MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

# PISA2015

# New Zealand Students' Wellbeing Report

OECD
BETTER POLICIES FOR BETTER LIVES

New Zealand Government

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# Executive summary

Students' educational outcomes can be affected by a range of factors from inside and outside of the school grounds. For example, students who are motivated to succeed have high expectations for the future, and those who have a strong sense of belonging at school tend to have better academic outcomes. It is therefore vitally important that parents, educators and system leaders understand and act on these aspects of student wellbeing.

In 2015, the Programme for International Student Assessment (PISA) measured these and other aspects of wellbeing among 15-year-olds across 70 countries. This report summarises the main results as they relate to New Zealand students. Where relevant, this report also triangulates information from other studies to provide a fuller understanding of student wellbeing.

Results of the PISA assessment support other evidence about New Zealand students' wellbeing. They confirm areas where New Zealand students felt positive about their school life and academic abilities. For example, New Zealand students were strongly motivated to achieve academically, and almost half expected to achieve a university degree. The vast majority of students reported their parents were interested in their schooling and supported their efforts. Similarly, most reported their teachers showed an interest in their learning and gave extra help when needed. The majority of New Zealand students felt liked by other students, made friends easily and felt they belonged at school. Students had high levels of access to information and communication technologies (ICT), which they felt supported their education. Unfortunately, as with other studies, the PISA assessment also finds high levels of bullying in New Zealand schools.

The PISA report confirmed that a sense of belonging is strongly correlated with students' relationships with their teachers and other students. Those 15-year-old students who had a weaker sense of belonging were more likely to report that they were treated unfairly by their teachers, or had experienced bullying at school.

The PISA report also confirmed that higher achievement is strongly correlated with a stronger sense of belonging, motivation to achieve, parental support and lower schoolwork-related anxiety. Schoolwork-related anxiety and worry about poor grades among New Zealand students was high, particularly for girls. A small minority of students were recorded as 'extreme users' of the internet, a result that is associated with lower achievement.

The PISA results help grow our understanding of students' experiences of bullying behaviours. The majority of New Zealand students reported they 'only occasionally or never' experienced any form of bullying at school. However, just over a quarter experienced at least one type of bullying a 'few times a month' or more. On the Organisation for Economic Co-operation and Development (OECD) 'Exposure to Bullying' index, New Zealand had the second highest level of students' reports of bullying across countries taking part in PISA 2015.

A student's wellbeing is also related to their physical health and how they spend their time outside of school. Results in these areas showed that just over a third of New Zealand students had paid work. Around three quarters of students reported that they exercised regularly or played sport outside of school.

Overall the findings of the PISA assessment paint a picture of New Zealand students who were motivated, expected a lot of themselves, were well supported by the adults around them and felt safe in their schools. Most felt they belonged at school, were welcomed and liked among their peers. They were busy and well-rounded students with paid work, and helped around the home. They exercised and played sport on top of their schooling commitments. While most of these results appeared to be positive, a concerning minority of students responded that they were highly anxious about academic testing at school and that they experienced bullying behaviours at school.

# About this report

**New Zealand is currently involved in several research projects that compare education between countries. These projects cover different year and age groups as well as different areas of education and skills. The OECD oversees PISA, which is a three-yearly study assessing the science, mathematics, reading skills and knowledge of 15-year-old students.**

New Zealand has been participating in PISA since 2000. In mid-2015, over 4,500 New Zealand students took the assessment, which this time also included questions about their wellbeing.[1] Because this group was a representative sample of the 15-year-olds from throughout New Zealand, it can reliably indicate patterns across the whole New Zealand population. The results of the study can help us identify where there may be differences between students of different genders, socio-economic groups, or ethnic backgrounds. Importantly, the study also provides information about where things may have changed for our students over time.

This report also references the Trends in International Mathematics and Science Study (TIMSS), which assesses Year 5 (around 10 years old) and Year 9 (around 13 years old) students in mathematics and science. This study also asks questions about students' wellbeing very similar to the PISA questions. Where this happens, and where the information is brought together, an idea can also be generated about how things are changing for New Zealand students between different schooling years.

Studies like PISA and TIMSS cannot tell us what causes a certain result. But they do provide helpful information and insight into how different aspects of students' lives, background, and school context interact with student achievement. Because of the way the studies are designed, they also provide a reliable indication about the differences and similarities between education systems. This helps policy makers and school leaders identify areas for potential development and ideas for innovation.

Data in this report are sourced either from the PISA 2015 Results (Volume III): Students' Well-being or from the PISA 2015 database unless otherwise stated.

1 For further information about the PISA 2015 Report please see www.educationcounts.govt.nz/goto/pisa

## A note on ethnicity

When New Zealand undertakes this kind of research, students are free to identify with as many of the different ethnic groupings as they wish. No priority is given to any one of the student's choices in the analysis of the findings. This means that when looking at results by ethnicity, an individual student can, and does, 'count' in more than one grouping. For example, a student who identified as Māori and Asian would be included in any analysis for Māori students and any analysis for Asian students.

This approach means that the results for each ethnic grouping cannot be directly compared to each other (e.g. Māori cf. Paskifa, or Asian cf. Pākehā). If we did do this, students' responses would be counted multiple times and students who chose more than one ethnic grouping would effectively be compared to themselves. However, students who identified as a particular grouping can be compared to all those who did not. For example, those who identified as only Māori or Māori and another grouping can be compared to those students who did not identify as Māori at all. This way each student would only 'count' once. Comparisons on ethnicity are therefore limited to one grouping compared to everyone not identifying with that ethnicity (e.g. Māori cf non-Māori, Pākehā cf. Non-Pākehā).

## A note on socio-economic status

Socio-economic status is a measure of the social and economic resources of an individual or group of individuals. It is often measured as a combination of education, occupation and income or wealth. The measure can be used to help understand differences between social and economic groups in society.

In the PISA assessment, a student's socio-economic status is estimated by the PISA 'Index of Economic, Social and Cultural Status' (ESCS). This index is based on information about the level of parents' education and occupation, the number of home possessions that can be considered as material wealth, and the educational resources available at home. Students are classified as socio-economically advantaged if their values on the ESCS index are among the top 25 percent in their country or economy. They are classified as socio-economically disadvantaged if their values on the ESCS index are among the bottom 25 percent.

## A note on indices

In the PISA questionnaire, students were asked a series of questions around different topics. We can look at the percentage of students who answered in certain ways against individual questions (such as the percentage who agreed or disagreed with a statement) and this gives us one level of detail. In addition, individual questions can be combined into a composite index, which is intended to measure an underlying attitude, belief or value. For example, students were asked five individual questions related to anxiety at school. The results of these are then combined into an 'Index of Schoolwork-related Anxiety'.

An index measure is a value calculated relative to the original OECD average. Negative index values mean students have responded less positively than the OECD average. It does not mean that students have necessarily responded negatively to the individual questions. For example, on the Index of Schoolwork-related Anxiety, New Zealand has a value of .27. This indicates that overall our students agreed to the series of questions about being worried about school work more often than the OECD average. Finland, on the other hand, has an index value of -.41 which means their students agreed to the series of questions much less often than the OECD average. Examples of the indices included in this report are:

- Level of motivation to achieve academically
- Experiences of bullying at school
- Sense of belonging at school
- Level of schoolwork-related anxiety
- Level of teacher support
- Level of parental support.

# An overview of student wellbeing in New Zealand

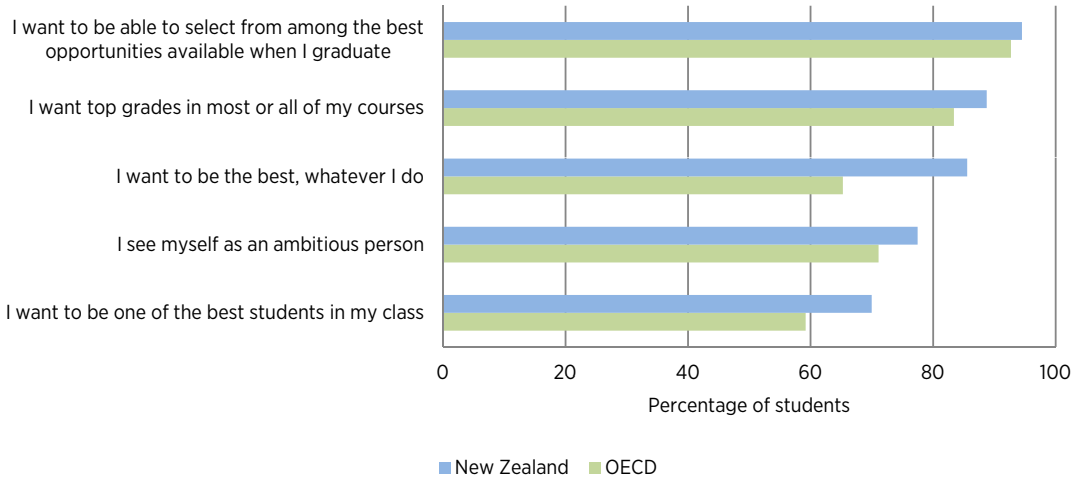
## Motivation to achieve at school and expectations of future education

Students' motivation towards their school work, how much they value it and are committed to putting in effort, is a strong factor in achievement. Motivation and beliefs about the value of further education are ultimately down to each student. However, they can be supported and encouraged by the school environment, teachers and parents. The PISA results provide a useful insight into how New Zealand students felt towards their school work and their aspirations for future education.

### Students' motivation towards their school work

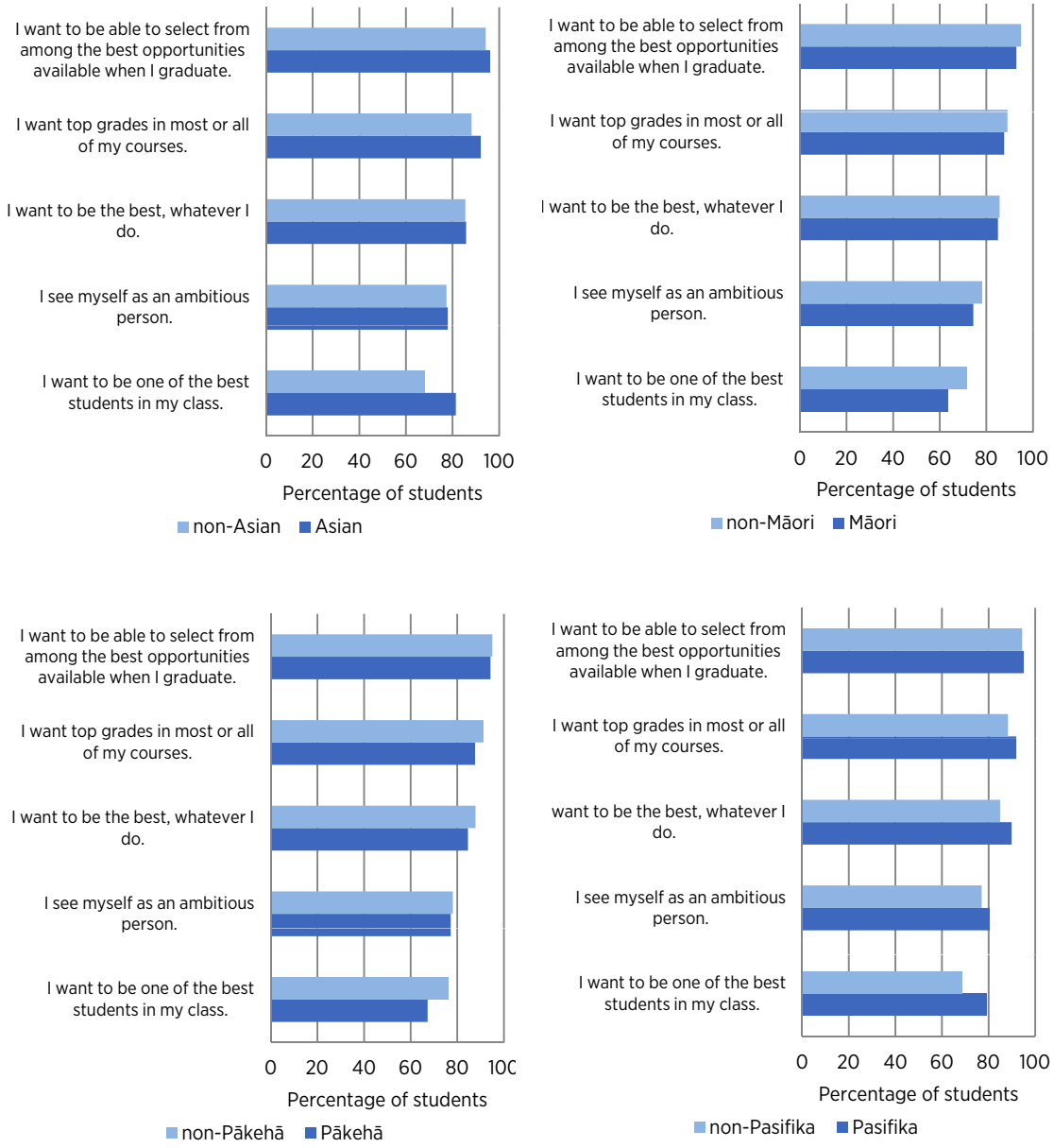
Students' motivation towards their school work was assessed through a series of questions. Across each individual question New Zealand students showed higher levels of motivation compared to the OECD average. Students who were considered more socially advantaged reported significantly higher levels of motivation across each of these questions.

**Figure 1.1: Student motivation towards schooling in New Zealand vs OECD average**



There was little difference between boys and girls in New Zealand and their motivation, though girls were slightly ahead of boys on individual questions. New Zealand students who identified as Asian had higher levels of motivation than non-Asian students. Students who identified as Pasifika also had higher levels of motivation than non-Pasifika students.

**Figure 1.2:** New Zealand student motivation by ethnicity

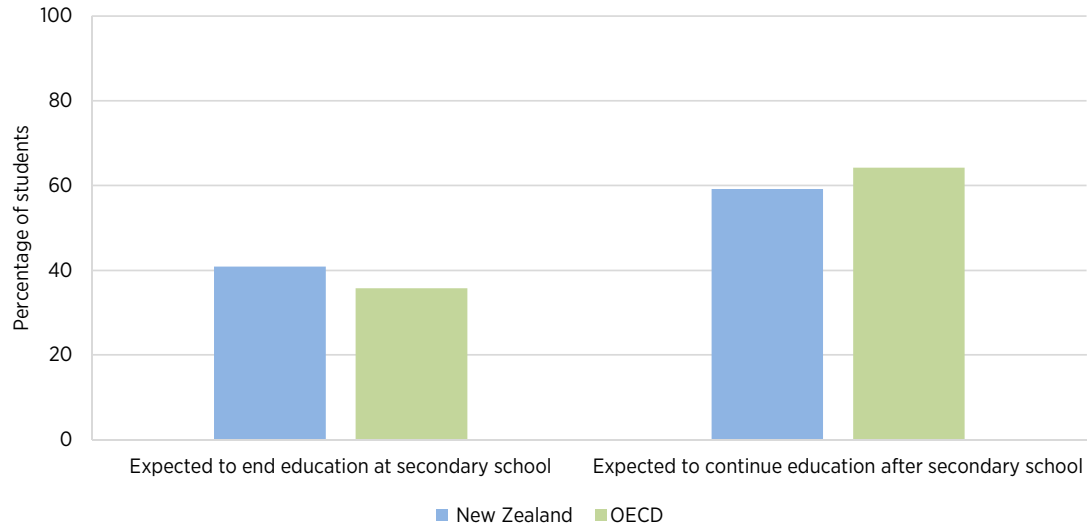



On the OECD index of achievement motivation, New Zealand (.24) sat above the OECD average, though slightly below Australia (.33) and Canada (.33), and noticeably below the United States (.65) and the United Kingdom (.51). On this index scale, students in Finland were the least motivated.

