April 2020

What works best: 2020 update

Centre for Education Statistics and Evaluation

NSW Department of Education

NSW GOVERNMENT

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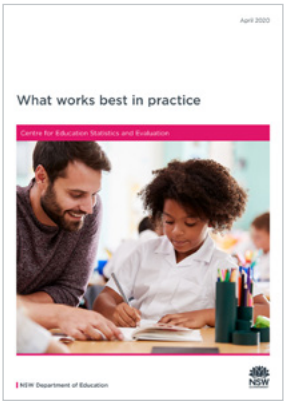

More information

Read more about evidence-based practical strategies for teachers in WWB in practice on CESE's website:

www.cese.nsw.gov.au/publications

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Introduction

First released in late 2014, **What works best: Evidence-based practices to help improve NSW student performance** was an early publication of the newly established Centre for Education Statistics and Evaluation (CESE). Succinctly laying out the research for seven of the most effective practices in education, **What works best** quickly found a wide audience among NSW educators. Over the intervening years it has remained popular and well-used, providing an accessible point of entry to the evidence on effective teaching practices.

In 2020, the time is right for an update. The decline in the performance of Australian students in international assessments, notably the Programme for International Student Assessment (PISA), has continued, and public concern about this ongoing trend has grown. The performance of NSW students has fallen more sharply than the rest of Australia, with a declining proportion of top-performing students and an increasing proportion of low-performing students across all three PISA domains. The NAPLAN results of NSW students have mostly continued to plateau, although HSC results are more positive.

The challenges of the NSW education landscape are well known – our system is very large, highly diverse, and many students experience significant socioeconomic disadvantage. Despite these challenges, our school leaders and teachers remain as committed as ever to ensuring positive outcomes for our students. In NSW and nationally, there have been concerted efforts to enhance school leadership and improve the quality of teaching, and to address persistent underperformance in literacy and numeracy. Significant additional funding for education has been injected into the system to tackle the educational disadvantage experienced by students from low socioeconomic backgrounds or with other characteristics associated with poorer outcomes.

While there are challenges, we know that to succeed in the knowledge economy our young people will need to have strong foundational skills and be ready to learn new skills throughout their lives. To set our students on the path for success, the NSW Department of Education is strengthening its focus on school improvement so that every student, every teacher, every leader and every school improves every year. Updated school planning processes will have an even stronger focus on what schools can do to improve, supported by more effective self-assessment and external validation processes. The close alignment between the School Excellence Framework and the themes of **What works best** is intended to support schools to consider how to change their practice.

This update of **What works best** offers eight themes for schools to consider. Assessment, which was included in a number of the original seven themes, has now been included as a separate eighth theme, in recognition of the key role it plays in teaching, learning and student achievement. Research shows that quality teaching practices tend to benefit students regardless of their background, but it also shows that not all students have access to these effective strategies. These practices are not a complete list of effective educational practice, or the only things that school leaders and teachers should focus on to improve student outcomes. They are, however, some of the best evidenced practices in education, and attention to these strategies is almost always evident in our high-performing schools.

The eight themes are:

1. High expectations
2. Explicit teaching
3. Effective feedback
4. Use of data to inform practice
5. Assessment
6. Classroom management
7. Wellbeing
8. Collaboration

These themes offer helpful ways of thinking about aspects of teaching practice, but they are not discrete. They overlap and connect with one another in complex ways. For example, being explicit about the learning goals of a lesson and the criteria for success gives high expectations a concrete form, which students can understand and aim for. Wellbeing and quality teaching are mutually reinforcing – if students with high levels of general wellbeing are more likely to be productively engaged with learning, it is also true that improving intellectual engagement can improve wellbeing.

The eight themes are not confined to what happens in classrooms. While they offer sound strategies for individual teachers to consider as part of their repertoires, evidence suggests that their effectiveness is stronger when they are implemented as whole-school approaches. For example, the literature indicates that teachers are more likely to make effective use of student data when working collaboratively, rather than when working alone. Ideally, everyone associated with a school – leaders, teachers, students, parents and community members – will share the same commitment to the school's vision and strategies for development and will collaborate effectively to achieve it. Whole school engagement matters.

This update of **What works best**, the accompanying **What works best in practice** guide, and other professional learning resources provide our school leaders and teachers with the up-to-date evidence and resources to support school improvement and enhance the learning outcomes of our students. We look forward to hearing how schools use these documents to inform, deepen and strengthen their practice to support every student's learning.

Chapter 1: **High expectations**

Key points

- High expectations are linked with higher achievement and performance for all students. Those students in NSW who report their teachers having high expectations are often ahead in their learning by 3-6 months.
- High expectations matter at all stages of education for all students, and this is particularly important for students from disadvantaged backgrounds.
- All students need to be challenged and engaged in order to develop their potential fully. A culture of high expectations needs to be supported by strategies that both challenge and support student learning needs, such as through appropriate curriculum differentiation.

Why it matters

Research evidence consistently finds that teachers' high expectations are linked to their students' performance and achievement (Hattie 2009; Rubie-Davies 2017; Schleicher 2018). Positive student-teacher relations, constructive feedback, differentiated instruction, and effective strategies for student wellbeing and engagement are linked to high expectations (Centre for Education Statistics and Evaluation 2020b). High expectations have been found to be connected to positive behaviour, improved motivation, enhanced self-esteem, higher levels of attendance, academic success and improved rates of school completion (Centre for Education Statistics and Evaluation 2020b).

What the evidence says

Impact on student achievement and performance

Empirical studies since the 1960s have looked at the impact of teacher expectations on student performance. For example, in the famous 1965 'Pygmalion in the classroom' study, researchers told teachers that a group of randomly selected elementary school students had been identified through a new test as expected 'growth spurters'. School-wide, the 'spurters' gained almost four IQ points more than the control group after one year. The effect was particularly pronounced for younger students: Grade 1 students gained over 15 IQ points more, and Grade 2 students over 9 points more than their respective control groups. Both findings were statistically significant (Rosenthal & Jacobson 1968).[1] Other studies have also found that teachers holding high expectations for all students has a positive effect on student achievement (De Boer, Timmermans & van der Werf 2018; Hattie 2009; Rubie-Davies et al. 2014;).

In NSW, schools are able to examine the extent to which their students are experiencing high expectations in the classroom through data collected in the Tell Them From Me (TTFM) student survey and this data provides valuable system-level insights. Students in NSW who report experiencing high expectations in Year 5 can be at least 6 months ahead in learning of a student who does not (Centre for Education Statistics and Evaluation 2019a). Furthermore, TTFM research has also found that if a student experiences low expectations in Year 5, but then reports high expectations in Year 6 or 7, they are likely to see a large boost to their learning, the equivalent of up to four months (Figure 1.1) (Centre for Education Statistics and Evaluation 2019a). The results from the NSW data also show that, even assuming all other characteristics are the same, students experiencing high teacher expectations are three months ahead in their learning by Year 9, compared with students who do not identify their teacher as having high expectations (Figure 1.2) (Centre for Education Statistics and Evaluation 2017c).

1 This research is not without its critics. See, for example, Jussim, Robustelli, & Cain 2009.

Teachers' high expectations affect student learning directly and indirectly. NSW Department of Education TTFM modelling shows, for high expectations, 60% of the total improvement appears as direct effects, realised through strategies which promote high expectations such as challenging students using differentiation. The remaining 40% of the total improvement in achievement comes about indirectly, through raising academic interest and motivation, positive behaviour, attendance and homework behaviour (Centre for Education Statistics and Evaluation 2017c).

Figure 1.1

The effect of teachers' expectations for success on NAPLAN scores (Source: CESE, 2019a)

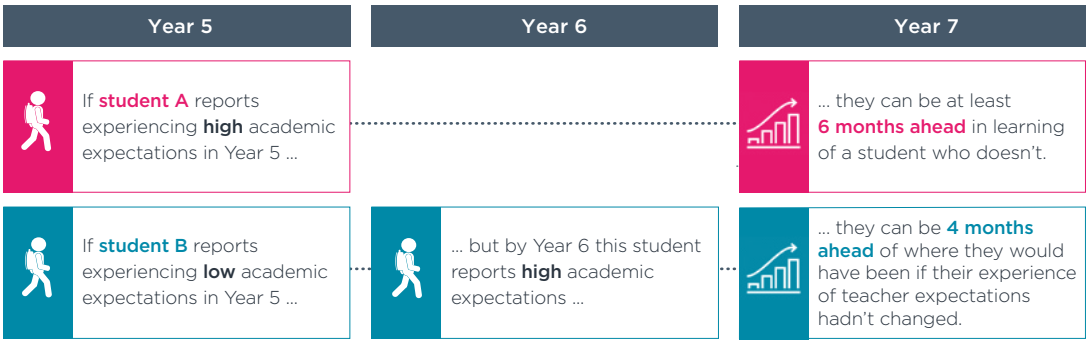
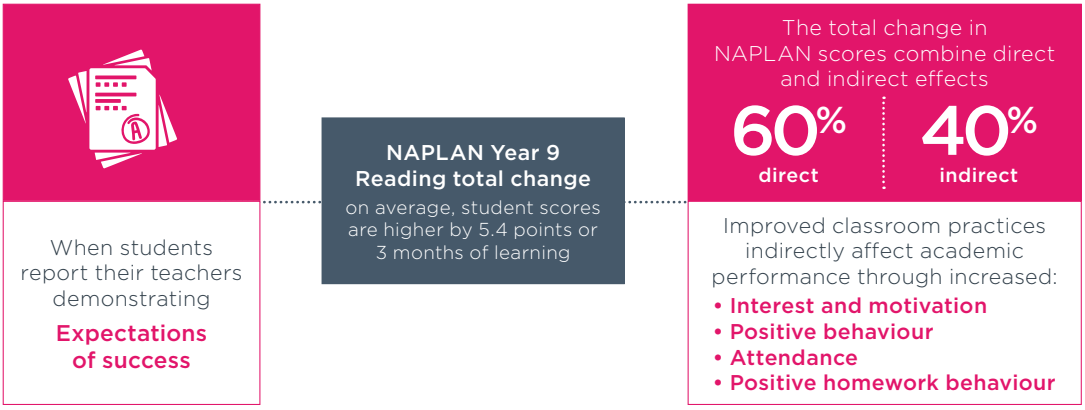


Figure 1.2

The effects on student learning of teachers demonstrating high academic expectations for success (Source: CESE, 2017c)



High expectations matter at all stages of education for all students

A culture of high expectations must start early and be maintained throughout schooling. There is evidence of students showing differences in post-school aspirations as early as Year 2 and, as a consequence of this, adjusting their expectations downwards before starting secondary school (Auger, Blackhurst & Wahl 2005; Creed, Conlon & Zimmer-Gembeck 2007). There is also evidence for the important role the school environment plays in shaping post-school aspirations for older students (Abbott-Chapman et al. 2013; Massey, Gebhardt & Garnefski 2008).

Findings from the TTFM student survey suggest that students experience different expectations at different stages of their schooling (Figure 1.3). In primary school, 95% of students report that their teachers have high academic expectations of them; however, the proportion of students reporting that their teachers have high expectations decreases steadily throughout secondary school, to 70% in Year 10, before picking up again in Years 11 and 12.

Figure 1.3

Percentage of students reporting high expectations for success, by school year, NSW government schools, 2019 (Source: CESE analysis of Tell Them From Me data)

Evidence from research also shows the importance of high expectations for all students to achieve highly through school and beyond (Hébert 2018; Turner & Juntune 2018). This is particularly important for students from disadvantaged backgrounds and Aboriginal students (Chaffey 2011; Chaffey, Bailey & Vine 2015) who may not be realising their potential or who are provided with fewer opportunities to learn (De Boer, Timmermans & van der Werf 2018; Siegle et al. 2016). The importance of high expectations for students with disabilities has also been identified as part of the complex set of skills and qualities that teachers require to support their students (Ruppar, Roberts & Olsen 2017).

The findings from the literature are supported by results from the 2019 TTFM student survey which shows that there are differences in the reporting of high expectations by students from high and low socioeconomic status (SES) backgrounds (Figure 1.4), and by students who identify as Aboriginal or Torres Strait Islander and those who do not (Figure 1.5). These reported differences are greater in the high school years. Creating an environment of high expectations for all students may help address some of the inequities in these student outcomes.

