TALIS 2018

The Teaching and Learning International Survey

AUSTRALIAN REPORT

Volume 1

Teachers and school leaders as lifelong learners

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The views expressed in this report are those of the authors and not necessarily those of the Commonwealth, state and territory governments.

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Abbreviations

ACER	Australian Council for Educational Research
CABA	Ciudad Autonoma de Buenos Aires
ESCS	economic, social and cultural status
ICT	information and communication technology
IEA	International Association for the Evaluation of Educational Achievement
ISCED	International Standard Classification of Education
NRBA	non-response bias analysis
OECD	Organisation for Economic Co-operation and Development
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
PPP	purchasing power parity
SE	Standard Error
SEIFA	Socio-Economic Indexes for Areas
SiAS	Staff in Australian Schools Survey
TALIS	Teaching and Learning International Survey
TIMSS	Trends in International Mathematics and Science Study
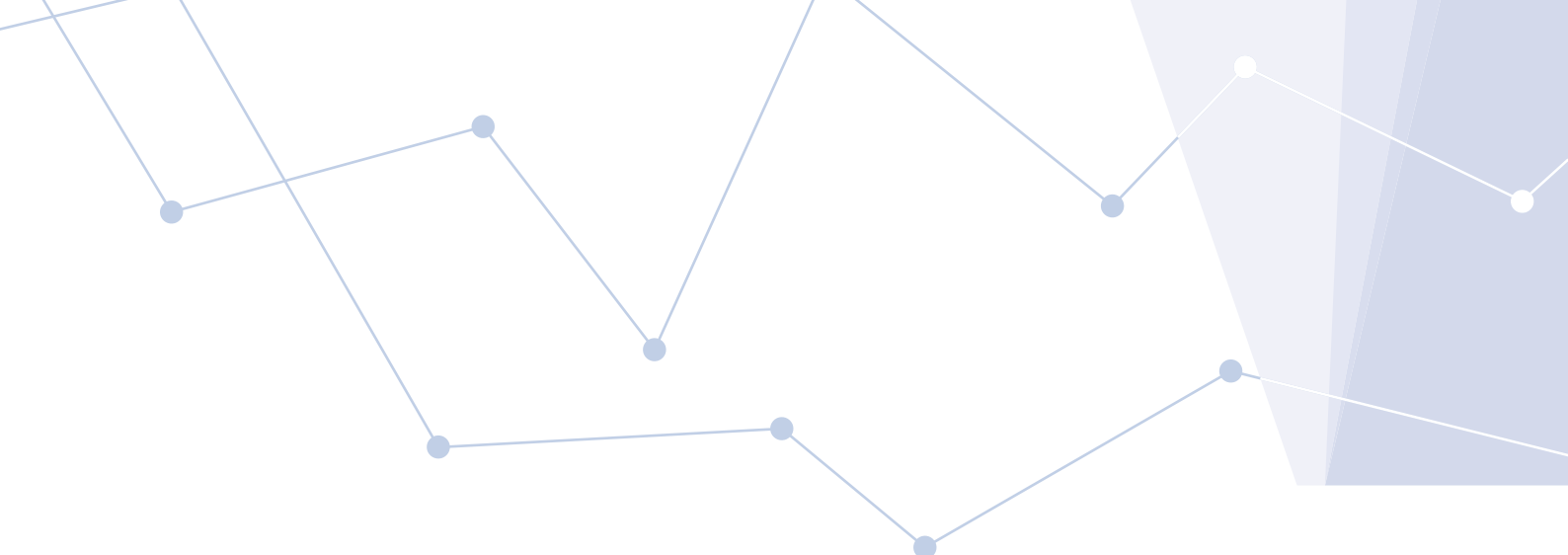
Executive Summary

Introduction

The OECD Teaching and Learning International Survey (TALIS) collects internationally comparable data on the learning environment and the working conditions of teachers and principals in schools across the world. It offers teachers and principals the opportunity to provide their perspectives on the state of education in their own countries, allowing for a global view of teachers, the education systems in which they work, and the successes and challenges faced by teachers and school leaders. The study's main objective is to "generate internationally comparable information relevant to developing and implementing policies focused on school leaders, teachers and teaching, with an emphasis on those aspects that affect student learning" (OECD, 2019a, p. 19). TALIS provides a voice to teachers and school leaders, and allows them the opportunity to reflect on and discuss their practice and find ways to enhance it. TALIS provides information required by policymakers to assist them to review and develop policies that promote the teaching profession and provide optimal conditions for effective teaching and learning.

TALIS 2018 is the third cycle of TALIS, and Australia has participated in each cycle. While the main focus of TALIS is on teachers and principals in lower secondary education (Years 7-10 in the Australian school system, or ISCED level 2 internationally), countries in TALIS 2018 were given the option to survey teachers and principals in their primary (ISCED level 1) and upper secondary (ISCED level 3) schools, and to participate in a TALIS–PISA link option, which involved conducting the TALIS survey in schools that participated in the 2015 Programme for International Student Assessment (PISA). As well as the main lower secondary survey, which is the focus of this volume, Australia participated in the primary school option and in the TALIS-PISA link, which will be reported separately in 2020.

The Australian Council for Educational Research (ACER) conducted TALIS 2018 in Australia on behalf of the Australian Government Department of Education, and the Australian State and Territory Departments of Education.

The main survey for TALIS 2018 was conducted in 31 OECD countries and economies and 17 partner (non-OECD) countries and economies. In Australia, a nationally representative sample of 4,000 teachers and their principals from 200 lower secondary schools was randomly selected to participate in the study. The sample drawn was larger than in previous years (2,059 teachers and 159 schools in TALIS 2013) because the three larger states (New South Wales, Victoria and Queensland) chose to draw a larger sample in order to increase the reliability of the estimates within their jurisdictions. In Australia, 3,573 lower secondary teachers and 230 principals completed the TALIS questionnaires.

However, the technical standards for TALIS set out by the OECD require countries to reach specified response rate targets. A minimum of 50 per cent of schools from the original sample of schools is required to participate for data to be included in the international database, and due to a range of factors, Australia did not meet the response rate targets set by the OECD for lower secondary school principals, or primary principals or teachers. It did meet the required response rate for lower secondary teachers.

To assess the quality of the data collected an extensive non-response bias analysis (NRBA) was conducted. An NRBA examines the extent to which the response characteristics of principals and teachers who respond to a survey are different from the response characteristics of the principals and teachers that did not respond. This analysis compared the characteristics of the TALIS respondents with those available from independently available population statistics. When compared to official independent data on Australian schools, across most characteristics the distribution of participating schools was similar to national profiles. The NRBA concluded that despite the response rate of originally sampled schools falling just below the threshold, the data collected showed no significant bias and could be taken as representative of Australian schools and teachers.

This report complements the OECD report of the same name (OECD, 2019a) by providing a more focused comparison of Australia with a group of high-performing countries as well as the OECD and TALIS averages. The group of countries chosen for comparison for the lower secondary sample were the countries that significantly outperformed Australia in all three assessment domains in PISA 2015: Alberta (Canada), Estonia, Finland, Japan, and Singapore. This report also provides analysis on trends in Australia which are not reported in the OECD report due to issues with sampling. It presents data from the primary school samples where it is relevant (comparing findings from primary and lower secondary schools in Australia), as well as results from particular questions that were only asked of Australian teachers.

Teaching and learning for the future

Chapter 2 of the report describes what teachers do in their classrooms and how teaching has changed over the past five to ten years. It examines the extent to which teachers and school leaders engage in related activities to support student learning, and describes the extent to which teachers and schools are able to innovate in their methods of teaching and working together.

Australian lower secondary teachers commonly use a range of teaching practices in their classrooms, some more often than on average across OECD countries. A higher proportion of Australian teachers say that they tell students to quieten down quickly at the beginning of a class, that they explain what they want students to learn, give tasks that require students to think critically, that they let students use information and communication technology (ICT) for projects or classwork, and that they give students projects requiring more than one week to complete.

The use of ICT in the classroom has increased over the past five years in most TALIS countries, including Australia. Australian classrooms are the third largest users of ICT in TALIS.

Australian teachers reported working more hours than on average over the OECD (45 compared to 39 hours) and spent a lower proportion of that time on teaching (19.9 hours, or 44% of their time compared to the OECD average of 20.6 hours, or 53% of their time). The number of hours of work has increased for Australian teachers over the last five years, and all of this time seems to have been in face-to-face teaching.

Of these hours in the classroom, just 78 per cent of teachers' time was spent on teaching and learning, with the remainder being spent on other tasks such as classroom discipline and administrative tasks. This share of time is even lower in schools with a high concentration of students from socioeconomically disadvantaged homes, and in classrooms taught by novice teachers (those with five years of experience or less) and young teachers. On average in Australia, the amount of classroom time spent on teaching and learning increased slightly for Australia as a whole over the past 10 years, largely due to a decrease in the amount of time spent on classroom management.

On average in Australia and across the OECD, more than 80 per cent of teachers felt confident in their capacity to teach and manage their classroom, despite over 30 per cent of teachers reporting difficulties in motivating student learning when a student shows little interest in school work. Novice teachers in Australia were less sure of their capacity to control disruptive behaviour in the classroom than the average across the OECD for novice teachers.

A little more than one-third (34%) of Australian principals' working time was spent on administrative tasks and meetings, while one-quarter (25%) of their time was spent on leadership tasks and meetings. Prior OECD research identified curriculum and teaching-related tasks and meetings as a key component of instructional leadership and supporting teaching. This activity typically involves developing a school curriculum, observing classes and mentoring teachers, designing or organising professional development activities for teachers or being involved in student evaluation. Australian principals, on average, spent about 11 per cent of their time on these activities, significantly lower than the OECD average of 16 per cent, and lower than any of the high-performing PISA countries.

Almost two-thirds of Australian principals cited high workload and level of responsibility in their job as issues that substantially limited their effectiveness. Principals of schools with a higher proportion of socioeconomically disadvantaged students were more likely to report a lack of principal support such as higher levels of teacher absenteeism, lack of support from parents or guardians, and lack of shared leadership within the school.

Rapid changes in technology have led to calls for innovation in education. Meetings of the International Summit on the Teaching Profession over the past few years, for example, have stressed the importance of encouraging innovation in order to create 21st century learning environments. TALIS examines some facets of innovation in teaching and learning in schools. In general, most Australian teachers and principals reported that their schools support the adoption of innovative practices and are responsive to change.

The changing landscape of teaching

Chapter 3 provides a profile of lower secondary teachers and school principals and examines how their demographic characteristics and experience have changed since 2008. It examines how teachers deal with increasingly diverse classrooms and schools, and explores the practices implemented in schools to respond to student diversity, as well as teachers' preparedness and confidence to teach in these more diverse environments. The chapter also examines school and classroom climate and identifies school resources issues that teachers and school leaders believe particularly require action.

The average age for Australian teachers was just over 42 years, lower than the OECD average of 44 years, and lower than the average in TALIS 2013 of just over 43 years. While the majority of Australian teachers were aged between 30–49 years, a higher proportion of Australian teachers were under 30 compared to the OECD average.

TALIS 2018 found that the distribution of teaching experience in Australian schools reflects the movement of the baby boomer generation into retirement, and a new generation of teachers moving into schools. In the decade since 2008, there was a seven percentage point decline in the proportion of teachers with more than 20 years experience, with 29 per cent now in that group. At the other end of the spectrum, after a decline in the proportion of teachers with less than five years experience between 2008 and 2013, the five years between 2013 and 2018 saw this increase to be similar to that recorded in TALIS 2008.

The average age for principals was 51 years, similar to the OECD average. Most Australian principals were very experienced teachers and school managers prior to becoming a school leader. The average principal had been a teacher for 23 years, and had also spent some 12 years on average in other school management roles. This time in administrative roles is higher than the OECD average.

Just over 62 per cent of lower secondary teachers in Australia are female, an increase of three percentage points since TALIS 2008. Around 40 per cent of the principals of lower secondary schools in Australia are female, remaining unchanged over the last decade.

Working with a diverse student population is the reality for many teachers and schools across the OECD generally and certainly in Australia. Australian schools and classrooms are more diverse, and so potentially more challenging, than is the average for the OECD. Thirty-six per cent of teachers teach in schools in which there are more than 10 per cent non-native speakers, and 36 per cent teach in schools in which there are at least 10 per cent of students with special needs.

Twenty-five per cent of teachers work in schools in which more than 30 per cent of the students come from socioeconomically disadvantaged homes, 41 per cent in schools in which more than 10 per cent of students are immigrants or from a migrant background, and 62 per cent in schools in which at least 1 per cent of the student population are refugees. Perhaps reflecting the diversity in Australian schools, a high proportion of Australian teachers and principals reported that their schools implement policies and practices related to equity and diversity, and teachers generally feel confident they are able to provide the appropriate leadership in multicultural classes.

Incidents related to school safety are a particular concern to Australian principals compared to the OECD average. Intimidation and bullying of students is a particular issue, with 37 per cent of principals reporting that this occurs at least weekly in their school. Also of concern is the relatively high incidence of intimidation or verbal abuse of teachers or staff. Twelve per cent of Australian principals reported that this happens at least weekly, compared to three per cent on average across the OECD. The incidence of cyber-bullying, measured for the first time, was also relatively high compared to the average across the OECD.

While Australian classrooms are often characterised as being particularly noisy and disruptive, there were no differences found on these items between Australia and the OECD average. In Australian schools the need for more discipline is lower in classes with high proportions of academically gifted students. Also, the higher the concentration of students with behavioural problems, the more teachers reported discipline problems in the classroom, even after controlling for other classroom characteristics and teacher characteristics.

Resource issues were reported as being less of a problem in Australia than across the OECD on average. The four top resource shortage issues reported by lower secondary principals that hindered their capacity to provide quality instruction *quite a bit* or *a lot* were: shortage or inadequacy of time for instructional leadership (28%), shortage of teachers with competence in teaching students with special needs (18%), shortage of vocational teachers (17%), and shortage of qualified teachers (16%).

In general, feedback from Australian teachers suggests that they are reasonably content with the level of the infrastructure in their schools, with more than half the teachers surveyed reporting that these issues did not impact instruction at all.

There were significant differences in the extent to which Australian teachers in socioeconomically advantaged and disadvantaged schools reported the extent to which resource issues hindered instruction *quite a bit* or *a lot*. The most pressing issue impeding instruction reported by teachers in more disadvantaged schools was a lack of digital technology available for instruction, with almost one-third (32%) identifying this as a major hindrance to instruction. While this was also the most common hindrance for teachers in more advantaged schools, it was only identified as such by 13 per cent of teachers. Almost one-quarter of teachers (23%) in disadvantaged schools cited inadequate internet access as a major issue, followed by around 20 per cent of teachers reporting that a lack of both digital software and traditional instructional materials such as textbooks hindered instruction in their schools. By comparison, less than 10 per cent of teachers in more advantaged schools believed these issues impeded instruction.

Teachers were asked to rate the importance of a number of priorities if the education budget were increased by five per cent. For Australian teachers the most important priority was 'reducing teachers' administrative load by recruiting more support staff' (59%), reflecting concerns reported in

Chapter 2 about the administrative burden faced by both principals and teachers. The other highest priorities were the same as for the OECD overall – 'reducing class sizes by recruiting more staff', and 'offering high-quality professional development for teachers', although Australian teachers were less emphatic than the average OECD teacher.

Attracting and preparing the right candidates for the teaching profession

Chapter 4 examines the reasons teachers were attracted to the profession and describes how teachers and school leaders were prepared for their roles. It examines the relationship between the features of training programs and a range of quality indicators, including teachers' sense of preparedness, self-efficacy in teaching and job satisfaction. The chapter also explores the support provided to new teachers in their early career years.

Over 90 per cent of Australian teachers rated altruistic reasons for becoming a teacher, such as influencing the development of young people and contributing to society, of moderate to high importance in their career decisions. However many teachers also reported being motivated by practical reasons, with more than 80 per cent reporting that a secure job and reliable income were of moderate to high importance, compared to 71 per cent and 67 per cent respectively for the OECD on average.

When asked why they might leave their profession, the most common reason selected by Australian teachers was to retire from work. This was the same for teachers no matter where they were in their career – similar responses were reported by novice teachers, more experienced teachers, as well as teachers in all age groups. These results indicate a fairly high level of commitment on behalf of teachers to their profession.

Across the OECD on average, 49 per cent of teachers reported that they had completed a bachelor's degree, with a further 46 per cent holding a higher degree (master's or doctorate). In Australia, 75 per cent of teachers held a bachelor's degree but less than one-quarter reported holding a higher degree, such as a master's (20%) or doctorate (2%).

Among Australian principals, higher degrees were more common, with 48 per cent of principals holding a master's degree. This was still lower than in most high-performing PISA countries, and lower than the OECD average of 66 per cent. Fewer than 1 per cent of Australian principals have a doctorate compared to 3 per cent across the OECD.

While close to half of Australia's school principals hold a master's degree, the majority had not received training *specific to their role as a principal* prior to taking up their positions.

In Australia, and across OECD countries on average, 90 per cent of teachers indicated that their formal qualifications had included content of some or all of the subjects they now taught, general pedagogy, and pedagogy specific to some or all of the subjects they taught, while slightly lower proportions indicated that they had covered student behaviour and classroom management (84% in Australia and 72% across the OECD). However, Australian teachers reported feeling less prepared at the start of their teaching career in the core areas of subject content, pedagogy and classroom management compared to the OECD average.

Higher proportions of Australian teachers, compared to the OECD average, indicated that they had received training in teaching in mixed-ability settings, use of ICT in teaching and teaching in a multilingual or multicultural setting as part of their initial teacher education. The teachers who received this training, however, felt no better prepared to teach these areas than teachers on average across the OECD. However, novice teachers in Australia reported higher self-efficacy than their more experienced peers in supporting student learning using digital technology.

In Australia, the school characteristics that were associated with higher concentrations of novice teachers were rurality (with lower proportions of novice teachers working in city schools), government schools (lower proportions of novice teachers working in private schools) and lower concentrations

of students with special needs (schools with higher proportions of students with special needs had lower proportions of novice teachers). In comparison to novice teachers in other countries, Australian novice teachers do not appear to be allocated to schools with higher concentrations of disadvantaged, immigrant or special-needs students but they are overrepresented in rural schools, and may thus face challenges related to issues of isolation.

On average across OECD countries there was no difference in the teaching hours of novice and more experienced teachers. In Australia, however, novice teachers appear to be carrying a heavier teaching load than their more experienced peers (spending just over 21 hours teaching compared to 19 hours for more experienced teachers).

Mentoring was seen by principals as important for all teachers, but particularly to support less experienced teachers in their teaching (88% of Australian principals agreed this was of high importance). Despite the value placed on it, however, just over one in three novice teachers and one in ten more experienced teachers in Australia reported receiving mentoring from a peer.

Providing opportunities for continuous development

Chapter 5 of this report examines the participation rates in professional development for teachers and principals, the different types of training available and those that are most valued by teachers. Participation in various forms of training is then compared with reported need for further training, to identify potential gaps between availability and need. The barriers to participation and support available to teachers and principals in their continued development are also explored.

Continuous professional development is a vital element of the career paths of teachers and principals, providing training that can impact both on what happens in the classroom and in the school more generally. In a rapidly changing world, with an increase in diversity within schools as described in Chapter 3, as well as changes in the curriculum and an increase in the use of technology in the classroom, teachers and principals need professional development in order to ensure that students acquire the skills and competencies they will need. Participation in professional development is a compulsory requirement for Australian teachers (99% participated in some form in the past 12 months) and principals (100% participated in some form in the past 12 months).

Most commonly, Australian teachers and principals reported attending courses or seminars in person, but reading professional literature was an activity that was also undertaken by most principals and many teachers. Over 90 per cent of Australian teachers reported that their professional development had had a positive impact on their teaching. However, while Australian teachers who reported that their professional development had a positive impact on their work tended to report higher levels of job satisfaction than other teachers, they did not report higher levels of self-efficacy.

The area of professional development in which Australian teachers reported the highest level of need was in teaching children with special needs. Expressed need for training in this area increased by three percentage points since TALIS 2013 (from 8% to 12%) but remains below the OECD average (of 22%).

Australian teachers who participated in professional development in pedagogical practices recorded significantly higher use of effective classroom practices compared with teachers who had not participated in such professional development.

Australian teachers who participated in at least one of the professional development activities on multicultural teaching reported higher self-efficacy in operating in multicultural environments than teachers who had not undertaken such training.

Over 60 per cent of Australian teachers and principals indicated that conflict between teachers' work schedules and professional development was a barrier to participation. This proportion has not changed significantly between TALIS 2013 and 2018.

Reader's Guide

Classification of levels of education

The classification of the levels of education used in TALIS 2018 reporting is based on the revised International Standard Classification of Education (ISCED-97). ISCED is an instrument for compiling statistics on education internationally and distinguishes between six levels of education:

- ▶ Pre-primary education (ISCED level 0)
- ▶ Primary education (ISCED level 1)
- ▶ Lower secondary education (ISCED level 2)
- ▶ Upper secondary education (ISCED level 3)
- ▶ Post-secondary non-tertiary level of education (ISCED level 4)
- ▶ Tertiary-type A education (ISCED level 5A)
- ▶ Tertiary-type B education (ISCED level 5B)
- ▶ Advanced research qualifications (ISCED level 6).

The new coding scheme for ISCED 2011 was not available at the time of the TALIS 2018 data collection.

Country coverage

The TALIS 2018 publications feature data on 48 countries and economies, including 31 OECD countries and 17 partner countries and economies. The complete list of countries that participated in TALIS 2018 is presented in Chapter 1 (Table 1.1).

Chinese Taipei and Cyprus did not participate directly in TALIS 2018: their data collection and processing were managed exclusively by the international research consortium. As such their results are not included in their report and are reported separately in the OECD TALIS International report. In the case that a TALIS participating country does not appear in a figure or table, it may be that their data has been excluded for technical reasons, or withdrawn at their request.

The statistical data for Israel are supplied by and under the responsibility of relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

There are five sub-national entities participating in TALIS 2018. They are referred to in the following manner:

▸ The province of Alberta, in Canada, is referred to as Alberta (Canada).

▸ The Flemish Community of Belgium is referred to as Flemish Comm. (Belgium).

▸ Ciudad Autónoma de Buenos Aires is referred to as CABA (Argentina).

▸ The nation of England is referred to as England (United Kingdom) or England (UK).

▸ The municipality of Shanghai, in China, is referred to as Shanghai (China).

Two notes were added to the statistical data related to Cyprus.

1. Note by Turkey: The information in this document with reference to 'Cyprus' relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island.

2. Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Data underlying the figures

The data referred to in this volume are presented in the TALIS 2018 results: Teachers and School Leaders as Lifelong Learners (Volume I) (https://www.oecd-ilibrary.org/education/talis-2018-results-volume-i_1d0bc92a-en) with some greater details available in Annex C of that volume. Data pertaining to the Australian national option questions are presented in the Appendices of this National report.

Definitions of groups and comparison countries

High-performing PISA countries

A group of five countries and economies – Alberta (Canada), Estonia, Finland, Japan, and Singapore – were selected as a comparison group for this report. These five entities performed at a level significantly higher than Australia in all three domains of PISA 2015. Within the report they are referred to as 'high-performing PISA countries' (referring to the sub-national entity of Alberta as a country for ease of reading).

Novice and more experienced teachers

Teachers' self-reports of years of experience in the teaching profession were used to create two groups of teachers for use in comparisons – Novice teachers were those who reported five years or less of teaching experience while More Experienced teachers were those with more than five years of teaching experience.

Statistics and analysis

The primary focus of this report is the statistics and analysis derived from the survey responses of teachers of lower secondary education (level 2 of ISCED-97) and the principals of their schools. Some parallel analysis of the responses of primary teachers and principals (level 1 of ISCED-97) was also conducted and is reported in this volume.

Means and international averages

TALIS averages were calculated for most indicators presented throughout this report. TALIS averages are calculated as the mean of the data values for all of the participating TALIS countries

and economies included in the table. In tables, the number of countries included in the statistic being calculated is shown after the TALIS label. For example, TALIS-47 means that the data from 47 TALIS 2018 countries and economies were used to calculate the statistic.

OECD averages reported in the text and in figures are calculated as the mean of the data values of participating countries who are also members of the OECD. In tables, the number of countries included in the statistic being calculated is shown after the OECD label – for example, OECD-31 means that the data from 31 OECD countries were used to calculate the statistic.

Odds ratios

An odds ratio indicates the degree to which an explanatory variable is associated with a categorical outcome variable and is calculated following a logistic regression. An odds ratio below one denotes a negative association; an odds ratio above one indicates a positive association; and an odds ratio of one means that there is no association.

Regression coefficients

A regression coefficient (ß) indicates the degree to which an explanatory variable is associated with a non-categorical outcome variable. For example, a statistically significant regression coefficient of 3.5 would indicate that for every change of 1 unit in the explanatory variable, the outcome variable would increase by 3.5 units.

Statistical significance

The term 'significant' is used throughout the report to describe a difference that meets the requirements of statistical significance at the 0.05 level, indicating that the difference is real, and would be found in at least 95 analyses out of 100 if the comparisons were to be repeated. It is not to be confused with the term 'substantial', which is qualitative and based on judgement rather than statistical comparisons. A difference may appear substantial but not statistically significant (due to factors that affect the size of the standard errors around the estimate, for example) while another difference may seem small but reach statistical significance because the estimate was more accurate.

Reporting conventions
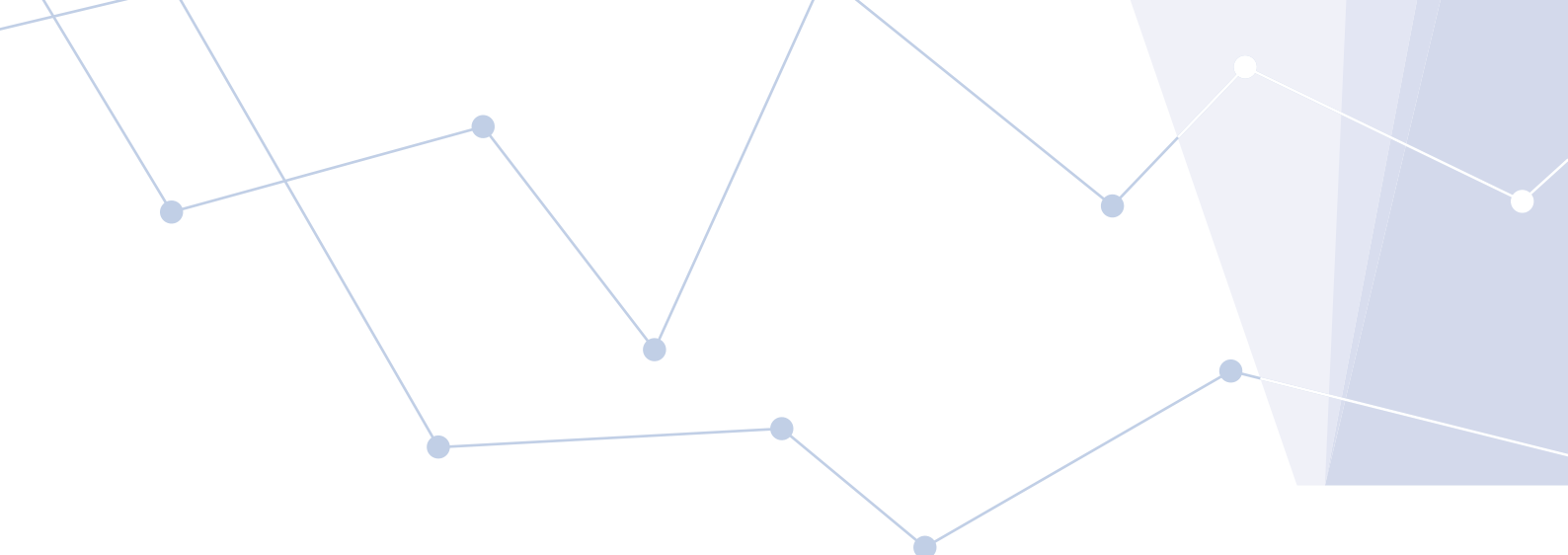
Rounding of figures

Totals, differences and averages are always calculated on the basis of exact numbers and are rounded only after calculation. Due to this rounding, some figures in tables may not exactly add up to the totals presented.

All standard errors in this publication have been rounded to one decimal place. Where the value 0.00 is shown, this does not imply that the standard error is zero, but that it is smaller than 0.005.

Further documentation

For further information on TALIS documentation, the instruments and methodology, see the *TALIS 2018 Technical Report* (OECD, 2019b) and the TALIS website (*www.oecd.org/edu/school/talis.htm*).

Overview of TALIS 2018

1.1　Introduction/Aims of the study

The OECD TALIS collects internationally comparable data on the learning environment and the working conditions of teachers and principals in schools across the world. It offers teachers and principals the opportunity to provide their perspectives on the state of education in their own countries, allowing for a global view of teachers, the education systems in which they work, and the successes and challenges faced by teachers and school leaders. The study's main objective is to "generate internationally comparable information relevant to developing and implementing policies focused on school leaders, teachers and teaching, with an emphasis on those aspects that affect student learning" (OECD, 2019a, p. 19). TALIS provides a voice to teachers and school leaders, and allows them the opportunity to reflect on and discuss their practice and find ways to enhance it. TALIS provides information required by policymakers to assist them to review and develop policies that promote the teaching profession and provide optimal conditions for effective teaching and learning.

1.2　Themes for TALIS 2018

TALIS is composed of two online surveys: one for school principals and another for teachers. As in previous cycles, the primary focus of TALIS remains on lower secondary education (Years 7 – 10 in the Australian school system, or ISCED level 2[1]). TALIS 2018 also gave countries the option of surveying teachers and principals in their primary (ISCED level 1) and upper secondary (ISCED level 3) schools, and participating in a TALIS-PISA link option, which involved conducting the TALIS survey in schools that participated in PISA 2015. As well as the main lower secondary survey, which is the focus of this volume, Australia participated in the primary school option and in the TALIS-PISA link, which will be reported separately in 2020.

Nine themes were selected for inclusion in the TALIS 2018 surveys:

▸ teachers' instructional practices;

▸ school leadership;

▸ teachers' professional practices;

▸ teacher education and initial preparation;

1　The International Standard Classification of Education (ISCED) identifies comparable levels of education across countries.

- teacher feedback and development;
- school climate;
- job satisfaction;
- teacher self-efficacy; and
- teacher human resource measures and stakeholder relations.

Two cross-cutting themes were added to this list:

- innovation; and
- equity and diversity.

All but the last of the primary themes is reported to some extent in this volume of the report, along with the two cross-cutting themes.

1.3   Participants in TALIS 2018

Countries

The first cycle of TALIS was conducted in 2008, with 24 countries participating. The second cycle was conducted in 2013 with 34 countries and economies participating. TALIS 2018 has expanded further, with 48 countries and economies involved. Australia has participated in all three cycles of the TALIS survey.

The main survey for TALIS was conducted in the following 31 OECD countries and economies and 17 OECD partner countries and economies (Table 1.1).

TABLE 1.1   TALIS 2018 participating countries and economies

OECD countries and economies			
Alberta (Canada)	Australia	Austria	Belgium
Belgium (Flemish Community)	Chile	Colombia	Czech Republic
Denmark	England (UK)	Estonia	Finland
France	Hungary	Iceland	Israel
Italy	Japan	Korea	Latvia
Lithuania	Mexico	Netherlands	New Zealand
Norway	Portugal	Slovak Republic	Slovenia
Spain	Sweden	Turkey	United States
OECD partner countries and economies			
Brazil	Bulgaria	Ciudad Autonoma de Buenos Aires (CABA Argentina)	
Croatia	Cyprus	Georgia	Kazakhstan
Malta	Romania	Russia	Saudi Arabia
Shanghai (China)	Singapore	South Africa	Chinese Taipei
United Arab Emirates	Viet Nam		

1.4   Overview of TALIS 2018 in Australia

As was the case for the two previous cycles of TALIS, the DoE commissioned the Australian Council for Educational Research (ACER) to oversee and conduct the implementation of TALIS 2018 in Australia. At an international level, TALIS was coordinated and managed by the International Association for the Evaluation of Educational Achievement (IEA), and the study's implementation was overseen by IEA Hamburg. The IEA Secretariat was responsible for overseeing the quality control of the data collection, and Statistics Canada was responsible for developing the sampling plan, drawing samples, calculating sampling weights and advising on the calculation of sampling errors.

Ultimately the OECD Secretariat has overall responsibility for managing TALIS and monitoring its implementation in participating countries.

In each country participating in TALIS, a representative sample of 4,000 teachers and their principals from 200 lower secondary schools was randomly selected for the study. For the purpose of TALIS, a teacher was defined as "one whose primary or major activity in the school is student instruction, involving the delivery of lessons to students" (OECD, 2014, p. 28), and who was not a teacher aide, a pedagogical support staff member or a health and social support staff member. Also excluded from the target population of teachers were substitute, emergency or occasional teachers, teachers teaching adults exclusively and teachers on long-term leave.

In Australia, a nationally representative random sample was drawn from a list of all Australian schools, stratified by jurisdiction, sector and geographic location. The sample is much larger than in previous cycles (2,000 lower secondary teachers and 149 principals participated in TALIS 2013) as the three larger states (New South Wales, Victoria and Queensland) chose to draw a larger than required sample in order to increase the reliability of the estimates in their own jurisdiction. In Australia, 3,573 lower secondary teachers and 230 principals completed the TALIS questionnaires.

Australian teachers and principals – and a discussion of response rates

School participation in TALIS is voluntary in Australia. The technical standards for TALIS set out by the OECD require countries to reach specified response rate targets. A minimum of 50 per cent of schools from the original sample of schools is required to participate for data to be included in the international database. Australia has met these targets in previous cycles, and again met the target for lower secondary teachers (50.3%) in this third cycle. However, due to a range of factors, Australia had difficulty in attaining the minimum response rate of originally sampled schools.

Following data cleaning and the formal OECD adjudication process, Australia fell just short of the target for lower secondary school principals (49.0%), primary school teachers (47.2%) and primary school principals (46.2%). After taking replacement schools into account, however, Australia did meet the targets for lower secondary schools and teachers, as shown in Table 1.2, but did not for primary school principals or teachers.

As a result, the Australian data for lower secondary teachers is reported in the international TALIS report and in the body of the OECD tables, but the data for lower secondary principals, and primary principals and teachers, is not reported in the body of the international report, and is annotated in the OECD TALIS tables as "participation rate is too low to ensure comparability".

TABLE 1.2 Australia's preliminary response rates mapped onto the adjudication rules for school and teacher data in TALIS 2018

School participation		Teacher participation after replacement or non-participating schools	Risk of teacher non-response bias	Rating	
Before replacement	After replacement				
≥ 75%	≥ 75%	≥ 75%		good	
		50% – 75%		fair	
		77% 78% ≥ 75%		fair	
50% 50% – 75%	77% ≥ 75%	50% – 75%	low	fair	ISCED 2
			high	poor	
50% – 75%	50% – 75%			poor	
< 50%	≥ 75%			poor	
46% < 50%	72% < 75%	insufficient			ISCED 1

Typically, when a school or teacher does not respond to a survey, its contribution to the survey is shifted to other similar schools and teachers in the sampling frame through the production of weights. This process assumes the schools and teachers not responding to the survey have the same response characteristics as the schools and teachers that do respond. When this assumption

is not true, a bias in the estimates is introduced. This bias could lead to incorrect conclusions about the schools and teachers in Australia. Therefore it was necessary for Australia to conduct a non-response bias analysis (NRBA). In the case of TALIS, non-response bias occurs when the response characteristics of schools and teachers that do not respond to a survey are different from the response characteristics of the schools and teachers that do respond.

The NRBA carried out for Australia used data collected through the TALIS surveys and sampling frame, and compared the characteristics of respondents with independently available population statistics. The analysis explored whether there were significant differences between the respondents of TALIS and a similar data source.

The analyses aimed to demonstrate that despite the response rate of originally sampled schools falling just below the threshold, the data collected showed no significant bias and could be taken as representative of Australian teachers.

When compared to official independent data on Australian schools, across most characteristics the distribution of participating schools was similar to national profiles. The NRBA concluded that despite the response rate of originally sampled schools falling just below the threshold, the data collected showed no significant bias and could be taken as representative of Australian schools at the national level.

For this National report, the Australian data have been placed in tables and figures as if all groups had met the OECD criteria, and while ACER's analysis has shown no significant bias exists, the results should be treated with some element of caution.

Profile of principals and teachers

Extensive data were collected from teachers and principals across all participating countries, allowing us to prepare a broad profile of some of the demographic characteristics of Australia's lower secondary teachers and make comparisons to teachers (Table 1.3) and principals (Table 1.4) in other countries.

TABLE 1.3   Profile of Australian teachers responding to TALIS 2018

Australian teacher profile	
Gender	62% of Australian lower secondary school teachers are female. This is significantly lower than the OECD average of 68%.
Age	The average age of the Australian teacher is 42.1 years. This is significantly lower than the OECD average of 44.1 years. Around 30% of Australian teachers are more than 50 years of age, which is lower than the OECD average.
Level of education	All Australian respondents hold a qualification at ISCED level 6 (undergraduate and postgraduate diploma or degree), or above. The TALIS average is 92.7%.

TABLE 1.4   Profile of Australian principals responding to TALIS 2018

Australian principal profile	
Gender	40% of Australian lower secondary school principals are female. The OECD average is 47%.
Age	In Australia, principals are, on average, 51 years old, similar to the average age of 52 across OECD countries and economies participating in TALIS. 19% of principals in Australia are aged 60 and above, which is the same as the OECD average of 20%.
Level of education	Australian principals are relatively highly qualified compared to the comparison countries, with all respondents having completed ISCED level 6 (undergraduate and postgraduate diploma or degree) or higher as their academic qualification.

1.5   Complementary data for Australia

Surveys such as TALIS are valuable as they collect internationally comparable data from teachers and principals that may help guide the work of policymakers. It is helpful to consider TALIS results in the context of complementary research results. Australia's participation in the OECD Programme

for International Student Assessment (PISA) and the IEA's Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS) all have extensive school and teacher questionnaires that provide a direct link between teacher and school factors and student achievement. A further source of information within Australia is the Staff in Australian Schools Survey (SiAS). SiAS, conducted in 2010 and again in 2013, gathered a wealth of information pertaining to teaching and learning from the same groups of people surveyed as part of TALIS.

1.6   Comparative groups

Throughout this report, comparisons will be made between Australia and the following:

▸ The OECD average (the average of participating countries who are members of the OECD)

▸ The TALIS average (the average of all participating countries and entities)

▸ A set of comparison countries and economies: Alberta (Canada), Estonia, Finland, Japan, and Singapore. These countries (reporting the sub-national entity of Alberta as a country for ease of reading) significantly outperformed Australia in PISA 2015 in all three domains: mathematical, reading and scientific literacy.

1.7   Interpreting the data

The TALIS data provide an important contribution to understanding the working conditions of teachers and the learning environment in schools. When interpreting the data presented in this report, however, care must be taken when making any comparisons between countries, or between groups of countries. Comparisons must be made with an understanding of the cultural, social or economic factors that underpin these responses in various countries.

In addition, it must also be borne in mind that TALIS data are based on self-reports by teachers and principals and therefore represent teachers' and principals' own sets of opinions, perspectives and beliefs on a given matter. As such, responses may be subjective and/or carry personal or cultural bias of some nature. In this way, these data differ from more objectively collected data, and therefore may differ from administrative data provided by national or state governments. In many respects, however, it is the very 'subjectiveness' of the TALIS responses that allow and provide powerful insights into the experiences and perspectives of teachers and principals in Australian schools.

As in the TALIS international reports, only differences that are statistically significant will be referred to in the text of the report. As TALIS is a sample study, the data are weighted and standard errors calculated in order to ascertain whether differences are indeed significant.

1.8   Report outline

The structure of this report mirrors that of the TALIS 2018 International Report, and is organised around four substantive chapters:

▸ Chapter 2 describes what teachers do in their classrooms and how teaching has changed over the past five to ten years. It also examines the extent to which teachers and principals engage in related activities to support student learning. This chapter also addresses two of the additional questions asked only in Australia:

   ▸ principals' reports of the extent to which a number of factors limit their effectiveness as a principal; and

   ▸ the extent to which principals believe they can undertake a number of important tasks related to school leadership.

Finally, the chapter describes the extent to which teachers and schools are able to innovate in their methods of teaching and working together.

- Chapter 3 describes how the teaching landscape has changed since 2008, both in regard to teachers' and principals' demographics and in terms of the contexts for teaching and learning. The chapter also sets the scene for the remainder of the report by identifying school resource issues that, according to teachers and principals, particularly require action. This chapter also provides the responses to the third question asked only of Australian teachers:
    - the extent to which their capacity to provide instruction is hindered by lack of a variety of resources.
- Chapter 4 presents how teachers were attracted to, and prepared for, the teaching profession, and in two questions only asked of Australian teachers and principals, explores the reasons that they would leave the profession. The chapter also explores the support provided to new teachers in their early career years.
- Chapter 5 examines participation in, and need for, training of teachers and principals. It reports teachers' views on the characteristics of effective professional development. It concludes by examining barriers to participation in training and the support received by teachers and principals to overcome them.

Teaching and learning for the future

This chapter describes what teachers do in their classrooms and how teaching has changed over the past five to ten years. It also examines the extent to which teachers and school leaders engage in related activities to support student learning. Finally, insights are provided into the extent to which teachers and schools are able to innovate in their methods of teaching and working together.

Key Findings

▸ Use of ICT in the classroom has increased over the past five years; Australian classrooms are the third largest users of ICT in TALIS.

▸ Australian teachers reported working more hours than the average across OECD countries (45 compared to 39 hours) and spent a lower proportion of that time teaching (44% compared to 53%). The number of hours of work has increased for Australian teachers over the last five years, and the additional hours seem largely to have been in face-to-face teaching.

▸ In Australia and on average across OECD countries, just 78 per cent of teachers' time in the classroom was spent on teaching and learning. This share of time is even lower in schools with a high concentration of students from socioeconomically disadvantaged homes, and in classrooms taught by novice and young teachers. However, classroom time spent on teaching and learning increased slightly for Australia as a whole over the past 10 years.

▸ On average in Australia and across the OECD, more than 80 per cent of teachers feel confident in their capacity to teach and manage their classroom, though over 30 per cent of teachers reported difficulties in motivating student learning, particularly when a student shows little interest in school work. Novice teachers in Australia (those with five years of experience or less) were less sure of their capacity to control disruptive behaviour in the classroom relative to the OECD average.

▸ Almost two-thirds of Australian principals cited high workload and level of responsibility in their job as issues that substantially limited their effectiveness. Principals of schools with a higher proportion of socioeconomically disadvantaged students were more likely to report a lack of principal support such as higher levels of teacher absenteeism, lack of support from parents or guardians, and lack of shared leadership within the school.

2.1   Introduction

There is a great deal of evidence pointing to teacher quality as one of the most important school factors in determining the success of an educational system (see, for example Hattie, 2009). There is a growing body of evidence that describes key elements of 'teacher quality', but further research is needed to fully establish the common characteristics, behaviours and practices of highly effective teachers. The OECD report *Teaching for the future: effective classroom practices to transform education* (OECD, 2018a, p. 54) argues that "an education system is effective when its teachers use teaching practices which improve student performance and develop the full potential of every student, regardless of socioeconomic background, native language or migrant status".

This chapter uses teachers' self-reports to find out what teachers do in their classrooms. TALIS asked teachers to identify a particular class chosen at random from their teaching schedule (referred to as the 'target class') and respond to a series of questions about this target class and how they teach the students in this class. TALIS also asked teachers for their opinion on how well they feel they are able to implement certain practices and achieve particular goals.

2.2   What teachers do in their classroom and how they feel about it

2.2.1   Effective teaching strategies

Certain instructional practices have been proven to be positively associated with students' learning outcomes. These effective practices can be grouped into four main strategies: classroom management, clarity of instruction, cognitive activation, and enhanced activities. TALIS asked teachers to indicate the frequency with which they use each of these strategies in teaching the target class from the options: *never or almost never*, *occasionally*, *frequently*, or *always*.

Classroom management

Skills in classroom management are an essential part of a teacher's toolkit. An orderly environment generally means a more effective use of time in a lesson. Results from large-scale studies such as PISA and TIMSS suggest that schools and classrooms with a good disciplinary climate and orderly classrooms are beneficial for students in general and particularly beneficial for vulnerable students. TALIS provides insights into what teachers do to maintain order in a classroom or re-establish order (Figure 2.1).

On average, 68 per cent of Australian teachers reported that they frequently or always told students to quieten down quickly at the beginning of a lesson, with fewer reporting the use of other classroom management techniques (58% to follow classroom rules, 60% tell students to listen to what I say, 60% to calm disruptive students).

The OECD suggests that if teachers do not have to use these classroom management practices as often, it may be because they do not need to. This may be because students take care to create a pleasant environment or because teachers have succeeded in establishing a classroom environment in which it is not necessary to keep repeating rules (OECD, 2019a, p. 55). It may be that by ensuring a calm environment at the beginning of the lesson, Australian teachers do not need to use other techniques as frequently.

Clarity of instruction

A slightly higher proportion of Australian teachers (93%) reported that they frequently or always explain to students what they expect them to learn, compared to the average across the OECD of 90 per cent.

More than two-thirds of Australian teachers frequently or always explained how new and old topics were related (83%); set goals at the beginning of instruction (82%); placed problems within the context of everyday life (73%); provided a summary of recently learned content (74%); and let students practice similar tasks until they all understand the subject matter (67%). These were not significantly different to the OECD average.

PISA data show that teacher-directed instruction that aims to provide a well-structured, clear and informative lesson on a topic is more frequently used than other types of instructional practices by mathematics and science teachers. It is hypothesised in the OECD TALIS International report that these strategies are a response to increasing demands on teachers to cover a longer curriculum or teach more diverse classrooms, as they are typically less time-consuming and easier to implement.

Cognitive activation

Cognitive activation practices are instructional activities that require students to evaluate, integrate and apply knowledge within the context of problem-solving. Such activities are usually associated with group work on complicated problems. The most common strategy reported by all teachers was to give tasks that require students to think critically. A higher proportion of Australian teachers reported frequently or always using this strategy (70%) compared with the OECD average (58%).

The least commonly used strategy was to present tasks to students for which there is no obvious solution. Australian teachers reported using this strategy *less* often than on average across the OECD (29% of Australian teachers and 34% of teachers across the OECD). Around half of the teachers in Australia, as well as those across TALIS countries, reported that they had students work in groups to solve problems, and around 44 per cent asked students to decide on their own procedures for solving problems.

Enhanced activities

TALIS also asked teachers about the frequency with which they use 'enhanced activities'. This includes letting students use ICT for project and classwork and giving students projects that take more than a week to complete. Australian teachers reported greater use of these two strategies than the OECD average. Just over three-quarters (78%) of Australian teachers reported frequently or always letting students use ICT for projects or classwork, compared to just 53 per cent on average across the OECD. Almost half of the Australian teachers (46%) reported frequently or always giving students projects to be completed over at least one week, compared to the OECD average of 29 per cent.