## Student plans and aspirations

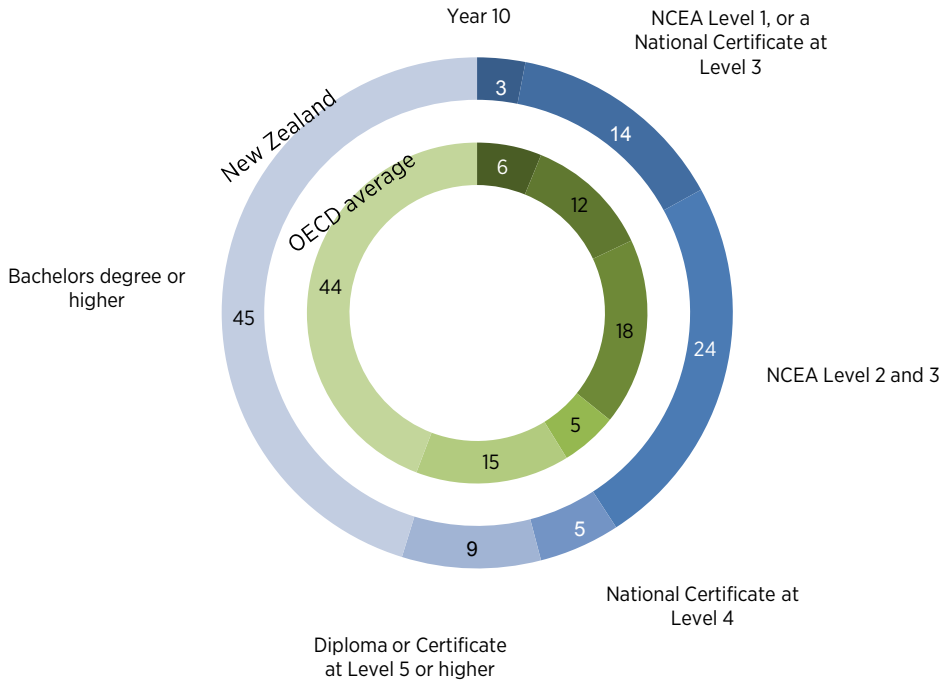
The PISA assessment also measured future expectations and plans for further education. Overall, 59 percent of New Zealand students expected to complete some form of post-secondary education (ranging from Level 4 National Certificate outside of secondary school to bachelor's degrees). This result was just under the OECD average (64 percent), higher than the United Kingdom (53 percent) and similar to Australia (62 percent). It is much lower than Canada and the United States (both at 87 percent).

**Figure 1.3:** **Student expectation of future education in New Zealand vs OECD average**



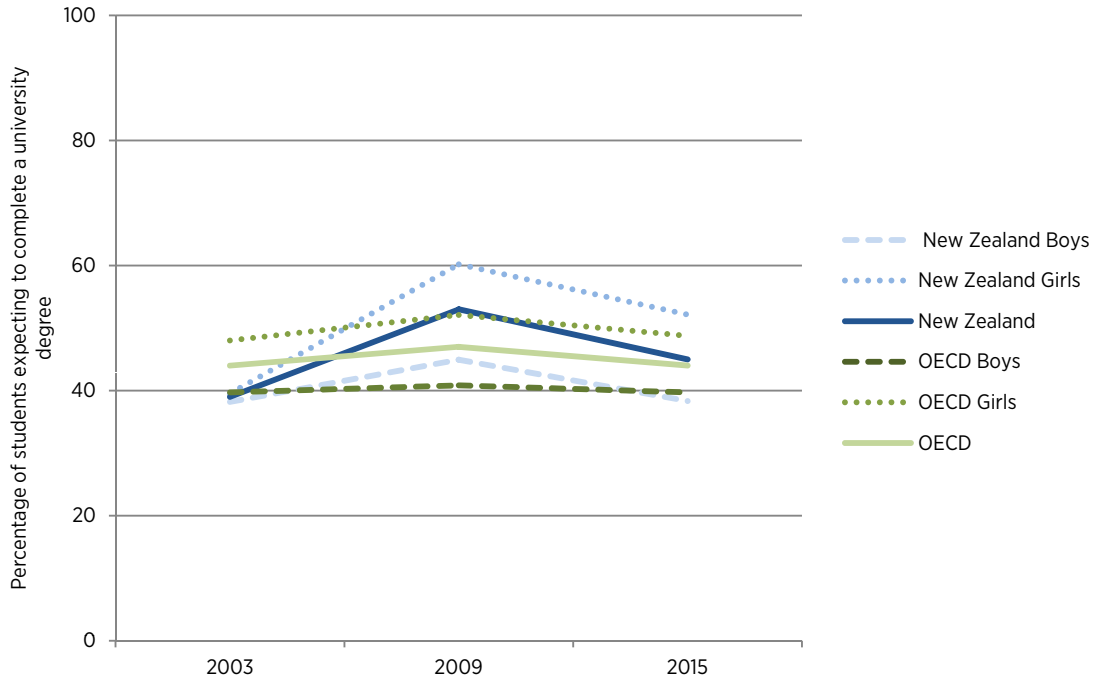

Almost all New Zealand students wanted to be able to select "from amongst the best opportunities available when I graduate". University was the main intended destination for 15-year-olds. Just under half (45 percent) of students expected to complete a university degree (similar to the OECD average of 44 percent). The United States stood out with 76 percent of their students expecting to gain a degree. Canada and Singapore were also higher than the OECD average, (63 percent), and Australian students were slightly higher than the OECD average (54 percent). Students in the United Kingdom responded below New Zealand (42 percent). Since the early 2000s there has been an increase in the proportion of New Zealand students who expected to complete a university degree. This result was largely driven by girls.

**Figure 1.4: Percentage of students who expected to complete each type of education level in New Zealand vs OECD average**




More girls than boys expected to complete a degree (around half of all girls and just under 40 percent of boys). Between 2003 and 2015 the percentage of girls expecting to complete a university degree rose from 40 percent to 52 percent. This value was even higher in 2009 (60 percent). More recently this value decreased, following the same pattern as the OECD average. New Zealand boys' expectation for tertiary qualifications has changed little since 2003 and the same is true across the OECD.

**Figure 1.5:** Student expectation of future education in New Zealand vs OECD by gender from 2003 to 2015



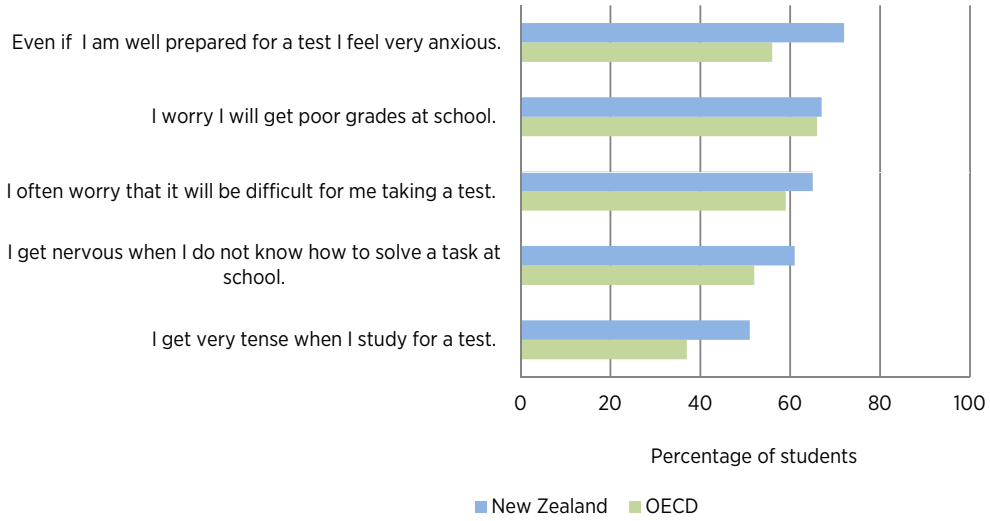

In New Zealand the difference in students' expectations for gaining a degree in both higher and lower socio-economic groups is much the same in 2015 as it was in 2003 (though there was a slight narrowing in 2009). In 2015, 67 percent of advantaged students expected they would obtain a degree compared to 26 percent of disadvantaged students. This difference was almost identical to the OECD average. Among the different ethnic groupings, only 31 percent of students who identified as Pasifika expected they would achieve a university degree. This value was the same for people who identified as Māori.

## Schoolwork-related anxiety amongst students

A series of five questions were asked of students to find out how they felt about schoolwork and tests. To put the results of this question into context, this data was collected in mid-2015 when most New Zealand students would have been undertaking internal assessments and mock exams for NCEA Level 1. New Zealand is one of the few countries that has national qualifications for this age group.

While New Zealand students were highly motivated to do well at school. However, they also had high schoolwork-related anxiety. New Zealand students were much more likely to report both high motivation and schoolwork-related anxiety than the OECD average. Seventy-two percent of New Zealand students felt anxious, even when well prepared for a test (compared to the OECD average of 56 percent). New Zealand students reported higher rates of schoolwork-related anxiety for all questions in this series, compared with the OECD averages.

**Figure 1.6: Percentage of students who agreed with school work-related anxiety statements in New Zealand vs OECD average**




New Zealand girls reported feeling noticeably more anxious on all the questions in this series than boys; this pattern was reasonably consistent across OECD countries. Students who identified as Pasifika reported higher levels of anxiety than non-Pasifika. Students who identified as Māori also reported feeling more anxious than non-Māori on each question.

**Figure 1.7: Percentage of New Zealand students who agreed with schoolwork-related anxiety statements by gender**

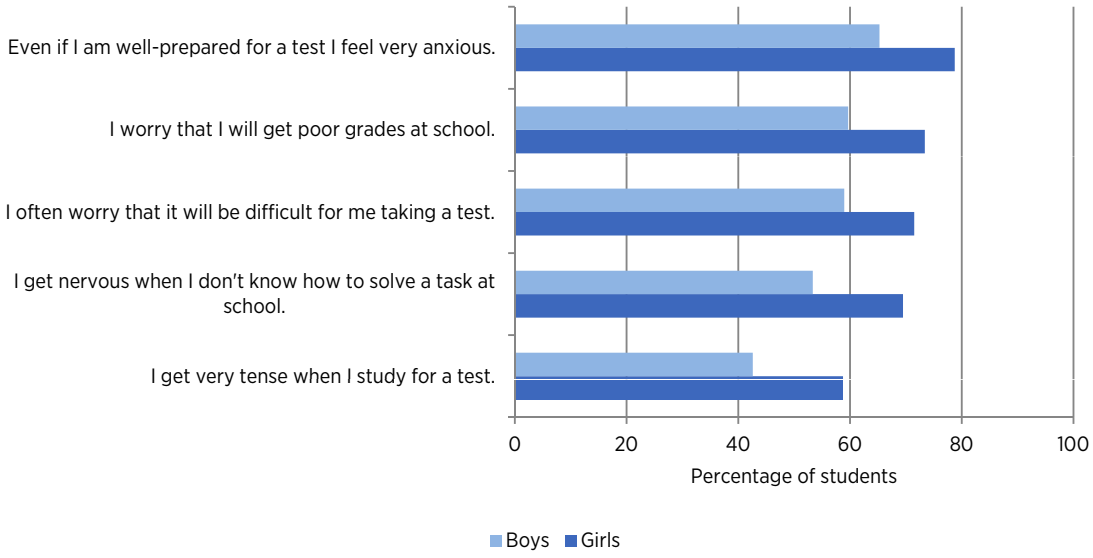
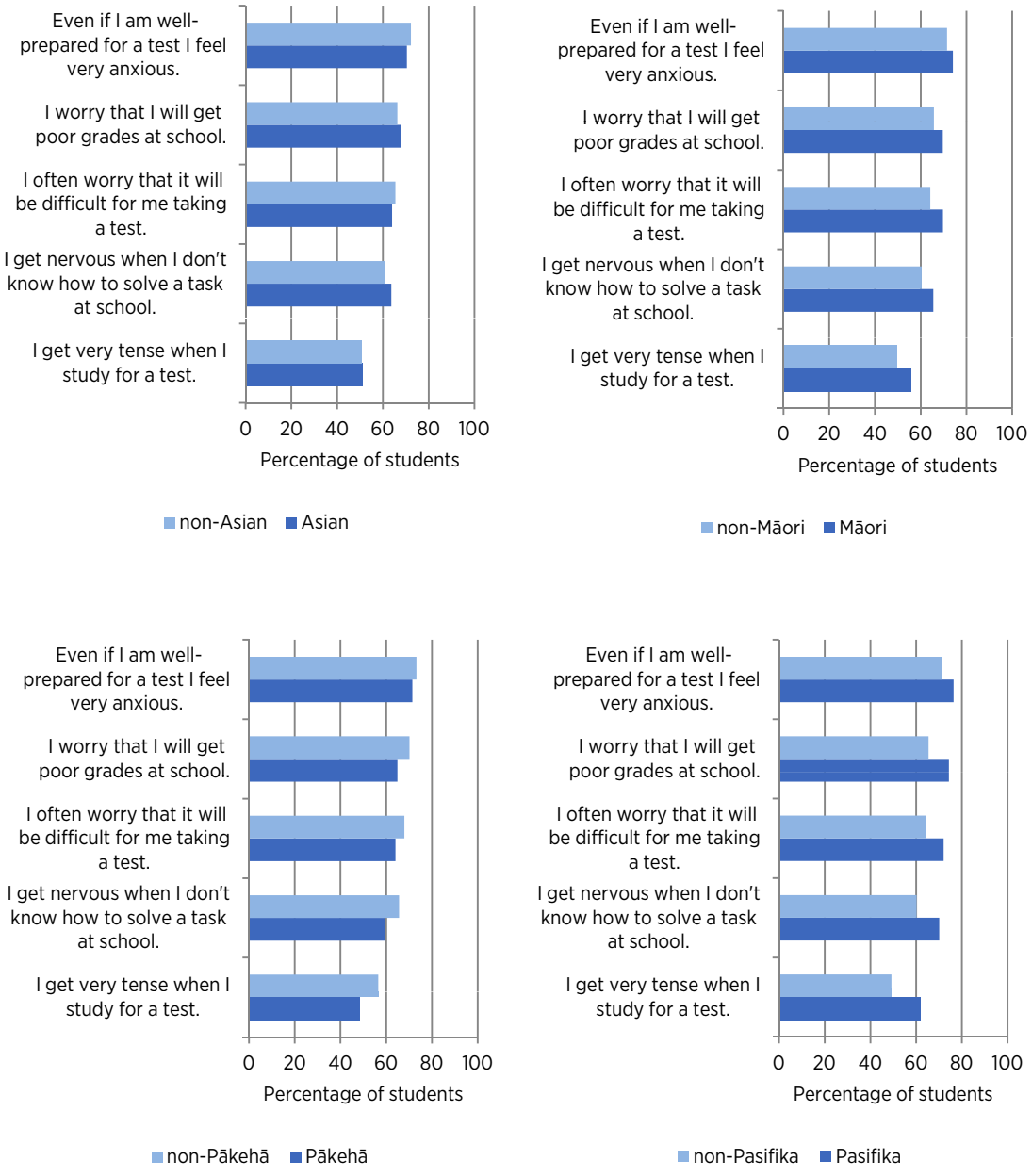


**Figure 1.8:** Percentage of New Zealand students who agreed with schoolwork-related anxiety statements by ethnicity




As with other areas of student wellbeing, the student answers were combined into an Index of Schoolwork-related Anxiety. New Zealand's value (.27) was slightly higher than the United Kingdom (.25) and higher than Australia (.19), the United States (.19) and Canada (.17). This means that our students reported feeling more anxious than students in those countries. Students in Singapore and Chinese Taipei reported higher levels of anxiety than New Zealand students (.57 and .39 respectively).