Figure 1.4

Percentage of students reporting high expectations for success, by low- and high-SES, NSW government schools, 2019 (Source: CESE analysis of Tell Them From Me data)

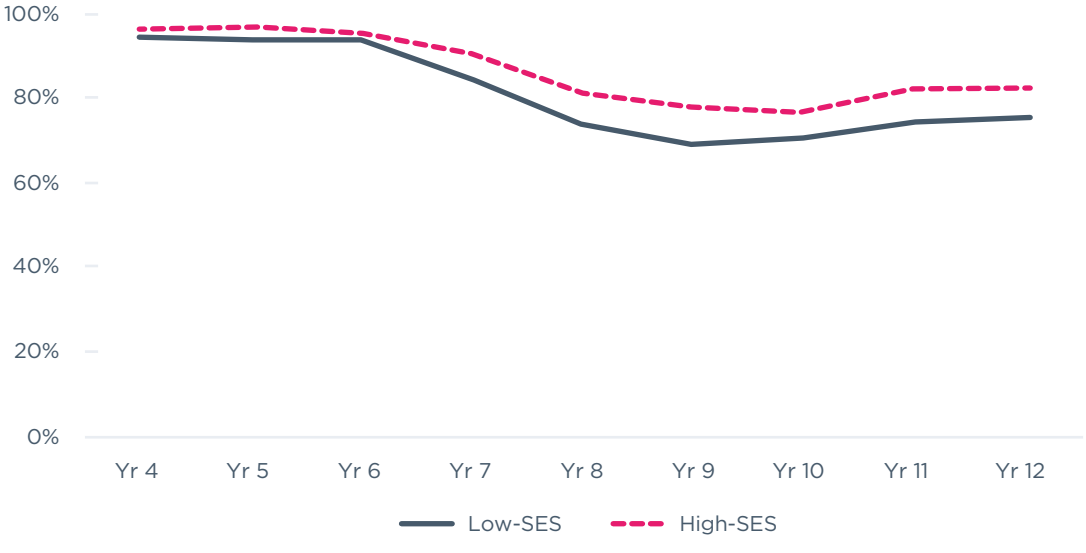
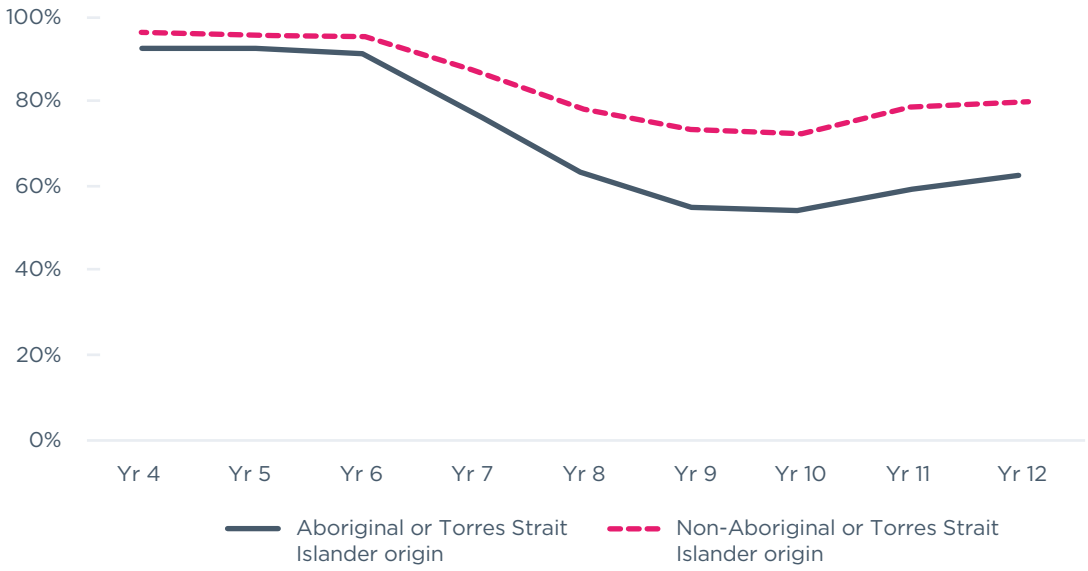


Figure 1.5

Percentage of students reporting high expectations for success, by Aboriginal or Torres Strait Islander status, NSW government schools, 2019 (Source: CESE analysis of Tell Them From Me data)



All students need to be challenged and engaged in the classroom

All students, including high potential students, need to be continuously challenged to learn new things. Challenge avoids underachievement and boredom and is an important factor in maintaining high expectations for all students (Centre for Education Statistics and Evaluation 2020b; Cross & Cross 2017; Gallagher, Harradine & Coleman 2010; Rogers 2007). Catering for diverse learning needs in classrooms is an essential teaching skill, and appropriate differentiation of the curriculum is an important way to ensure that all students are challenged. Differentiation and access to a broad, rigorous and challenging curriculum are both important factors in creating successful, high expectation environments.

Curriculum differentiation occurs when teachers adapt the syllabus to meet the specific learning needs of students. This may involve changes in the curriculum objectives, teaching methods, assessment methods, and/or changes in resources and learning activities. Differentiation is generally used when students with a diverse range of knowledge, skills and abilities are in the same classroom, but differentiation can also happen across different classrooms and programs such as when students are in different programs based on ability (Firmender, Reis & Sweeny 2013). Research acknowledges that curriculum differentiation can be challenging for teachers to implement successfully, especially without sufficient training and support (Brighton et al. 2005). The research also recognises that the complexity of differentiation in highly diverse classrooms may require that teachers simultaneously manage multiple groups working at different levels on different learning tasks (van Geel et al. 2019).

The evidence base for differentiation is still growing, with more research studies needed to measure the effectiveness of differentiation models on learning outcomes (Centre for Education Statistics and Evaluation 2019b). However, existing studies suggest that successful differentiation occurs when learning activities and resources are modified and targeted to students' specific learning needs, before teaching commences (McCoach et al. 2014; Reis et al. 2011).

Implications for schools and teachers

The research evidence highlights the importance of high expectations for all students throughout their schooling. Using the research on high expectations to inform practices in schools involves:

- Understanding that teachers holding high expectations of their students has been found to impact student achievement and learning, as well as student behaviour, motivation, self-esteem, attendance, and secondary school completion.
- Recognising that a culture of high expectations must start early and be maintained throughout schooling for all students. The research particularly emphasises the importance of high expectations for students from disadvantaged backgrounds. Data from the TTFM student survey highlights a decline in students' sense of high teacher expectations as they move from primary into high school. It also highlights that Aboriginal and Torres Strait Islander students and students from a low-SES backgrounds report that their teachers do not hold as high expectations as some other students.
- Ensuring that students are challenged and engaged in school is fundamental to building a culture of high expectations. Appropriate differentiation of the curriculum is essential.

Chapter 2: **Explicit teaching**

Key points

- Explicit teaching practices involve teachers clearly explaining to students why they are learning something, how it connects to what they already know, what they are expected to do, how to do it and what it looks like when they have succeeded. Students are given opportunities and time to check their understanding, ask questions and receive clear, effective feedback.
- Students who experience explicit teaching practices make greater learning gains than students who do not experience these practices.
- Explicit teaching recognises that learning is a cumulative and systematic process.
- Explicit teaching helps students develop sophisticated and well organised ways of thinking, understanding and doing.

Why it matters

The evidence shows that students who experience explicit teaching practices perform better than students who do not. Explicit teaching can benefit all students (that is, across all year groups and ability levels) when learning new or complex concepts and skills. Explicit teaching reduces the cognitive burden of learning new and complex concepts and skills, and helps students develop deep understanding.

What the evidence says

The term 'direct instruction' is often used interchangeably with explicit instruction or teaching. When this paper refers to explicit teaching, it refers to the set of teaching practices that Hattie summarises as follows:

> "The teacher decides the learning intentions and success criteria, makes them transparent to the students, demonstrates them by modelling, evaluates if they understand what they have been told by checking for understanding, and retelling them what they have been told by tying it all together with closure."
>
> — (Hattie 2009, p. 206).

The evidence base for the effectiveness of explicit teaching is extensive and longstanding (for instance, see Archer & Hughes 2011; Brophy & Good 2008). Hattie's (2009) synthesis of four meta-analyses found the average effect size of explicit teaching on student achievement is 0.59.

Effect sizes explained

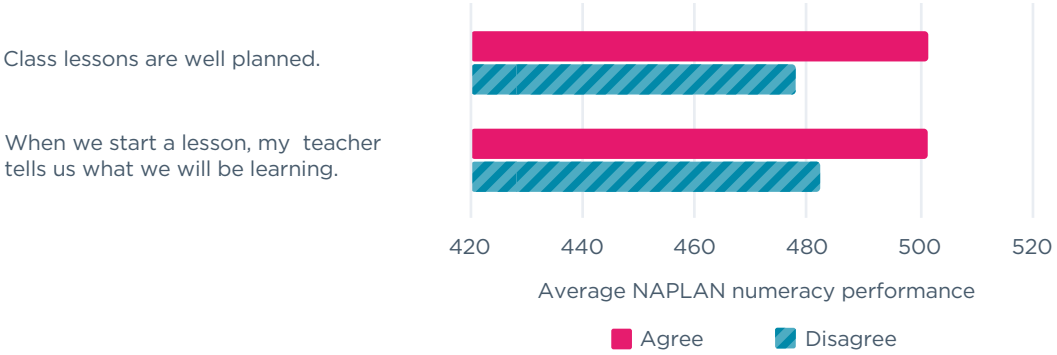
Effect sizes are commonly used when combining findings from independent studies (meta-analysis) as a way of measuring the significance or magnitude of the subject(s) of study. Hattie identifies an effect size of 0.40 as a threshold or 'hinge point' to indicate what works best. An effect size of 0.40 or higher means that a specific program or intervention being measured shows an above-average beneficial effect on student outcomes (Hattie 2009).

Students have higher achievement when their teachers explain what they will be learning, organise lessons well, and provide guidance and support

Analysis of Tell Them from Me data shows that NSW primary school students who say that their teachers tell them what they will be learning at the beginning of lessons and that class lessons are well planned, generally have higher average NAPLAN numeracy scores. For example, students who agreed that their teacher tells them what they will be learning at the start of the lesson scored on average 19 NAPLAN score points higher than students who disagreed (Figure 2.1).

Figure 2.1

Students' views on teaching practices with student performance, NSW government primary schools, 2019 (Source: CESE analysis of Tell Them From Me data)



PISA 2018 data suggests a similar pattern with Australian high school students. Those students who report receiving a variety of explicit teaching practices, especially teacher guidance and support, in their English class have higher reading scores than students who do not report experiencing these practices (Figure 2.2).

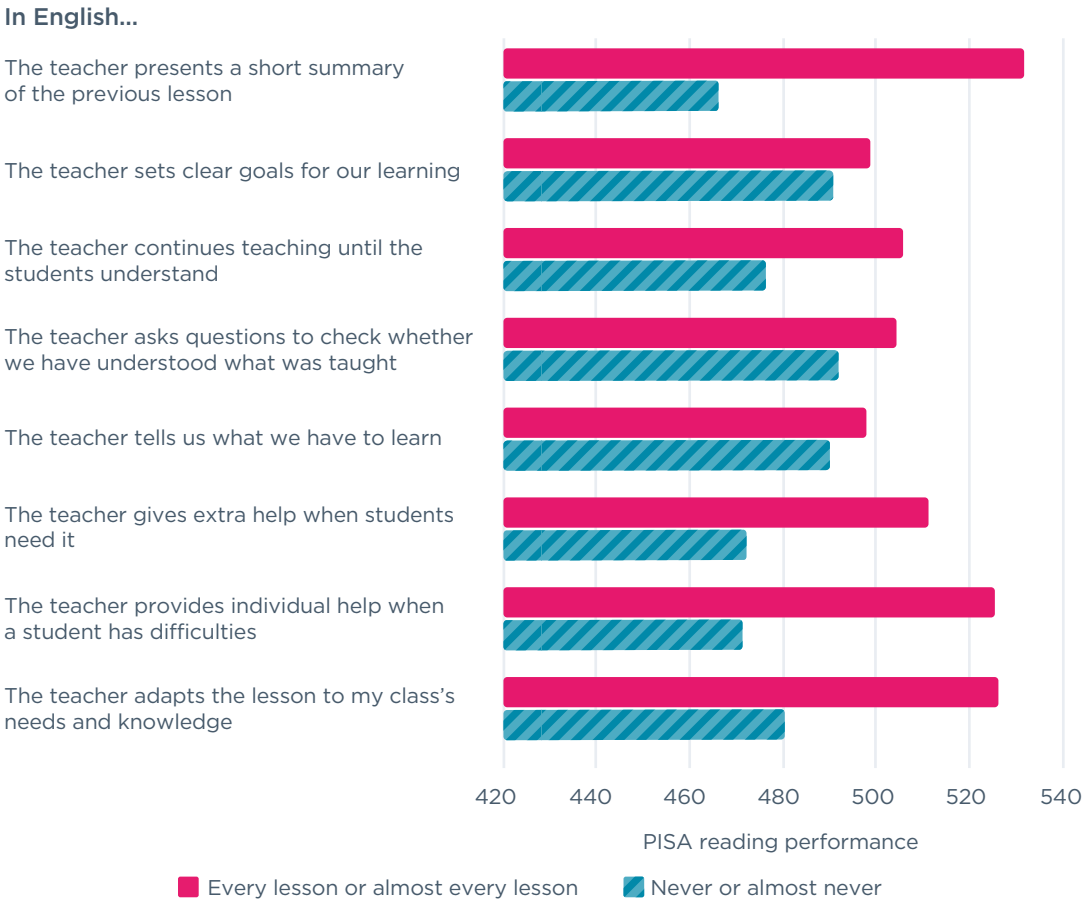
Similarly, analysis of NSW teacher survey data found that teachers in high value-add schools[2] were significantly more likely to report using explicit teaching practices, including setting clear learning goals, than teachers in schools that did not show high-growth over time[3] (Centre for Education Statistics and Evaluation 2015a).

