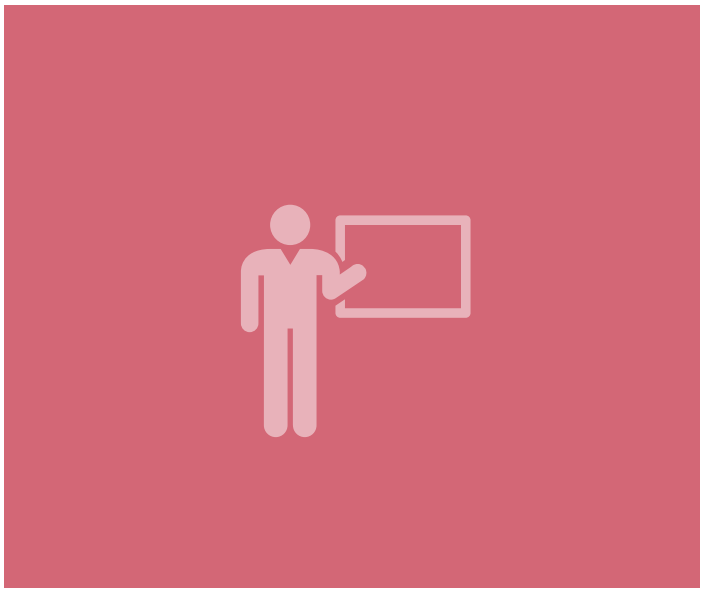
NSW GOVERNMENT

# State of the NSW teaching profession 2014

Centre for Education Statistics and Evaluation



## Centre for Education Statistics and Evaluation

The Centre for Education Statistics and Evaluation (CESE) was established by the Minister for Education in 2012 to improve the effectiveness, efficiency and accountability of education in NSW.

The Centre undertakes analysis and evaluation of education programs across the early childhood, school, training and higher education sectors to inform whole-of-government, evidence-based decision-making. It has three main responsibilities:

1. to provide data analysis, information and evaluation that improve effectiveness, efficiency and accountability
2. to provide an access point to the Department's data that has appropriate safeguards to protect data confidentiality and integrity
3. to build capacity across the education sector by developing tools that make complex data easy to understand and use; and providing reports that summarise the available evidence so that everyone can make better use of it.

## Publication and contact details

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# Contents

# The importance of teacher quality

It is now widely accepted that within schools, teacher- and teaching-related factors are the most important influences on student learning[1]. In their 2004 article, Nye, Konstantopoulos and Hedges reported that somewhere between seven and 21 per cent of the variance in achievement gains was associated with variations in teacher effectiveness[2].

Having an effective teacher leads to substantial gains in student achievement. Australian research suggests that a student with a teacher in the top 10 per cent of teachers in the country could achieve in half a year what a student with a teacher in the bottom 10 per cent of effectiveness takes a full year to achieve[3].

Having an ineffective teacher can have an ongoing detrimental effect on student achievement. In their 1996 research, Sanders and Rivers found that students with the least effective teachers gained an average of approximately 14 percentile points a year, whereas those with the most effective teachers gained an average of 52 percentile points a year. Analyses also indicated that the 'residual effects of relatively ineffective teachers from prior years can be measured in subsequent student achievement scores'[4].

1 See for example, L Darling-Hammond 2000, 'Teacher quality and student achievement: a review of state policy evidence', *Education Policy Analysis Archives*, vol. 8, no. 1, pp. 1-49; S Konstantopoulos 2006, 'Trends of school effects on student achievement: evidence from NLS:72, HSB:82, and NELS:92', *Teacher College Record*, vol. 108, no. 12, pp. 2550-2581; S Rivkin, E Hanushek and J Kain 2005, 'Teachers, schools, and academic achievement', *Econometrica*, vol. 73, no. 2, pp. 417-458; all cited in OECD 2014, *TALIS 2013 Results: an international perspective on teaching and learning*, TALIS, OECD Publishing, Paris, France, p. 32.

2 See B Nye, S Konstantopoulos and L Hedges 2004, 'How large are teacher effects?' Educational Evaluation and Policy Analysis, vol. 26, no. 3, pp. 237-257; cited in J Hattie 2009, *Visible Learning: a synthesis of over 800 meta-analyses relating to achievement*, Routledge, Oxon, p. 108.

3 A Leigh 2010, 'Estimating teacher effectiveness from two-year changes in students' test scores', *Economics of Education Review*, vol. 29, no. 3, pp.480-488.

4 W Sanders and J Rivers 1996, *Cumulative and residual effects of teachers on future student academic achievement*, research progress report, University of Tennessee Value-Added Research and Assessment Center, Knoxville, TN.

# The challenge of measuring teacher quality

With so much at stake, governments and education communities around the world are keen to define and measure teacher quality, but the process is complex and the research field is still in the relatively early stages of development.

A number of proxies for teacher quality have been investigated, including degree acquisition, years of experience and student outcomes, however these are generally limited in their capacity to reliably measure individual teacher effectiveness. Research by the Bill and Melinda Gates Foundation into measures of effective teaching indicates that a more valid measure of teacher effectiveness is likely to be achieved when gathering data from a range of sources, such as classroom observation, student survey data and student gain data[5].

While studies into reliable measures of teacher effectiveness continue, research consistently demonstrates that particular teacher practices and attributes lead to improved student learning outcomes. These practices include, but are not limited to: teaching with clarity, establishing positive relationships with students, using data to inform practice and providing effective feedback[6]. These, and other effective teacher practices and attributes are the focus of this report.

5 Bill and Melinda Gates Foundation 2013, *Ensuring fair and reliable measures of effective teaching: culminating findings from the MET project's three-year study*, policy and practitioner brief, report prepared by S Cantrell and T Kane.

6 See for example, Hattie 2009 (n 2 above); B Jensen and J Reichl 2011, *Better teacher appraisal and feedback: improving performance*, Grattan Institute, Melbourne, Australia.

# About this report

## Great Teaching, Inspired Learning

In March 2013, the NSW Government released Great Teaching, Inspired Learning (GTIL) – a plan to improve the quality of teaching and learning in NSW schools.

The GTIL blueprint provides a set of 16 reforms and 47 specific actions across the whole career cycle of a teacher, from initial teacher training and induction for beginning teachers, through to how to best recognise and value experienced teachers and support potential school leaders.

The blueprint commits to the publication of a 'State of the NSW Teaching Profession' report that nationally and internationally benchmarks the 'health' of the NSW teaching profession against a range of indicators.

## The structure of this report

This first State of the NSW Teaching Profession report identifies 11 evidence-based indicators of effective teaching across four domains: professional knowledge, professional practice, professional engagement and teacher self-efficacy and job satisfaction.

| | |
|---|---|
| **Domain:** | **Professional knowledge** |
| Indicator 1: | Know how to teach students with a diverse range of abilities |
| Indicator 2: | Know subject matter content and how to teach it |
| **Domain:** | **Professional practice** |
| Indicator 3: | Teach with clarity and use a repertoire of teaching strategies |
| Indicator 4: | Establish and maintain a safe classroom environment that is conducive to learning |
| Indicator 5: | Establish positive relationships with students |
| Indicator 6: | Use a variety of strategies to assess student learning and provide timely and effective feedback to students |
| Indicator 7: | Involve parents and carers in the educative process |
| **Domain:** | **Professional engagement** |
| Indicator 8: | Engage in professional learning that focuses on subject matter content and how to teach it |
| Indicator 9: | Engage with colleagues and students to improve own professional knowledge and practice |
| Indicator 10: | Participate in professional learning targeted to professional needs |
| **Domain:** | **Teacher self-efficacy and job satisfaction** |
| Indicator 11: | Are confident in their role as teacher and satisfied with their job |

The indicators in this report are not intended to be an exhaustive list of effective teaching practices and teacher attributes. Rather, they represent 11 practices and attributes that are supported by evidence (including the Australian Professional Standards for Teachers); are relevant to the NSW teaching context; and for which there are data available. It is also important to note that many of the indicators are not discrete, but interconnect or overlap with each other. For example, teachers who have a positive relationship with students are also more likely to have classroom environments that are conducive to learning.

Each indicator in this report is presented on a separate page and is accompanied by:

- the evidence that supports it
- information about relevant NSW requirements for teacher quality
- data indicating the extent to which teachers in NSW, Australia and other selected countries possess the attribute or are implementing the practice, and
- commentary on how NSW compares nationally and internationally.

A set of icons indicates which of the four domains each indicator belongs to:


Professional knowledge


Professional practice


Professional engagement


Teacher self-efficacy and job satisfaction.

## Use of effect sizes

Where possible, the evidence section of each indicator in this report refers to effect sizes. An effect size provides an indication of the impact of a particular teacher attribute or practice on student outcomes. Individual studies may use different methods and measures, but the effect size allows us to talk about them in a common language. The larger the effect size, the greater the impact on student outcomes.

American statistician Jacob Cohen suggests that a 'small' effect size is 0.2, a 'medium' effect size is 0.5 and a 'large' effect size is 0.8[7]. Professor John Hattie suggests that programs with effect sizes of 0.40 or higher are worth considering for implementation[8].

7 J Cohen 1988, *Statistical power analysis for the behavioural sciences*, Hillsdale, NJ, Erlbaum.
8 Hattie 2009 (n 2 above), p. 17.

# Data used in this report

## Sources and jurisdictions for comparison

Three main sources of data were used in this report:

- **Teaching and Learning International Survey (TALIS)** 2013
- **Programme for International Student Assessment (PISA)** 2012
- **Trends in International Mathematics and Science Study (TIMSS)** 2011.

For each dataset, NSW data are compared with those of a range of high-performing and/or culturally similar jurisdictions. The jurisdictions for comparison vary between datasets.

Where NSW data appear, they represent teachers from all sectors in NSW (government, Catholic and independent).

For detailed information about the data sources used in this report and the jurisdictions included for comparison, see Appendix 1.

## Limitations

All the questionnaires from which the data in this report are derived are self-reports and therefore represent the opinions, perceptions, beliefs and accounts of activities of teachers, school leaders and students. It is useful information because it provides insight into how respondents perceive the learning environments in their classrooms and schools and their motivations. However, as with any self-reported data, the information is subjective and therefore often differs from objectively collected data.

In addition, sample sizes are small, particularly in relation to data sourced from TALIS. As Australian data from the main TALIS survey cannot be disaggregated by state and territory, it is not possible to analyse NSW responses. For this reason, NSW data have been taken from the smaller TALIS-PISA link dataset for TALIS comparisons (33 schools and 745 teachers). For detailed information about the sample sizes associated with datasets used in this report, see Appendix 2.

# Teacher quality in NSW

The NSW teaching workforce is large. Over 82,000 teachers are employed in schools from Kindergarten to Year 12, across three school sectors and in a diverse range of settings – from large metropolitan schools to small rural and remote schools.

The NSW Government is the largest employer of teachers, with approximately 65 per cent of teachers working in NSW public schools. Catholic schools are the second largest employer, with 20 per cent of teachers, and approximately 15 per cent of teachers work in independent schools.

NSW teachers educate and care for approximately 647,000 primary and 507,000 secondary students located in 3,080 schools across the State[9].

## Requirements for teacher quality

In NSW, mechanisms to ensure teacher quality are in place in the initial teacher education phase and during employment as a teacher. The Board of Studies, Teaching and Educational Standards (BOSTES) is the regulatory authority responsible for implementing and monitoring standards for teachers[10]. Each education sector employer is also responsible for developing and implementing any additional requirements for teacher quality in their own schools.

### Initial teacher education

All NSW teachers are required to satisfactorily complete a four-year or longer full-time equivalent higher education qualification. The qualification may be structured as:

- a three-year undergraduate degree providing the required discipline knowledge, plus a two-year graduate entry professional qualification, or
- an integrated qualification of at least four years comprising discipline studies and professional studies, or
- combined degrees of at least four years covering discipline and professional studies, or
- other combinations of qualifications identified by the provider and approved by the teacher regulatory authority in consultation with AITSL to be equivalent to the above, and that enable alternative or flexible pathways into the teaching profession[11].

All initial teacher education programs in NSW must undergo an accreditation process coordinated by BOSTES and must reflect the standards set out in *Accreditation of Initial Teacher Education Programs in Australia: Standards and Procedures* (National Program Standards), and the *Australian Professional Standards for Teachers* (Professional Teaching Standards). Program approval is based on an assessment of the program's structure, curriculum content, assessment and professional experience components, with a focus on the graduate outcomes of the program.

### The teaching workforce

The *Teacher Accreditation Act 2004* and the *Board of Studies, Teaching and Educational Standards Act 2013* require that NSW teachers be accredited with BOSTES. Accreditation is achieved by demonstrating all Standard Descriptors, at the appropriate teaching level, across the seven Standards described in the Australian Professional Standards for Teachers. Approximately 65,000 teachers are currently accredited in NSW.

9 Australian Bureau of Statistics 2013, Schools Australia, cat. no. 4221.0.

10 BOSTES commenced operation on 1 January 2014, and brings together the functions previously provided by the Board of Studies NSW, and the NSW Institute of Teachers.

11 AITSL 2011, *Accreditation of initial teacher education programs in Australia: standards and procedures*, Education Services Australia, Victoria, p. 12.

### *New and returning teachers*

All teachers entering the workforce for the first time after 1 October 2004, or returning to the workforce following an absence of five years or more, are currently required to be accredited at the level of Graduate Teacher. Accreditation may be either provisional or conditional, based on an assessment of the individual's qualifications[12]. Teachers then have a set period of time to achieve accreditation at the level of Proficient Teacher[13].

### *Pre-2004 teachers*

Teachers who have worked in New South Wales since before 1 October 2004, and who have not had a break from teaching of five years or more, sometimes referred to as 'pre-2004 teachers' are not currently required to be accredited. However, recent amendments to the Teacher Accreditation Act will require all teachers working in schools to be accredited. It is anticipated that this requirement will commence on 1 January 2018.

## Australian Professional Standards for Teachers

The Australian Professional Standards for Teachers provide a framework for teaching quality in NSW[14]. They detail the elements of teacher knowledge, practice and professional engagement that are required across a teacher's career in order to teach effectively. The Professional Teaching Standards are organised according to three broad domains of teaching:

| Domain of teaching | Standard |
|---|---|
| Professional knowledge | 1. Know students and how they learn |
| | 2. Know the content and how to teach it |
| Professional practice | 3. Plan for and implement effective teaching and learning |
| | 4. Create and maintain supportive and safe learning environments |
| | 5. Assess, provide feedback and report on student learning |
| Professional engagement | 6. Engage in professional learning |
| | 7. Engage professionally with colleagues, parents/carers and the community |

Each Standard then describes in detail what teachers need to know and be able to do at four professional career stages:

- Graduate
- Proficient
- Highly Accomplished
- Lead.

Accreditation at the Graduate Teacher and Proficient Teacher levels is mandatory. The remaining two levels: Highly Accomplished Teacher and Lead Teacher are available to teachers who want to extend themselves professionally and be recognised for stand-out achievements, however they are not mandatory.

Once accredited, teachers must undergo a five-year cycle of maintenance of accreditation, which includes undertaking a specified number of hours of professional development and demonstrating that their professional practice continues to meet the Professional Teaching Standards[15].

12 *Provisional* accreditation is given when an individual has successfully completed an accredited degree. The individual doesn't need to do any further study. *Conditional* accreditation is given when an individual has successfully completed either an undergraduate degree or at least three years of a four-year teaching degree. They can then work as a teacher while they complete their studies.

13 Provisionally accredited teachers must achieve accreditation at Proficient Teacher level within three years (full-time) or five years (part-time or casual). Conditionally accredited teachers must achieve accreditation at Proficient Teacher level within four years (full-time) or six years (part-time or casual).

14 The Australian Professional Standards for Teachers replaced the NSW Professional Teaching Standards in 2012. A period of transition will take place during 2013 and 2014 and by 2015 all teachers must be using the Australian national standards.

15 Teachers employed part-time or as casuals have seven years to complete their cycle of maintenance of accreditation.

It is important to note that the Professional Teaching Standards provide a process for recognising the quality of teachers in NSW schools. They do not describe the attributes of specific job descriptions. Thus a highly skilled classroom teacher may be accredited at the level of Highly Accomplished Teacher and a member of the school executive may be accredited at the level of Proficient Teacher.

## Additional requirements

NSW teachers are supported by policy in relation to decisions around teaching and learning programs and teaching practice.

In the NSW government sector, policies relating to teacher quality are developed both centrally and at the school level. Teachers working in the NSW Catholic school sector could be employed by one of the 11 Catholic Dioceses or by any of the 43 independent Catholic schools owned by religious congregations. Policies and procedures vary between employers but include common themes. Each Catholic school develops these policies under the ethos of the Catholic Church and as influenced by their individual histories. In the independent school sector, policies relating to teacher quality are developed at individual school level, reflecting the ethos and values of individual school communities.

Quality assurance in relation to the delivery of teaching and learning programs in non-government schools is managed by BOSTES via the registration and accreditation process. In government schools, this process has been managed previously by the NSW Department of Education and Communities. However, from 2015 the Department will work with BOSTES as the registration authority for government schools in the same way as non-government schools.

Registration is a non-government school's licence to operate. In order to achieve registration, schools and school systems must demonstrate compliance in a range of areas, including in the development of teaching programs of suitable content and structure and in the development and implementation of a range of clearly written and freely available school policies. Policies include, but are not limited to: student discipline, student safety and welfare and modifying the curriculum to suit individual student needs.

# Professional knowledge

## Indicator 1:
## Know how to teach students with a diverse range of abilities

### What the evidence says

Meta-analyses of studies that look at between- and within-class grouping of students according to their ability indicate that the academic benefits from grouping tend to be relatively small (average effect size = 0.11)[16]. Hattie argues that it is not the composition of the class that is the key issue, but rather, the quality of teaching, together with the instructional materials and the teacher's ability to vary his or her teaching and make it appropriately challenging to accommodate the needs of students at their different levels of ability[17].

Hattie also suggests that educators spend too much time debating whether one method of teaching is superior to another, when in fact the focus should be on the effect that strategies have on student learning. He argues that teachers need multiple teaching strategies and suggests that when students fail to learn, they often need 'different' rather than 'more'[18].