FIGURE 2.1   Teaching practices

Percentage of lower secondary teachers who frequently or always use the following teaching practices in their class (OECD average and Australia)
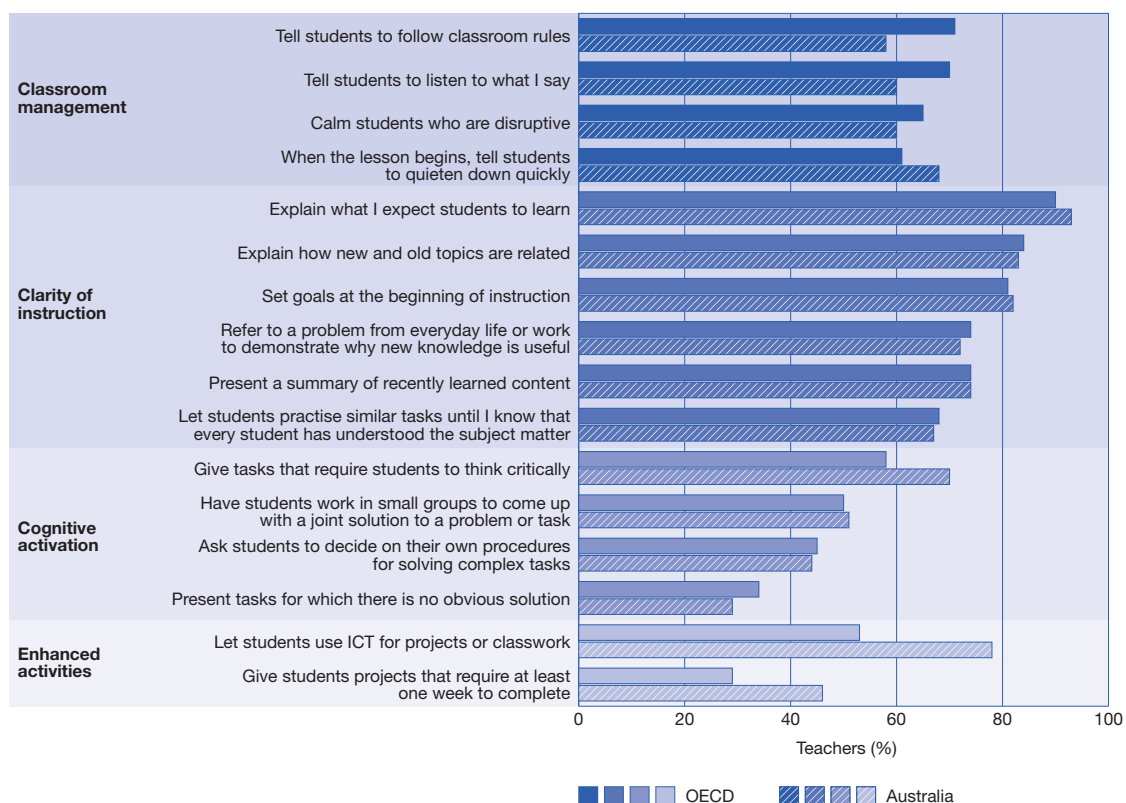
Change in clarity of instruction over time

Of the 16 teaching practices that were reported in TALIS 2018, several were also included in the teacher questionnaire for 2013. Results for the three questions pertaining to clarity of instruction (presenting a summary of recently learned content; referring to a problem from everyday life or work to demonstrate why new knowledge is useful; and letting students practice similar tasks until the teacher knows that every student has understood the subject matter) were compared between the two surveys (Figure 2.2). For both Australia and the high-performing PISA countries, there was no significant reported change in the frequency with which these strategies are used by teachers.

FIGURE 2.2 Change in the use of teaching practices pertaining to clarity of instruction from 2013 to 2018
Percentage of lower secondary teachers who frequently *or* always *report using teaching practices pertaining to clarity of instruction*
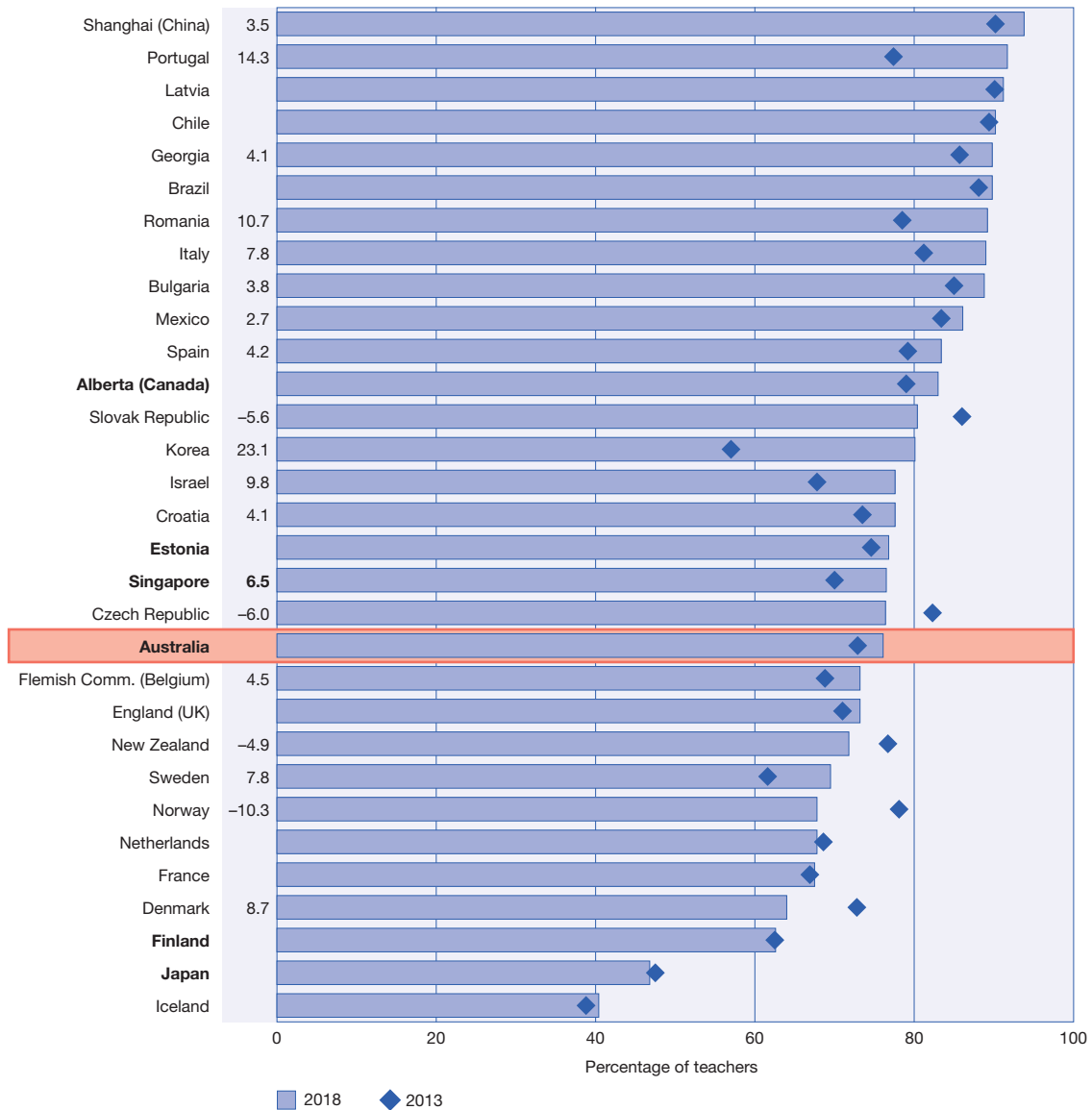
Notes: Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant changes in the use of practices pertaining to claritiy of instruction between 2013 and 2018 (TALIS 2018-2013) are shown next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

Change in the use of ICT

In 28 of the 31 countries with comparable data, frequent use of ICT in the classroom increased in the five years to 2018, by an average of 16 percentage points (Figure 2.3). The percentage of teachers who frequently or always allow students to use ICT for projects or classwork increased in all of the high-performing PISA countries: Finland, up 32 percentage points from 18 to 50 per cent; Alberta (Canada), up 16 percentage points from 50 to 66 per cent; Estonia, up 16 percentage points from 29 to 45 per cent; Singapore, up 13 percentage points from 30 to 43 per cent; and Japan, up eight percentage points from 10 to 18 per cent. In Australia, starting from a higher basepoint than the high-performing PISA countries, the proportion increased by 11 percentage points, from 67 per cent of 2013 teachers to 78 per cent of 2018 teachers.

FIGURE 2.3   Change in teachers' encouragement of students using ICT for projects or classwork from 2013 to 2018
Percentage of teachers who frequently *or* always *let students use ICT for projects or classwork*

Country	Change
Israel	33.0
Finland	32.5
Romania	30.2
Sweden	29.6
New Zealand	24.5
Croatia	22.7
Portugal	22.5
Iceland	22.3
Russia	21.3
Netherlands	16.6
Denmark	16.6
Alberta (Canada)	16.4
Estonia	16.4
Italy	15.7
Spain	14.4
Singapore	12.9
Mexico	12.5
France	11.9
Australia	11.4
Brazil	11.3
Flemish Comm. (Belgium)	10.9
Bulgaria	10.5
Shanghai (China)	9.1
Japan	7.9
Cyprus	7.8
Latvia	7.8
Georgia	5.8
England (UK)	4.1
Chile	
Czech Republic	
Korea	
Slovak Republic	

Percentage of teachers

■ 2018   ◆ 2013

Notes: *Countries and economies are ranked in descending order of the change in percentage of teachers letting students use ICT for projects and classwork. Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant change in the use of practices pertaining to claritiy of instruction between 2013 and 2018 (TALIS 2018-2013) are found next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.*

2.2.2　Teachers' assessment practices

Teachers need to be able to provide effective feedback to the students about their learning progress. This feedback can take the form of formative assessment, which consists of providing feedback and information during the teaching process while learning is taking place, and summative feedback, which is provided after the teaching process has concluded and provides information and feedback about learning outcomes. TALIS asked teachers about the frequency with which they use a set of four practices to assess student learning with their target class (Figure 2.4).

The most significant difference between Australia and the average across OECD countries in this set of questions was in the proportion of teachers who responded that they frequently or always provided written feedback to students in addition to a mark. Of Australian teachers, 83 per cent reported frequently or always providing this type of feedback, compared to 58 per cent on average for the OECD countries.

The majority of teachers in TALIS reported frequently or always observing students and providing immediate feedback, but this proportion was also much higher for Australian teachers (89% compared to the OECD average of 79%). The majority of teachers also reported administering their own assessment (74% for Australian teachers compared with the OECD average of 77%) – while fewer than half (44% of Australian teachers compared to the OECD average of 41%) let students evaluate their own progress.

FIGURE 2.4　Teachers' assessment practices, OECD and Australia

Percentage of lower secondary teachers who frequently *or* always *use these assessment methods in their class*
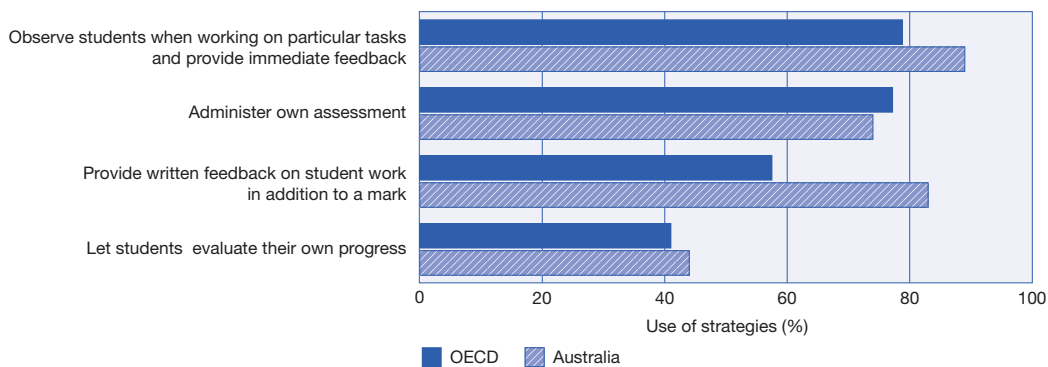
Change in assessment practices

In Australia, the proportion of teachers reporting that they frequently or always provided written feedback to students in addition to a mark increased from 75 per cent in 2013 to 83 per cent in 2018 (Figure 2.5). Similar improvements were also observed in most of the high-performing PISA countries. Singapore increased by four percentage points from 73 per cent to 77 per cent, Alberta (Canada) increased by eight percentage points from 68 per cent to 76 per cent and from a much lower base Estonia increased by seven percentage points from 34 per cent to 42 per cent; Finland by 13 percentage points from 25 per cent to 38 per cent and Japan by three percentage points from 23 per cent to 26 per cent.

The other assessment practice that can be examined over time is that of observing students and providing immediate feedback. A very high proportion (89%) of Australian teachers reported frequently or always providing immediate feedback in 2018, which remained relatively unchanged since 2013. Similarly, this practice did not become more commonly used in Singapore or Alberta (Canada), nor in Japan (where only 41% of teachers reported its frequent use). In Estonia, use of this method actually declined from 84 per cent to 77 per cent of teachers, while in Finland there was a small increase in the use of this method (76% to 79% of teachers).

FIGURE 2.5 Change in teachers' assessment practices from 2013 to 2018

Change in percentage of lower secondary teachers who reported frequently *or* always *using these methods of assessing student learning in their class*

	Provide written feedback (%)		Observe students (%)
7.8	**Australia**		
12.1	Spain		
	England (UK)		
6.8	Norway		
7.3	Mexico		
3.0	France		
4.1	**Singapore**		
7.8	**Alberta (Canada)**		
11.4	Brazil		
	Shanghai (China)		
3.7	New Zealand		
9.6	Flemish Comm. (Belgium)		
−6.7	Portugal		
3.9	Israel		
	Croatia		
	Chile		
10.7	Iceland		
7.4	Bulgaria		
	Denmark		
	Sweden		
	Georgia		
	Italy		
6.0	Netherlands		
7.7	**Estonia**		
13.0	**Finland**		
3.9	Romania		
11.1	Korea		
	Czech Republic		
	Slovak Republic		
3.4	**Japan**		
	Latvia		

■ Provide written feedback on student work in addition to a mark (2018)

◆ Provide written feedback on student work in addition to a mark (2013)

■ Observe students when working on particular tasks and provide immediate feedback (2018)

◆ Observe students when working on particular tasks and provide immediate feedback (2013)

Notes: Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant change between 2013 and 2018 (TALIS 2018-2013) are found next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

2.2.3   Teachers' use of classroom time

Across the world, students in compulsory secondary education spend a substantial period of time in the classroom each year – 913 hours on average across OECD countries and 1,000 hours on average in Australia[2]. How much teaching and learning takes place in those classrooms is dependent on many factors such as how much order there is in the classroom, what administrative tasks the teacher needs to complete, as well as the experience and expertise of the teacher. TALIS asked teachers to report on the proportion of time they spend during a lesson with the target class on three types of activities: actual teaching and learning; administrative tasks (recording attendance, handing out school information or forms); and keeping order in the classroom.

Australian teachers reported spending 78 per cent of classroom time on actual teaching and learning (Figure 2.6), in line with the average across the OECD. Teachers in Estonia spend substantially more of their classroom time on teaching and learning (86%) than Australian teachers, while for those in Alberta (Canada) and Finland the proportion of time was larger than in Australia, but only by a few percentage points. Japanese teachers responded similarly to Australian teachers, however those in Singapore reported spending only 74 per cent of their time actually teaching and learning.

The time spent on actual teaching and learning in the classroom is positively related to teacher age and experience (Figure 2.6). In most participating countries and economies, teachers with more than five years teaching experience spend more time on actual teaching and learning than those teachers with five years teaching experience or less. This is the case in Australia and in all of the high-performing PISA countries.

Importantly, in terms of equity, Australian teachers in schools with a higher proportion of disadvantaged students spent less time teaching and learning than their colleagues in more advantaged schools. The difference in Australia (of 9.8 percentage points) is the highest in the OECD, and equates to about 6 minutes per hour. Over 1,000 hours of face-to-face time at school, this is substantial. Of the high-performing PISA countries, only in Alberta (Canada) was there a similar difference (of 7.2 percentage points).

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2   Data accessed 12 July 2019 from https://stats.oecd.org/Index.aspx?DataSetCode=EAG_IT_ALL (OECD, 2019c).

FIGURE 2.6 Time spent on actual teaching and learning, by teacher and school characteristics
Results based on responses of lower secondary teachers and principals

	Difference by teacher and school characteristics			Average proportion of time teachers spend on actual teaching and learning in a typical classroom
	High - low concentration of disadvantaged students	Age 50 and above -under age 30	Experienced - novice teacher	
Russia		+	+	
Estonia		+	+	
Viet Nam	-			
Shanghai (China)		+	+	
Lithuania		+	+	
Georgia		+	+	
Latvia		+	+	
Bulgaria	-	+	+	
Czech Republic		+	+	
Croatia		+	+	
Norway		+	+	
Sweden		+	+	
Denmark	-	+	+	
Romania		+	+	
Alberta (Canada)	-	+	+	
Slovenia		+	+	
Hungary	-	+	+	
Slovak Republic		+	+	
England (United Kingdom)	-	+	+	
Finland		+	+	
Kazakhstan		+	+	
United States	-		+	
Japan		+	+	
OECD average-31	-	+	+	
Italy		+	+	
Australia	-	+	+	
New Zealand	-	+	+	
CABA (Argentina)		+	+	
Austria	-	+	+	
Korea		+	+	
Mexico		+	+	
United Arab Emirates		+	+	
Spain		+	+	
Colombia		+	+	
Malta		+	+	
Israel		+	+	
France	-	+	+	
Iceland		+	+	
Flemish Comm. (Belgium)	-	+	+	
Singapore		+	+	
Portugal		+		
Turkey	-		+	
Belgium	-	+	+	
Netherlands		+	+	
Chile		+	+	
Brazil			+	
South Africa	-			
Saudi Arabia	-			

+ Postive difference
- Negative difference
☐ Difference is not significant
▨ Missing values

Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

For the countries that participated in both TALIS 2008 and 2018, it is possible to examine the change in time spent teaching (Figure 2.7). A significant increase was reported in Australia, which is at least partly the result of less time reported spent on classroom management tasks. Estonia is the only comparison country to have participated in TALIS 2008, and while there was a decrease in the amount of time spent on classroom management, this did not translate to an increase in actual teaching and learning time.

FIGURE 2.7 Change in the use of class time from 2008 to 2018
Percentage of time spent on various activities in a typical lesson as reported by lower secondary teachers

	Actual teaching and learning	Classroom management
Estonia		–1.3
Bulgaria	–3.1	2.2
Norway	1.3	–1.2
Denmark		–2.0
Slovenia	–2.2	1.5
Hungary	–4.1	
Slovak Republic	–2.9	1.8
Italy	1.0	–0.9
Australia	1.4	–1.3
Austria	–2.4	
Korea	–1.6	
Mexico	5.6	–0.8
Malta	–1.9	1.6
Spain	–1.6	
Iceland		
Flemish Comm. (Belgium)	–3.3	1.8
Portugal	–2.1	1.1
Turkey	–5.7	4.2
Brazil	–1.9	

Actual teaching and learning (%) — Classroom management (%)

- Actual teaching and learning (2018)
- Actual teaching and learning (2008)
- Classroom management (2018)
- Classroom management (2008)

Notes: The sum of time spent in an average lesson may not add up to 100% for each TALIS cycle because some answers that did not add up to 100% were accepted. Only countries and economies with available data for 2008 and 2018 are shown. Statistically significant change between 2008 and 2018 (TALIS 2018-2013) are found next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 2.1 Teachers' time and teaching practices – comparing primary and lower secondary schools

Teachers' time use during a typical lesson

Australian primary school teachers reported spending a similar proportion of classroom time as lower secondary school teachers on actual teaching and learning. The average primary teacher reported spending just over three-quarters of class time on this activity, and a similar 15 per cent of their time on keeping order in the classroom (Appendix Table A2.1)

Teaching practices

There was variability between the proportions of primary and secondary teachers using the listed classroom management techniques. Lower secondary teachers were less likely than primary teachers to have to remind students to follow class rules or to have to calm disruptive students (Appendix Table A2.2).

There were a number of significant but small differences between primary and lower secondary teachers in the area of clarity of instruction. Most teachers reported that they provided an explanation to students of what they expected them to learn; this was the most common practice for both groups of teachers. The item for which there was the greatest difference was to let students practise similar tasks until the teacher knows that every student has understood the subject matter, a strategy which a larger proportion of primary teachers reported frequently or always using.

In terms of cognitive activation strategies, some appear to be largely favoured by primary school teachers. For example, primary school teachers more frequently report that they have students work in small groups to come up with a joint solution to a problem or task, and ask students to decide on their own procedures for solving complex tasks. Secondary teachers, on the other hand, were more likely than primary teachers to give tasks that required students to think critically. A slightly higher proportion of primary teachers than secondary teachers reported that they presented tasks for which there was no obvious solution – however this was the least utilised strategy for both groups, with one-third or fewer teachers reporting frequent use.

Not surprisingly, use of ICT for projects and giving students projects that required at least a week to complete were strategies more often used by lower secondary teachers than primary teachers.

2.2.4 Teacher self-efficacy

Self-efficacy is a person's belief in their ability to effectively perform the tasks that are needed to achieve a goal. TALIS examines three aspects of teacher self-efficacy: classroom management, instruction, and student engagement. The TALIS survey asked teachers to what extent they felt they could perform a series of goal-oriented actions, asking them to choose from the options *not at all*, *to some extent*, *quite a bit*, or *a lot*.

Classroom management

Teacher self-efficacy in classroom management reflects teachers' beliefs about their ability to establish an orderly learning environment and effectively manage disruptive student behaviour.

Around 90 per cent of teachers, in Australia and across the OECD, reported high levels of self-efficacy in terms of making their expectations about behaviour clear and getting students to follow rules (Figure 2.8). More than 80 per cent of Australian teachers reported high self-efficacy in controlling disruptive behaviour in the classroom or calming a student who was disruptive or noisy. This was lower than the average across the OECD. In addition, the proportion of Australian teachers reporting

high self-efficacy in controlling disruptive behaviour in the classroom had declined by more than four percentage points since TALIS 2013.

As would be expected, fewer novice teachers (those with five years of experience or less) in Australia and across the OECD on average reported feeling high levels of self-efficacy in classroom management than more experienced teachers. In particular, novice Australian teachers (74%) and novice teachers across the OECD (78%) reported lower levels of confidence in their ability to control disruptive behaviour, compared to 85 and 87 per cent respectively for more experienced teachers.

Similarly, fewer Australian novice teachers (74%) reported being confident of their capacity to calm a student who was disruptive or noisy, compared to more experienced teachers (84%).

It is not surprising that novice teachers report lower levels of self-efficacy in managing disruptive behaviour. Learning to deal with disruptive behaviour comes from being exposed to students in classrooms, and novice teachers have had limited exposure and thus limited opportunities to build that skill set.

Instruction

Teacher self-efficacy in terms of instruction refers to teachers' beliefs about whether they feel confident in using or providing a wide range of teaching practices, assessment strategies, and explanations. Students do not all learn in the same way, and teachers learn to explain things in different ways to assist student learning. On average across the OECD, 92 per cent of teachers believed that they would be able to provide an alternative explanation if students were still confused, compared to 96 per cent of Australian teachers.

A slightly higher proportion of Australian teachers (88%) reported being confident of their skills in varying instructional strategies, compared to the OECD average (85%). Australian teachers also reported being confident in using a variety of assessment strategies to a greater extent than the average teacher across the OECD (85% compared to 80%), but less confident in their ability to craft good questions for their students (86% compared to 88% across the OECD).

There is significant variability in the self-efficacy of novice and more experienced teachers in instructional practices. Overall, more experienced teachers reported higher levels of self-efficacy than novice teachers, other than for varying instructional strategies, in which novice teachers were just as confident as more experienced teachers.

Student engagement

Teacher self-efficacy in student engagement investigates teachers' beliefs about the emotional and cognitive support they feel they can provide to their students, and about their perceived ability to motivate their students. In Australia and across the OECD, teachers felt least confident in motivating students who show little interest in schoolwork, with 68 per cent of teachers reporting feeling confident of their abilities in this area. More than 80 per cent of teachers in Australia and across the OECD reported feeling capable of motivating students to think critically, value learning and believe they could do well in school.

The gaps between Australian novice and more experienced teachers were higher on each of the self-efficacy measures for assisting student motivation than was the case for the average across OECD countries. In Australia, 59 per cent of novice teachers in Australia felt confident in motivating students with low levels of interest, compared to 71 per cent of more experienced teachers. There was also a substantial difference (of 11 percentage points) between the proportion of novice and experienced Australian teachers who felt confident in helping students value learning. Just over three-quarters of the novice teachers were confident that they could do this.

Supporting learning with digital technology

The one area in which novice teachers reported higher levels of self-efficacy than more experienced teachers was in the area of supporting student learning through the use of digital technology. This was the case in Australia and across the OECD on average. Overall, Australian teachers reported higher levels of self-efficacy in this area than the OECD average (78% compared to 67%).

FIGURE 2.8 Teachers' self-efficacy

Percentage of lower secondary teachers who feel they can do the following quite a bit *or* a lot
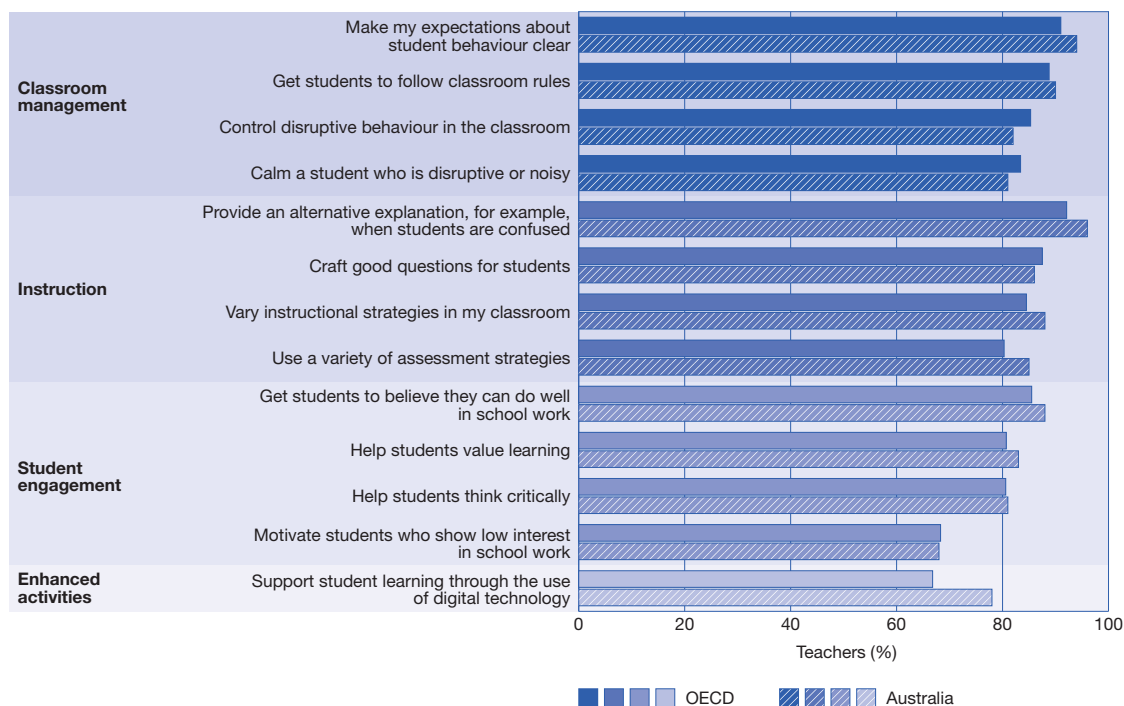
On average, teachers report high levels of self-efficacy in the different domains of teaching, but novice teachers were less likely to feel confident in their teaching skills than their more experienced colleagues. The most pronounced differences between novice and experienced teachers was in the area of classroom management, and in particular their capacity to control disruptive behaviour in the classroom (Figure 2.9).

On average across the OECD, 78 per cent of novice teachers felt that they could control disruptive behaviour in their classroom, while 87 per cent of experienced teachers reported that they could do so. Experienced teachers in Alberta (Canada) and Australia were very confident of their capacity in this area, but novice teachers were less confident, with around 10 percentage points fewer in Australia and five percentage points fewer in Alberta (Canada) agreeing that they felt they could control disruptive behaviour. In Finland, both experienced and novice teachers reported lower levels of self-efficacy than the OECD average and there was around a 10 percentage point difference between experienced and novice teachers. In Estonia and Singapore, both experienced and novice teachers were less confident than across the OECD on average, and while there was no difference in the level of confidence between novice and experienced teachers in Estonia, the difference was around seven percentage points in Singapore. Japanese teachers reported the lowest level of confidence of all TALIS countries in dealing with disruptive behaviour, with just 65 per cent of experienced teachers and 42 per cent of novice teachers expressing confidence in managing these behaviours.

FIGURE 2.9 Calming a disruptive student, by teachers' teaching experience

Percentage of lower secondary teachers who feel quite a bit *or* a lot *that they can calm a student who is disruptive or noisy*
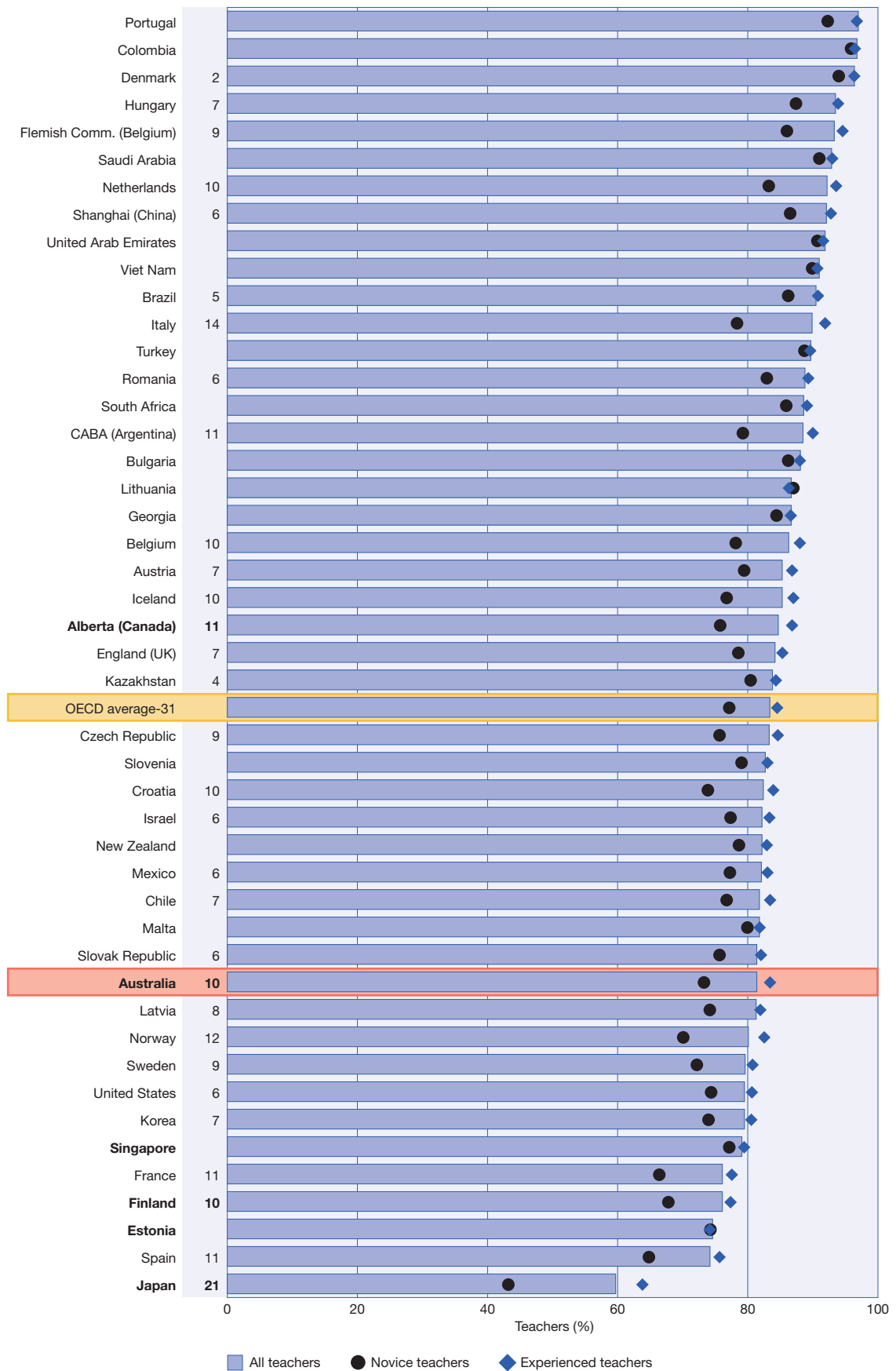
Notes: Statistically significant differences between experienced teachers (with more than 5 years of experience) and novice teachers (with fewer than or equal to 5 years of experience) are shown next to the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

2.2.5 Relationship between teaching, classroom and teacher characteristics

Teachers tend to adapt their teaching to the students they teach. This section investigates how teachers modify their teaching strategies depending on the characteristics of the class they teach. Classroom size and composition were analysed in relation to three indicators of quality teaching processes using linear regression: 1) the frequency with which teachers report using cognitive activation strategies; 2) the total class time teachers spend on instruction; and 3) teachers' reported level of self-efficacy.[3]

The analyses found that, all other things equal, teachers (in Australia and on average across OECD countries) with larger classes tended to spend less time on average on actual teaching and learning (Figure 2.10). In part, this result is likely to be due to the greater time required to complete simple administrative tasks for a larger class, but it could also be due to more time being required to keep order in the classroom. This relationship was strong and significant in schools in Australia, also across the OECD on average, and in Alberta (Canada), Finland, Singapore, Estonia, and Singapore. Of the high-performing PISA countries, only in Japan was there no significant effect.

Teachers' teaching practices also differ depending on the composition of the classroom they teach, although this varies widely across countries. In Australia however, teachers were more likely to report use of cognitive activation practices, higher self-efficacy and more time spent on actual teaching in classrooms where the share of academically gifted students was larger and/or the proportion of low achievers was smaller.

There were also a number of teachers' personal characteristics included in the regression analyses. In general, these analyses found that past teaching experience was the characteristic that was most important when it comes to teaching strategies. After controlling for classroom composition, more experienced teachers tend to report higher levels of self-efficacy and also more time spent on teaching. In many countries, female teachers reported significantly higher levels of self-efficacy than male teachers. While this was the case for Australia, Estonia, and Finland, there were no significant gender differences in Alberta (Canada). In Japan, male teachers reported significantly higher levels of self-efficacy.

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3   Not all of these analyses will be reported in depth in this Australian report, but interested readers are encouraged to refer to the international TALIS report for further details.

FIGURE 2.10 Relationship between class time spent on actual teaching and learning and class size

Change in the average proportion of time spent on teaching and learning associated with the number of students in the target class
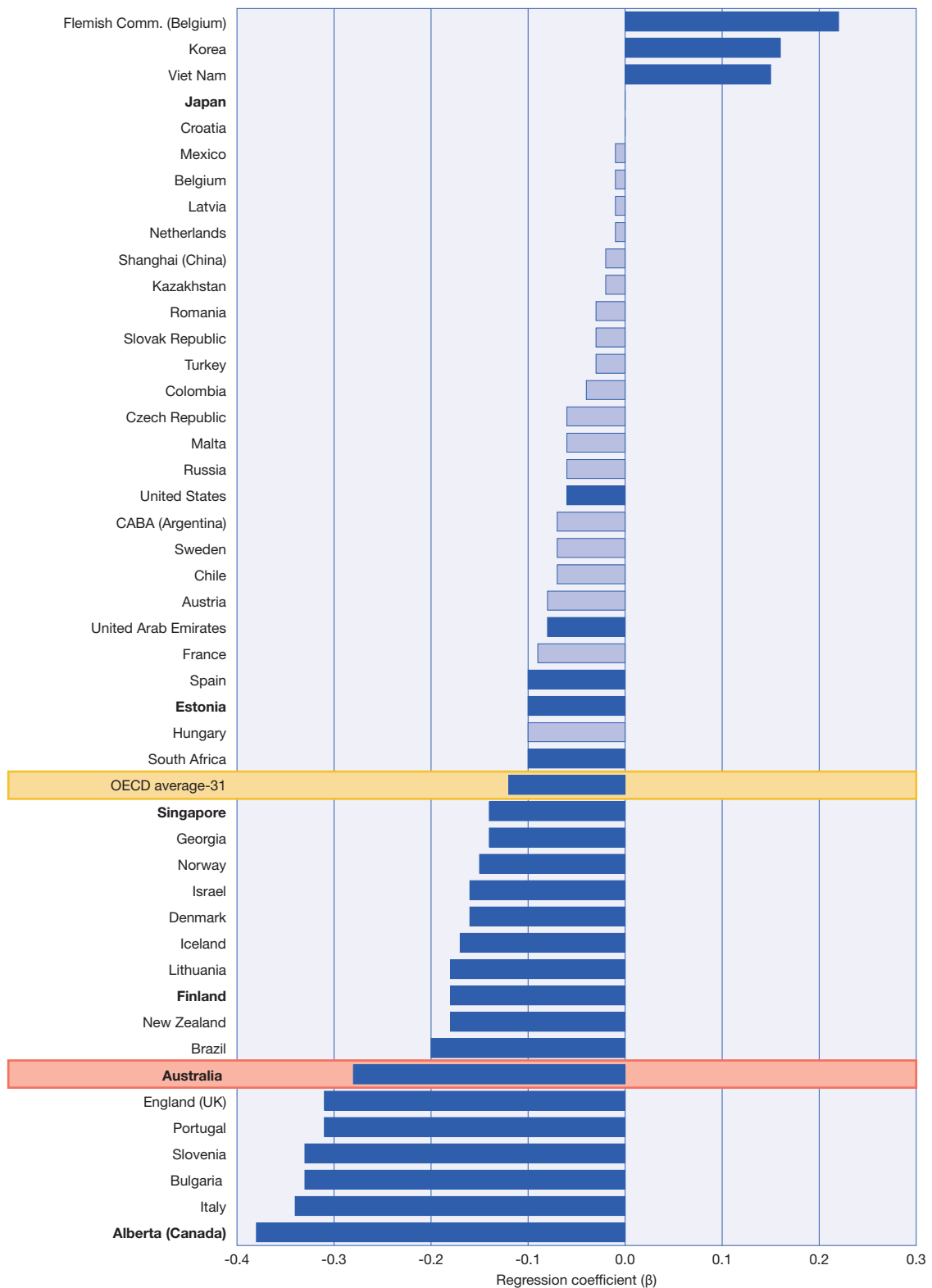
Notes: Statistically significant coefficients are marked in a darker tone. Countries and economies are ranked in descending order of the change in the average proportion of time spent on teaching and learning associated with the number of students in the target class. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

2.3　What teachers and school leaders do outside the classroom to get ready for teaching

The work of teachers and school leaders includes many tasks other than presenting lessons to students. The quality of teachers' teaching in their classroom is to a large extent dependent on the quality of the planning and preparation of their lessons, and on the measures taken by school leaders to support teaching and learning in their schools.

2.3.1　Planning, preparing and marking

TALIS asked teachers how many hours they spent working in total and on various tasks during the most recent calendar week prior to the survey, including tasks that took place during weekends, evenings or other out of class hours (Table 2.1). On average, teachers across the OECD spent 38.8 hours on all aspects of their job in the week preceding the TALIS survey, of which 20.6 hours, or 53 per cent of their time, was spent teaching. Australian teachers worked a higher number of hours, averaging 44.8 hours in the previous week, of which a lower proportion of time, 19.9 hours or 44 per cent of their time, was spent teaching.

For the teachers in high-performing PISA countries the amount of time worked varied from 33.3 hours in Finland, of which 62 per cent was spent teaching, to 56 hours in Japan, of which 32 per cent was spent teaching. For Japanese teachers a much larger amount of time was spent doing general administrative work than was spent by teachers in other countries, and also participating in extracurricular activities (13% of their working time on average compared to the OECD average of 4%), much of which is spent in teaching extra lessons in 'school clubs'.

Planning and preparation is an important part of enabling teachers to provide quality instruction to their students. The OECD refers to work conducted by Hargreaves (1992), which emphasises the need for good quality lesson preparation, and found a positive benefit to teachers' work in general and to the quality of their instruction in particular. The OECD argue that preparation time "can be seen as a way of providing teachers with working conditions designed to help them catch up with the diverse and changing requirements of their jobs … [and] is a promising lever to help teachers cope more effectively with these changes" (OECD, 2019a, p. 71).

The next two most time-consuming activities in teachers' work are planning and lesson preparation, and marking and correcting student work. In Australia, teachers spend about 16 per cent of their time at work on planning and lesson preparation, and about 11 per cent of their time on marking and correcting student work. This is around the same as the average across the OECD. The proportion of time spent planning and preparing lessons is remarkably similar across the high-performing PISA countries, ranging from 15 per cent of time in Japan and Finland to 17 per cent of time in Estonia. The proportion of time teachers spend marking student work varies more, from eight per cent of their time in Japan to 16 per cent of their time in Singapore.

TABLE 2.1 Teachers' working hours

	Total working hours		Teaching		Individual planning or preparation of lessons either at school or out of school		Team work and dialogue with colleagues within the school		Marking/ correcting student work		Counselling students[3]		Participation in school management		General administrative work[4]		Professional development activities		Communication and co-operation with parents or guardians		Engaging in extracurricular activities		Other work tasks	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Australia	**44.8**	**(0.3)**	**19.9**	**(0.2)**	**7.3**	**(0.1)**	**3.7**	**(0.1)**	**4.9**	**(0.1)**	**2.5**	**(0.1)**	**2.4**	**(0.1)**	**4.1**	**(0.1)**	**1.7**	**(0.1)**	**1.3**	**(0.1)**	**1.8**	**(0.1)**	**2.6**	**(0.1)**
OECD average-31	38.8	(0.1)	20.6	(0.0)	6.5	(0.0)	2.7	(0.0)	4.2	(0.0)	2.2	(0.0)	1.4	(0.0)	2.7	(0.0)	1.7	(0.0)	1.4	(0.0)	1.7	(0.0)	2.0	(0.0)
TALIS average-48	38.3	(0.1)	20.3	(0.0)	6.8	(0.0)	2.8	(0.0)	4.5	(0.0)	2.4	(0.0)	1.6	(0.0)	2.7	(0.0)	2.0	(0.0)	1.6	(0.0)	1.9	(0.0)	2.1	(0.0)
High-performing PISA countries																								
Alberta (Canada)	47.0	(0.6)	27.2	(0.5)	7.3	(0.3)	2.6	(0.1)	5.0	(0.2)	2.3	(0.1)	1.8	(0.2)	2.4	(0.1)	1.5	(0.1)	1.4	(0.1)	2.7	(0.2)	0.7	(0.1)
Estonia	35.7	(0.3)	20.9	(0.3)	6.0	(0.1)	1.8	(0.0)	3.5	(0.1)	1.9	(0.0)	0.6	(0.1)	1.8	(0.0)	1.8	(0.0)	1.1	(0.0)	1.6	(0.1)	1.4	(0.1)
Finland	33.3	(0.3)	20.7	(0.2)	4.9	(0.1)	2.1	(0.0)	2.9	(0.1)	1.0	(0.1)	0.3	(0.0)	1.1	(0.0)	0.8	(0.0)	1.2	(0.0)	0.4	(0.0)	0.9	(0.1)
Japan	56.0	(0.4)	18.0	(0.2)	8.5	(0.2)	3.6	(0.1)	4.4	(0.1)	2.3	(0.1)	2.9	(0.1)	5.6	(0.2)	0.6	(0.0)	1.2	(0.0)	7.5	(0.2)	2.8	(0.1)
Singapore	45.7	(0.3)	17.9	(0.2)	7.2	(0.1)	3.1	(0.1)	7.5	(0.1)	2.4	(0.1)	1.4	(0.0)	3.8	(0.1)	1.8	(0.0)	1.3	(0.0)	2.7	(0.1)	8.2	(0.1)

Average number of hours (i.e. 60 minutes) teachers report having spent on the following activities during the most recent complete calendar week [1,2]

1. A "complete" calendar week is one that was not shortened by breaks, public holidays, sick leave, etc. It also includes tasks that took place during weekends, evenings or other out-of-class hours.
2. The sum of hours spent on different tasks may not be equal to the number of total working hours, because teachers were asked about these elements separately. It is also important to note that data presented in this table represent the averages from all the teachers surveyed, including part-time teachers.
3. Including student supervision, mentoring, virtual counselling, career guidance and behaviour guidance.
4. Including communication, paperwork and other clerical duties.

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Australian teachers reported an increase in the amount of time they spend working of about 2.1 hours a week over the last five years, of which 1.3 hours was teaching time. There were no significant changes in the amount of time spent in planning or on general administrative work (Figure 2.11). The only increase in time spent teaching among the high-performing PISA countries was in Singapore, in which the number of hours spent teaching per week increased by 0.8 of an hour, and at the same time the amount of time both for planning and administrative tasks fell by 1.1 hours and 1.4 hours respectively. In Estonia, the number of hours spent teaching remained the same but the number of hours spent in preparation and in administrative tasks declined.

FIGURE 2.11   Change in teachers' working hours from 2013 to 2018
Average number of working hours (i.e. 60-minute) that lower secondary teachers spent on teaching and individual planning or preparation of lessons

	Teaching change	Country	Planning change	
	1.7	Chile	0.6	
		Alberta (Canada)		
		Mexico		
	−3.2	Brazil	−1.1	
	8.0	**Shanghai (China)**	0.4	
	3.1	Israel		
	1.8	Latvia		
		Estonia	**−1.0**	
		Finland		
		England (UK)	−0.4	
		Slovak Republic	−0.7	
	−0.7	Portugal	−1.7	
	1.3	**Australia**		
	1.4	Bulgaria	−0.5	
	1.6	New Zealand	−0.5	
	0.8	Iceland		
		Croatia	−1.5	
	1.0	Spain	−0.4	
	0.5	Denmark	−0.9	
	1.3	Czech Republic	−0.9	
	1.0	Sweden		
	−0.7	Flemish Comm. (Belgium)		
	−0.3	France	−0.6	
	2.3	Georgia	−2.4	
	−0.7	Korea	0.0	
		Japan		
	0.8	**Singapore**	**−1.1**	
		Netherlands		
	0.8	Romania	−1.6	
	−0.6	Italy		
	0.8	Norway		

Hours

Teaching (2018)
Teaching (2013)

Individual planning or preparation of lessons (2018)
Individual planning or preparation of lessons (2013)

Notes: Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant changes between 2013 and 2018 (TALIS 2018-2013) are shown next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

2.3.2 Time spent by school leaders on curriculum and teaching-related tasks

TALIS also investigated how school leaders supported their teaching staff by asking them about the proportion of time allocated to various activities throughout the year in their role as principal (Table 2.2). The majority of principals' time in most countries was spent on administrative tasks and meetings. In Australia, these tasks engaged principals for a little more than one-third (34%) of their time, higher than the average over the OECD of 30 per cent. This was similar for principals in Alberta (Canada) and Finland, but much higher than principals in Estonia and Japan (33% of principals' time), and even more so in Singapore, where principals reported spending just 21 per cent of their time on administrative tasks and meetings.

Principals in Singapore, instead, spend a relatively large proportion of their time on leadership tasks and meetings (31%). Australian principals spent on average 25 per cent of their time on these activities; the average over the OECD was a little less at 21 per cent. Japanese principals spent significantly more time on interactions with local businesses, community and industry than principals in the other high-performing PISA countries.

TABLE 2.2   Principals' working time

| | Average proportion of time principals report spending on the following tasks | | | | | | | | | | | | | |
| | Administrative tasks and meetings | | Leadership tasks and meetings | | Curriculum and teaching-related tasks and meetings | | Student interactions | | Parent or guardian interactions | | Interactions with local and regional community, business and industry | | Other | |
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Australia	34	(1.8)	25	(1.2)	11	(0.5)	12	(0.7)	10	(0.4)	6	(0.6)	2	(0.7)
OECD average-30	30	(0.3)	21	(0.2)	16	(0.2)	13	(0.2)	10	(0.1)	6	(0.1)	4	(0.1)
TALIS average-47	28	(0.2)	21	(0.1)	17	(0.1)	14	(0.1)	10	(0.1)	6	(0.1)	3	(0.1)
High-performing PISA countries														
Alberta (Canada)	33	(5.4)	17	(1.4)	19	(3.1)	16	(2.0)	9	(0.9)	4	(0.3)	3	(0.7)
Estonia	26	(0.8)	27	(0.8)	15	(0.6)	12	(0.5)	9	(0.4)	6	(0.4)	4	(0.4)
Finland	33	(1.2)	24	(0.7)	14	(0.6)	11	(0.6)	9	(0.4)	5	(0.3)	4	(0.4)
Japan	23	(1.1)	20	(0.7)	23	(0.9)	11	(0.6)	10	(0.4)	8	(0.4)	4	(0.6)
Singapore	21	(0.8)	31	(0.8)	20	(0.7)	13	(0.5)	8	(0.4)	5	(0.2)	2	(0.2)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Among the seven activities that are the focus of the Principal questionnaire, prior OECD research (OECD, 2016b) identified curriculum and teaching-related tasks and meetings as a key component of instructional leadership and supporting teaching (Figure 2.12). This activity typically involves developing a school curriculum, observing classes and mentoring teachers, designing or organising professional development activities for teachers or being involved in student evaluation. Australian principals, on average, spent about 11 per cent of their time on these activities, lower than the OECD average of 16 per cent, and lower than any of the high-performing PISA countries.