2 Analysis was conducted on primary and secondary schools combined. High value-add schools achieved improvements in NAPLAN scores between 2010 and 2014 that exceeded predicted growth based on the characteristics of students attending those schools.

3 These schools had similar characteristics to and demonstrated similar baseline performance as high value-add schools, but did not show high-growth in achievement over time.

Figure 2.2

Students' views on teaching practices and relationship with student performance, Australia, PISA 2018 (Source: CESE analysis of PISA data)



Students in all year groups and of all ability levels can benefit from explicit teaching

Explicit teaching can benefit students across all year groups and ability levels when learning new or complex concepts and skills. Przychodzin et al (2004 p. 57) conducted a meta-analysis on explicit or direct teaching of mathematics and found positive results in 11 of 12 studies across a variety of year groups and student ability levels, not just for students who have special needs or mathematics difficulties. In addition, there is evidence that in the early stages of learning a new topic or skill, gifted learners benefit from explicit teaching practices, such as worked examples, guided support, and well-sequenced learning tasks (Martin 2016). Gifted learners also benefit from guided support when completing open-ended and complex tasks (Eysink, Gersen & Gijlers 2015)[4].

4 For more information about explicit teaching and high ability students, see Centre for Education Statistics and Evaluation 2019b.

Explicit teaching recognises that learning is a cumulative and systematic process

Explicit teaching acknowledges that student understanding and mastery of concepts and skills builds on their previous understanding of related concepts and skills. As such, explicit teaching requires a systematic and sequenced approach to what is being taught. For example, evidence shows the advantage of using phonics in teaching reading to children in preschool and the early primary school years (Centre for Education Statistics and Evaluation 2017b). However, it is not just important that phonics is taught, and that it is taught explicitly, but also when it is taught. Children will learn to read most effectively if they are taught phonics at the very start of beginning to read (Department of Education, Science and Training 2005).

Explicit teaching supports students towards independent learning

Explicit teaching draws on research about how students effectively take in and retain information, and how they then use that knowledge and understanding to solve problems, pose questions, and synthesise and justify their reasoning. When teaching new or complex concepts and skills, explicit teacher guidance accompanied by practice and feedback can reduce cognitive burden so that students have enough working memory space to learn new content and build connections to prior learning (Clark, Kirschner & Sweller 2012). For example, a recent Australian study of students in Years 9-11, found that using explicit teaching practices in mathematics during the early stages of learning allowed students to build up the skills and knowledge they needed to then be successful in subsequent guided inquiry-based learning (Martin & Evans 2018)[5].

A challenging aspect of explicit teaching is finding the right balance between teacher guidance and independent practice. McKinsey & Company (2017) analysed PISA 2015 data and found that while high levels of 'inquiry-based' teaching with little provision of 'teacher-directed' teaching practices resulted in low student science scores, students had the highest achievement when they experienced teacher-directed teaching in most or almost all lessons, with inquiry-based teaching practices in some lessons. This finding may reflect that, as student understanding or mastery of a skill or concept increases, there is decreasing benefit from teacher provided guidance and support (see Centre for Education Statistics and Evaluation 2017a, p. 7).

The McKinsey & Company (2017) findings may also reflect that once teachers have explained, modelled and guided student practice, students benefit from opportunities to independently practise concepts or skills. For example, a recent US study found that kindergarten students with mathematical difficulties had higher achievement when given three individual practice opportunities for every explicit teacher demonstration of mathematical content compared with those given fewer individual practice opportunities (Doabler et al. 2019).

The use of formative assessments is critical in explicit teaching. Formative assessment allows teachers to accurately determine students' current level of understanding and decide how much guidance is required. Without formative assessments, teachers may assume that students need much more or much less support and guidance than they actually do.

5 For more information about explicit teaching and reducing cognitive burden, see Centre for Education Statistics and Evaluation 2017a.

Asking questions is important

The literature supports the use of questioning to support comprehension, problem solving, reasoning, creativity and learning. Asking questions also provides teachers with a way to identify what students already understand so that teachers can build connections to new learning, or revise concepts or skills and adjust their level of guidance to meet student needs. Some forms of questions are more effective than others. Craig (2013, p.414) distinguishes between shallow questions that verify existing knowledge, and do not take much thought, and deep questions, which ask learners to build connections between ideas. The What Works Clearinghouse (2007, pp. 29-31) reports strong evidence for teachers encouraging students to both ask and answer deep-level questions.

Implications for schools and teachers

The evidence strongly supports teachers' use of explicit teaching practices, including:

- telling students what they will be learning, and being clear about the purpose of tasks
- demonstrating or explaining new ideas, and checking that students understand
- giving time for asking and answering questions
- giving specific feedback based on success criteria
- systematically delivering skills, concepts and content knowledge in the right sequence to provide the building blocks towards mastery
- asking students challenging questions, such as 'why, why-not, how, what-if, how does X compare to Y, and what is the evidence for X?'
- assessing and confirming whether students understand what they are learning before progressing
- reviewing learning and explaining how it contributes to related and more complex skills
- providing opportunities for guided, and then independent, practice as students gain proficiency and understanding of concepts and skills.

Consistent use of explicit teaching practices across the whole school supports teachers' use of effective practices. A whole-school approach creates a common language around practice which in turn supports teacher collaboration and strengthens classroom observation practice.

Chapter 3: **Effective feedback**

Key points

- Feedback is one of the most powerful influences on student achievement.
- Feedback that focuses on improving tasks, processes and student self-regulation is the most effective.
- All students should receive high quality feedback.

Why it matters

Feedback is a core component of teaching practice, intersecting with learning, assessment and reporting. It is central to the assessment and reporting requirements of NSW syllabuses and support documents (NSW Education Standards Authority 2019), and a key aspect of Standard 5 of the Australian Professional Standards for Teachers (Education Services Australia 2011). Feedback is also one of the themes of 'Effective classroom practice' in the School Excellence Framework (State of New South Wales 2019).

Feedback is used to communicate a teacher's assessment of students' performances and understanding (Hattie & Timperley 2007); to stimulate students' reflections on their learning (Brookhart 2012; Nicol & Macfarlane-Dick 2006); and to inform future learning (Black & Wiliam 2018). Teacher feedback involves two core functions: communicating assessment information and providing advice for how a student might improve (Sadler 2010).

Feedback is also an important way in which teachers can communicate their expectations to their students and engage students in their learning. Feedback in the classroom should focus on students' performance on specific tasks, clearly identifying for students where and why mistakes have been made and emphasising opportunities to learn and improve (Centre for Education Statistics and Evaluation 2020b). This type of feedback supports all students with the development of positive feelings of self-efficacy, providing motivation for continued effort and engagement (Centre for Education Statistics and Evaluation 2020b).

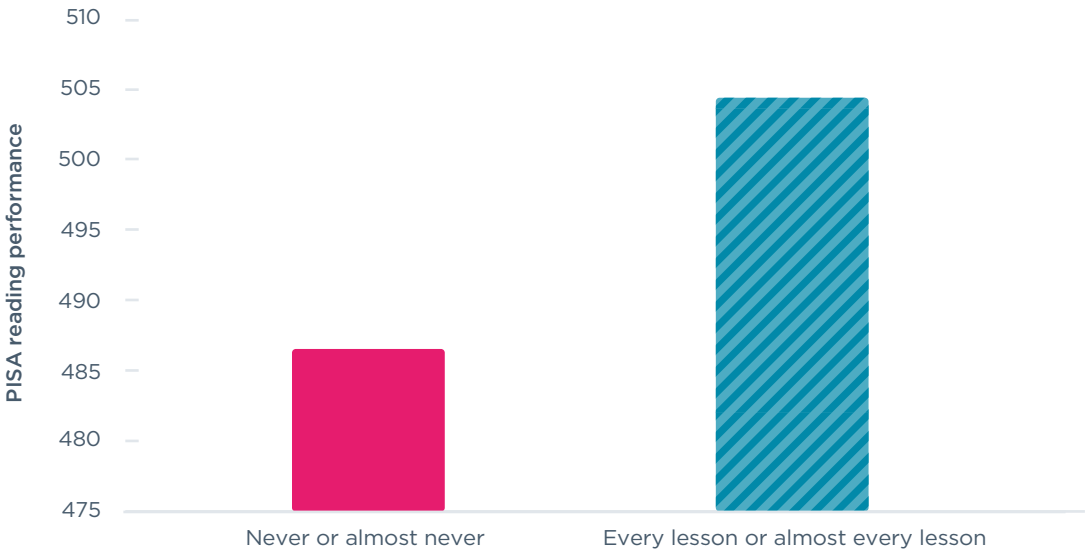
What the evidence says

Feedback impacts student outcomes

Research shows that feedback is an important classroom factor that impacts students' academic outcomes (De Boer, Timmermans & van der Wef 2018). Meta-analyses over the years have consistently highlighted the importance of feedback to student outcomes (Bangert-Drowns et al. 1991; Hattie & Timperley 2007; Kluger & DeNisi 1996). One meta-analysis, for example, found that the average effect size of feedback was 0.79, an effect size comparable to that of students' prior cognitive ability (0.71) (Hattie & Timperley 2007). Hattie & Timperley (2007) state that feedback is one of the most powerful influences on student learning and achievement. Australian data from PISA 2018 shows that receiving feedback improves student performance. Students who report in reading that they receive frequent feedback from their teacher (that is, in every or almost every lesson), perform better than students who report that they do not receive regular feedback (that is, never or almost never) (Figure 3.1).

Figure 3.1

Average PISA reading performance by answers to the question, 'My English teacher tells me in which areas I can still improve', Australia 2018 (Source: CESE analysis of PISA data)



In NSW, data from the Tell Them From Me student survey (2019) shows that 74% of primary students and 58% of secondary students agreed with the statement 'the feedback from assessments and quizzes helps me to learn'. Students who agree with this statement perform better in NAPLAN (Figure 3.2). The number of students who report that teacher feedback from assessments and quizzes helps me learn declines for students across Years 6 to 10 (Figure 3.3).

Figure 3.2

Average Year 9 NAPLAN numeracy performance by answers to the question, 'The feedback from assessments and quizzes helps me learn', (Maths) NSW government schools, 2019
(Source: CESE analysis of Tell Them From Me data)