### NSW requirements for teacher quality

#### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in Standard 1 – Know students and how they learn. Examples include:

1.1.1 Demonstrate knowledge and understanding of physical, social and intellectual development and characteristics of students and how these may affect learning (Graduate Teacher level).

1.3.4 Evaluate and revise school learning and teaching programs, using expert and community knowledge and experience, to meet the needs of students with diverse linguistic, cultural, religious and socioeconomic backgrounds (Lead Teacher level).

1.5.2 Develop teaching activities that incorporate differentiated strategies to meet the specific learning needs of students across the full range of abilities (Proficient Teacher level).

1.6.3 Work with colleagues to access specialist knowledge, and relevant policy and legislation, to develop teaching programs that support the participation and learning of students with disability (Highly Accomplished Teacher level).

#### Additional requirements

All NSW schools are required to have policies and procedures in place which ensure that teaching and learning programs meet the needs of all students. These may be incorporated in documents relating to areas such as curriculum standards, literacy, English as a Second Language, students with learning difficulties, students with a disability and gifted and talented students. Teachers and schools may demonstrate that teaching and learning programs meet the needs of all students by diversifying the curriculum, environment and pedagogy to accommodate students with a range of special needs. These may be due to language, physical, intellectual, social, family, ability, background, or other influences that may be irregular, temporary or ongoing.

16 Hattie 2009 (n 2 above), p.90.
17 Hattie 2009 (n 2 above), pp. 89-95.
18 J Hattie 2012, *Visible learning for teachers: maximising impact on learning*, Routledge, Oxon, p. 251.

## How NSW compares nationally and internationally

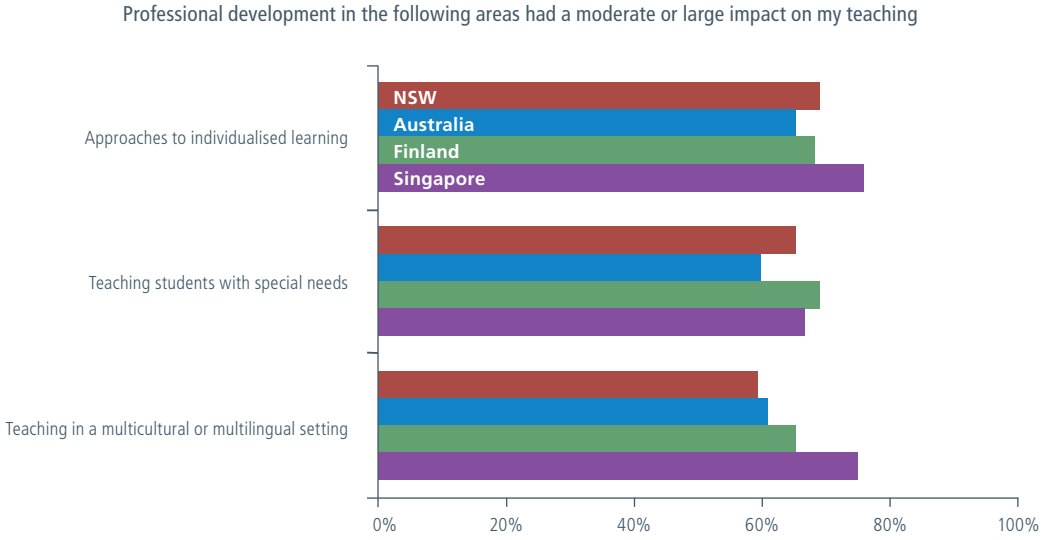
The Teaching and Learning International Survey (TALIS) 2013 asked teachers from around the world about the impact on their teaching of recent professional development experiences in the area of teaching students with a diverse range of abilities.

When asked about professional development that focussed on: approaches to individualised learning, and teaching in a multicultural or multilingual setting, NSW teachers were significantly less positive than their colleagues in Singapore. Compared with Finnish teachers, NSW teachers were significantly less positive in relation to teaching students with special needs, and teaching in a multicultural or multilingual setting. However, compared with teacher responses across Australia, NSW teachers were significantly more positive about approaches to individualised learning and teaching students with special needs (Figure 1.1).

**Figure 1.1:**

Proportion of teachers who report a moderate or large impact on their teaching, by focus of professional development and by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.




Student questionnaire data captured through the Programme for International Student Assessment (PISA) indicates that students who experienced the following practices in maths demonstrated significantly higher PISA maths scores than students who did not:

- The teacher gives extra help when students need it (Figure 1.2a).
- The teacher continues teaching until the students understand (Figure 1.3a).

While a large proportion of NSW students reported that their teachers did implement these practices, there is still some room for improvement:

- Eighty-two per cent of NSW students reported that in every lesson, or most lessons, their teacher gave extra help when students needed it (Figure 1.2b).
- Seventy-four per cent of NSW students reported that in every lesson, or most lessons, their teacher continued until the students understood (Figure 1.3b).

Compared with Australia, the OECD average and a group average of culturally similar and high-performing countries, NSW teachers are more likely to implement effective practices such as providing extra help and persevering until students understand (see Figures 1.2b and 1.3b).

**Figure 1.2a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

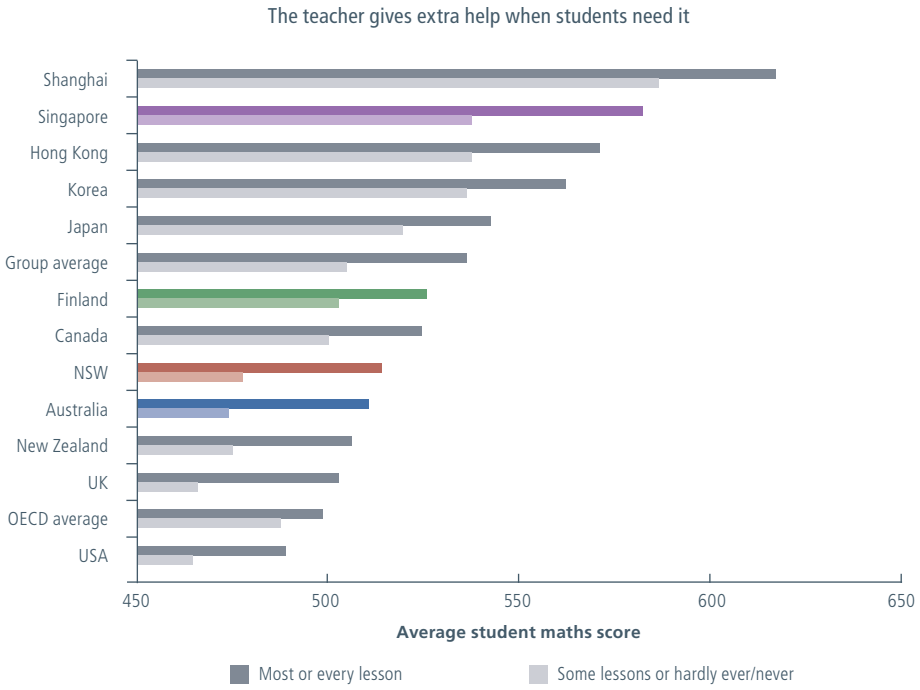
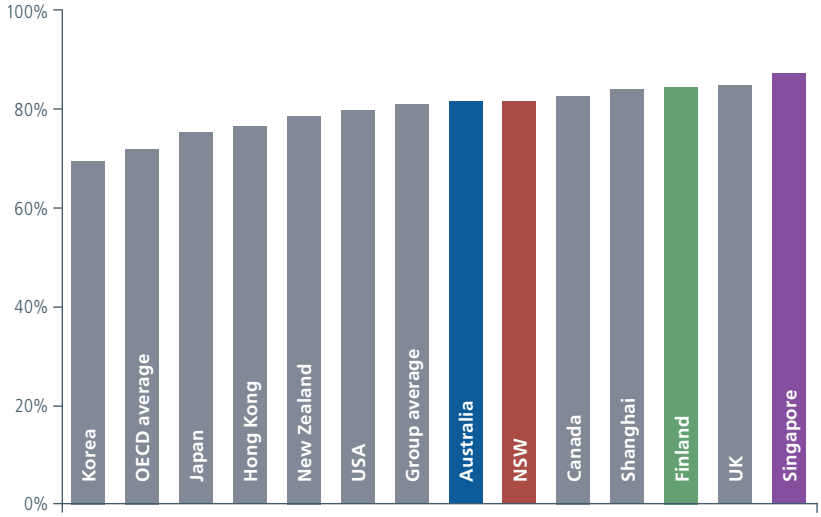



**Figure 1.2b:**

Proportion of students who report that their teacher gives extra help when students need it in most lessons, or every lesson, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

**Figure 1.3a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

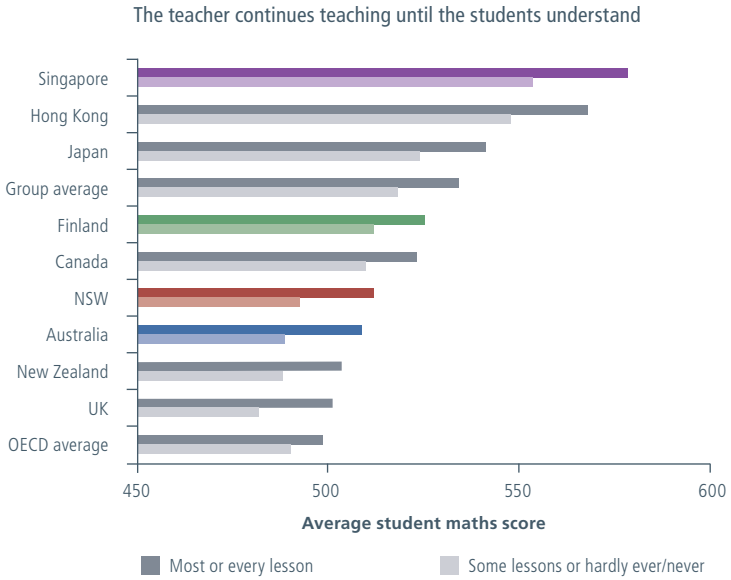
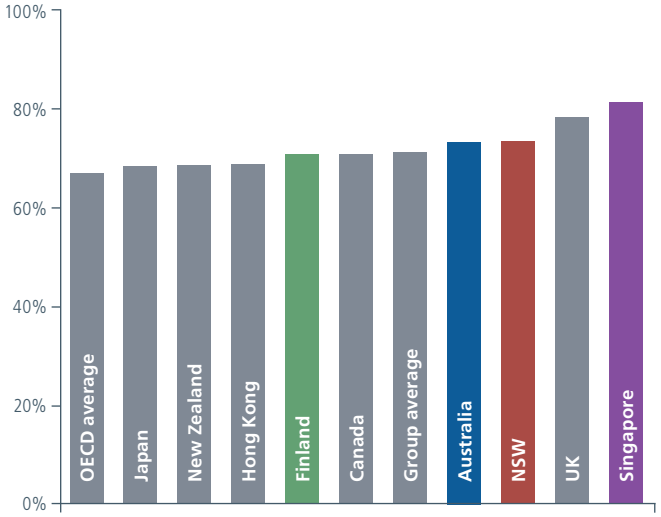



**Figure 1.3b:**

Proportion of students who report that their teacher continues teaching until the students understand in most lessons, or every lesson, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

# Indicator 2:
# Know subject matter content and how to teach it

## What the evidence says

It is generally agreed that teachers trained in the field they are teaching are more effective than those not so trained[19]. While it would seem obvious that a teacher must know their subject matter to teach it, research to date shows only a weak positive relationship between teacher content knowledge (as measured by standardised tests, courses taken and grade point average) and student achievement[20]. In one meta-analysis on the topic, by Ahn and Choi, there was a very low effect size (0.12) between knowing mathematics and student outcomes[21]. Monk has argued that it is likely that subject matter knowledge influences teaching effectiveness up to a level of basic competence, but less so thereafter[22].

## NSW requirements for teacher quality

### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in Standard 2 – Know the content and how to teach it. Examples include:

2.1.1 Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area (Graduate Teacher level).

2.2.2 Organise content into coherent, well-sequenced learning and teaching programs (Proficient Teacher level).

2.3.3 Support colleagues to plan and implement learning and teaching programs using contemporary knowledge and understanding of curriculum, assessment and reporting requirements (Highly Accomplished Teacher level).

2.5.4 Monitor and evaluate the implementation of teaching strategies within the school to improve students' achievement in literacy and numeracy using research-based knowledge and student data (Lead Teacher level).

### Additional requirements

All graduate teachers must be able to demonstrate all the descriptors for Standard 1 (Know the content and how to teach it) in the National Program Standards and the Professional Teaching Standards. Further detail regarding the knowledge and skills university graduates must possess in relation to their chosen subject area is contained in the document *NSW Supplementary documentation on Australian Graduate Teacher Standard Descriptor 2.1.1 (Subject content knowledge),* which accompanies the National Program Standards. NSW is the only state or territory that has detailed explanations in regard to subject content.

All graduates wishing to obtain employment in NSW schools are required to have a Statement of Eligibility, which gives specific advice on subjects for which the graduate has approval to teach in a NSW government school. Other employers, such as Catholic and independent schools, are also guided by this information.

Teachers in all NSW schools are required to prepare teaching and learning programs that demonstrate the inclusion of all relevant knowledge and skills in a scope and sequence that is appropriate to the age and stage of learning.

19 Hattie 2009 (n 2 above), p.111.
20 P Ferguson and S Womack 1993, 'The impact of subject matter and educational coursework on teaching performance', *Journal of Teacher Education*, vol. 44, no.1, p.56.
21 S Ahn and J Choi 2004, *Teachers' subject matter knowledge as a teacher qualification: a synthesis of the quantitative literature on students' mathematics achievement*, paper presented at the American Educational Research Association, April, San Diego, CA.
22 D Monk 1994, 'Subject area preparation of secondary mathematics and science teachers and student achievement', *Economics of Education Review*, vol. 13, no. 2, pp. 125-145; cited in Hattie 2009 (n 2 above), p. 113.

## How NSW compares nationally and internationally

In a TALIS teacher questionnaire, 72 per cent of NSW teachers reported that they received formal education or training in the content of all subjects they were teaching (Figure 2.1). Seventy-three per cent reported receiving formal education or training in the pedagogy of all the subjects they were teaching (Figure 2.2).

Comparatively, these proportions are significantly higher than those of teachers across Australia, but significantly lower than those of teachers in Singapore.

In Figure 2.1 the proportion of Finnish teachers is significantly higher than that of NSW teachers; there is no significant difference between NSW and Finland in Figure 2.2.

**Figure 2.1:**

Proportion of teachers who report that they received formal education or training in the content of all the subjects they teach, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.

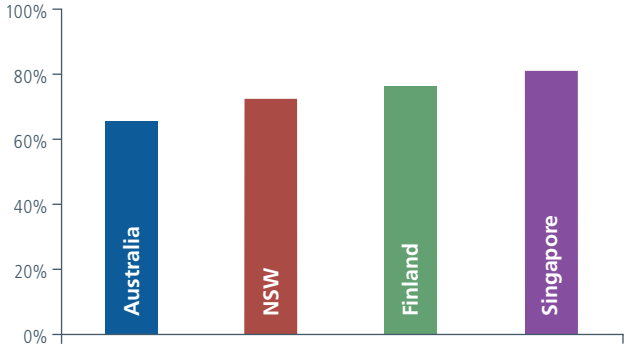
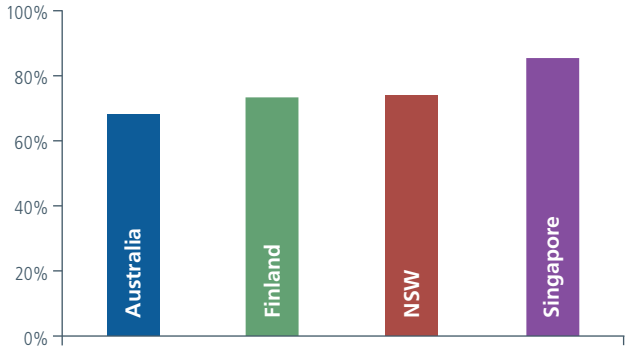
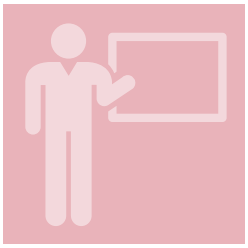



**Figure 2.2:**

Proportion of teachers who report that they received formal education or training in the pedagogy of all the subjects they teach, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.





# Professional practice

## Indicator 3:
## Teach with clarity and use a repertoire of teaching strategies

### What the evidence says

In a list of 150 influences on student achievement, Hattie ranks teacher clarity at ninth with an effect size of 0.75, placing it among the most powerful influences on student learning[23]. He describes teacher clarity as the teacher's ability to clearly communicate the intentions of the lesson and the notions of what success means for these intentions[24]. Fendick includes in his definition: organisation, explanation, examples and guided practice, and assessment of student learning[25].

In addition to clear or explicit teaching, teachers also need to employ a range of teaching strategies and evaluate which of these are having the greatest effect on student learning. Though a number of studies point to the positive effect of using active teaching strategies (in which students play a central role in the learning process) rather than passive ones (which require little involvement by the student)[26], Hattie considers that the advice of Fullan et al. is worth heeding. It is not a particular method, nor a particular script that makes the difference, rather, it is attending to personalising the learning, getting greater precision about how students are progressing in this learning, and ensuring that teachers receive professional learning that teaches how and when to provide different or more effective strategies for teaching and learning[27].

### NSW requirements for teacher quality

#### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in Standard 3 – Plan for and implement effective teaching and learning. Examples include:

3.1.2 Set explicit, challenging and achievable learning goals for all students (Proficient Teacher level).

3.3.1 Include a range of teaching strategies in teaching (Graduate Teacher level).

3.5.3 Assist colleagues to select a wide range of verbal and non-verbal communication strategies to support students' understanding, engagement and achievement (Highly Accomplished Teacher level).

3.6.4 Conduct regular reviews of teaching and learning programs using multiple sources of evidence including: student assessment data, curriculum documents, teaching practices and feedback from parents/carers, students and colleagues (Lead Teacher level).

#### Additional requirements

As part of school improvement processes, all NSW teachers are required to develop and continually refine a repertoire of teaching strategies that meet the needs of a range of students. This may include explicit instruction, differentiated pedagogies, active and passive teaching techniques, a range of formative and summative assessment practices, and effective feedback to guide student progression.