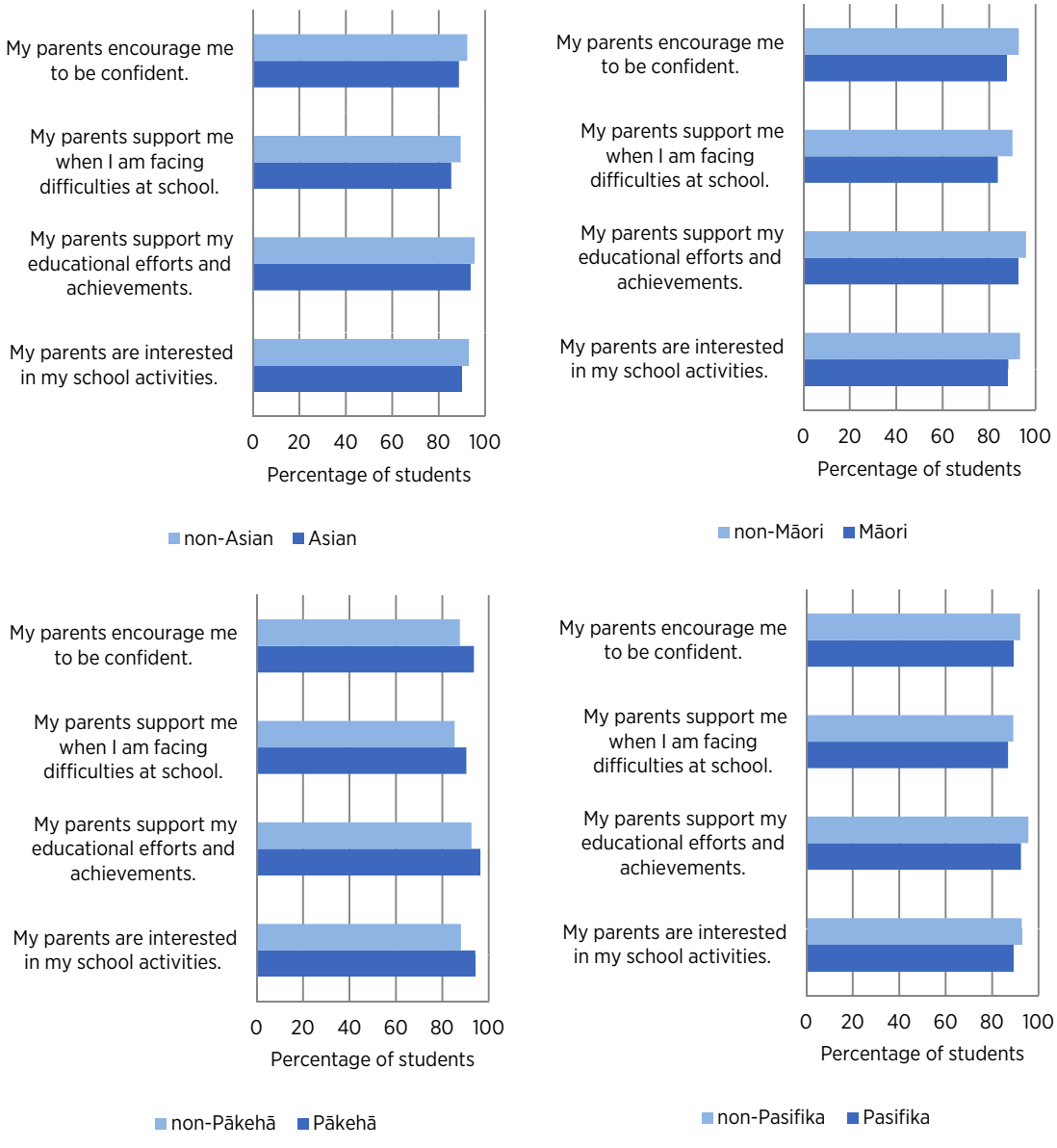
# Students' perceptions of parents, families, whānau and teacher support

## Parents, families and whānau support

New Zealand students reported they felt well supported by the adults in their lives. Around 90 percent of students felt their parents, families and whānau were highly interested in their schooling, and supportive when they were facing difficulties at school. Students also felt their parents and families encouraged them to be confident. The level of support in New Zealand was similar to the OECD average. New Zealand students reported similar levels of parental support to their peers in Australia, Canada, the United Kingdom and the United States.

Across all four questions in this series, New Zealand boys reported slightly higher levels of parental support than girls. Students who identified as Pākehā reported a higher sense of parental support than non-Pākehā students.

**Figure 1.9:** New Zealand students' perceptions of parent support by ethnicity



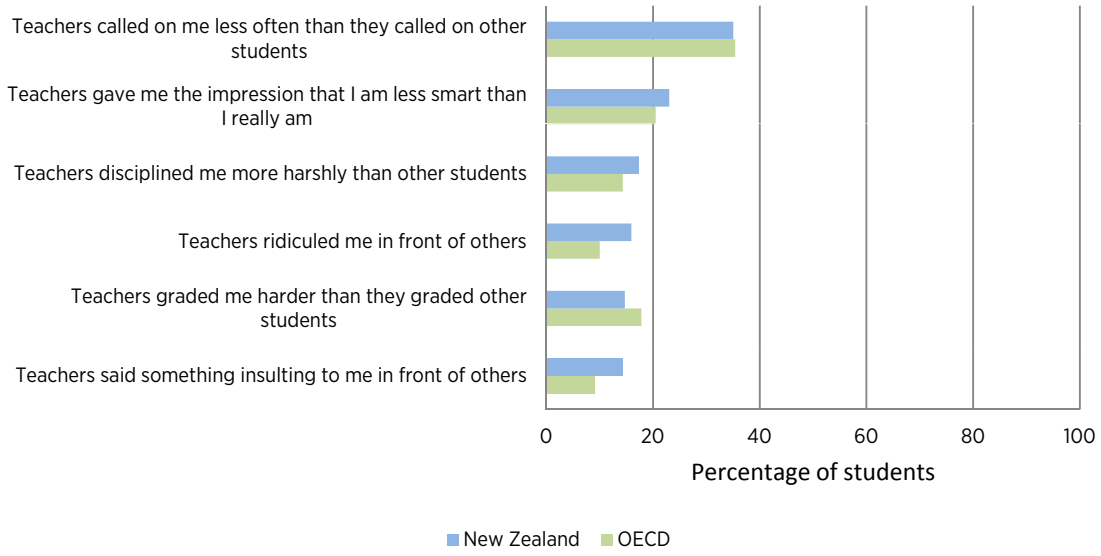
### Teacher support

Overall most New Zealand students were positive about the level of support they received from their teachers. Around 80 percent of New Zealand students reported that in most or every science lesson, their teachers showed an interest in their learning and gave extra help when needed. This was higher than the OECD average. Students who identified themselves as Asian or Pasifika reported that their teachers were supportive and helpful at a higher level than students who identified with other ethnic groupings.

## Students' perceptions of unfair treatment by teachers

Students were asked a series of questions about how they perceived their teachers' treatment of them and how often a range of different types of interactions happened. These behaviours focused on perceived unfair treatment by teachers because this has been found to negatively impact student achievement in previous studies.

**Figure 1.10: Percentage of students perceiving unfair treatment by teachers in New Zealand vs OECD average**




In New Zealand the most common unfair treatment reported by students was that "teachers called on me less often than they called on other students" (35 percent). Boys reported this slightly more often than girls (38 percent of boys and 32 percent of girls).

The OECD defines teacher unfairness as when, at least a few times a month, a teacher:

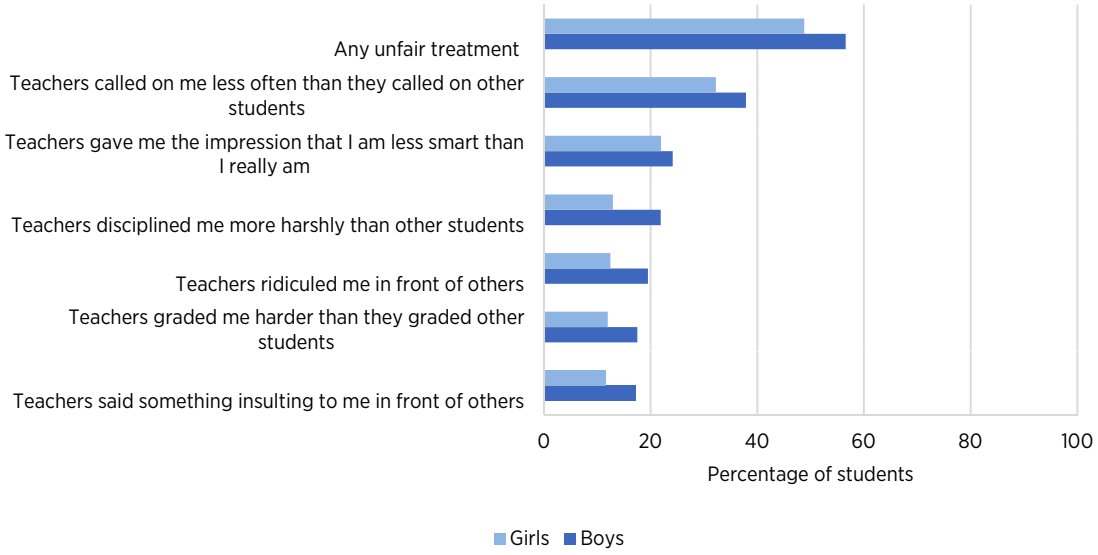
- disciplines a student more harshly than other students
- ridicules a student, and
- says something insulting to the student in front of others.

Around a quarter of New Zealand students reported this "teacher unfairness". This result was slightly higher than the OECD average and similar to Australia (26 percent), though less than the United Kingdom (29 percent). In New Zealand, 74 percent of our students reported that all three of these things only happened occasionally or never.

Students in both the PISA and TIMSS assessments were asked if they agreed that "my teachers are fair to me". When the two assessments are compared, students' sense of fairness appears to decrease slightly as they age (92 percent of Year 5 students agreed compared to 85 percent of Year 9 students).

In New Zealand, boys reported notably higher levels of perceived unfairness than girls (57 percent and 49 percent respectively). The biggest difference was where students agreed with the statement "Teachers disciplined me more harshly than other students" (22 percent for boys and 13 percent for girls). This pattern of higher reports from boys was consistent with results from across the OECD. There was no noticeable difference in the levels of student-reported teacher unfairness between advantaged and disadvantaged students in New Zealand.

**Figure 1.11: Percentage of students perceiving unfair treatment by teachers, by gender**



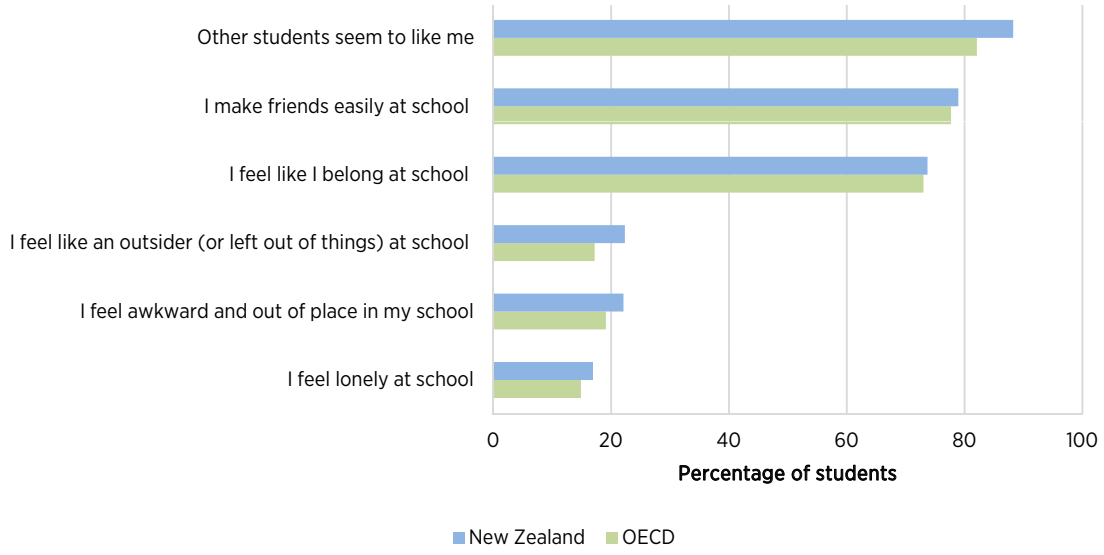
## Sense of belonging at school

In the PISA assessment, students were asked to agree or disagree with six questions related to their sense of belonging at school. Three questions were framed in the positive (agreeing with them indicates a positive sense of belonging) and three in the negative (agreeing with them indicates a more negative sense of belonging).

The majority of New Zealand students agreed with the positively framed questions (and more than the OECD average). However, they also agreed with the negatively framed questions more than the OECD average. Between 17 and 22 percent reported that at school they felt:

- like an outsider or left out of things
- awkward and out of place; or
- lonely.

**Figure 1.12: Percentage of students agreeing with sense of belonging in NZ vs OECD average**




Since 2003, New Zealand students have reported a weakening sense of belonging. In particular there has been an increase in the percentage of students who reported they felt like an outsider (or left out of things) at school: from 8 percent in 2003 to 22 percent in 2015. Students' sense of belonging has also weakened on average across the OECD, but to a lesser extent than in New Zealand.

In terms of different student groups, Pasifika students had a higher overall sense of belonging than non-Pasifika. Pākehā also had lower reports across all questions compared to non-Pākehā. New Zealand boys had a greater sense of belonging than girls across all key questions.

As with other areas of wellbeing, the OECD created an index measure for students' sense of belonging based on student responses to the six questions. On this scale, New Zealand students had a lower sense of belonging (-.17) than the OECD average. Students in Australia (-.12), Canada (-.11), and the United Kingdom and the United States (both -.09) were slightly higher. Students in Singapore – the country with the highest achievement on all academic measures in PISA – had a lower sense of belonging than New Zealand students (at -.21).

## Paid work and unpaid work

According to PISA results, just over a third (36 percent) of New Zealand students had paid work compared to an OECD average of 23 percent. In New Zealand 88 percent of students reported that they worked in the household or took care of other family members, which was somewhat higher than the OECD average of 73 percent. Only two countries (Thailand and Peru) had a higher percentage of students who worked in the household or took care of other family members. Socio-economically disadvantaged students were more likely to work outside the home, while advantaged and disadvantaged students were equally likely to report working at home.

**Figure 1.13: Percentage of New Zealand students with unpaid work in the household (including care of family members) and paid work outside home based on socio-economic status**


In terms of commitments outside school, students who identified as Asian reported lower rates of paid work than non-Asian students. Ninety-one percent of students who identified as Pasifika reported they did household work, including caring for family members.

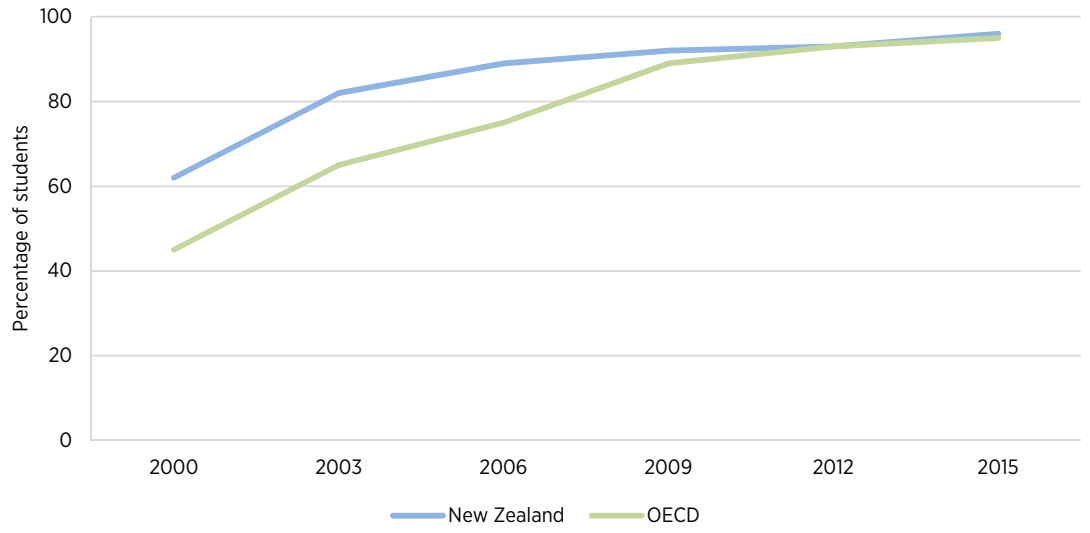
New Zealand boys were somewhat more likely than girls to work for pay (41 percent and 32 percent respectively). This difference between boys and girls was similar across the OECD (29 percent and 18 percent respectively). There was no noticeable difference between boys and girls in Australia (boys 35 percent and girls 34 percent). Canada and Singapore also had smaller gaps than in New Zealand. However, the gender difference in the United States was higher than in New Zealand (boys 36 percent and girls 25 percent).