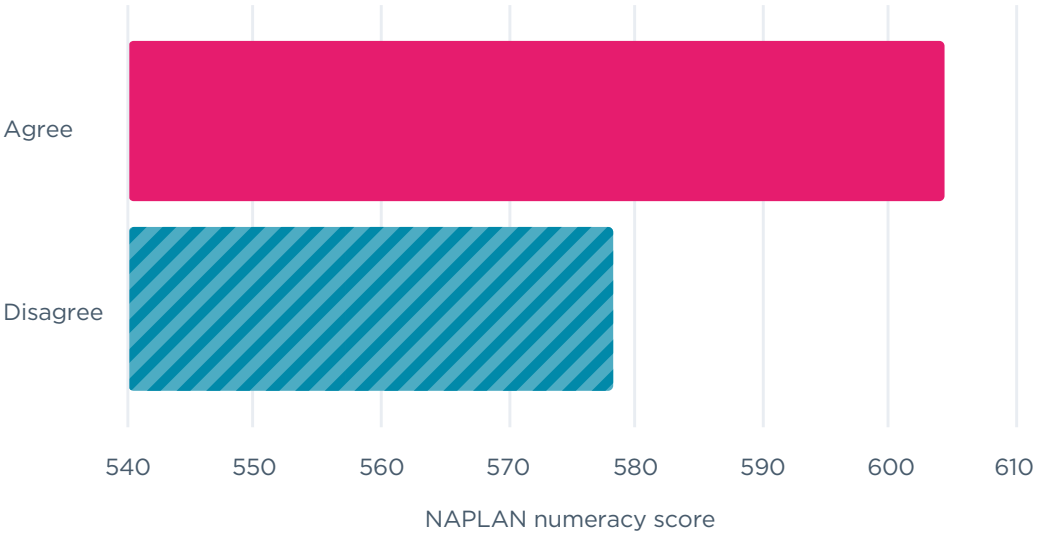
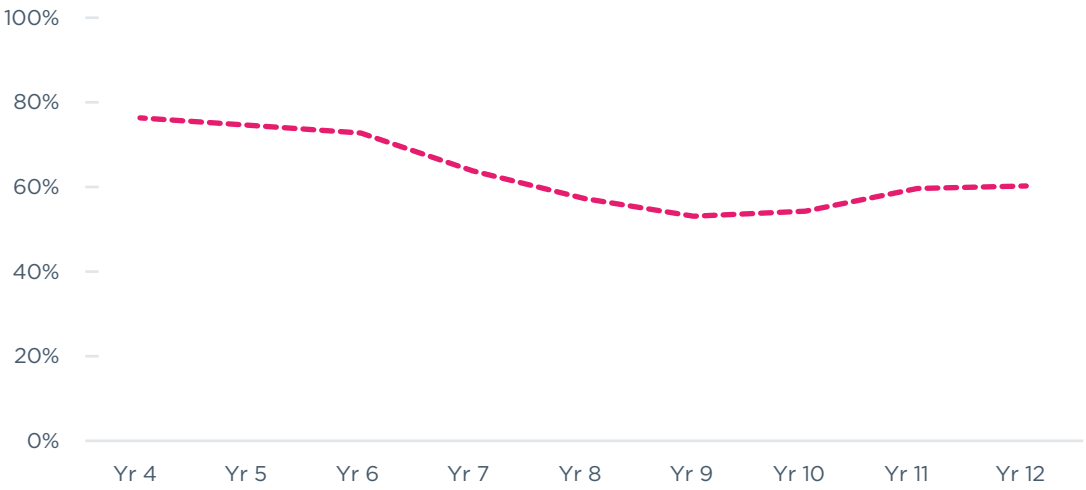


Figure 3.3

Percentage of students who agree that 'The feedback from assessments and quizzes helps me learn', by year group, NSW government schools, 2019

(Source: CESE analysis of Tell Them From Me data)



Feedback that focuses on tasks, processes and student self-regulation is the most effective

Giving feedback can take many forms including formal, informal, formative, summative, interactive, demonstrable, visual, written, verbal and non-verbal.

Feedback in the classroom should focus on students' performance on specific tasks, clearly identifying for students where and why mistakes have been made and emphasising opportunities to learn and improve (Centre for Education Statistics and Evaluation 2020b). This type of feedback supports all students with the development of positive feelings of self-efficacy, providing motivation for continued effort and engagement (Centre for Education Statistics and Evaluation 2020b).

Forms of feedback that appear to be particularly effective include feedback about a student's process or effort, for example, 'I can see you tried hard to improve X. The result is much better than last time because you did Y'; and feedback that encourages students' self-regulation, for example, 'You already know the key features of the opening of an argument. Check to see whether you have incorporated them in your first paragraph'.

Forms of feedback that are less effective include praise about a student's innate intelligence or talents, for example, 'You are a great student', or extrinsic rewards for work, such as stickers. Research suggests that providing rewards only leads to external motivation, not internal motivation, and thus it is unlikely that the appropriate behaviour will carry over into different contexts or when the reward is no longer available (Institute of Education Sciences 2008, p. 33).

All students need to receive high quality feedback

Teacher feedback can be received differently by different students, which is a significant factor in its usefulness (Brookhart 2012; Sadler 2010). Sortkær (2018) in a study using data from PISA 2015 looking at Nordic countries, who, notably, pride themselves on providing equal opportunities for all students, found that certain socio-cultural groups reported receiving more feedback than other socio-cultural groups. Boys, immigrant students, and low-performing students, all indicated higher perceptions of receiving feedback than groups of girls, non-immigrant students, and high performing students. In the Australian context, PISA data (2018) indicates that there is also a greater proportion of boys and first- and second-generation immigrant students who indicate a perception that they receive feedback in many lessons compared with girls and 'native' students. However, the proportion of differences between these groups is low and not as statistically significant as the difference reported for other countries.

Implications for schools and teachers

Using research on feedback to inform approaches and practices in schools involves:

- reflecting and communicating about the task with students
- providing students with detailed and specific feedback about what they need to do to achieve growth as a learner
- encouraging students to self-assess, reflect and monitor their work
- ensuring that students act on feedback that they receive.

Forms of feedback that appear to be particularly effective include:

- feedback about a student's process or effort: 'I can see you tried hard to improve X. The result is much better than last time because you did Y'
- feedback that encourages students' self-regulation: 'You already know the key features of the opening of an argument. Check to see whether you have incorporated them in your first paragraph'.

Forms of feedback that appear to be less effective include:

- praise about a student's innate intelligence or talents: 'You are a great student'
- extrinsic rewards for work, such as stickers.

Chapter 4: **Use of data to inform practice**

Key points

- Effective analysis of student data helps teachers identify areas in which students' learning needs may require additional attention and development.
- Data can also help teachers see which students may be struggling to engage with particular learning areas, and understand which students respond better to different teaching approaches in their classroom.
- Teachers need access to tools, skills and training to help them interpret and use data effectively.
- Teachers should analyse their own impact and use this knowledge to change what does not work and keep what does work.

Why it matters

The advantages of teachers using data from assessment for formative purposes are well documented (Black & Wiliam 1998). In a review by international education experts of the world's top performing systems, a consistent finding was that the best systems all use effective assessment and data to drive improvement: systems cannot improve what they do not measure (McKinsey & Company 2007).

Improving classroom practice, effective self-assessment, and reporting to the community involves schools collecting, analysing and presenting data. The ability to investigate, reflect on and make the most of available data is a core competency for everyone in schools – leaders, teachers and support staff. Effective use of data is a consistent attribute of high performing systems (McKinsey & Company 2007), it is a critical foundation for high expectations, explicit teaching and feedback, and it provides teachers with information to guide and direct students as well as data to reflect on their own effectiveness (Grattan Institute 2015).

Data can take many forms, and is not limited to NAPLAN or HSC scores. Data also encompasses teacher judgements, student work samples, classroom observation, and results of surveys, interviews or focus groups. Data can be quantitative (information that can be reduced to a set of numbers, from which averages, counts, percentages or totals can be obtained) or qualitative (information that tends to include thoughts, observations, feelings, opinion and/or experiences). A combination of these types of data is most effective in generating powerful evidence for schools to assess performance and improve practice.

What the evidence says

There is increasing interest in education in the use of data for school improvement

There is increasing interest in education in the use of data for school improvement (see, for example, Coburn & Tuner 2012; Institute of Educational Sciences 2009; Schildkamp et al. 2013; Schildkamp 2019). Data in education is usually viewed in two ways: as a tool for continuous improvement where data is used to inform teachers about students' needs and adapt and adjust instruction based on such information (van Geel et al. 2016); and/or as an accountability tool in which school leaders and teachers are held accountable for the quality of the education they provide.

Effective use of data in teaching and learning can lead to improvements in student outcomes

In recent years, there has been an increase in the number of studies that show that improved student outcomes can be achieved by using data to reflect on and adapt education practice. However, researchers recognise that there is still a need for more rigorous studies providing conclusive, unqualified findings linking data use to student improvement (van Geel et al. 2016; Prenger & Schildkamp 2018).

A study by Timperley (2009) showed that a teacher professional development program that focused on the interpretation and use of assessment information, resulted in student achievement gains 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% of students: effect sizes were 2.25 in writing and 1.90 in reading for these students.

Van Geel et al. (2016) studied the effects of a two-year data-based decision-making intervention on student achievement growth across 53 primary schools. Student achievement data was collected over the two years before and two years during the intervention. The researchers found an average effect of approximately one extra month of schooling. In particular, the intervention significantly improved the performances of students in low socioeconomic status schools.

The use of data in teaching practice can be a useful lever for achieving equity, particularly when equity is placed as an explicit goal in data use practices. Putting equity at the centre may involve asking specific questions such as:

- In what ways does data use lead to inequitable outcomes for different groups of students?
- What are the specific data use conditions and processes that contribute to unequal or equal opportunities to learn?
- How does data use challenge or confirm educators' assumptions about students, based on their background?
- What data use practices support shifts away from deficit thinking and fixed beliefs about intelligence or ability?
- Assuming an explicit equity-orientation, how do data-informed leaders build a school culture that expands opportunities to learn, not just for students, but also for teachers?

(Datnow & Park 2018).

Teachers and school leaders are uncertain about how to use data effectively

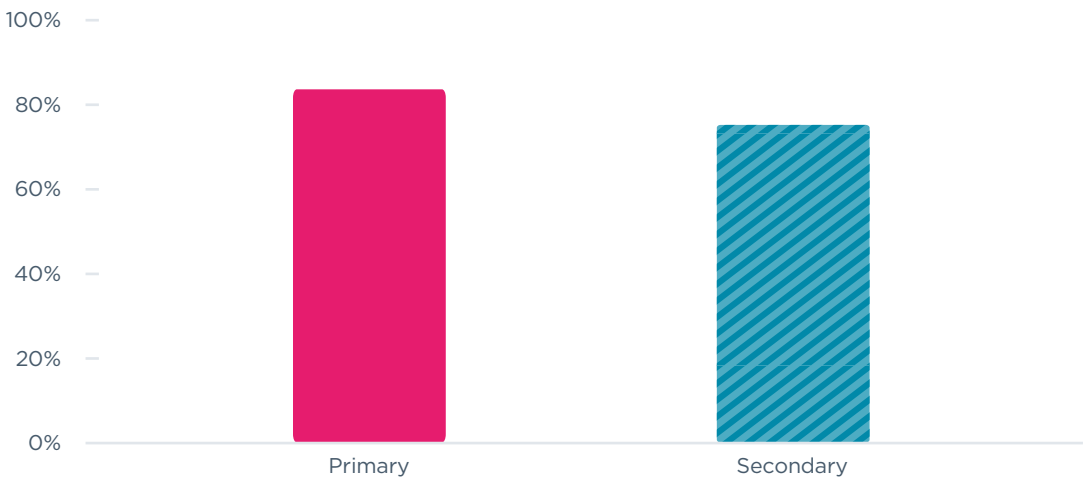
Despite the research that shows that data use can lead to improved student outcomes, there is also evidence that effective use of data does not happen in all classrooms in all schools. Teachers often find data difficult, use it ineffectively, or do not use data at all. There is a tendency to make decisions and decide directions based on 'gut' which leads to ineffective modifications and persistent problems (Prenger & Schildkamp 2018). The Grattan Institute (2015, p. 16) notes that 'while Australian schools are awash with data, many do not collect the data they really need, or use the data they do collect effectively'.

Schools' self-assessments using the NSW School Excellence Framework shows that data skills and use is the area of least positive self-assessment and the area that needs the most improvement (State of New South Wales 2019). Similarly, information collected from the National School Improvement Tool, developed by the Australian Council for Educational Research (ACER) shows that the collection and use of data is commonly identified as one of the most important areas where schools need to make significant improvements (Grattan Institute 2015).

Responses from the Tell Them From Me teacher survey shows that NSW teachers are using data in certain circumstances. Teachers report that they use data from formal assessment tasks to decide whether a concept should be taught another way (Figure 4.1).

Figure 4.1

Percentage of teachers' who agree that 'I regularly use data from formal assessment tasks to decide whether a concept should be taught another way', by primary or secondary teacher, NSW government schools, 2019 (Source: CESE analysis of Tell Them From Me data)



Teachers need to be equipped with the skills to interpret and use data in practice

The Grattan Institute (2015) notes that schools must support their commitment to the systematic collection of high-quality evidence of student learning by providing teachers and leaders with professional development that will enable them to use data in a robust way. This includes understanding the limitations of different types of data. Results from the Teaching and Learning International Survey (TALIS) 2018 (Organisation for Economic Co-operation and Development (OECD) 2020) show that 45% of lower secondary teachers in NSW, and 41% of teachers across Australia, state that analysis and use of student assessments is an area in which they would like professional development. The demand for professional learning in data use is also evident in the NSW public system. The Centre for Education Statistics and Evaluation runs face-to-face professional learning courses: Using data with confidence, Evaluation essentials for school leadership, and Engaging with Scout reports. Professional trainers have delivered the courses to numerous schools across NSW. Since 2017, there have been approximately 12,000 completions for these courses, with around 1,000 sessions delivered. (NSW Department of Education 2020).