23 Hattie 2012 (n 19 above), p. 251.
24 Hattie 2009 (n 2 above), p. 125.
25 F Fendick 1990, *The correlation between teacher clarity of communication and student achievement gain: a meta-analysis*, unpublished PHD, University of Florida, Gainesville, FL.
26 OECD 2014 (n 1 above), p. 151.
27 Hattie 2009 (n 2 above), p. 245.

# How NSW compares nationally and internationally

## Teach with clarity

PISA student questionnaire and test data show that students who experienced the following practices during most lessons, or during every lesson, demonstrated significantly higher PISA maths scores than students who did not:

- The teacher tells them what they have to learn (Figure 3.1a).
- The teacher tells them what is expected of them when they get a test, quiz or assignment (Figure 3.2a).

A large proportion of NSW students report that their teachers implement these practices, but there is still some room for improvement:

- Eighty-six per cent of NSW students reported that in most lessons, or every lesson, their teacher told them what they had to learn (Figure 3.1b).
- Seventy-two per cent of NSW students reported that in most lessons, or every lesson, their teachers told them what was expected of them when they were given a test, quiz or assignment (Figure 3.2b).

Compared with Australia, the OECD average and a group average of culturally similar and high-performing countries, NSW teachers are more likely to teach with clarity by telling students what they have to learn and what is expected of students when they are assessed (see Figures 3.1b and 3.2b).

**Figure 3.1a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

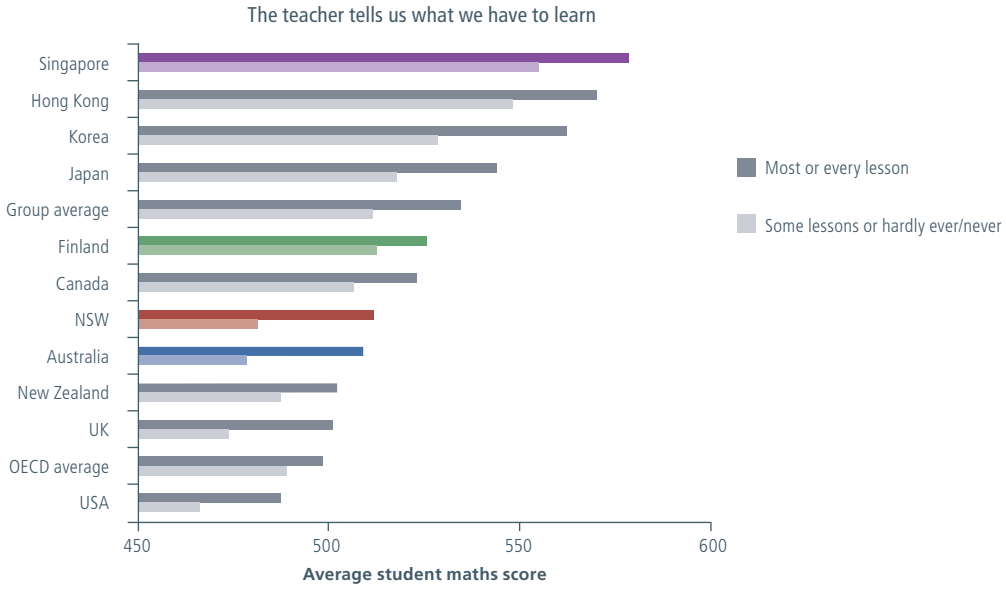
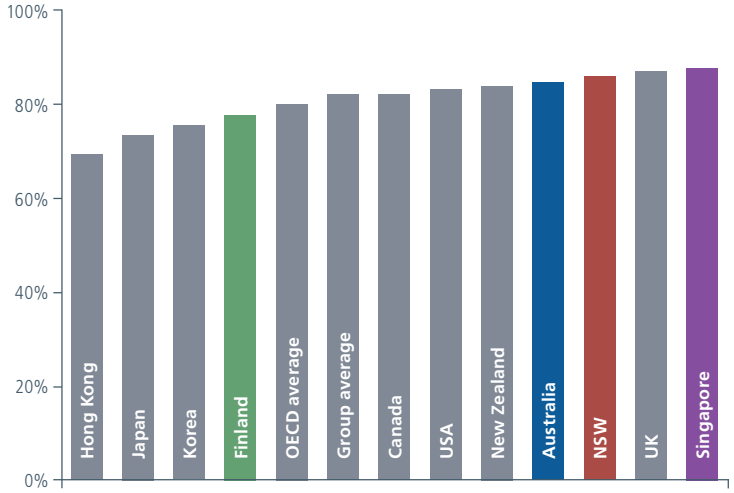



**Figure 3.1b:**

Proportion of students who report that their teacher tells them what they have to learn in most lessons, or every lesson, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

**Figure 3.2a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

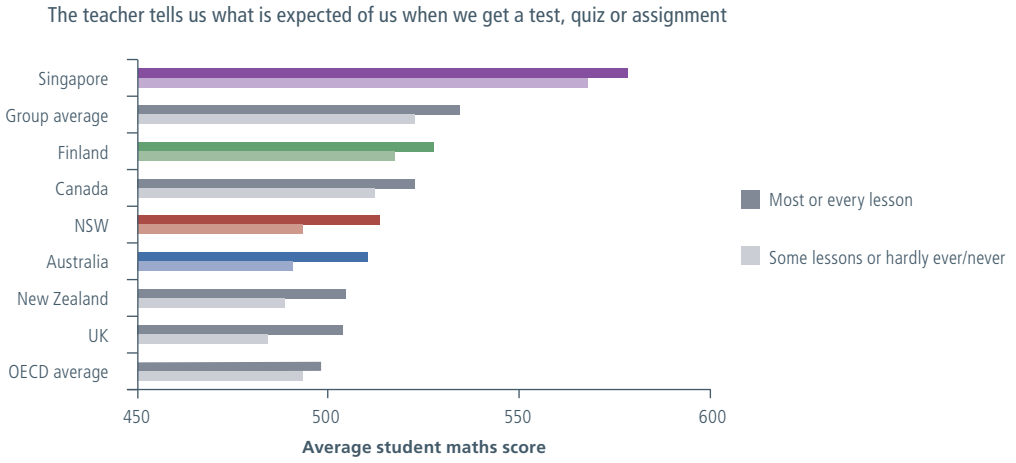
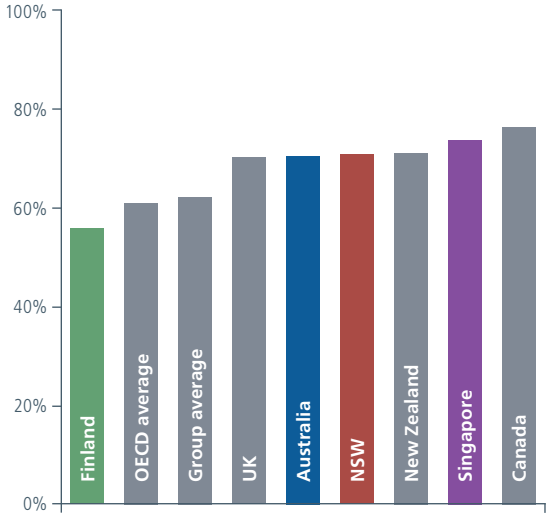



**Figure 3.2b:**

Proportion of students who report that their teacher tells them most lessons, or every lesson, what is expected of them when they get a test, quiz or assignment, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

## Use a repertoire of teaching strategies

PISA student questionnaire and test data show that students who experienced the following practices during most lessons, or during every lesson, also demonstrated significantly higher PISA maths scores than students who did not:

- The teacher presents problems in different contexts so that students know whether they have understood the concepts (Figure 3.3a).
- The teacher presents problems that require students to apply what they have learned to new contexts (Figure 3.4a).

Sixty-eight per cent of NSW students reported that their teacher often or always presented problems in different contexts so that students knew whether they had understood the concepts (Figure 3.3b). Seventy-one per cent of NSW students reported that their teacher often or always presented problems that require students to apply what they have learned to new contexts (Figure 3.4b).

Compared with Australia, the OECD average and a group average of culturally similar and high-performing countries, NSW teachers are more likely to use a repertoire of teaching strategies by presenting problems in different contexts and requiring students to apply their knowledge to new contexts (see Figures 3.3b and 3.4b).

**Figure 3.3a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

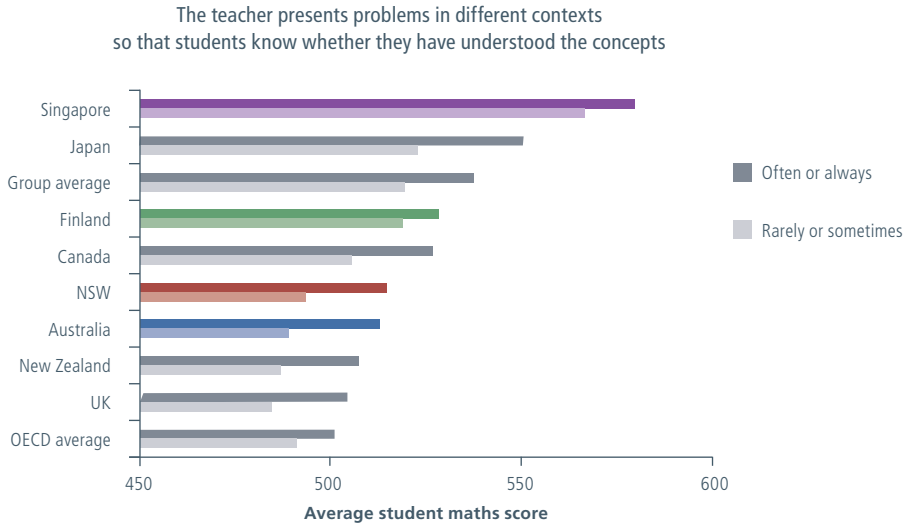
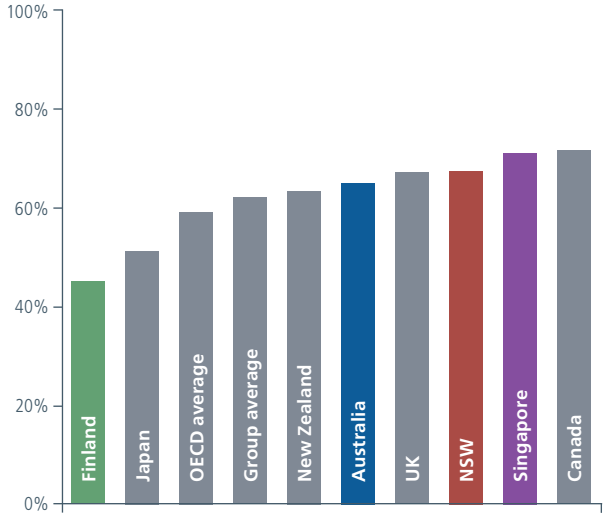



**Figure 3.3b:**

Proportion of students who report that their teacher often or always presents problems in different contexts so that students know whether they have understood the concepts, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

**Figure 3.4a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

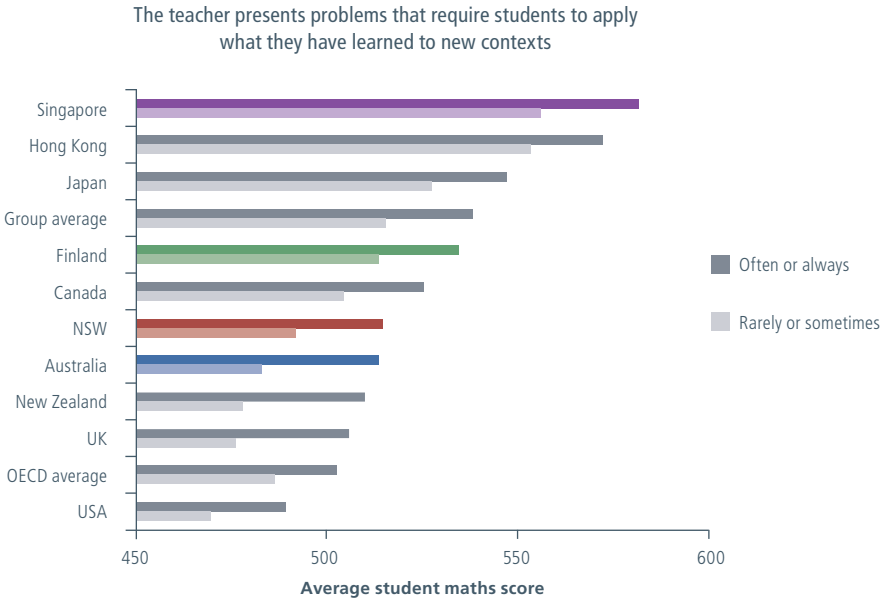
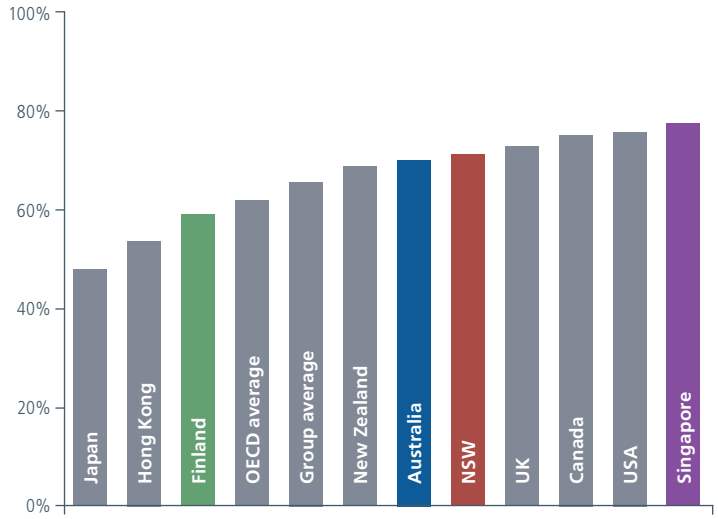


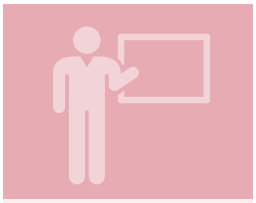

**Figure 3.4b:**

Proportion of students who report that their teacher often or always presents problems that require students to apply what they have learned to new contexts, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).



# Indicator 4:
# Establish and maintain a safe classroom environment that is conducive to learning

## What the evidence says

A positive classroom environment can be described as one in which teachers work with their students to develop a safe, respectful and supportive environment that facilitates student motivation and learning[28]. Research in this area consistently demonstrates that positive school and classroom climates result in less disruptive behaviours and more time for teaching and learning[29].

Research shows that well-managed classrooms positively affect:

- student behaviour (effect size 0.71)[30],
- student engagement (effect size 0.62)[31], and
- student achievement (effect size 0.52)[32].

Classroom management is also known to affect the stress levels and attrition rates of new teachers, in particular[33].

## NSW requirements for teacher quality

### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in Standard 4 – Create and maintain supportive and safe learning environments. Examples include:

4.2.2 Establish and maintain orderly and workable routines to create an environment where student time is spent on learning tasks (Proficient Teacher level).

4.3.2 Manage challenging behaviour by establishing and negotiating clear expectations with students and address discipline issues promptly, fairly and respectfully (Proficient Teacher level).

4.4.3 Initiate and take responsibility for implementing current school and/or system, curriculum and legislative requirements to ensure students well-being and safety (Highly Accomplished Teacher level).

4.5.4 Review or implement new policies and strategies to ensure the safe, responsible and ethical use of ICT in learning and teaching (Lead Teacher level).

### Additional requirements

The National Safe Schools Framework requires that all schools have policies and procedures in place to ensure that teachers maintain a consistently safe school and a well-managed classroom environment in order to enhance teaching and learning. These policies and procedures may relate to positive behaviour management, discipline, anti-bullying, support for students with special needs, and security.

28 OECD 2014 (n 1 above), p. 150.
29 C Guardino and E Fullerton 2010, 'Changing behaviours by changing the classroom environment', *TEACHING Exceptional Children*, vol. 42, no. 6, pp. 8-13.
30 R Oliver, J Wehby and D Reschly 2011, 'Teacher classroom management practices: effects on disruptive or aggressive student behaviour', *Campbell Systematic Reviews*, vol. 4, p. 5.
31 R Marzano 2001, *A new era of school reform: going where the research takes us,* Mid-Continent Research for Education and Learning, Aurora, CO; effect size calculated in Hattie 2009 (n 2 above), p. 102.
32 Marzano 2001 (n 32 above); effect size calculated in Hattie 2009 (n X above), p. 102.
33 See for example, A Brouwers and W Tomic 2000, 'A longitudinal study of teacher burnout and perceived self-efficacy in classroom management', *Teaching and Teacher Education*, vol. 16, no. 2, pp. 239-253; S Kellam et al. 1998, 'The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school', *Development and Psychopathology*, vol. 10, no. 2, pp. 165-185; R Ingersoll and T Smith 2003, 'The wrong solution to the teacher shortage: loss of new teachers plays a major role in the teacher shortage, but pouring more teachers into the system will not solve the retention problem', *Keeping Good Teachers*, vol. 60, no. 8, pp. 30-33; R Oliver and D Reschley 2007, *Effective classroom management: teacher preparation and professional development*, National Comprehensive Center for Teacher Quality, Washington, DC.

## How NSW compares nationally and internationally

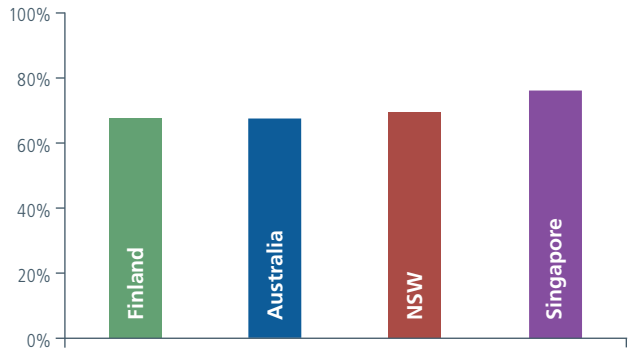
Teacher data indicates that 69 per cent of NSW teachers regarded their participation in professional development focussing on classroom management as having a moderate to large impact on their teaching (Figure 4.1).

This proportion is significantly higher than that of Australian and Finnish teachers, and significantly lower than that of teachers from Singapore.