## Information and communication technologies

As the use of technology in daily life increases, understanding how students interact with and use information and communication technologies (ICT) both within and outside school is increasingly important. Results from different cycles of PISA show changes over time in this area as access to the internet becomes more widespread and smartphones have changed how people connect to the internet.

Internet access at home in New Zealand, as reported by students in PISA, has tended to be high compared to other countries. Reported internet access has increased from 89 percent in 2006 to 96 percent in 2015. There continues to be big differences in internet access at home between countries.

**Figure 1.14: Percentage of students with internet access at home in New Zealand vs OECD for the period 2000-2015**




Between 2012 and 2015 New Zealand students reported notable increases in usage of smartphones and internet connected tablets at home. These increases were similar to those seen across the OECD, as shown in Table 1.1.

**Table 1.1:** Percentage of New Zealand vs OECD students with access to smartphones/ tablet/ computers in 2012 and 2015

| | Percentage of students who used device at home in 2012 | | Percentage of students who used device at home in 2015 | | Difference between PISA 2012 and PISA 2015 | |
|---|---|---|---|---|---|---|
| | New Zealand | OECD Average | New Zealand | OECD Average | New Zealand | OECD Average |
| Smartphones | 70 | 72 | 90 | 91 | 20 | 19 |
| Tablet computers | 29 | 23 | 57 | 54 | 28 | 30 |

**Note:** the difference for the OECD average is based on the 27 countries that had data for both 2012 and 2015.

New Zealand students were also somewhat more likely to have accessed the internet at a younger age than many other OECD countries. One in five New Zealand students (21 percent) reported using the internet at age 6 or younger (compared to an OECD average of 17 percent). Forty-seven percent reported using the internet for the first time between ages 7 and 9 years (compared with an OECD average of 43 percent).

New Zealand 15-year-olds reported spending slightly more time on the internet than the OECD average. On a week day when New Zealand students were not at school they spent, on average, just under 3 hours on the internet each day (2 hours and 43 minutes). Across the OECD this figure was lower at 2 hours and 26 minutes. On a weekend day, the New Zealand average was 3 hours and 16 minutes and the OECD average was 3 hours and 4 minutes. Between 2012 and 2015, the amount of time the average OECD student spent on the internet outside of school increased by an average of 40 minutes per day on both week days and weekends. Over this period New Zealand students increased their internet use by more than an hour.

In terms of the type of activity students were undertaking on the internet, the percentage of students who played online games, chatted online or used social networks every day had increased. For New Zealand students, the largest increase was for chatting online (from 65 percent in 2012 to 79 percent in 2015). Boys were much more likely to frequently play online games than girls (56 percent for boys and 15 percent for girls). This pattern was similar across the OECD.

Extreme internet use was classified by the OECD as more than 6 hours per day (outside of school). Just over a quarter (28 percent) of New Zealand students reported this level of use (the OECD average was 26 percent). Extreme internet users had lower PISA science scores, on average, than non-extreme users. Students who met the criteria for extreme use on week days had a much lower score than students who were extreme users on weekends.

# Student wellbeing and bullying at school

**A sense of security at school promotes a stable learning environment. Bullying among students is a threat to this environment and causes harm to students, their families and the overall school community.[2] A large body of international and New Zealand research indicates a close connection between school climate and academic achievement, as well as the behavioural and social-emotional wellbeing of students.[3] Both the victims and initiators of bullying are more likely to have adverse outcomes in the long-term, including leaving school at a younger age. Bullying may also have a negative impact on those who witness it.[4]**

## Defining bullying at school

The report "Bullying Prevention and Response: a guide for schools" written by the New Zealand Bullying Prevention Advisory Group defines bullying as follows:

> *Bullying is one particular form of aggressive behaviour. It can be covert or overt in nature. Most widely accepted definitions of bullying are based on four characteristics: bullying is deliberate, harmful, involves a power imbalance, and has an element of repetition.*[5]

Bullying can take different forms including verbal or relational as well as physical. Bullying can be direct, person to person (such as pushing someone or calling them a name) or indirect (such as spreading rumours about someone). Verbal and social or relational bullying can be as harmful as physical bullying. Each of these different types of bullying can occur separately or concurrently and can be repeated over time.

Students participating in PISA 2015 were asked how often they experienced certain types of bullying behaviours ("never or almost never", "a few times a year", "a few times a month", "once a week or more"). Students were *not* asked directly if they were bullied or if they would have called their experiences "being bullied". Therefore their responses are reported as "experiences of bullying behaviour".

2 Hooper et al., 2013; Giovazolias et al. 2010

3 Boyd & Barwick, 2011; Thapa et al., 2012; O'Malley et al., 2012; Ruus et al., 2007; Macneil et al., 2009; Voight et al., 2013; Marsh et al., 2014

4 Ministry of Education Bullying guide, 2015

5 Ministry of Education (2015). *Bullying prevention and response: A Guide for Schools*. ISBN 978-0-478-16149-6 (Web)

The following table categorises the types of bullying behaviours that were recorded.

**Table 2.1:** Bullying behaviours recorded in PISA 2015

| Students were asked if and how often they had the experience in school during the previous 12 months | Type of bullying |
|---|---|
| Other students took away or destroyed things that belong to me. | Physical |
| I was hit or pushed around by other students. | Physical |
| I was threatened by other students. | Verbal/physical |
| Other students spread nasty rumours about me. | Verbal/relational |
| Other students left me out of things on purpose. | Relational |
| Other students made fun of me. | Verbal |

## Measuring exposure to bullying behaviours in PISA and TIMSS

The OECD created an Index of Exposure to Bullying from the individual student responses in the PISA assessment, to summarise students' experience of bullying behaviours. This index helps with comparability between students. It ensures that both the type and frequency of bullying is taken into account in one measure.

The Index of Exposure to Bullying was constructed so that:

- a student who has experienced few or no instances of bullying behaviour will have a low value on the index
- a student who has experienced several types of bullying behaviour more frequently will have a high value on the index.

The 10 percent of students with the highest scores on this index are categorised by the OECD as '*frequently bullied*'. This group consists of students who experienced a high intensity of bullying behaviours (at least three of the bullying behaviours a few times a month or more) or experienced most of the bullying behaviours equally or less often. Throughout this report the term *frequently bullied* always refers to students who are classified as such through this measure.

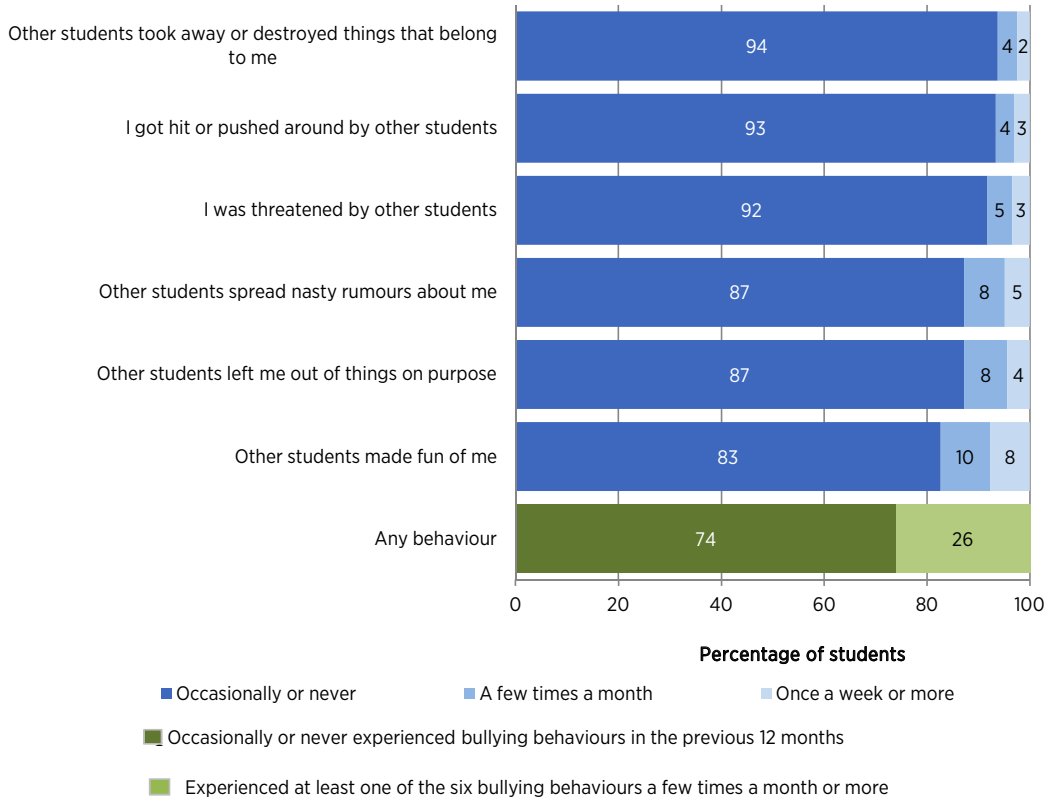
Appendix one has more detailed information on the how the Index of Exposure to Bullying is calculated. Importantly, findings from an index measure may provide a different perspective than results based on the percentage of students who agree or disagree with individual questions.

The TIMSS assessment of Year 5 and Year 9 students also included questions about students' experiences of bullying behaviours and created a similar index based on these results. While the questions were slightly different from the PISA assessment and the group of countries participating in each assessment differ, the relationships with achievement and other wellbeing measures can be broadly compared.

## New Zealand students' reports of experiencing bullying behaviours and the effect on their wellbeing

According to the direct student report (not the index), three quarters (74 percent) of New Zealand students who completed PISA reported they had occasionally or never experienced bullying behaviours in the previous 12 months (see Figure 2.1).[6] In addition most New Zealand students (85 percent) reported feeling safe at school.[7] However, a quarter (26 percent) reported experiencing at least one of the six bullying behaviours a few times a month or more. This was higher than the OECD average of one in five students (19 percent) experiencing any type of bullying a few times a month or more.

**Figure 2.1: Percentage of New Zealand students reporting bullying behaviours**



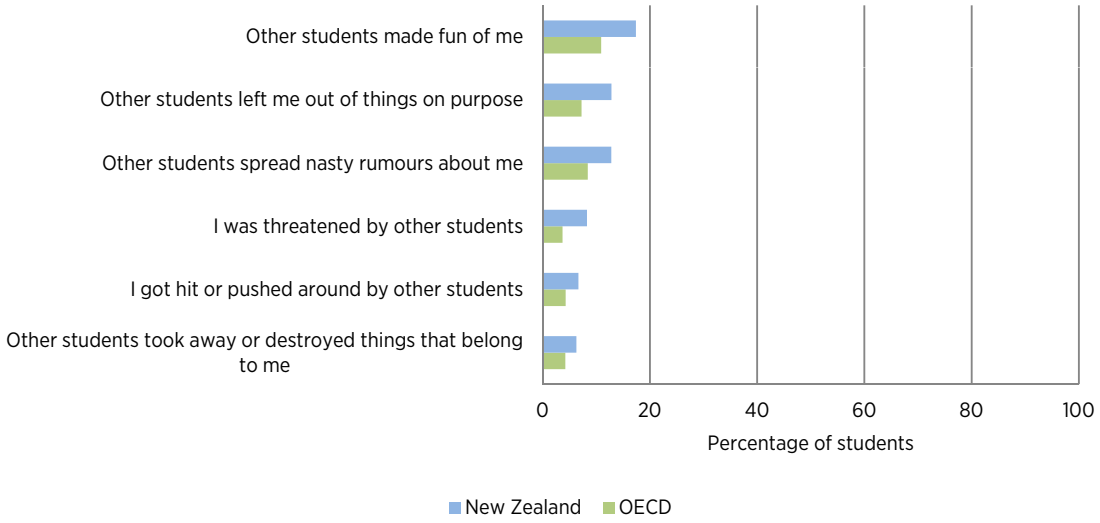

**Note:** Numbers may not add to 100% due to rounding.

Several other countries reported similar levels to New Zealand students, for example Singapore (25 percent), Australia (24 percent), the United Kingdom (24 percent) and Canada (20 percent). The Netherlands (9 percent) and Portugal, Korea and Iceland (all 12 percent) had the lowest percentages of students reporting one or more of the six bullying behaviours a few times a month or more. For each of the six individual bullying behaviours, New Zealand students reported higher prevalence than the OECD average.

6 These are students who chose "never or almost never", "a few times a year" for how often something occurred.

7 This question was only asked of New Zealand students and no international comparisons are available.

**Figure 2.2:** Percentage of students reporting bullying behaviours in New Zealand vs OECD average




On the OECD Index of Exposure to Bullying, New Zealand had the second highest average level of all participating countries, with Latvia the first. Singapore was the third highest and Australia the fifth, followed by the United Kingdom and Canada. The TIMSS 2014/2015 results are consistent with the PISA 2015 results and show that students' reported exposure to bullying was higher than in most other participating countries. On the TIMSS bullying scale, 45 percent of students at Year 9 and 60 percent of students at Year 5 reported they had experienced bullying behaviours about monthly or more often.[8]

## The relationship between bullying and students' sense of belonging at school

Bullying at school may discourage students from socialising with other students, and result in them feeling isolated and withdrawn. Both PISA and TIMSS results show a strong connection between students' sense of belonging in school and their experiences of bullying at school, regardless of their age.

Across the OECD and in New Zealand, students who were classified as frequently bullied on the OECD's Index of Exposure to Bullying also reported:

- a weaker sense of belonging at school
- lower expectations to remain in education.

About 48 percent of New Zealand students who were categorised as frequently bullied reported feeling like an outsider at school, compared to only 16 percent who were not frequently bullied. This difference was significant both before and after accounting for student and school characteristics. TIMSS 2014/15 results show that students who were "bullied about weekly" were more likely to have a low sense of belonging than those who were "almost never bullied" at school.

8 TIMSS 2014/15 Science Year 9: Trends over 20 years in TIMSS

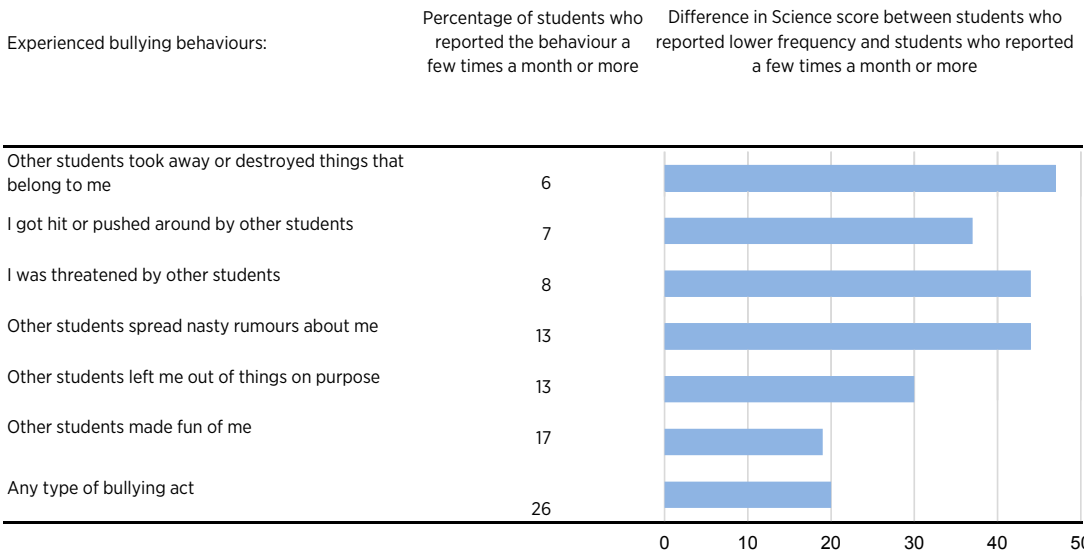
## Bullying, schoolwork-related anxiety and student achievement

The OECD reports that those who experienced bullying behaviours were also more likely to have experienced schoolwork-related anxiety. This may be because anxious individuals are easy targets for bullies or because negative results at school are more worrying for students who are picked on by their peers.[9]

PISA 2015 results show that 82 percent of New Zealand students who were classified as frequently bullied reported feeling anxious before a test, even if they were well prepared, compared to 70 percent who were not classified as frequently bullied. This difference is significant even after gender, socio-economic status and overall school performance are taken into account.