Professional learning communities have also been seen to have an impact on the effective use of data in schools. For example, a New Zealand study found data discussions in professional learning communities were an important component of research and development interventions in three clusters of schools (48 schools in total). These interventions significantly improved student achievement over three years, and the achievement gains were sustained after the interventions. Understanding classroom instruction in relation to student achievement patterns was a central feature of the data discussions (Lai & McNaughton 2013). Putting students' 'faces to the data' through the use of data walls has also received considerable attention in recent years (see, for example, Sharrat & Fullan 2012). Data walls are a means of visualising data to all teachers across a school, and thus building teachers' collective efficacy and whole-school responsibility for improving student outcomes. A recent systematic review concluded, nonetheless, that there is currently insufficient empirical research evidence to substantiate or refute claims about the educational effects of data walls (Adie, Harris & Wyatt-Smith 2020). This highlights that this is an area where further research would be beneficial.

Schildkamp (2019) states that the effective use of data for school improvement does not happen in isolation – its use is influenced by system, organisation and individual/team factors. She goes on to note that there needs to be a consistent approach to defining goals for data use, the collection of different types of data, sense-making, taking improvement actions and evaluation; and that some of the most important enablers and barriers to effective data use are data literacy and leadership.

Implications for schools and teachers

There are a number of strategies teachers and schools can put in place to ensure the effective use of data in practice.

- Teachers and leaders should collect meaningful data from all stages of the learning process. They should gather both qualitative and quantitative data, using consistent, rigorous and ethical data collection methods.
- Time should be dedicated to routinely and systematically collecting data, putting systems and structures in place to record and analyse data, and engaging in regular collaborative analysis of data with colleagues.
- Teaching and learning should be directly informed by data through monitoring and reflecting on the progress of every student. Connections should be made between different data sets to build up a rounded picture of each student and student data across years or classes analysed to identify wider trends, and identify which teaching practices work for which students, and which do not.
- Data use should be embedded within a whole-school framework by ensuring there is a school-wide plan to collect robust evidence of student learning and use that data to target teaching and track student progress over time.
- Teachers need access to relevant and useful professional learning in data use, including the opportunity to work with professional learning communities.

Chapter 5: **Assessment**

Key points

- The primary role of assessment is to establish where individuals are in their learning so that teaching can be differentiated and further learning progress can be monitored over time.
- Assessment is most effective when it is an integral part of teaching and learning programs.
- Accurate conclusions about student learning are reliant on rigorously-constructed assessment tasks, teacher collaboration and the use of marking rubrics.

Why it matters

According to researcher and educator, Lyn Sharratt (2019), 'nothing else matters in teaching and learning as much as quality assessment, that is, data that inform and differentiate instruction for each learner in a never-ending cycle of inquiry to discover what works best'.

High quality student assessment supports teachers to monitor student progress and inform next steps, determine the effectiveness of chosen teaching strategies – both for learning and engagement – and to measure student understanding of a unit of work (Stronge 2002). Assessment is a core and essential component of teaching and learning programs. It is included in Standard 5 of the Australian Professional Standards for Teachers (Education Services Australia 2011) and is one of six elements in the 'learning domain' in the NSW Department of Education's School Excellence Framework (State of New South Wales 2019).

Student assessments can be formative or summative. Formative assessments occur during the learning process to give teachers and students feedback about student progress. They can be formal or informal and serve to guide the student's future learning. Summative assessments occur at the end of a course of study or period of time and indicate a student's achievement level against curriculum standards or other defined learning objectives. Studies show that substantial learning gains are possible when teachers introduce a range of formative and summative assessment strategies into their classroom practice (Ponte et al. 2009).

In their influential work on assessment, Black and Wiliam (1998) analysed over 250 studies and found that formative assessment leads to significant learning gains. The formative assessment experiments they studied produced a typical effect size of between 0.4 and 0.7, which is a larger effect size than most education interventions. They also found that improved formative assessment helps 'low attainers' more than other students, and so reduces inequities in attainment whilst also raising attainment overall.

What the evidence says

Student assessment encompasses the variety of methods that teachers use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students. These include formal examinations, standardised tests, class tests, work samples, analysis of student portfolios and the informal questions, teacher judgements, and observations that occur in classrooms. It is only via effective assessment that teachers can know if learning is taking place.

Historically, assessment was summative and used to provide information about a student's level of ability, rather than as a source of information for teachers to guide and direct students and to reflect on the effectiveness of their own teaching practice. Masters (2013) asserts that when assessments focus primarily on judging student success, they encourage performance cultures rather than learning cultures. He states that assessments should be based on an understanding that learners can be at very different points in their learning, but that, despite this, all are capable of progress if motivated and provided with appropriate learning opportunities. Sharratt and Fullan (2013) reflect this view in their '14 parameters to increase all students' achievement', stating that 'Each student can achieve high standards given the right time and the right support'. Therefore, the primary role of assessment is to establish where individuals are in their learning so that teaching can be differentiated and further learning progress can be monitored over time.

Assessment is most effective when it is an integral part of teaching and learning programs

Educators need to know that every student is learning by continuously assessing their progress and incorporating that information into daily instruction (Sharratt & Fullan 2013). With this in mind, various models for assessment and instruction have been put forward.

Sharratt (2019) articulates five elements of effective assessment practice:

- establishing **learning intentions** that are drawn from the relevant syllabus and clearly describe what students should know, understand and be able to do at the conclusion of a unit of work
- creating **success criteria** that describe what success looks like in relation to the learning intentions and are co-created by students and teachers
- providing **explicit descriptive feedback** to students in a timely manner and ensuring that it is clearly understood by students
- building the capacity of students to **peer assess and self-assess** using the success criteria as a reference
- developing the capacity for individual **goal-setting** by students, which includes students asking questions such as 'What do I need to improve?' and 'What is my next step?'.

Love and Crowell (2018) note that having clear and explicit success criteria is also important for equity reasons, as they 'level the playing field by making explicit what success looks like … so students don't have to guess what's on the teacher's mind – a phenomenon that tends to privilege students whose backgrounds are similar to teachers'.

The inclusion of peer assessment and self-assessment in teaching and learning programs is also widely supported, but capacity-building in the use of peer assessment is particularly important in order to circumvent some potential negative aspects, such as issues of poor quality feedback, inconsistent feedback due to social networks within a class or students' apprehension (Scott 2016).

Black (2016) proposes a slightly different model to that put forward by Sharratt (2019), but which incorporates assessment at various stages:

- Step 1 – Clear aims
- Step 2 – Planning activities
- Step 3 – Interaction in dialogue
- Step 4 – Review of the learning
- Step 5 – Formal summative assessment.

Both models recognise that assessment is most effective when it is part of the broader teaching and learning program, rather than just an 'add-on' at the end of a unit of work.

Accurate conclusions about student learning are reliant on rigorously-constructed assessment tasks, teacher collaboration and the use of marking rubrics

In order for teachers to draw accurate conclusions about student learning, careful consideration needs to be given to the construction of assessment tasks. Masters (2013) identifies four attributes of high-quality assessment tasks: validity, reliability, objectivity and inclusiveness:

- The **validity** of an assessment task refers to the degree to which it accurately measures those things the teacher is attempting to measure.
- The **reliability** of an assessment task refers to the extent to which it produces stable and consistent results over time, and with different learners and assessors.
- The conclusions drawn from assessments should be '**objective**', in that they should not depend on which specific assessment task is used or who does the assessing. This cannot be the case if they are influenced by things such as differences in assessor leniency or an assessor's prior knowledge of a student.
- Assessment tasks should be **inclusive**; that is, provide useful information about the achievements and progress of all students. An assessment process should not provide underestimates or overestimates of some students' levels of achievement or progress because of their gender, physical ability, cultural background or geographical location.

Drawing accurate conclusions about student learning is also more likely when teachers make judgements against proficiency scales or marking rubrics and when they collaborate. Multiple studies show that well-developed rubrics help students understand and internalise the success criteria, which leads to improved student outcomes (Chappuis et al. 2012, cited in Lyna, Hung & Chong 2016). Rubrics are a powerful tool for teachers to communicate and clarify the targets of instruction and they provide rich information about the extent to which the success criteria have been achieved by individual learners (Lyna, Hung & Chong 2016).

Masters (2013) notes the benefits of teacher collaboration: '... by collaborating with other teachers – for example, through moderation activities – teachers can increase the consistency and comparability of the assessments they make against described proficiency scales'. He further adds: 'For example, when teachers judge student progress against the levels of a developmental continuum in writing, and when their judgements are consistent across different samples and kinds of student writing, and are consistent with the judgements of their colleagues, then writing assessments can be said to be made 'objectively''.

Teachers need to have a detailed knowledge of their subject and how learning progresses in that subject

Accurate information about student learning is also reliant on the teacher having a detailed knowledge of their subject and how learning progresses in that subject.

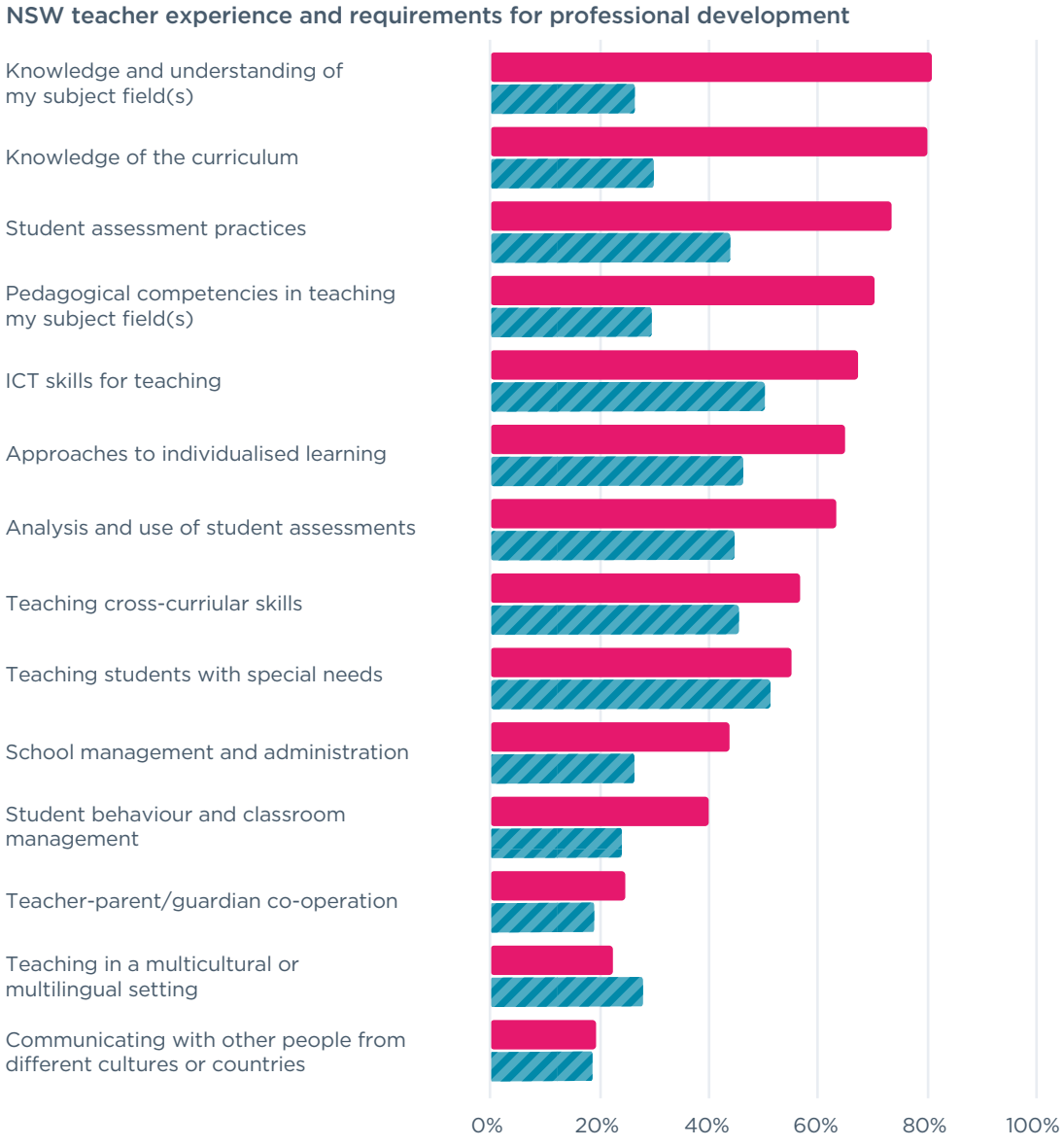
Research shows that student abilities in a single school Year level are only loosely related to age, with one Australian study finding that within a single Year group, achievement differed by as much as eight school year levels (Wiliam, cited in Grattan Institute 2015). With so much variation in student ability in one cohort, it is essential that teachers know where individual students are up to in their learning, where to take them next, and how best to adapt their instruction to do so. This requires a deep and detailed understanding by teachers of their subject area and an ability to distinguish small increments in progress and be able to test for them. Teachers should also know how learning typically progresses within the subject and be aware of common misunderstandings, errors and obstacles to learning progress (Masters 2013).

