NZCER
Me and My School Survey

Making Sense of the Reports

NZCER

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Introduction

This document introduces the reporting provided to schools that make use of the Me and My School (MMS) survey. The document begins by describing the organisation of MMS. It then explains the scale scores used to measure levels of student engagement and reading engagement, and provides examples of the different types of reports schools receive.

The organisation of the Me and My School survey

MMS is divided into three sections. The first and largest section is entitled "Me and My School" and is concerned with a global measure of student engagement. Student engagement refers to the level of connection and commitment students have to school and learning. In the research literature student engagement is often described as involving behavioural, affective and cognitive aspects. Behavioural engagement refers to participation in school and learning, for instance attending class, staying on task, and contributing to activities. Affective engagement is concerned with students' emotional responses, for instance: liking school, and feeling valued by teachers and peers. Finally, cognitive engagement refers to students' commitment to, and involvement in learning. This includes their ability to focus on tasks and self-regulate their learning. Research shows that engagement is associated with positive academic and health outcomes, and that changes in school policies and practices can influence engagement.

Data regarding student engagement can be collected from many different sources, for instance: through teacher observations; by studying records of attendance; and by quantifying levels of involvement in extra-curricular activities. MMS provides a systematic way for schools to collect student engagement data directly from the students themselves. As such, it provides a vehicle to capture an element of student voice and involve students in an evaluative capacity.

In the Me and My School section students are presented with a series of statements chosen as indicators of behavioural, affective and cognitive aspects of engagement. The students use a four-point scale (strongly disagree to strongly agree) to show their level of agreement with each statement.

The second section, "Reading and Me" provides a snapshot of students' engagement in reading. Students who are engaged readers are enthusiastic about reading. They read for enjoyment; persevere when reading is difficult; and are confident in their ability to make sense of print. A high level of reading engagement is associated with positive academic outcomes. In the "Reading and Me" section students use the same four-point scale as used for the first section to report their level of agreement with each of six statements regarding their attitude to, and involvement in reading.

The last section, "More about Me" is concerned with a range of environmental variables that may affect students' reported engagement levels. The first question in this section asks the students whether they normally eat breakfast on a school day. The students respond by selecting "yes" or "no". The second question is focused on how much time is spent on a list of out-of-school activities on an average school day. Here students use a five-point scale to indicate the relative amount of time they spend doing things such as reading and watching television. The descriptors for the scale are: "none or very little", "some (up to 1 hour each day)", "quite a bit (1-2 hours each day)", "a lot (2-4 hours each day)" and "heaps (4 hours plus each day)".

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Understanding scale scores

What is a scale score?

MMS reports levels of student engagement and reading engagement using scale scores. Scale scores transform "raw" survey scores to locations on measurement scales.

A raw survey score is calculated by assigning a number to each response (strongly disagree = 1, disagree = 2, agree = 3, and strongly agree = 4) and then adding these together to make a total score. This raw total can be used to indicate a respondent's overall level of agreement with a set of survey items. However, raw survey scores do not take into account that some statements may be easier to agree with than others, for instance, a "strongly agree" is always scored as a 4 no matter how hard it is to agree with the statement. In addition, raw scores assume that the difference between the levels of agreement represented by adjacent response categories is constant. This is not necessarily so, for instance moving from agree to strongly agree may represent a bigger change in the level of agreement with a statement, than moving from strongly disagree to disagree. The transformation of a raw score into a scale score takes into account the differences between statements, and the differences between response categories. Unlike raw scores, scales scores are based around a consistent measurement unit. Moving from 55 units to 60 scale score units for example, represents the same amount of change as moving from 65 to 70 units.

The student engagement and reading engagement scales used by MMS have been constructed by applying Rasch Measurement. At the heart of Rasch Measurement is a mathematical model built on strong measurement principles. Developing a Rasch Measurement scale involves writing a set of survey items designed to assess the trait of interest (student engagement for example) and using the items in a trial to collect a range of responses. The collected data then undergoes a statistical analysis to ascertain how well the responses fit the measurement model. Once a series of well-fitting items has been confirmed it becomes possible to estimate student locations on the scale and obtain representative Year level distributions.

The development of the student engagement scale involved selecting a collection of appropriate survey items, using the items in a series of trials, and then collecting student responses via a large representative national trial at Years 7 to 10. The Rasch model was applied at each stage to inform the selection of 33 final statements, which researchers deemed were useful indicators of engagement and where responses showed good fit to the model. Three other statements for which data did not appear to fit the model quite as well, but which were believed to be useful engagement indicators, were retained for reporting purposes. Responses to these latter statements do not contribute to the engagement scale scores.