**Figure 4.1:**

Proportion of teachers who participated in professional development covering student behaviour and classroom management and reported that it had a moderate to large impact on their teaching, by jurisdiction, TALIS

Source: Teaching and Learning International Survey (TALIS) 2013.



PISA student survey data indicates that students who experienced the following practices demonstrated significantly higher PISA maths scores than students who did not:

- The teacher starts lessons on time (Figure 4.2a).
- The teacher gets students to listen to him or her (Figure 4.3a).
- The teacher keeps the class orderly (Figure 4.4a).

A large proportion of NSW students report that their teachers implement these practices; but there is still some room for improvement:

- Eighty-one per cent of NSW students report that their teachers start lessons on time (Figure 4.2b).
- Eighty-eight per cent of NSW students report that their teachers are able to get students to listen to them (Figure 4.3b).
- Seventy-six per cent of NSW students report that their teachers are able to keep the class orderly (Figure 4.4b).

Compared with a group of culturally similar and high-performing countries, NSW teachers are less likely to implement practices that typically indicate the classroom environment is well managed, such as starting lessons on time and keeping the class orderly (see Figures 4.2b and 4.4b). However, NSW teachers are more likely to get students to listen to them than a group of culturally similar and high-performing countries (see Figure 4.3b).

**Figure 4.2a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

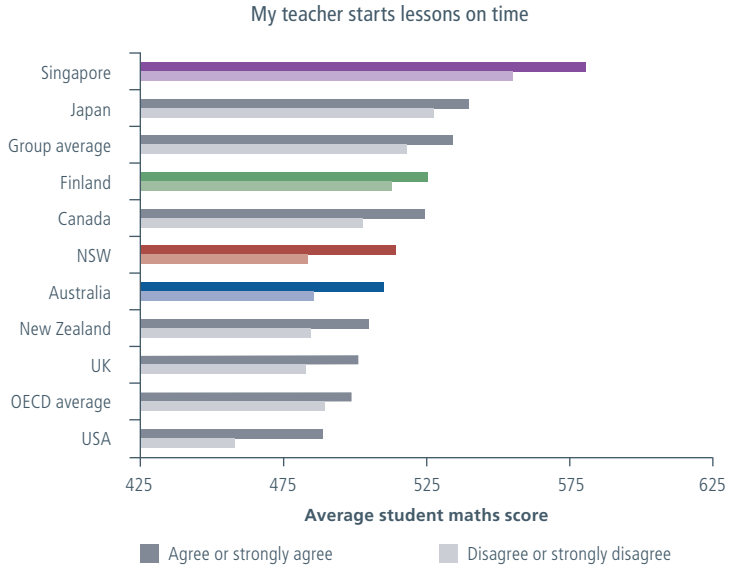
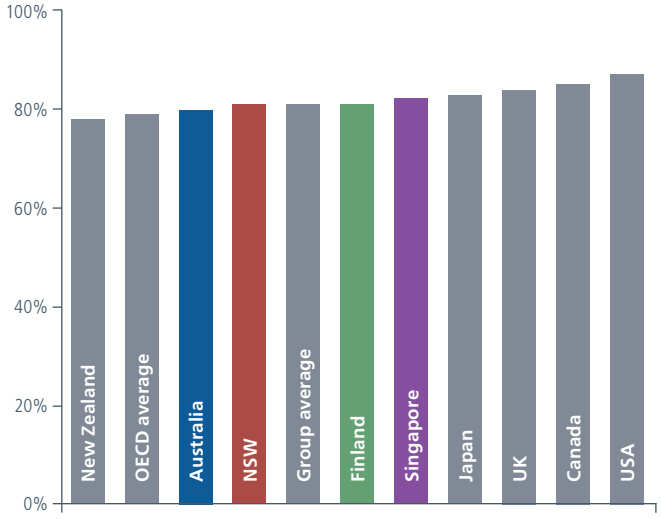



**Figure 4.2b:**

Proportion of students who agree or strongly agree that their teacher starts lessons on time, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

**Figure 4.3a:**

Average student maths scores by student responses to a statement about teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

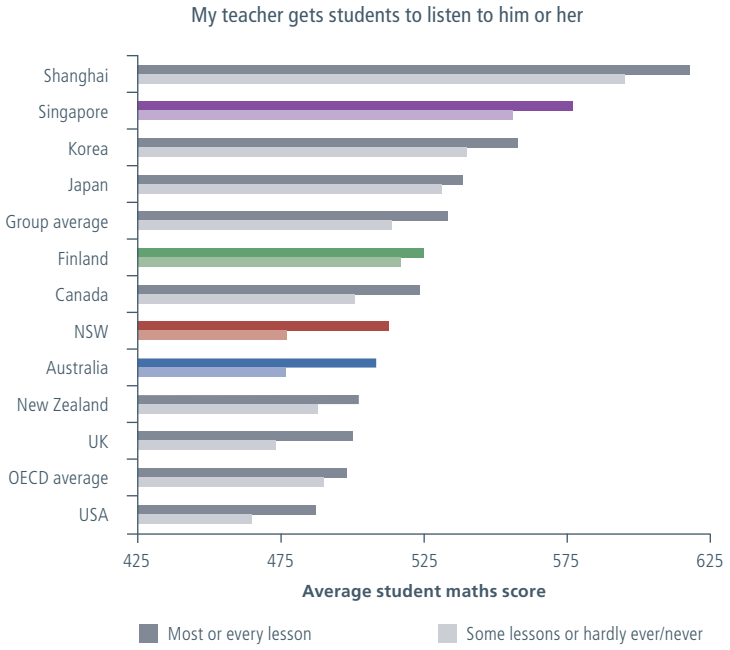
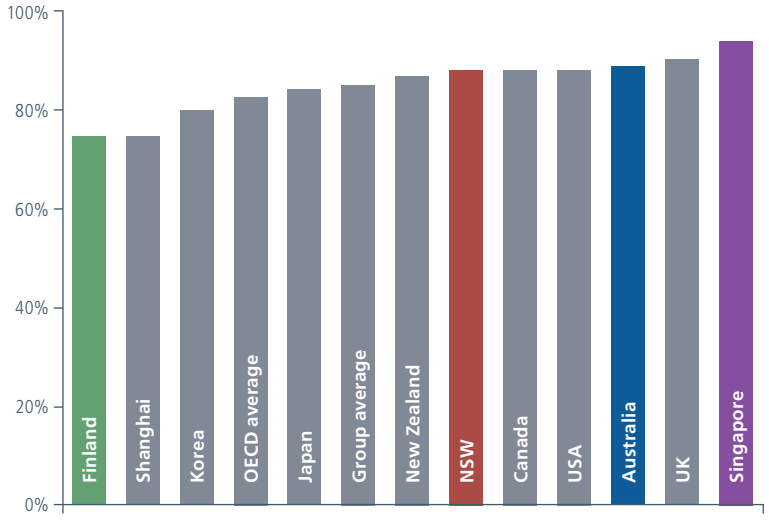



**Figure 4.3b:**

Proportion of students who agree or strongly agree that their teacher gets students to listen to him or her, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, each figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

**Figure 4.4a:**

Average student maths score, by how strongly students agree with a statement on teacher practice, and by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.

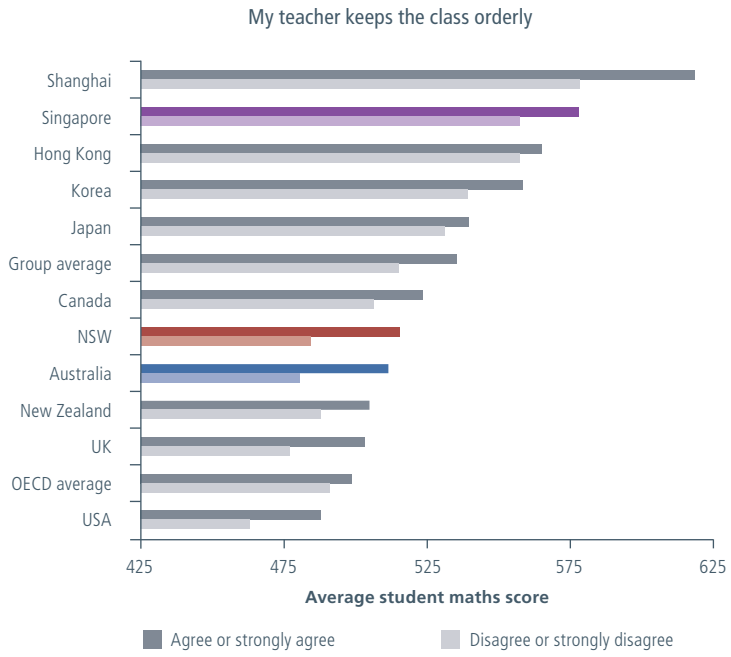
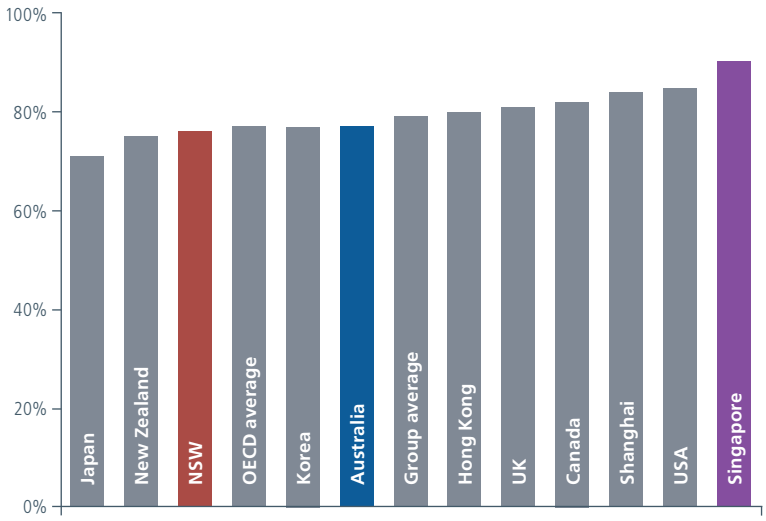



**Figure 4.4b:**

Proportion of students who agree or strongly agree that their teacher keeps the class orderly, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: For each figure, data has been analysed for the following jurisdictions – NSW, Australia, Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK), and the United States of America (USA); figures only show results for those jurisdictions where a significant difference in maths scores was found between students who experienced the teacher behaviour and students who did not; for comparison purposes, figure also shows a weighted average of all the jurisdictions listed above (Group average) and all OECD countries (OECD average).

The following index of disciplinary climate summarises student responses to a series of related items (Figure 4.5). The items are selected by personnel from PISA based on previous research.

Students were asked how often the following happen in their lessons:

- Students don't listen to what the teacher says.
- There is noise and disorder.
- The teacher has to wait a long time for the students to quieten down.
- Students cannot work well.
- Students don't start working for a long time after the lesson begins.

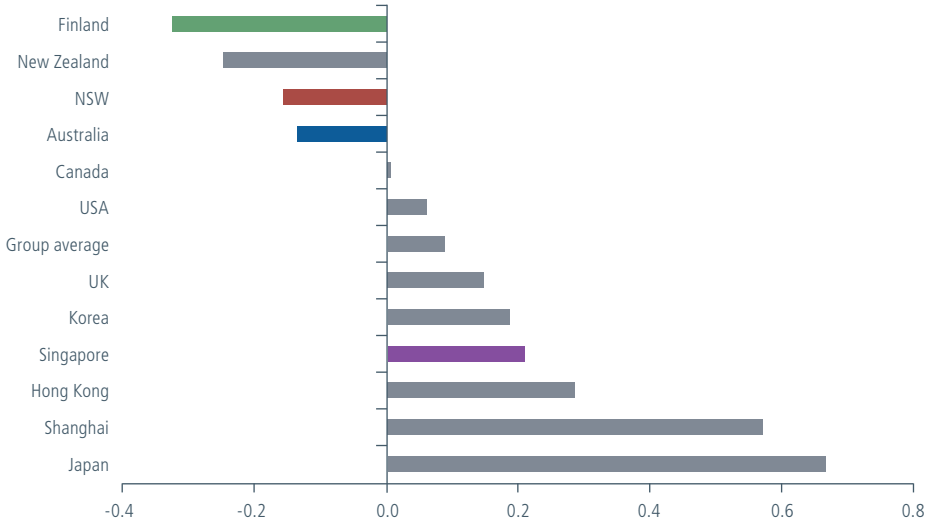
Higher values indicate a better disciplinary climate.

Compared with Australia, the OECD average and a group of culturally similar and high-performing countries, Figure 4.5 indicates that NSW classrooms have disciplinary climates that are less orderly.

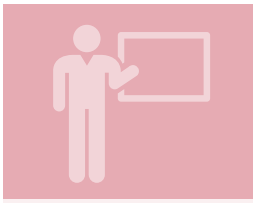
**Figure 4.5:**

Average index of disciplinary climate, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: The vertical line in the centre of the graph has a value of '0' and represents the average of all OECD countries. All countries with a score above (to the right of) '0' answered these questions more positively than OECD countries on average; all countries with a score below (to the left of) '0' answered the questions less positively than OECD countries on average.



# Indicator 5: Establish positive relationships with students

## What the evidence says

Research shows that classrooms that focus on teacher-student interpersonal interactions facilitate higher achievement and positive learning environments. A meta-analysis covering studies from the 1940's to 2004 shows correlations (ranging from 0.25 to 0.55) between students' perceptions of supportive teacher relationships, and academic and social student outcomes such as participation, satisfaction, self-efficacy, critical thinking, mathematic and language achievement, attendance and decreases in disruptive behaviour[34]. Hattie ranks positive student-teacher relationships as the twelfth highest (out of 150) influence on student outcomes in terms of attitudes and achievement[35].

Marzano et al. found that 'higher quality' teacher-student relationships led to 31 per cent fewer discipline and related problems than for those who had lower connectedness with their teachers[36]. Results from international surveys suggest that students who are in schools where teacher-student relationships and the learning climate are poor are more likely to have low levels of engagement in their schooling. They are also more likely to arrive late for school, skip classes or days of school, report a weak sense of belonging and hold negative attitudes towards school[37]. International studies also show that levels of engagement vary among schools and suggest that the role of the classroom teacher may be as important, or even more important, than students' family background[38].

## NSW requirements for teacher quality

### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in Standard 4 – Create and maintain supportive and safe learning environments. Examples include:

4.1.1 Identify strategies to support inclusive student participation and engagement in classroom activities (Graduate Teacher level).

4.3.2 Manage challenging behaviour by establishing and negotiating clear expectations with students and address discipline issues promptly, fairly and respectfully (Proficient Teacher level).

4.4.3 Initiate and take responsibility for implementing current school and/or system, curriculum and legislative requirements to ensure student well-being and safety (Highly Accomplished Teacher level).

### Additional requirements

A critical aspect of quality teaching is the teacher-student relationship. This relationship needs to be built on trust and demonstrate openness and a willingness to engage in dialogue and enquiry. The principal and leadership team in each school are responsible for ensuring that teachers are able to engage appropriately with students to enhance teaching and learning.

34 J Cornelius-White 2007, 'Learner-centered student-teacher relationships are effective: a meta-analysis', *Review of Educational Research*, no. 77, pp. 113-143.
35 Hattie 2009 (n 2 above), p. 297.
36 R Marzano, S Marzano and D Pickering 2003, *Classroom management that works: research-based strategies for increasing student achievement*, Association for Supervision and Curriculum Development, Alexandria, VA.
37 OECD 2013, *PISA 2012 results: ready to learn: students' engagement, drive and self-beliefs (volume III)*, PISA, OECD Publishing, Paris, France, p. 184.
38 D Willms, S Friesen and P Milton 2009, *What did you do in school today? Transforming classrooms through social, academic and intellectual engagement,* Canadian Education Association, Toronto, Canada.

## How NSW compares nationally and internationally

Student and teacher responses both indicate that student-teacher relations are relatively positive in NSW.

The following index of teacher-student relations summarises student responses to a series of related items (Figure 5.1). The items are selected by personnel from the PISA based on previous research.

Students were asked to what extent they agree with the following statements:

- Students get along well with most teachers.
- Most teachers are interested in students' well-being.
- Most of my teachers really listen to what I have to say.
- If I need extra help, I will receive it from my teachers.
- Most of my teachers treat me fairly.

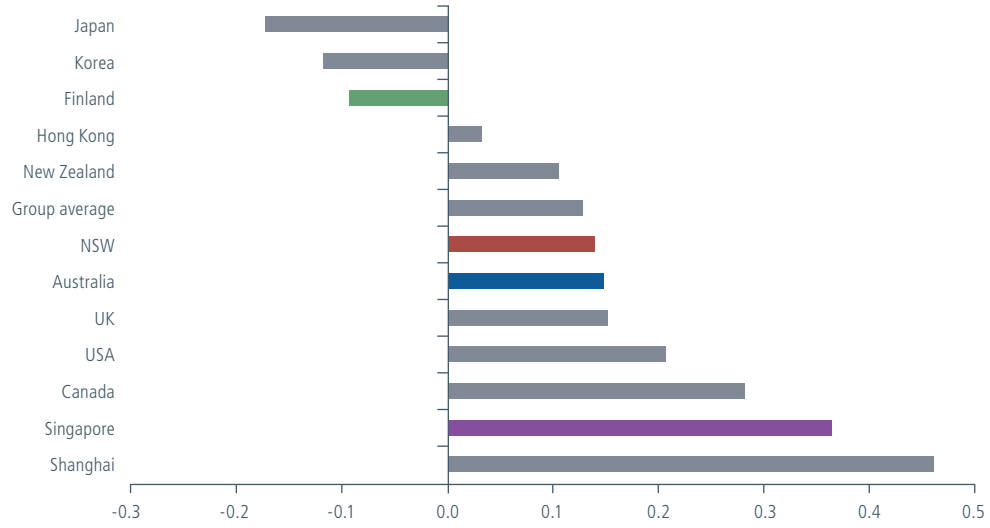
Higher values indicate positive teacher-student relations.

Compared with responses from students across Australia as a whole, NSW students responded less positively in terms of student-teacher relationships. However, the data also shows that student-teacher relationships in NSW classrooms are more positive than both the OECD average and a group average of culturally similar and high-performing countries.

**Figure 5.1:**

Average index of teacher-student relations, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.