NSW teachers reported having undertaken professional development in assessment in the previous twelve months, but also reported a need for further learning in this area

In late 2017, TALIS asked a sample of 888 lower secondary teachers in NSW about their professional development experiences and needs. Seventy-three per cent reported that they had undertaken professional development related to student assessment practices in the past year and 44% reported having a moderate to high level of need for professional development in this area. When asked about the 'analysis and use of student assessments', 63% reported having undertaken professional development in this area and 45% reported a moderate to high level of need for it (Figure 5.1).

Figure 5.1

Proportion of teachers who had undertaken professional development in particular topics in the last 12 months and topics reported as being of moderate to high level need, NSW, TALIS 2018
(Source: CESE analysis of TALIS data)



Implications for schools and teachers

The evidence strongly supports the use of high-quality assessment practices as an integrated part of teaching and learning programs. Specific practices include:

- making student assessment part of everyday practice
- using assessment to provide students with learning opportunities
- designing and delivering high-quality formal assessment tasks
- carefully structuring group assessment activities to ensure that students are supported, challenged and able to work successfully together.

Chapter 6: **Classroom management**

Key points

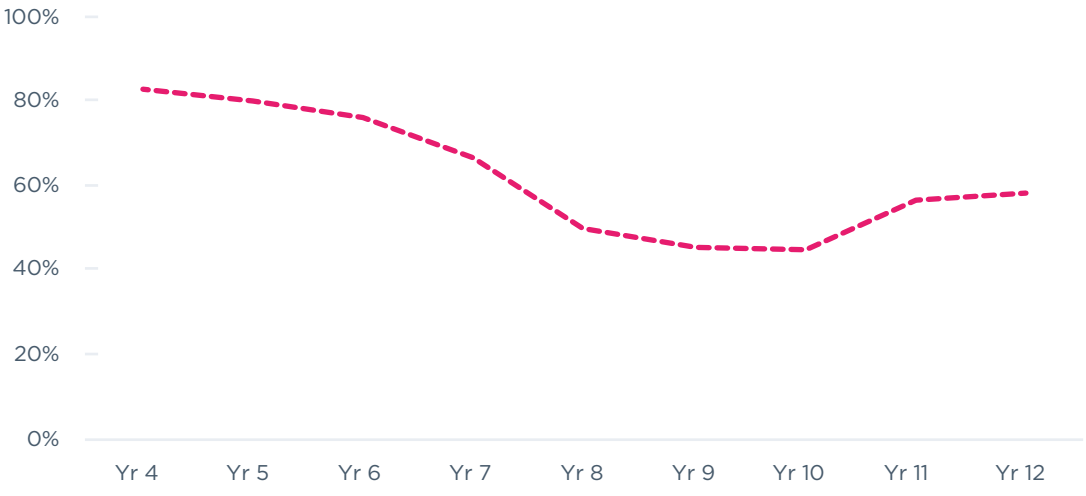
- Effective classroom management is important for creating the conditions for learning.
- Data confirms a link between effective classroom management and student performance.
- Effective classroom management minimises and addresses all levels of disengagement and disruptive behaviours.
- Early career teachers are likely to benefit from explicit support in developing effective classroom management strategies.

Why it matters

Effective classroom management is vital for creating an environment that minimises disruptions, maximises instruction time, and encourages students to engage in learning. Evidence shows that improving classroom management practices can help improve students' performance. Classroom management is of particular concern in high school. For example, NSW students report less well-managed classroom climates from the end of primary school through to the middle years of secondary school. In line with other indicators of student engagement, classroom climate picks up in senior high school (Figure 6.1).

Figure 6.1

Percentage of students reporting a positive classroom climate by school year, NSW government schools, 2019 (Source: CESE analysis of Tell Them From Me data)



What the evidence says

Classroom management is an umbrella term encompassing a broad range of strategies, approaches and actions undertaken by teachers to encourage a safe, positive and stimulating learning environment for their students. This can make it difficult to define and measure the effectiveness of classroom management on students' learning.

Nevertheless, the evidence base addressing classroom management issues and strategies is extensive, with meta-analyses conducted as far back as the 1950s. Research points to the positive effect of well-managed classrooms on:

- student behaviour (effect size 0.71) (Oliver, Wehby & Reschly 2011)
- student engagement (effect size 0.62) (Marzano, Marzano & Pickering 2003, p. 10)
- student achievement (effect size 0.52) (Marzano, Marzano and Pickering 2003, p. 10).

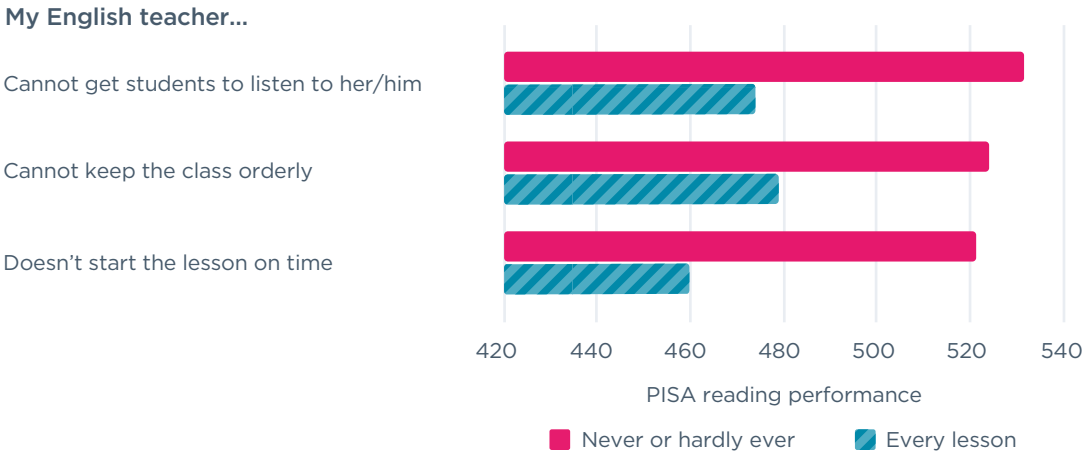
More recently, a meta-analysis of classroom management research conducted in primary schools replicated the findings of a positive effect on student achievement and student behaviour and additionally found a positive effect on student social-emotional outcomes (Korpershoek et al. 2016). Classroom management is also known to affect the stress levels and attrition rates of new teachers (see, for instance, see Brouwers & Tomic 2000; Hong 2012; Klassen & Chiu 2010).

Effective classroom management can help lift student performance

According to data from PISA 2018, performance in reading is higher where students report well-managed English classroom climates (Figure 6.2). The Australian Council for Educational Research (ACER), notes that results from PISA and TIMMS data suggest that well-managed classrooms are beneficial for all students, and particularly beneficial for vulnerable students (Australian Council for Educational Research (ACER) 2019, p. 8).

Figure 6.2

Students' views on their English classroom climate and relationship with student performance, Australia, PISA 2018 (Source: CESE analysis of PISA data)

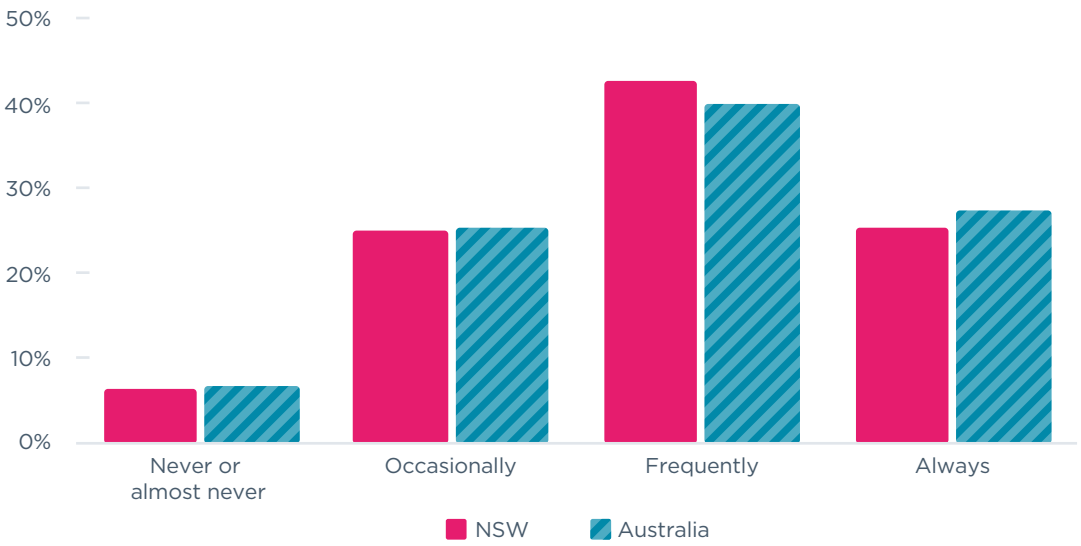


Ineffective classroom management impacts on time available for teaching

Many teachers report that managing student behaviour takes up a significant share of their time and energy that would otherwise be spent teaching. For example, one in four (25.6%) NSW teachers participating in TALIS 2018 reported that they 'always' have to wait a long time for students to quiet down at the start of lessons (Figure 6.3).

Figure 6.3

Teachers' views on how frequently they wait a long time for students to quieten down at the start of lessons, NSW compared with Australia, TALIS 2018 (Source: CESE analysis of TALIS data)



Low-level disengagement and low-level disruptive behaviours are common, stressful, and can impact student learning

Teachers most frequently reported that their classroom management concerns are students displaying low-level disengagement (for example, 'avoiding school work') and low-level disruptive behaviours (for example, 'talking out of turn') (Beaman, Wheldall & Kemp 2007; Sullivan et al. 2014). Teachers also report that these low-level disengagement and low-level disruptive behaviours are stressful and hard to manage (Sullivan et al. 2014).

It is important for classroom management practices to minimise and address low-level disengagement in lessons, even if students are not disrupting others in the classroom. Students who are disengaged in lessons, but not disruptive, may perform equally poorly on academic outcomes as students who are disruptive (see Angus et al. 2009).

Early career teachers feel underprepared in classroom management

Any teacher may experience classroom management challenges, but early career teachers may particularly need support to develop effective classroom management practices. New teachers often report receiving inadequate training in classroom management (see O'Neill & Stephenson 2013). According to data from TALIS 2018, less than half of Australian teachers (43%) reported feeling 'well prepared' or 'very well prepared' for addressing 'student behaviour and classroom management' upon completion of their initial teacher training (Australian Council for Educational Research (ACER) 2019, p. 116). In addition, fewer Australian early career teachers reported feeling high levels of self-efficacy in their ability 'to calm a student who was disruptive or noisy' compared with more experienced teachers (74% and 84% respectively) (Australian Council for Educational Research (ACER) 2019, p. 18).

Students with additional learning and support needs

Students with additional learning and support needs may benefit from targeted programs that follow similar principles of whole-class classroom management strategies, but which additionally provide greater levels of structure and more intensive guidance of self-regulation skills (Kern & Clemens 2007; Leach & Helf 2016; Osher et al. 2010; Skiba et al. 2016).

Culturally responsive classroom management

Culturally responsive classroom management involves teachers developing both their understanding of their students' cultural backgrounds and also their understanding of broader power, social, economic, and political factors (Weinstein, Tomlinson-Clarke & Curran 2004). Culturally responsive classroom management is particularly important in NSW schools because students come from a range of different cultural backgrounds (NSW Department of Education 2019). However, there is limited research about culturally responsive classroom management in Australia. A recent systematic literature review about classroom management strategies for Aboriginal and Torres Strait Islander students identified several common practices that align with culturally responsive classroom management principles but noted that there is limited research about the effective implementation of these practices in Australian schools (Llewellyn, Boon & Lewthwaite 2018).

Implications for schools and teachers

The evidence points to the following whole-class classroom management strategies as being the most effective for creating well-managed classrooms:

- Create a positive social and emotional classroom climate by supporting students' social and emotional competence and positive teacher-student relationships.
- Establish and teach classroom rules and routines to communicate classroom expectations and provide structure and guidance for students in a wide variety of situations.
- Foster and maintain student engagement in instruction, by including frequent opportunities for active student participation in lessons.
- Actively supervise students to keep them on task and proactively offer assistance or extension to students who may otherwise passively disengage or become disruptive.
- Provide consistent and calm responses to disengagement and disruptive behaviours to support students to re-engage in learning (Centre for Education Statistics and Evaluation 2020a).

For classroom management strategies to be most effective, there needs to not only be a commitment from the individual teacher, but also:

- a consistent school-wide approach
- access to professional learning with opportunities for subsequent monitoring, feedback and planning support
- proactive wellbeing support for teachers (Centre for Education Statistics and Evaluation 2020a).