In PISA 2015, New Zealand students who reported they experienced bullying at least a few times a month had lower average science achievement than those who reported they experienced it occasionally or never (Figure 2.3). This relationship also held for boys and girls, and students in each ethnic grouping. Similar findings were observed in TIMSS 2014/15 for both Year 5 and Year 9 students.

**Figure 2.3: Bullying behaviours and differences in science achievement of PISA 2015 New Zealand students**




**Note:** In this figure positive differences indicate students reporting less bullying behaviour have higher scores.

At the school level across the OECD and in New Zealand, schools with a high prevalence of bullying had lower average science achievement than the schools with a low prevalence.[10] In New Zealand, there was no association between science performance and prevalence of bullying after accounting for schools' socio-economic profiles. In other words, in New Zealand, the negative relationship at the school level between bullying and science achievement appears to be more a function of socio-economic factors than bullying *per se*. In contrast the relationship between bullying and achievement remained significant across the OECD even after accounting for socio-economic status.

9 PISA 2015 Wellbeing report

10 Schools with a high prevalence of bullying are those where more than 10% of students are frequently bullied. Schools with a low prevalence of bullying are those where 5% of students or less are frequently bullied

## Bullying and students' expectations of their future education

Across the OECD, students with higher reported levels of exposure to bullying behaviours were more likely to have lower expectations about their future education. In New Zealand, 52 percent of frequently bullied students expected to leave education at the end of secondary school. This was notably higher than the 38 percent of those who were not frequently bullied.

TIMSS 2014/15 findings showed a similar result. About a quarter of Year 9 students who reported experiencing bullying behaviours "almost never" expected to end their education at secondary level. In contrast, a third of students who reported experiencing bullying behaviours "about weekly" expected to do so.

However, the difference for 15-year-olds is not statistically significant in New Zealand after accounting for student and school characteristics — but it is across the OECD. This suggests that the impact of bullying on student expectations may weaken in New Zealand as students progress through their schooling.

## Bullying and different student groups

Research shows that the likelihood of students exhibiting bullying behaviours or experiencing bullying behaviours has links to certain personal characteristics. These characteristics include:

- age
- gender
- ethnicity
- socio-economic status.

Bullying behaviour seems to happen particularly often during times of transition in children's and adolescent's lives, when they are figuring out where they fit in among peer groups.[11]

### Age

The most common type of bullying behaviour experienced by New Zealand 15-year-olds was "being made fun of by other students", with 17 percent of students reporting this a few times a month or more (OECD average was 11 percent). This was also the most common behaviour reported by Year 5 and Year 9 students in the TIMSS assessment. The least common bullying behaviours reported by 15-year-olds were "other students took away or destroyed things that belong to me" and "I got hit or pushed around by other students". Six percent and 7 percent of students on the PISA assessment, respectively, experienced these behaviours a few times a month or more (compared to an OECD average of 4 percent each).

With increased access to online communication and social networking tools, cyber bullying has become a new form of bullying behaviour among teenagers.[12] The PISA 2015 questionnaire did not include cyber bullying specifically. However, in the TIMSS 2014/15 assessment 7 percent of Year 9 students reported that other students posted embarrassing things about them online once a month or more often.

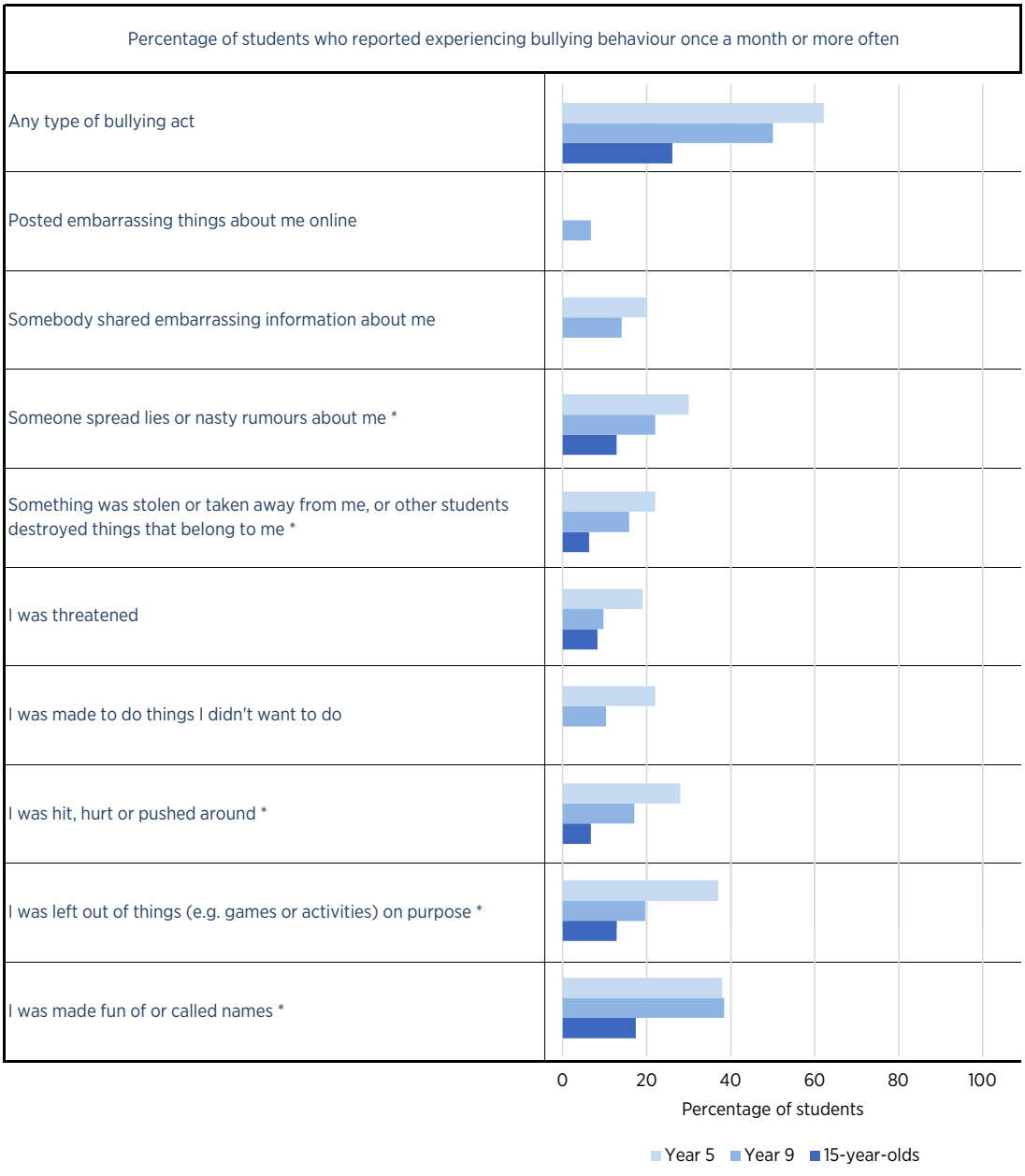
11 PISA Well-being report

12 Livingstone et al. 2008; Wang et al. 2009

Figure 2.4 shows the prevalence of bullying among different age groups in New Zealand. Looking at TIMSS and PISA together we see the prevalence of students reporting bullying behaviours decreases as students age.

This isn't necessarily because younger students bully each other more than older students do. Rather it could be related to students growing resilience as they age, and an ability to feel less affronted or insulted by something. Also as children develop they generally become less concrete and literal in their understanding of social situations and in how they describe and ascribe those behaviours, meaning younger children may *perceive* something more negatively than older children.

**Figure 2.4:** New Zealand students' exposure to bullying by age groups: PISA 2015 and TIMSS 2014/15




**Notes:** * TIMSS and PISA had slightly different wording for some of the bullying behaviours.
The average age at the time of TIMSS testing in New Zealand was 10 for Year 5 students and 14 for Year 9 students.

## Gender

Boys and girls reported different experiences of bullying behaviours. Both PISA and TIMSS results showed that boys were more likely than girls to experience bullying at school across all age groups. Boys were also much more likely to be "made fun of or called names". As students grow older, there is a shift in certain behaviours towards girls reporting they experienced them more than boys. In TIMSS 2014/2015, Year 5 boys and girls had similar percentages of students reporting that somebody "shared embarrassing information" about them. By secondary school, girls were more likely than boys to report that someone "spread rumours or shared embarrassing information" (including online) about them.

## Ethnicity

Students who identified as Asian had noticeably lower levels of experiencing bullying behaviours than students who did not identify in this group. Students who identified as Māori or Pākehā had higher reported exposure to bullying among the four main New Zealand ethnicities. However, significant numbers of students who experienced this bullying would be part of both of these groupings.

**Table 2.2:** New Zealand student exposure to bullying by ethnicity

| Ethnicity reported (Students may be included in more than one category) | Percentage of Frequently Bullied students who are ... | Percentage of NZ PISA students who are ... | PISAIndex of Exposure to Bullying |
|---|---|---|---|
| Asian | 11 | 16 | 0.45 |
| Pasifika | 13 | 13 | 0.59 |
| Pākehā/European | 73 | 69 | 0.65 |
| Māori | 23 | 20 | 0.70 |

**Note:** 18% of all PISA students in New Zealand are classified as *frequently bullied*.
Ethnic groupings cannot be compared with each other, as 17% of New Zealand students reported more than one ethnicity.

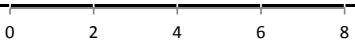
## Socio-economic status

Across the OECD and in New Zealand, students from an economically disadvantaged background were more likely to report being bullied regularly than those with advantaged backgrounds. For example, the last line of figure 2.5 shows that 30 percent of New Zealand students who were socio-economically disadvantaged reported experiencing any type of bullying act compared to 24 percent of socio-economically advantaged students.

A socio-economic profile was also assigned at the school level (by looking at the mean value of ESCS students per school). New Zealand schools considered more disadvantaged scored higher in the index of exposure to bullying (0.77) than those considered to be advantaged schools (0.52). Similar results appear in TIMSS 2014/15. That study identified that in New Zealand more disadvantaged schools had a bigger proportion of students who experienced bullying behaviours *about weekly*, and a smaller proportion of those who *almost never* experienced those behaviours than in the more advantaged schools. This pattern was similar across both Year 5 and Year 9 students.

**Figure 2.5: Students' experience of different types of bullying by socio-economic status**

| Bullying behaviors that students reported occuring at least a few times a month | Percentage of New Zealand socio-economically disadvantaged students | Percentage of New Zealand socio-economically advantaged students | Percentage difference (disadvantaged - advantaged) |
|---|---|---|---|
| | % | % | New Zealand OECD |
| Other students took away or destroyed things that belong to me | 8 | 6 | |
| I got hit or pushed around by other students | 9 | 6 | |
| I was threatened by other students | 11 | 7 | |
| Other students spread nasty rumours about me | 16 | 12 | |
| Other students left me out of things on purpose | 15 | 11 | |
| Other students made fun of me | 21 | 15 | |
| Any type of bullying act | 30 | 24 | |




**Note:** All percentage differences are statistically significant

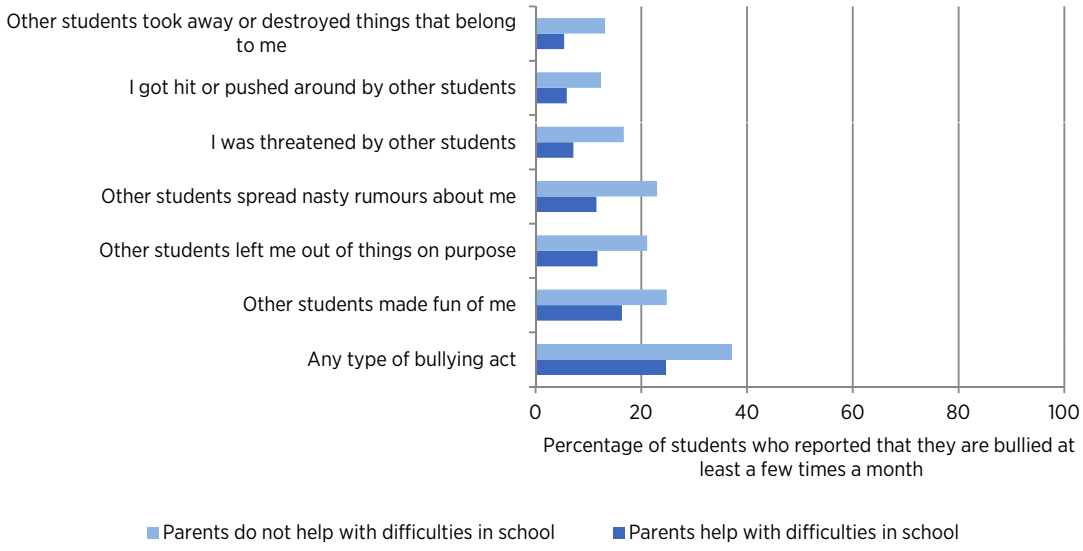
A socio-economically disadvantaged student is a student in the bottom quarter of the PISA index of economic, social and cultural status. A socio-economically advantaged student is a student in the top quarter of the PISA index of economic, social and cultural status (ESCS) within his or her own country/economy.

## Bullying and parents, families and whānau support

Exposure to bullying behaviour was strongly related to students' reports of their parental support. In PISA 2015, over a third (37 percent) of New Zealand students who did not feel supported by their parents when having difficulties in school also reported experiencing bullying behaviours a few times a month or more often. In comparison, only about a quarter of those who felt supported by their parents when having difficulties in school reported similar experiences of bullying.

These results do not mean that levels of parental support cause bullying in any way. Rather they suggest that it is possible that students who feel more supported also feel more resilient and less affected by others' behaviours. Alternatively, other factors may impact on *both* parental support and experiences of bullying for young people.

**Figure 2.6: Exposure to bullying and parental support in New Zealand**




**Notes:** All differences between students with and without supportive parents are statistically significant.

Students with (without) supportive parents reported that they "agree" or "strongly agree" ("disagree" or "strongly disagree") that their parents help them when they have difficulties in school.

## Students' perceptions of teacher fairness

Teachers play a dual role in preventing bullying among students. They have an authority to intervene in instances of bullying, and can act as a role model for students in building and maintaining healthy relationships with their peers. The results of PISA 2015 show that students' perceptions of teacher unfairness were associated with students' reports of bullying prevalence. Students who said they had been humiliated or have had their self-confidence undermined by teachers may often try to regain it by asserting their superiority over more vulnerable groups.

Across the OECD and in New Zealand, perceptions of teachers' unfairness was higher among frequently bullied students compared to all students. Just over half of frequently bullied students perceived that their teacher behaved unfairly, compared to around a quarter of all students in New Zealand.