A constructed Rasch scale can be described to show how different scale scores are associated with different levels of the trait. This has been done for the MMS Engagement scale. The figure on the opposite page shows how the most probable responses to the engagement indicators change as students' scale scores increase. The descriptions are provided in blocks. Each description outlines the most probable types of responses that students make when their scale scores are located in the range covered by the block. Students are less likely to select responses indicated by descriptions well above, or well below their own location on the scale.

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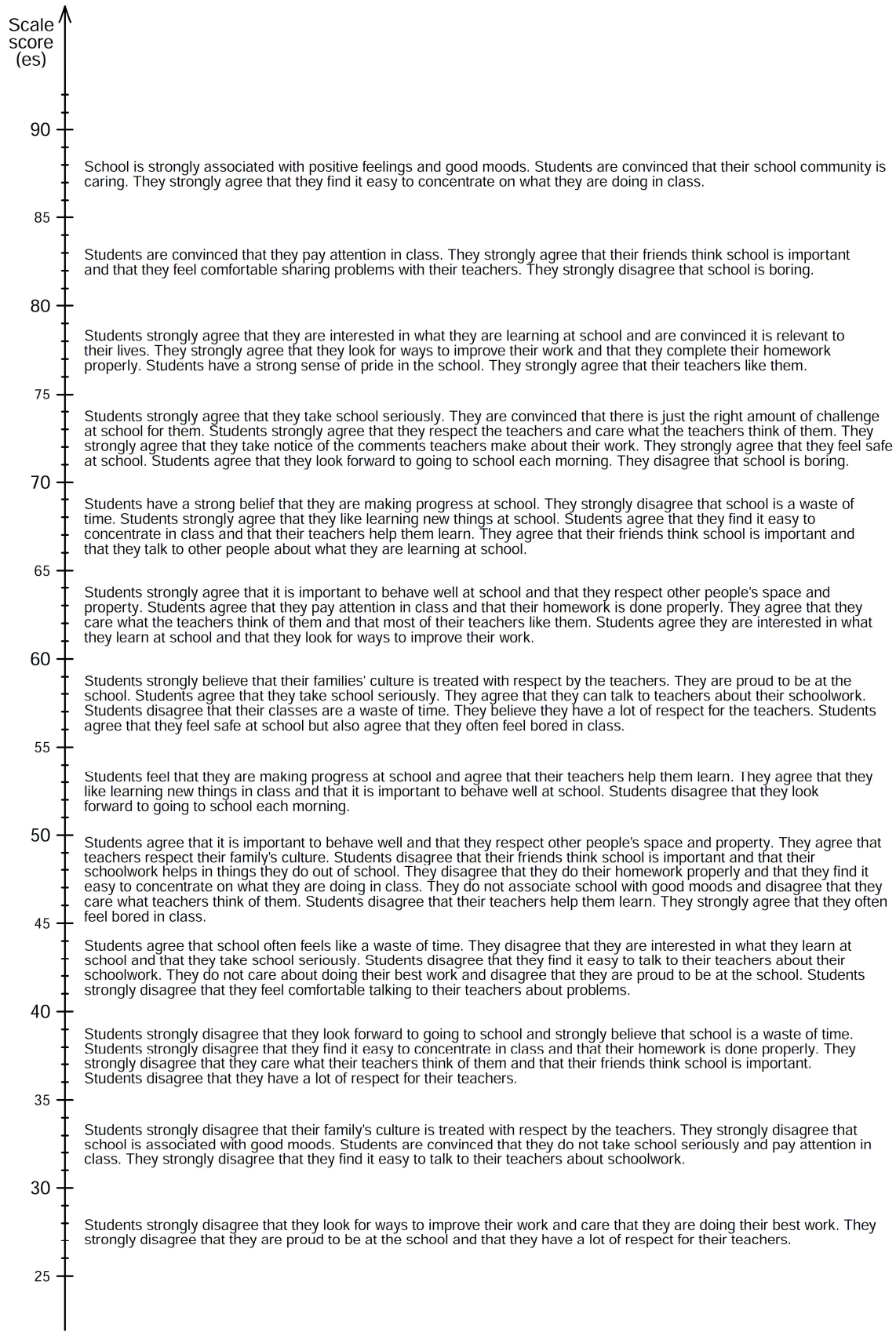
The Student Engagement Scale