Chapter 7: **Wellbeing**

Key points

- Internationally, as well as in NSW, there is increasing focus on student wellbeing, in recognition that the school years contribute to the development of the whole child.
- Evidence shows that higher levels of wellbeing are linked to higher academic achievement, school completion, better overall mental health and a more pro-social and responsible lifestyle.
- Survey data from NSW reveals that students experience wellbeing differently at different stages of their schooling.

Why it matters

Student wellbeing is a broad term that encompasses many dimensions including cognitive, social, physical, emotional and spiritual wellbeing. At school, wellbeing is supported by practices that foster students' sense of belonging, and which value student voice and promote engagement in learning. Such practices are associated with improved student outcomes across a broad range of domains, from academic achievement to mental health and responsible life choices. Students with higher levels of wellbeing are more likely to be higher academic achievers and complete Year 12, have better overall mental health and a more pro-social and responsible lifestyle (Australian Catholic University and Erebus International 2008; Centre for Education Statistics and Evaluation 2019; O'Connor et al. 2019). Paying attention to student wellbeing also acknowledges the pivotal role of education in preparing students for a rewarding life beyond school.

Specific groups of students are particularly vulnerable to experiencing low levels of wellbeing at school, including those from language backgrounds other than English, students with disabilities, and students identifying as lesbian, gay, bisexual, or transgender (Sulkowski, Demaray & Lazzarus 2012). Other student groups can be at risk of disengaging at school. Students of Aboriginal and Torres Strait Islander backgrounds, in particular, have reported lower levels of engagement at school, reflected in measures of positive behaviour, homework and attendance (Willms 2014).

What the evidence says

Student wellbeing results from many interconnected elements of school and home life. At school, the practices that support student wellbeing involve creating a safe environment; ensuring connectedness; engaging students in their learning; and promoting social and emotional skills. A whole-school approach is important in addressing the interconnected and interdependent nature of wellbeing.

Schools need to offer students emotional as well as physical safety

A safe school is one where the physical environment does not lead to harm or injury for students, the emotional environment is a positive one, and a healthy lifestyle is promoted. An emotionally safe school environment means students feel safe to attend and know that they will be supported should they encounter any issues. It is an environment that fosters positive relationships and where students feel supported and advocated for.

Bullying can be a particular threat to students' emotional safety at school. Bullying is the repeated and ongoing use of physical, verbal, cyber or social behaviours by one student to cause fear, distress or other harm to another. Students who are victims of bullying are more likely to display a range of mental health difficulties, such as anxiety and depression (Australian Catholic University and Erebus International 2008), and are at risk of lower academic achievement (Glew et al. 2005).

Students need to be emotionally, behaviourally and intellectually engaged at school for the best outcomes

Student engagement refers to the extent to which students identify with and value schooling outcomes, and participate in academic and non-academic school activities (Willms 2003). Increased engagement positively impacts student outcomes and is reflected in students' positive relationships with their teachers and peers, improved academic performance and school completion, and higher levels of attendance and participation in school activities.

Research shows that student engagement is not only an important outcome in itself, but it is also directly related to students' academic performance and future outcomes (Abbott-Chapman et al. 2014; Centre for Education Statistics and Evaluation 2019a, 2019b; Gallup Education 2014). For example, a 2009 American study of 78,106 students in 160 schools across eight states found that a one-percentage point increase in a student's engagement was associated with a six-point increase in reading achievement and an eight-point increase in mathematics achievement scores (Gallup Education 2014).

Other studies of student engagement have shown that increased student engagement has a flow-on effect in regard to educational and occupational success many years into the future. For example, an Australian study that used data from the Childhood Determinants of Adult Health study and a school engagement index, found that each unit of school engagement was independently associated with a 10% higher chance of achieving a post-compulsory school education at some point during the next 20 years, including as a mature age student. This was true over and above the influence of family background and personality (Abbott-Chapman et al. 2014).

Positive relationships support students' connectedness to school

School connectedness refers to students' sense of belonging, commitment to school, relationships with their peers and teachers, and opportunities to actively participate in the school community (Sulkowski, Demaray & Lazzarus 2012). Within the school environment, connectedness is realised and promoted in the quality of the relationships between students and their teachers, between students and the school, and between students and other students. Low levels of school connectedness in teenagers are linked to an increased likelihood of later problems with alcohol and drug use and other 'risk taking' behaviours, mental health issues and violence (Bond et al. 2007; Glover et al. 1998).

Teacher-student relationships may be the most critical of all relationships at school

Research suggests that students who report positive teacher-student relationships and a more positive learning climate are more likely to have high levels of engagement with and at school (OECD 2013; Centre for Education Statistics and Evaluation 2019a). Positive teacher-student relationships are also one of the strongest influences of student academic outcomes (Hattie 2009) and can lead to more positive classroom behaviours (Marzano, Marzano & Pickering 2003). Some studies suggest that the role of the classroom teacher may be as important, or even more important, than a student's family background in ensuring their success at school (Willms, Friesen & Milton 2009).

Advocacy at school is particularly important for ensuring students have opportunities to achieve their best.[6] Having an adult or adults 'on their side' and working in their best interests has a positive impact on school life and achievements. Survey data from students in NSW shows that those students reporting high levels of advocacy at school show higher levels of interest and motivation at school, experience an enhanced sense of belonging, and have an improved chance of completing school (Centre for Education Statistics and Evaluation 2020b). As students progress through their schooling, they often face increasing complexity in their home and school lives. Students consistently say that their relationships with adults at school provide an important source of ongoing support which enables them to thrive (Dunleavy & Milton 2009). For many students, their teacher

6 For more information on student advocacy, see Centre for Education Statistics and Evaluation 2020c.

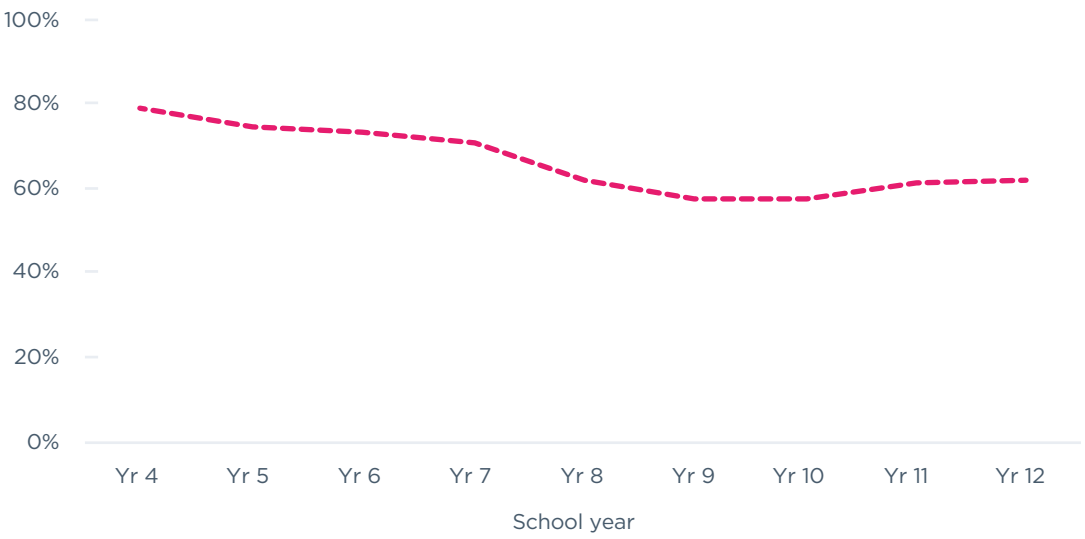
or teachers may provide this support, though there are other adults across the school who can also be advocates for students. Students with specific learning needs often have strong positive relationships with school staff beyond their teachers, including school learning support and administration staff, who also provide advocacy and ensure that they are supported to achieve their best.

Students experience wellbeing differently at different stages of their schooling and depending on demographic factors

Survey data from students in NSW suggests that students experience different levels of connectedness to school at different stages of their schooling. Primary school students have a very strong sense of belonging at school, but this drops in the middle years of high school, followed by a slight increase in the senior years (Figure 7.1).

Figure 7.1

Percentage of students with a positive sense of belonging, by school year, NSW government schools, 2019 (Source: Tell Them From Me data)

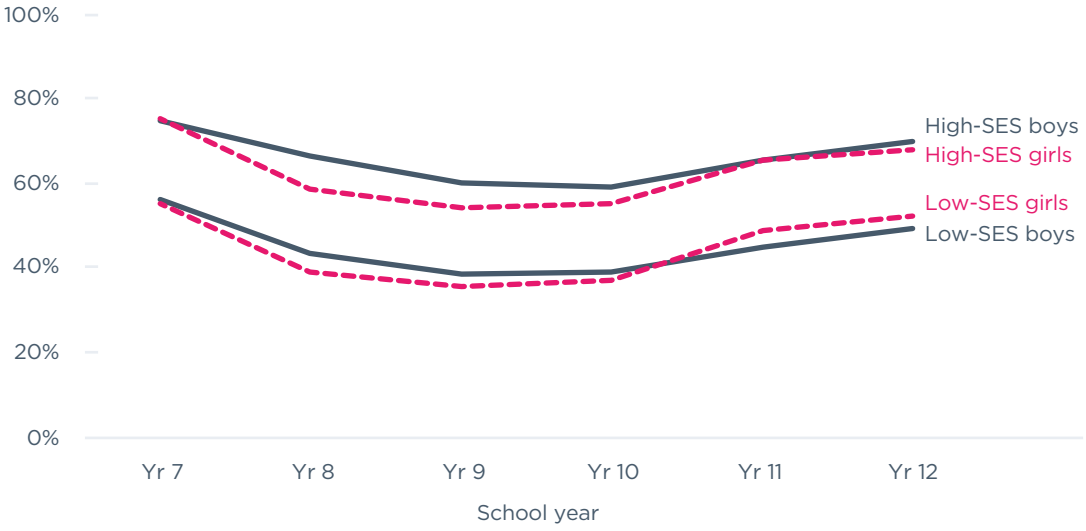


Gender appears to also make a difference to levels of student wellbeing and engagement. Girls are more likely than boys to comply with behavioural expectations at school (such as observing school rules and having positive attitudes towards homework), but are less likely to feel a positive sense of belonging throughout schooling (Centre for Education Statistics and Evaluation 2017; 2020d). Results from PISA 2012 also show that girls are more likely to report moderate or high levels of anxiety at school, peaking in Year 9 (OECD 2013). Girls are also less likely to report high levels of advocacy at school in the early years of high school (Figure 7.2).

A student's socioeconomic status can also have an impact on indicators of wellbeing. High-SES students feel higher levels of advocacy at school in all years, compared with low-SES students (Graph 6.2). Such students are also more likely to report higher levels of sense of belonging throughout their schooling (Centre for Education Statistics and Evaluation 2020d).

Figure 7.2

Percentage of students who experience advocacy at school, by school year, SES and gender, NSW government schools, 2019 (Source: CESE analysis of Tell Them From Me data)



Implications for schools and teachers

The relationship between student wellbeing and engagement in learning is two-way – improving wellbeing can facilitate intellectual engagement, and improving intellectual engagement can also promote wellbeing.

Build positive learning environments focused on positive teacher-student relationships

Positive teacher-student relationships and high levels of advocacy are crucial for student wellbeing. Students feel advocated for and supported and when they know that they have someone to whom they can turn to for advice.

Proactively teach healthy coping strategies

Students need support in understanding and developing skills in resilience to ensure their ongoing wellbeing. Teachers can provide opportunities to develop coping strategies in the classroom, such as engaging in positive self-talk, discussing issues as they arise, asking for help, and managing time effectively.

Make schools safe by employing bullying interventions

Bullying interventions work and help to reduce anti-social behaviours and foster positive peer relationships amongst students. Effective strategies include employing parent meetings, firm disciplinary methods, and improved playground supervision to identify and address bullying behaviours.

Target support for different phases of student development and for students who may be at risk

A focus on building positive teacher-student relationships can make a difference to students, particularly for low-SES students and girls. It is important to remember that compliant behaviour is not an indicator of engagement or wellbeing. This is evidenced by the fact that while girls report compliance with school rules and positive homework behaviours, they also have higher anxiety and a lower sense of belonging. Teachers need to be attentive to all students and monitor the breadth of student wellbeing.

Adopt a whole-school approach

Student wellbeing cannot be viewed in isolation from the broader school context. School communities have the potential to significantly influence student wellbeing. Strong school leadership that emphasises and promotes the importance of wellbeing, a culture of high expectations for all students and teachers who emphasise improvement are critical elements to supporting wellbeing at the school level. Student wellbeing must be integrated into the school learning environment, into the policies and procedures of a school, and into the stakeholder relationships within and outside the school, including teachers, parents, students, support staff and community groups.