Across the OECD and in New Zealand the incidence of reported bullying behaviour was higher in schools where students also had high perceptions of teachers' unfair behaviour. New Zealand was among the countries where the association between perceptions of teacher unfairness in the school and students reports of bullying behaviour was particularly strong. In New Zealand, in schools where there was higher perception of teacher unfairness, 36 percent of students were classified as frequently bullied compared to 12 percent in schools with lower perceptions of teacher unfairness (a much bigger difference than across the OECD). This difference was significant even after accounting for other student and school characteristics.

TIMSS 2014/2015 does not have directly comparable data to PISA findings about teacher fairness. However, as part of the TIMSS questionnaire students were asked if "teachers at my school are fair to me". This showed a similar pattern of response. Students who *disagreed* with this statement were also more likely to report more regular experiences of bullying behaviour.

## School disciplinary climate

Positive school discipline practices were associated with a lower incidence of bullying and victimisation. Consistent and structured disciplinary environments, and support and care of adults are paramount to ensuring students:

- feel secure
- become more engaged with school work
- are less inclined to engage in high-risk behaviours[14].

PISA 2015 findings show that, across the OECD, for schools where students reported a poor disciplinary climate in class there was a higher prevalence of students reporting experiences of bullying. In New Zealand the proportion of frequently bullied students was higher in schools with a negative disciplinary climate (24 percent) than in schools with a positive disciplinary climate (12 percent). This difference was significant even after accounting for student and school characteristics.

14 (Gregory et al., 2010; Cornell and Huang, 2016; Mytton et al., 2006; Kuperminc, 2001 in Wellbeing report)

# Students' physical wellbeing

**Adolescence is a significant life stage and adolescent wellbeing is important for the successful navigation of a physical and emotional transition from childhood to adulthood. It is also important for establishing healthy patterns and habits into adulthood.[15] Hauora is a concept of wellbeing that covers the physical, mental and emotional, social, and spiritual dimensions of health. This idea is recognised as one of the underlying concepts of the health and physical education section of the New Zealand Curriculum.[16] This generally aligns with the PISA definition of students' wellbeing, which is "...the psychological, cognitive, social and physical functioning and capabilities that students need to live a happy and fulfilling life".**

PISA 2015 gathered contextual information from students on physical activity, and food and nutrition. These are two of seven key areas of learning in the health and physical education section of the New Zealand Curriculum. Key learning areas highlight the importance New Zealand places on these aspects of student life in the education system.

The *Annual Update of Key Results 2015/16: New Zealand Health Survey* found that almost one in three adults (those aged 15 and over) were obese, and a further 35 percent were overweight.[17] The survey also reported that there was a significant decline in the rate of 15 to 17 year-olds who are physically active between 2011/12 and 2015/16 (people were considered physically active when they did at least 30 minutes of exercise on five or more days in the week prior to the survey).

15 Clark et al., 2013; OECD, 2017.

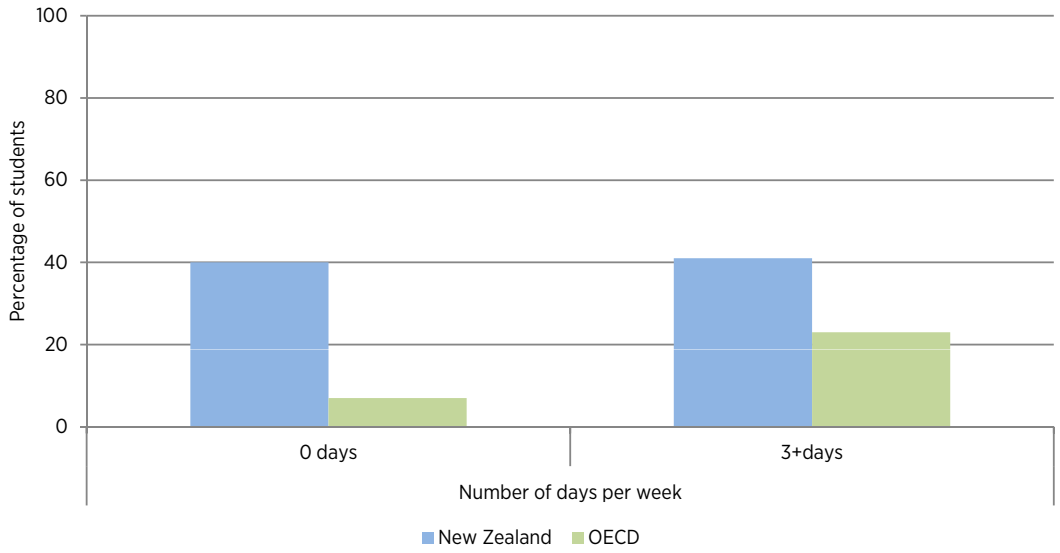
16 Ministry of Education, 2007.

17 Ministry of Health, 2017.

## Physical activity in school

In the majority of PISA 2015 countries, most students took at least one physical education (PE) class per week. Compared to the OECD average, New Zealand had higher proportions of students at both ends of the spectrum, those who are not doing very much and those who are doing PE frequently.[18] In New Zealand, PE is not compulsory after Year 10, although individual schools can decide to include it as a core subject. It may be that the percentage of New Zealand students who did not take PE is so much higher than the OECD average because it is not compulsory after Year 10.

**Figure 3.1: Percentage of students taking no PE classes or 3+ PE classes per week**




Students' emphasis on PE tends to decrease as they move from lower to upper secondary levels. For New Zealand, the difference between students in Year 12 and above and those in Year 11 or below was close to three quarters of a day of PE per week. This was larger than the other English-speaking and comparison countries except for Australia. On average across the OECD, this difference was closer to half a day per week.

Across the OECD, students who had lower PISA scores[19] tended to take more PE classes per week than those who had higher PISA scores.[20] This was the same for New Zealand, where students in the bottom quarter of science performance had more than a day more per week of PE than those in the top quarter. This is unlikely to mean that exercise has a detrimental effect on achievement. Perhaps rather it means that those students who are taking more PE classes have a greater focus on that subject than on the subjects that are tested in PISA (science, mathematics, and reading).

18 'Frequently' is defined as three or more days per week.

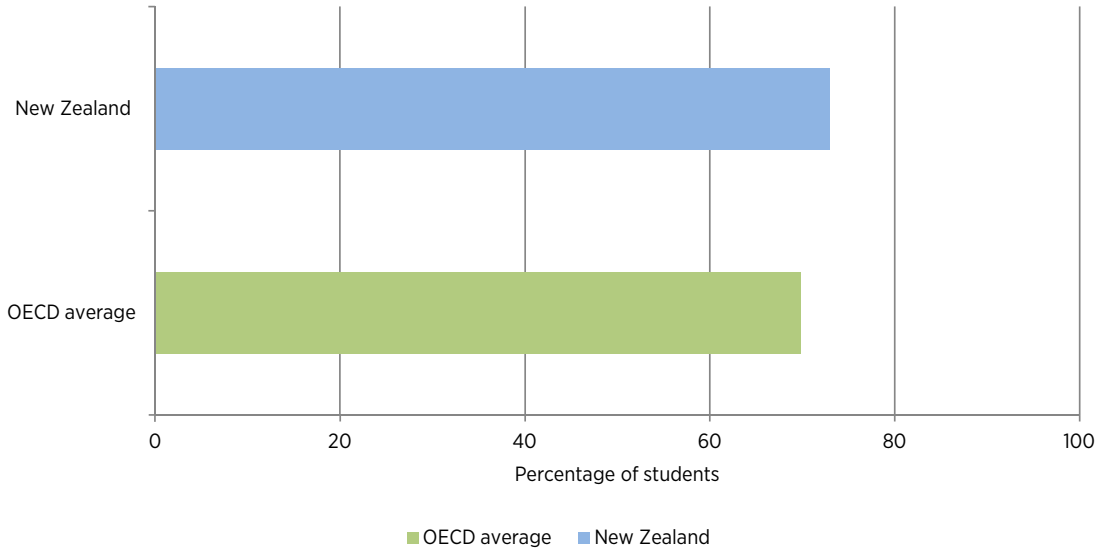
19 Students who were in the bottom quarter of science performance.

20 Students who were in the top quarter of science performance.

## Physical activity outside of school

On average across the OECD, 70 percent of students reported they exercised or practiced sports outside of school.[21] The rate for New Zealand students was slightly higher at 73 percent. Compared to the OECD average, high-performing Asian countries such as Japan, Singapore, and Chinese Taipei tended to have smaller proportions of students reporting they did physical activity outside of school. Seven percent of New Zealand 15-year-olds reported not engaging in any type of physical activity (consistent with the OECD average).

**Figure 3.2:** Proportion of students exercising or practising sports outside of school




### Moderate and vigorous activity outside of school

Students in PISA 2015 were asked how many days per week they engaged in moderate physical activity[22] for at least 60 minutes per day and how many days per week they engaged in vigorous physical activity[23] for at least 20 minutes per day. In New Zealand, 11 percent of students reported they did not engage in any moderate physical activity (the same as the OECD average). The proportion of New Zealand students who reported doing moderate activity frequently was 67 percent, similar to the OECD average (65 percent). When it came to vigorous physical activity, 19 percent of New Zealand 15-year-olds reported they did not engage in this at all whereas 52 percent did so frequently. The OECD averages were similar — 17 and 52 percent respectively.

In most countries, students who took PE classes tended to also be more active outside of school. New Zealand students who attended PE at least two days per week did an average of 1.2 more days of moderate physical activity per week outside of school compared to those who did no PE. This difference was larger than the OECD average of half a day, and one of the largest differences across PISA countries.

There was generally a positive relationship between the number of days students do moderate physical activity outside of school and their average science achievement score. However, both the New Zealand and OECD average scores drop sharply for those students who do vigorous physical activity each day. Again this is unlikely to mean that exercise and physical activity causes a reduction in science score. However, it does show that there is something different happening for students who are exercising outside school intensely and very often.

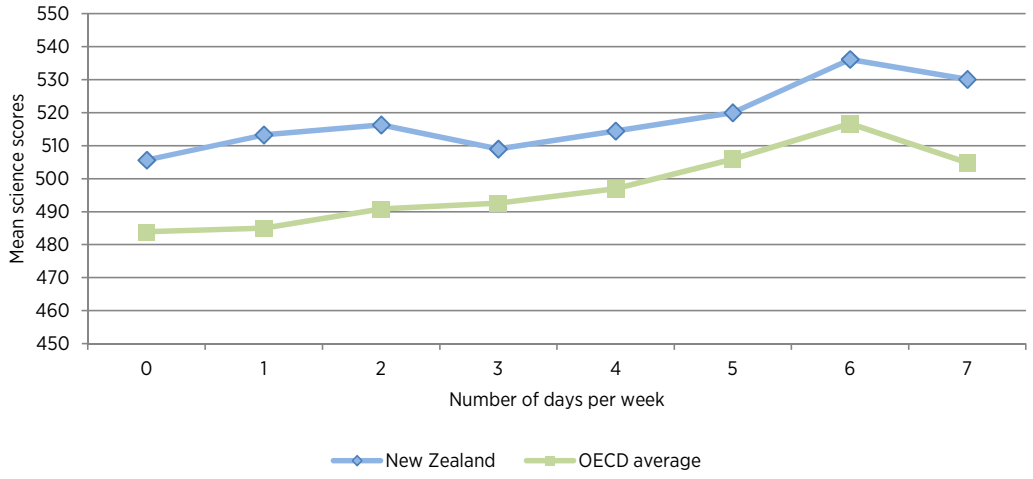
21 Students are asked about exercise or sport in relation to the most recent day they attended school.

22 Physical activities such as walking and cycling can be considered moderate if they raise a person's heart rate and the person breaks into a sweat.

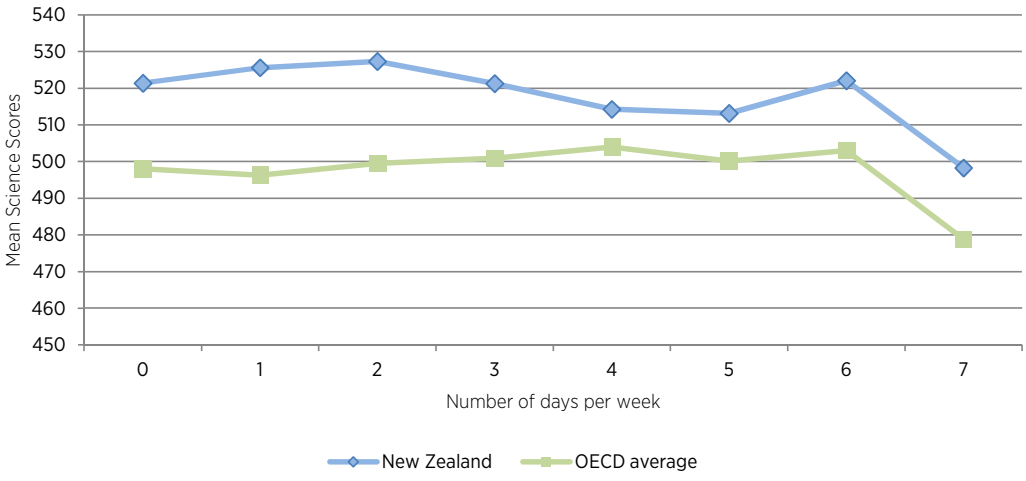
23 Activities such as hiking, jogging, or playing tennis or football are considered vigorous if breathing becomes difficult and fast, and the heart rate increases rapidly.

**Figure 3.3:** Science performance by students who engage in physical activity outside of school

**Moderate physical activity**




**Vigorous physical activity**



# Physical wellbeing of different student groups

## Gender

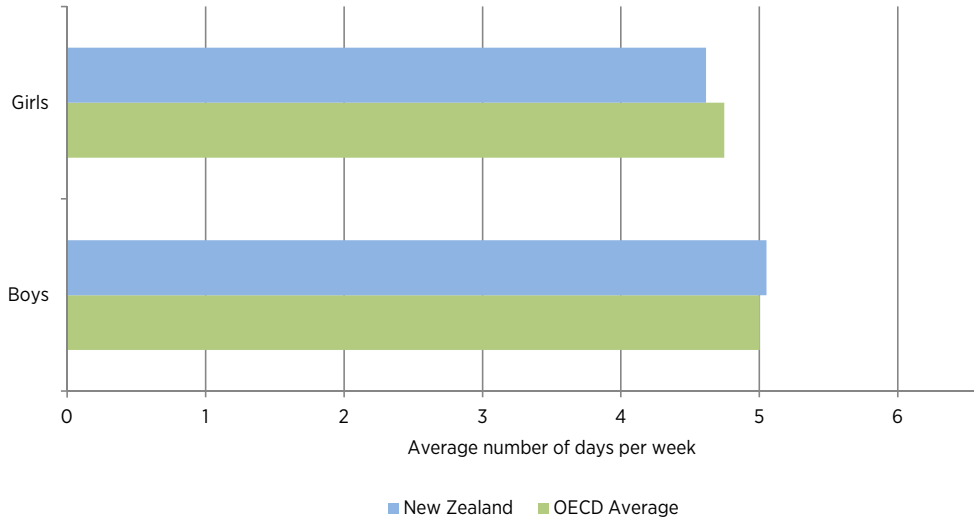
In PISA 2015 there were small differences between girls and boys when it came to indicators of physical wellbeing. On average across OECD countries, 6 percent of boys and 7 percent of girls reported they did not participate in any type of physical activity outside of school, similar to New Zealand (7 percent for both genders).

There was a difference of around half a day between boys' and girls' weekly PE class attendance in New Zealand. This was higher than the international average but reflects a general trend across countries for boys to spend more time in PE than girls. The gender difference in New Zealand was similar to that of Canada and the United States but larger than the other English speaking and comparison countries.

Boys were more likely than girls to report that they exercise or do sports outside of school, both across the OECD and in New Zealand. The gender difference, however, was smaller for New Zealand students, particularly for after school exercise or sports. Here the gap was one of the smallest among English-speaking countries and the chosen comparison countries.

