non-Māori students on four questions of the *Year 8 Art Survey* (p51): how much they thought they learned about art at school (question 2), how often they were involved in group art activities (question 5i), how often they looked at art and talked about art at school (question 6), and how much they wanted to keep learning about art when they grew up (question 13).

Proportion of Māori students in schools

Schools were categorised into three subgroups: schools with less than 10 percent Māori students, schools with 10 to 30 percent Māori students, and schools with more than 30 percent Māori students. Results were compared for students attending schools in these three categories.

For year 4 students, differences between the three subgroups were found on five of the 13 tasks: *Art Objects A* (p40), *Landscapes* (p42), *Firebirds* (p46), *Link Task 3* (p48) and *Link Task 4* (p48). All of these tasks focused on responding to art, and students attending schools with less than 10 percent Māori students performed better than students attending schools with higher proportions of Māori students. There were, however, no differences on any questions of the *Year 4 Art Survey* (p50).

For year 8 students, differences between the three subgroups were found on four of the 13 tasks: *Clay Model* (p19), *Two Paintings* (p38), *Landscapes* (p42), and *Link Task 3* (p48). In all cases, performance levels declined as the proportion of Māori students in the schools increased. There were also differences on five questions of the *Year 8 Art Survey* (p51). Students from schools with more than 30 percent Māori students enrolled gave the most positive ratings on how much they thought they learned about art at school (question 2), how often they looked at art and talked about art at school (question 6), how much they liked doing art things in their own time (question 11), how often they did really good things in art in their own time (question 12), and how much they wanted to keep learning about art as they grew up (question 13).

Proportion of Pacific Island students in schools

Because most of the Pacific Island students are concentrated into relatively few schools, it was difficult to create sensible subgroups for schools with higher or lower percentages of Pacific Island students. Two subgroups were formed: students attending schools with up to 10 percent Pacific Island students, and students attending schools with more than 10 percent Pacific Island students. Results were compared for students in these two subgroups. For year 4 students, differences between the two subgroups were found on three of the 13 tasks, all involving responding to art. Students attending schools with more than 10

percent Pacific Island students scored lower on *Art Objects A* (p40), *Landscapes* (p42), and *Link Task 3* (p48). There were no differences on any questions of the *Year 4 Art Survey* (p50).

For year 8 students, differences between the two subgroups were found on six of the 13 tasks, five of which involved responding to art. In each case, students attending schools with more than 10 percent Pacific Island students scored lower. The tasks involved were: *Clay Model* (p19), *Art Objects A* (p40), *Landscapes* (p42), *Wbakairo Rākau* (p44), *Link Task 3* (p48), and *Link Task 4* (p48). On the *Year 8 Art Survey* (p51), students attending schools with more than 10 percent Pacific Island students gave higher ratings on how often they learned new things in art at school (question 7), and on how often they did really good things in art in their own time (question 12).

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 10 subdivisions, each containing 10 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 four of the 13 tasks: *Art Objects A* (p40), *Landscapes* (p42), *Firebirds* (p46), and *Link Task 3* (p48). In each case, the tasks involved responding to art, and students in the low SES schools performed worst while students from high SES schools performed best. There were no differences on questions of the *Year 4 Art Survey* (p50).

For year 8 students, there were differences among the three subgroups on eight of the 13 tasks: *Rainy Day* (p14), *Clay Model* (p19), *Teddy* (p25), *Link Task 1* (p36), *Two Paintings* (p38), *Landscapes* (p42), *Firebirds* (p46), *Link Task 3* (p48), and *Link Task 4* (p48). Students in the low SES schools performed worst, while students from high SES schools generally performed somewhat better than students from medium SES schools. There were also differences on five questions of the *Year 8 Art Survey* (p51). Students from low SES schools gave higher ratings on how much they liked doing art at school (question 1), how often their class did really good things in art (question 4), how often they did drawing in art at school (question 5a), how often they looked at art and talked about art at school (question 6), and how often they learned new things in art at school (question 7).

Summary

School size, school type (full primary or intermediate), geographic zone and community size did not seem to be important factors predicting achievement on the art tasks. The other five factors revealed more substantial differences.

Boys performed better than girls on 15 percent of the tasks at year 4 level, but worse than girls on 23 percent of tasks at year 8. In addition, at both year levels girls were more positive on four survey questions about art activities in and out of school.

There were no differences between Māori and non-Māori year 4 students, on tasks or on survey questions. Non-Māori students outperformed Māori students on 23 percent of the tasks at year 8 level, but year 8 Māori students were more positive on four survey questions. Students attending schools with high proportions of Māori students performed worse than students attending other schools on 38 percent of the tasks at year 4 level (all involving responding to art) and on 31 percent of the tasks at year 8 level (mainly involving responding to art). Students attending schools with more than 10 percent Pacific Island students performed worse than students at other schools on 23 percent of the tasks at year 4 level and 46 percent of the tasks at year 8 level. With one exception at year 8 level, all of these tasks involved responding to art. Most significantly, there were statistically significant differences in the performance of students from low, medium and high decile schools on 31 percent of the year 4 tasks (all involving responding to art) and 62 percent of the year 8 tasks. For these three factors relating to school ethnic mix and socio-economic decile rating, there were no differences on the art survey questions at year 4 level. At year 8 level, however, students in schools containing higher proportions of Māori or Pacific Island students, or having low decile ratings, were more positive than other students on some survey questions.