Chapter 8: **Collaboration**

Key points

- Great teachers do not just happen; they are developed and keep on developing throughout their professional lives.
- Effective collaboration is key to sharing successful and innovative evidence-informed practices across the teaching profession.
- Not all collaboration is effective. Teachers need to engage in professional collaboration that explicitly aims to improve teacher practices and student outcomes.
- School leaders play a vital role in creating the conditions and culture that support meaningful teacher collaboration.

Why it matters

Some professionals, such as doctors or lawyers, have the benefit of seeing their peers in action as part of their day-to-day environments, and can see first-hand what works. Teachers, however, need to work harder than many to break down the potential 'silo effect' and ensure that best practice is identified and shared across classrooms. This is important because high-quality collaborative practice, which harnesses the expertise of the collective, is critical to improving teacher quality and student outcomes (Grattan Institute 2020; Reeves, Pun & Chung 2017; Ronfeldt et al. 2015; Sharratt & Planche 2016).

What the evidence says

Teacher collaboration is a powerful professional learning tool

Collaboration connects teachers and leaders to their colleagues and to external experts (AITSL 2012). This increases teacher collective efficacy (Donohoo, Hattie & Eells 2019), which Hattie (2019) lists as the number one factor that influences student achievement. International education researchers point to collaborative practices between teachers within and across schools as important features of many high-performing schooling systems (McKinsey & Company 2007; McKinsey & Company 2010; National College for School Leadership 2012; National Center on Education and the Economy 2016). In Shanghai, British Colombia, Singapore and Hong Kong, for example, collaborative professional learning practices are built into the everyday lives of teachers and school leaders (National Center on Education and the Economy 2016). Teachers are encouraged to work together, including through planning lessons and programs jointly, observing each other's lessons, and engaging in professional discussion and refection with other teachers.

In Australia, the importance of implementing and embedding effective collaborative practice is widely known and accepted. The Review to Achieve Educational Excellence in Australian Schools, the Australian Government's vision of how to improve teaching and learning across all schools, recognises collaborative practice as an important factor that contributes to school improvement (Department of Education and Training 2018b). The review highlights the need for schools to create the conditions and culture to support meaningful teacher collaboration. It also identifies modes of collaboration that are particularly effective, including peer observation and feedback, coaching, and mentoring. In recognising the importance of professional collaborative practice, AITSL (2018) created an evidence-based guide for school leaders and teachers that focuses on how to develop and maintain an effective collaborative learning culture, and the Grattan Institute recently released a report that recommends a significant shift in the ways expertise is shared to improve teaching and learning in Australian schools (Grattan Institute 2020).

Great teachers learn from observing other teachers

Peer observation has been demonstrated to be an effective collaboration tool that leads to improvements in teaching and learning, when it is implemented well (Danielson 2012; Timperley et al. 2007; DuFour & Eaker 1998). Peer observation can take place as part of a structured professional learning approach, as happens in Shanghai 'teaching and research groups' (Grattan Institute 2012), or more informally. The Australian Teacher Performance and Development Framework (AITSL 2012) recognises observation of teacher practice as an essential component of teachers' development process. In NSW, observing a colleague's lesson is a teacher-identified activity that counts towards the professional learning requirements for teacher accreditation.

Research shows that peer observation can benefit both the teacher being observed and the observer (Department of Education and Training 2018a). In addition to increasing knowledge of effective teaching and learning strategies, well-implemented peer observation can also increase teacher confidence about their own practice (Hendry & Oliver 2012). Australian researchers, Smith and Starmer (2017) report that lesson observation is a powerful professional learning tool because it moves away from telling teachers what they should do and, instead, allows them to reflect on how they can use what they observe to refine and improve their own practice. Wiliam (2016) emphasises that the purpose of peer observation is not to copy the practices of other teachers, but for teachers to adapt and modify what they observe to suit their own classroom.

It is important to recognise that peer observation has the greatest impact on teaching and learning when it involves effective feedback processes (Macklin & Zbar 2017). Therefore, when teachers open their classrooms to other teachers, they should be prepared to analyse each other's strengths and areas for improvement. A Grattan Institute report suggests that effective systems of teacher appraisal and feedback that are directly linked to improved student performance can increase teacher effectiveness by up to 30% (Grattan Institute 2011). The research also suggests it is important to place teachers carefully into suitable observation groups as this increases the likelihood of teachers feeling comfortable to give and receive constructive feedback. Tenenberg (2016) found that observations involving teachers who have a close relationship are not always effective because such teachers can be unwilling to provide each other with honest and constructive feedback about areas for improvement.

Building strong professional learning communities can improve the quality of teaching and learning

Professional learning communities[7], which include professional networks, can be beneficial. However, research shows that the effectiveness of these communities ultimately depends on their composition.

John Hattie (2009; 2015) suggests that professional learning communities may work to improve student outcomes, but they are generally not sufficient by themselves. While professional learning communities can work, they tend to need an additional factor, perhaps a person or a process, to challenge problematic beliefs, test the efficacy of competing ideas, and ground discussions in student outcomes. Without an additional factor to challenge problematic beliefs and deficit thinking, professional learning communities can be a counterproductive collaborative practice and have a negative effect on student learning (Alton-Lee 2011). Timperley (2008) agrees with Hattie (2009; 2015) that for professional learning communities to be effective they need to focus continually on improving student outcomes and include experts who will challenge entrenched beliefs. Hargreaves and O'Connor (2018) highlight another important feature of effective professional learning communities; that is, establishing an environment where teachers feel comfortable giving and receiving honest and constructive feedback.

7 AITSL (2018, p. 6) describes a professional learning community as 'a group of leaders/teachers who collaborate regularly with a focus on achieving continual school improvement'.

In Australia, Gore and her colleagues developed Quality Teaching Rounds (QTR), a form of professional learning community that involves guided reading, discussion and observation by teachers who are members of a 'professional learning community'. Current research is exploring the impact of QTR on student outcomes (Gore 2018).

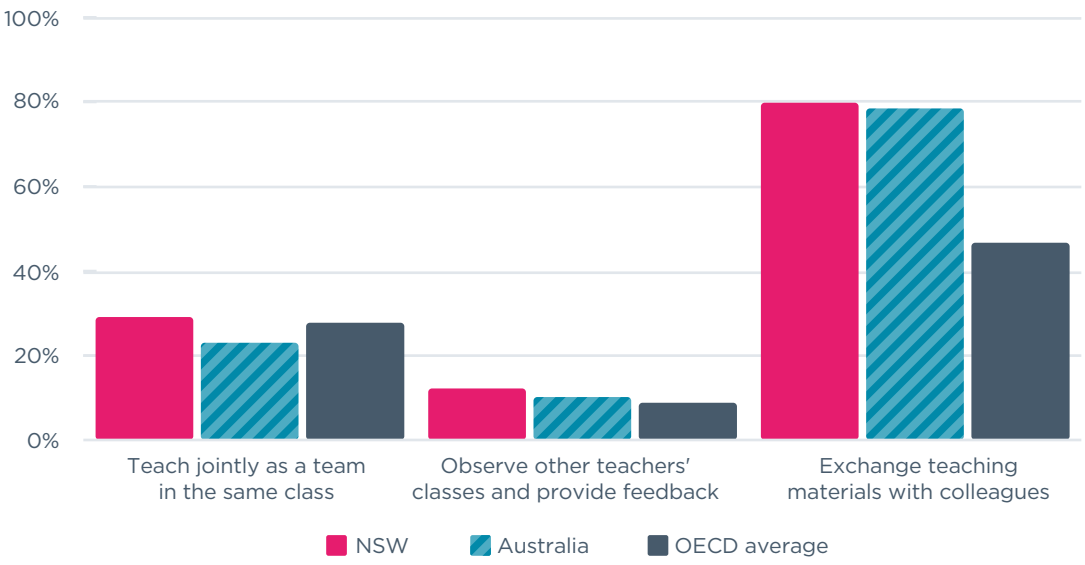
NSW teachers engage in collaborative practices, but could extend their participation further

The 2018 TALIS OECD (2020), shows that by comparison with other Australian states and territories and the OECD average, NSW teachers are generally more likely to engage in certain collaborative practices, such as observing other teachers' classes and providing feedback, exchanging teaching materials with colleagues, and teaching jointly as a team in the same class (Figure 8.1).

Figure 8.1

Percentage of teachers who report that they undertake selected collaboration activities at least once a month, NSW compared with Australia and the OECD average, TALIS 2018

(Source: CESE analysis of TALIS data)

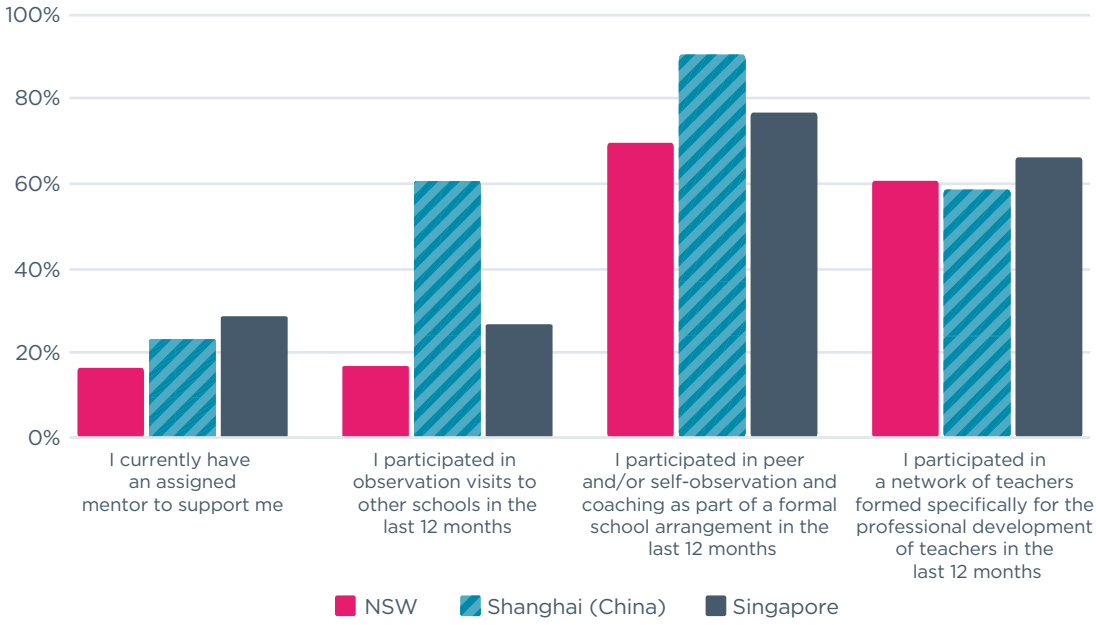


Compared with teachers in Shanghai and Singapore,[8] however, NSW teachers are considerably less likely to participate in the majority of collaborative practices included in the 2018 TALIS. For example, teachers in Shanghai and Singapore are considerably more likely than Australian teachers to participate in formal mentoring, observation visits to other schools, and peer and/or self-observation or coaching as part of a formal school arrangement (Figure 8.2).

8 Note: this analysis is only possible for a sub-set of countries participating in TALIS. Shanghai and Singapore have been selected as examples of a high-performing schooling systems.

Figure 8.2

Teachers participation in selected collaboration activities, NSW compared with Shanghai and Singapore, TALIS 2018 (Source: CESE analysis of TALIS data)



School leaders are vital to the success of teacher collaboration

Meaningful teacher collaboration does not just happen. To be effective, it needs to be carefully planned, implemented and sustained. The Australian Institute for Teaching and School Leadership (2018) places the responsibility for establishing the conditions that support meaningful and productive teacher collaboration with school leaders. The research (for example, Australian Council for Educational Research 2016; Australian Institute for Teaching and School Leadership 2018; Department of Education and Training 2018a; Hattie 2015; Page & Eadie 2019) shows that school leaders can promote meaningful teacher collaboration by:

- providing teachers with regular time to collaborate with their colleagues
- modelling what effective collaboration looks like
- creating a safe environment where teachers feel comfortable discussing differences of opinion, and giving each other honest and constructive feedback
- creating a shared vision so all teachers are invested in the success of the whole school community
- sharing and promoting the benefits of collaboration.

Implications for schools and teachers

The evidence supports a broad range of collaborative approaches that can and should be integrated and embedded in ongoing professional learning across the teaching profession.

- Teachers and school leaders need to draw on internal and external expertise to identify and implement best-practice models that centre first and foremost on students' needs and improving learning outcomes.
- All teachers should be willing to open their classrooms and participate in structured lesson observations that focus on how different teaching approaches impact on student learning.
- School leaders need to create a strong culture in which collaborative planning, reflection and peer coaching are embedded in everyday school life, so that teachers are supported, and support one another, to continuously develop their skills and knowledge.

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