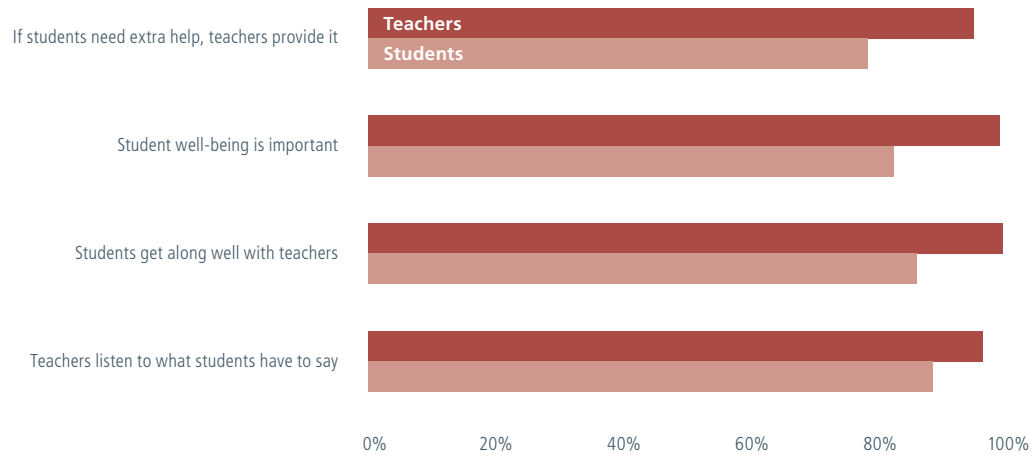

Note: The vertical line in the centre of the graph has a value of '0' and represents the average of all OECD countries. All countries with a score above (to the right of) '0' answered these questions more positively than OECD countries on average; all countries with a score below (to the left of) '0' answered the questions less positively than OECD countries on average.

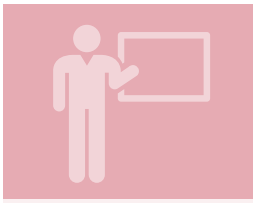
A comparison of teacher results from TALIS with student results from PISA indicates that teachers tend to feel more positive about teacher-student relations than students themselves do.

**Figure 5.2:**

Proportion of teachers and students who agree or strongly agree with selected statements about teacher-student relations

Source: Programme for International Student Assessment (PISA) 2012; Teaching and Learning International Survey (TALIS) 2013.





# Indicator 6:
# Use a variety of strategies to assess student learning and provide timely and effective feedback to students

## What the evidence says

A study by Timperley in 2009 showed that a professional development program for teachers that focused on the interpretation and use of assessment information resulted in student achievement gains accelerating at twice the expected rate. For all schools that focused on writing, the average effect size was 1.20; for reading, 0.92. Gains were found to be greatest for the lowest-performing 20 per cent of students: effect sizes were 2.25 in writing and 1.90 in reading for these students[39].

While the advantages of teachers using data from assessment for formative purposes are well documented[40]; for students to benefit from ongoing and constructive assessment, teachers must also provide timely and specific feedback based on that data.

Feedback is defined as information provided by a teacher to a student about aspects of performance or understanding[41]. Hattie describes feedback as 'among the most powerful influences on achievement', reporting its impact on student attitudes and outcomes with an effect size of 0.73, which is comparable to that of students' prior cognitive ability (0.71)[42].

## NSW requirements for teacher quality

### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in Standard 5 – Assess, provide feedback and report on student learning. Examples include:

5.1.1 Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning (Graduate Teacher level).

5.2.3 Select from an effective range of strategies to provide targeted feedback based on informed and timely judgements of each student's current needs in order to progress learning (Highly Accomplished Teacher level).

5.3.2 Understand and participate in assessment moderation activities to support consistent and comparable judgements of student learning (Proficient teacher level).

5.4.2 Use student assessment data to analyse and evaluate student understanding of subject/content, identifying interventions and modifying teaching practice (Proficient teacher level).

### Additional requirements

All NSW schools are required to have policies and procedures in place in relation to assessing student progress and reporting to parents.

In recent years, the critical nature of timely and accurate assessment of student learning and prompt and specific feedback to students has been further emphasised with the growing evidence base in this area. Teachers are encouraged to use a variety of appropriate assessment techniques that are valid, reliable and appropriate to the age and Stage of learning. The development of these teaching skills has been a major focus of teacher professional learning opportunities in all NSW schools over the past decade. The National Partnerships and the Literacy and Numeracy State Action Plan have also promoted these skills to ensure individualised learning for enhanced student outcomes.

39 H Timperley 2009, 'Using assessment data for improving teaching practice', paper presented at the Australian Council for Educational Research Conference, 16-18 August, Perth, Australia; H Timperley and J Parr 2009, 'Chain of influence from policy to practice in the New Zealand literacy strategy', *Research Papers in Education*, vol. 24, no. 2, pp. 135-154.

40 See for example, P Black and D Wiliam 1998, 'Inside the black box: raising standards through classroom assessment', *Phi Delta Kappan*, vol. 80, no. 2; J Hattie and H Timperley 2007, 'The power of feedback', *Review of Educational Research*, vol. 77, no. 1, pp. 81-112.

41 Hattie and Timperley 2007 (n 41 above), p. 402.

42 Hattie 2009 (n 2 above), p. 173.

## How NSW compares nationally and internationally

Teacher survey data from TALIS indicates that 80 per cent of NSW teachers who participated in professional development relating to student evaluation and assessment practices reported that it had a moderate to large impact on their teaching.

Student survey data suggests that NSW teachers are more inclined to use formative assessment (including feedback to students) than the average of OECD teachers.

The following index of teachers' use of formative assessment summarises student responses to a series of related items. The items are selected by personnel from the Programme for International Student Assessment (PISA) based on previous research.

Students were asked how often the following happen in their lessons:

- The teacher tells me about how well I am doing in my mathematics class.
- The teacher gives me feedback on my strengths and weaknesses in mathematics.
- The teacher tells me what I need to do to become better in mathematics.

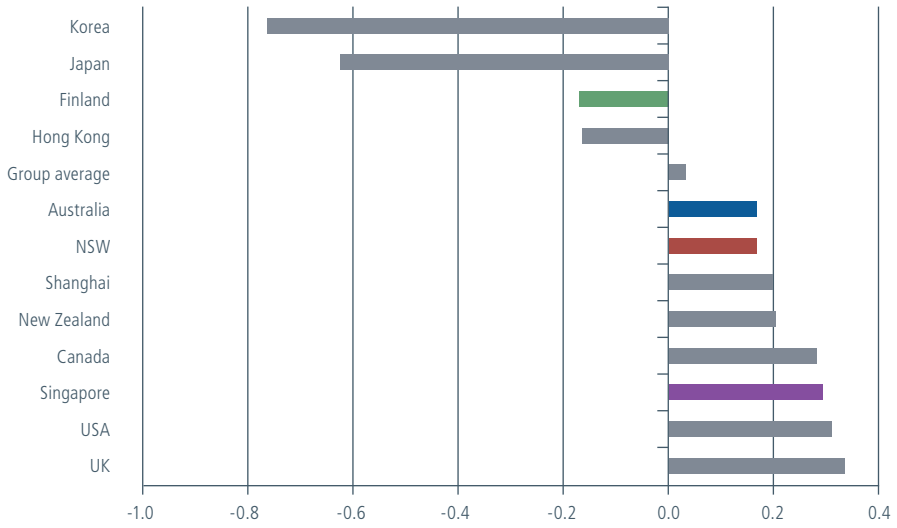
Higher values indicate greater use of formative assessment.

Compared with Australia, the OECD average and a group average of culturally similar and high-performing countries, survey responses show that NSW teachers are more likely to use formative assessment practices.

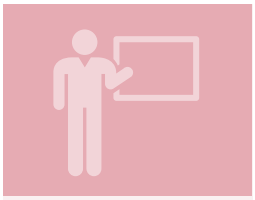
**Figure 6.1:**

Average index of teachers' use of formative assessment, by jurisdiction

Source: Programme for International Student Assessment (PISA) 2012.




Note: The vertical line in the centre of the graph has a value of '0' and represents the average of all OECD countries. All countries with a score above (to the right of) '0' answered these questions more positively than OECD countries on average; all countries with a score below (to the left of) '0' answered the questions less positively than OECD countries on average.



# Indicator 7:
# Involve parents and carers in the educative process

## What the evidence says

The literature consistently shows that parental engagement in learning leads to better outcomes, although meta-analyses can find it difficult to measure the exact effects of parental involvement in learning as there are many different ways in which involvement can occur[43]. The optimum frequency of contact between teachers and parents, and the form that this should take, are yet to be determined.

Across home variables, Hattie states that parental aspirations and expectations for children's educational achievements have the strongest relationship with achievement, while communication (e.g. assistance with homework, discussing progress) has a moderate effect. He states that parental home supervision (e.g. home rules for watching television) has the weakest effect size[44]. Evidence shows that school parent/carer engagement practices have the greatest impact when they are focused on linking behaviours of families, teachers and students to learning and learning outcomes, when there is a clear understanding of the roles of parents and teachers in learning, when family behaviours are conducive to learning, and when there are consistent, positive relations between the school and parents[45].

## NSW requirements for teacher quality

### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in various Standards. Examples include:

3.7.2 Plan for appropriate and contextually relevant opportunities for parents/carers to be involved in their children's learning (Proficient Teacher level).

5.5.3 Work with colleagues to construct accurate, informative and timely reports to students and parents/carers about student learning and achievement (Highly Accomplished Teacher level).

7.3.4 Identify, initiate and build on opportunities that engage parents/carers in both the progress of their children's learning and in the educational priorities of the school (Lead Teacher level).

### Additional requirements

References to the place of parents and carers as partners in the educative process are included in policy documents or school guidelines in all NSW schools. Relevant documents may relate to multicultural education, curriculum provision, assessing and reporting to parents, the role of parents and carers in the learning of their children, and discipline policies. In many schools, technology is being used effectively to link the classroom and the home.

Examples of resources which assist parents to engage as partners in their child's education include the Partners4Learning (www.partners4learning.edu.au) and School A to Z (www.schoolatoz.nsw.edu.au) websites.

43 Hattie 2009 (n 2 above), p. 126
44 Hattie 2009 (n 2 above), p. 126
45 L Emerson et al. 2012, *Parental engagement in learning and schooling: lessons from research*, Australian Research Alliance for Children and Youth (ARACY) for the Family-School and Community Partnerships Bureau, Canberra, Australia, p. 12.

## How NSW compares nationally and internationally

The following figures are based on Year 8 teacher responses to TIMSS survey questions and test results for Year 8 students.

TIMSS data show that average maths performance increased for students whose teachers do the following more often:

- Meet or talk individually with the student's parents to discuss his/her learning progress (Figure 7.1a)
- Send home a progress report on the student's learning (Figure 7.2a).

However, according to teacher self-reports, compared with most other countries, NSW teachers are less likely to do either of these things (Figures 7.1b and 7.2b).

It should be noted that the proportion of NSW teachers who report that they never meet or talk individually with parents, and who report that they never send home progress reports, are five per cent and less than one per cent respectively.

**Figure 7.1a:**

Average Year 8 student maths score, by how often Year 8 teachers meet or talk individually with parents, NSW

Source: Trends in International Mathematics and Science Study (TIMSS) 2011.

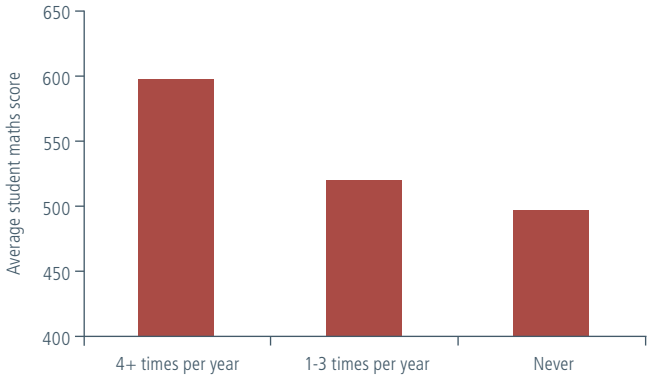
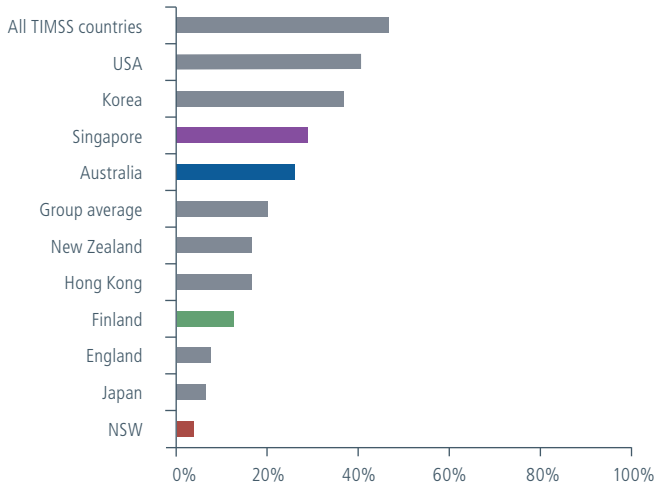



**Figure 7.1b:**

Proportion of Year 8 teachers who meet or talk individually with students' parents at least four times per year, by jurisdiction

Source: Trends in International Mathematics and Science Study (TIMSS) 2011.




Note: Data has been analysed for NSW and Australia and the following high-performing and culturally similar jurisdictions: England, Finland, Hong Kong, Japan, Korea, New Zealand, Singapore, and the United States of America (USA); for comparison purposes, figure also provides a weighted average of all the countries listed above ('Group average') and all TIMSS countries (TIMSS average).

**Figure 7.2a:**

Average Year 8 student maths score, by how often Year 8 teachers send home a progress report on students' learning, NSW

Source: Trends in International Mathematics and Science Study (TIMSS) 2011.

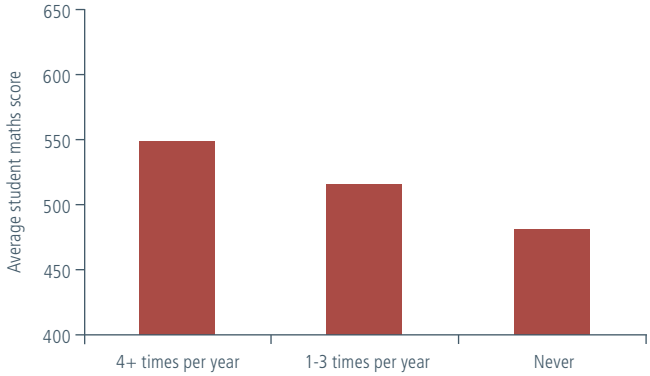
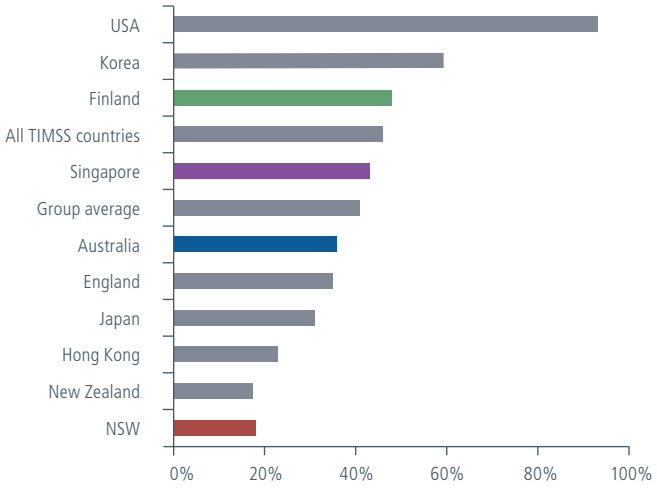



**Figure 7.2b:**

Proportion of Year 8 teachers who send progress reports home at least four times per year, by jurisdiction

Source: Trends in International Mathematics and Science Study (TIMSS) 2011.




Note: Data has been analysed for NSW and Australia and the following high-performing and culturally similar jurisdictions: England, Finland, Hong Kong, Japan, Korea, New Zealand, Singapore, and the United States of America (USA); for comparison purposes, figure also provides a weighted average of all the countries listed above ('Group average') and all TIMSS countries (TIMSS average).

# Professional engagement

## Indicator 8:
## Engage in professional learning that focuses on subject matter content and how to teach it

### What the evidence says

The content-focus of professional development is concerned with both teachers' content knowledge of a particular subject matter and their understanding of how students learn that subject matter. As noted in relation to Indicator 2: Know subject matter content and how to teach it, research to date shows only a weak positive relationship between teacher content knowledge and student achievement[46].

However, Scher and O'Reilly's meta-analysis of 18 robust studies (yielded from a total of 145) found that curriculum-focussed professional development programs that emphasised content, how to teach specific content and how students learn, generated a more positive effect on student outcomes (effect size: 0.56) than programs that focus on pedagogy only (effect size: 0.07)[47]. This example is based on maths-focussed professional develop programs.

### NSW requirements for teacher quality

#### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are mainly found in Standard 6 – Engage in professional learning. Examples include:

6.1.1 Demonstrate an understanding of the role of the Australian Professional Standards for Teachers in identifying professional learning needs (Graduate Teacher level).

6.2.2 Participate in learning to update knowledge and practice, targeted to professional needs and school and/or system priorities (Proficient Teacher level).

6.4.3 Engage with colleagues to evaluate the effectiveness of teacher professional learning activities to address student learning needs (Highly Accomplished Teacher level).

7.4.2 Understand the role of external professionals and community representatives in broadening teachers' professional knowledge and practice (Graduate Teacher level).

#### Additional requirements

In NSW, participation in continuing professional development is mandatory to support the maintenance of accreditation at Proficient, Highly Accomplished and Lead Teacher levels. At Proficient Teacher level, teachers must undertake a minimum of 100 hours of continuing professional development over a five-year period, comprising a minimum of 50 hours of BOSTES-registered courses with the balance made up of teacher-identified courses. The latter may include workshops and conferences, but also professional reading, observations, research and delivery of professional development.

46 P Ferguson and S Womack 1993, 'The impact of subject matter and educational coursework on teaching performance', *Journal of Teacher Education*, vol. 44, no. 1, p. 56.