FIGURE 2.12 Time spent by principals on curriculum and teaching

Average proportion of time lower secondary principals report spending on curriculum and teaching-related tasks and meetings
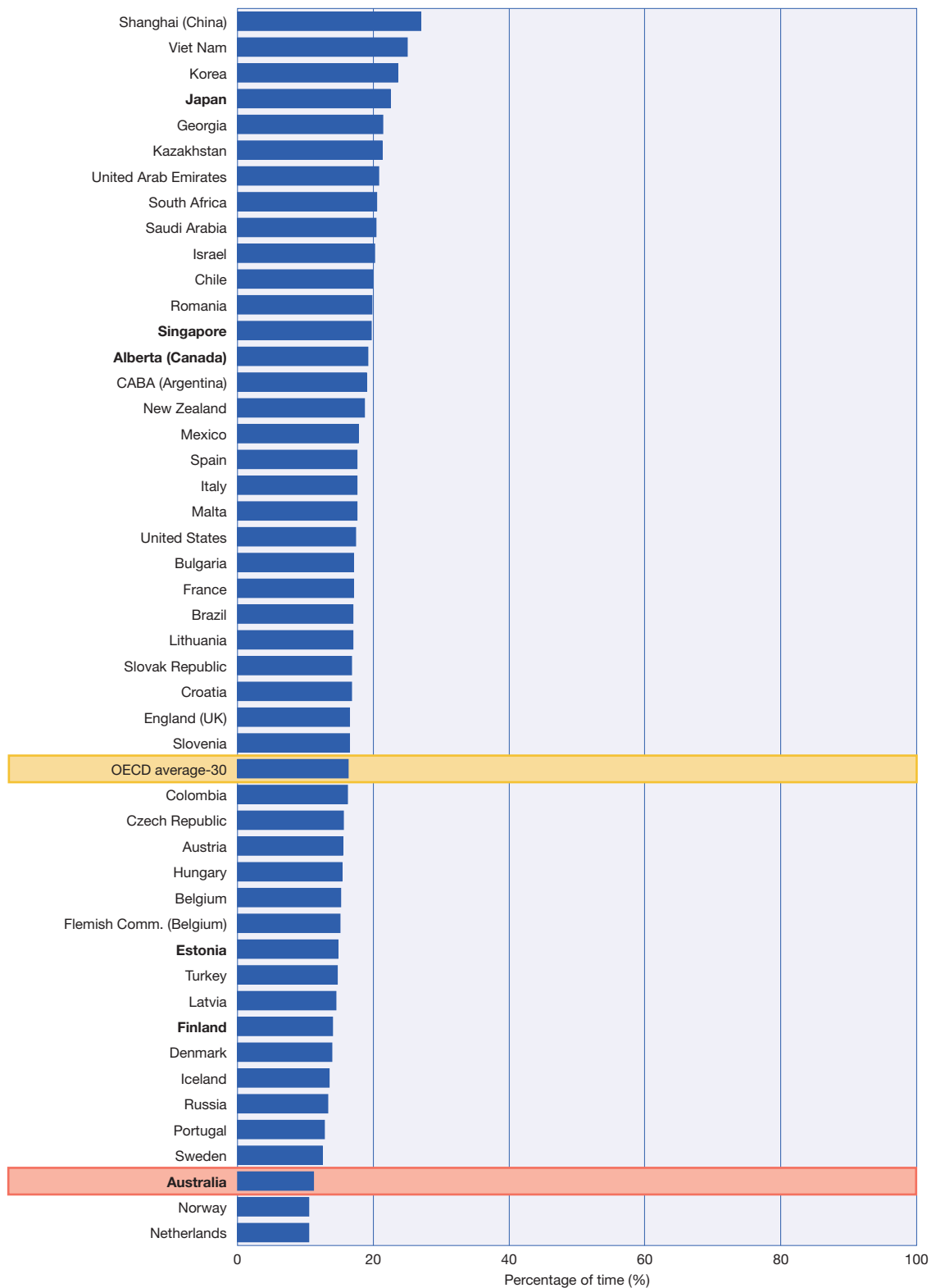
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 2.2   Teachers' and principals' time – comparing primary and lower secondary schools

Teachers

Internationally, the total working time teachers actually spend on teaching during a typical working week generally decreases slightly from primary to lower secondary school (Appendix Table A2.3) and this is the case in Australia. While the total hours worked is not dissimilar (43.7 hours for primary and 44.8 hours for lower secondary teachers, on average), face-to-face teaching time is 23.6 hours for primary teachers and 19.9 hours for lower secondary teachers, on average. Outside of actual teaching, lower secondary teachers spend about one and three-quarter hours a week more than primary teachers on marking and correcting student work (4.9 compared to 3.3 hours). The other differences are minor – participation in school management (2.4 hours compared to 2 hours) general administrative work (4.1 compared to 3.4 hours), and extracurricular activities (1.8 compared to 1.1 hours).

Principals

On average in Australia, and generally across the OECD, principals at both primary and lower secondary level spend more than half of their time dealing with administrative tasks (about 33% of their time) and leadership tasks and meetings (almost 21% of their time for primary principals and 25% for lower secondary principals).

Primary principals spend a larger proportion of their time on curriculum and teaching-related tasks and meetings (15% compared to 11% for lower secondary) and student interactions (15% compared to 12% for lower secondary), while lower secondary principals report spending a greater proportion of their time on interactions with local and regional community, business and industry (6% compared to 4% for primary principals).

2.4   How effective and influential do Australian principals feel they are?

Another of the additional questions that the Australian TALIS survey asked of principals targeted their beliefs about the extent to which particular issues limited their effectiveness. The standout message from these data is that almost two-thirds of principals reported that high workload and level of responsibility in their job limited their effectiveness *quite a bit* or *a lot* (Table 2.3).

Almost one-third of principals reported that inadequate school budget and resources (31%), government regulation and policy (30%), and difficulty with recruiting teachers in some areas (31%) limited their effectiveness *quite a bit* or *a lot*. Of little concern for most principals was anything relating to the opportunity for professional development – either for teachers in the school or for themselves.

TABLE 2.3 Principals' perceptions of limitations to their effectiveness

	To what extent do the following limit your effectiveness as a principal in this school?							
	Not at all		To some extent		Quite a bit		A lot	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Inadequate school budget and resources	21	(4.2)	48	(5.7)	23	(4.9)	8	(2.2)
Government regulation and policy	11	(3.4)	59	(6.1)	22	(4.4)	8	(2.1)
Teachers' absences	25	(5.2)	61	(5.5)	12	(2.5)	1	(0.7)
Lack of parent or guardian involvement and support	35	(5.3)	40	(5.2)	21	(3.1)	4	(1.3)
Teachers' career-based wage system	59	(6.1)	31	(4.7)	8	(4.4)	2	(1.0)
Lack of opportunities and support for my own professional development	65	(5.4)	30	(5.5)	5	(2.1)	1	(0.5)
Lack of opportunities and support for teachers' professional development	53	(5.0)	40	(4.6)	6	(2.7)	1	(0.5)
High workload and level of responsibility in my job	4	(2.3)	32	(6.1)	35	(6.1)	29	(4.0)
Lack of shared leadership with other school staff members	41	(5.9)	46	(5.2)	12	(2.4)	1	(0.4)
Difficulty with recruiting teachers in some subject areas.	21	(5.8)	48	(5.6)	17	(3.6)	14	(4.6)

Principals from more disadvantaged schools were more likely to report that teachers' absences, lack of support from parents or guardians and lack of shared leadership with other school staff limited their effectiveness (Table 2.4). No other significant differences were found. In part, this was due to relatively large standard errors for some results. Perhaps more support for principals in disadvantaged schools might lead to more effective management of those schools.

TABLE 2.4 Differences in perceived effectiveness between principals of more advantaged and disadvantaged schools

	Percentage of principals reporting that they can influence the actions "quite a bit" or "a lot"			
	More advantaged schools		Disadvantaged schools	
	%	S.E.	%	S.E.
Teachers' absences	9	(2.7)	25	(6.5)
Lack of parent or guardian involvement and support	14	(5.5)	55	(9.0)
Lack of shared leadership with other school staff members	9	(2.8)	23	(4.4)

Australian principals were also asked about the extent to which they felt they could influence a variety of teacher and school-related targets (Table 2.5). Around 20 per cent of principals felt lacking in their ability to manage and resolve conflicts between staff, and around 25 per cent believed they had limited ability to provide effective feedback to teachers, to monitor implementation of tasks delegated to staff and to effectively manage their own working day.

TABLE 2.5   Principals' perceptions of their influence

	In your role as principal, to what extent can you do the following?							
	Not at all		To some extent		Quite a bit		A lot	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Motivate staff to improve their performance	0	(0.0)	10	(2.6)	64	(5.2)	26	(4.2)
Manage and resolve conflicts between staff	8	(5.2)	12	(2.4)	51	(6.6)	29	(5.3)
Develop a positive school climate	0	(0.0)	3	(0.9)	45	(6.5)	52	(6.3)
Develop collaboration between the school and stakeholders (e.g. ministry, community, parents/guardians)	0	(0.0)	13	(4.9)	53	(6.2)	35	(4.7)
Influence teacher quality	1	(0.5)	14	(4.4)	61	(5.6)	24	(4.0)
Encourage staff to actively participate in decision making	0	(0.0)	18	(4.4)	59	(4.9)	23	(4.1)
Manage the school effectively and efficiently	0	(0.0)	2	(0.8)	50	(5.9)	49	(5.9)
Provide effective feedback to teachers	1	(1.3)	23	(4.8)	53	(5.4)	23	(4.3)
Develop school improvement plans	0	(0.0)	2	(1.3)	50	(6.2)	48	(6.1)
Monitor implementation of tasks delegated to staff	0	(0.4)	23	(5.3)	58	(5.7)	18	(2.8)

There were no significant differences found between more advantaged schools and disadvantaged schools – again largely because of the size of the standard errors.

2.5   To what extent can teachers and schools innovate?

Rapid changes in technology have led to calls for innovation in education. Meetings of the International Summit on the Teaching Profession over the past few years, for example, have stressed the importance of encouraging innovation in order to create 21st century learning environments.

In schools, there can be a number of facets of innovation. Innovation in teaching is, according to a recent OECD report "… a problem-solving process rooted in teachers' professionalism, a normal response to addressing the daily changes of constantly changing classrooms." (Paniagua & Istance, 2018, p. 13). Other literature defines innovative teaching processes that support students' acquisition of cross-curricular skills (OECD, 2014) and argues that students need more than the well-established literacies such as mathematics and reading, they need a broader and more complex range of skills such as creativity and innovation, entrepreneurship, problem-solving, and digital literacy, for example. Another aspect of innovation in schools is the extent to which teachers themselves adopt innovative practices such as blended learning, gamification, computational thinking (Paniagua & Istance, 2018), and to what extent schools support this.

On average in Australia, more than 80 per cent of teachers agreed or strongly agreed that most teachers in their school strive to develop new ideas for teaching and learning, and felt confident that most teachers provide practical support to each other for the application of new ideas (Table 2.6). This is similar to that in Alberta (Canada) and Japan, and higher than in Estonia, Finland, and the OECD average. Singaporean teachers are less likely to agree that teachers strive to develop new ideas, but are more confident that teachers will provide practical support to those who do. A smaller percentage of teachers in most countries, including Australia, agreed that most teachers in [their] school are open to change.

TABLE 2.6   Teachers' views on their colleagues' attitudes towards innovation

	Percentage of teachers who "agree" or "strongly agree" with the following statements							
	Most teachers in the school strive to develop new ideas for teaching and learning		Most teachers in the school are open to change		Most teachers in the school search for new ways to solve problems		Most teachers in the school provide practical support to each other for the application of new ideas	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	83	(0.9)	74	(0.9)	75	(0.8)	84	(0.8)
OECD average-31	79	(0.2)	74	(0.2)	77	(0.2)	78	(0.2)
TALIS average-48	80	(0.2)	76	(0.2)	79	(0.2)	80	(0.2)
High-performing PISA countries								
Alberta (Canada)	86	(1.3)	79	(1.6)	82	(1.3)	86	(1.3)
Estonia	74	(1.2)	82	(0.9)	79	(1.0)	78	(1.2)
Finland	79	(1.1)	69	(1.5)	74	(1.3)	75	(1.1)
Japan	82	(0.9)	70	(1.1)	77	(1.0)	71	(1.1)
Singapore	79	(0.8)	74	(0.8)	74	(0.8)	84	(0.6)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

School principals in Australia and in most of the high-performing PISA countries, as well as across the OECD on average, reported positive attitudes towards innovation in their schools (Table 2.7). The vast majority of Australian and OECD principals agreed or strongly agreed that their school identifies the need to do things differently, responds to change when needed, accepts new ideas and makes assistance readily available for innovation.

TABLE 2.7   Innovation in school practices

	Percentage of principals who "agree" or "strongly agree" with the following statements							
	The school quickly identifies the need to do things differently		The school quickly responds to changes when needed		The school readily accepts new ideas		The school makes assistance readily available for the development of new ideas	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	92	(2.9)	85	(4.9)	89	(4.5)	93	(2.9)
OECD average-30	89	(0.6)	88	(0.7)	85	(0.5)	89	(0.5)
TALIS average-47	91	(0.4)	90	(0.5)	87	(0.4)	91	(0.4)
High-performing PISA countries								
Alberta (Canada)	78	(13.3)	79	(13.5)	89	(3.3)	98	(1.0)
Estonia	88	(2.4)	88	(2.3)	88	(2.4)	83	(2.7)
Finland	79	(3.0)	84	(2.8)	88	(2.8)	91	(2.5)
Japan	86	(2.6)	88	(2.4)	70	(3.9)	73	(3.9)
Singapore	93	(1.7)	96	(1.2)	93	(1.7)	98	(0.9)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

BOX 2.3   Teachers' views of their colleagues' attitudes towards innovation – comparing primary and lower secondary schools

More than 80 per cent of Australian primary teachers reported positive views of their colleagues' attitudes towards innovation, and, on all aspects of this question, were more positive than their lower secondary school peers (Appendix Table A2.5), although the differences were within seven percentage points or less. Eighty-nine per cent of primary teachers *agreed* or *strongly agreed* that most teachers in the school provide practical support to each other for the application of new ideas and 88 per cent *agreed* or *strongly agreed* that most teachers in the school strive to develop new ideas for teaching and learning.

The changing landscape of teaching

This chapter describes the age, experience and gender distribution profiles of lower secondary teachers and school principals and examines how their demographic characteristics and experience have changed since 2008. It explores how teachers deal with increasingly diverse classrooms and schools, and explores the practices implemented in schools to respond to student diversity, as well as teachers' preparedness and confidence to teach in these more diverse environments. The chapter then turns to school and classroom climate as an important lever within the school for students' learning and wellbeing, as well as for teachers' confidence and commitment to teaching. Finally, it identifies school resource issues that, teachers and school leaders believe, particularly require action.

Key findings

‣ The average age for Australian teachers was just over 42 years, lower than the OECD average of 44 years, and lower than the average in TALIS 2013 of just over 43 years. While the majority of Australian teachers were aged between 30–49 years, a higher proportion of Australian teachers were under 30 compared to the OECD average. The average age for principals was 51 years, similar to the OECD average.

‣ Most Australian principals were very experienced teachers prior to becoming a school leader. The average principal had been a teacher for 23 years, and had also spent some 12 years on average in other school management roles. This time in management roles is higher than the OECD average.

‣ Australian schools and classrooms are more diverse than the average across OECD countries with respect to students with special needs, refugees, immigrants, students from a disadvantaged background, and students with a language background other than the language of instruction.

‣ Just over 62 per cent of lower secondary teachers in Australia are female, an increase of three percentage points since TALIS 2008. Around 40 per cent of the principals of lower secondary schools in Australia are female, and this has not changed in the last decade.

‣ There are some incidents related to school safety that are of particular concern to Australian principals compared to the OECD average. Intimidation and bullying of students is a particular issue, with 37 per cent of principals reporting that this occurs at least weekly in their school. Also of concern is the relatively high incidence of intimidation or verbal abuse of teachers or staff. Twelve per cent of Australian principals report that this happens at least weekly, compared to

three per cent on average across the OECD. The incidence of cyber-bullying, measured for the first time, is also relatively high compared to the average across the OECD.

▸ While Australian classrooms are often characterised as particularly noisy and disruptive, there were no differences found on these items between Australia and the OECD average. In Australian schools the need for more discipline is less in classes with high proportions of academically gifted students. Conversely, the higher the concentration of students with behavioural problems the more teachers reported discipline problems in the classroom, even after controlling for other classroom characteristics and teacher characteristics.

3.1   Changing demographics of the profession

The ageing demographic of teachers and school leaders, and the implications for the education system once they retire, have been an issue for some time, particularly in terms of workforce planning. Systems face further challenges with an aging population as the uptake of technology increases and drives demand for professional development of existing teachers. In many countries, the entry of the baby boomer generation into the education system in the 1950s and 1960s, along with widening access to education and increasing community expectations about students completing school, led to mass recruitment of teachers in the 1960s and 1970s, and hence mass retirements a generation later.

3.1.1   Age and experience profile of teachers and school leaders

In TALIS 2018, the average age for Australian teachers was just over 42 years. This was lower than the OECD average of 44 years, and lower than the Australian TALIS 2013 average of 43 years. The majority of Australian teachers (52%) were in the 30–49 year age bracket (Figure 3.1). A further 30 per cent were over 50 years old, and 18 per cent were under 30 years of age. Across the OECD, 54 per cent of teachers were in the 30–49 year age bracket, 34 per cent over 50 and just 11 per cent under 30.

Of the high-performing PISA countries, Estonia had the highest average age for teachers (49 years), reflecting the 54 per cent of teachers that were aged over 50, and just 7 per cent under 30. Singaporean teachers, on the other hand, were among the youngest in the TALIS survey, with an average age of 38 years, 23 per cent aged under 30 and just 12 per cent aged over 50.

The average age for Australian principals was just over 51 years, similar to the OECD on average and to the high-performing PISA countries with the exception of Japan, where the average age was 58 years (Figure 3.2). In Japan, 78 per cent of principals were in the 40–50 years age group, and none were under 40 years of age. Most other countries had at least some younger principals in the education system: Australia with 11 per cent, Alberta (Canada) 12 per cent, Finland nine per cent, Estonia seven per cent and Singapore two per cent, and eight per cent on average across the OECD.

FIGURE 3.1 Teachers' age

Percentage of lower secondary teachers by age group and average age of teachers
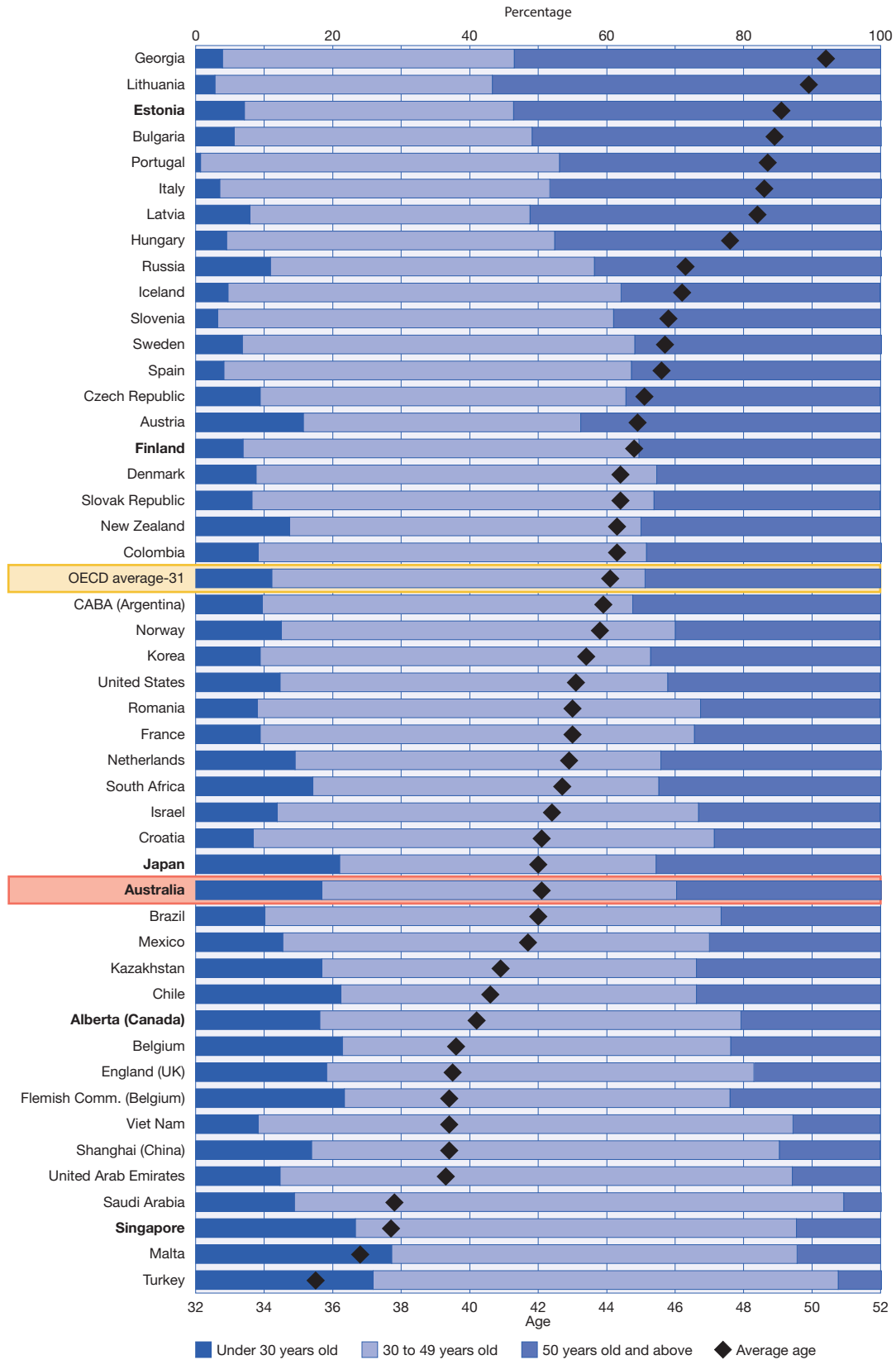
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

FIGURE 3.2 Principals' age

Percentage of lower secondary principals by age group and average age of principals
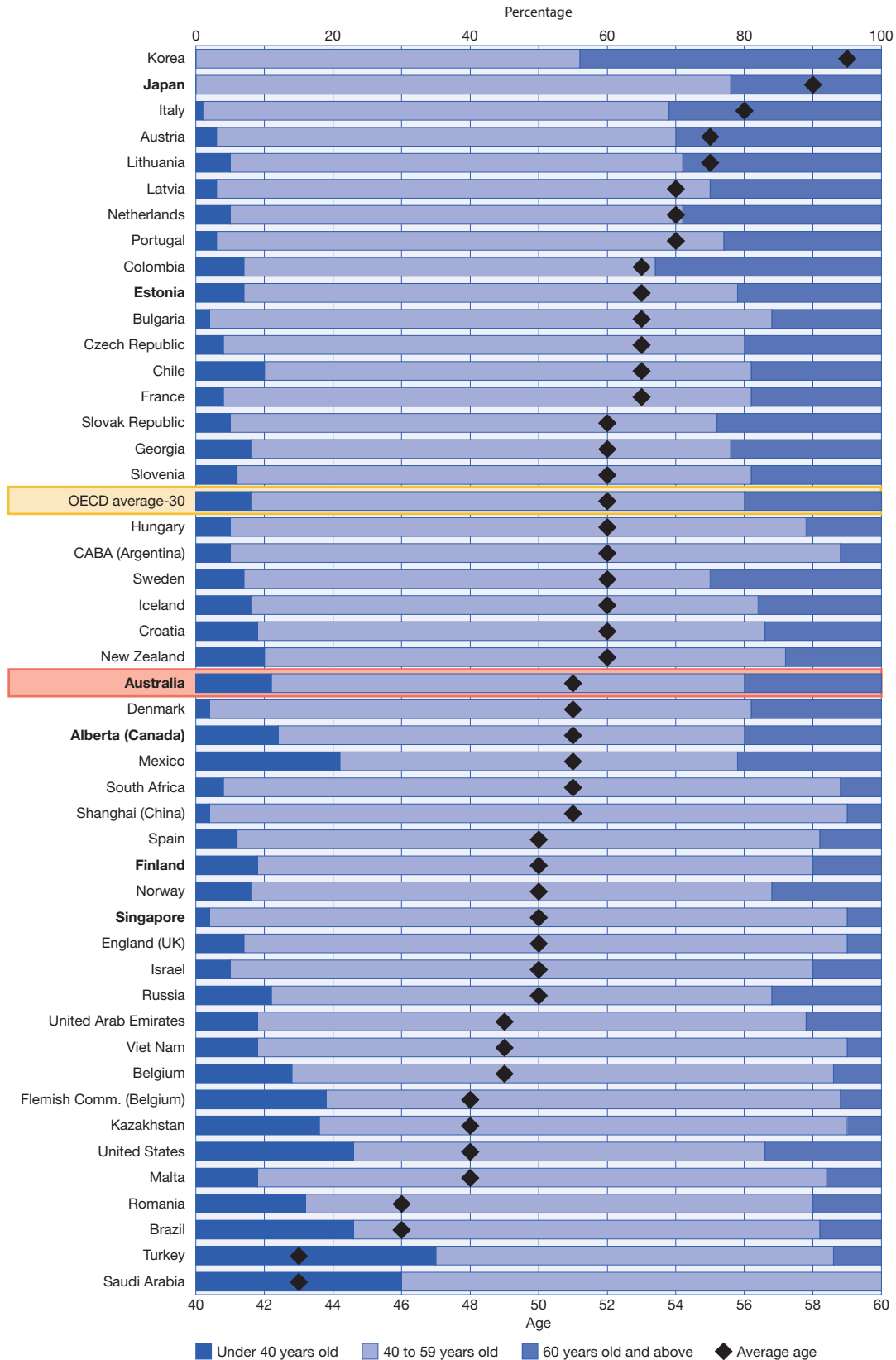
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

TALIS results suggest that Australia has a good balance of experienced and younger principals, and teachers leaving and entering the workforce. In 2018, almost one in five (19%) Australian principals were above 60 years of age, remaining unchanged from the 2013 TALIS result (Figure 3.3). Over the same period, the proportion of teachers aged more than 50 years declined.

FIGURE 3.3 Change in the share of 'seniors' among teachers and principals from 2013 to 2018
Percentage of lower secondary teachers and principals by age group
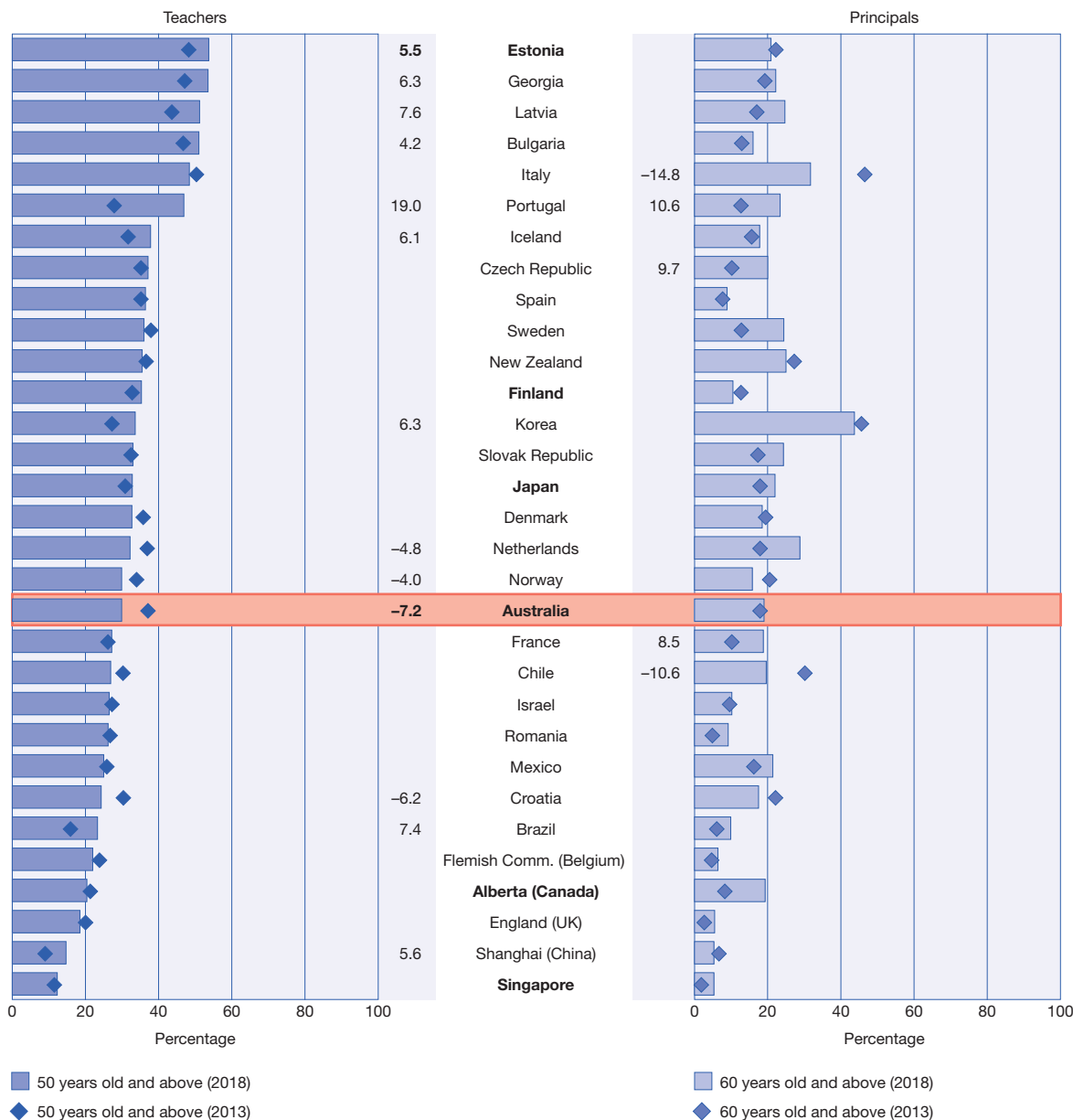
Notes: Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant changes between 2013 and 2018 (TALIS 2018-2013) are shown next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

TALIS 2018 found that the distribution of teaching experience in Australian schools reflects the movement of the baby boomer generation into retirement, and a new generation of teachers moving into schools. In the decade since 2008, there was a seven percentage point decline in the proportion of teachers with more than 20 years experience, with 29 per cent now in that group (Table 3.1, Table A3.1 for all TALIS 2018 countries). At the other end of the spectrum, after a decline in the proportion of teachers with less than five years experience between 2008 and 2013, the five years between 2013 and 2018 saw this increase to be similar to that noted between 2008 and 2013.

Australia is the only country in the comparison group that seems to be seeing this shift – the proportion of older teachers in Estonia has grown by ten percentage points over the decade to represent 56 per cent of the teaching cohort, although there has been a growth of three percentage points in the proportion of novice teachers. Singapore has seen a somewhat worrying decline of 14 percentage points in the proportion of novice teachers, with a commensurate increase in the proportion of teachers with six to 20 years experience.

TABLE 3.1 Change in teachers' teaching experience from 2008 to 2018

Percentage of teachers by years of experience as a teacher

	Fewer than or equal to 5 years					6 to 20 years					More than 20 years				
	TALIS 2008	TALIS 2013	TALIS 2018	Change between 2008 and 2018 (TALIS 2018 - TALIS 2008)	Change between 2013 and 2018 (TALIS 2018 - TALIS 2013)	TALIS 2008	TALIS 2013	TALIS 2018	Change between 2008 and 2018 (TALIS 2018 - TALIS 2008)	Change between 2013 and 2018 (TALIS 2018 - TALIS 2013)	TALIS 2008	TALIS 2013	TALIS 2018	Change between 2008 and 2018 (TALIS 2018 - TALIS 2008)	Change between 2013 and 2018 (TALIS 2018 - TALIS 2013)
	% S.E.	% S.E.	% S.E.	% dif. S.E.	% dif. S.E.	% S.E.	% S.E.	% S.E.	% dif. S.E.	% dif. S.E.	% S.E.	% S.E.	% S.E.	% dif. S.E.	% dif. S.E.
Australia	24 (1.1)	19 (1.1)	23 (0.9)	-1 (1.5)	4 (1.5)	40 (1.1)	45 (0.9)	48 (1.2)	8 (1.6)	3 (1.5)	35 (1.3)	37 (1.2)	29 (1.0)	-7 (1.7)	-8 (1.6)
High-performing PISA countries															
Alberta (Canada)		25 (1.3)	22 (1.6)		-3 (2.1)		54 (1.2)	58 (2.0)		4 (2.3)		21 (1.3)	19 (1.5)		-1 (2.0)
Estonia	15 (0.7)	10 (0.7)	13 (0.8)	-2 (1.1)	3 (1.0)	39 (1.1)	36 (1.2)	31 (1.0)	-8 (1.5)	-5 (1.6)	46 (1.1)	54 (1.5)	56 (1.2)	10 (1.6)	2 (1.9)
Finland		18 (0.9)	16 (0.8)		-2 (1.2)		50 (1.0)	52 (1.0)		2 (1.5)		31 (0.9)	32 (0.9)		0 (1.2)
Japan		20 (0.8)	21 (0.7)		1 (1.1)		37 (1.0)	40 (1.0)		3 (1.4)		43 (1.1)	39 (1.1)		-4 (1.6)
Singapore		43 (0.9)	29 (0.8)		-14 (1.2)		45 (0.9)	58 (1.0)		13 (1.4)		12 (0.6)	13 (0.7)		1 (0.9)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

With the different demographic patterns of the teaching workforce comes a diversity of teacher experience across countries. Australian teachers on average had 15 years of experience (Table 3.2, Table A3.2 for all TALIS 2018 countries), less than the average across the OECD of 17 years. Across the high-performing PISA countries the average years of experience ranged widely, from 12 years in Singapore to 23 years in Estonia.

Teachers in TALIS 2018 were asked how many years they had worked in other non-education roles prior to entering the profession. Australian teachers on average had five years of experience working in jobs other than teaching, higher than the OECD average of three years and about the same as in Alberta (Canada). Teachers in Finland, Singapore and particularly Japan had very little other work experience.

The number of years teachers have been teaching at their current school provides some insights into the level of mobility within a system. Australian teachers had spent an average of eight years at their current school, less than the OECD average of 10 years, but still representing a little more than half of their teaching career. Of the high-performing PISA countries mobility is lowest in Estonia, where teachers have spent an average of 15 years at their current school (about 65% of their teaching career) and highest in Japan, where the average is five years (about 30% of their teaching career).

TABLE 3.2 Teachers' work experience

| | Teachers' years of work experience | | | | | | | |
| | As a teacher at the current school | | As a teacher, in total | | In other education roles, not as a teacher | | In other non-education roles | |
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Australia	8	(0.2)	15	(0.2)	2	(0.1)	5	(0.1)
OECD average-31	10	(0.1)	17	(0.1)	2	(0.0)	3	(0.0)
TALIS average-48	10	(0.0)	17	(0.0)	2	(0.0)	3	(0.0)
High-performing PISA countries								
Alberta (Canada)	7	(0.3)	13	(0.4)	1	(0.1)	5	(0.3)
Estonia	15	(0.4)	23	(0.3)	3	(0.1)	4	(0.2)
Finland	10	(0.2)	16	(0.2)	1	(0.1)	2	(0.1)
Japan	5	(0.2)	17	(0.2)	0	(0.0)	1	(0.1)
Singapore	6	(0.1)	12	(0.2)	1	(0.1)	2	(0.1)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Most principals were very experienced teachers prior to becoming a school leader. In Australia, the average principal had been a teacher for 23 years, and had also spent some 12 years on average in other school management roles (Table 3.3, Appendix Table A3.3 for all TALIS 2018 countries). In terms of teaching experience, this is around the same as the OECD average of 20 years, however Australian teachers spend a great deal more time in other administrative roles than is the average internationally. In Finland, on the other hand, principals have, on average, spent 15 years in the classroom and just three years in other administrative roles.

These data suggest that there is not a lot of mobility in the principal workforce in Australia, with principals having spent, on average, five of their seven years as a principal at their current school. This is similar to the OECD, where principals on average have spent seven of their 10 years as principal at the same school. In contrast, principals in Singapore have an average of nine years in that position, with only four years at their current school, suggesting a little more mobility.

TABLE 3.3 Principals' work experience

| | Principals' years of work experience | | | | | | | | | |
| | As a principal at the current school | | As a principal, in total | | In other school management roles | | As a teacher, in total | | In other jobs | |
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Australia	5	(0.4)	7	(0.6)	12	(0.9)	23	(1.3)	2	(0.3)
OECD average-30	7	(0.1)	10	(0.2)	5	(0.1)	20	(0.2)	3	(0.1)
TALIS average-47	7	(0.1)	9	(0.1)	6	(0.1)	20	(0.2)	3	(0.1)
High-performing PISA countries										
Alberta (Canada)	5	(1.1)	13	(5.0)	4	(0.6)	23	(3.8)	5	(0.9)
Estonia	10	(0.6)	14	(0.6)	5	(0.6)	22	(0.9)	6	(0.7)
Finland	7	(0.6)	12	(0.8)	3	(0.3)	15	(0.8)	3	(0.4)
Japan	3	(0.1)	5	(0.2)	5	(0.3)	29	(0.6)	1	(0.3)
Singapore	4	(0.3)	9	(0.5)	8	(0.5)	15	(0.7)	2	(0.5)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

3.2   Gender of teachers and school leaders

It is well-documented that there is a degree of gender imbalance in the teaching profession in most countries. Teaching in Australia is generally dominated by females, particularly primary education but also in secondary education to a lesser degree. Just over 62 per cent of Australian lower secondary teachers are female, and this has increased by three percentage points since TALIS 2008, although not significantly from 2013 (Figure 3.4). Among the high-performing PISA countries there is a great deal of variation in this area: from Estonia where 84 per cent of teachers are female to Japan where 42 per cent are female.

FIGURE 3.4   Change in gender balance among teachers from 2013 to 2018
Average proportion of lower secondary female teachers
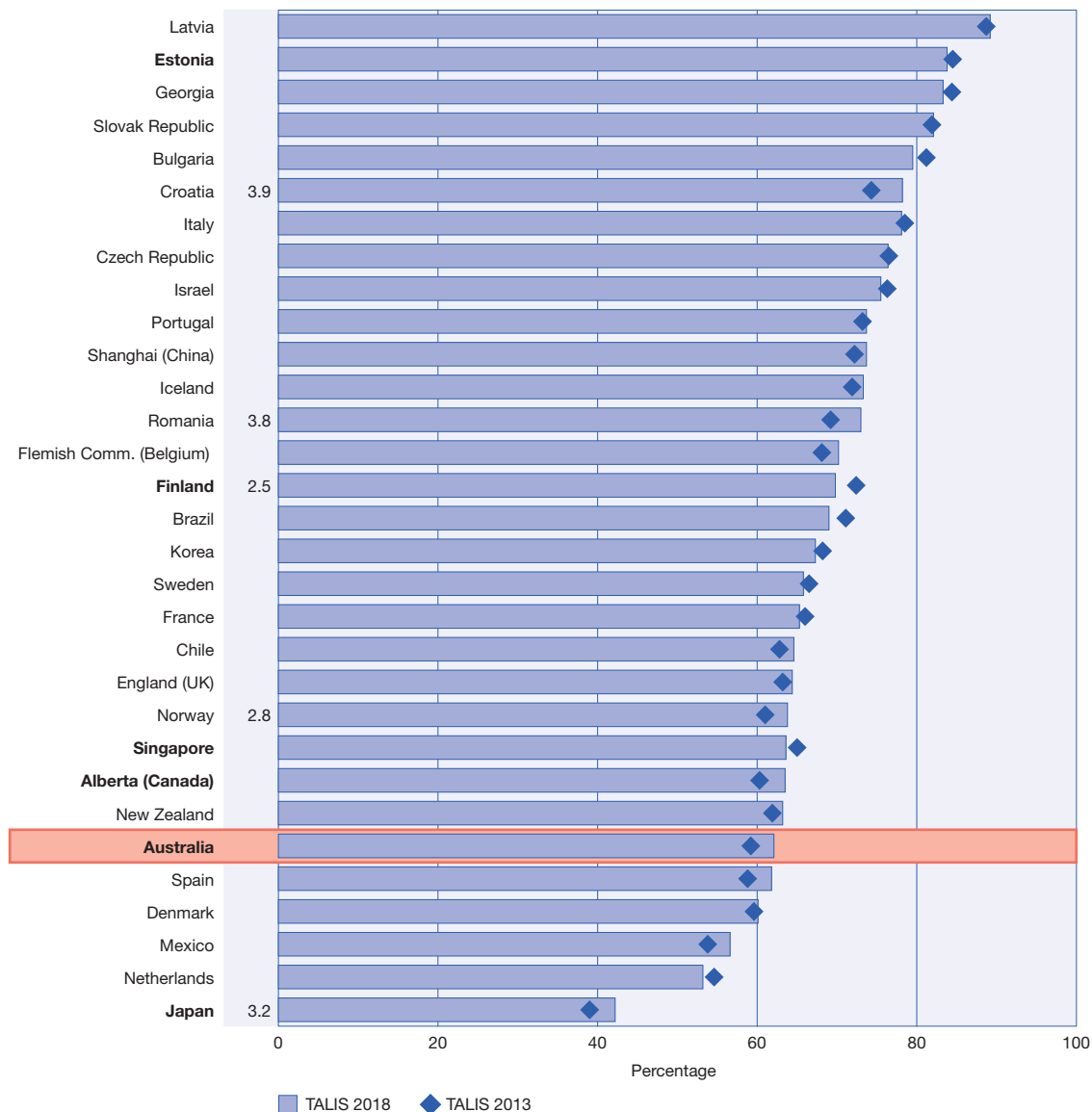
Notes: Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant changes between 2013 and 2018 (TALIS 2018-2013) are shown next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

On the other hand, 40 per cent of the principals of lower secondary schools in Australia were female, a proportion that has not changed since TALIS 2008 or TALIS 2013 (Table 3.4, Appendix Table A3.4 for all TALIS 2018 countries). Of the high-performing PISA countries, Estonia has the highest percentage of female principals and Japan by far the lowest. In these two countries, the percentage of female principals reflects the gender distribution of teachers in their respective education systems.

TABLE 3.4 Change in the proportion of female principals from 2008 to 2018

	Percentage of female principals								
	TALIS 2008		TALIS 2013		TALIS 2018		Change between 2008 and 2018 (TALIS 2018 - TALIS 2008)		Change between 2013 and 2018 (TALIS 2018 - TALIS 2013)	
	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	% dif.	S.E.
Australia	38	(4.8)	39	(5.5)	40	(4.8)	2	(6.8)	2	(7.3)
High-performing PISA countries										
Alberta (Canada)			43	(3.8)	30	(6.7)			-13	(7.7)
Estonia	56	(3.2)	60	(3.4)	57	(3.5)	0	(4.8)	-4	(4.9)
Finland			41	(4.0)	46	(4.3)			6	(5.9)
Japan			6	(1.9)	7	(1.9)			1	(2.7)
Singapore			52	(4.8)	47	(3.0)			-5	(5.6)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Female teachers are in the majority for all TALIS 2018 countries other than Japan, but they are a minority among school principals in about half, including Australia (Figure 3.5, Appendix Table A3.4 for all TALIS 2018 countries). These statistics seem to be fairly enduring, with no countries recording substantial changes in the gender distribution of teachers or principals between 2013 and 2018.

Across the OECD on average, 68 per cent of teachers are female, compared to 47 per cent of principals. This suggests there are significant gender imbalances in the promotion of female from teaching into leadership positions. Most countries are below the 'equal feminisation line', having a lower proportion of female principals relative to female teachers (Figure 3.5). The international TALIS report points out that "the cause for this pattern can be endogenous, with a lesser propensity of women to apply for leadership positions, as much as exogenous, with a lesser propensity for women to be selected when applying for leadership positions" (OECD, 2019a, p. 88).

FIGURE 3.5 Gender balance among teachers and principals
Results based on responses of lower secondary teachers and principals
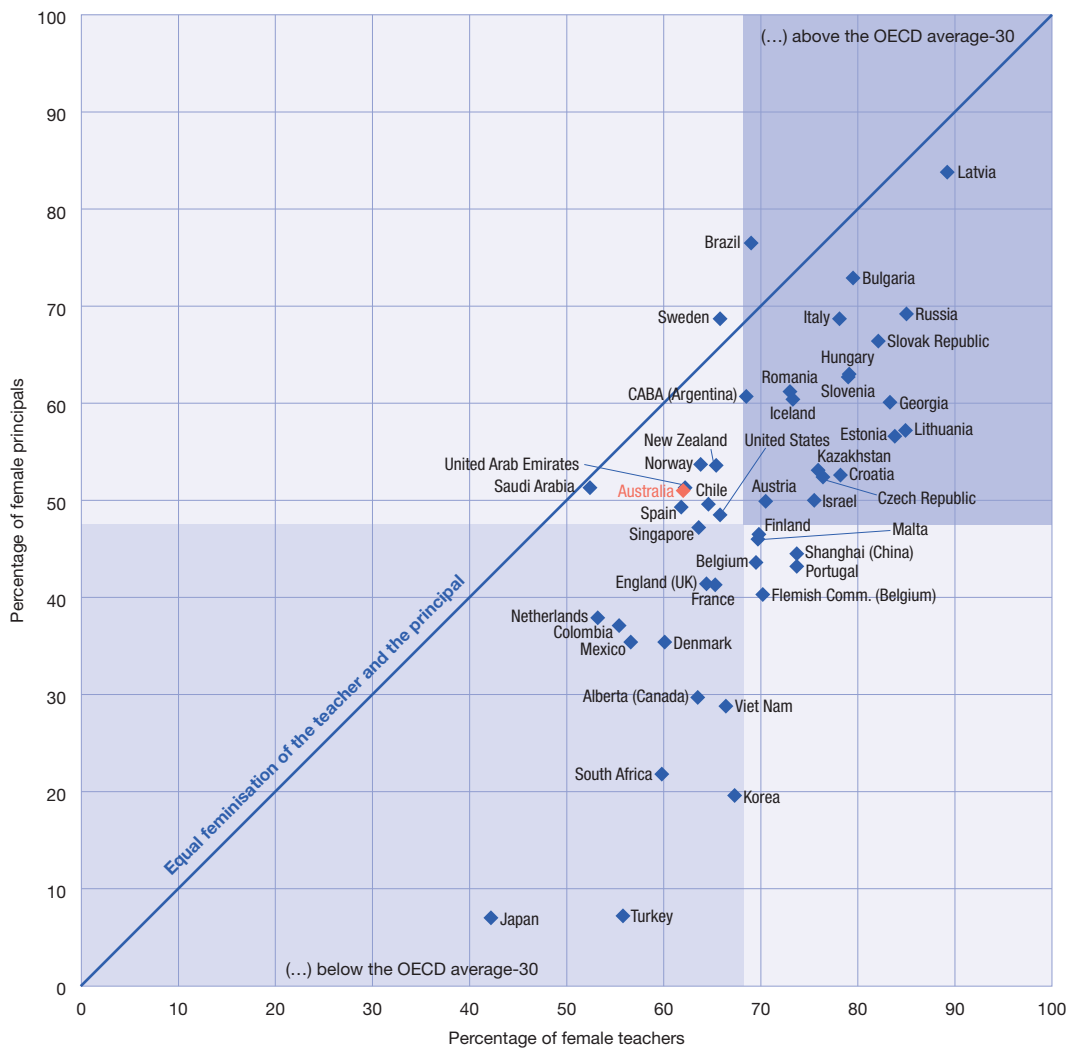
Notes: Only countries and economies with available data for the percentage of female teachers and the percentage of female principals are shown.
High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 3.1   Teachers' and principals' profiles – comparing primary and lower secondary schools

The average age and the age distribution is similar for Australian teachers and principals at both the primary and lower secondary level (Appendix Table A3.5, Appendix Table A3.6).