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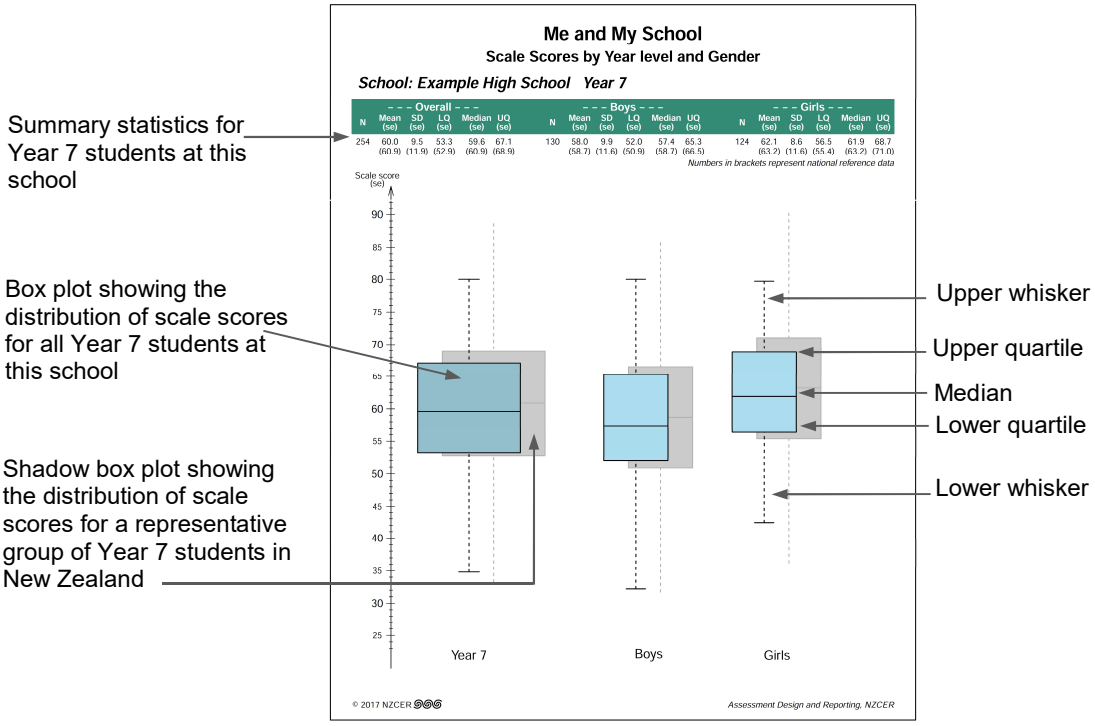
Reporting using box plots

Several of the reports for Me and My School use box plots to show how engagement (student engagement or reading engagement) for a group is distributed along the appropriate measurement scale. In the case of student engagement, shadow box plots are used to show the distribution of engagement for a relevant national reference group.

Figure 1 **Example of box plot used to show distributions of results for groups of students**



Key to the box plots

Median: This is the mid-point of the data and is shown by the line that divides the box into two parts. Half the scores are greater than or equal to this value and half are less.

Upper Quartile: Seventy-five percent of the scores fall below this value, which is represented by the top of the box.

Lower Quartile: Twenty-five percent of the scores fall below this value. This means 50 percent of the scores fall within the confines of the box between the upper and lower quartiles.

Whiskers: There is an upper and lower whisker. The upper whisker shows the spread of the highest 25 percent of the scores and the lower whisker the spread of the lowest 25 percent of the scores.

The box plots above show that as a group the Year 7 boys from Example High School have lower engagement scale scores than the Year 7 girls, while both of the distributions are similar to their respective national reference groups.

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Statement by statement reporting using strip graphs

Some of the reporting for the Me and My School survey uses strip graphs to show how groups of students have responded to statements in the survey. In the report shown a statement is displayed accompanied by a series of strip graphs showing the percentage of students in various student groups who have chosen each of the different responses. For the Me and My School section shadow strip graphs are plotted behind the school graphs to represent the pattern of responses for appropriate national reference groups. A line running down the centre of the graphs is used to separate the agreement categories from the disagreement categories.

A key at the start of the report is used to show which part of the strip graph refers to each type of response.