47 L Scher and F O'Reilly 2009, 'Professional development for K-12 math and science teachers: what do we really know?', *Journal of Research on Educational Effectiveness*, vol. 2, p. 230.

As is evident at the Highly Accomplished and Lead Teacher levels of the Professional Teaching Standards, high-performing teachers are expected to be involved in the professional development of others as well as the promotion of the profession. With the implementation of the new NSW syllabuses in response to the Australian Curriculum, NSW schools have placed a significant focus on the in-school development of teachers. This has resulted in a specific focus on individual subject content programming and suitable pedagogies.

## How NSW compares nationally and internationally

Teacher self-reports show that over 80 per cent of NSW teachers who participated in professional development covering subject matter and how to teach it report that it had a moderate to large impact on their teaching (see Figure 8.1b). However, they are significantly less likely than Singaporean teachers to engage in that professional development (see Figure 8.1a).

**Figure 8.1a:**

Proportion of teachers reporting participation in professional development in selected topics in the past 12 months, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.

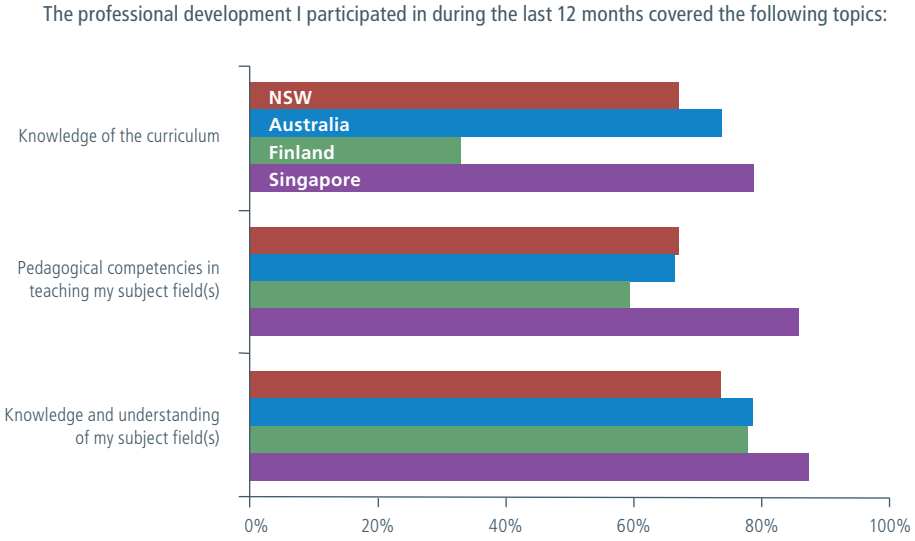
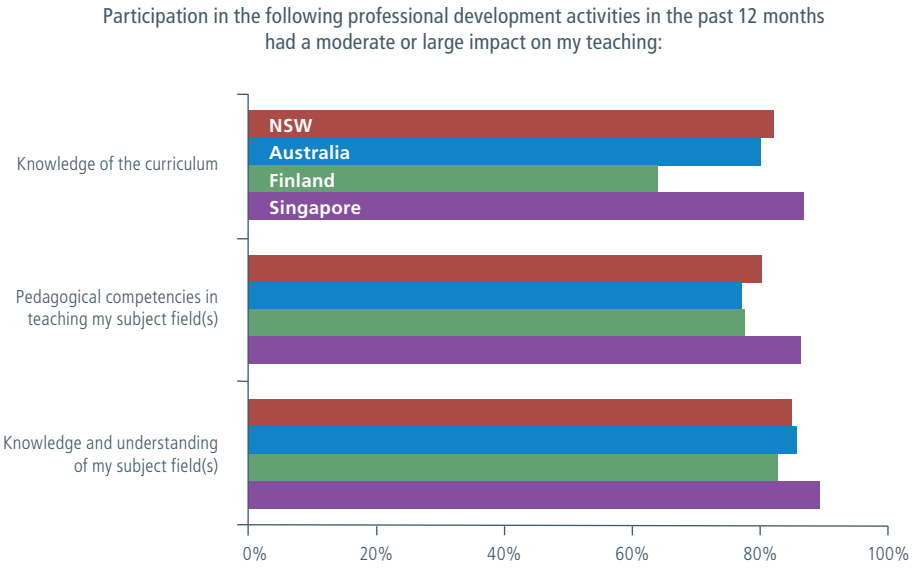
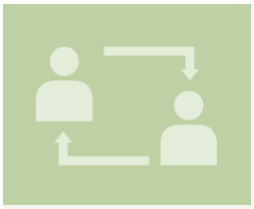



**Figure 8.1b:**

Proportion of teachers who report a moderate or large impact on their teaching by focus of professional development, and by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.





## Indicator 9:
## Engage with colleagues and students to improve own professional knowledge and practice

### What the evidence says

International education researchers point to collaborative practices between teachers within and across schools as important features of many high-performing schooling systems[48].

Key to the process of improving practice is providing and receiving effective feedback. Jensen suggests that systems of teacher appraisal and feedback that are directly linked to improved student performance can increase teacher effectiveness by up to 30 per cent. He proposes a new system of teacher appraisal and feedback in which at least four of the following eight methods are utilised: peer observation and collaboration, student performance and assessments, direct observation of classroom teaching and learning, student surveys, parent surveys, 360 degree assessment, self-assessment and external observation[49].

Two other collaborative teacher practices that are widely used are induction and mentoring. It can be difficult to gain a consistent picture of the effectiveness of mentoring because programs vary in a variety of ways, including structure, length, preparation and selection of mentors, and mentor-mentee matching processes. However, collectively, the evidence points to the effectiveness of mentoring and that exposure to longer or more intense mentoring programs, or programs with higher quality mentor selection processes, have more positive impacts on student achievement than shorter programs[50].

### NSW requirements for teacher quality

#### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in various Standards. Examples include:

3.6.2 Evaluate personal teaching and learning programs using evidence, including feedback from students and student assessment data, to inform planning (Proficient Teacher level).

6.3.1 Seek and apply constructive feedback from supervisors and teachers to improve teaching practice (Graduate Teacher level).

6.1.3 Analyse the National Professional Standards for Teachers to plan personal professional development goals, support colleagues to identify and achieve personal development goals and pre-service teachers to improve classroom practice (Highly Accomplished Teacher level).

7.1.4 Model exemplary ethical behaviour and exercise informed judgements in all professional dealings with students, colleagues and the community (Lead Teacher level).

48 M Barber and M Mourshed 2007, *How the world's best-performing school systems come out on top*, McKinsey & Company, London, UK; M Mourshed et al. 2010, *How the world's most improved school systems keep getting better*, McKinsey & Company, London, UK; L Stoll, A Harris and G Handscomb 2012, *Great professional development which leads to great pedagogy: nine claims from the research*, National College for School Leadership, Nottingham, UK.

49 B Jensen and J Reichl 2011, *Better teacher appraisal and feedback: improving performance*, Grattan Institute, Melbourne, Australia, p. 3.

50 R Ingersoll and M Strong 2011, 'The impact of induction and mentoring programs for beginning teachers: a critical review of the research', *Review of Educational Research*, vol. 81, no. 2, pp. 201-233.

### Additional requirements

All graduate teachers must be able to demonstrate the Graduate Teacher Standard Descriptors across the seven standards described in the Australian Professional Standards for Teachers. Subsequent accreditation is also dependent on the ability to demonstrate all descriptors at the appropriate level.

In 2014, the *Great Teaching, Inspired Learning* reforms have encouraged teachers to engage with colleagues in order to improve their professional knowledge and practice. Many schools have incorporated professional learning practices involving the essential elements of the Australian Teacher Performance and Development Framework, which describes the characteristics of an effective performance and development cycle. The Framework is being used widely in non-government schools as the means by which teachers work with colleagues to develop individualised professional learning plans.

From Semester 1, 2015, government school teachers will be required to undergo an annual cycle of professional development and assessment of their performance as detailed in the *Performance and Development Framework for Principals, Executives and Teachers in NSW Public Schools*. The Framework replaces the Teacher Assessment and Review Schedule (TARS) and is closely aligned with the Professional Teaching Standards.

### Beginning teachers

Induction and mentoring of beginning teachers are widely practised in NSW schools. Beginning teachers appointed to government schools must be provided with a school-based induction program, which is equivalent to two hours per week release time for the teacher in the first year, and one hour for an experienced colleague to provide mentoring support. In their second year, the teacher receives the equivalent of one hour per week release time to further develop their practice.

## How NSW compares nationally and internationally

Figure 9.1 shows that 87 per cent of NSW teachers indicated that student performance was given moderate to high importance when they received feedback about their work as a teacher. This proportion is significantly lower than that for teachers in both Singapore (95 per cent) and Australia (88 per cent), but significantly higher than that for teachers in Finland (75 per cent). Forty-six per cent of NSW teachers responded that this feedback resulted in moderate to large positive changes in their teaching practice; a proportion significantly lower than that for Singaporean teachers, at 67 per cent.

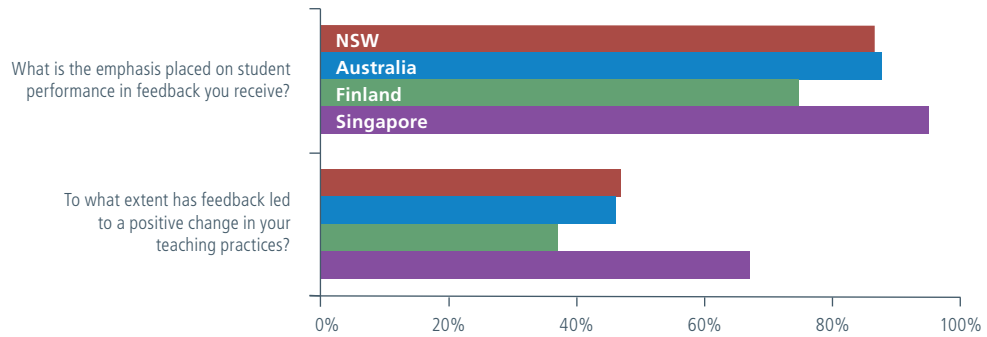



**Figure 9.1:**

Proportion of teachers responding 'moderate' or 'high'/'large' in relation to the statements about feedback on their performance, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.

Compared with Singaporean teachers, a significantly higher proportion of NSW teachers agreed or strongly agreed that teacher appraisal and feedback are largely done to fulfil administrative requirements (see Figure 9.2). Finnish and Australian teacher responses showed no significant differences when compared with NSW responses.

**Figure 9.2:**

Proportion of teachers agreeing or strongly agreeing with statements about teacher appraisal and feedback, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.

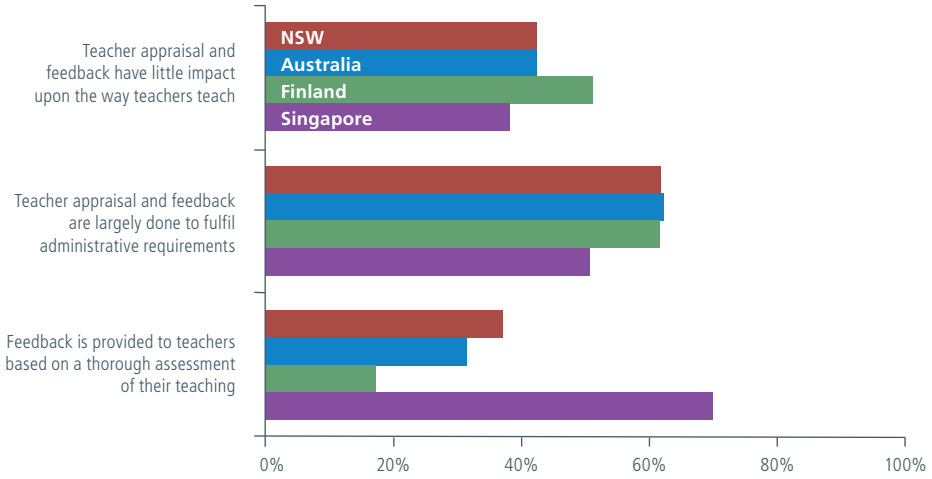
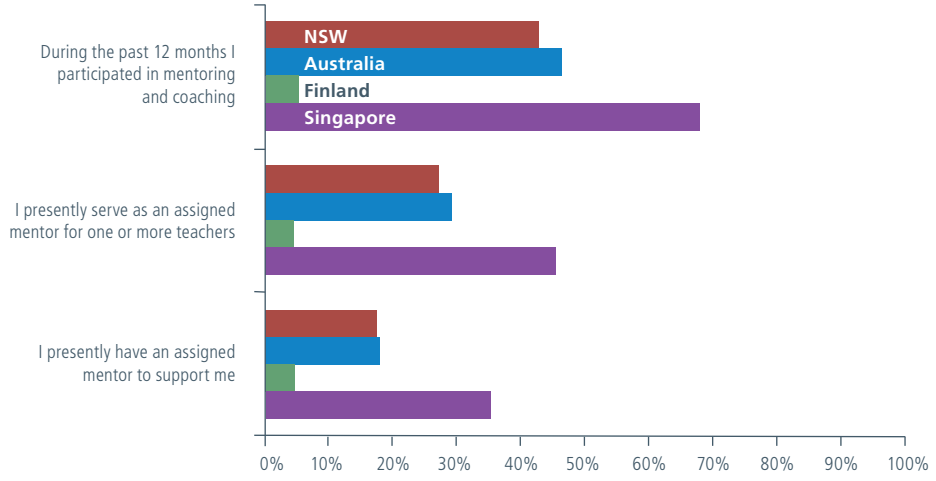


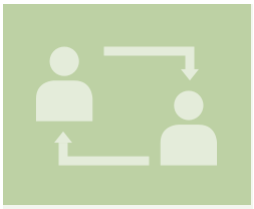

Figure 9.3 shows that some high-performing systems use mentoring widely, while others do not. Over 42 per cent of NSW teachers (and 46 per cent in Australia) reported that they had participated in mentoring and coaching during the 12 months prior to completing the TALIS survey. Teachers from Finland reported a far lower level of participation, with only five per cent of teachers indicating that they had participated in mentoring and coaching during the same period. Singapore was significantly higher, with 68 per cent.

**Figure 9.3:**

Proportion of teachers answering 'yes' to statements about teacher mentoring, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.





# Indicator 10: Participate in professional learning targeted to professional needs

## What the evidence says

It is important for teachers to identify and plan for their professional learning needs. Research has proven that professional learning activities tend to be more effective when teachers can align their experience to specific contextual goals that they clearly understand and consider relevant to their professional needs[51]. Timperley's research shows that all of the studies identified as robust in maths (number: 11) and literacy (number: 13) included communication of clear goals related to student outcomes, and found evidence of moderate to high effect sizes on student outcomes[52].

Effective analysis of student data also helps teachers identify areas in which students' learning needs may require additional attention, and as such can direct the teacher to engage in professional learning in relation to this student need. Some researchers note that teachers should not identify professional learning needs without the use of such additional evidence[53].

## NSW requirements for teacher quality

### Australian Professional Standards for Teachers

Descriptors relevant to this indicator are found in Standard 6 – Engage in professional learning. Examples include:

6.1.2 Use the Australian Professional Standards for Teachers and advice from colleagues to identify and plan professional learning needs (Proficient Teacher level).

6.2.2 Participate in learning to update knowledge and practice, targeted to professional needs and school and/or system priorities (Proficient Teacher level).

6.4.3 Engage with colleagues to evaluate the effectiveness of teacher professional learning activities to address student learning needs (Highly Accomplished Teacher level).

### Additional requirements

In NSW, participation in continuing professional development is mandatory to support the maintenance of accreditation at Proficient, Highly Accomplished and Lead Teacher levels. At Proficient Teacher level, teachers must undertake a minimum of 100 hours of continuing professional development over a five-year period, comprising a minimum of 50 hours of BOSTES-registered courses with the balance made up of teacher-identified courses. The latter may include workshops and conferences, but also professional reading, observations, research and delivery of professional development.

Recent Australian and State Government legislation places additional compliance requirements on all NSW schools. The use of the Australian Teacher Performance and Development Framework and the requirement for all teachers to come under the registration authority of BOSTES have resulted in even tighter linkages between teacher need and professional learning.

51 V Robinson and H Timperley 2007, 'The leadership of the improvement of teaching and learning: lessons from initiatives with positive outcomes for students', *Australian Journal of Education*, vol. 51, no. 3, p. 250; H Timperley 2008, 'Teacher professional learning and development', *Educational Practices Series 18*, International Academy of Education, Belley, France, p. 15; New Zealand Ministry of Education 2007, *Literacy professional development project: identifying effective teaching and professional development practices for enhanced student learning*, prepared by J Parr et al., p. 136.

52 H Timperley, A Wilson, H Barrar and I Fung 2007, *Teacher professional learning and development: best evidence synthesis iteration*, New Zealand Ministry of Education, Auckland, NZ, p. xlvi.

53 See New Zealand Ministry of Education 2007 (n 54 above), p. 136.

## How NSW compares nationally and internationally

The following two figures show NSW teachers' need for, and participation in, professional development, by topic area. Topics are ordered according to responses by NSW teachers.