While the teaching workforce at both primary and lower secondary levels is predominantly female, this is particularly the case in primary schools, where 86 per cent of teachers are female (Appendix Table A3.7). At lower secondary level, 62 per cent of teachers are female.

The gender distribution of principals mirrors that of teachers. At the primary level 59 per cent of principals are female, while at the lower secondary level 40 per cent are female.

3.3   Changing contexts for teaching and learning

Schools are increasingly diverse places, and to understand more completely teachers' and principals' working conditions, it is useful to look more closely at the contexts in which teaching and learning take place. The diversity of student backgrounds includes many dimensions: gender, cultural background, language spoken at home, and socioeconomic background among others.

This information is useful descriptively, but there is also a strong link between school composition and factors such as student outcomes (OECD, 2013; Thomson, De Bortoli & Underwood, 2017) or teaching processes (Echazarra, Salinas, Méndez, Dennis & Rich, 2016).

Analysis of PISA data shows the importance of socioeconomic background both at the individual and school level. Students are advantaged academically, regardless of their own socioeconomic background, if they attend a school in which most of the students come from an advantaged background (Box 3.2).

BOX 3.2   The relationship of socioeconomic background of students and schools in PISA

In PISA, Australian students are grouped by their socioeconomic background according to quartiles of the PISA economic, social and cultural status (ESCS), which is derived from several variables related to students' family background: parents' education, parents' occupations, a number of home possessions that can be taken as proxies for material wealth, and the number of books and other educational resources available in the home. Disadvantaged students are those in the lowest quartile of ESCS nationally, advantaged students are those in the highest quartile, and those in the middle two quartiles are placed in the average category. Schools were categorised in a similar way using the Socio-Economic Indexes for Areas (SEIFA), which was developed by the Australian Bureau of Statistics and ranks areas in Australia according to their relative socioeconomic advantage and disadvantage. The indexes are based on information from the five-yearly national census and are attached to schools according to their postcode. Figure B3.1 shows the scientific literacy achievement of Australian 15-year-old disadvantaged, average and advantaged students in disadvantaged, average, and advantaged schools in PISA 2015.

FIGURE B3.1   Scientific literacy achievement of students and schools by socioeconomic background in PISA 2015
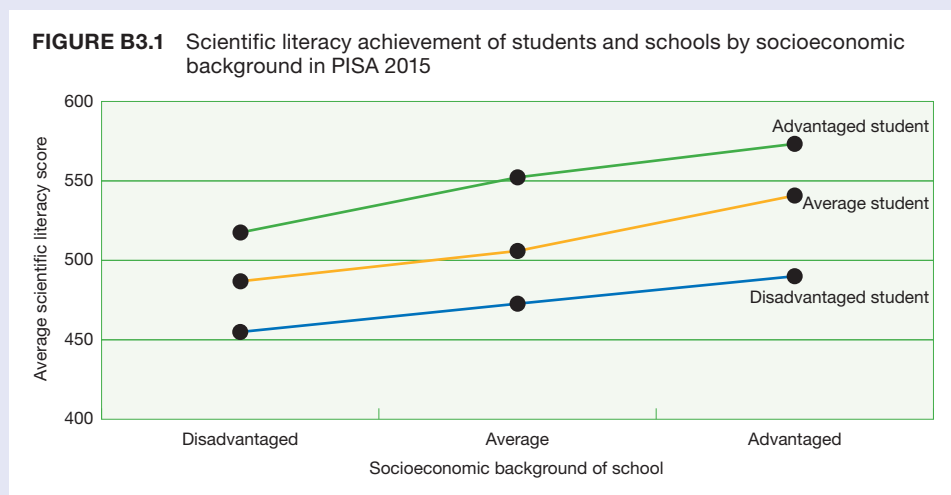
All students perform relatively lower when they attend a disadvantaged school; however, disadvantaged students suffer the most. The benefit to disadvantaged students of not attending disadvantaged schools is also evident. The average score for a disadvantaged student in a disadvantaged school was 455 score points. The average score for a disadvantaged student in an average school was about 16 points higher – which represents around half a year of schooling. Similarly, disadvantaged students in advantaged schools scored a further 19 points higher again, which was equal to more than one year of schooling higher than the average disadvantaged student in a disadvantaged school.

Source: Thomson et al., 2017, p. 218

3.4 The relationship of socioeconomic background of students and schools in PISA

TALIS provides a unique opportunity to examine a number of issues related to student diversity, school composition and teachers' work. The TALIS questionnaire asked principals and teachers about the composition of the school or classroom in terms of students with special needs, socioeconomic disadvantage, immigrant background, language background, and refugee status of the students (Indigenous status was not included in the questionnaire). These measures are different from those used in PISA (see Box 3.3) and, the OECD argue, provide "more direct context on how teachers and principals perceive the profile of their students. This provides important context for examining teachers' work, school practices related to diversity and teachers' preparedness and confidence to teach in diverse environments" (OECD, 2019a, p. 91).

BOX 3.3   School composition in PISA and TALIS

PISA measures of school composition rely upon information collected through student questionnaires administered to a random sample of 30 students in each PISA school and aggregates at the school level of students' responses on their gender, migration background and index of economic, social and cultural status (ESCS). The school socioeconomic composition in PISA is the mean value of the ESCS index of students in the school (OECD, 2016a).

TALIS relies upon the perspectives of teachers and school leaders on the composition of their school and of teachers on the composition of a randomly selected target class. It asks teachers and school leaders about the share of students with different profiles at the classroom level (this is unique to TALIS) and at the school level.

This approach is more subjective, but it is also more complete than the PISA measures, as both principals and teachers are describing the population not just the characteristics of a random sample of students. TALIS uniquely provides information on classroom composition as perceived by teachers. The two approaches (TALIS and PISA) provide complementary perspectives on actual school composition. However, because the TALIS measures reflect the subjective perceptions of teachers and school leaders, it can be argued that they are more likely to be related to teachers' practices and to school policies put in place by principals.

Source: OECD, 2019a, p. 91

3.4.1 School and classroom composition

Since the large-scale take-up of the international studies of student achievement in the 1990s – the Third International Mathematics and Science Study, which has since morphed into the Trends in International Mathematics and Science Study (TIMSS), the Programme for International Student Assessment (PISA) and the Progress in International Reading Literacy Study (PIRLS) – there has been a large body of research investigating the relationship between student learning outcomes and the school and classroom context. Largely, this has been conceptualised as the social composition of the school or classroom or as the neighbourhood in which the school is situated (for example, Gustafsson, Nilsen & Yang Hansen, 2018; OECD, 2013; Perry & McConney, 2010; Schuelka, 2013). However, while the literature on this has been extensive, there has been no clear consensus on the significance and magnitude of this effect, after controlling for student background characteristics. Nevertheless, school composition is relevant to understanding the profile of the student body that teachers and principals work with, and how it has changed over time, so that appropriate support and training can be provided to teachers and principals.

To this end, TALIS asked principals and teachers to estimate the broad percentages of students with the following backgrounds in their school (for principals) and in their target class (for teachers):

▶ students with special needs (those for whom a special learning need has been formally identified because they are mentally, physically, or emotionally disadvantaged)

▶ students from socioeconomically disadvantaged homes (hereafter disadvantaged students)

▶ students who are immigrants or from an immigrant background (hereafter students with a migrant background)

▶ students whose first language is different from the language of instruction or from a dialect of this/these languages (hereafter students whose first language is different from the language(s) of instruction)

▶ students who are refugees.

An international cut-off value (none, 1% - 10%, 11% - 30%, 31% - 60%, more than 60%) is set for each student characteristic, in order to group the percentage categories in a relevant manner.

In 2018, working with a diverse student population is the reality for many teachers and schools (Figure 3.6), across the OECD generally and certainly in Australia.

FIGURE 3.6   School composition, OECD and Australia

Percentage of lower secondary teachers teaching in schools with the following composition
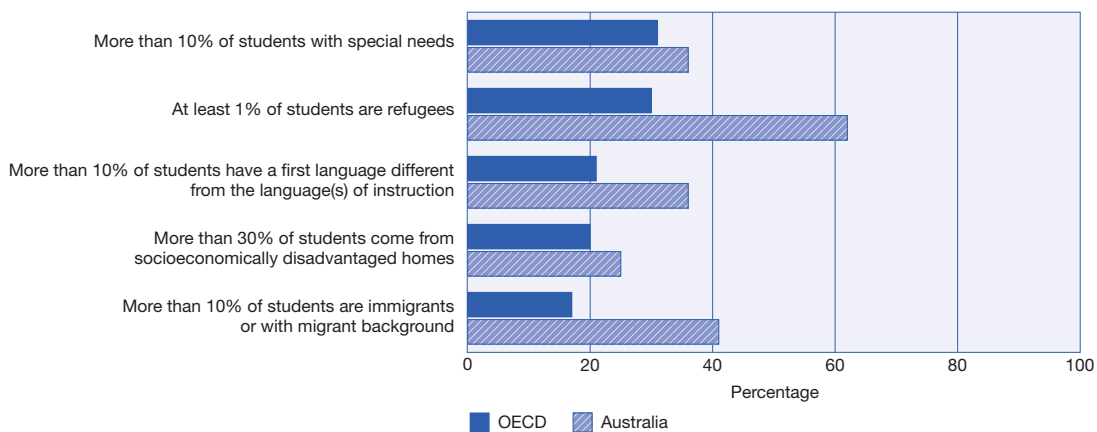
As noted by the OECD in the TALIS international report, access to formal education for special needs students has improved across the world, as countries have accepted the right of these students to be included in the general education system, and for them to receive the support they require to participate. As a reflection of these changes, children with special needs are increasingly enrolled in mainstream schools, although the extent to which this occurs varies. On average, 31 per cent of teachers across the OECD and 36 per cent of teachers in Australia teach in schools with at least 10 per cent of students with special needs. This is a similar picture to that in Alberta (Canada), Estonia and Finland (Figure 3.7), but not the case in either Singapore or Japan, with just 14 and nine per cent of teachers respectively teaching in such schools. The reasons for these differences internationally are varied – from differing definitions of 'special needs' to differences in the provision of the support needed by these students.

FIGURE 3.7   School concentration of students with special needs

Percentage of lower secondary teachers teaching in schools where more than 10% of students have special needs
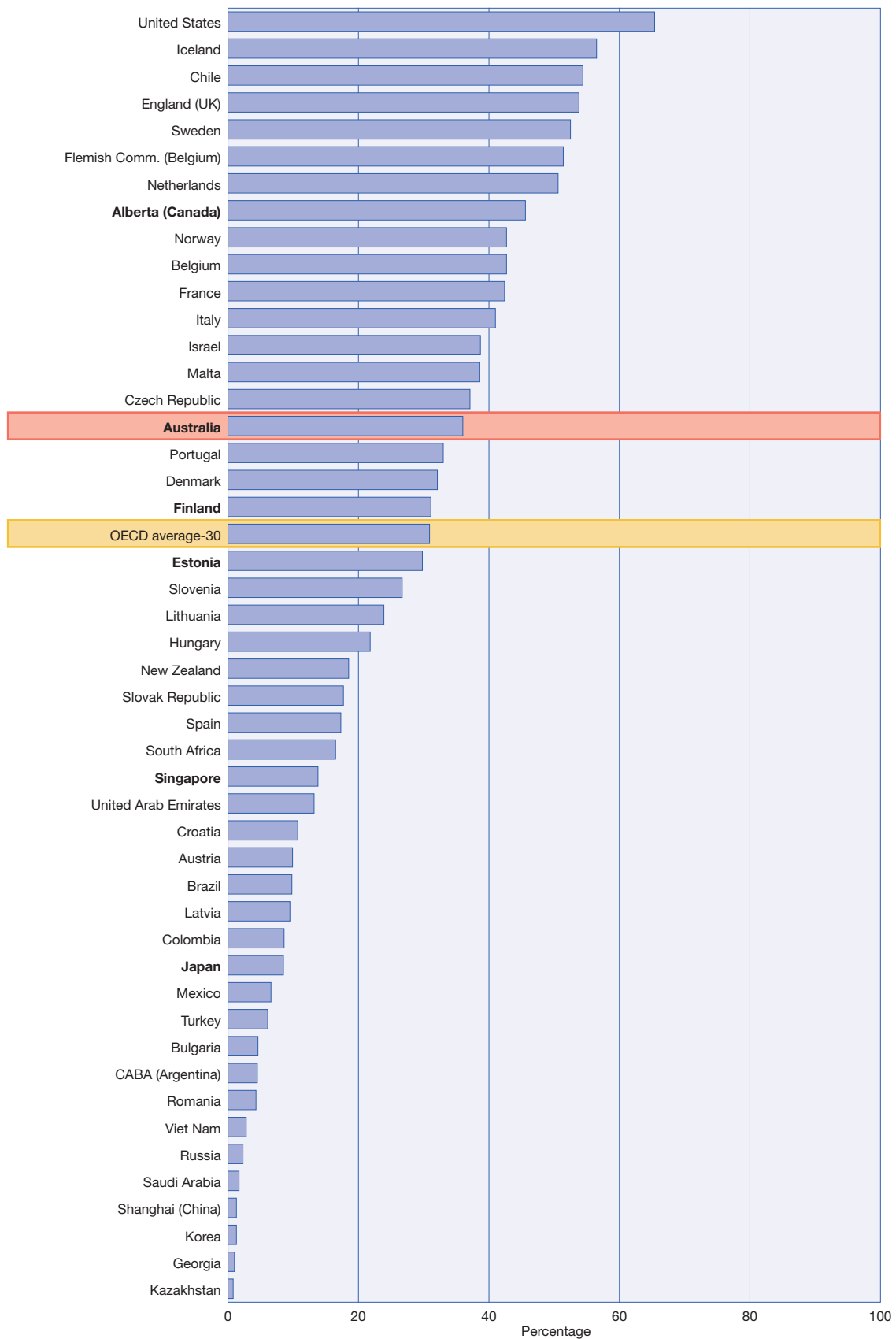
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

In Australia, 25 per cent of teachers work in schools with at least 30 per cent of socioeconomically disadvantaged students (that is, those whose homes lack the basic necessities or advantages of life, such as adequate housing, nutrition and medical care), greater than the OECD average of 20 per cent. These Australian and OECD results are high compared to the high-performing PISA countries, in which Alberta (Canada) is the closest to Australia with 11 per cent of teachers working in similar schools (Table 3.5). The OECD argue that this pattern may reflect higher levels of poverty or inequality in the system, and/or a higher degree of social segregation in the education system.

TABLE 3.5 School composition

| | Percentage of teachers teaching in schools with the following composition | | | | | | | | | |
| | More than 10% of students are non-native speakers | | More than 10% of students have special needs | | More than 30% of students come from socio-economically disadvantaged homes | | More than 10% of students are immigrants or with migrant background | | At least 1% of students are refugees | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	36	(0.1)	36	(0.1)	25	(0.1)	41	(0.1)	62	(0.1)
OECD average-30	21	(0.5)	31	(0.6)	20	(0.5)	17	(0.5)	30	(0.5)
TALIS average-47	22	(0.4)	23	(0.5)	18	(0.4)	15	(0.4)	24	(0.4)
High-performing PISA countries										
Alberta (Canada)	50	(4.7)	46	(5.5)	11	(3.6)	45	(5.3)	46	(4.7)
Estonia	13	(3.1)	30	(3.8)	4	(1.2)	1	(0.5)	9	(2.0)
Finland	18	(3.1)	31	(4.5)	3	(1.5)	17	(3.0)	51	(4.6)
Japan	2	(1.0)	9	(2.1)	8	(2.0)	1	(0.6)	0	(0.0)
Singapore	82	(0.1)	14	(0.1)	5	(0.0)	38	(0.1)	0	(0.0)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Recent global conflicts have resulted in an increasing flow of refugees in many parts of the world. That, in addition to the growing labour mobility across some geographic areas has increased migration in many countries. The children of refugees and immigrants are enrolled in the education systems of their host countries, often requiring specific support from schools and teachers. In Australia 41 per cent of teachers are working in schools in which, according to the principal, at least 10 per cent of children have a migrant background (that is, those born outside the country or whose parents were both born outside the country). Across the OECD on average, around 17 per cent of teachers are working in such schools. Again, this varies widely across the high-performing PISA countries, with Singapore and Alberta (Canada) having a similar proportion to Australia, and Finland about the same as the OECD average. Estonia and Japan, as countries with traditionally low migration inflows, have one per cent or fewer teachers working in schools with a substantial migrant background.

While language background can be related to migration flows, it can also be due to the presence of one or more linguistic minorities in a country. This is the case for 21 per cent of teachers across the OECD and 36 per cent of Australian teachers, who are working in schools where there are at least 10 per cent of students whose first language is different from the language(s) of instruction or from a dialect of this (these) language(s) (Figure 3.8). Singapore stands out among the high-performing PISA countries, with 82 per cent of teachers working in schools with a high proportion of non-native language speakers. This is not surprising given its multicultural and multilingual background, in which English was chosen as the language of instruction over the three official languages: Mandarin, Malay and Tamil. In Alberta (Canada), around 50 per cent of teachers teach in linguistically diverse schools, and at the other end of the spectrum, teachers in Estonia, Finland, and particularly in Japan, work in much more linguistically homogeneous schools.

FIGURE 3.8 School concentration of students whose first language is different from the language(s) of instruction

Percentage of lower secondary teachers teaching in schools with more than 10% of students whose first language is different from the language(s) of instruction
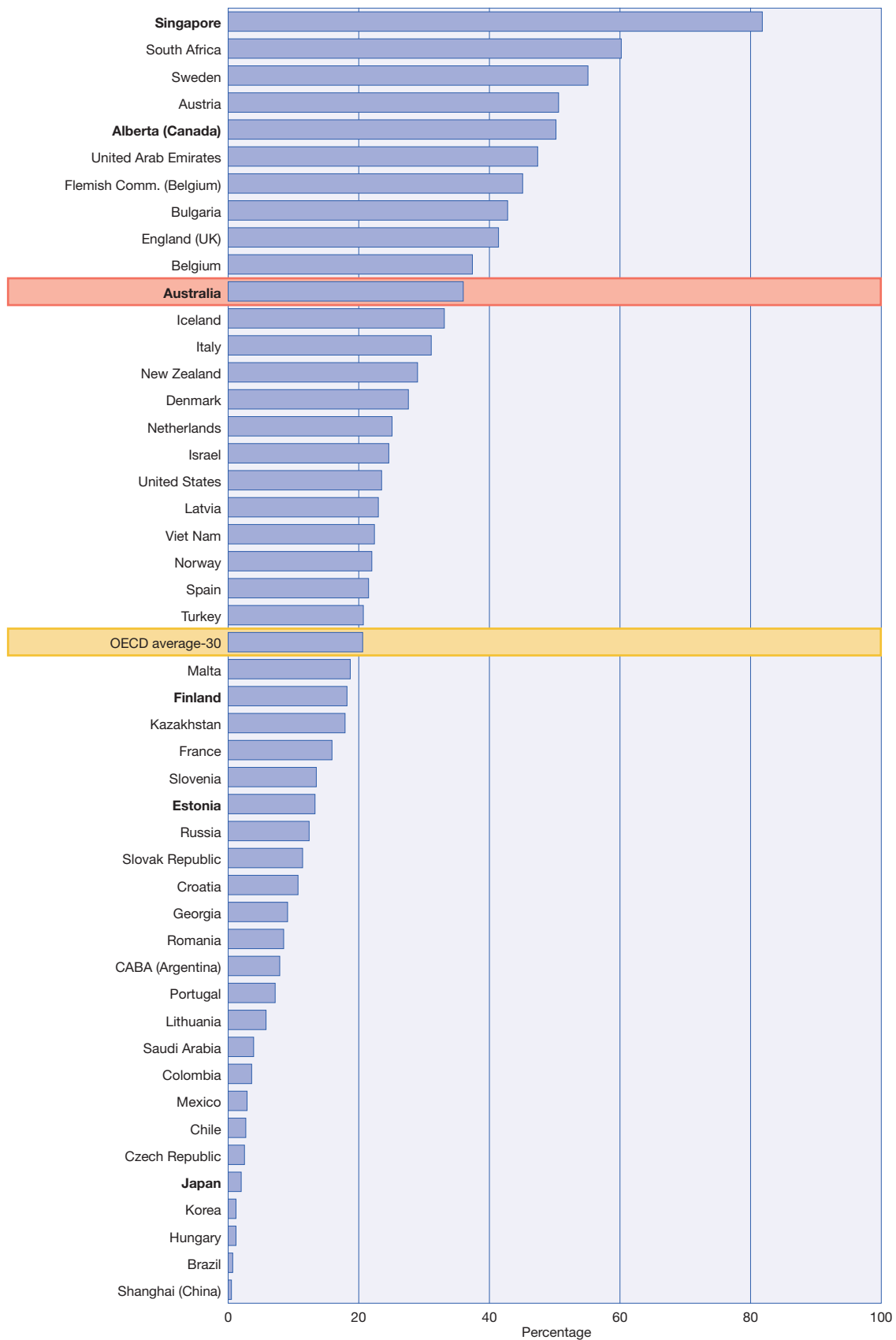
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

The issue of refugee students has arisen largely due to the refugee crisis of 2015–16. The question is new to TALIS, and provides new insight into the proportion of teachers and principals teaching and supporting refugee students (that is, those who, regardless of legal status, fled to another country seeking refuge from war, political oppression, religious persecution, or a natural disaster) in their schools. The TALIS international report cites research showing that "[r]efugee students often come with a personal history of forced relocation and trauma that requires specific support from the school and its community" (OECD, 2019a, p. 94). In Australia, 62 per cent of teachers are working in schools in which at least one per cent of students are refugees, significantly greater than the OECD average of 30 per cent. Again, there was significant variability between the high-performing PISA countries, with higher proportions in Alberta (Canada) (46%), and Finland (51%) and only a very small proportion in Estonia, Singapore and particularly Japan. Australia is well above the OECD and all the comparison countries, showing Australian schools and teachers are dealing with a more diverse and potentially more challenging classroom composition in this respect.

Teachers were asked the same questions about the composition of their target class (Table 3.6). To a large extent these data reflect the principal data. According to Australian teachers, a similar proportion to the OECD average teach classes in which there are large proportions of students with special needs and with disadvantaged backgrounds. The proportion of classes with non-native speaking students was about 10 percentage points above the OECD average, and close to 20 percentage points higher for students with an immigrant or refugee background.

TABLE 3.6 Classroom composition

	Percentage of teachers teaching in classes with the following composition									
	More than 10% of students are non-native speakers		More than 10% of students have special needs		More than 30% of students come from socio-economically disadvantaged homes		More than 10% of students are immigrants or with migrant background		At least 1% of students are refugees	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	27	(0.7)	29	(0.9)	18	(0.5)	36	(0.8)	35	(1.0)
OECD average-31	18	(0.3)	27	(0.3)	16	(0.3)	17	(0.3)	17	(0.2)
TALIS average-48	20	(0.2)	22	(0.2)	16	(0.2)	16	(0.2)	16	(0.2)
High-performing PISA countries										
Alberta (Canada)	45	(3.8)	32	(2.8)	12	(2.3)	43	(3.3)	38	(2.7)
Estonia	13	(1.5)	14	(1.1)	4	(0.5)	2	(0.3)	4	(0.7)
Finland	15	(1.8)	26	(1.1)	8	(0.8)	16	(1.8)	21	(1.6)
Japan	2	(0.5)	21	(1.0)	6	(0.8)	1	(0.3)	1	(0.2)
Singapore	58	(0.9)	19	(0.7)	14	(0.6)	23	(0.8)	3	(0.3)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

3.4.2   Change in classroom composition

Three of the questions about classroom composition were also asked in previous TALIS cycles, allowing an examination of how learning environments have changed over time. In Australia and Estonia, the only two countries that have participated in all three TALIS cycles, there has been no significant change over the past decade in the proportion of teachers working in linguistically diverse schools (Table 3.7). Over the past five years, there has been no change in this proportion in Australia, however there has been a rise in diversity among teachers and schools in Finland (from a very low proportion) and a decline in Singapore (from a very high proportion).

TABLE 3.7 Change in the concentration of students who were non-native speakers in school from 2008 to 2018

| | Percentage of teachers teaching in schools where the share of non-native speaking students is more than 10% | | | | | | | | |
| | TALIS 2008 | | TALIS 2013 | | TALIS 2018 | | Change between 2008 and 2018 (TALIS 2018 – TALIS 2008) | | Change between 2013 and 2018 (TALIS 2018 – TALIS 2013) | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	29	(3.9)	33	(5.0)	36	(0.1)	7	(3.9)	3	(5.0)
High-performing PISA countries										
Alberta (Canada)			41	(5.0)	50	(4.7)			9	(6.8)
Estonia	12	(2.6)	10	(2.0)	13	(3.1)	1	(4.1)	4	(3.7)
Finland			9	(2.4)	18	(3.1)			**9**	(3.9)
Japan			2	(1.0)	2	(1.0)			0	(1.4)
Singapore			89	(0.1)	82	(0.1)			**-7**	(0.1)

Notes: For explanation about choice of high-performing PISA countries refer to Reader's Guide The boundaries in TALIS 2008 are different from those in TALIS 2013 and 2018. The category includes *10% or more* for TALIS 2008.

With respect to socioeconomic diversity, there has been no change in the proportion of teachers working in socioeconomically diverse schools in Australia over the past five years (Table 3.8). Of the high-performing PISA countries, Estonia and Singapore have seen a decline in this area, which could reflect either a decline in poverty and social inequalities among students or a rise in school social inclusion in these countries.

TABLE 3.8 Change in the concentration of students who were from socioeconomically disadvantaged homes in school from 2013 to 2018

| | Percentage of teachers teaching in schools where the share of students who are from socioeconomically disadvantaged homes is more than 30% | | | | | |
| | TALIS 2013 | | TALIS 2018 | | Change between 2013 and 2018 (TALIS 2018 – TALIS 2013) | |
	%	S.E.	%	S.E.	% dif.	S.E.
Australia	26	(3.8)	25	(0.1)	-1	(3.8)
High-performing PISA countries						
Alberta (Canada)	20	(3.9)	11	(3.6)	-9	(5.4)
Estonia	11	(2.2)	4	(1.2)	**-7**	(2.5)
Finland	3	(1.8)	3	(1.5)	0	(2.3)
Japan	6	(1.8)	8	(2.0)	2	(2.7)
Singapore	6	(0.1)	5	(0.0)	**-2**	(0.1)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Over the past five years there has been a significant increase (of around 13 percentage points) in the proportion of Australian teachers working in schools in which there are more than 10 per cent of students with special needs (Table 3.9). This increase could reflect an actual increase in the number of students with special needs, or it could reflect a greater propensity to identify students with such needs, a broadening of the categorisation of special needs or more simply policy changes to allow for the inclusion of special-needs students in the general education system.

In Singapore, the proportion of teachers working in schools with more than 10 per cent of students with special needs increased from almost none to 14 per cent in five years. This is most likely a reflection of the substantial policy changes in this area in Singapore over the past ten years, and will increase further as Singapore implements new guidelines that include all children with moderate to severe special education needs in the compulsory education network and provides financial support and training for schools and teachers in order to be able to cater for more diverse classrooms.

TABLE 3.9 Change in the concentration of special-needs students in school from 2013 to 2018

| | Percentage of teachers teaching in schools where the share of students with special needs is more than 10% | | | | | |
| | TALIS 2013 | | TALIS 2018 | | Change between 2013 and 2018 (TALIS 2018 – TALIS 2013) | |
	%	S.E.	%	S.E.	% dif.	S.E.
Australia	24	(4.5)	36	(0.1)	**13**	(4.5)
High-performing PISA countries						
Alberta (Canada)	51	(4.6)	46	(5.5)	-5	(7.2)
Estonia	29	(3.9)	30	(3.8)	1	(5.5)
Finland	27	(3.6)	31	(4.5)	4	(5.8)
Japan	9	(2.0)	9	(2.1)	-1	(2.9)
Singapore	1	(0.0)	14	(0.1)	**13**	(0.1)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

3.4.3 Attitude of school staff towards student diversity and equity

Of interest in the context of globalisation and multiculturalism is how schools and teachers adapt to the increase in diversity. A key aspect of a school's response to diversity is the attitudes and beliefs of the staff in that school, and so it is important that policymakers have a good understanding of the range of these attitudes and beliefs. However, research has shown that asking questions about sensitive topics, such as beliefs about equity and diversity, directly of teachers or principals is likely to elicit socially desirable responses (Janus, 2010; Krumpal, 2013), and so TALIS asks the questions indirectly. Principals are asked to estimate the proportion of teachers in their school (*none or almost none*; *some*; *many*; *almost all or all*) that would agree with a series of statements about cultural diversity (Table 3.10) and equity (Table 3.11).

While the responses of principals show they generally report that the teachers in their school share very inclusive and positive views on diversity, these responses are still the *principals'* perceptions of teachers' beliefs. The results show few differences between the responses of principals in each of the high-performing countries, either reflecting a real belief in teachers' general support of diversity or a persistence in social desirability influencing their responses.

TABLE 3.10 Principals' views about the diversity beliefs of teachers

| | Percentage of principals who think that "many" or "all or almost all" teachers in their school would agree with the following statements | | | | | | | |
| | It is important to be responsive to differences in students' cultural backgrounds | | It is important for students to learn that people from other cultures can have different values | | Respecting other cultures is something that children and young people should learn as early as possible | | Children and young people should learn that people of different cultures have a lot in common | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	90	(6.3)	95	(4.2)	91	(6.3)	91	(6.3)
OECD average-31	91	(0.5)	92	(0.6)	94	(0.6)	95	(0.6)
TALIS average-48	90	(0.4)	92	(0.5)	94	(0.4)	94	(0.4)
High-performing PISA countries								
Alberta (Canada)	95	(2.1)	82	(13.9)	80	(13.9)	82	(13.9)
Estonia	95	(1.6)	93	(1.9)	94	(1.8)	96	(1.5)
Finland	95	(1.3)	96	(1.6)	97	(1.6)	98	(1.2)
Japan	92	(2.5)	92	(2.6)	88	(3.0)	89	(3.0)
Singapore	97	(0.9)	98	(1.0)	99	(0.5)	100	(0.0)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Principals' views on their teachers' equity beliefs were very positive (Table 3.11). The same caveats apply with this question as well. The belief that female and male students should be treated equally is almost universally shared – 98 per cent of principals believed that most of the teachers in their school would agree with this principle.

TABLE 3.11   Principals' views about the equity beliefs of teachers

	Percentage of principals who think that "many" or "all or almost all" teachers in their school would agree with the following statements							
	Schools should encourage students from different socioeconomic backgrounds to work together		Students should learn how to avoid gender discrimination		It is important to treat female and male students equally		It is important to treat students from all socioeconomic backgrounds in the same manner	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	94	(4.2)	94	(4.4)	99	(0.7)	95	(4.2)
OECD average-30	92	(0.7)	93	(0.6)	98	(0.3)	97	(0.3)
TALIS average-47	93	(0.5)	94	(0.4)	97	(0.2)	97	(0.2)
High-performing PISA countries								
Alberta (Canada)	82	(13.8)	80	(13.6)	98	(1.4)	97	(1.3)
Estonia	94	(1.8)	87	(2.7)	94	(1.8)	97	(1.2)
Finland	97	(1.6)	100	(0.0)	100	(0.0)	100	(0.0)
Japan	89	(2.6)	90	(2.6)	95	(2.1)	96	(1.9)
Singapore	99	(0.5)	97	(1.2)	99	(0.5)	100	(0.0)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

TALIS 2018 asked principals to what extent a range of policies were implemented in their schools to address gender and socioeconomic issues (Figure 3.9). In Australia, and across the OECD on average, the most common policy was teaching students to be inclusive of different socioeconomic backgrounds. In 91 per cent of schools in Australia and 80 per cent of schools across the OECD, principals reported that they provided additional support for students from disadvantaged backgrounds. However, only 50 per cent of Australian schools have explicit policies combating socioeconomic discrimination, compared to 75 per cent across the OECD on average. Gender discrimination policies tend to be more common in Australian schools than those combating socioeconomic discrimination. In Australia, 73 per cent of schools have policies to deal with gender discrimination, also less than the OECD average of 80 per cent.

FIGURE 3.9   School practices related to equity

Percentage of lower secondary principals reporting that the following policies and practices are implemented in their school
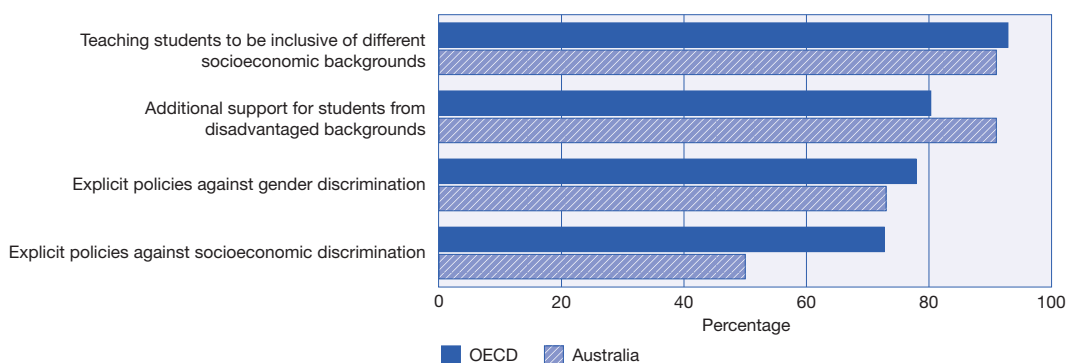
Previous sections have shown that schools are becoming more culturally diverse, and also that there is variation in the degree to which schools have adopted specific policies and practices related to cultural diversity. In 2018, TALIS examined school practices related to cultural diversity for the first time. The closer examination of the practices in this area was conducted by the OECD in what they refer to as 'multicultural schools' – those schools in which teachers reported that students from more than one cultural or ethnic background were enrolled (around 70% of the sample teachers on average).

On average in Australia, and across the OECD, the most common practices and policies related to diversity were those embedded in the teaching process (Figure 3.10). Eighty-eight per cent of Australian teachers, and 80 per cent of teachers across the OECD, working in multicultural schools do so in an environment that has integrated global issues throughout the curriculum. Seventy-six per cent of teachers in Australia and a similar proportion across the OECD (80%) worked in a school that teaches how to deal with ethnic and cultural discrimination.

The last two activities in this group illustrate a multicultural approach to teaching, and in both, the proportion of Australian teachers who teach in multicultural schools that use these approaches far exceeds the average across the OECD. Supporting activities or organisations encouraging students' expression of diverse ethnic and cultural identities is practiced by 85 per cent of Australian teachers and 61 per cent of teachers across the OECD on average. Australian teachers and schools stand out when it comes to organising multicultural events, with 89 per cent supporting their students' needs in this way compared to 55 per cent of teachers across the OECD.

FIGURE 3.10   School practices related to diversity

Percentage of lower secondary teachers working in a school with diverse ethnic and cultural student background where the following diversity-related practices are implemented
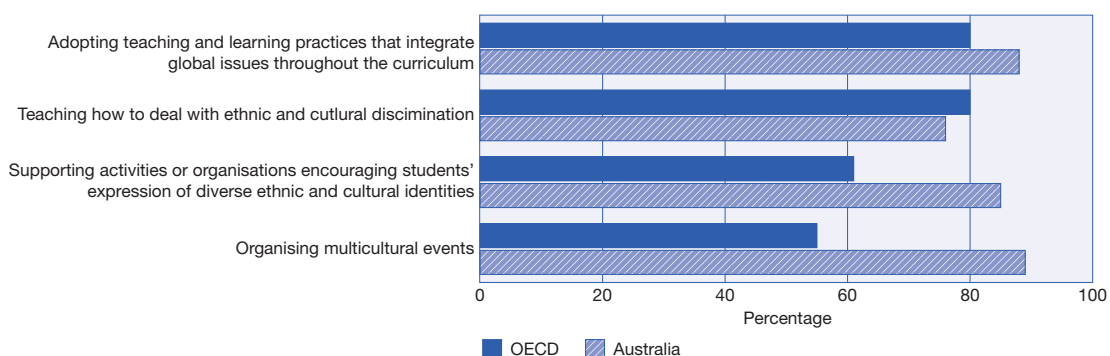
Note: Data based on principals' views. Principals' responses were merged to teacher data, and weighted using teacher final weights.

3.4.4   Teachers' readiness to teach in multicultural environments

As previous sections of this report have discussed, immigration is increasing across the world. The children of immigrants enrol in the schools of their host country, challenging teachers in those schools to adapt their teaching practices to cater for multicultural student profiles. In this context, the OECD argues, a key issue for policymakers and school leaders is to understand teachers' readiness to teach multicultural classes. The TALIS international report notes:

> …[A] recent international review of the integration of immigrant students acknowledged that handling cultural diversity in class is difficult and requires preparation. Often, students differ not only in the knowledge and skills they have acquired in their early years, but also in the strategies they use to approach and solve problems. De Abreu (2006) argues that, in mathematics for instance, teachers who are not fully aware of cultural differences in approaches to mathematical problems or who play down cultural differences, arguing for general notions of ability and equity, are ill-equipped to build on their students' knowledge and experience. (OECD, 2015) (OECD, 2019a, p. 99).

TALIS 2018 asked teachers who have previously taught classes with students from different cultures a range of questions about their experience and self-efficacy teaching a culturally diverse class, and to what extent (*not at all*; *to some extent*; *quite a bit*; and *a lot*), they could manage a number of aspects of teaching in multicultural contexts (Figure 3.11).

Teachers' self-efficacy in multicultural settings is highest with respect to reducing ethnic stereotyping among students, with almost three-quarters of the TALIS teachers (74% in Australia, 73% across the OECD on average) reporting that they did this *quite a bit* or *a lot*. Ensuring that students with and without a migrant background work together was also high in terms of teachers' self-efficacy, with 72 per cent of Australian teachers and 69 per cent of teachers across the OECD reporting high levels of self-efficacy in this area.

FIGURE 3.11 Teachers' self-efficacy in teaching multicultural classes

Percentage of lower secondary teachers who feel they can do the following quite a bit *or a lot* in *teaching a culturally diverse class*
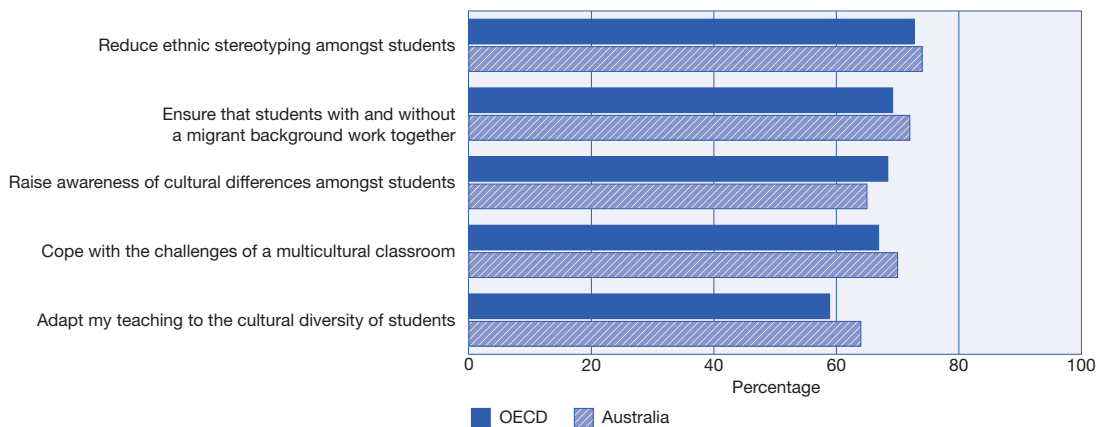
Note: The sample is restricted to teachers reporting to have already taught a class with students from different cultures

BOX 3.4   Student diversity – comparing primary and lower secondary schools

Overall, there were few differences between Australian primary and lower secondary schools in terms of diversity (Appendix Table A3.8). While a higher proportion of primary teachers (49% compared to 36% in lower secondary) reported working in a school with more than 10 per cent non-native speakers, a higher proportion of lower secondary teachers reported working in a school in which at least 1 per cent of the population were refugees (62% compared to 48% in primary schools).

There were also very few substantial differences in reports by primary and lower secondary teachers regarding policies that their school implements to address student cultural diversity (Table A3.9). While a higher proportion of primary teachers reported implementing strategies such as organising multicultural events (79% of primary teachers compared to 75% of lower secondary teachers), a larger proportion of secondary teachers reported their school supports activities or organisations encouraging students' expression of diverse ethnic and cultural identities (81% compared to 74% for primary teachers). Principals tend to report higher levels of policies and practices related to diversity at their schools than teachers, and this was more evident in primary schools.

3.5   Enhancing school climate and students' learning environments

There is a great deal of research showing that a positive school and classroom climate is a strong direct or indirect influence on student learning and wellbeing (Engel, Rutkowski & Rutkowski, 2009; Nilsen & Gustafsson, 2014), as well as on teachers' sense of self-efficacy, confidence, and commitment to teaching. TALIS examines several aspects of school and classroom climate: school safety, student–teacher relationships, and disciplinary climate.

Principals were asked about the frequency with which a number of incidents related to school safety occurred in their schools (*never*; *less than monthly*; *monthly*; *weekly*; or *daily*). Of concern for policymakers, principals, teachers and parents is that on each of the issues to do with school safety, Australian principals report a higher frequency of incidents than is the case internationally (Figure 3.12, Table 3.12). The most commonly reported issue is intimidation and bullying among students, which was reported to occur at least weekly in 14 per cent of schools across the OECD. It was also a considerable issue in Finland, where 29 per cent of principals reported these events occurring at least weekly. Principals in Japan and Singapore report that such behaviours rarely occur.

In Australia, however, 37 per cent of principals report that intimidation and bullying among students occurs at least weekly in their schools. This finding accords with evidence from both TIMSS and PISA for Australia, in which both principals and students reported higher levels of bullying than in many other countries. Bullying is particularly a concern given its enduring impact on the wellbeing, confidence and achievement of those who are its victims. Analysis from TIMSS 2015 found that only 17 per cent of students who are bullied frequently feel safe at school (Thomson, 2019).

Of concern for policymakers, principals, teachers and parents is that on each of the issues to do with school safety, Australian principals report higher levels of occurrence than is the case internationally. In Australia, 16 per cent of principals reported students or parents reporting unwanted electronic contact between students occurred at least weekly, compared to three per cent on average across all OECD countries. Six per cent of principals in Alberta (Canada) reported this as a major issue, but this was not an issue for the other high-performing PISA countries. Similarly, students or parents reporting posting of hurtful information on the internet about students was also an issue that 11 per cent of Australian principals reported occurring at least weekly in their schools, compared to just over two per cent of principals across the OECD, and four per cent or less in any of the high-performing PISA countries.

Intimidation and verbal abuse of teachers and staff by students can impact upon the psychological wellbeing of teachers and principals and the long-term retention of staff. Twelve per cent of Australian principals say that this happens at least weekly, compared to three per cent of principals across the OECD. This result contrasts with feedback from the vast majority of teachers (97%) reporting that teachers and students get on well with one another (see section 3.5.1).

Physical injury caused by violence among students is also reported to occur at least weekly in seven per cent of Australian schools compared to just under two per cent internationally, and two per cent or less in all of the high-performing PISA countries.

The incidence of vandalism or theft in Australian schools is also higher than on average across the OECD, reported as a weekly occurrence by five per cent of Australian principals compared to two per cent on average over the OECD. Finland is the only one of the high-performing PISA countries for which this is a minor problem – for the other countries it does not rate as an issue.

One positive is that very few principals in Australia or across the OECD report having to deal with use or possession of either drugs or alcohol on a weekly basis.

FIGURE 3.12 School safety

Percentage of principals reporting that these incidents occurred at least weekly in their school
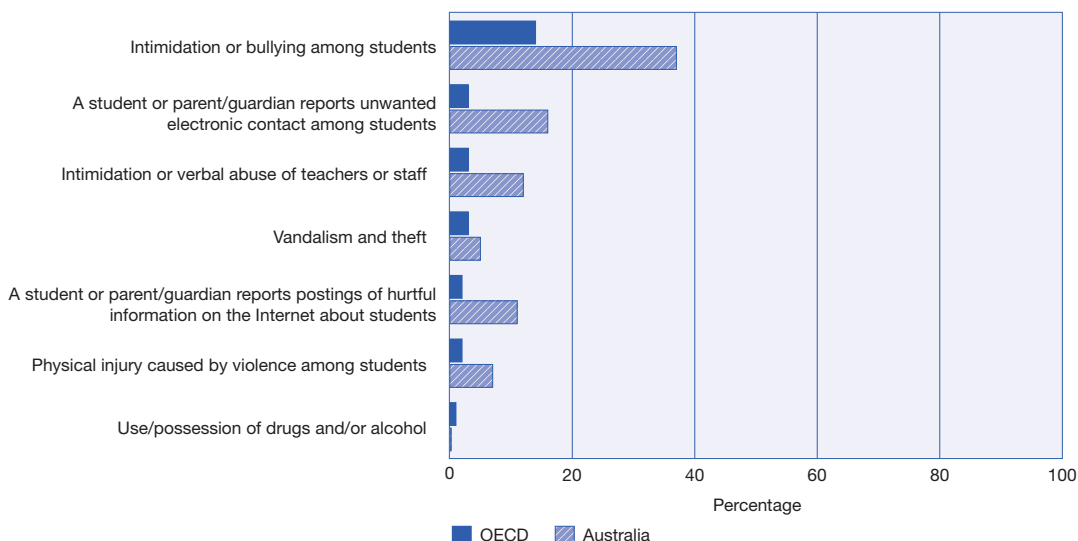
TABLE 3.12 School safety – internationally and Australia

| | Percentage of principals reporting that the following incidents occurred at least weekly in their school | | | | | | | | | | | | | |
| | Vandalism and theft | | Intimidation or bullying among students | | Physical injury caused by violence among students | | Intimidation or verbal abuse of teachers or staff | | Use/ possession of drugs and/ or alcohol | | A student or parent/ guardian reports postings of hurtful information on the Internet about students | | A student or parent/ guardian reports unwanted electronic contact among students | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	5	(1.7)	37	(6.2)	7	(2.5)	12	(3.6)	0	(0.2)	11	(2.5)	16	(3.5)
OECD average-30	3	(0.2)	14	(0.7)	2	(0.2)	3	(0.3)	1	(0.1)	2	(0.2)	3	(0.3)
TALIS average-47	3	(0.2)	13	(0.5)	2	(0.2)	3	(0.2)	2	(0.1)	2	(0.2)	3	(0.2)
High-performing PISA countries														
Alberta (Canada)	2	(1.3)	13	(3.4)	1	(0.7)	0	(0.1)	2	(1.4)	4	(1.8)	6	(1.9)
Estonia	0	(0.5)	12	(2.3)	0	(0.0)	8	(2.0)	1	(0.8)	2	(0.9)	1	(0.7)
Finland	4	(1.5)	29	(4.0)	2	(1.2)	5	(1.7)	4	(1.7)	0	(0.0)	1	(0.5)
Japan	1	(0.5)	0	(0.4)	0	(0.4)	1	(0.8)	0	(0.0)	1	(0.4)	1	(0.4)
Singapore	0	(0.0)	4	(1.5)	0	(0.0)	0	(0.0)	0	(0.0)	3	(1.5)	1	(0.5)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

TALIS makes it possible to look at changes in principals' perception of different aspects of school safety over the past five years (Table 3.13). Examining the most frequent school safety issue reported by principals – intimidation and bullying among students – there would seem to be a decline in the rate of occurrence in Alberta (Canada) and Estonia over the past five years, with no change for Australia, Finland, Japan or Singapore. However, it should be noted that an additional question was added to this group of questions for TALIS 2018, asking principals about the frequency of posting hurtful information – 'cyber-bullying'. This sort of incident would have been included in another category in 2013, so the comparison is not perfect and should be interpreted cautiously.