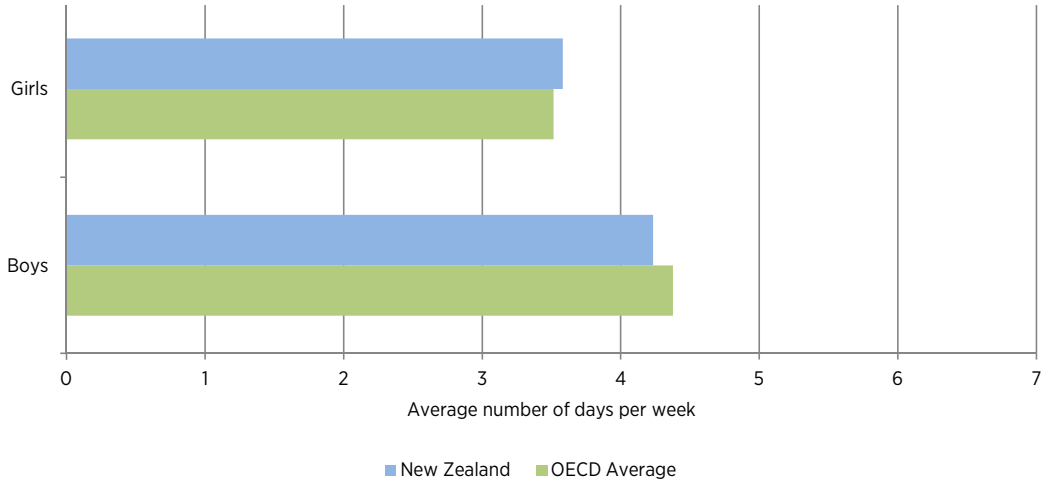
In New Zealand, 15-year-old boys reported spending almost half a day more engaged in moderate physical activity than girls. This difference was higher than the OECD average of around one quarter of a day but smaller than the difference for countries like the US, Australia and Canada.

**Figure 3.4:** Average number of days per week girls and boys engaged in *moderate* physical activity



There was an even larger difference (more than half a day) between New Zealand boys and girls when it came to how often they did vigorous physical activity.

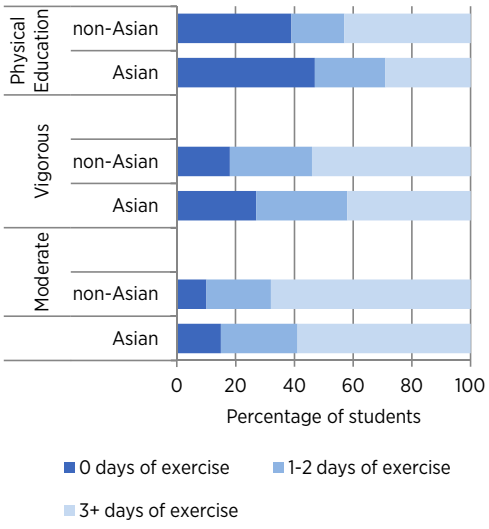
**Figure 3.5: Average number of days per week girls and boys engaged in *vigorous* physical activity**

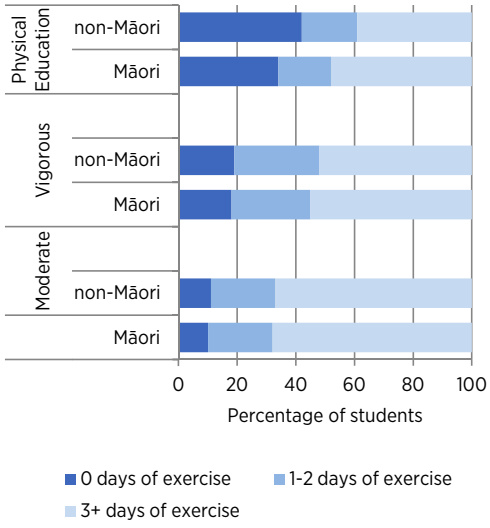


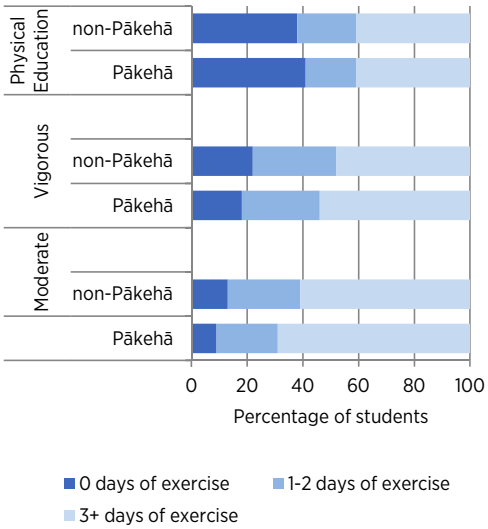
## Ethnicity

Differences exist between ethnic groupings for in- and out-of-school physical activity and eating breakfast. Overall, students who identified as Asian tended to be least involved in physical activities either within school or outside of school. On the other hand students who identified as Māori and students who identified as Pasifika were more likely to be involved in PE and to frequently do sports outside of school than their non-Maori and non-Pasifika counterparts. There was little difference between students who identified as Pākehā and those who did not when it came to frequency of PE classes but these students were less likely to do sport or exercise before school.

**Figure 3.6:** Percentage of students who took part in PE and *vigorous* and *moderate* exercise by ethnicity



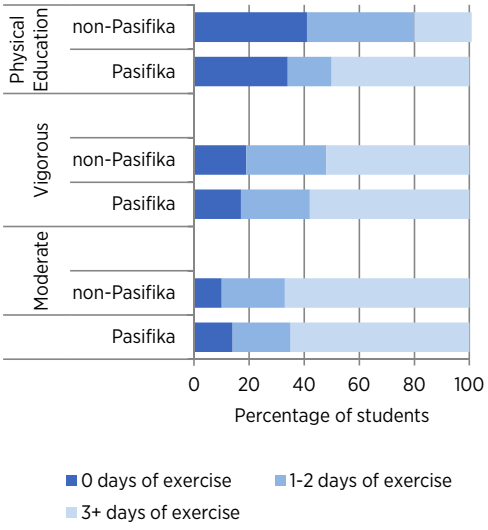
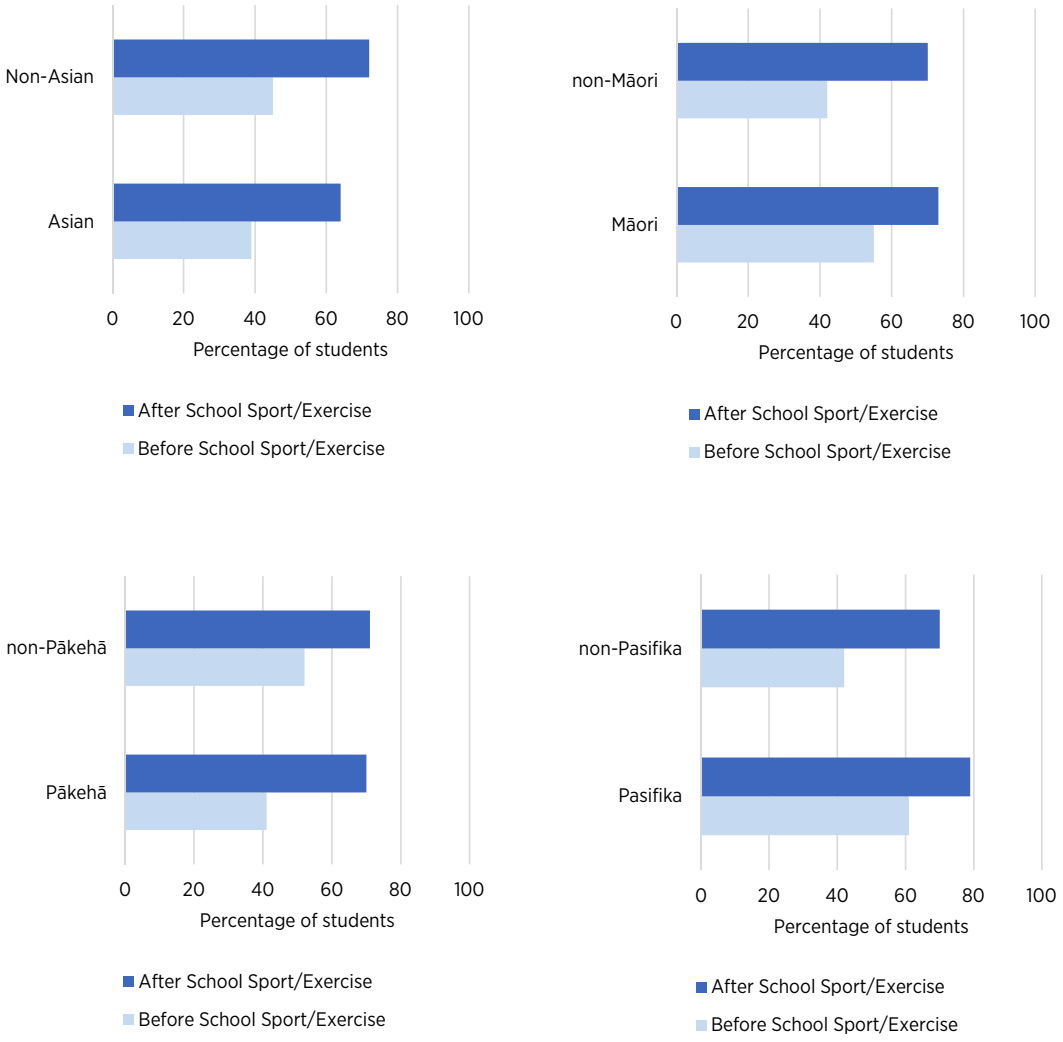



**Figure 3.7:** Percentage of students taking part in sport/ exercise before and after school by ethnicity



## Socio-economic status

Disadvantaged students had higher average weekly PE class attendance than advantaged students. This difference was larger in New Zealand than the OECD average. All other English-speaking countries aside from Australia had non-significant differences based on socio-economic status, as was also the case for Chinese Taipei and Finland.

There was no significant difference between advantaged and disadvantaged students in New Zealand when it came to exercising or practicing sports before school. In terms of after school exercise or sports, there was a higher percentage of advantaged than disadvantaged students who reported doing this. This difference was smaller than the OECD average and a number of the English speaking and comparison countries (except for Ireland, Japan, Chinese Taipei, and Singapore).

Advantaged students were more likely than disadvantaged students to report taking part in moderate or vigorous physical activity outside of school in New Zealand. Across the OECD there was a higher percentage of disadvantaged students who did not take part in either moderate or vigorous physical activity compared to advantaged students (9 percent vs 5 percent). For New Zealand students, this gap was slightly larger, with 10 percent of disadvantaged students reporting they did not do any moderate or vigorous physical activity, compared with 4 percent of advantaged students.

**Figure 3.8:** Percentage of advantaged and disadvantaged students reporting physical activity

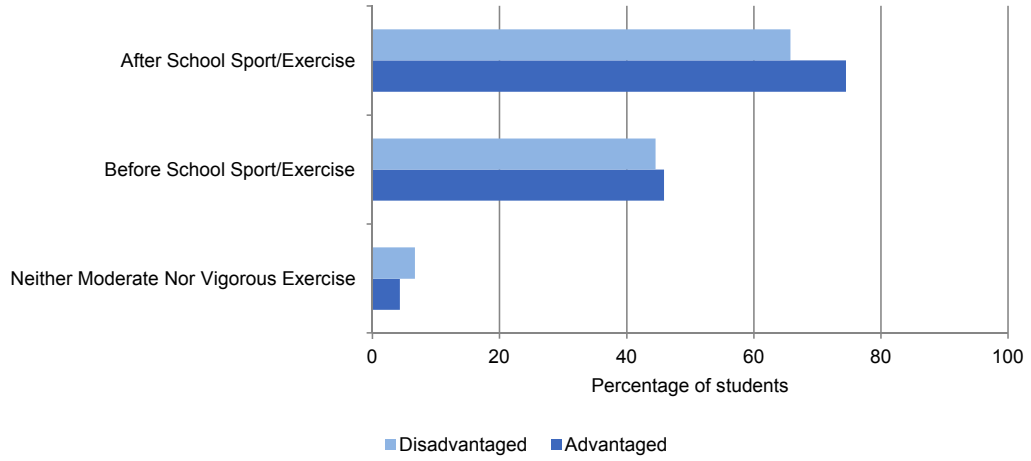
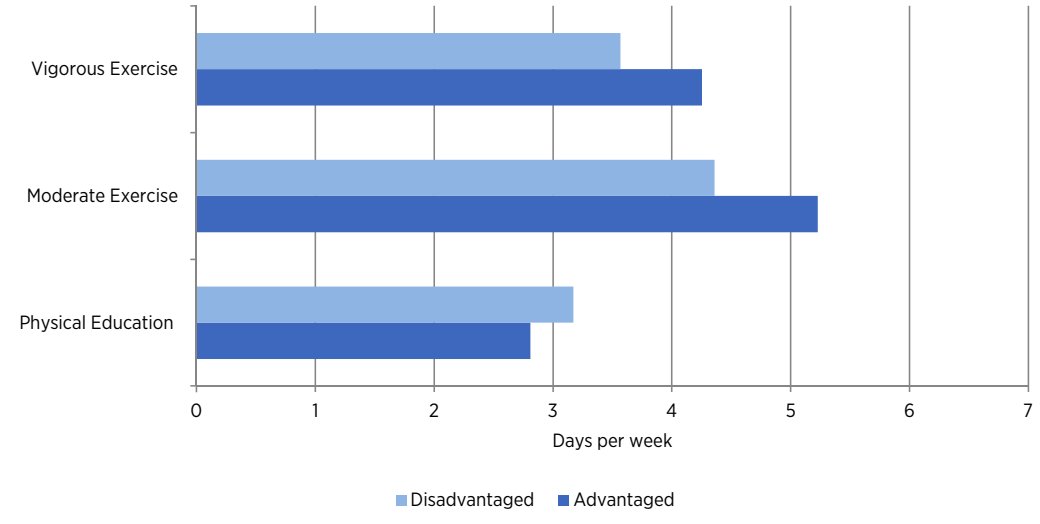



**Figure 3.9:** Average number of days per week engaging in physical activity



## Students' eating habits

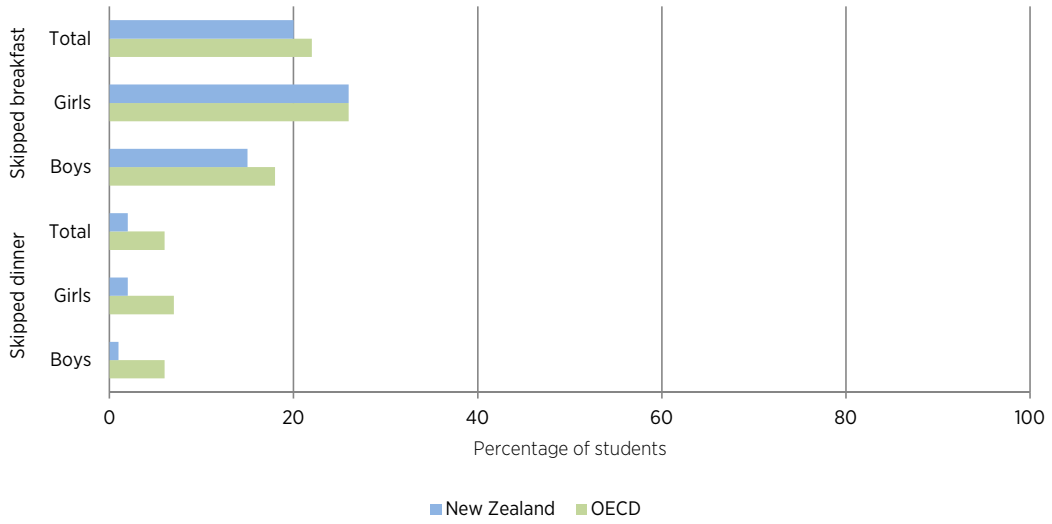
Students were asked in PISA 2015 if they ate breakfast before school or ate dinner after school on the most recent day they went to school. Twenty percent of New Zealand students reported that they skipped breakfast before school, similar to the OECD average (22 percent).[24] A much smaller percentage of students reported they had not eaten dinner (2 percent for New Zealand and 6 percent for the OECD average).