Figure 2 **Example of strip graph used to show results for each statement**

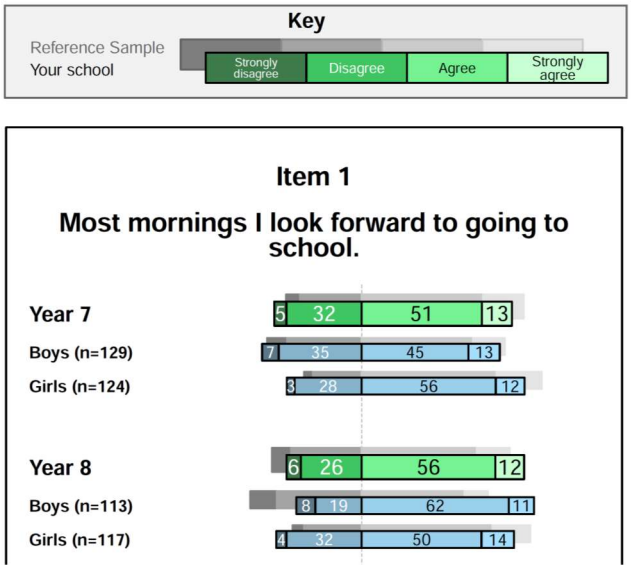

Figure 2 shows the results for the first statement ("Most mornings I look forward to going to school") in the Me and My School section of the survey. Overall, there appear to be some differences between the way Year 7 and Year 8 students have responded to the statement. Most notable is that 73% Year 8 boys agree or strongly agree that they look forward to going to school each day, while just 58% of Year 7 boys agree or strongly agree with this statement. Year 7 boys have responded in line with their national reference group, while Year 8 boys have responded more positively than their national reference group.

When making comparisons like this it is important to bear in mind how many students have responded. In this case over 40 students are represented in each strip graph. When the numbers represented are small (30 students or less) a large percentage difference between groups may equate to only a few students.

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Understanding the reports for each section

Me and my school

The most comprehensive reporting is provided for the Me and My School section of the survey. To report on this section each student's responses to the statements are scored and the sum of the scores converted to a scale score. High scores on the scale indicate high overall agreement with the survey's positive engagement indicators. The reports use box plots to show the distribution of scale scores for different groups. See page 4 for an explanation of how to read a box plot. The box plot reports are useful for understanding and comparing students' overall perceptions of their engagement. In many of the reports shadow box plots are presented alongside the school's results to provide a comparison with nationally representative groups.

Other reports for this section use strip graphs to show the proportion of students choosing each response category for each statement. The strip graph reports can help pinpoint particular indicators of engagement that may be strengths in a school and others that could need work. See page 5 for an explanation of how to read a strip graph.

Reports for this section are provided by year level, gender, ethnicity and by class group (box plot report only). Reports are not produced for any group comprising less than ten students. This is to ensure that individual students remain unidentifiable.

Reading and Me

In this section students rate their level of agreement with a series of statements chosen as indicators of reading engagement. In a similar way to the first section, each student's responses to the six statements are scored and the sum of the scores converted to locations on a reading engagement scale. The results for this section are reported in two ways: as box plots to show the distribution of reading engagement scale scores, and as strip graphs to show the proportion of students choosing each response category for each statement.

Reports for the Reading and Me section are provided by gender and year level. Again, to ensure that all students remain anonymous, a report will not be produced for any group comprising less than ten students.

More about me

Two types of report are produced for the More About Me section. The first is used to report on Question 1, which involves a "yes" or "no" response to the question: "I normally eat breakfast on a school day". The report uses two box plots to compare student engagement scale scores for students in the "yes" and "no" groups. A report is provided for each year level.

The second type of report for the More about Me section concerns the second question, which focuses on the amount of time students spend on out-of-school activities. Here strip graphs are used to show the proportion of students choosing each time category for each activity. For each activity, the proportions are shown by Year level and gender.

The More about Me statements have been developed to provide schools with information, which might prove useful when considering the student engagement measures. Unlike the Me and My School section however, national norms are not reported for either of the More about Me statements.

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Report breakdown

Table 1 **Reports provided by section**

Report Type	Me and My School	Reading and Me	More about Me
Box plots			
- by year level	✓	✓	✓ **
- by gender and year level	✓	✓	
- by ethnicity and year level	✓		
- by class and year level*	✓		
Strip graphs			
- by gender and year level	✓	✓	✓
- by ethnicity and year level	✓		

** Produced only when the surveys are organised according to class groups.
* Question 1 only

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