There were few changes in school safety between 2013 and 2018. Principals in Finland reported a slight increase in the incidence of physical injury caused by violence among students, while principals in Alberta (Canada) reported a decrease in the occurrence of intimidation or verbal abuse of teachers or staff.

TABLE 3.13 Change in school safety from 2013 to 2018

	Percentage of principals reporting that the following incidents occurred at least weekly in their school																													
	Vandalism and theft						Intimidation or bullying among students						Physical injury caused by violence among students						Intimidation or verbal abuse of teachers or staff						Use/possession of drugs and/or alcohol					
	TALIS 2013		TALIS 2018		Change between 2013 and 2018		TALIS 2013		TALIS 2018		Change between 2013 and 2018		TALIS 2013		TALIS 2018		Change between 2013 and 2018		TALIS 2013		TALIS 2018		Change between 2013 and 2018		TALIS 2013		TALIS 2018		Change between 2013 and 2018	
	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	% dif.	S.E.
Australia	2.5	(1.3)	5.4	(1.7)	3.0	(2.1)	30.1	(5.4)	37.2	(6.2)	7.1	(8.3)	5.9	(3.1)	7.2	(2.5)	1.3	(4.0)	12.2	(3.8)	12.1	(3.6)	-0.1	(5.2)	0.0	(0.0)	0.2	(0.2)	0.2	(0.2)
High-performing PISA countries																														
Alberta (Canada)	1.8	(1.0)	2.1	(1.3)	0.3	(1.7)	26.0	(3.3)	12.5	(3.4)	-13.5	(4.7)	2.2	(1.1)	0.7	(0.7)	-1.5	(1.3)	4.5	(1.9)	0.1	(0.1)	-4.4	(1.9)	5.3	(1.8)	1.8	(1.4)	-3.5	(2.2)
Estonia	2.0	(1.0)	0.5	(0.5)	-1.5	(1.1)	24.1	(3.1)	12.0	(2.3)	-12.2	(3.8)	1.5	(0.9)	0.0	(0.0)	-1.5	(0.9)	11.3	(2.4)	7.9	(2.0)	-3.4	(3.1)	2.1	(1.0)	1.1	(0.8)	-1.0	(1.3)
Finland	2.0	(1.2)	3.7	(1.5)	1.7	(1.9)	26.6	(3.6)	29.4	(4.0)	2.8	(5.4)	0.0	(0.0)	2.3	(1.2)	2.3	(1.2)	3.4	(1.4)	4.8	(1.7)	1.4	(2.2)	1.2	(0.9)	3.6	(1.7)	2.4	(1.9)
Japan	2.7	(1.2)	0.5	(0.5)	-2.1	(1.3)	2.0	(0.8)	0.4	(0.4)	-1.6	(0.9)	1.0	(0.6)	0.4	(0.4)	-0.7	(0.7)	1.4	(0.7)	1.3	(0.8)	-0.1	(1.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
Singapore	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	2.0	(1.2)	4.3	(1.5)	2.3	(1.9)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.7	(0.7)	0.0	(0.0)	-0.7	(0.7)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)

Notes: In TALIS 2013, principals were asked to report on the frequency with which "Intimidation or verbal abuse among students (or other forms of non-physical bullying)" occurred in this school. For explanation about choice of high-performing PISA countries refer to Reader's Guide.

3.5.1 Teachers' relationships with students

Teacher–student relationships have also been shown in many studies to be important for both student success and teacher job satisfaction. TALIS asked questions intended to find out the extent to which teachers and students get along with each other, and how well the school climate supports student wellbeing (Table 3.14).

Overall, the data suggest that the relationships between teachers and students are overwhelmingly positive. Virtually all Australian teachers (99%) and almost all teachers across the OECD on average (96%), including the high-performing PISA countries (ranging from 93% in Japan to 99% in Alberta (Canada)) agree or strongly agree that students' wellbeing is important.

The only item on which there was slightly less consensus is 'teachers can rely on each other' – although 93 per cent of Australian teachers agreed or strongly agreed with this. Teachers across the OECD on average were slightly less positive, with 87 per cent agreeing, and even fewer, 83 per cent, of Japanese teachers agreeing.

TABLE 3.14   Teacher–student relations

| | Percentage of teachers who "agree" or "strongly agree" with the following statements about what happens in their school | | | | | | | | | |
| | Teachers and students usually get on well with each other | | Most teachers believe that the students' well-being is important | | Most teachers are interested in what students have to say | | If a student needs extra assistance, the school provides it | | Teachers can rely on each other | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	97	(0.3)	99	(0.2)	96	(0.4)	94	(0.5)	93	(0.5)
OECD average-31	96	(0.1)	96	(0.1)	93	(0.1)	92	(0.1)	87	(0.2)
TALIS average-48	96	(0.1)	96	(0.1)	92	(0.1)	92	(0.1)	89	(0.1)
High-performing PISA countries										
Alberta (Canada)	98	(0.4)	99	(0.2)	97	(0.5)	97	(0.7)	93	(0.8)
Estonia	97	(0.4)	98	(0.3)	93	(0.5)	98	(0.3)	92	(0.6)
Finland	97	(0.5)	99	(0.2)	95	(0.5)	97	(0.4)	90	(0.7)
Japan	96	(0.5)	93	(0.6)	93	(0.5)	95	(0.4)	83	(1.0)
Singapore	98	(0.3)	98	(0.2)	93	(0.5)	98	(0.3)	92	(0.4)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

3.5.2 Disciplinary climate in today's landscape

Reflecting similar items in PISA and TIMSS, TALIS looks at the disciplinary climate in the classroom by asking teachers their level of agreement (*strongly disagree*; *disagree*; *agree*; *strongly agree*) with four statements about the disciplinary climate in the classroom of their target class (Table 3.15):

▸ I lose quite a bit of time because of students interrupting the lesson

▸ I have to wait quite a long time when the lessons begin for students to quieten down

▸ There is much disruptive noise in the classroom

▸ Students in this class take care to create a pleasant learning atmosphere.

Overall, most teachers agree that their students take care to create a pleasant learning environment, with 70 per cent of Australian teachers and a similar proportion on average across the OECD agreeing with this to some extent. This level of agreement was significantly higher in Japan (85% agreement) but significantly lower in Finland (59%), which is unexpected given Finland's performance in PISA.

School students in PISA have reported that Australian classes are particularly noisy and disruptive. In PISA, for example, 43 per cent of 15-year-old students reported that there is noise and disorder in the classroom (compared to 33% on average across the OECD) and 40 per cent of Australian students (compared to 32% OECD average) report that students don't listen to what the teacher says (Thomson, De Bortoli & Underwood, 2017).

However, according to TALIS teachers, Australian classes are not as disruptive as students report, and do not seem to be vastly different from others internationally. According to TALIS data there are no differences on any of these items between Australia and the OECD average. In Singapore and Finland, a larger proportion of teachers report that they have to wait a long time for students to quieten down, and that there is much disruptive noise in the classroom. As would be expected culturally, the climate in Japanese schools is one of order and discipline to a much greater extent than in any other country. However, in PISA the focus is on Year 9 students, whereas TALIS reports on a wider range of year levels (lower secondary school or years 7–10), so it may be that the differences reported are less about student perception versus teacher perception and more about the differences between Year 9 classes and Year 7–10 classes more broadly. The forthcoming report on the PISA–TALIS link may be able to shed light on this.

TABLE 3.15 Disciplinary climate internationally and for Australia

	Percentage of teachers who "agree" or "strongly agree" with the following statements about their target class							
	When the lesson begins, the teacher has to wait quite a long time for students to quieten down		Students in the class take care to create a pleasant learning atmosphere		The teacher loses quite a lot of time because of students interrupting the lesson		There is much disruptive noise in the classroom	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Australia	26	(1.1)	70	(1.3)	29	(1.2)	25	(0.9)
OECD average-31	28	(0.2)	71	(0.2)	29	(0.2)	26	(0.2)
TALIS average-48	26	(0.2)	73	(0.2)	27	(0.2)	24	(0.2)
High-performing PISA countries								
Alberta (Canada)	24	(1.8)	76	(2.2)	26	(2.0)	26	(2.4)
Estonia	18	(0.9)	69	(1.2)	17	(1.1)	19	(1.1)
Finland	32	(1.4)	59	(1.3)	32	(1.5)	33	(1.4)
Japan	11	(0.9)	85	(0.9)	8	(0.7)	12	(0.9)
Singapore	32	(0.9)	67	(0.8)	33	(0.8)	31	(0.8)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

As would also be expected, the disciplinary climate varies with classroom composition. Regression analyses reported in the TALIS international report (Table I.3.53) found that in all countries other than Vietnam, the higher the concentration of students with behavioural problems the more teachers reported discipline problems in the classroom, even after controlling for other classroom characteristics and teacher characteristics. The need for more discipline was found to be lower in classes with higher proportions of academically gifted students in Australia and in all of the high-achieving PISA countries other than Japan.

Comparing the classroom climate between 2013 and 2018 shows that there has been little change in Australian schools (Figure 3.13).

FIGURE 3.13 Change in classroom discipline from 2013 to 2018

Percentage of lower secondary teachers who agree *or strongly agree with the statements in the key about their target class*

	Netherlands	
	Brazil	
	Chile	
	Spain	
4.3	Portugal	
	Iceland	
8.8	Flemish Comm. (Belgium)	6.8
6.9	Korea	5.0
	France	
	Finland	
−4.7	**Singapore**	−4.9
−5.3	Israel	
4.6	New Zealand	4.4
	Australia	
−4.1	Sweden	
	Alberta (Canada)	
−3.2	Slovak Republic	
	Italy	
	England (UK)	
−4.9	Latvia	
4.0	Bulgaria	−3.1
	Mexico	
−3.6	Denmark	
−6.3	**Estonia**	−3.5
−19.8	Norway	
−2.9	Czech Republic	
4.9	Romania	2.8
	Croatia	
−3.3	**Japan**	
	Georgia	−1.9
−2.8	Shanghai (China)	

Percentage — Percentage

■ When the lesson begins, the teacher has to wait quite a long time for students to quieten down (2018)

◆ When the lesson begins, the teacher has to wait quite a long time for students to quieten down (2013)

■ There is much disruptive noise in this classroom (2018)

◆ There is much disruptive noise in this classroom (2013)

Notes: Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant change between 2013 and 2018 (TALIS 2018-2013) are shown next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 3.5   School climate – comparing primary and lower secondary schools

School safety

Among both primary and lower secondary schools, incidents such as vandalism and use of drugs or alcohol typically occur on a daily or weekly basis in less than five per cent of schools (Appendix Table A3.10). Incidents such as intimidation or bullying among students were reported to occur on a much more frequent basis in lower secondary than primary schools (at least weekly by 37% of lower secondary school principals compared to 21% of primary principals). Cyber-bullying was more prevalent at the lower secondary school level, where 11 per cent of principals reported the posting of hurtful information on the internet and 16 per cent reported unwanted electronic communication among students at least weekly, compared to one and three per cent respectively as reported by primary principals.

Student–teacher relationships

Across both primary and lower secondary schools in Australia, nearly 100 per cent of teachers agree that teachers and students get on well together, that teachers believe the students' wellbeing is important and that they are interested in what students have to say (Appendix Table A3.11). More than 90 per cent of both primary and secondary teachers agreed that students are provided extra assistance if needed and teachers can rely on each other.

Disciplinary climate

The responses to the questions on classroom discipline provide a broad picture of primary and lower secondary classrooms (Appendix Table A3.12). A larger proportion of primary school teachers report that their students take care to create a pleasant learning atmosphere (80% of primary teachers and 70% of lower secondary teachers), but also that the teacher loses quite a lot of time because of students interrupting the lesson (33% of primary teachers and 29% of lower secondary teachers). However there is no indication from the data collected whether these interruptions are on or off-task. A higher proportion of secondary teachers than primary teachers report that the teacher has to wait quite a long time at the beginning of lessons for students to quieten down. Around one-quarter of both primary and lower secondary teachers also report that there is a considerable amount of disruptive noise in the classroom.

3.5.3   School climate, teaching practices and teachers' self-efficacy

While the reports from principals and teachers on the school climate are informative, the TALIS data allow an examination of the extent to which the school and classroom climate relates to teaching practices used by teachers and their perceived efficacy. These relationships can explain the extent to which the link between school climate and student achievement is mediated by teachers' practices and perceptions.

While these issues have been discussed already in Chapter 2 of this report, regression analyses reported by the OECD in the TALIS 2018 international report show that teachers who reported a greater lack of discipline in their classrooms tend to feel less confident in their teaching ability and spend less classroom time on actual teaching and learning (Table I.3.56–Table I.3.59), even after controlling for teacher characteristics. Teachers with less disciplined classes also report the use of the following cognitive activation practices less frequently: give tasks that require students to think critically, have students work in groups, and ask students to decide on their own procedures for solving complex problems.

3.6 Challenges and priorities according to teachers and school leaders

As has been shown at the beginning of this chapter, the landscape for teaching and learning has changed significantly over the past decade, and it is likely that it will continue to do so. The increased professionalism of the teaching workforce means a growing role for teachers and their professional organisations in the area of educational policy making and even resource allocation. TALIS provides an opportunity to obtain their views on the challenges they face and the priorities they feel that policymakers should address.

3.6.1 School leaders' views on school resource issues that hinder quality instruction

Principals were asked about the school resource issues they feel hinder their school's capacity to provide quality instruction (Figure 3.14). In particular, TALIS asked principals about the extent to which the following issues hinder quality instruction (*not at all*; *to some extent*; *quite a bit*; and *a lot*):

▸ Shortage of support personnel

▸ Shortage of teachers with competence in teaching students with special needs

▸ Shortage or inadequacy of time for instructional leadership

▸ Shortage or inadequacy of physical infrastructure

▸ Shortage or inadequacy of time with students

▸ Shortage or inadequacy of instructional space

▸ Shortage or inadequacy of digital technology for instruction

▸ Shortage of qualified teachers

▸ Shortage of teachers with competence in teaching students in a multicultural or multilingual setting

▸ Insufficient internet access

▸ Shortage or inadequacy of necessary materials to train vocational skills

▸ Shortage of teachers with competence in teaching students from socioeconomically disadvantaged homes

▸ Shortage or inadequacy of library materials

▸ Shortage of vocational teachers

▸ Shortage or inadequacy of instructional materials.

The results indicate that resourcing is less of an issue in Australia than across the OECD on average. The four top issues for Australian principals were a shortage or inadequacy of time for instructional leadership, reported by 28 per cent of principals as hindering instruction *quite a bit* or *a lot*, shortage of teachers with competence in teaching students with special needs (18% of principals), shortage of vocational teachers (17% of principals) and shortage of qualified teachers (16% of principals).

FIGURE 3.14 Shortages of school resources that hinder quality instruction

Percentage of lower secondary principals reporting that the following shortages of resources hinder the school's capacity to provide quality instruction quite a bit *or* a lot
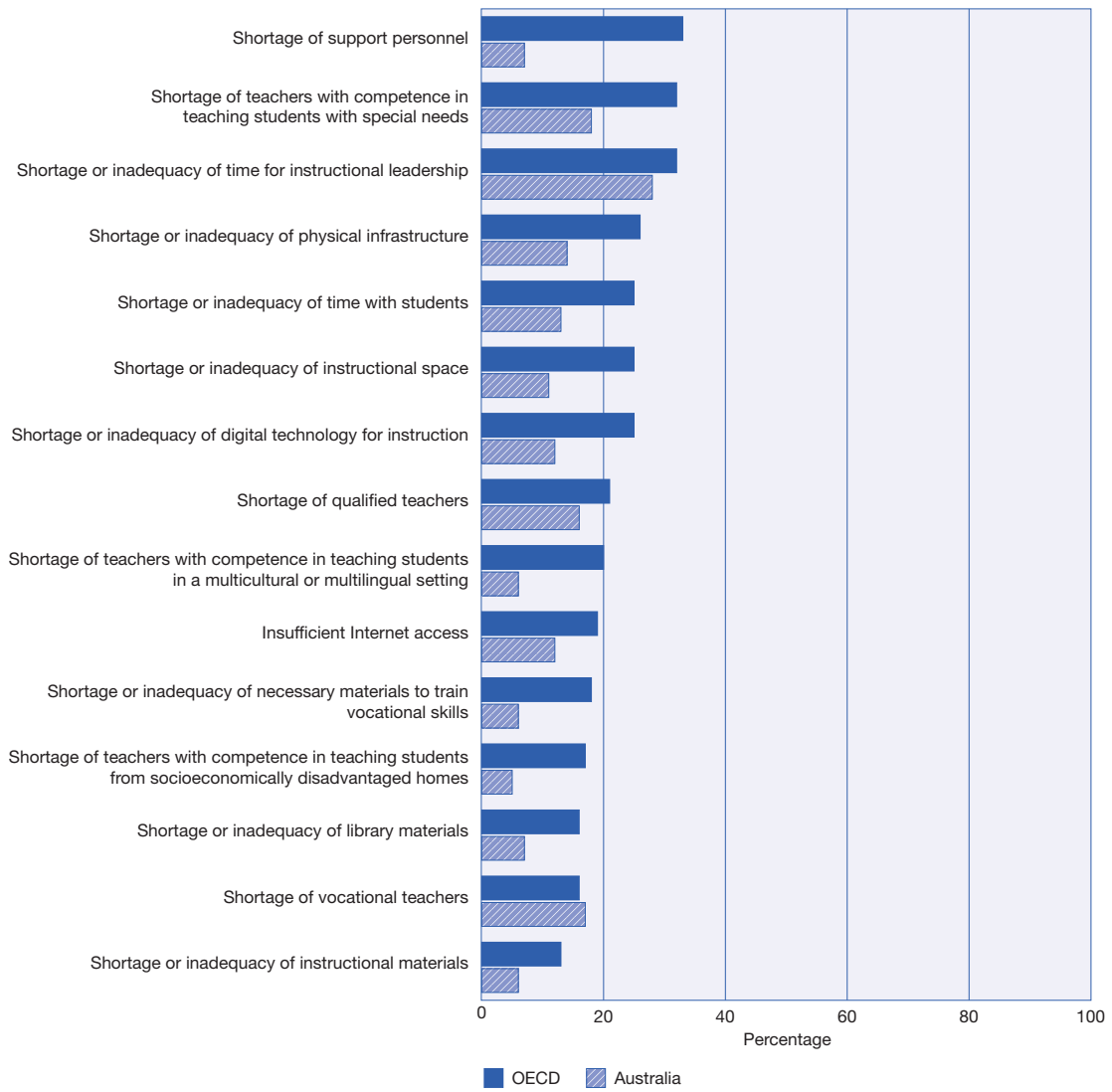
BOX 3.6   School resourcing issues – comparing primary and lower secondary schools

Principals in primary schools had some similar concerns to those in lower secondary schools, with the main resource issues reported being shortage or inadequacy of time for instructional leadership (27%), and shortage of teachers with competence in teaching students with special needs (19%). Primary school principals also reported shortage or inadequacy of physical infrastructure (19%) and shortage or inadequacy of instructional space (19%) were issues for their schools (Appendix Table A3.13).

3.6.2   Australian teachers' views on school resource issues that hinder quality instruction

One of the supplementary questions included in the Australian version of the TALIS teacher questionnaire asked teachers to rate the extent to which they felt that their capacity to provide quality instruction to the target class was hindered by various factors (Table 3.16).

In general, most Australian teachers seem to be reasonably content with the level of the infrastructure in their schools, with more than 80 per cent of teachers surveyed reporting that these issues did not have a significant impact on instruction. Technology was the most commonly identified resource issue, with 17 per cent of teachers reporting a shortage or inadequacy of digital technology and 13 per cent reporting insufficient internet access that impacted their capacity to provide quality instruction *quite a bit* or *a lot*.

TABLE 3.16   Australian teachers' perceptions about issues hindering instruction

	To what extent is your capacity to provide quality instruction in the target class currently hindered by any of the following issues?							
	Not at all		To some extent		Quite a bit		A lot	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Shortage or inadequacy of instructional materials (e.g. textbooks)	63	(1.2)	28	(1.1)	8	(0.6)	2	(0.3)
Shortage or inadequacy of digital technology for instruction (e.g. computers, tablets, smart boards)	52	(1.2)	30	(1.1)	11	(0.6)	6	(0.5)
Insufficient Internet access	53	(1.1)	34	(1.1)	9	(0.6)	4	(0.4)
Shortage or inadequacy of digital software for instruction	62	(1.1)	27	(1.0)	8	(0.5)	3	(0.4)
Shortage or inadequacy of library materials	76	(1.0)	17	(0.8)	5	(0.6)	2	(0.4)
Shortage or inadequacy of instructional space (e.g. classrooms)	65	(1.1)	24	(0.9)	8	(0.7)	4	(0.5)
Shortage or inadequacy of classroom furniture for students (e.g. desks, chairs, materials storage)	74	(1.0)	19	(0.9)	4	(0.5)	2	(0.3)
Shortage or inadequacy of physical infrastructure (e.g. school buildings, heating/cooling, and lighting)	70	(1.0)	19	(0.9)	7	(0.6)	4	(0.5)
Shortage or inadequacy of necessary materials to train vocational skills	76	(1.0)	19	(1.0)	4	(0.5)	2	(0.3)

However there were very large differences in the hindrances nominated by teachers in more advantaged schools and those in more disadvantaged schools (Table 3.17). This analysis was conducted by grouping together the outcomes *not at all* and *to some extent* as being infrequent hindrances, and *quite a bit* and *a lot* together as frequent hindrances.

The most pressing issue impeding instruction reported by teachers in more disadvantaged schools was a lack of digital technology available for instruction, with almost one-third (32%) identifying this

as a major hindrance to instruction. While this was also the major hindrance for teachers in more advantaged schools, it was only identified as such by 13 per cent of teachers.

Almost one-quarter of teachers (23%) in disadvantaged schools cited inadequate internet access as a major issue, followed by around 20 per cent of teachers reporting that a lack of both digital software and traditional instructional materials such as textbooks hindered instruction in their schools. By comparison, 10 per cent of teachers in more advantaged schools reported that inadequate internet access impeded instruction, while eight per cent and six per cent respectively reported that lack of digital software and lack of traditional instructional materials impeded instruction were an issue.

TABLE 3.17 Australian teachers' perceptions about issues hindering instruction, by school socioeconomic level

	Percentage of teachers reporting that the issue hinders instruction "quite a bit" or "a lot"			
	More advantaged schools		Disadvantaged schools	
	%	S.E.	%	S.E.
Shortage or inadequacy of instructional materials (e.g. textbooks)	6	(0.7)	19	(1.7)
Shortage or inadequacy of digital technology for instruction (e.g. computers, tablets, smart boards)	13	(0.8)	32	(2)
Insufficient Internet access	10	(0.6)	23	(1.9)
Shortage or inadequacy of digital software for instruction	8	(0.7)	21	(1.7)
Shortage or inadequacy of library materials	6	(0.9)	11	(1.3)
Shortage or inadequacy of instructional space (e.g. classrooms)	10	(1.0)	16	(1.5)
Shortage or inadequacy of classroom furniture for students (e.g. desks, chairs, materials storage)	6	(0.7)	9	(1.2)
Shortage or inadequacy of physical infrastructure (e.g. school buildings, heating/cooling, and lighting)	10	(1.0)	17	(1.5)
Shortage or inadequacy of necessary materials to train vocational skills	4	(0.6)	11	(1.3)

3.6.3   Teachers' views on priority areas for intervention and additional spending in education

As a complement to principals' reports on resource issues that hinder their schools' capacity to provide quality instruction, TALIS 2018 also asked teachers what they thought might be the priority areas for intervention and additional spending in education. Teachers are particularly well-positioned to report on resource issues that directly affect their daily work, and this provides important information for policymakers to understand what teachers feel should be priority areas for intervention and additional spending.

Teachers were asked to rate the importance of a number of priorities if the education budget were to be increased by five per cent (Figure 3.15). For each priority they were asked to rate the importance as *low importance*; *moderate importance*; or *high importance*. To avoid the dilemma of asking teachers to choose from competing issues, they were able to rate all as *high importance*, however it is possible to get a sense of which are the most pressing issues from the proportion of teachers who rated each issue as high priority and also the top three that were seen as a priority.

For Australian teachers the most important priority was reducing teachers administrative load by recruiting more support staff (59%), reflecting concerns reported in Chapter 2 about the administrative burden faced by both principals and teachers. The other highest priorities were the same as for the OECD overall – reducing class sizes by recruiting more staff, and offering high-quality professional development for teachers, although Australian teachers were less emphatic than the average OECD teacher.

FIGURE 3.15 Spending priorities for lower secondary education

Percentage of lower secondary teachers who reported the following spending priorities to be of high importance
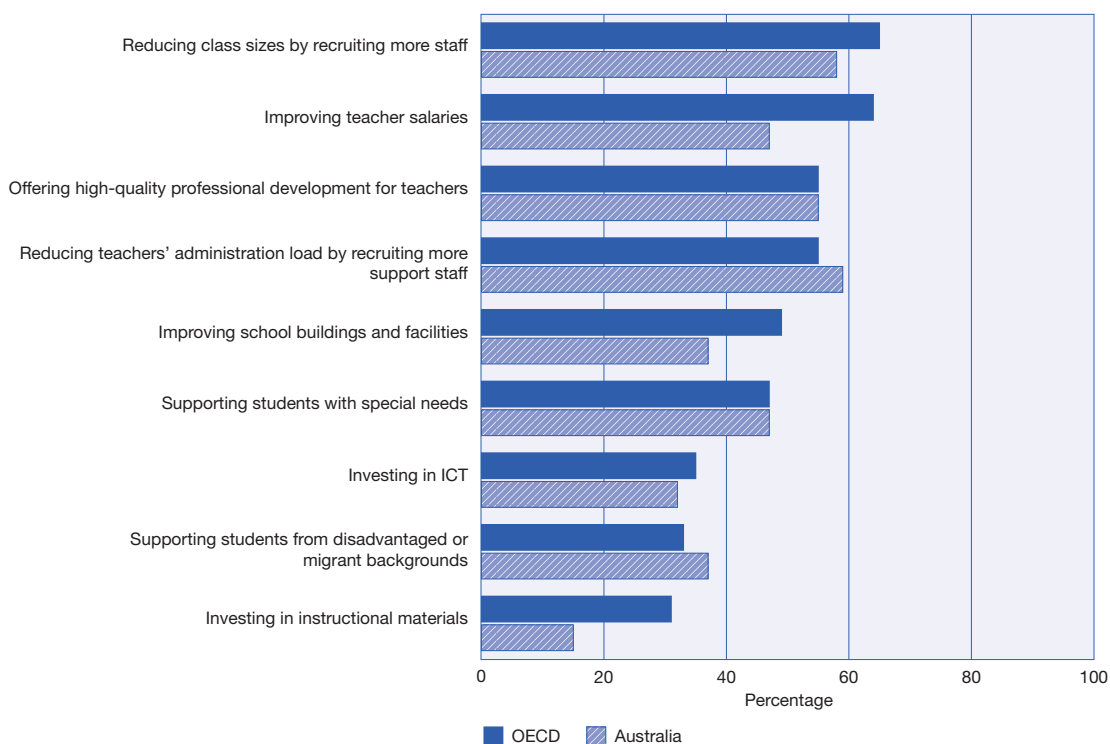
BOX 3.7   Priorities for policy intervention – comparing primary and lower secondary schools

The highest spending priorities among lower secondary teachers in Australia were reducing teachers' administration load by recruiting more support staff (59%), reducing class sizes by recruiting more staff (58%), and offering high-quality professional development for teachers (55%) (Appendix Table A3.14). Primary teachers largely shared these views, with two of the top priorities being reducing teachers' administration load by recruiting more support staff (62%) and reducing class sizes by recruiting more staff (66%). The next highest priority for primary teachers was supporting students with special needs, which 61 per cent of primary teachers and 47 per cent of lower secondary teachers rated as of high importance. There was also a substantial difference between the two groups on the importance of investing in ICT, with 45 per cent of primary teachers and 32 per cent of lower secondary teachers placing this as a high spending priority.

The spending priority 'improving teacher salaries' is worthy of further examination. It is noteworthy that fewer than half of the Australian teachers put 'improving teacher salaries' as a high priority, instead being more focused on spending priorities that would improve teaching. This was the case in a number of other countries as well, although it was rated highly by teachers in the majority of participating countries.

Firstly, the OECD examined teachers' starting salaries for those countries for which such data were available, in terms of purchasing power parity (PPP) (OECD, 2018b). Looking at the proportion of teachers who rated improving teachers' salaries as a high priority and the salaries of early career teachers in the same country (Figure 3.16), it would seem that that there is an inverse relationship between the two. Perhaps not surprisingly, teachers tend to prioritise improving salaries when their standard of living is lower by international standards.

School context could also be a factor in teachers' propensity to prioritise 'improving teachers' salaries'. This is examined in the OECD international TALIS report (Table I.3.69), where the only significant finding for Australia was that teachers working in schools with higher proportions of socioeconomically disadvantaged students were more likely to prioritise higher salaries than those teaching in schools with a lower proportion of disadvantaged students.

Motivational aspects could also play a role in teachers' tendency to prioritise salary improvement. Research has shown that teachers whose motivation to join the profession was based on personal-utility factors rather than social-utility factors might be more likely to prioritise the increase in salary (Watt, Richardson, Klusmann, Kunter, Beyer, Trutwein & Baumer, 2012; Watt & Richardson, 2008). Logistic regression analyses conducted by the OECD and reported in the international TALIS report (Table I.3.72) found that in general, and in Australia, teachers who valued the economic characteristics and working conditions of the job were more likely to prioritise salary increases.

FIGURE 3.16 Improving teachers' salaries

Improving teacher salaries as a highly-important spending priority for lower secondary teachers and lower secondary teachers' statutory starting salaries
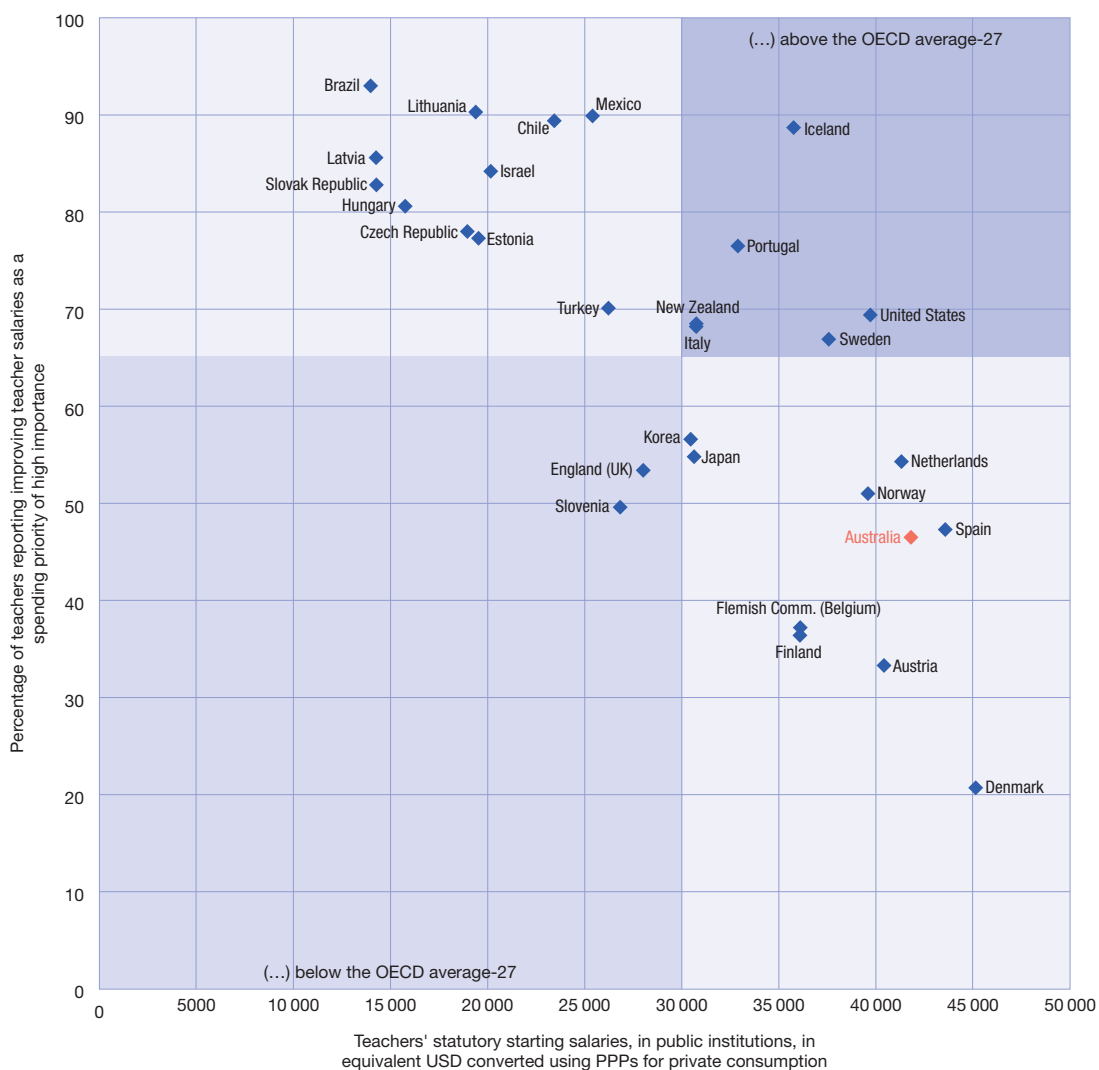
Notes: Only countries and economies with available data for percentage of teachers who reported improving teacher salaries as of high importance in relation to spending priorities and teachers' statutory starting salaries are shown. The OECD average-27 includes all TALIS 2018 OECD countries, except for Alberta (Canada), Belgium, Colombia and France.

Teachers' propensity to report 'reducing class sizes by recruiting more staff' as a spending priority, which was one of the top three spending priorities of Australian teachers, was also examined more closely by the OECD in the international report (for technical details refer to OECD, 2019a, p. 113). Regression analyses showed that teachers who teach larger classes were more likely to report reducing class sizes as a spending priority of high importance (Figure 3.17). This relationship holds across the OECD on average and for many of the participating TALIS countries, after controlling for classroom composition and teacher characteristics. However, this is not the case for Australia overall, although it was a significant priority for teachers who worked in schools with a high proportion of students with behavioural problems and also for those in schools with large proportions of refugee students.

FIGURE 3.17   Relationship between reducing class sizes as a high-importance spending priority and class size

Likelihood of reducing class sizes reported as a high spending priority related to class size
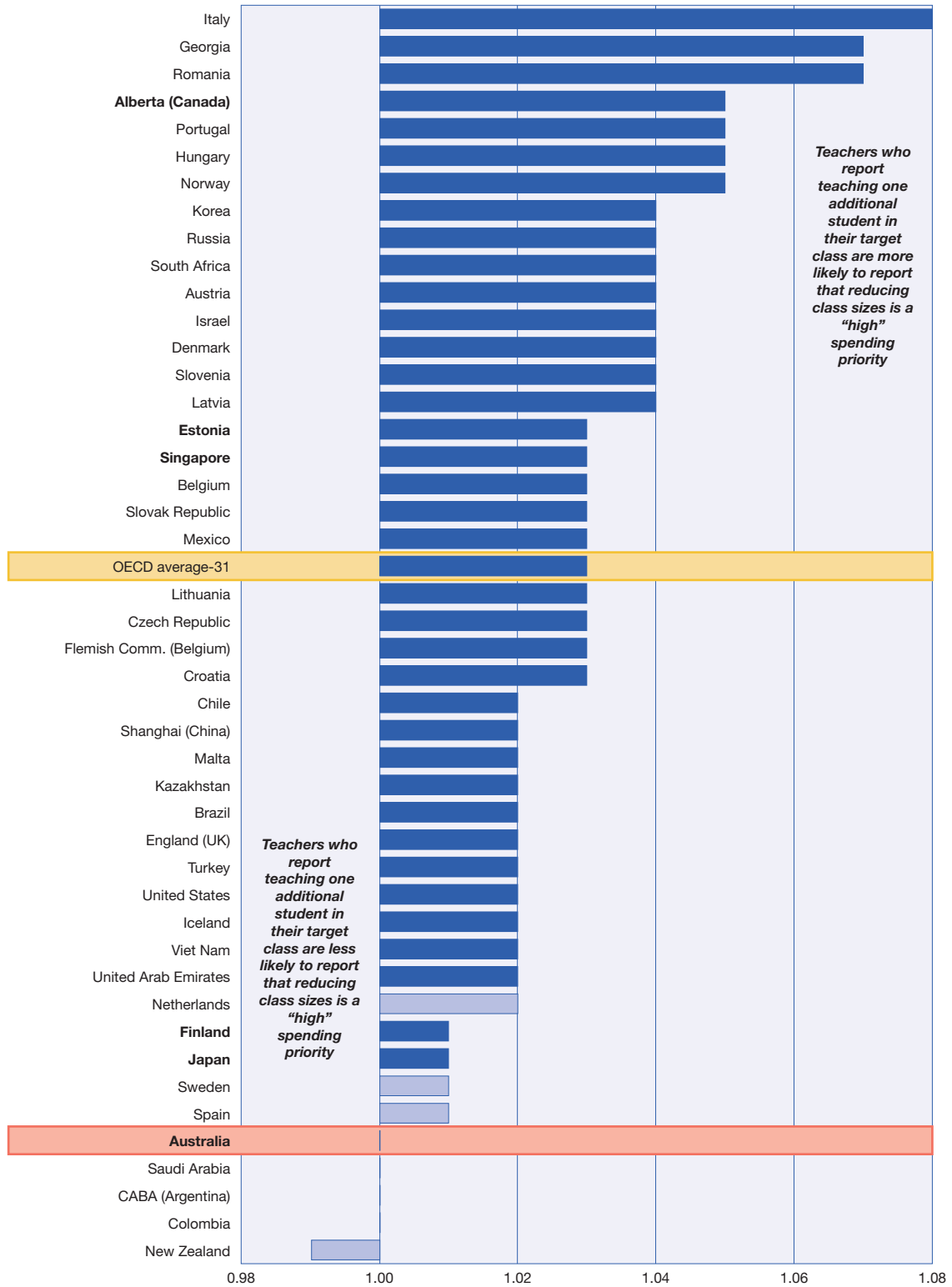
Notes: Class size is a continuous variable so the relationship refers to the marginal effect of one additional student in the target class on the likelihood of reducing class sizes being reported as a highly-important spending priority. Statistically significant coefficients are marked in a darker tone. Countries and economies are ranked in descending order of the likelihood of reducing class sizes reported as a *high* spending priority related to class size. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

Attracting and preparing the right candidates for the teaching profession

This chapter examines what motivated in-service teachers to take up their profession and describes how novice teachers and school leaders were prepared for their roles. Relationships between the features of different training programs and teachers' sense of preparedness, self-efficacy and job satisfaction are also explored. The chapter also explores the support provided to new teachers in their early career years.

Key findings

▸ Over 90 per cent of Australian teachers rate altruistic reasons, such as influencing the development of young people and contributing to society, as of moderate to high importance in their decision to become teachers.

▸ When asked why they might leave their profession, the most common reason selected by Australian teachers was to retire from work.

▸ Higher proportions of Australian teachers, compared to the OECD average, indicated that they had received training in teaching in mixed-ability settings, use of ICT in teaching and teaching in a multilingual or multicultural setting as part of their initial teacher education.

▸ Australian teachers were less confident in their teaching in the core areas of subject content, pedagogy and classroom management compared to the OECD average.

▸ Australia's novice teachers reported higher self-efficacy than their more experienced peers in supporting student learning using digital technology.

▸ In comparison to novice teachers in other countries, Australian novice teachers do not appear to be allocated to schools with higher concentrations of disadvantaged, immigrant or special-needs students, but they are overrepresented in rural schools, and may thus face challenges related to issues of isolation.

▸ On average across OECD countries there was no difference in the teaching hours of novice and more experienced teachers. In Australia, however, novice teachers appear to be carrying a heavier teaching load than their more experienced peers (just over 21 hours compared to 19).

▸ While close to half of Australia's school principals hold a master's degree, the majority had not received training *specific to their role as a principal* prior to taking up their positions.

4.1   Introduction

Many countries, Australia included, face difficulties in attracting highly-skilled and motivated candidates to become teachers and school leaders. Attracting the 'right' candidates, and training them correctly, is a key component in ensuring that students are exposed to those best prepared to assist them on their learning journey. Strategies for attracting high-quality candidates into teaching (generally understood as students who perform at higher levels in the senior years of secondary school) usually reference one or more of the following: increasing the requirements for entry into teacher training courses, increasing the social standing of teaching as a profession, ensuring that career progression in teaching is clear and continuous, and ensuring that remuneration for teaching is in line with other professions.

4.2   What motivated teachers to choose the profession?

Teachers were asked to rate the importance of the seven factors below in their decision to become a teacher, with responses of *not important at all*, *low importance*, *moderate importance* or *high importance*:

▸ Teaching allowed me to influence the development of children and young people

▸ Teaching allowed me to provide a contribution to society

▸ Teaching allowed me to benefit the socially disadvantaged

▸ Teaching was a secure job

▸ Teaching provided a reliable income

▸ The teaching schedule fit with responsibilities in my personal life

▸ Teaching offered a steady career path

The vast majority of teachers in Australia and across the OECD indicated that altruistic reasons motivated their career choice (Figure 4.1). In Australia and on average across the OECD countries, over 90 per cent of teachers indicated that the fact that teaching allowed them to influence the development of children and young people was of moderate to high importance (96% and 92%, respectively). In addition, 93 per cent of Australian teachers and 88 per cent of teachers across the OECD indicated that teaching allowing them to provide a contribution to society was of moderate to high importance.

Australian teachers valued practical considerations as well as altruistic ones when pursuing their profession. Compared to the OECD average, more teachers in Australia cited practical reasons for becoming a teacher – over 80 per cent indicated that a secure job and reliable income were of moderate to high importance compared to 71 per cent and 67 per cent respectively for the OECD on average.

FIGURE 4.1 Motivations for becoming a teacher, Australia and the OECD average

Percentage of lower secondary teachers who report that the following elements were of moderate or high importance in becoming a teacher
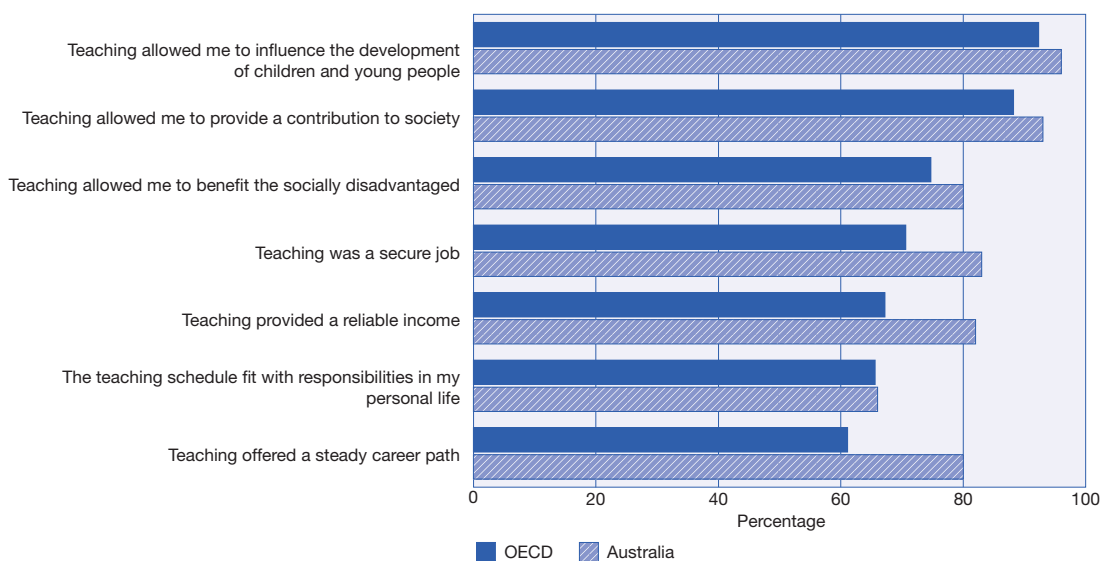
Teachers were also asked whether teaching had been their first choice as a career, which was defined as having a paid job that one regarded as likely to form one's life work. Just under 60 per cent of Australian teachers agreed that teaching had been their first choice for a career, which was significantly lower than the 66 per cent of teachers across OECD countries on average. In Japan, over 80 per cent of teachers indicated it had been their first choice, compared to 59 per cent in Finland (Table 4.1)

In Australia and the majority of countries participating in TALIS, there was a gender difference in the reported preference for teaching as a career, with smaller proportions of male teachers reporting teaching as their first career choice compared to their female counterparts. This difference was especially large in Estonia (41% of male teachers compared to 69% of female teachers), while the difference in Australia (51% of male teachers and 63% of females) was of a similar magnitude to that in Alberta (Canada) (60% of male teachers and 72% of female teachers).

Higher proportions of experienced teachers (those with more than five years teaching experience) compared to novice teachers (those with five or fewer years teaching experience) reported that teaching had been their first choice as a career in Australia. This was also the case in Estonia and across OECD countries on average. In other high-performing PISA countries such as Japan, Singapore and Finland, there was little difference in the percentages of novice and experienced teachers who nominated teaching as their first preference for a career.

The results of a logistic regression model that included the seven rated motivations for becoming a teacher, along with teachers' gender and age, indicated that whether teaching was the first career choice of respondents or not was related to their motivations for becoming a teacher (Figure 4.2). Australian teachers who indicated that teaching was not their first choice were more likely to nominate the flexibility of teaching schedules (the teaching schedule fit with responsibilities in my personal life) as being of moderate to high importance in their decision. This was true also of teachers in Japan and Estonia, and across the OECD on average. It is possible that selection of subsequent vocations may be influenced to a greater degree by the need to balance work responsibilities with personal responsibilities, or that teaching as a 'Plan B' becomes attractive when personal responsibilities demand a different work/life balance.