This is consistent with other information and evidence sources about New Zealand students. The New Zealand Annual Health Survey (2015/16), reported 78 percent of children aged 10 to 14 said they ate breakfast at home every day.[25] In TIMSS 2014/15, 73 percent of Year 9 students reported eating breakfast every day or most days, while only 11 percent said they never ate breakfast on school days.[26] In 2012, the Youth '12 survey reported that only 54 percent of New Zealand secondary school students always ate breakfast.[27]

### Gender

In most countries that did PISA 2015, girls were more likely to have skipped breakfast before the previous school day and this was also true for New Zealand.

**Figure 3.10: Percentage of girls and boys who skipped meals in New Zealand vs the OECD average**




24 The PISA estimates are an upper bound of the actual percentage of students' skipping breakfast, as some students may have breakfast when they arrive at school.

25 Ministry of Health, 2017.

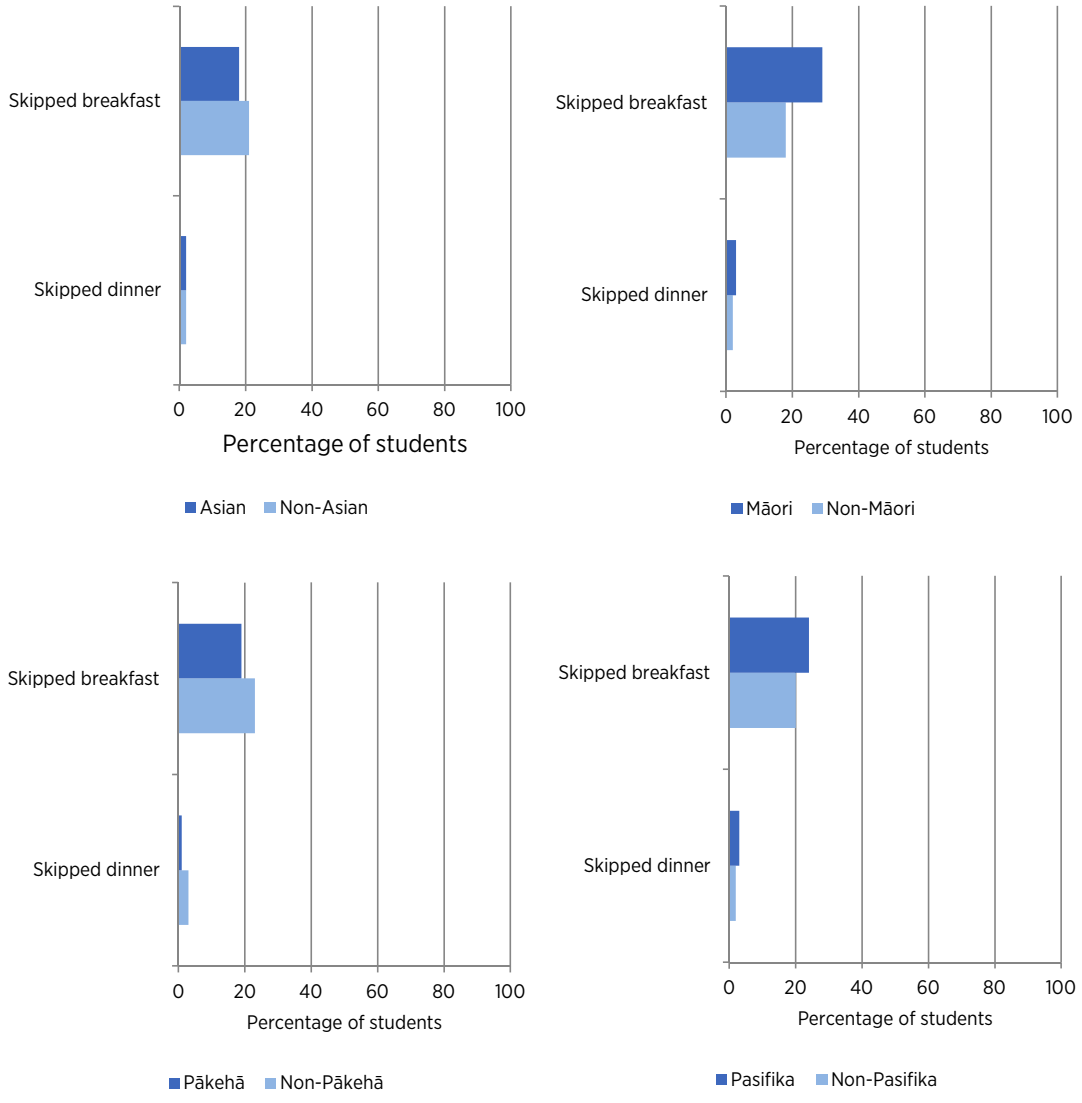
26 IEA, 2016.

27 Clark et al., 2013.

## Ethnicity

The proportion of Asian students who missed breakfast on the school day prior to the test was lower than the proportion of non-Asian students. Only a small proportion of Asian students reported missing dinner. A higher proportion of Māori students reported skipping breakfast than non-Māori students but only a small percentage reported skipping dinner. A higher proportion of Pasifika than non-Pasifika students reported missing breakfast but the difference was small. There was little difference when it came to missing dinner and the proportion reporting doing this was also small. A smaller proportion of Pākehā/European students reported they skipped breakfast and only a small proportion reported missing dinner.

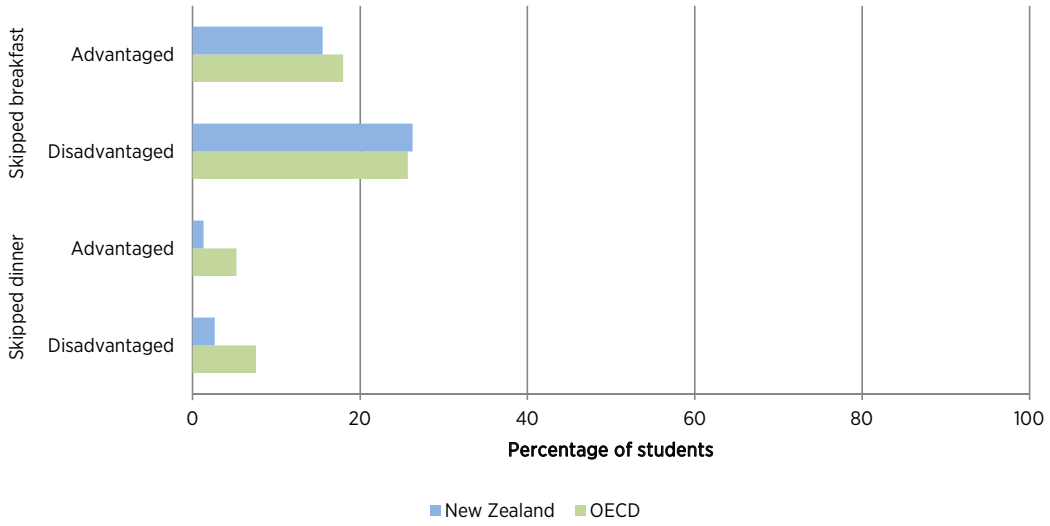
**Figure 3.11: Percentage of New Zealand students who skipped meals by ethnicity**



## Socio-economic status

Across all quarters of the ESCS index, at least 97 percent of students reported eating dinner on the day before the PISA test. A higher proportion of disadvantaged students than advantaged reported skipping breakfast before school both across the OECD on average and in New Zealand. For the OECD, this difference was 8 percent and in New Zealand it was 11 percent. The difference for New Zealand was similar to Australia and Finland but lower than for Singapore and the United Kingdom.

**Figure 3.12: Percentage of advantaged and disadvantaged students who skipped meals New Zealand vs OECD average**



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# Appendix 1

## Measures of bullying

### OECD Index of Exposure to Bullying

The PISA Index of Exposure to Bullying summarises students' experiences of bullying behaviours. This index is constructed by taking into account, for each individual student, both the number of bullying behaviours they have experienced, and the frequency with which they reported experiencing each one. The centre point of the index is 0. A student who has experienced less bullying behaviour than the OECD mean will have a negative value on the index and a student who has experienced more bullying behaviour than the OECD mean will have a positive value on the index.

### Frequently Bullied

Using this index the OECD ranked all students participating in PISA, regardless of their country. They then identified the 10% of students with the highest scores and categorised them as "Frequently Bullied". Just over half of this group consists of students who have experienced a high intensity of bullying behaviours: at least three of the bullying behaviours a few times a month or more, as reported in the section with New Zealand's overall findings. The rest of the Frequently Bullied group are students who have experienced most of the bullying behaviours less often.

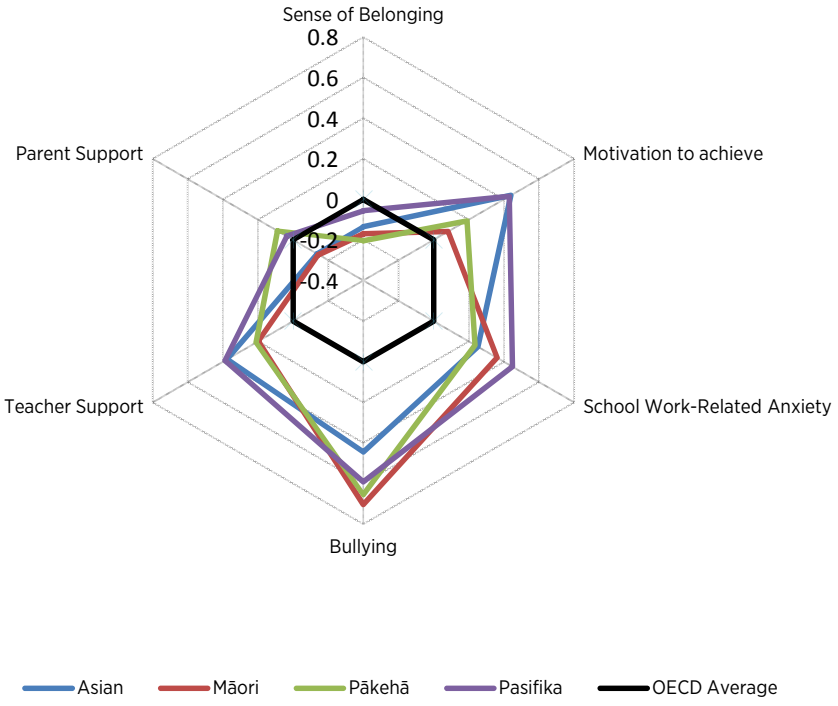
Once the group of Frequently Bullied students was identified, the OECD then looked at which countries these students belonged to. New Zealand was ranked second highest among all PISA countries for the country average of this index (see Figure 3), and 18% of New Zealand 15-year-olds were classified as Frequently Bullied using this index.

### Comparisons with TIMSS 2014/15

The Trends in International Mathematics and Science Study (TIMSS) also asked participating students about their experience of bullying behaviours and constructed an index of bullying similar to the PISA index described above. TIMSS is led by the International Association for the Evaluation of Achievement in Education (IEA) and goes to Year 5 and Year 9 students. The most recent 2015 cycle of TIMSS was run in New Zealand in 2014.

# Appendix 2

## Indices of sense of belonging, motivation to achieve, schoolwork-related anxiety, bullying, teacher support and parental support, by New Zealand ethnicity vs OECD average



# Appendix 3

## Comparison across countries on wellbeing indicators

These tables give a snapshot of how New Zealand sits with other countries that we commonly compare with. They are the countries that have a similar history in the education system or have systems we are interested in learning from. For comparison with all PISA participating countries please refer to the OECD website.

**Table A4.1:** Index of Achievement Motivation

| Country | Mean index |
|---|---|
| United States | 0.65 |
| United Kingdom | 0.51 |
| Singapore | 0.41 |
| Iceland | 0.39 |
| Australia | 0.33 |
| Canada | 0.33 |
| **New Zealand** | **0.24** |
| OECD average | -0.01 |
| Estonia | -0.04 |
| Japan | -0.51 |
| Finland | -0.63 |

**Table A4.2:** Index of school-related anxiety

| Country | Mean index |
|---|---|
| Singapore | 0.57 |
| Chinese Taipei | 0.39 |
| **New Zealand** | **0.27** |
| Japan | 0.26 |
| United Kingdom | 0.25 |
| Australia | 0.19 |
| United States | 0.19 |
| Canada | 0.17 |
| Ireland | 0.15 |
| OECD average | 0.00 |
| Estonia | -0.22 |

**Table A4.3:** Index of parental support

| Country | Mean index |
|---|---|
| Ireland | 0.24 |
| United States | 0.16 |
| Australia | 0.11 |
| Canada | 0.09 |
| United Kingdom | 0.09 |
| **New Zealand** | **0.03** |
| OECD | 0.00 |
| Finland | -0.04 |
| Singapore | -0.24 |
| Estonia | -0.32 |
| Chinese Taipei | -0.41 |

**Table A4.4:** Index of teacher support

| Country | Mean index |
|---|---|
| United States | 0.35 |
| Singapore | 0.31 |
| Canada | 0.27 |
| **New Zealand** | **0.25** |
| Australia | 0.23 |
| United Kingdom | 0.21 |
| Finland | 0.20 |
| Ireland | 0.08 |
| Chinese Taipei | 0.06 |
| OECD | 0.00 |
| Estonia | -0.05 |

**Table A4.5:** Index of sense of belonging

| Country | Mean index |
|---|---|
| Finland | 0.09 |
| Chinese Taipei | 0.02 |
| OECD | 0.00 |
| Ireland | -0.02 |
| Japan | -0.03 |
| Estonia | -0.06 |
| United States | -0.09 |
| United Kingdom | -0.09 |
| Canada | -0.11 |
| Australia | -0.12 |
| **New Zealand** | **-0.17** |

**Table A4.6:** Exercise or practice sports after school

| Country | Mean index |
|---|---|
| Ireland | 78.6 |
| Canada | 74.2 |
| United States | 73.4 |
| **New Zealand** | **73.0** |
| Estonia | 72.1 |
| Australia | 71.7 |
| OECD Average | 69.8 |
| Finland | 69.6 |
| Chinese Taipei | 63.6 |
| United Kingdom | 63.4 |
| Singapore | 58.7 |
| Japan | 57.7 |

# Participants in PISA 2015

- Albania*
- Algeria*
- Argentina*
- Australia
- Austria
- Belguim
- Brazil*
- B-S-J-G (China)*
- Bulgaria*
- Canada
- Chile
- Chinese Taipei*
- Colombia*
- Costa Rica*
- Croatia*
- Cyprus*
- Czech Republic
- Denmark
- Dominican Republic*
- Estonia
- Finland
- France
- Germany
- Georgia*
- Greece
- Hong Kong (China)*
- Hungary
- Iceland
- Indonesia*
- Ireland
- Israel
- Italy
- Japan
- Jordan
- Kazakhstan*
- Korea
- Kosovo*
- Latvia
- Lebanon*
- Lithuania*
- Luxembourg
- Macao (China)*
- FYR Macedonia*
- Malaysia*
- Malta*
- Mexico
- Moldova*
- Montenegro*
- Netherlands
- New Zealand
- Norway
- Peru*
- Poland
- Portugal
- Qatar*
- Romania*
- Russian Federation*
- Singapore*
- Slovak Republic
- Slovenia
- Spain
- Sweden
- Switzerland
- Thailand*
- Trinidad & Tobago*
- Tunisia*
- Turkey
- United Arab Emirates*
- United Kingdom
- United States
- Uruguay*
- Vietnam*

* non-OECD countries and economies
B-S-J-G (China) refers to the four participating China provinces: Beijing, Shanghai, Jiangsu, Guangdong.
FYR Macedonia refers to the Former Yugoslav Republic of Macedonia.

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