Figure 10.1 shows that in 2013, the top five areas in which NSW teachers indicated a moderate to high need for professional development were:

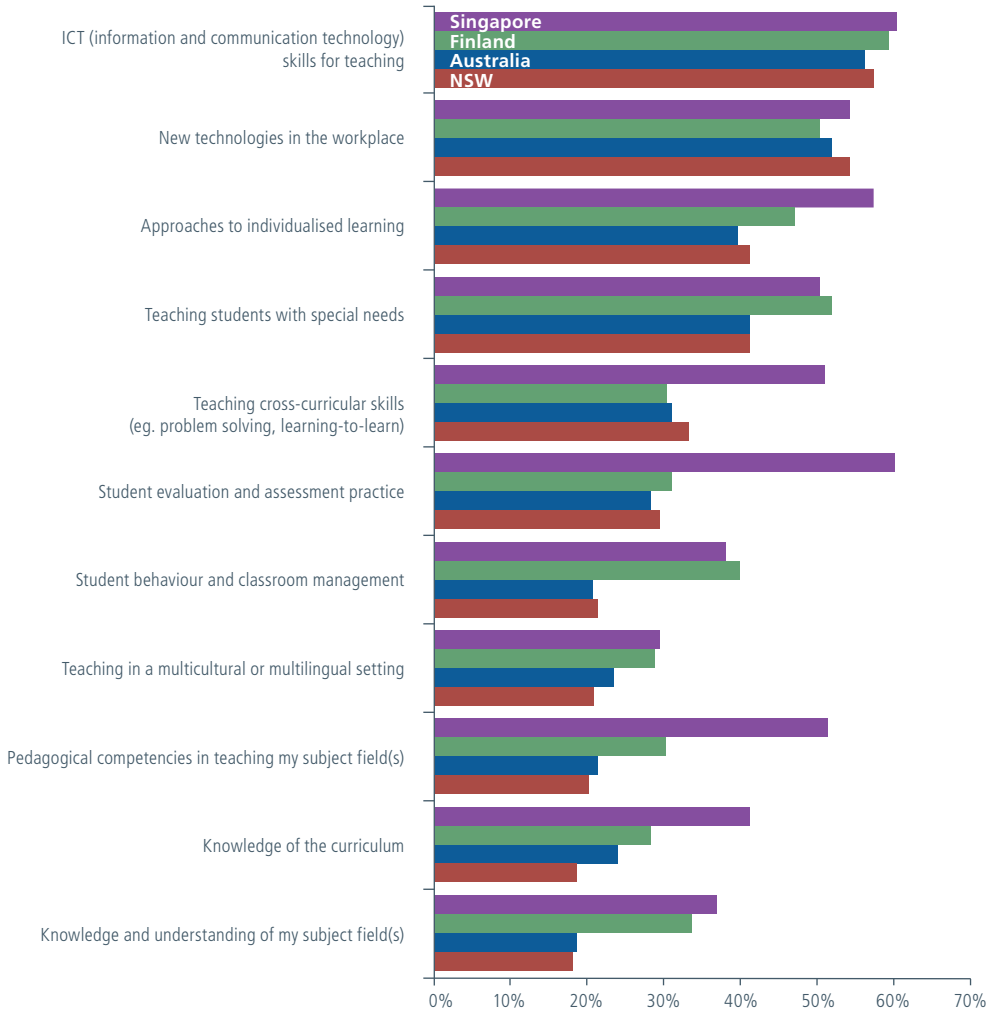
- ICT skills for teaching (57 per cent of teachers)
- new technologies in the workplace (54 per cent of teachers)
- approaches to individualised learning (41 per cent of teachers)
- teaching students with special needs (41 per cent of teachers), and
- teaching cross-curricular skills (e.g. problem solving, learning-to-learn) (33 per cent of teachers).

Singaporean teachers consistently indicated a higher need for professional development in all topic areas than teachers in NSW and across Australia as a whole. Compared with teachers in NSW, Finnish teachers expressed a higher need for professional development in all topic areas with the exception of two: new technologies in the workplace and teaching cross-curricular skills.

**Figure 10.1:**

Proportion of teachers indicating that they had a 'moderate' or 'high' level of need for professional development, by topic, and by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.




Notes: Topics are ordered according to the need expressed by NSW teachers.

Figure 10.2 shows that the top five areas in which NSW teachers had undertaken professional development in the previous 12 months were:

- knowledge and understanding of their subject field(s) (74 per cent of teachers)
- ICT skills for teaching (71 per cent of teachers)
- knowledge of the curriculum (67 per cent of teachers)
- pedagogical competencies in teaching their subject field(s) (67 per cent of teachers), and
- new technologies in the workplace (57 per cent of teachers).

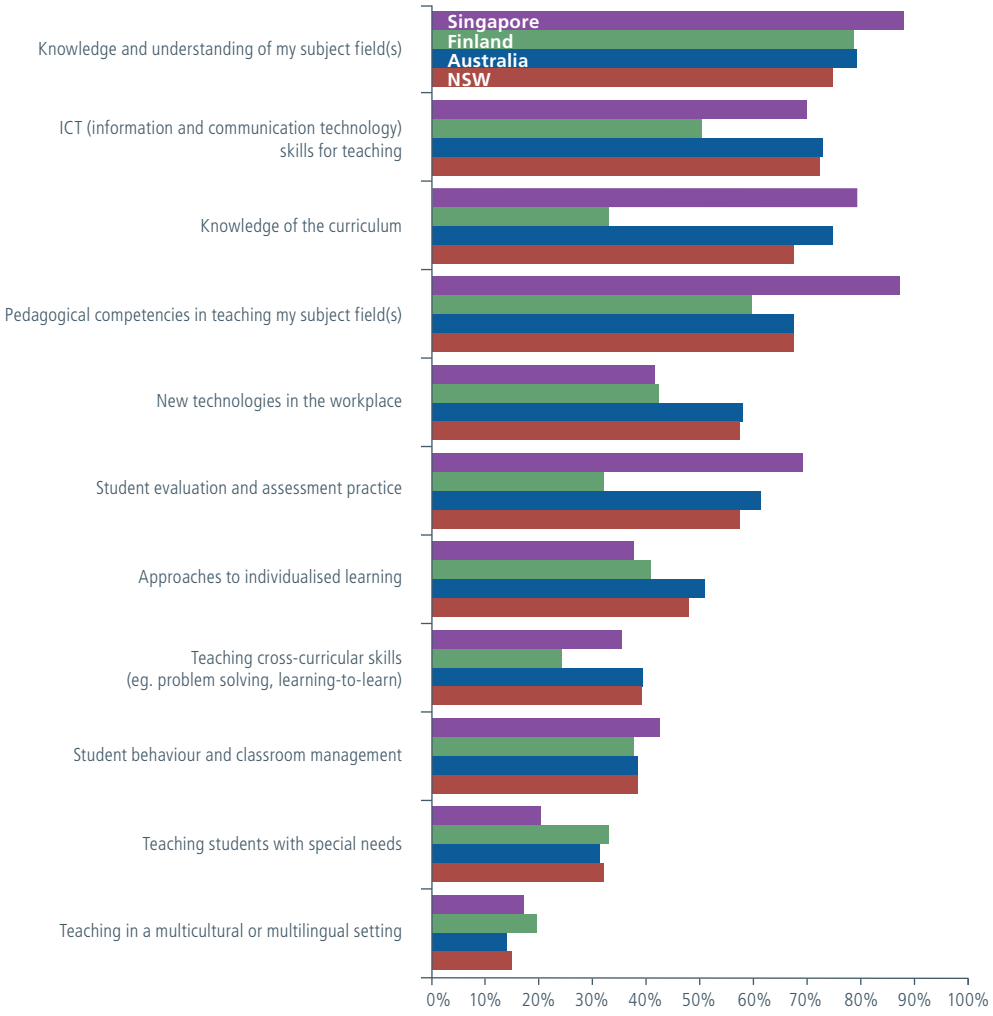
Two of these areas are also included in the list of the top five areas of need for professional development: ICT skills for teaching and new technologies in the workplace.

Teacher responses in relation to participation in professional development vary widely across topics and jurisdictions.

**Figure 10.2:**

Proportion of teachers indicating that they had participated in professional development in particular topic areas over the previous 12 months, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.




Notes: Topics are ordered according to the need expressed by NSW teachers.

Figure 10.3 shows the topics in which NSW teachers undertook professional development compared to their reported level of need for professional development in those topic areas.

Over 70 per cent of teacher respondents indicated that they had undertaken professional development covering knowledge and understanding of their subject field(s), but only 18 per cent of teachers expressed a need for professional development in this area. Likewise, over 66 per cent of teacher respondents indicated that they had undertaken professional development covering pedagogical competencies in teaching their subject field(s), but only 20 per cent of teachers expressed a need in this area.

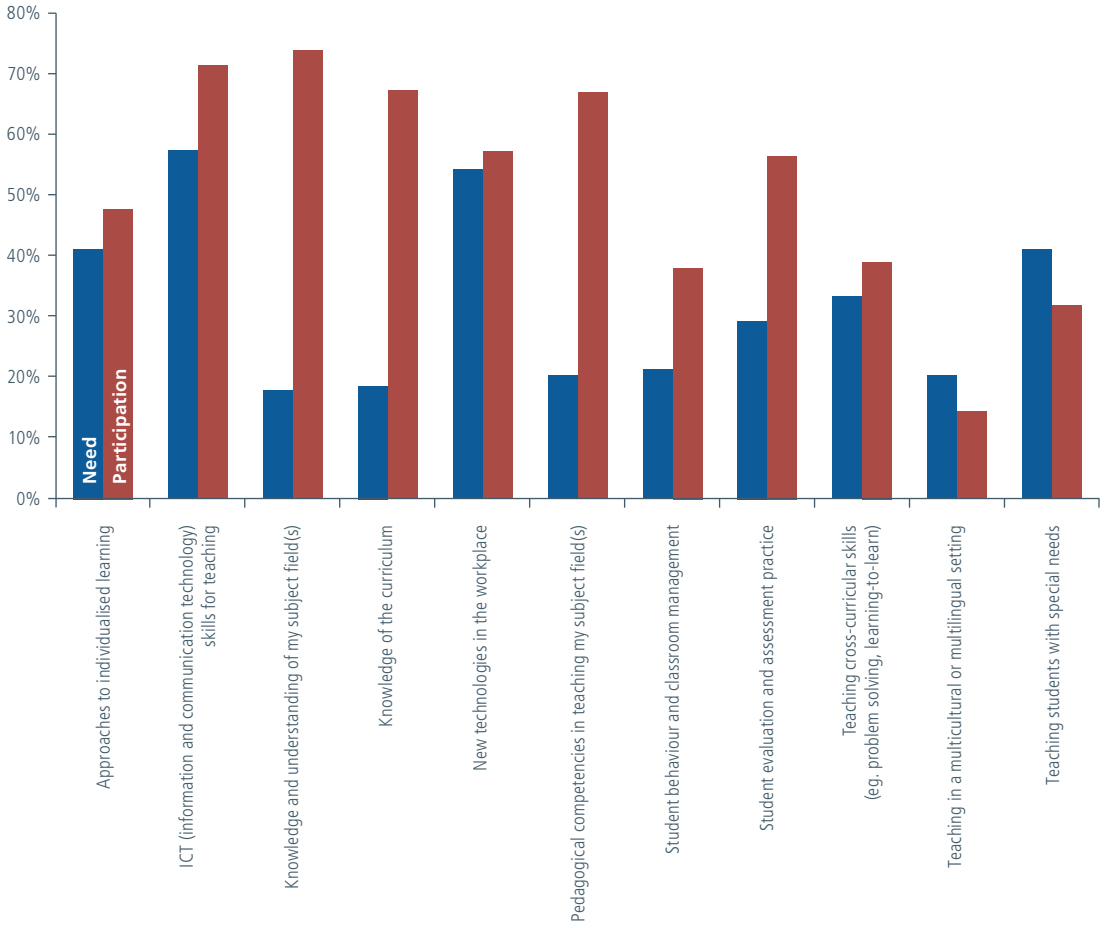
The differences between teachers' perceived need for, and their participation in, professional development could reflect a number of different scenarios.

For example, a high participation column that is coupled with a comparatively low need column may indicate that professional development has met teacher need in NSW, or that the impact of professional development in that particular area is undervalued. Data from TALIS does not allow further analysis to identify the reasons for proportions presented in Figure 10.3.

**Figure 10.3:**

Proportion of teachers reporting participation in professional development over the previous 12 months, and proportion of teachers reporting a moderate or high level of need for professional development, by topic

Source: Teaching and Learning International Survey (TALIS) 2013.



# Teacher self-efficacy and job satisfaction

## Indicator 11:
## Are confident in their role as teacher and satisfied with their job

### What the evidence says

There is increasing evidence that teachers' sense of self-efficacy is an important factor in influencing the academic outcomes of students[54]. Hattie reports on three substantive studies to conclude that teacher efficacy is a strong predictor of student achievement and few teacher characteristics have as much impact on instructional practice and student outcomes as teacher efficacy[55].

Hattie defines teacher efficacy as referring to 'teachers' confidence in their professional abilities, specifically, teachers' expectations that they will be able to perform the actions that lead to student learning … teacher efficacy influences professional behaviour through cognitive processes (especially goal setting), motivational processes (especially attributions for success and failure), affective processes (especially control of negative feelings), and selection processes (choices about physical and social environments, activities, etc.)'[56].

### Additional requirements

With the contemporary approach to 'open all classrooms', good teachers are being recognised by colleagues and rewarded by engaging in opportunities to share their practice with colleagues. The Highly Accomplished and Lead Teacher levels of the Professional Teaching Standards enable these higher order teaching skills to be described, recognised and potentially, rewarded. The introduction of the Australian Professional Standards for Teachers in 2004 provided a professional language by which teachers could describe their activity, providing greater confidence, recognition, satisfaction and clarity.

### How NSW compares nationally and internationally

Teacher survey data shows that NSW and Australian teachers feel confident and satisfied in their role as teacher.

#### Teacher self-efficacy

The following figures show teachers' reported levels of self-efficacy in relation to classroom management, instruction and student engagement. They indicate that the confidence levels of NSW teachers are significantly higher than those reported by Finnish, Singaporean and Australian teachers. For Figure 11.3 only, NSW confidence levels are not significantly different to those of teachers in Singapore.

##### *Efficacy in classroom management*

Teachers were asked to what extent they can do the following in their teaching (Figure 11.1):

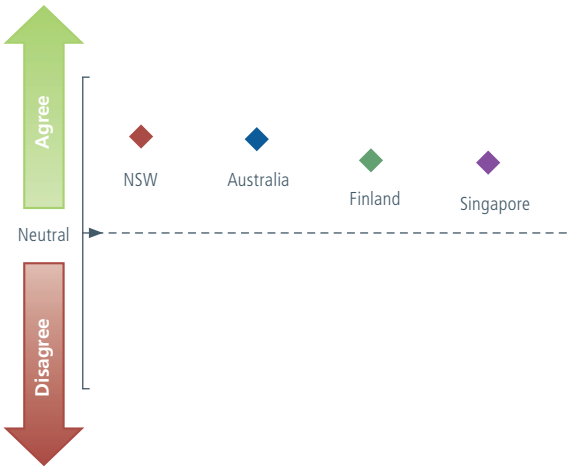
- Control disruptive behaviour in the classroom
- Make their expectations about student behaviour clear
- Get students to follow classroom rules, and
- Calm a student who is disruptive or noisy.

54 See G Caprara et al. 2006, 'Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: a study at the school level', *Journal of School Psychology*, vol. 44, no. 6, pp. 473-490; cited in OECD 2014 (n 1 above), p. 182.
55 J Hattie and E Anderman (eds) 2013, *International guide to student achievement*, Routledge, New York, NY, p.266.
56 Hattie and Anderman 2013 (n 56 above), p.266.

**Figure 11.1:**

The extent to which teachers agree that they are efficacious in classroom management, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.




### *Efficacy in instruction*

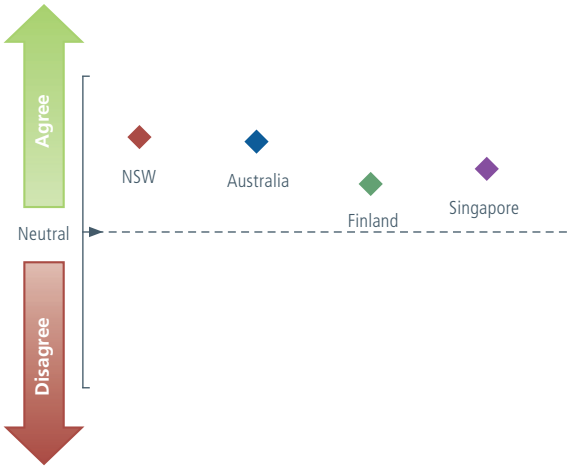
Teachers were asked to what extent they can do the following in their teaching (Figure 11.2):

- Craft good questions for their students
- Use a variety of assessment strategies
- Provide an alternative explanation, for example when students are confused, and
- Implement alternative instructional strategies in their classroom.

**Figure 11.2:**

The extent to which teachers agree that they are efficacious in instruction, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.



### *Efficacy in student engagement*

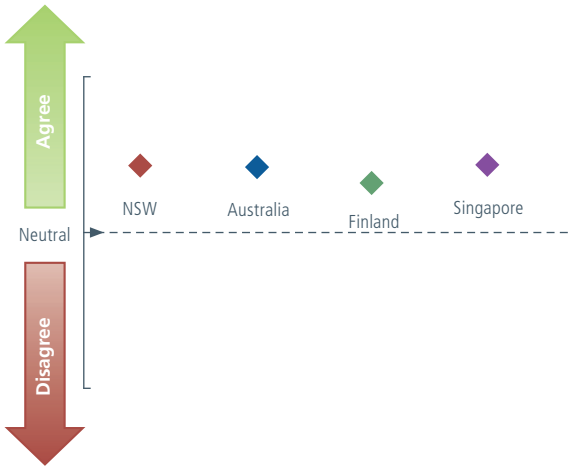
Teachers were asked to what extent they can do the following in their teaching (Figure 11.3):

- Get students to believe they can do well in school work
- Help their students value learning
- Motivate students who show low interest in school work, and
- Help students think critically.

**Figure 11.3:**

The extent to which teachers agree that they are efficacious in student engagement, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.




## Teacher satisfaction

The following figures show teachers' reported levels of satisfaction with their work environment, profession, and job. They indicate that the satisfaction levels of NSW teachers are significantly higher than those reported by teachers in Singapore and Australia. However, Figures 11.5 and 11.6 show that the satisfaction levels of Finnish teachers are significantly higher than those of NSW teachers.

### *Satisfaction with current work environment*

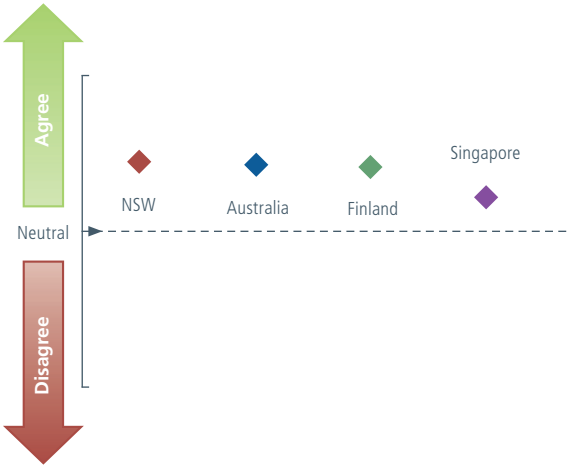
Teachers were asked how strongly they agree or disagree with the following statements (Figure 11.4):

- I would like to change to another school if that were possible
- I enjoy working at this school
- I would recommend my school as a good place to work
- All in all, I am satisfied with my job, and
- I am satisfied with my performance in this school.