TABLE 4.1 Teaching as a first career choice, by teacher characteristics

	Percentage of teachers for whom teaching was their first choice as a career																		
	Total		By gender						By age						By number of years of teaching experience					
			Male		Female		Male - Female		Under age 30 (a)		Age 50 and above (b)		(b) - (a)		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)	
	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	% dif.	S.E.
Australia	58	(1.1)	51	(1.7)	63	(1.4)	-11.8	(2.1)	68	(2.0)	58	(2.1)	-9.4	(2.7)	54	(2.2)	59	(1.3)	5.1	(2.5)
OECD average-31	67	(0.2)	59	(0.4)	69	(0.2)	-9.7	(0.4)	70	(0.6)	67	(0.4)	-3.4	(0.7)	59	(0.5)	68	(0.2)	9.1	(0.5)
TALIS average-48	69	(0.2)	62	(0.3)	72	(0.2)	-9.8	(0.3)	71	(0.5)	69	(0.3)	-1.9	(0.6)	62	(0.4)	70	(0.2)	8.5	(0.4)
High-performing PISA countries																				
Alberta (Canada)	68	(1.7)	60	(2.8)	72	(2.1)	-12.2	(3.6)	80	(3.4)	61	(4.5)	-18.2	(5.7)	70	(3.2)	67	(2.1)	-2.7	(3.9)
Estonia	65	(1.4)	41	(2.3)	69	(1.4)	-27.6	(2.3)	54	(3.4)	69	(1.5)	15.2	(3.5)	43	(2.6)	68	(1.5)	25.8	(2.6)
Finland	59	(1.1)	57	(1.8)	60	(1.3)	-3.5	(2.3)	74	(4.3)	53	(1.7)	-20.7	(4.6)	60	(2.2)	59	(1.3)	-0.7	(2.5)
Japan	82	(0.7)	83	(0.8)	79	(1.1)	4.5	(1.3)	86	(1.3)	79	(1.1)	-6.6	(1.7)	83	(1.5)	81	(0.8)	-1.5	(1.8)
Singapore	71	(0.9)	66	(1.6)	74	(0.9)	-8.0	(1.8)	76	(1.5)	71	(2.5)	-5.8	(2.8)	71	(1.7)	71	(1.0)	-0.1	(2.0)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

FIGURE 4.2 Relationship between teaching as a career choice and motivations to become a teacher

Likelihood of teaching not a first choice career related to teaching schedule fitting responsibilities in personal life reported as of moderate *or* high *importance to become a teacher*
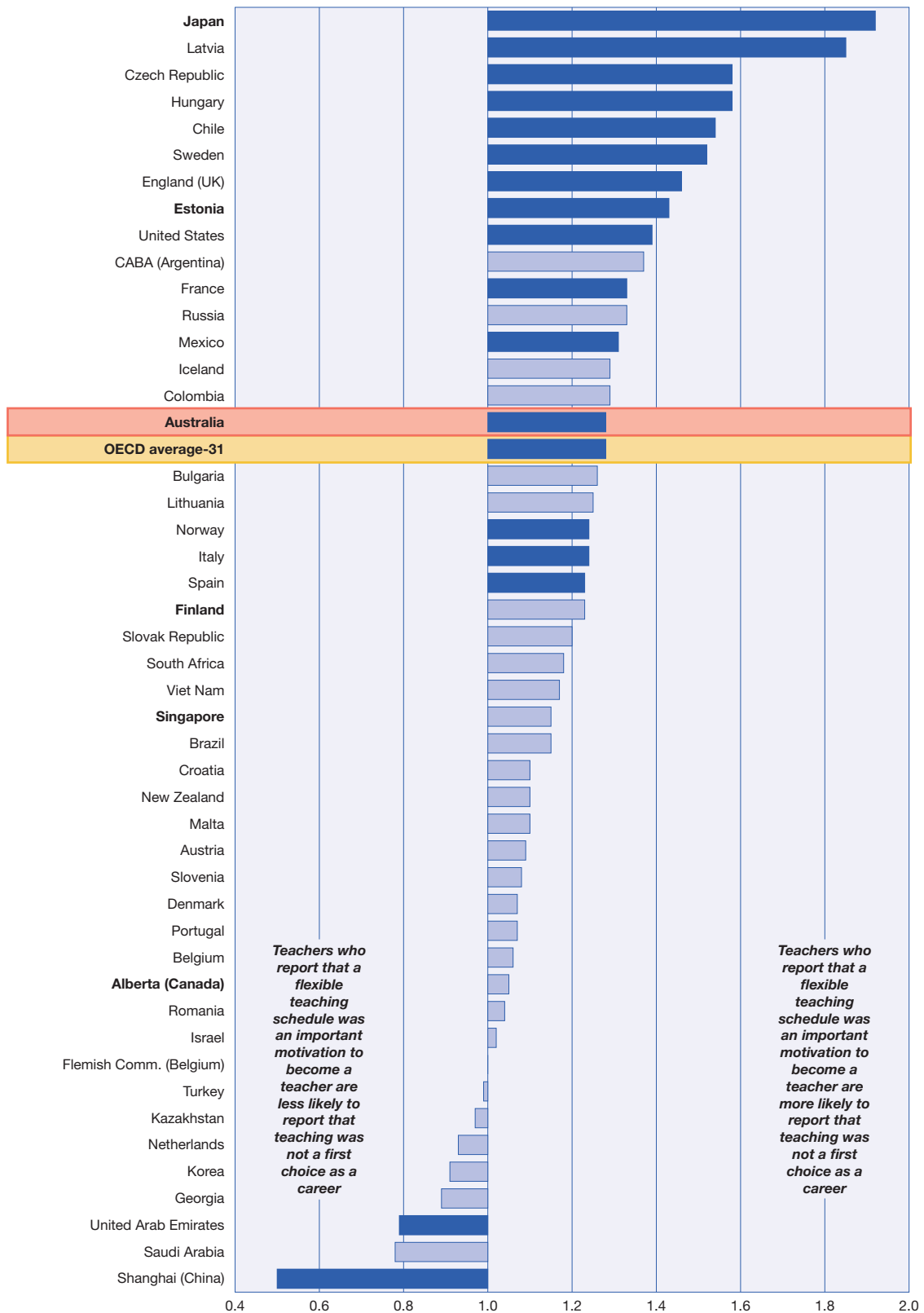
Notes: Statistically significant coefficients are marked in a darker tone. Countries and economies are ranked in descending order of the likelihood of teaching not a first choice as a career related to teaching schedule fitting responsibilities in personal life reported as of *moderate* or *high* importance to become a teacher. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 4.1   Motivation to join the teaching profession – comparing primary and lower secondary schools

Australian primary and lower secondary teachers report similar reasons for joining the profession (Appendix Table A4.1). Among the most important reasons for both primary and lower secondary teachers were that teaching allowed them to influence the development of children and young people (96% of lower secondary and 98% of primary teachers), that teaching allowed them to provide a contribution to society (93% of lower secondary and 95% of primary teachers), and that teaching allowed them to benefit the socially disadvantaged (80% of lower secondary and 84% of primary teachers).

Both primary and lower secondary teachers were less likely than the OECD average to report joining the profession for more pragmatic reasons, such as job security.

4.2.1   Australian teachers' reasons for leaving teaching

Australian teachers who participated in the 2018 TALIS surveys were asked to select from a list of reasons they might choose to leave teaching in the future (Table 4.2). Over the entire sample of teachers, the most commonly nominated reason for leaving the teaching profession was to retire from work (48%). Even when comparing the responses of novice teachers (those with five or fewer years of experience) with those of more experienced teachers, or teachers in younger versus older age groups, retirement was the most commonly nominated reason to leave the teaching profession. These results indicate a fairly high level of commitment on behalf of teachers to their profession, as even those in the first few years of their careers do not envisage leaving before they reach the age of retirement.

TABLE 4.2   Australian teachers' most likely reasons for leaving teaching

Most likely reason to leave teaching	All Australian teachers		Novice Australian teachers		More Experienced Australian teachers	
	%	S.E.	%	S.E.	%	S.E.
Become a school leader	12	(0.7)	17	(1.8)	11	(0.9)
Work as a teacher	1	(0.1)	1	(0.4)	1	(0.2)
Work in an educational job not in a school	11	(0.7)	15	(1.4)	10	(0.9)
Work in a different job not in the education sector	12	(0.6)	15	(1.5)	12	(0.8)
Attend to family responsibilities	8	(0.6)	12	(1.5)	6	(0.6)
Retire from work	48	(1.1)	26	(1.9)	54	(1.5)
Return as a student to an education program	1	(0.2)	2	(0.9)	1	(0.2)
Other	7	(0.5)	12	(1.5)	6	(0.6)

4.3   How ready are teachers for teaching?

Good training for pre-service teachers sits alongside attracting appropriate candidates as one of the focal areas for those interested in improving the quality of teaching. However, measuring the quality of training is not a simple issue – length of program, program content, applicability of content and opportunities to actually interact with students may all impact on the quality of teachers that emerge from the training program. Indeed, analysis of students' results on the PISA assessments and their teachers' reports of the length of their pre-service training has revealed that countries and systems with high performance have a majority of teachers with at least four years of initial training (OECD, 2018c).

4.3.1   Teacher and principal qualifications

Teachers were asked to indicate the highest level of formal education they had completed (Figure 4.3). Across the OECD on average, 49 per cent of teachers reported that they had completed a bachelor's degree, with a further 46 per cent holding a higher degree (master's or doctorate). A bachelor's degree was the most common qualification reported by teachers in Australia (75%), along with Singapore (72%), Alberta (Canada) (84%) and Japan (86%), while in Finland and Estonia the most common qualification was a master's degree (91% in Finland and 71% in Estonia). In Australia, less than one-quarter of teachers reported holding a higher degree, such as a master's (20%) or doctorate (2%).

Among Australian principals, higher degrees were more common, with 47 per cent of principals holding a master's degree and close to one per cent holding a PhD or doctorate. This was still lower than in most high-performing PISA countries, and lower than the OECD average. Only Japan had a lower rate of higher degrees among its principals, with just 12 per cent holding a master's degree. Over 90 per cent of principals in Finland and Estonia held a master's degree.

FIGURE 4.3 Highest educational attainment of teachers and principals
Results based on responses of lower secondary teachers and principals

Slovak Republic	Portugal	Czech Republic

Percentage of teachers, by highest level of
formal education completed

Percentage of principals, by highest level of
formal education completed

☐ Below ISCED level 5 ☐ ISCED level 5 ☐ ISCED level 6 ☐ ISCED level 7 ☐ ISCED level 8
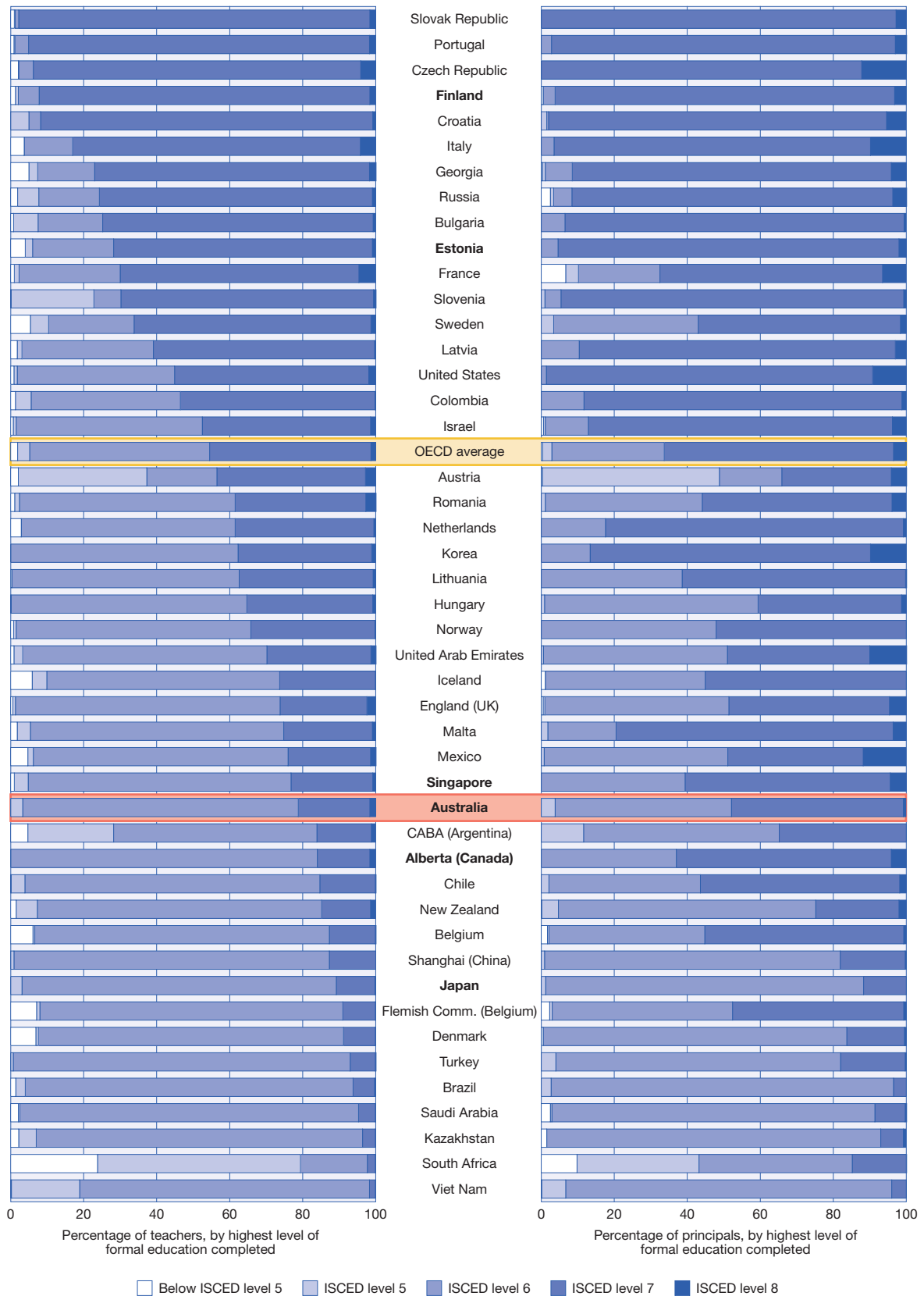
Notes: Education categories are based on the International Standard Classification of Education (ISCED-2011). ISCED levels 6 and 7 programs are generally
longer and more theory-based, while ISCED level 5 programs are typically shorter and more practical and skills oriented. ISCED level 5 includes
bachelor's degrees in some countries. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

4.3.2 Australian teachers' qualifications

One of the supplementary questions included in the Australian version of the TALIS teacher questionnaire asked for further detail about the undergraduate qualifications of teachers – had they studied towards a Bachelor of Education or had they undertaken some other undergraduate degree followed by a teaching-focused course, such as a Diploma or Masters in Education or a Teach for Australia training course?

In the 2018 sample of Australian teachers, just over half had undertaken an undergraduate degree followed by a specific teaching course (52%), while just under half (48%) had completed a Bachelor of Education. These results are similar to those recorded in the 2013 Staff in Australian Schools (SiAS) survey, which reported that 51 per cent of secondary teachers had completed a graduate qualification in education following some other undergraduate degree and 49 per cent had completed an undergraduate degree only (such as a Bachelor of Education) (McKenzie, Weldon, Rowley, Murphy & McMillan, 2014).

4.3.3 Training content and teachers' sense of preparedness for teaching

Teachers were asked to indicate which elements, from a list of 10, had been covered in their initial teacher education and training (Figure 4.4). In Australia, and across the OECD on average, around 90 per cent of teachers indicated that their courses had included content of some or all of the subjects they now taught, general pedagogy, and pedagogy specific to some or all of the subjects they taught, while slightly lower proportions indicated that they had covered student behaviour and classroom management (84% in Australia and 72% across the OECD).

Teachers were also asked how well prepared they felt after their training for addressing the same 10 elements, with response options ranging from *not at all* through to *very well*. Australian teachers appeared less confident in their teaching in each of the core areas (subject content, pedagogy and classroom practice – the first four areas listed in Figure 4.4), with between 60 and 70 per cent indicating that they felt well or very well prepared compared to over 70 per cent across the OECD on average.

Moving to more specific or specialised elements of teacher education and training, significantly higher proportions of Australian teachers, compared to the OECD average, indicated that they had received training in teaching in mixed-ability settings (74% compared to 62%), use of ICT in teaching (65% compared to 56%), and teaching in a multilingual or multicultural setting (59% compared to 35%). Despite this, the proportions of Australian teachers who felt that they were well or very well prepared for addressing these specific issues in teaching did not differ greatly from the OECD average.

FIGURE 4.4 Content of teacher education and sense of preparedness for teaching
Results based on responses of lower secondary teachers

■ OECD Percentage of teachers for whom the element was included in
their formal education or training

● Australia Percentage of teachers for whom the element was included in
their formal education or training

▨ OECD Percentage of teachers who felt "well" or "very well" prepared
for this element

◇ Australia Percentage of teachers who felt "well" or "very well" prepared
for this element
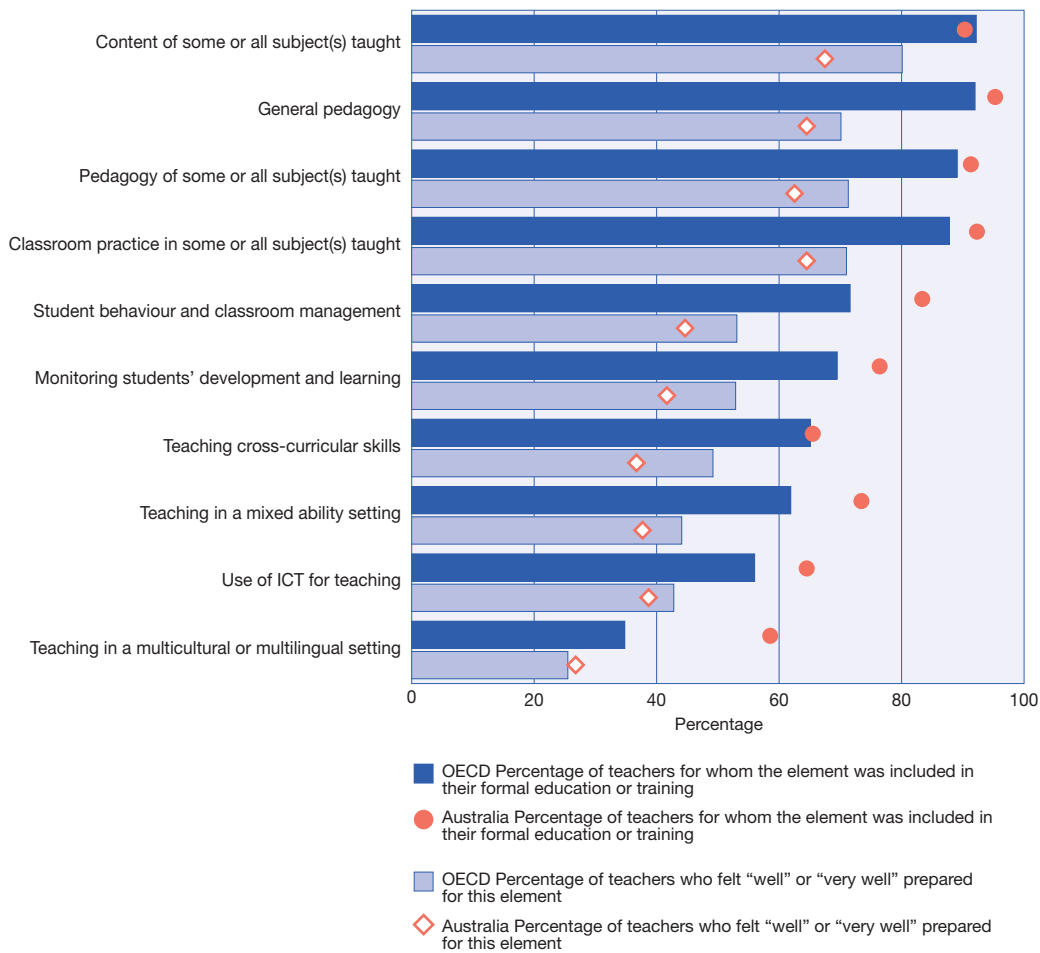
A comparison of the proportions of novice and more experienced teachers who had undertaken practical experience in classrooms as a mandatory component of their initial teacher training found that there were no significant differences in the proportions of novice and more experienced teachers who indicated that they undertook practicums or placements during their studies (Figure 4.5).

FIGURE 4.5 Teacher training in classroom practice

Percentage of lower secondary teachers for whom classroom practice in some or all subject(s) taught was included in their formal education or training, by year of completion

All teachers   ◆ Teachers who completed their training in the past 5 years
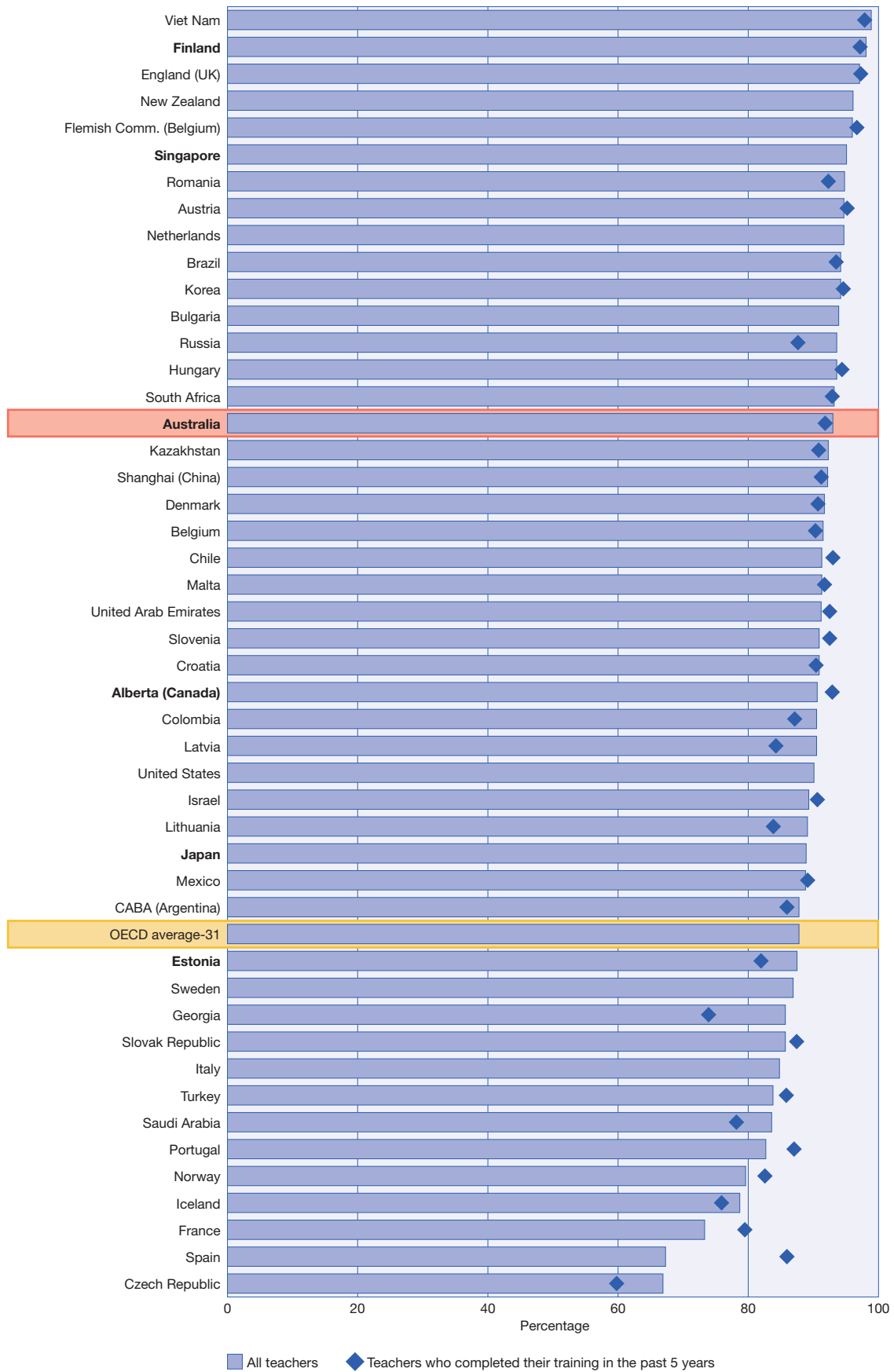
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 4.2   Initial teacher training – comparing primary and lower secondary schools

Training in general pedagogy, as well as subject-specific pedagogy and content and classroom practice were reported to be the major features of initial teacher education for both primary and lower secondary teachers in Australia (Appendix Table A4.2). More than 90 per cent of teachers at both levels reported that these were elements of their training. A higher proportion of lower secondary teachers than primary teachers reported training in teaching cross-curricular skills, use of ICT for teaching, and student behaviour and classroom management in their initial teacher education program. There were no other differences between primary and lower secondary teachers in any other aspects of initial teacher training courses.

A linear regression model was constructed to explore relationships between the content of initial teacher education training and teachers' self-efficacy in classroom management. The model controls for teacher characteristics such as gender and years of teaching experience (Figure 4.6). In the majority of countries, teachers who indicated that their initial teacher education had included training in student behaviour and classroom management reported higher levels of self-efficacy in classroom management compared to teachers whose initial teacher education had not included the areas of student behaviour and classroom management. This held true for Australian teachers, as well as those in the high-performing countries of Japan, Finland and Estonia, whereas results for teachers in Singapore and Alberta (Canada) did not reach statistical significance.

FIGURE 4.6 Relationship between self-efficacy in classroom management and being trained in classroom management

Change in the index of self-efficacy in classroom management associated with being trained in classroom management
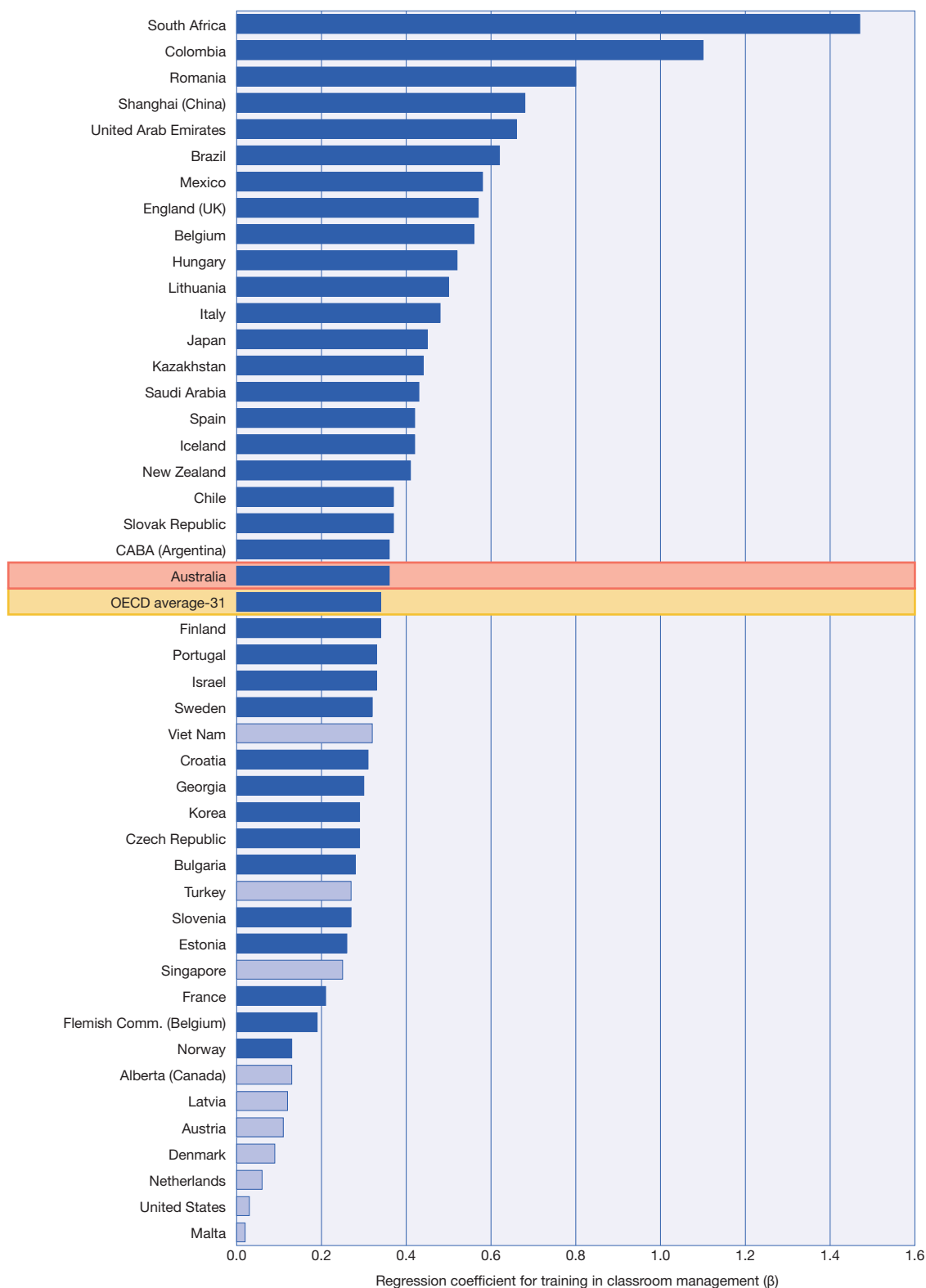
Notes: Statistically significant coefficients are marked in a darker tone. Countries and economies are ranked in descending order of the change in the index of self-efficacy in classroom management associated with being trained in classroom management. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

4.4   How are novice teachers supported during the first years of their careers?

Improvements made to the initial training of pre-service teachers can only result in longer term change when pre-service teachers become in-service teachers and remain in their chosen career. Experiences during the early years after graduation, are therefore of great importance in retaining teachers in their profession.

Across the OECD on average, novice teachers (defined as teachers with up to five years of teaching experience) made up less than one-fifth of the total teacher population (19%), which was a smaller representation than reported in Australia (24%), Alberta (Canada) (23%) and Singapore (29%). In Finland and Estonia, where the majority of teachers held a master's degree or equivalent, the proportion of novice teachers in the field was much lower, at 17 per cent and 15 per cent, respectively. The teaching populations in these high-performing nations are not only more highly qualified but also more experienced than in the other countries.

The following sections examine the attitudes and experiences of novice teachers including how they feel about their work in terms of their self-efficacy and satisfaction in comparison to teachers at later points in their careers. The types of schools novice teachers are teaching in, and what support teachers receive from their schools in terms of induction programs, reduced teaching loads and mentoring are also examined.

4.4.1　Novice teachers' self-efficacy and job satisfaction

Teachers were asked to indicate their levels of self-efficacy in a variety of tasks – this was reported in Chapter 2. Novice teachers in Australia, and on average across OECD countries, reported lower self-efficacy in a range of teaching skills than their more experienced peers. Among Australian teachers, the largest differences in the self-efficacy of novice and more experienced teachers were in the key skills of motivating students with low interest in schoolwork, controlling disruptive behaviour in the classroom, calming loud or disruptive students and helping students to value learning. The one area in which novice teachers indicated higher self-efficacy than more experienced teachers was in supporting student learning using digital technology – 81 per cent of novice Australian teachers reported that they did this *quite a bit* or *a lot* compared to 76 per cent of more experienced teachers.

Teachers were also asked to report on their satisfaction with aspects of their work environment in relation to their current school and their career more generally, with response options ranging from *strongly disagree* through to *strongly agree*. Focusing on aspects of their work environment, the only area in which there was a significant difference between Australian novice and more experienced teachers was in relation to the teachers' satisfaction with their own performance in their current school. While the majority of both groups of teachers agreed or strongly agreed that they were satisfied with their performance in their current school, the proportion of more experienced teachers who agreed or strongly agreed (96%) was significantly higher than the corresponding proportion of novice teachers who agreed or strongly agreed with the item (91%) (Table 4.3). This difference was also evident across OECD countries on average, and in Estonia, Singapore and Japan. In combination with the findings about novice teachers' self-efficacy with management of disruptive behaviour reported earlier, this result suggests that some novice teachers may feel underprepared to deal with challenging classroom behaviour and feel that their performance suffers for this lack of preparation. However, while novice teachers may feel underprepared, it may be that the only real preparation is direct experience, and at this point of their careers, this is necessarily limited.

On average across OECD countries, novice teachers appeared slightly more satisfied with their career choice than their more experienced peers, with higher proportions agreeing that they would still choose to work as a teacher if given a second chance (81% compared to 74% for experienced teachers) and lower proportions agreeing to statements about regretting the decision to become a teacher (8% compared to 9%) and wondering whether it would have been better to choose another profession (32% compared to 34%). In Australia, however, there were no differences in the satisfaction levels of novice and more experienced teachers with these facets of their career choices (Table 4.4).

TABLE 4.3 Teachers' job satisfaction with their work environment, by teachers' teaching experience

	Percentage of teachers who "agree" or "strongly agree" with the following statements, by teachers' teaching experience															
	I would like to change to another school if that were possible								I enjoy working at this school							
	Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)		Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)	
	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.
Australia	25	(1.0)	25	(1.9)	26	(1.1)	1	(2.2)	91	(0.6)	92	(1.1)	91	(0.7)	-1	(1.4)
OECD average-31	20	(0.2)	22	(0.5)	19	(0.2)	**-3**	(0.5)	90	(0.1)	91	(0.3)	90	(0.2)	**-1**	(0.3)
TALIS average-48	21	(0.2)	24	(0.4)	21	(0.2)	**-3**	(0.4)	89	(0.1)	89	(0.3)	89	(0.1)	**-1**	(0.3)
High-performing PISA countries																
Alberta (Canada)	23	(2.1)	27	(3.9)	22	(2.1)	-6	(3.8)	94	(0.8)	93	(1.7)	94	(1.0)	1	(2.0)
Estonia	13	(0.8)	15	(2.1)	13	(0.8)	-2	(2.2)	85	(0.8)	85	(1.8)	86	(0.9)	1	(2.0)
Finland	20	(1.1)	24	(2.8)	20	(1.1)	-4	(2.8)	87	(1.0)	90	(1.6)	87	(1.1)	-3	(1.8)
Japan	31	(1.2)	30	(1.8)	31	(1.3)	1	(1.9)	78	(0.8)	84	(1.6)	77	(0.9)	**-7**	(1.8)
Singapore	39	(0.8)	40	(1.7)	39	(1.0)	-2	(2.1)	85	(0.7)	87	(1.2)	84	(0.9)	-2	(1.4)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

TABLE 4.4 Teachers' job satisfaction with their profession, by teachers' teaching experience

	Percentage of teachers who "agree" or "strongly agree" with the following statements, by teachers' teaching experience															
	The advantages of being a teacher clearly outweigh the disadvantages								If I could decide again, I would still choose to work as a teacher							
	Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)		Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)	
	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.
Australia	88	(0.7)	86	(1.4)	88	(0.8)	2	(1.7)	83	(0.9)	85	(1.4)	82	(1.1)	-3	(1.8)
OECD average-31	76	(0.2)	79	(0.4)	75	(0.2)	**-3**	(0.4)	76	(0.2)	81	(0.4)	74	(0.2)	**-7**	(0.4)
TALIS average-48	75	(0.2)	77	(0.3)	75	(0.2)	**-2**	(0.4)	76	(0.2)	80	(0.3)	75	(0.2)	**-5**	(0.4)
High-performing PISA countries																
Alberta (Canada)	90	(0.9)	90	(2.2)	90	(1.1)	0	(2.6)	86	(1.3)	85	(2.6)	86	(1.4)	1	(2.7)
Estonia	80	(1.0)	77	(2.2)	80	(1.1)	3	(2.3)	74	(0.9)	77	(2.0)	74	(0.9)	-3	(2.1)
Finland	92	(0.6)	93	(1.2)	92	(0.7)	-1	(1.3)	79	(1.0)	83	(2.1)	78	(1.0)	**-5**	(2.2)
Japan	74	(0.9)	73	(1.8)	74	(1.0)	1	(2.0)	55	(1.1)	59	(2.0)	54	(1.2)	**-5**	(2.3)
Singapore	85	(0.6)	83	(1.2)	86	(0.7)	**4**	(1.4)	82	(0.8)	81	(1.3)	82	(0.9)	1	(1.5)

Note: For explanation about choice of high-performing PISA countries refer to Reader's Guide

Percentage of teachers who "agree" or "strongly agree" with the following statements, by teachers' teaching experience																							
I would recommend this school as a good place to work								I am satisfied with my performance in this school								All in all, I am satisfied with my job							
Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)		Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)		Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)	
%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.
84	(0.7)	84	(1.7)	84	(0.9)	0	(2.1)	94	(0.6)	91	(1.3)	96	(0.6)	5	(1.4)	90	(0.6)	88	(1.3)	91	(0.6)	2	(1.4)
83	(0.2)	84	(0.4)	83	(0.2)	-1	(0.4)	93	(0.1)	90	(0.3)	93	(0.1)	3	(0.3)	90	(0.1)	90	(0.3)	90	(0.1)	0	(0.3)
83	(0.2)	84	(0.3)	83	(0.2)	0	(0.3)	93	(0.1)	90	(0.2)	93	(0.1)	3	(0.2)	90	(0.1)	90	(0.3)	90	(0.1)	1	(0.3)
88	(1.6)	88	(2.7)	87	(1.9)	-1	(3.2)	96	(0.7)	95	(1.7)	97	(0.7)	2	(1.8)	93	(1.2)	91	(2.8)	93	(1.0)	3	(2.6)
82	(1.2)	81	(2.5)	82	(1.3)	1	(2.7)	92	(0.7)	88	(1.6)	93	(0.7)	5	(1.8)	94	(0.5)	91	(1.7)	95	(0.5)	4	(1.8)
82	(1.4)	84	(2.1)	82	(1.5)	-1	(1.9)	94	(0.6)	92	(1.4)	95	(0.5)	3	(1.4)	88	(0.9)	88	(1.6)	88	(0.9)	0	(1.6)
62	(1.3)	62	(2.2)	61	(1.4)	-1	(2.3)	49	(0.9)	34	(2.0)	53	(1.0)	19	(2.1)	82	(0.7)	79	(1.8)	83	(0.8)	4	(1.9)
70	(0.8)	68	(1.5)	71	(1.0)	3	(1.9)	87	(0.7)	84	(1.2)	89	(0.7)	4	(1.3)	89	(0.6)	86	(1.1)	90	(0.7)	4	(1.3)

Percentage of teachers who "agree" or "strongly agree" with the following statements, by teachers' teaching experience																							
I regret that I decided to become a teacher								I wonder whether it would have been better to choose another profession								I think that the teaching profession is valued in society							
Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)		Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)		Total		Fewer than or equal to 5 years (a)		More than 5 years (b)		(b) - (a)	
%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.
6	(0.5)	6	(1.0)	6	(0.6)	0	(1.3)	33	(1.0)	33	(2.0)	33	(1.2)	0	(2.3)	45	(1.0)	47	(2.3)	44	(1.2)	-4	(2.8)
9	(0.1)	8	(0.3)	10	(0.1)	2	(0.3)	34	(0.2)	32	(0.5)	34	(0.2)	2	(0.5)	26	(0.2)	30	(0.5)	25	(0.2)	-5	(0.5)
10	(0.1)	9	(0.2)	11	(0.1)	2	(0.3)	35	(0.2)	34	(0.4)	36	(0.2)	1	(0.4)	32	(0.2)	37	(0.4)	32	(0.2)	-5	(0.4)
4	(0.8)	2	(0.9)	4	(1.0)	2	(1.3)	33	(2.0)	37	(4.1)	31	(2.2)	-5	(4.7)	63	(2.4)	65	(4.7)	62	(2.6)	-3	(5.1)
6	(0.5)	6	(1.4)	6	(0.6)	0	(1.4)	30	(0.9)	29	(2.5)	30	(1.0)	1	(2.8)	26	(1.0)	39	(2.8)	24	(1.0)	-15	(2.8)
6	(0.5)	5	(1.2)	7	(0.6)	1	(1.3)	34	(1.0)	33	(2.3)	34	(1.1)	1	(2.7)	58	(1.4)	63	(2.8)	57	(1.4)	-6	(2.7)
8	(0.5)	9	(1.0)	8	(0.5)	-1	(1.1)	30	(0.9)	32	(2.0)	30	(1.0)	-2	(2.1)	34	(1.0)	38	(1.9)	34	(1.1)	-4	(2.2)
8	(0.5)	10	(1.0)	8	(0.5)	-2	(1.0)	48	(0.9)	55	(1.6)	46	(1.0)	-9	(1.8)	72	(0.8)	70	(1.6)	73	(1.0)	3	(1.8)

4.4.2   Novice teachers' school assignment

On average across the OECD countries, higher proportions of novice teachers were working in schools with a high concentration of disadvantaged students, in schools with high concentrations of immigrant students, and in private schools (Figure 4.7).

In Australia, the school characteristics that were associated with higher concentrations of novice teachers were rurality, government schools, and schools with lower concentrations of students with special needs. In comparison to novice teachers in other countries, Australian novice teachers do not appear to be allocated to schools with higher concentrations of disadvantaged, immigrant or special-needs students, but they are overrepresented in rural schools, and may thus face challenges related to issues of isolation.

FIGURE 4.7 Novice teachers by school characteristics
Percentage of novice lower secondary teachers

	Difference by school characteristics					Percentage of novice teachers
	City - rural area	Private - public schools	High - low concentration of disadvantaged students	High - low concentration of immigrant students	High - low concentration of students with special needs	
Turkey	-	+	+			
Singapore		-			-	
Chile	-					
South Africa				-		
Malta		+			+	
Austria	+		+	+	+	
Israel						
United States						
Kazakhstan		-				
Australia	-	-			-	
Mexico						
England (UK)			+	+		
Alberta (Canada)						
Norway	+			+		
Russia	-					
Korea		-				
Belgium	+		+	+		
New Zealand		-				
Japan						
Flemish Comm. (Belgium)			+			
Bulgaria						
Iceland						
Saudi Arabia	-		+			
Croatia						
OECD average-31		+	+	+		
Czech Republic						
Denmark				+		
Slovenia						
Sweden		+				
Italy		+				
CABA (Argentina)						
Netherlands						
Finland						
Spain	-					
United Arab Emirates	+	+		+		
Colombia		+	-			
France			+			
Shanghai (China)						
Slovak Republic	+	+				
Estonia			+		+	
Brazil		-				
Georgia						
Romania	-		+			
Latvia						
Hungary		+				
Viet Nam		+				
Lithuania						
Portugal		+			-	

Percentage (0 to 100)

- **+** Postive difference
- **-** Negative difference
- **□** Difference is not significant
- **▨** Missing values

Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

4.4.3   Induction programs

Induction programs, both for novice teachers and more experienced teachers who are new to a particular school, can be extremely valuable in setting these teachers up for success. Systems, expectations, cultures and values can vary widely from school to school and what has been covered during pre-service training can differ from what happens 'on the ground'. In Australia, 40 per cent of teachers did not participate in any induction activities during their first employment, compared to 62 per cent on average across the OECD.

Teachers who had participated in some form of induction activity at their current school were asked what sorts of activities were available (Figure 4.8). Compared to the OECD average, Australian teachers relied more heavily on general or administrative introductions (80% compared to 63% across the OECD on average), and networking or collaboration with other new teachers (71% compared to 61%). Activities such as supervision by a principal or other experienced teacher, or in person attendance of courses or seminars, were less common among Australian teachers compared to the average across OECD countries. Online induction activities were the least commonly used activity among Australian teachers and across the OECD countries, with only around 20 per cent of teachers using these sorts of activities.

FIGURE 4.8   Induction activities for teachers

Percentage of lower secondary teachers reporting that the following provisions are included in teacher induction at their current school
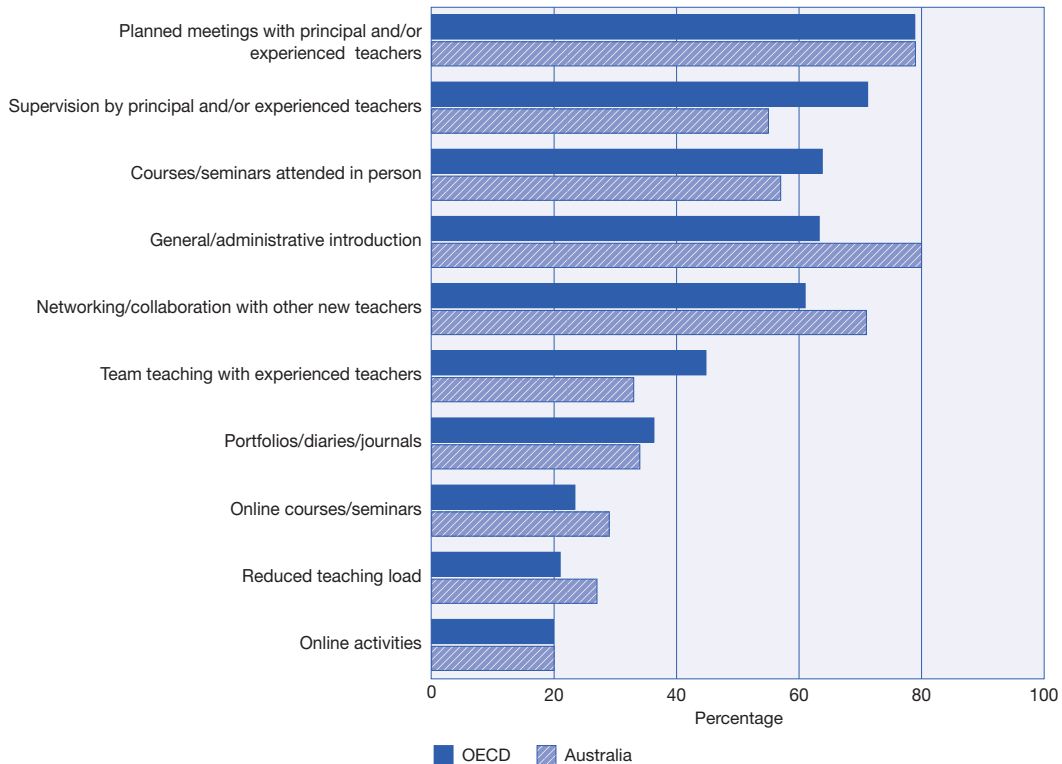
Note: The sample is restricted to teachers who took part in induction acivities at the current school based on teachers' responses and also have access to induction activities based on principals' responses

Regression analyses were carried out to determine the effect of participation in induction activities at the current school on the self-efficacy of teachers (in relation to classroom management, instruction and student engagement) after controlling for variables such as teachers' gender, years of experience and some elements of initial teacher education and training. The results displayed in Figure 4.9 indicate that in many countries, including Finland and Estonia, and across OECD countries on average, participation in induction activities was associated with significantly higher levels of self-efficacy among teachers. This was not the case among Australian teachers, however, as the relationship did not reach statistical significance. It may be that the types of induction activities most commonly reported by Australian teachers, such as participation in general or administrative introductions, do not have a strong influence on self-efficacy.

FIGURE 4.9 Relationship between teacher self-efficacy and participation in induction at current school

Change in the index of self-efficacy associated with having participated in induction activities at current school
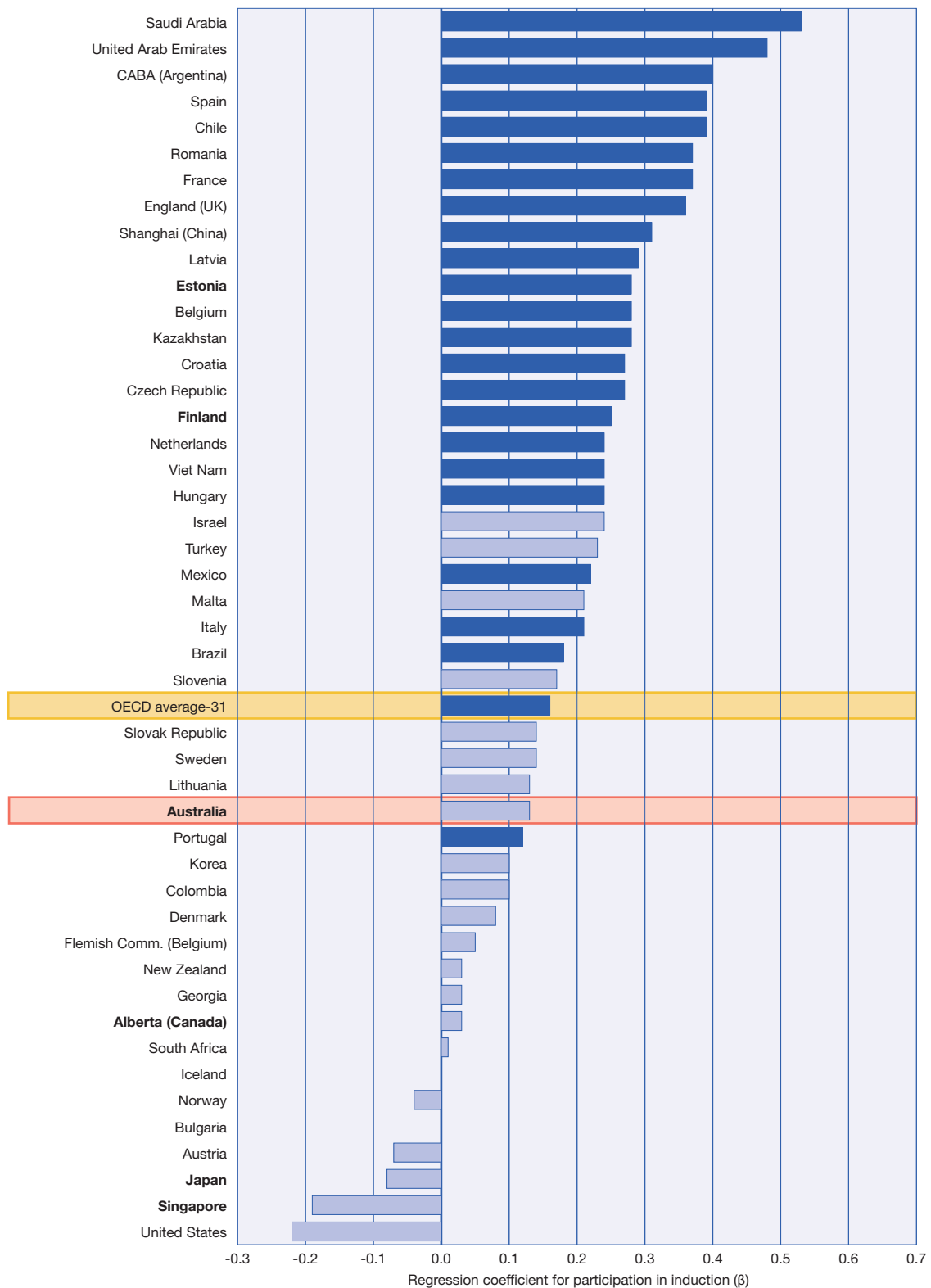
Notes: Statistically significant coefficients are marked in a darker tone. Countries and economies are ranked in descending order of the change in the index of self-efficacy associated with having taken part in any induction activity (formal or informal) at current school. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

4.4.4   Reduced workload

A reduced workload may be useful to novice teachers as they learn to cope with the demands of their new profession. Fewer hours in front of a class means more time available for planning and preparing, as well as more time to participate in induction or support activities, such as mentoring or meetings with supervising teachers. Around 27 per cent of Australian teachers and 21 per cent of teachers across OECD countries on average make use of a reduced teaching load during induction to a new school (Figure 4.8). A comparison of teaching hours and total work hours (which included time spent on the weekend, evenings and outside class times on activities such as marking, supervising extracurricular activities and planning and preparation) for novice and more experienced teachers is presented in Figure 4.10. The results indicate that, on average across OECD countries, there was no difference in the teaching hours of novice and more experienced teachers (around 20 hours). More experienced teachers recorded around 39 hours in total work hours, compared to 38 hours for novice teachers.

Among Australian teachers, both novice and more experienced teachers recorded 45 total work hours, higher than the OECD average. However, rather than working fewer hours in front of a class, Australian novice teachers appear to be carrying a heavier teaching load than their more experienced peers (just over 21 hours compared to 19).

FIGURE 4.10 Teachers' workload by years of experience

Average number of hours lower secondary teachers spent on working in total and teaching

	Teaching hours		Total working hours
		Chile	2
	−2	United States	−5
	−2	**Alberta (Canada)**	**−5**
		Colombia	
		South Africa	3
	−2	Turkey	−2
		Russia	5
	−1	United Arab Emirates	1
	2	Mexico	
	3	Brazil	
		Shanghai (China)	−3
	2	Israel	3
		Hungary	2
	2	Latvia	5
	2	**Estonia**	**4**
	1	**Finland**	
		Saudi Arabia	
		OECD average-31	1
		New Zealand	
	−3	England (UK)	
		Slovak Republic	
	3	Portugal	10
	−2	**Australia**	
		Bulgaria	
		Iceland	
	2	Croatia	3
	1	Spain	
		Slovenia	
		Denmark	
	1	Austria	
		Czech Republic	2
		Lithuania	4
	−1	Malta	
		Sweden	
		Belgium	
	−1	Flemish Comm. (Belgium)	−1
	2	France	4
	1	Georgia	3
		Viet Nam	
		Korea	
		Japan	
	1	**Singapore**	**−2**
		Netherlands	
	2	Romania	6
	4	CABA (Argentina)	5
	1	Italy	4
	−1	Norway	
	2	Kazakhstan	5

■ All teachers ● Novice teachers ◆ Experienced teachers

Notes: Statistically significant differences between experienced teachers (with more than 5 years of experience) and novice teachers (with fewer than or equal to 5 years of experience) are shown next to the country/economy name. Countries and economies are ranked in descending order of lower secondary teachers' average number of teaching hours during the most recent complete calendar week. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

4.4.5   Mentoring

In TALIS, mentoring is defined as a support structure in schools that requires more experienced teachers to support less experienced teachers, and can thus be made available specifically to novice teachers or to more experienced teachers who are new to the particular school. Referring back to Figure 4.8, mentoring could include such induction activities as regular meetings or supervision by principals or more experienced staff, or possibly even team teaching with more experienced staff.

Across the OECD, around two-thirds of schools provide a mentoring program to their staff (novice, new to school or for all staff) (OECD, 2019a). Those principals who report that a mentoring program is available at their school were asked to indicate the importance of the mentoring program in addressing different needs – from supporting new staff to improving student performance. The most important role of mentoring programs, according to principals, is to support less experienced teachers in their teaching (nominated by 88% of Australian principals and 77% of principals on average across OECD countries as being of high importance), followed by improving teachers' competence in pedagogical areas (74% and 67%, respectively) (Figure 4.11). Fewer principals saw mentoring as an important factor in improving their teachers' subject knowledge.

FIGURE 4.11   Principals' reports of the importance of mentoring

Percentage of lower secondary principals reporting that the following outcomes of mentoring are of high importance
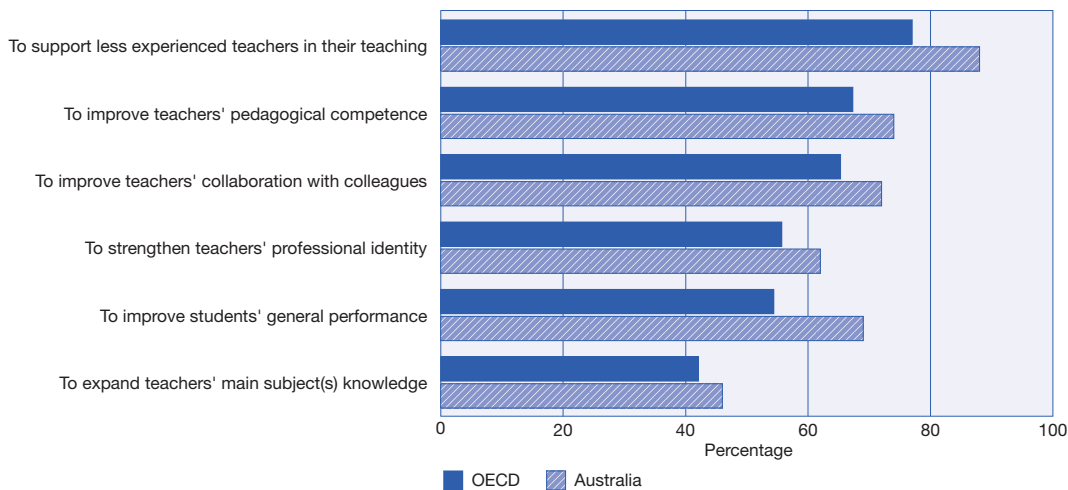
Despite the value placed on mentoring by school principals, just over one in every three novice teachers and one in every 10 more experienced teachers in Australia reported receiving mentoring from a peer. The proportion of novice teachers being mentored in Australia was higher than the OECD average (37% compared to 22%). Participation in mentoring was higher again in Singapore, where over 50 per cent of novice teachers and close to 20 per cent of more experienced teachers reported being mentored. In contrast, mentoring was not a commonly reported activity in Finland, where 10 per cent of novice teachers and three per cent of experienced teachers received mentoring support in their schools.

FIGURE 4.12   Peer mentoring by teachers' years of experience

Percentage of lower secondary teachers who have an assigned mentor as part of a formal arrangement at the school

| | All teachers | Novice teachers | Experienced teachers |
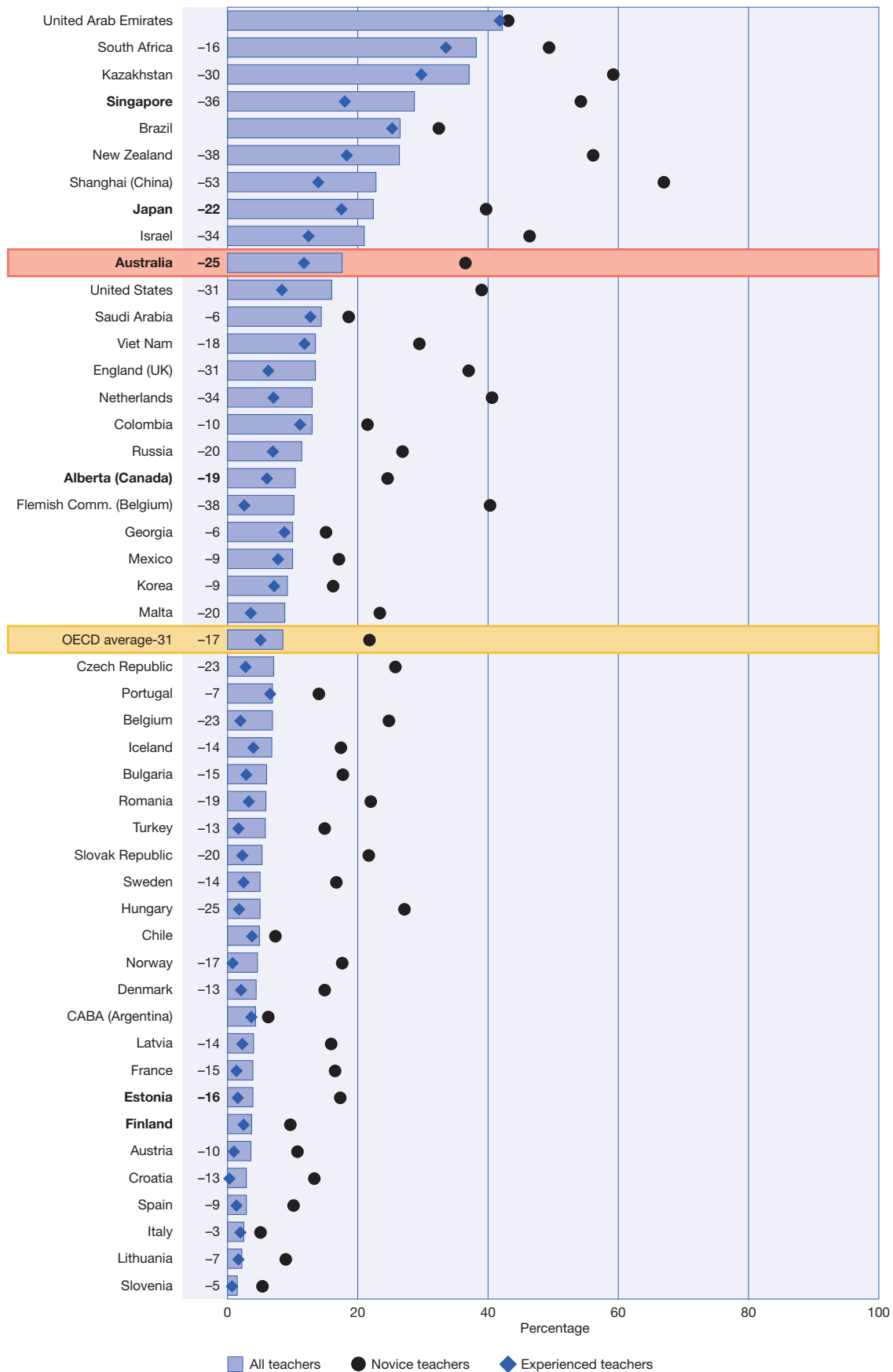
Notes: Mentoring is defined as a support structure in schools where more experienced teachers support less experienced teachers. Statistically significant differences between experienced teachers (with more than 5 years of experience) and novice teachers (with fewer than or equal to 5 years of experience) are shown next to the country/economy name. Countries and economies are ranked in descending order of the percentage of lower secondary teachers who have an assigned mentor. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

4.5   How are school leaders trained for their work as principals?

Principals typically reported having higher qualifications than teachers, with 63 per cent of principals on average across the OECD reporting holding a master's degree, compared to 44 per cent of teachers. This pattern held true in Australia, with close to half of principals holding a master's degree (47%) compared to one-fifth of teachers (Figure 4.3).

Principals were also asked to indicate whether they had undertaken training specific to their role as a school leader, in the form of a school administration or principal training program or course, or an instructional leadership course prior to taking up their position as principal. On average across the OECD, over 50 per cent of school leaders reported having completed a school administration or principal training course while 50 per cent reported having completed an instructional leadership course (Figure 4.13). There was great variation across the countries in these figures – close to 90 per cent of school leaders in Singapore and Finland had completed school administration or principal training, compared to 30 per cent of school leaders in Australia. The proportion of Australian school leaders who had completed instructional leadership training was slightly higher than the proportion who had undertaken school administration or principal training (43% compared to 30%). This was also the case in Japan (71% compared to 54%). Nevertheless, this result suggests that the majority of school leaders in Australia have not received training specific to their role as a principal prior to taking up their positions. The professional development activities undertaken by principals while they are in their positions is examined further in Chapter 5.

FIGURE 4.13 Principals' formal training before taking role as principal

Percentage of lower secondary principals for whom the following elements were included in their formal education before taking up their role as a principal

Legend:
- School administration or principal training program or course
- Instructional leadership training or course
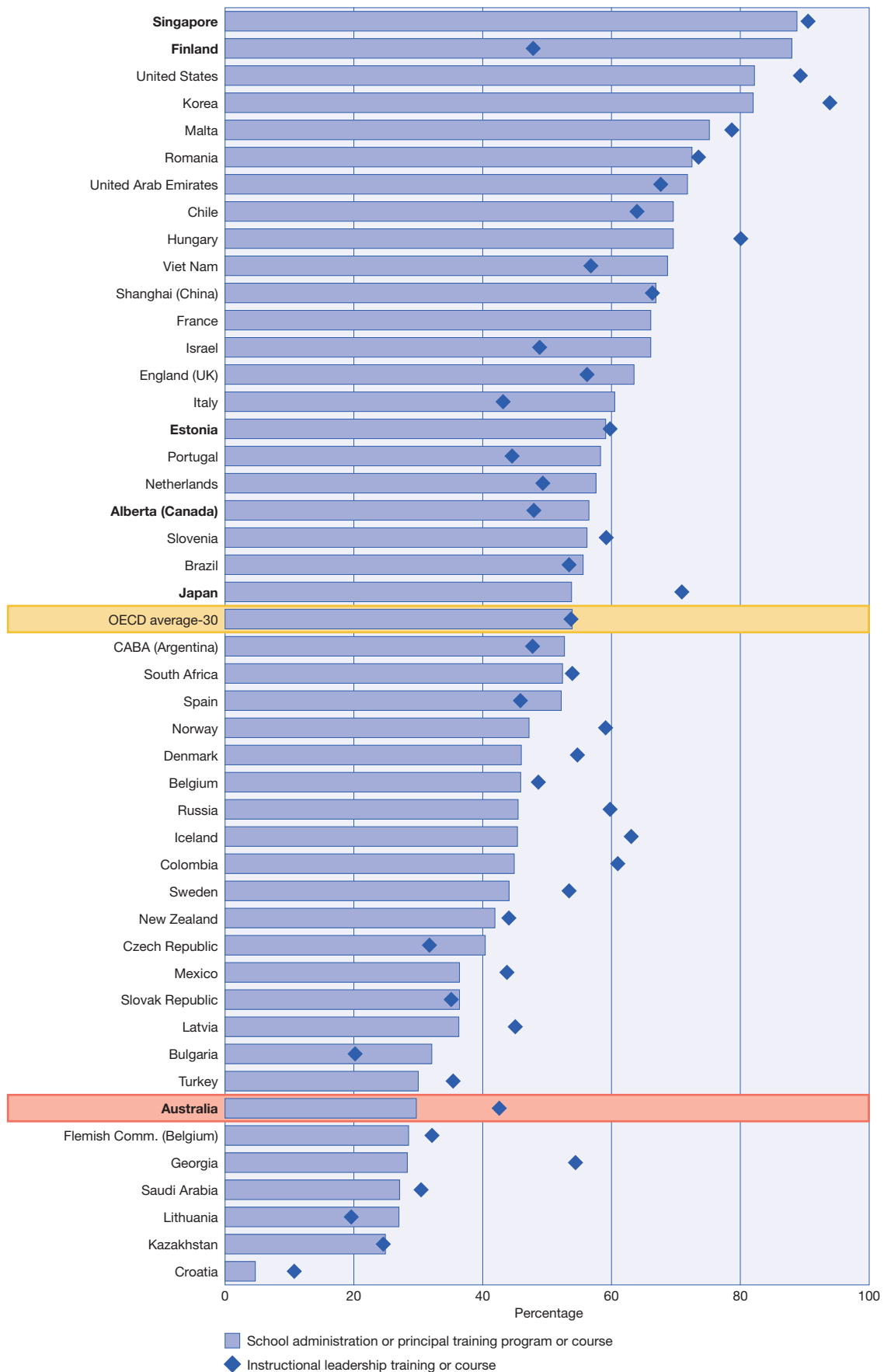
Notes: Data refer to the the sum of the percentages of school leaders trained "before taking up position" and "before and after taking up position" as principal. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 4.3   Support systems for new teachers – comparing primary and lower secondary schools

There was a significant difference between primary and lower secondary teachers in access to formal induction activities, with 93 per cent of lower secondary principals and 81 per cent of primary principals reporting that new teachers had such access (Appendix Table A4.3). Given this, however, more than 90 per cent of both groups of principals reported that they provided informal induction activities.

For almost all teachers, part of this induction included planned meetings with principals and/or experienced teachers and a general administrative introduction (Appendix Table A4.4). Also high among induction activities for new teachers was supervision by the principal or experienced teachers and networking and collaboration with other new teachers. More common among primary than secondary teachers was team teaching with experienced teachers (77% of primary and 62% of lower secondary teachers). Induction activities provided more often in secondary schools than primary schools include attending courses or seminars (85% of lower secondary and 73% of primary teachers), a reduced teaching load (62% of lower secondary and 49% of primary teachers) and portfolios, diaries, and journals (49% of lower secondary and 44% of primary teachers).

Providing opportunities for continuous development

CHAPTER

5
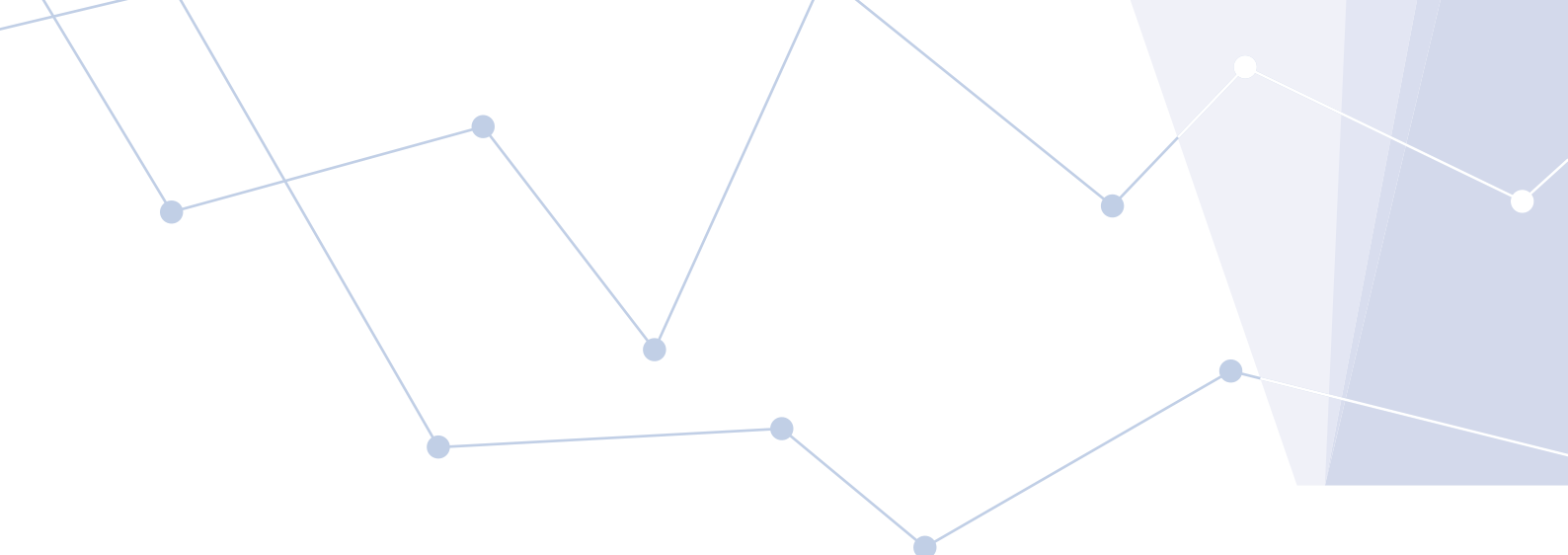
This chapter examines the participation rates in professional development for teachers and principals, the different types of training available and those that are most valued by teachers. Participation in various forms of training is then compared with reported need for further training, to identify potential gaps between availability and need. The barriers to participation and support available to teachers and principals in their continued development are explored in the final section.

Key findings

▸ Participation in professional development is almost universal among Australian teachers (99% participated in some form in the past 12 months) and principals (100% participated in some form in the past 12 months).

▸ Over 90 per cent of Australian teachers reported that their professional development had had a positive impact on their teaching.

▸ Australian teachers who reported that their professional development had a positive impact on their work tended to report higher levels of job satisfaction than other teachers, though not higher levels of self-efficacy.

▸ The area of professional development in which Australian teachers report the highest level of need is in teaching children with special needs. Expressed need for training in this area has increased by three percentage points since TALIS 2013, but remains below the OECD average.

▸ Australian teachers who participated in professional development in pedagogical practices recorded significantly higher use of effective classroom practices compared with teachers who had not participated in such professional development.

▸ Australian teachers who participated in at least one of the professional development activities on multicultural teaching reported higher self-efficacy in operating in multicultural environments than teachers who had not undertaken such training.

▸ Over 60 per cent of Australian teachers and principals indicated that conflict between teachers' work schedules and professional development was a barrier to participation. This proportion has not changed significantly between TALIS 2013 and 2018.

5.1   Introduction

Continuous professional development is a vital element of the career paths of teachers and principals, providing training that can impact both on what happens in the classroom and in the school more generally. In a rapidly changing world, with an increase in diversity within schools as described in Chapter 3, as well as changes in the curriculum and an increase in the use of technology in the classroom, teachers and principals need professional development in order to ensure that students acquire the skills and competencies they will need.

5.2   Providing learning opportunities for teachers and school leaders

5.2.1   Overall participation in continuous professional development

Teachers were asked to indicate which, if any, of the following types of professional development they had attended in the previous 12 months:

▶ Courses or seminars (in person)

▶ Online courses or seminars

▶ Education conferences

▶ Formal qualification programs

▶ Observation visits to other schools

▶ Observation visits to businesses, public organisations or non-government organisations

▶ Peer and/or self-observation and coaching

▶ Participation in a network of teachers

▶ Reading professional literature

▶ Other types of professional development activities.

An indicator of overall participation was then constructed using teachers who had attended at least one of these types of professional development. In Australia, along with Alberta (Canada) and Singapore, participation in professional development was almost universal, with around 99 per cent of teachers participating in at least one type of activity. On average across the OECD countries, 94 per cent of teachers surveyed had participated in some form of professional development in the previous year (Figure 5.1).

FIGURE 5.1 Teachers' participation in professional development activities

Percentage of lower secondary teachers who participated in professional development activities
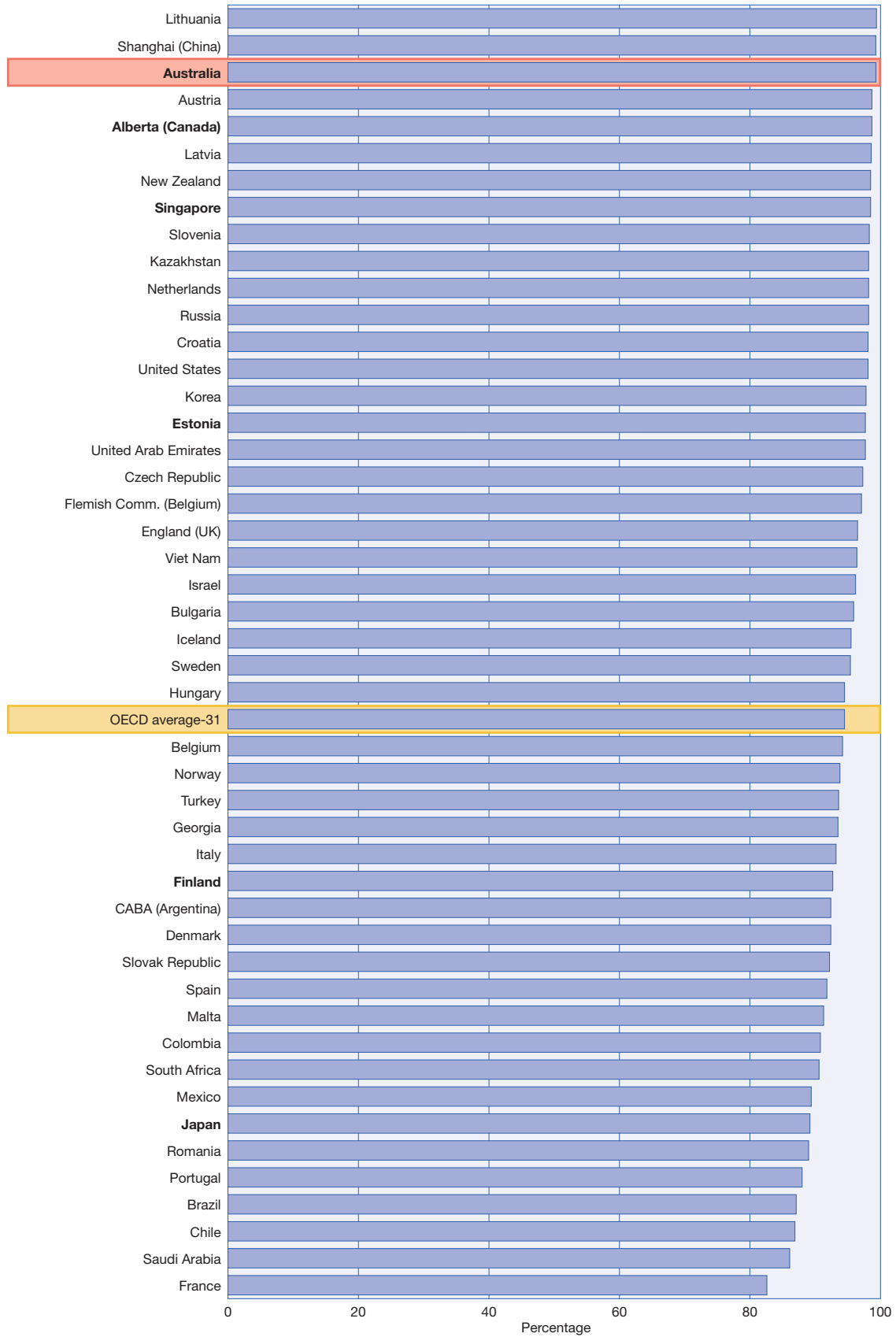
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

Participation in professional development was also very common among principals. In Australia, Estonia and Singapore, 100 per cent of principals had participated in some form of professional development, while across OECD countries the average participation rate was 99 per cent.

These results should be considered alongside the actual requirements of countries and economies for teachers to participate regularly in professional development, either to maintain their employment or in order to access opportunities for promotion or salary increases (Figure 5.2). Participation in professional development is compulsory in Australia and 22 other TALIS countries or economies who had data available. In Singapore, however, there was no official requirement to participate in professional development, but participation was still similar to that in Australia (99%).

FIGURE 5.2 Requirements for teachers' professional development in public institutions, 2013
For teachers teaching general subjects in public institutions, lower secondary education

	No requirement	Compulsory for promotion or salary increase	Compulsory requirements for teachers to maintain employment
Australia			▉
Austria			▉
Belgium (Fl.)	▉		
Bulgaria		▉	
Chile		▉	
Croatia			▉
Czech Republic			▉
Denmark	▉		
England (UK)			▉
Estonia			▉
Finland			▉
France	▉		
Georgia	▉		
Hungary			▉
Iceland			▉
Ireland	▉		
Israel		▉	
Italy	▉		
Japan			▉
Kazakhstan		▉	▉
Korea		▉	
Lithuania		▉	▉
Malta	▉		
Mexico		▉	
Netherlands	▉		
Norway	▉		
Portugal		▉	
Russia			▉
Singapore	▉		
Slovak Republic		▉	
Slovenia			▉
Spain		▉	
Sweden	▉		
Turkey			▉
United Arab Emirates	▉		

Notes: High-performing PISA countries in bold. For explanation refer to Reader's Guide. Source: OECD (2014), Education at a Glance 2014: OECD Indicators.

5.2.2 Types of continuous professional development training

Figure 5.3 provides a comparison of the different types of professional development reported by principals and teachers. As may be expected, given the high rates of participation in professional development reported by Australian teachers (99%, with an average of five different activities) and principals (100%, with an average of seven different activities) compared to average rates across OECD countries, participation in the individual types of professional development was generally higher among Australian teachers and principals than the OECD average. The exceptions to this pattern were participation in other types of professional development activities and formal qualifications, in which participation was either not different to the OECD average or slightly lower among Australian respondents. Over 90 per cent of Australian teachers and principals reported attending courses or seminars in person, compared to 76 per cent and 77 per cent of teachers and principals, respectively, across OECD countries on average. Attendance at educational conferences and reading professional literature were also more common among Australian teachers and principals than on average across the OECD.

FIGURE 5.3 Types of professional development attended by teachers and principals, Australia and the OECD average

Results based on responses of lower secondary teachers and principals
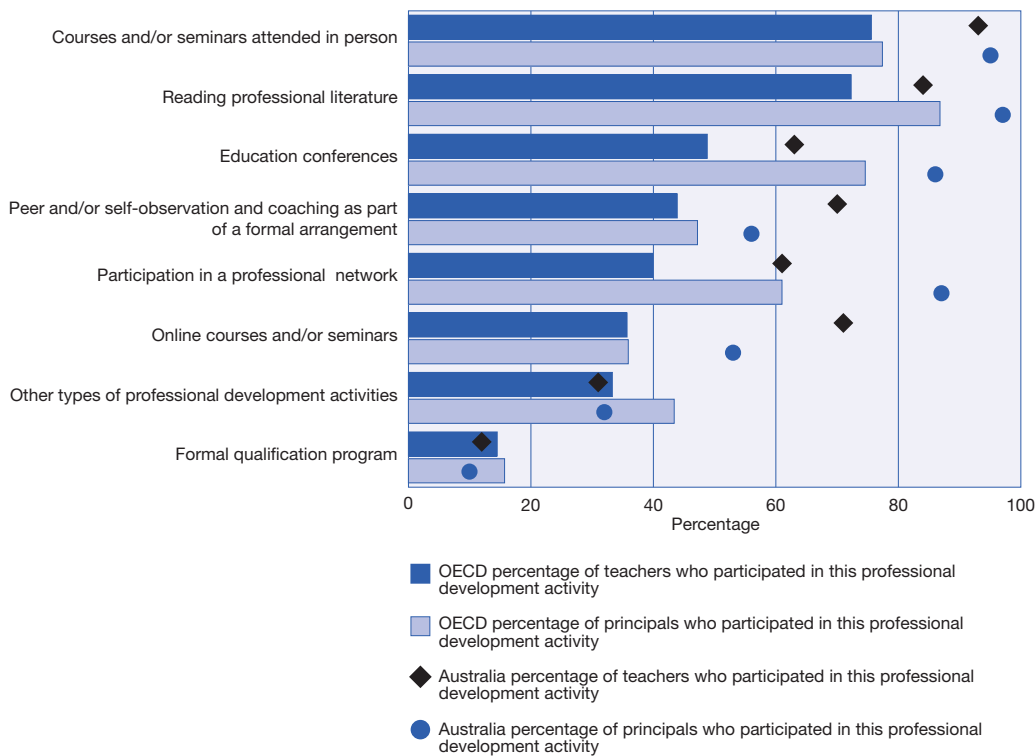
Notes: OECD average covers 31 countries for teachers and 30 countries for principals. The figure only includes those items that were common both for the teacher and the school leader questionnaire.

Participation in and types of professional development – comparing primary and lower secondary schools

As discussed earlier in this chapter, participation in professional development is mandatory in Australia in order for teachers to maintain their teaching registration. On average, both primary and lower secondary teachers participated in five professional development activities over the previous 12 months (Appendix Table A5.1). Most commonly, this was in the form of courses or seminars attended in person (92% of primary teachers and 93% of lower secondary teachers) or reading professional literature (92% of primary and 84% of lower secondary teachers). There were only a few forms of professional development in which primary teachers tended to participate to a greater extent than lower secondary teachers. These were participation in online courses or seminars (82% of primary and 71% of lower secondary teachers) and observation visits to other schools (32% of primary and 18% of lower secondary teachers). Lower secondary teachers, on the other hand, participated more frequently in education conferences in which teachers and/or researchers presented their research or discussed educational issues (63% of lower secondary and 56% of primary teachers) and observation visits to businesses, public organisations or non-governmental organisations (16% of lower secondary and 9% of primary teachers).

5.3   Exploring effective forms of professional development

Having established that participation in professional development is common, if not universal, among teachers and principals, the question is then raised as to whether this participation has a useful impact on the quality of teaching and learning in the TALIS countries.

This section reports on the proportions of teachers who reported a positive impact of their professional training activities on their teaching practices and the extent to which this impact was associated with three different professional outcomes – teachers' self-efficacy, job satisfaction and cognitive activation practices. The characteristics of effective professional development are also explored.

5.3.1   Impact of continuous professional development activities

Teachers were asked to indicate whether any of the continuous professional development activities that they had undertaken in the previous 12 months had had a positive impact on their teaching practices. In Australia, 92 per cent of teachers reported that their professional development had had a positive impact on their teaching. On average across the OECD, 82 per cent of teachers surveyed reported a positive impact on their teaching practice attributable to their participation in professional development activities.

The relationships between the positive impact of professional development and teachers' job satisfaction and self-efficacy were explored using regression analyses. Results indicated that participation in professional development (that had a positive impact) was more uniformly related to higher job satisfaction, with 47 TALIS countries or economies recording a positive relationship between the two (Figure 5.4). Australian teachers reported a significant, positive relationship between participation in professional development that was considered impactful and higher job satisfaction.

In 33 TALIS countries or economies and on average across OECD countries, teachers who reported participating in professional development that had a positive impact also recorded higher levels of self-efficacy (in comparison to teachers who believed that their professional development had not had a positive impact). This relationship did not hold among Australian teachers, nor among teachers in Singapore or Alberta (Canada). In contrast, teachers in Finland, Estonia and Japan recorded higher levels of self-efficacy when they had participated in professional development that they considered impactful.

FIGURE 5.4 Relationship between teachers' job satisfaction and self-efficacy and participation in impactful professional development

Change in the index of job satisfaction and the index of self-efficacy associated with having participated in impactful professional development
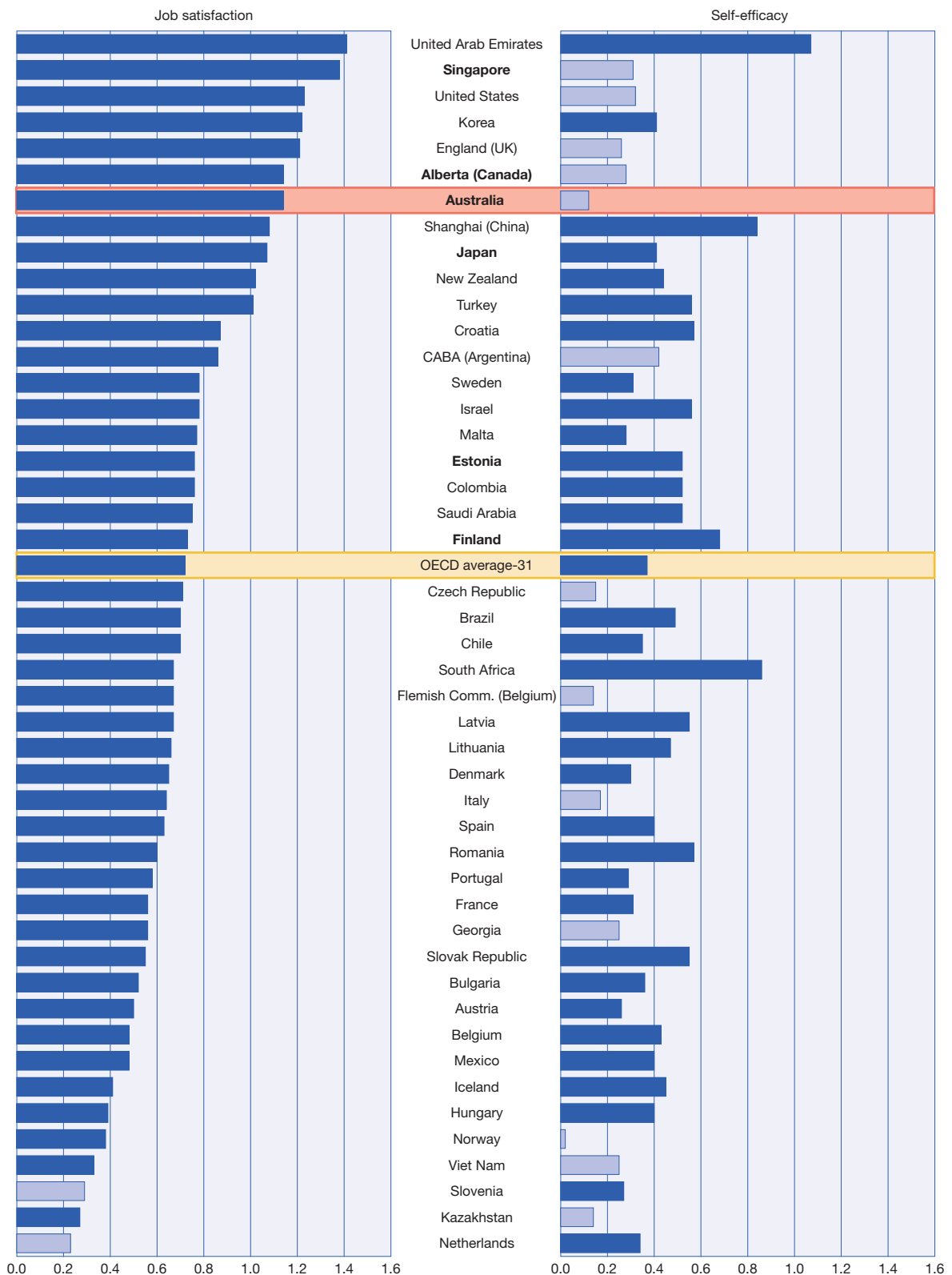
Notes: Statistically significant coefficients are marked in a darker tone. Countries and economies are ranked in descending order of the change in the index of self-efficacy associated with having participated in impactful professional development. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

5.3.2 Characteristics of effective continuous professional development programs

Teachers who reported that their participation in professional development had a positive impact on their teaching practice (92% of Australian teachers and 82% of teachers on average across the OECD), were asked to nominate the characteristics of the training that contributed to its effectiveness from the following list:

‣ It built on the teacher's prior knowledge

‣ It adapted to the teacher's personal development needs

‣ It had a coherent structure

‣ It appropriately focused on content needed to teach the teacher's subjects

‣ It provided opportunities to practise/apply new ideas and knowledge in the teacher's own classroom

‣ It provided opportunities for active learning

‣ It provided opportunities for collaborative learning

‣ It focused on innovation in the teacher's teaching

‣ It provided follow-up activities

‣ It took place over an extended period of time

‣ It took place at the teacher's school

‣ It involved most colleagues from the teacher's school.

These characteristics were categorised into four groups, namely *Content quality*, *Active learning and collaboration*, *Sustained length*, and *School-embedded approach*.

The most frequently nominated characteristic of effective professional development was that it built on the teacher's prior knowledge – nominated by 97 per cent of Australian teachers and 91 per cent of teachers on average across the OECD (Figure 5.5). The second most frequently nominated characteristic of effective training pertained to Active learning and collaboration. This includes development that provided opportunities to practise or apply new ideas and knowledge in the teacher's own classroom – nominated by 88 per cent of Australian respondents and 86 per cent of respondents on average across the OECD. School-embedded factors, such as the professional development taking place in the teacher's school or involving colleagues from the teacher's school were less frequently seen by responding teachers as key to the effectiveness of professional development, cited by between 40 per cent and 55 per cent of teachers in Australia and across the OECD on average.

FIGURE 5.5   Characteristics of effective professional development, according to teachers

Percentage of lower secondary teachers for whom the most effective professional development activities had the following characteristics
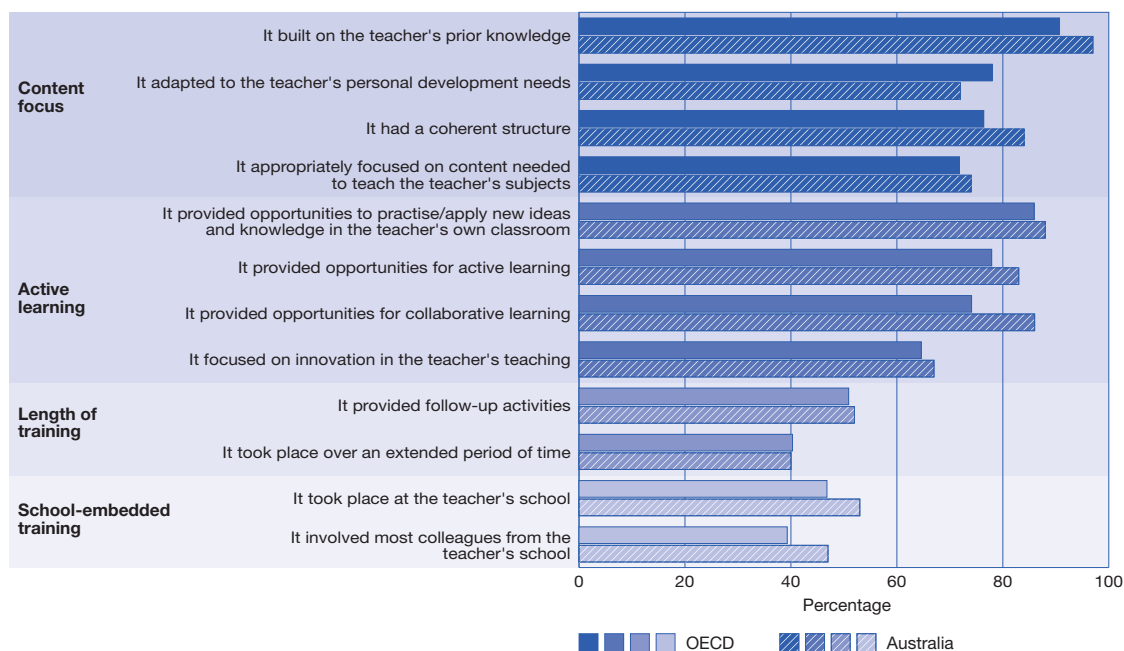
BOX 5.2   Characteristics of effective continuous professional development activities – comparing primary and lower secondary schools

More than 90 per cent of primary and lower secondary teachers agreed that the professional development activities they had undertaken over the previous 12 months had had a positive impact on their teaching (Appendix Table A5.2).

Teachers at both levels reported that the most effective professional development was content driven: built on teachers' prior knowledge (99% of primary and 97% of lower secondary teachers), or provided an opportunity to apply new ideas/knowledge in the teacher's own classroom (93% of primary and 88% of lower secondary teachers). Of the remaining activities, a higher proportion of primary teachers reported a positive impact from professional development which focused on innovation in the teacher's teaching (76% of primary and 67% of lower secondary teachers), provided follow-up activities (67% of primary and 52% of lower secondary teachers), that involved most colleagues at their school (59% of primary and 47% of lower secondary teachers), and that took place over an extended period of time (52% of primary and 40% of lower secondary teachers).

5.4   Exploring the content of professional development and the need for it

This section reports on the contents of professional development activities undertaken by teachers, along with the needs expressed by teachers for professional development in particular areas. Possible relationships between the content of professional development, the expressed need for it and the characteristics of teachers and schools are then explored. The final section focuses on changes in professional development content and demand over time and the associations between content and teachers' self-efficacy and teaching practices.

5.4.1　Content of teachers' training and need for it

Teachers who had participated in some form of professional development training in the past year were asked to identify the topics covered in those activities, as well as their self-assessed need for training in that area on a scale ranging from *no need* through to *high level of need*. Among Australian teachers, the most commonly reported topic covered by professional development was knowledge of the curriculum (83%), followed closely by knowledge and understanding of their subject field(s) (82%). Across the OECD on average, the most commonly reported topic of professional development was knowledge and understanding of their subject field(s) (76%), followed by pedagogical competencies in teaching their subject field(s) (73%). Despite the focus of professional development on these areas, only four to five per cent of Australian respondents reported a high level of need for development in their subject areas or the curriculum. While these topics, arguably, should form the basis of initial teacher training rather than continuous professional development, it should be noted that participation in professional development is required of Australian teachers and that changes to the state and national curriculums, as well as updates to subject content, may require coverage of these topics more regularly in order for teachers to be up to date with their field. It may also relate to out-of-field teaching, with many teachers required to teach in areas in which they have not received training in their initial teacher education courses.

The proportions of Australian teachers who indicated that their professional training had covered the 14 topics listed were generally higher compared to the OECD average. The exceptions to this were for student behaviour and classroom management, co-operation between teachers and parent/guardians, and issues with multiple languages and cultures (Figure 5.6). On average, Australian teachers reported a lower need for professional development in the areas examined than did teachers across the OECD.