**Figure 11.4:**

The extent to which teachers agree that they are satisfied with their current work environment, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.



### *Satisfaction with profession*

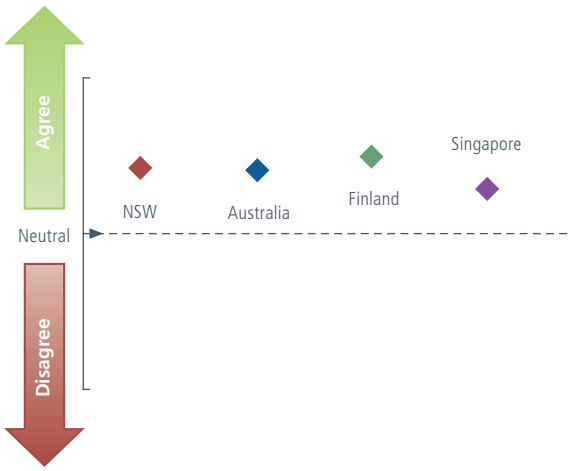
Teachers were asked how strongly they agree or disagree with the following statements (Figure 11.5):

- The advantages of being a teacher clearly outweigh the disadvantages
- If I could decide again, I would still choose to work as a teacher
- I regret that I decided to become a teacher
- I wonder whether it would have been better to choose another profession, and
- I think that the teaching professional is valued in society.

**Figure 11.5:**

The extent to which teachers agree that they are satisfied with the teaching profession, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.



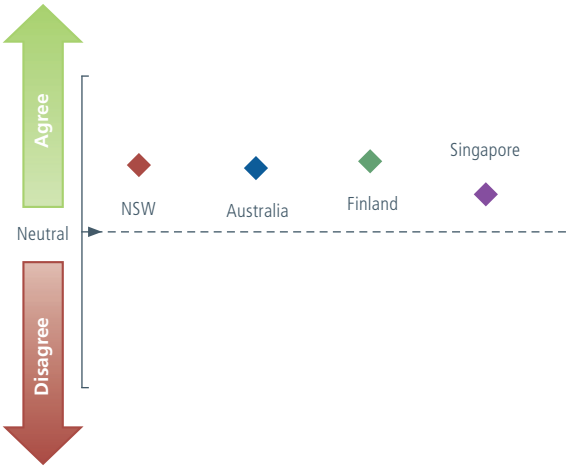

### *Satisfaction with job*

The following figure represents a combination of responses to all the statements included in Figures 11.4 and 11.5.

**Figure 11.6:**

The extent to which teachers agree that they are satisfied with their jobs, by jurisdiction

Source: Teaching and Learning International Survey (TALIS) 2013.



# Appendix 1

## Data sources and jurisdictions for comparison

### Teaching and Learning International Survey (TALIS) 2013

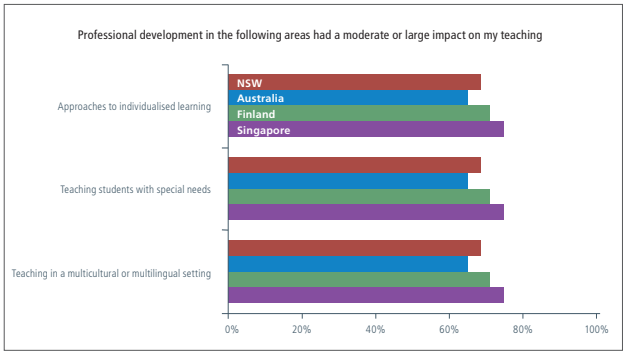
The main source of data for this report is the Teaching and Learning International Survey (TALIS) 2013, conducted by the Organisation for Economic Cooperation and Development (OECD). TALIS is an international, large-scale survey that focuses on the working conditions of teachers and the learning environments in schools. It aims to provide valid, timely and comparable information to help countries review and define policies for developing a high-quality teaching profession. The first cycle of TALIS was conducted in 2008. TALIS 2013 is the second.

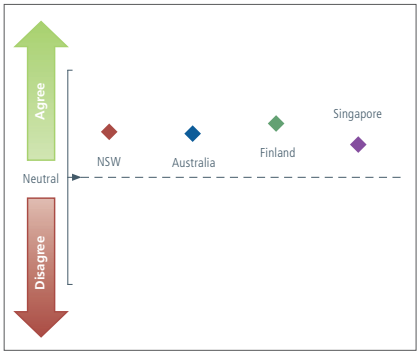
The main TALIS survey focuses on teachers in lower secondary schools. Thirty-four countries, including Australia, took part in this survey. Australia also chose to take part in an option known as the TALIS-PISA link, in which the survey was conducted in schools that participated in the 2012 Programme for International Student Assessment (PISA). Australia and seven other countries took up the TALIS-PISA link option: Finland, Latvia, Mexico, Portugal, Romania, Singapore and Spain.

Because so few countries took up this option, international benchmarks are difficult to attain. In this report, where data are sourced from TALIS 2013, NSW data are compared only to data from Australia, and high-performing countries Finland and Singapore.

In order to ensure statistical rigour, the Centre for Education Statistics and Evaluation applied tests of significance to their analysis. The relatively small sample of schools selected in NSW meant that a number of comparisons were shown to have no significant differences. The commentary attached to figures in this report indicates where statistically significant differences have, or have not, been found.

Following are two examples of graphs based on TALIS data. See also 'PISA 2012', below.



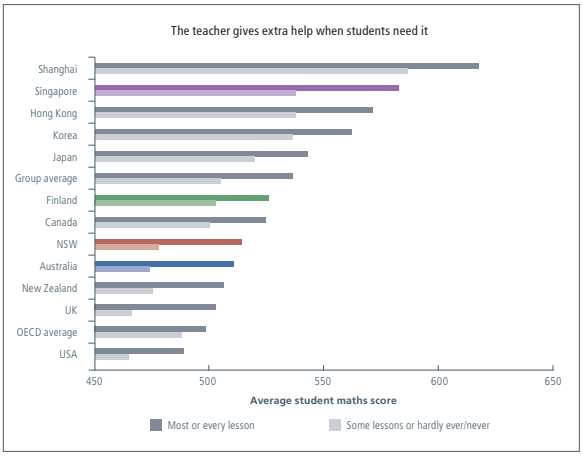

### Programme for International Student Assessment (PISA) 2012

Data in this report are also sourced from the Programme for International Student Assessment (PISA) 2012, conducted by the OECD. PISA is an internationally standardised assessment designed to measure how well students, at age 15, are prepared to meet the challenges they may encounter in future life. PISA 2012 covered the domains of mathematics, reading and science. It also included a questionnaire that sought information from students about a number of aspects of their home and school experiences, including teaching strategies used by their teachers and their thoughts and feelings about learning. Sixty-six countries and economies participated in PISA 2012.

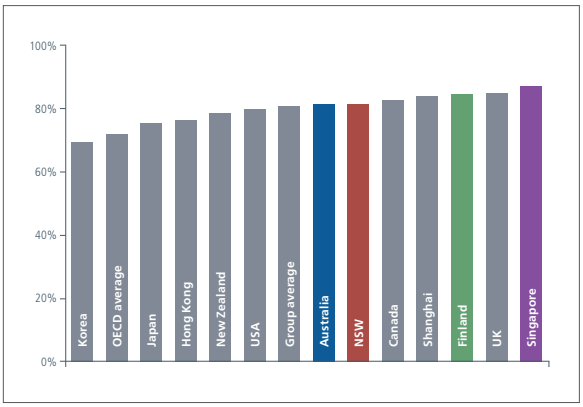
Data sourced from PISA are represented in three different ways in this report.

## Figures representing both student test results and student questionnaire responses

These figures appear in pairs.




The first figure shows, by jurisdiction, the average maths score of students who responded to a selection of statements in one of the two affirmative categories; as well as the average maths score of students who responded in one of the two negative categories.

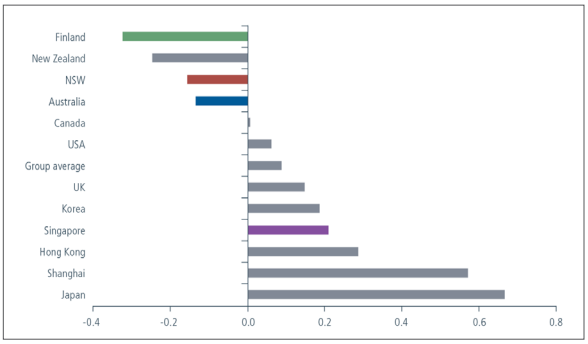



The neighbouring figure shows the proportion of students in each jurisdiction who responded to the particular selection of statements in the affirmative. ie. 'most lessons'/'every lesson'; or 'agree'/ 'strongly agree'.

For each figure, data have been analysed for NSW and Australia and the following groups of high-performing and culturally similar jurisdictions: Canada, Finland, Hong Kong, Japan, Korea, New Zealand, Shanghai, Singapore, the United Kingdom (UK) and the United States of America (USA). However, the only jurisdictions displayed are those for which a significant difference in PISA maths scores was found between students who responded in the affirmative, and those who responded in the negative. Consequently, the number of jurisdictions included in each figure varies. For comparison purposes, each figure also provides a weighted average of all the jurisdictions listed above ('Group average') and all OECD countries (OECD average).

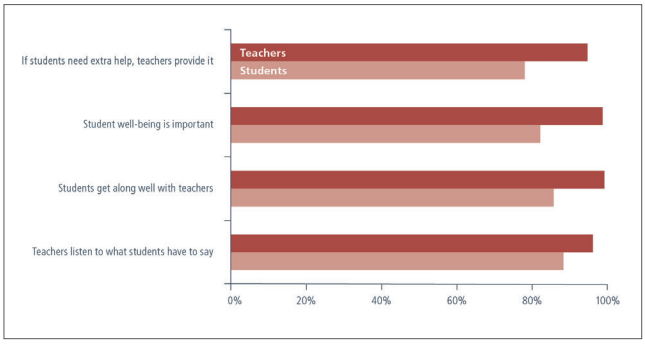
## PISA indexes

PISA indexes summarise student responses to a series of related items. The items are selected by PISA personnel based on previous research.




The vertical line in the centre of the figure has a value of '0' and represents the average of all OECD countries. All countries with a score above (to the right of) '0' answered these questions more positively than OECD countries on average; all countries with a score below (to the left of) '0' answered the questions less positively than OECD countries on average.

### Figures representing TALIS and PISA data

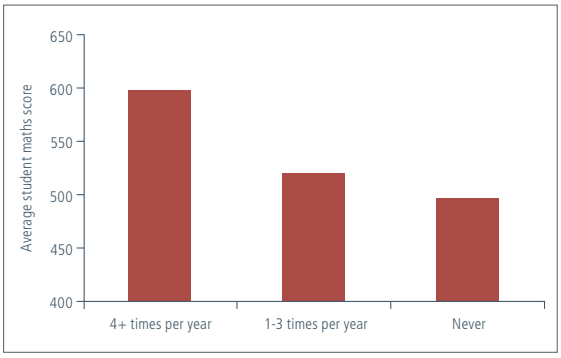



This figure compares teacher responses from TALIS to student responses to similar questions in the PISA questionnaire.

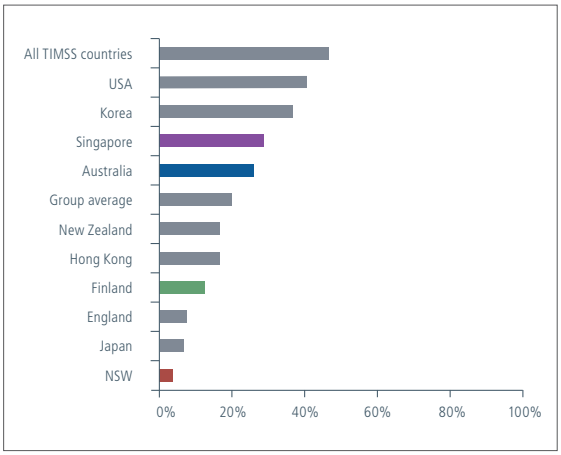
## Trends in International Mathematics and Science Study (TIMSS) 2011

The third source of data in this report is the Trends in International Mathematics and Science Study (TIMSS) 2011. TIMSS is an international study directed by the International Association for the Evaluation of Educational Achievement (IEA). It aims to provide comparative information about educational achievement across countries in order to improve teaching and learning in mathematics and science. It also collects a variety of background information via student, teacher and school questionnaires. TIMSS has measured trends in maths and science achievement at the fourth and eighth grades every four years since 1995. In 2011, Year 8 students in 45 countries took part in TIMSS, and Year 4 students in 59 countries took part in TIMSS and/or its companion test, PIRLS (Progress in International Reading Literacy Study)[57].

Figures based on TIMSS data in this report appear in pairs.




The first figure shows the average TIMSS maths score of NSW students in Year 8 in relation to how Year 8 teachers responded to a particular survey question.




The second figure shows the proportion of Year 8 teachers in other high-performing or culturally similar jurisdictions who engage in the behaviour most frequently.

In the second figure, student data have been analysed for NSW and Australia and the following groups of high-performing and culturally similar jurisdictions: England, Finland, Hong Kong, Japan, Korea, New Zealand, Singapore, and the United States of America (USA). For comparison purposes, each figure also provides a weighted average of all the jurisdictions listed above ('Group average') and all TIMSS countries ('All TIMSS countries' ).

57 Results for PIRLS are not analysed in this report

# Appendix 2

## Sample sizes for datasets used in the State of the NSW Teaching Profession report

| | | Australia | | | | NSW | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Questionnaire and category of respondent** | **Year of collection** | **Schools Number** | **Students Number** | **Teachers Number** | **Principals Number** | **Schools Number** | **Students Number** | **Teachers Number** | **Principals Number** |
| TALIS-PISA link (TALIS international Option 2)<br>• Teachers of 15-year-old students at schools that participated in PISA<br>• Principals of the schools at which they teach | 2012 | 122 | n/a | 2718 | 105 | 33 | n/a | 745 | 30 |
| TIMSS Year 4<br>• Year 4 students<br>• Year 4 teachers<br>• Principals or department heads at schools that Grade 4 students and teachers attend | 2011 | 280 | 6146 | 415 | 270 | 44 | 1,077 | 70 | 44 |
| TIMSS Year 8<br>• Year 8 Students (maths and science)<br>• Year 8 teachers (maths and science)<br>• Principals or department heads at schools that Grade 8 students and teachers attend | 2011 | 275 | 7556 | 487 maths<br>580 science | 252 | 42 | 1,134 | 68 maths<br>78 science | 40 |
| PISA<br>• 15-year-old students<br>• Principals of the schools that students attend (or their designate) | 2012 | 775 | 14,481 | n/a | 760 | 186 | 3,447 | n/a | 18,411 |

Note: Not all categories of respondents are represented in data in this report. For example, no TIMSS Year 4 student, teacher or principal data is included.

# Glossary

### Accreditation (individuals)
A process that recognises and certifies a teacher's achievement of the Australian Professional Standards for Teachers on entry to the profession and at the levels of Proficient Teacher, Highly Accomplished Teacher and Lead Teacher.

### Accreditation (non-government schools and school systems)
A process that authorises a non-government school, or school system to nominate candidates for the award of the Record of School Achievement (RoSA) and/or the Higher School Certificate (HSC).

### Australian Professional Standards for Teachers
A set of career-long standards that describe a teacher's knowledge, practice and professional engagement at four key stages: Graduate, Proficient, Highly Accomplished and Lead.

### BOSTES-registered continuing professional development
Courses and programs that provide opportunities to extend teacher learning and that are delivered by providers who are endorsed by BOSTES. This type of continuing professional development has been mapped to the Professional Teaching Standards at the level of Proficient Teacher.

### Collaboration
Working with colleagues to achieve a common goal.

### Continuing professional development
Processes, activities and experiences that provide opportunities to extend teacher learning and support accreditation against the Australian Professional Standards for Teachers.

### Correlation
A measure of the strength of the relationship between two variables (expressed as a number). A correlation between two variables does not necessarily imply that one causes the other.

### Effect size
A commonly-used measure of the effect of one variable on another.

### Formative assessment
The process of evaluating student learning to provide feedback to students and devise/change teaching and learning programs.

### Induction
The experiences and professional learning provided to beginning teachers to assist them to obtain information, understandings, and skills relating to the teaching profession and teaching.

### Jurisdiction
The territory over which authority is exercised. In this report, 'jurisdiction' means the state or country whose sample is represented.

### Mentor
A more experienced person who supports and assists another person to grow and learn in their role.

### Meta-analysis
A method of comparing and combining results of many studies.

### Professional development
The processes, activities and experiences that provide opportunities to extend teacher learning.

### Professional learning
Growth of teacher expertise that leads to improved student learning.

### Professional Teaching Standards
See Australian Professional Standards for Teachers.

### Registration
A process that authorises a non-government school, or school system to operate. The main purpose of registration is to ensure that the requirements of the Education Act are being, or will be, met.

### Self-efficacy
A measure of the belief in one's own ability to complete tasks and reach goals.

### Teacher-identified continuing professional development
Experiences that provide opportunities to extend teacher learning and which have not been registered through BOSTES. These experiences may include courses and programs, but may also include a range of other activities such as research, preparation of articles published in professional journals, working with industry and reflection activities.

# Acronyms

| | |
|---|---|
| AITSL | Australian Institute for Teaching and School Leadership |
| BOSTES | Board of Studies, Teaching and Educational Standards |
| GTIL | Great Teaching, Inspired Learning |
| HSC | Higher School Certificate |
| ICT | Information and Communication Technology |
| OECD | Organisation for Economic Cooperation and Development |
| PIRLS | Progress in International Reading Literacy Study |
| PISA | Programme for International Student Assessment |
| RoSA | Record of School Achievement |
| TALIS | Teaching and Learning International Survey |
| TIMSS | Trends in International Mathematics and Science Study |
| UK | United Kingdom |
| USA | United States of America |

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