FIGURE 5.6 Participation in professional development for teachers and need for it
Results based on responses of lower secondary teachers

OECD percentage of teachers for whom this topic was included in their professional development activities

Australia percentage of teachers for whom this topic was included in their professional development activities

OECD percentage of teachers reporting a high level of need for professional development in this area

Australia percentage of teachers reporting a high level of need for professional development in this area
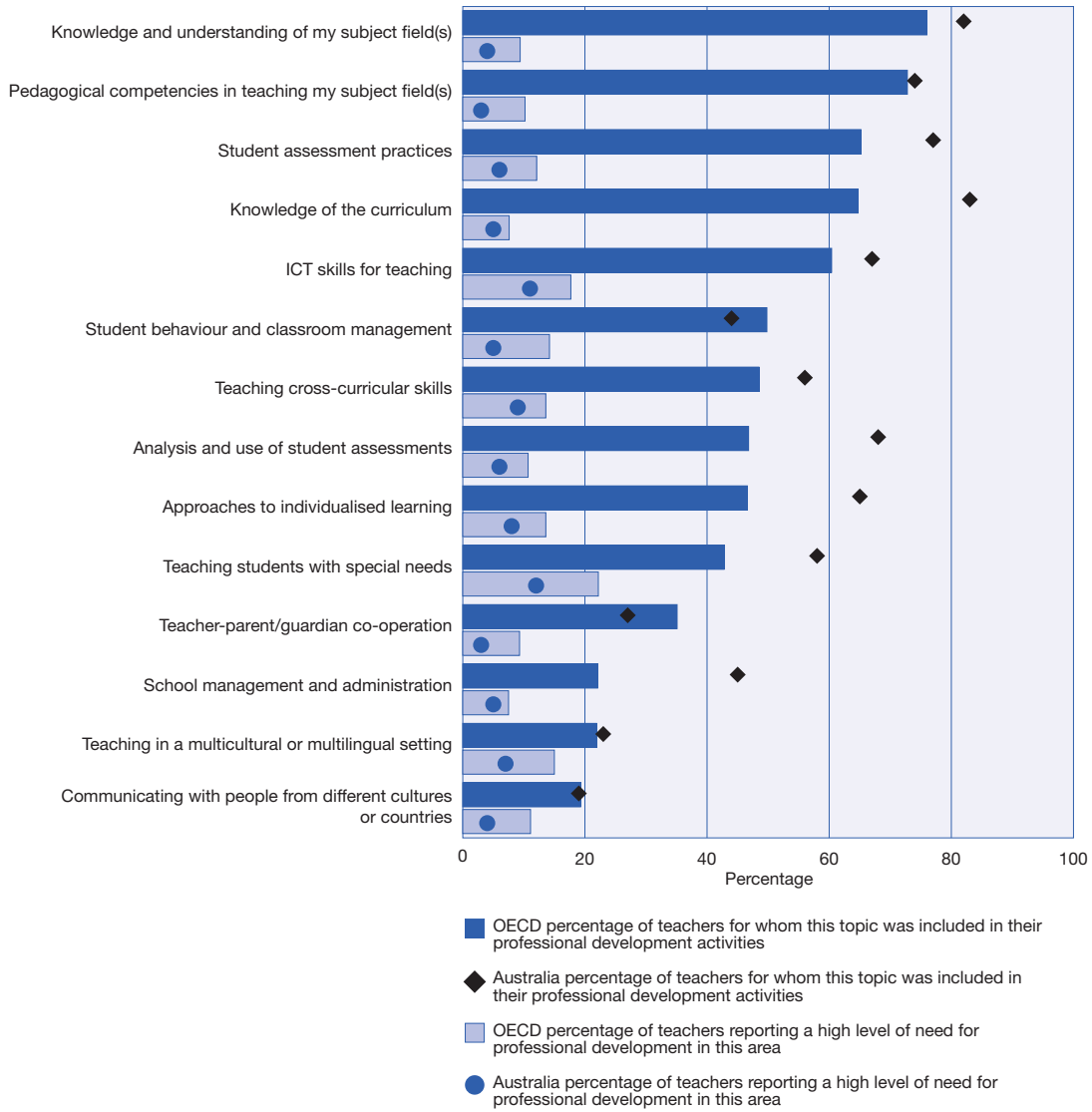
For Australian teachers and across the OECD on average, the area most commonly rated as a high need was for training in teaching children with special needs. Twelve per cent of Australian teachers identified this as an area in which they had a high need for professional development, as did 22 per cent of teachers across the OECD. However, only 58 per cent of Australian teachers and 43 per cent of teachers across the OECD had participated in professional development that covered this area.

Figure 5.7 compares the proportion of teachers who participated in professional development for teaching children with special needs and rated it is as high need, with the proportions of teachers who did not participate in professional development in this area but who identified it as an area of high need. Australia appears towards the lower end of the figure, indicating a relatively low need for training in teaching children with special needs among both teachers who did and did not participate in such training. Among Australian teachers, the proportions of teachers who had or had not accessed training in this area and who expressed a high need for training were not significantly different. This was also true in Alberta (Canada) and Finland, whereas in Japan the proportion of teachers who had not accessed training in teaching children with special needs with a high demand for such training was lower than the proportion of teachers who had completed such training and still reported a high need.

FIGURE 5.7 High needs in teaching special-needs students by teachers' participation in professional development in this topic

Percentage of lower secondary teachers who reported a high need for professional development teaching students with special needs
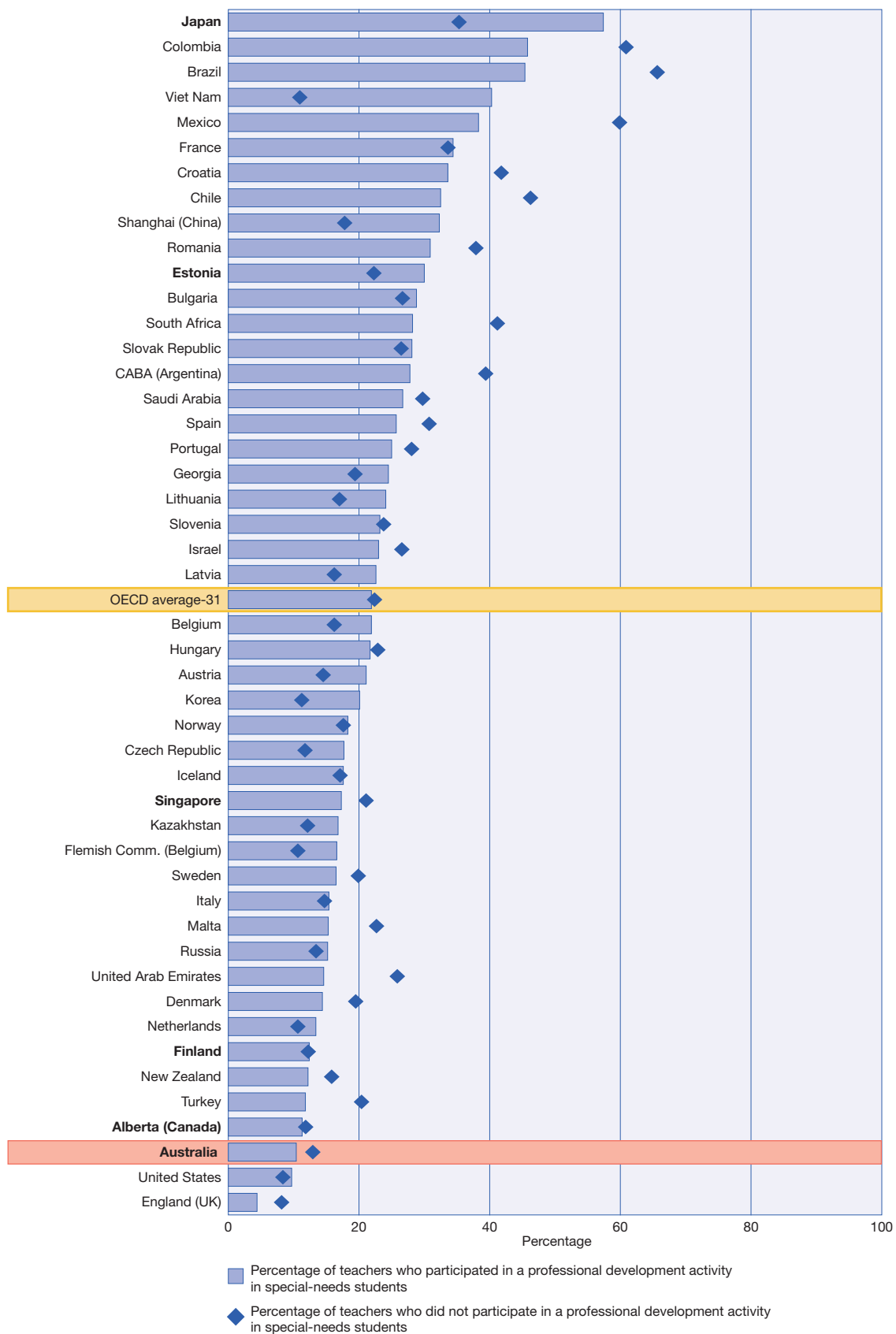
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

Focusing on the content of professional development undertaken by principals, Figure 5.8 presents the proportions of principals who participated in courses or seminars about leadership compared to courses or seminars about subject matter, teaching methods or pedagogical topics. In Australia, 87 per cent of principals had undertaken professional development focused on leadership and 80 per cent had undertaken training focused more on instructional and pedagogical matters. These participation rates were slightly higher than those recorded across the OECD on average (73% and 72%, respectively) but lower than in Singapore (96% and 90%, respectively).

FIGURE 5.8 Principals' participation in professional development courses or seminars

Percentage of lower secondary principals who participated in the following professional development activities
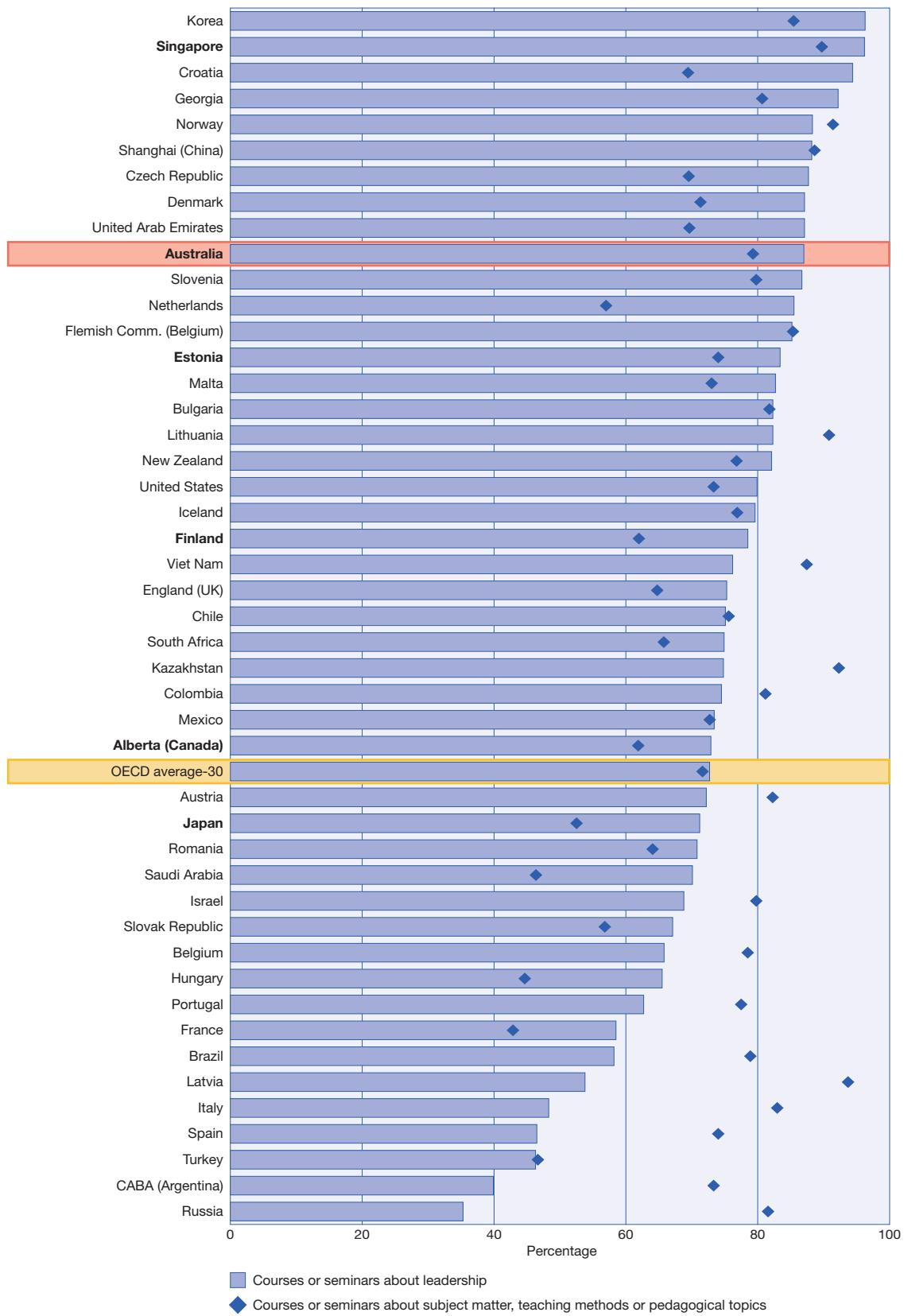
Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 5.3   Content of and need for continuous professional development – comparing primary and lower secondary schools

Content of continuous professional development activities

For Australian teachers at both levels, the most popular types of professional development activities are those consisting of knowledge and understanding of the teacher's subject field, pedagogical competencies in teaching their subject field(s), knowledge of the curriculum, and student assessment practices, with three-quarters or more of teachers at both levels participating in such activities (Appendix Table A5.3). Primary teachers participated more commonly than lower secondary teachers in professional development on student behaviour and classroom management (55% compared to 44%), approaches to individualised learning (72% compared to 65%), and analysis and use of student assessments (77% compared to 68%). A higher proportion of lower secondary than primary teachers participated in activities to do with ICT skills for teaching (67% compared to 63%). There were no differences between the groups on participation in any other professional development activities.

Need for different types of professional development

The proportions of primary and lower secondary teachers reporting a high need for professional development in the areas mentioned above were consistently low, indicating good professional development coverage in most areas (Appendix Table A5.4). A minority of primary and lower secondary teachers reported a high level of need for professional development in ICT skills for teaching (18% for primary and 11% of lower secondary teachers), and a similar proportion of teachers (11% for primary and 12% for lower secondary) reported a high need for professional development in teaching students with special needs.

5.4.2   Content of continuous professional development and need for it, by teacher characteristics

Among Australian teachers, 51 per cent of novice teachers (those with five years or less experience) who had participated in professional development in the past 12 months had attended courses focused on classroom management, while only 42 per cent of more experienced teachers had attended this type of professional development (Figure 5.9). This is similar to the average across OECD countries, with 55 per cent of novice teachers and 49 per cent of more experienced teachers accessing professional development in classroom management. As discussed in Chapter 4, Australian teachers reported lower levels of preparedness for classroom management (and student behaviour) than on average across the OECD (45% of Australian teachers reported being *well* or *very well* prepared compared to 53% on average across the OECD). Accessing further professional development in this area is one way that teachers may be addressing the perceived shortfall in their initial teaching preparation for this crucial component of teaching and instruction.

FIGURE 5.9 Participation in professional development on classroom management, by teachers' teaching experience

Percentage of lower secondary teachers for whom student behaviour and classroom management were included in their professional development activities
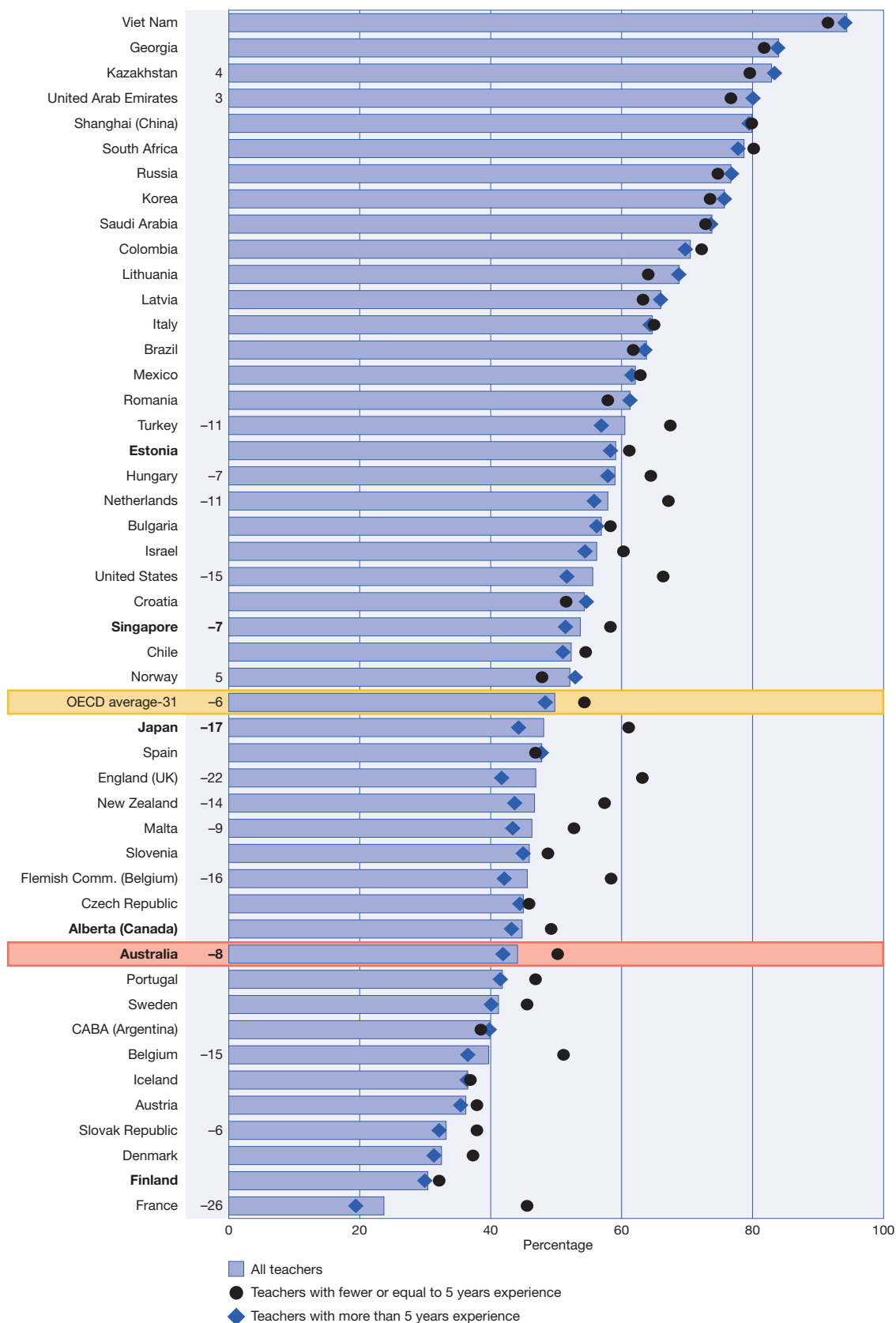
Notes: Statistically significant differences between teachers with more than 5 and fewer than or equal to 5 years of experience are shown next to the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

Figure 5.10 presents the proportions of teachers who indicated a high level of need for professional development in teaching students with special needs across a number of demographic characteristics. In Australia, higher proportions of female teachers, compared to male teachers, expressed such a need. Higher proportions of younger teachers (under 30 years of age) and novice teachers, compared to older and more experienced teachers, also felt that they needed professional development in this area. This pattern was similar to that found across OECD countries on average and in most of the comparison countries, with the exceptions of Estonia, in which there was no difference between novice and more experienced teachers, and Alberta (Canada), in which the gender difference did not reach statistical significance.

FIGURE 5.10 Need for professional development on teaching students with special needs, by teacher characteristics

Percentage of lower secondary teachers who report a high level of need in teaching students with special needs

	Difference by teacher professional characteristics			Percentage of teachers with high need for professional development on teaching students with special needs
	Male – Female	Age 50 and above -under age 30	Experienced – novice teacher	
Brazil			+	
Colombia				
Mexico				
Japan	-	-	-	
South Africa				
Chile				
Croatia	-	-	-	
CABA (Argentina)	-			
Romania	-	-		
France	-	-		
Saudi Arabia		-		
Spain	-	-	-	
Bulgaria	-			
Portugal	-	Missing values		
Estonia	-	-		
Slovak Republic	-	-		
Viet Nam				
Israel		-	-	
Shanghai (China)		-	-	
Slovenia	-			
OECD average-31	-	-	-	
Hungary	-	-	-	
Georgia				
Lithuania	-			
Malta		-	-	
Singapore	-	-	-	
Latvia	-			
Denmark	-		-	
Belgium	-	-	-	
United Arab Emirates		-	-	
Sweden	-	-	-	
Norway	-	-	-	
Iceland	-		-	
Austria	-	-	-	
Turkey	-	-		
New Zealand	-	-	-	
Italy		-	-	
Czech Republic	-	-	-	
Russia		-	-	
Kazakhstan		-	-	
Korea		-	-	
Flemish Comm. (Belgium)	-	-	-	
Finland	-	-	-	
Netherlands		-	-	
Australia	-	-	-	
Alberta (Canada)		-	-	
United States				
England (UK)		-	-	

Legend:
- **+** Postive difference
- **-** Negative difference
- ☐ Difference is not significant
- ▨ Missing values

Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

5.4.3 Trends in the content of continuous professional development and need for it

The TALIS data allow comparisons of participation rates in and demand for professional development in a number of areas over the previous cycles of TALIS. Participation in 11 professional development areas can be compared between the 2013 and 2018 TALIS surveys:

▸ Knowledge and understanding of my subject field(s)

▸ Pedagogical competencies in teaching my subject field(s)

▸ Knowledge of the curriculum

▸ Student assessment practices*

▸ ICT skills for teaching*

▸ Student behaviour and classroom management

▸ School management and administration*

▸ Approaches to individualised learning

▸ Teaching students with special needs*

▸ Teaching in a multicultural or multilingual setting*

▸ Teaching cross-curricular skills.

The reported need for training in five areas (those marked with an asterisk above) can be compared across the 2008, 2013 and 2018 surveys.

In Australia, participation in professional development in 10 of the 11 areas increased significantly between the 2013 and 2018 surveys. Participation in professional development in ICT skills for teaching decreased significantly between the two cycles, from 72 per cent to 67 per cent. It should be noted, however, that over two-thirds of Australian teachers who participated in professional development did cover this area (higher than the OECD average of 60%), and that 65 per cent of Australian teachers indicated that ICT skills for teaching was covered in their initial teacher education. A reduced need for professional development in this area was also evident among Australian teachers – between the 2008 and 2018 surveys, the percentage of Australian teachers who reported a high level of need for professional development in this area dropped from 18 per cent to 11 per cent, although there was no significant change between the 2013 and 2018 cycles.

Across the countries participating in TALIS 2013 and 2018, the two areas with the greatest change in reported need for professional development were teaching students with special needs (which increased in Australia and 19 other countries and economies), and teaching in a multicultural or multilingual setting (which increased in Australia and 20 other countries and economies). Demand for professional development in ICT skills for teaching also increased in a number of countries, although, as discussed earlier, this was not the case for Australia. The following sections focus on comparisons between participation in and demand for professional development in these three areas, in turn.

Figure 5.11 presents a comparison of the percentages of teachers who participated in professional development in teaching students with special needs and the percentage of teachers who reported a high level of need for such professional development. Participation in professional development in this area increased by 25 percentage points among Australian teachers (one of the higher increases among TALIS participants and higher than most of the high-performing PISA countries). The percentage of Australian teachers who reported a high level of need for professional development in teaching students with special needs increased by around three percentage points between 2013 and 2018, although rates of need remained lower than the OECD average and some of the high-performing PISA countries. In Finland, participation in professional development in teaching students with special needs decreased between 2013 and 2018, while the reported need for such training remained about the same.

FIGURE 5.11 Change in participation in and need for professional development on teaching students with special needs from 2013 to 2018

Percentage point differences between 2013 and 2018 in the share of teachers (i) having participated in professional development and (ii) reporting a high need in training in teaching special-needs students
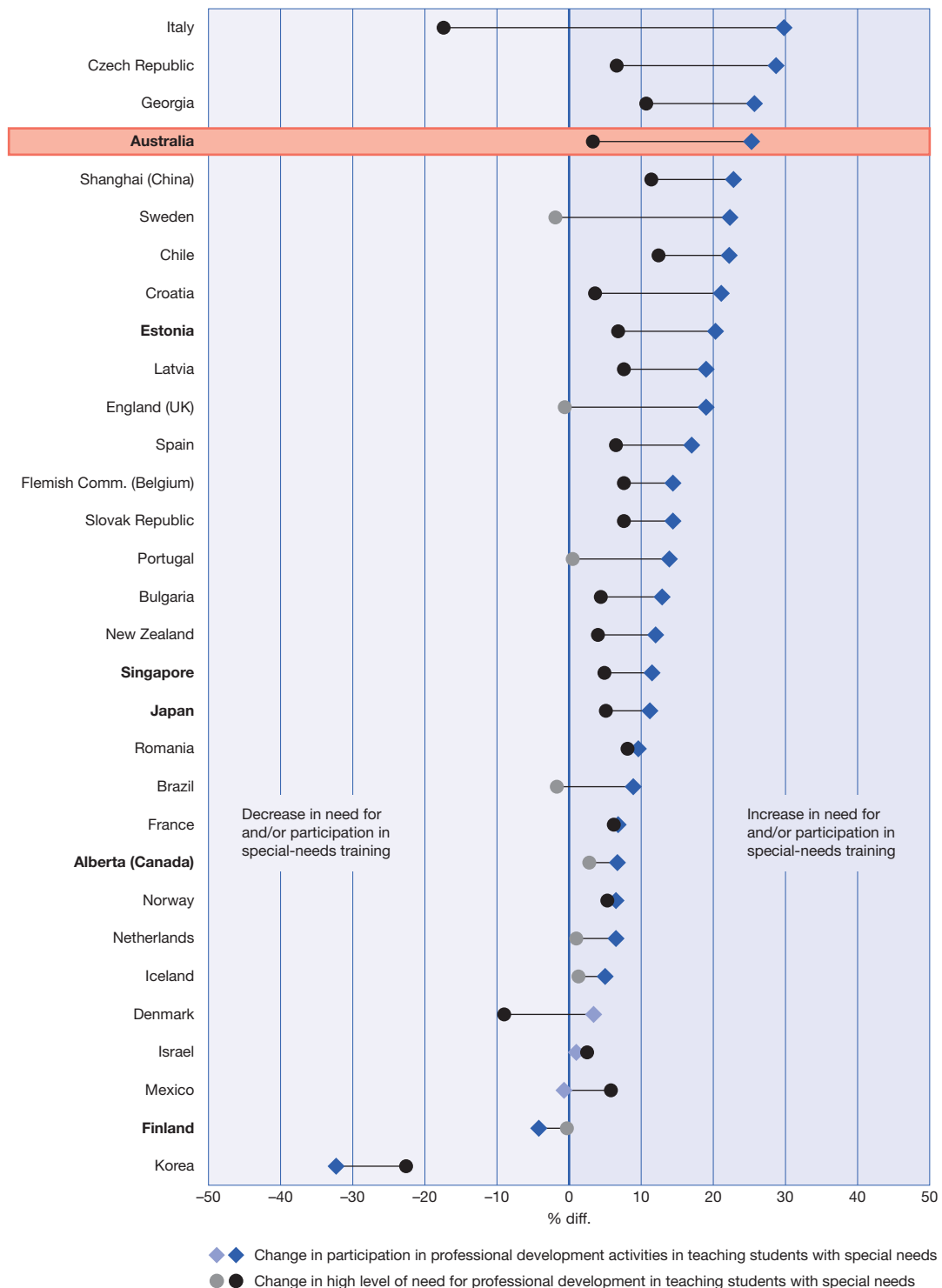
Notes: Values over zero reflect an increase in participation or need between 2013 and 2018 while values below zero reflect a decrease in participation or need between 2013 and 2018. Statistically significant values are marked in a darker tone. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

Figure 5.12 presents a similar comparison for professional development for teaching in multicultural or multilingual settings. Among Australian teachers, there has been an increase in participation in professional development in this area between 2013 and 2018 of nine percentage points, as well as a smaller, but still significant, increase in the need for training in this area (3 percentage points).

Interestingly, this is an area that close to 60 per cent of Australian teachers said had been included in their initial teacher education (see Figure 4.4) and for which there was a relatively low need expressed compared to the OECD average (see Figure 5.6).

FIGURE 5.12 Change in participation in and need for professional development on teaching in multicultural or multilingual settings from 2013 to 2018

Percentage point differences between 2013 and 2018 in the share of teachers (i) having participated in professional development and (ii) reporting a high need in training in teaching in multicultural or multilingual settings
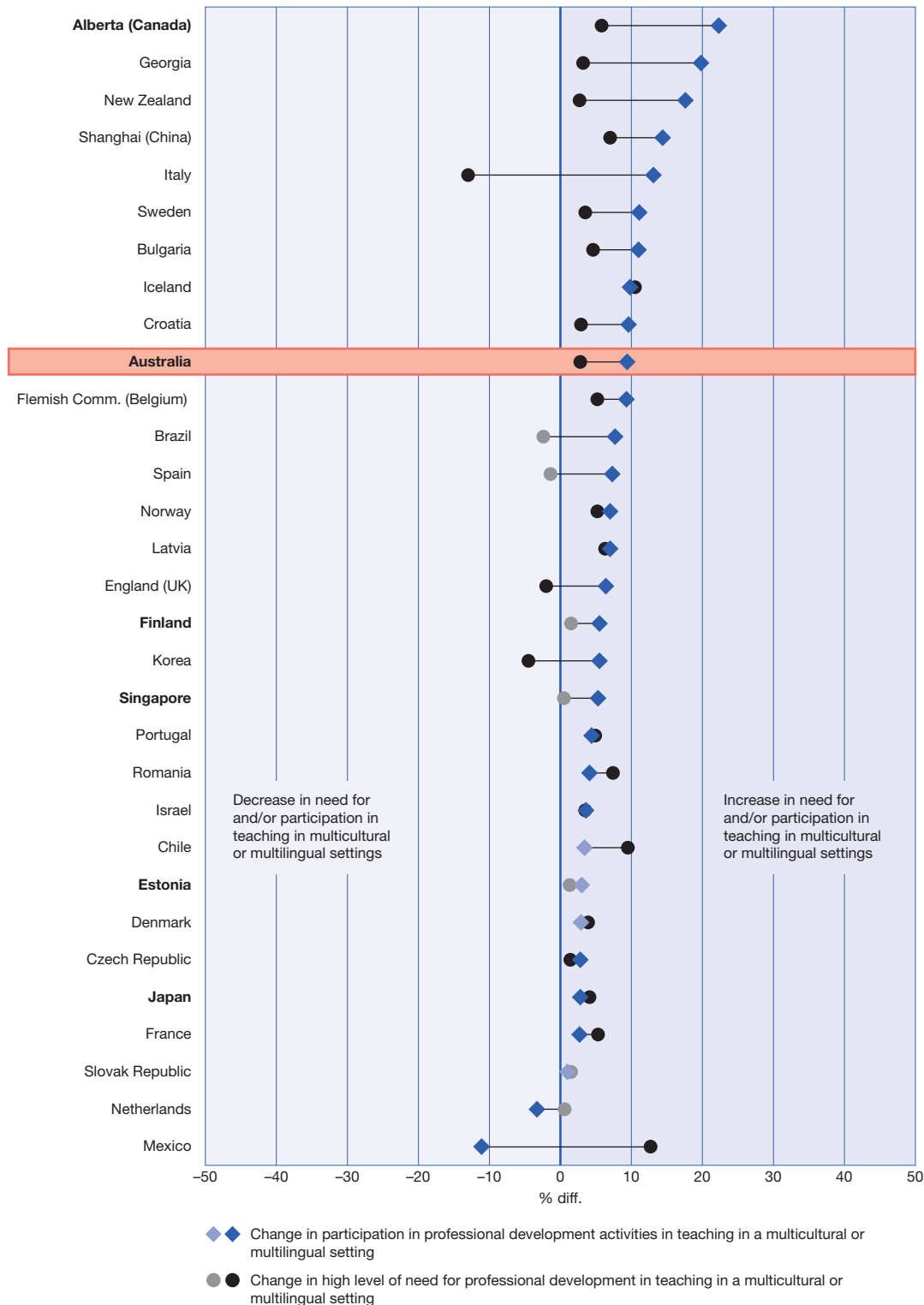
Decrease in need for and/or participation in teaching in multicultural or multilingual settings

Increase in need for and/or participation in teaching in multicultural or multilingual settings

◆ ◆ Change in participation in professional development activities in teaching in a multicultural or multilingual setting

● ● Change in high level of need for professional development in teaching in a multicultural or multilingual setting

Notes: Values over zero reflect an increase in participation or need between 2013 and 2018 while values below zero reflect a decrease in participation or need between 2013 and 2018. Statistically significant values are marked in a darker tone. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

While participation in professional development focused on ICT skills for teaching has increased over time in a number of TALIS countries, this has not been the case in Australia, where participation has declined by five percentage points between the 2013 and 2018 surveys. In contrast, participation in professional development in ICT skills has remained static or increased significantly in each of the high-performing PISA countries. It should be noted, however, that a high proportion of Australian teachers reported that use of ICT skills for teaching was covered in their initial training (see Figure 4.4) so it may be that Australian teachers feel sufficiently well-prepared by their initial training in ICT skills for teaching, and so prioritise participation in professional development in other areas over this one.

Demand for professional development in ICT skills for teaching has remained unchanged in Australia between the 2013 and 2018 TALIS cycles, as in Finland and Alberta (Canada), while Estonia has recorded a significant decrease in demand for professional development in this area (Figure 5.13).

FIGURE 5.13 Change in the participation in and need for professional development on ICT skills for teaching from 2013 to 2018

Percentage point differences between 2013 and 2018 in the share of teachers (i) having participated in professional development and (ii) reporting a high need in training in ICT skills for teaching
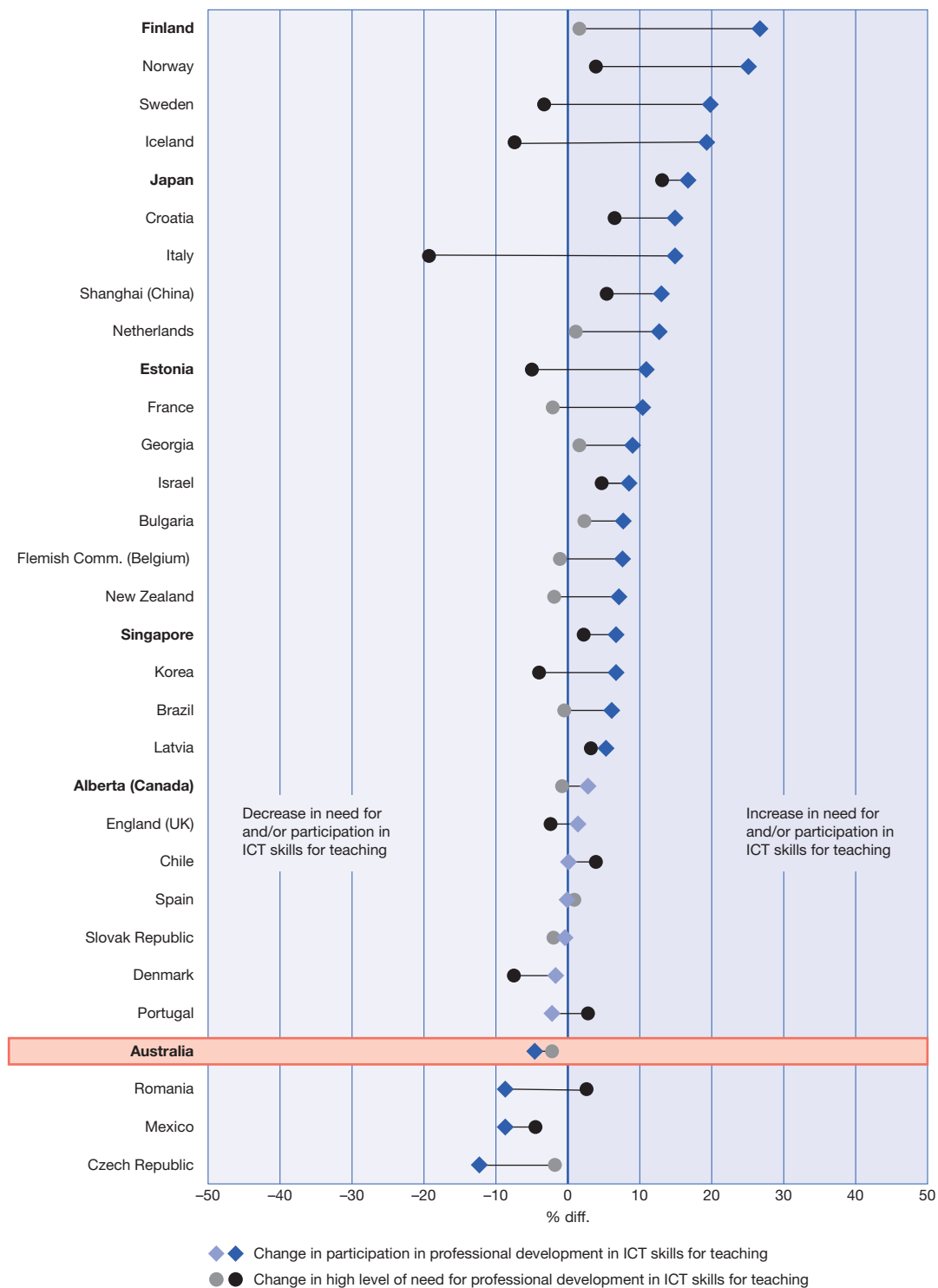
Decrease in need for and/or participation in ICT skills for teaching

Increase in need for and/or participation in ICT skills for teaching

% diff.

◆ ◆ Change in participation in professional development in ICT skills for teaching

● ● Change in high level of need for professional development in ICT skills for teaching

Notes: Values over zero reflect an increase in participation or need between 2013 and 2018 while values below zero reflect a decrease in participation or need between 2013 and 2018. Statistically significant values are marked in a darker tone. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

5.4.4 Continuous professional development, self-efficacy and effective classroom practices

The relationship between teachers' participation in professional development and their levels of self-efficacy was discussed earlier in this chapter in general terms. The section focuses in greater detail on the specific areas covered by the professional development activities and teachers' levels of self-efficacy and practices in those areas.

Regression models were created to explore relationships in three specific areas of professional development: pedagogical practices and the implementation of effective practices in the classroom; classroom management and teachers' level of self-efficacy in classroom management; and teaching in multicultural/multilingual settings and teachers' levels of self-efficacy to teach in multicultural environments.

The first regression model was conducted with teachers who had participated in at least one of three professional training activities that focused on pedagogical practices – pedagogical competencies in teaching their subject field(s), approaches to individualised learning and teaching cross-curricular skills – and an outcome measure of implementation of effective practices in the classroom. This measure was based on items from the teaching practices scale, including effective practices in clarity of instruction, cognitive activation and classroom management. After controlling for demographic characteristics, such as teacher gender, full-time versus part-time and years of experience, and classroom composition characteristics, such as proportions of low achieving students and students with behavioural problems, Australian teachers who had participated in professional development that covered pedagogical practices recorded significantly higher scores on the outcomes measure of effective classroom practices compared with teachers who had not participated in such professional development.

The second model focused on teachers' participation in professional development in student behaviour and classroom management. After controlling for teachers' own characteristics, classroom composition factors mentioned previously and classroom size, there was no significant relationship between participation in professional development in student behaviour and classroom management skills and Australian teachers' self-efficacy in classroom management.

The third model examined the relationship between participation in at least one of two professional development activities that involved multiculturalism – teaching in a multicultural or multilingual setting and communicating with people from different cultures or countries – and teacher's self-efficacy in operating in multicultural environments. Around 20 per cent of Australian teachers had participated in training in each of these areas of professional development (see Figure 5.6). After controlling for teachers' own characteristics (gender, time load and years of experience) and classroom composition characteristics (proportions of students whose first language was not the language of instruction, who are immigrants or who have a migrant background, and students who are refugees), Australian teachers who had participated in at least one of the professional development activities on multicultural teaching reported higher self-efficacy in operating in multicultural environments than teachers who had not undertaken such training.

5.5 Supporting continuous professional development for teachers and school leaders

Even in education systems where participation in continuous professional development activities is mandatory, such as Australia, the onus to participate cannot be solely with teachers and principals. Systems need to foresee and address (or at least mitigate) any barriers to participation, through support mechanisms such as time release and access to funding. This section describes the main barriers to accessing training, as reported by teachers and principals in the TALIS 2018 surveys. It then examines the level of support received by teachers and how that relates to actual participation in training.

5.5.1 Barriers to participation in continuous professional development

Teachers and principals were presented with a list of seven possible barriers to their participation in professional development and asked to what extent they agreed that these were an issue for them:

▸ Professional development conflicts with the teacher's work schedule

▸ There are no incentives for participating in professional development

▸ Professional development is too expensive

▸ There is no relevant professional development offered

▸ Do not have time because of family responsibilities

▸ There is a lack of employer support

▸ Do not have the prerequisites.

Responses were on a four-point Likert scale, ranging from *strongly agree* through to *strongly disagree*.

The most prominent barrier to participation in professional development, among Australian teachers and on average across OECD countries, was conflict with teachers' work schedules (Figure 5.14). Over 60 per cent of Australian teachers and principals agreed or strongly agreed that this conflict was a barrier to participation in professional development, which was significantly higher than the OECD average. Other barriers were less of an issue for Australian teachers and principals compared to the OECD average, with either similar or smaller proportions of Australian teachers and principals agreeing that these factors impeded participation.

Australian principals, in particular, did not appear to support the idea that a lack of relevant professional development, employer support, or pre-requisite knowledge impeded participation in professional development, with only five per cent or fewer nominating these factors.

FIGURE 5.14 Types of barriers to teachers' and principals' participation in professional development
Results based on responses of lower secondary teachers and principals
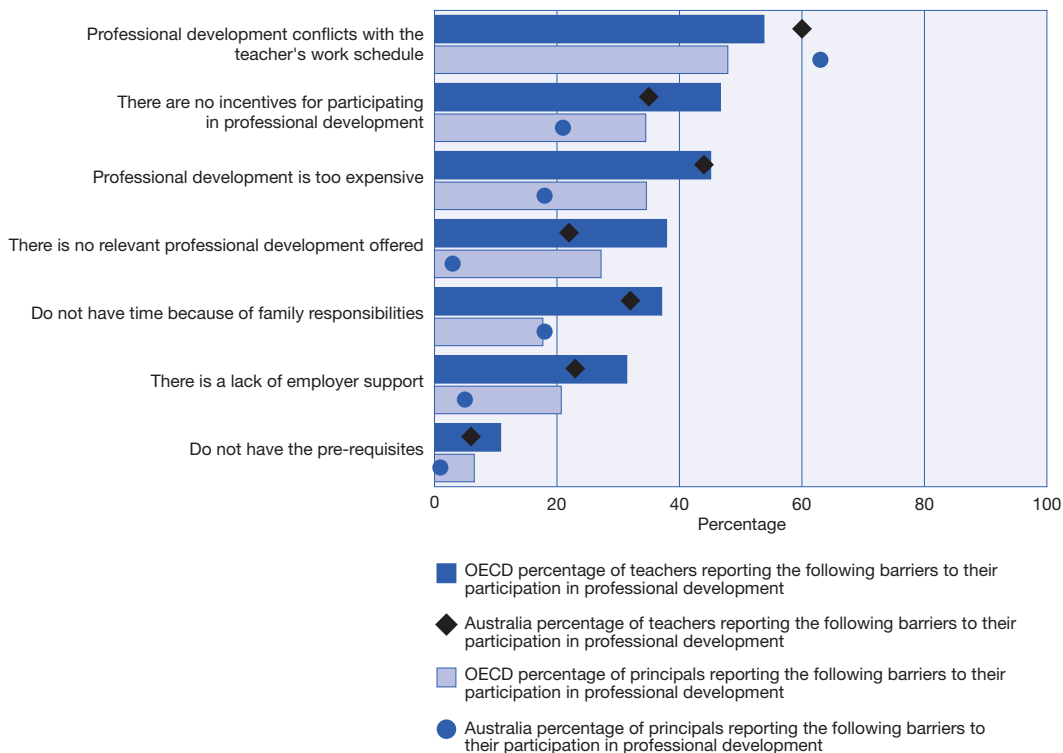
Figure 5.15 presents a comparison of the proportions of teachers in the 2013 and 2018 TALIS surveys who reported conflicts with teachers' work schedule and lack of incentives as barriers to their participation in professional development. Conflicts between teachers' work schedules and professional development has remained a common problem for Australian teachers, with no change in the proportion of teachers reporting this as a barrier. This is true of all of the other countries selected for comparison, apart from Alberta (Canada), which has recorded a significant decrease in the proportions of teachers reporting a conflict between their participation in professional development and their work schedules.

FIGURE 5.15 Change in barriers to teachers' participation in professional development from 2013 to 2018
Percentage of lower secondary teachers reporting the following barriers to their participation in professional development

	Professional development conflicts with the teacher's work schedule	Country	There are no incentives for participating in professional development	
	5.0	Korea	8.9	
		Japan	**8.3**	
	2.5	Portugal		
	6.5	Chile		
	4.1	England (UK)	6.2	
		Singapore		
	3.9	Iceland		
		Australia	−4.4	
		Spain	−4.0	
		Sweden	−6.0	
	5.8	New Zealand	9.5	
	−4.4	Italy	−13.2	
	−3.7	Shanghai (China)	−5.4	
		Mexico	8.4	
		Bulgaria		
	−8.7	**Alberta (Canada)**	−6.3	
		Finland	9.0	
	5.8	Czech Republic	−7.3	
	9.7	Denmark		
		Norway		
	−6.0	Brazil	4.7	
		Israel		
	3.5	Flemish Comm. (Belgium)		
	2.9	France		
	5.8	Netherlands	−8.6	
		Romania		
		Estonia	−4.6	
	3.4	Latvia		
	−3.9	Slovak Republic		
	7.3	Croatia		
	−11.9	Georgia		

Professional development conflicts with the teacher's work schedule (TALIS 2018)

Professional development conflicts with the teacher's work schedule (TALIS 2013)

There are no incentives for participating in professional development (TALIS 2018)

There are no incentives for participating in professional development (TALIS 2013)

Notes: Includes teachers who agree or strongly agree that the following elements present barriers to their participation in professional development. Only countries and economies with available data for 2013 and 2018 are shown. Statistically significant changes between 2013 and 2018 (TALIS 2018-2013) are shown next to the category and the country/economy name. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

BOX 5.4   Barriers to teachers' participation in professional development activities – comparing primary and lower secondary schools

Despite participation in professional development being universal for Australian teachers, there are still some perceived barriers to undertaking such activities, including for some forms of professional development (Appendix Table A5.5). For 49 per cent of primary teachers and 60 per cent of lower secondary teachers, professional development conflicts with the teacher's work schedule. For 51 per cent of primary teachers and 44 per cent of lower secondary teachers, professional development is too expensive. On most other barriers there were no differences in the responses of primary and lower secondary teachers. For about 35 per cent of both groups, a barrier was there being no incentives for participation, 31 per cent cited lack of time because of family responsibilities, and 23 per cent reported that there was a lack of employer support.

There has been a significant decrease in the proportion of Australian teachers reporting a lack of incentives to participate in professional development. In the 2013 TALIS survey, 40 per cent of Australian teachers agreed that this was a barrier to their participation, while 35 per cent of Australian teachers agreed with this in the 2018 survey. Significant decreases in agreement with this item were also apparent in Alberta (Canada) and Estonia, while increases in agreement were recorded in Japan and Finland.

5.5.2   Overall support for teachers' participation in continuous professional development

Teachers were asked to indicate the support mechanisms they received for professional development training from a list of eight options:

▶ Release from teaching duties for activities during regular working hours

▶ Non-monetary support for activities outside working hours (such as time in lieu or study time)

▶ Reimbursement or payment of costs

▶ Materials needed for the activities

▶ Monetary supplements for activities outside working hours

▶ Non-monetary rewards, such as materials, vouchers or software

▶ Non-monetary professional benefits, such as improved opportunities for promotion

▶ Increased salary.

Among Australian teachers, the most frequently received supports were release from teacher duties (78% of teachers), non-monetary professional benefits (49%) and reimbursement or payment of costs (47%). Less than five per cent of Australian teachers indicated that they received an increase in salary as a support for their participation in professional development.

A summary indicator of support for professional development was created that indicated if teachers had received at least one of the eight listed options for support. Over 90 per cent of Australian teachers had received support for their professional development, according to this indicator. Similar levels of support were recorded in Estonia (93%) and Alberta (Canada) (88%), with slightly lower levels in Singapore (86%) and Finland (78%). The association between support for professional development (as measured by the indicator described above) and participation in a number of professional development activities is presented in Figure 5.16.

There was a positive association between support and participation, with correlation coefficients of 0.59 among the OECD countries and 0.5 for the TALIS countries.

Countries in the upper right quadrant of Figure 5.16 are those in which the proportions of teachers who receive support and the number of professional development activities undertaken are both above the OECD average. Australia appears here, with over 90 per cent of teachers receiving some form of support and teachers undertaking around five different professional development activities in the year prior to the survey. Estonia, Singapore and Alberta (Canada) also recorded high participation and high support. Finland, however, recorded high support but lower participation relative to the OECD average. These results indicate that while there is a moderate, positive association between the receipt of support for professional development and levels of participation, other factors are also likely to influence teachers' decisions to participate in further professional development and training.

FIGURE 5.16   Teachers' participation in professional development and level of support received
Results based on responses of lower secondary teachers
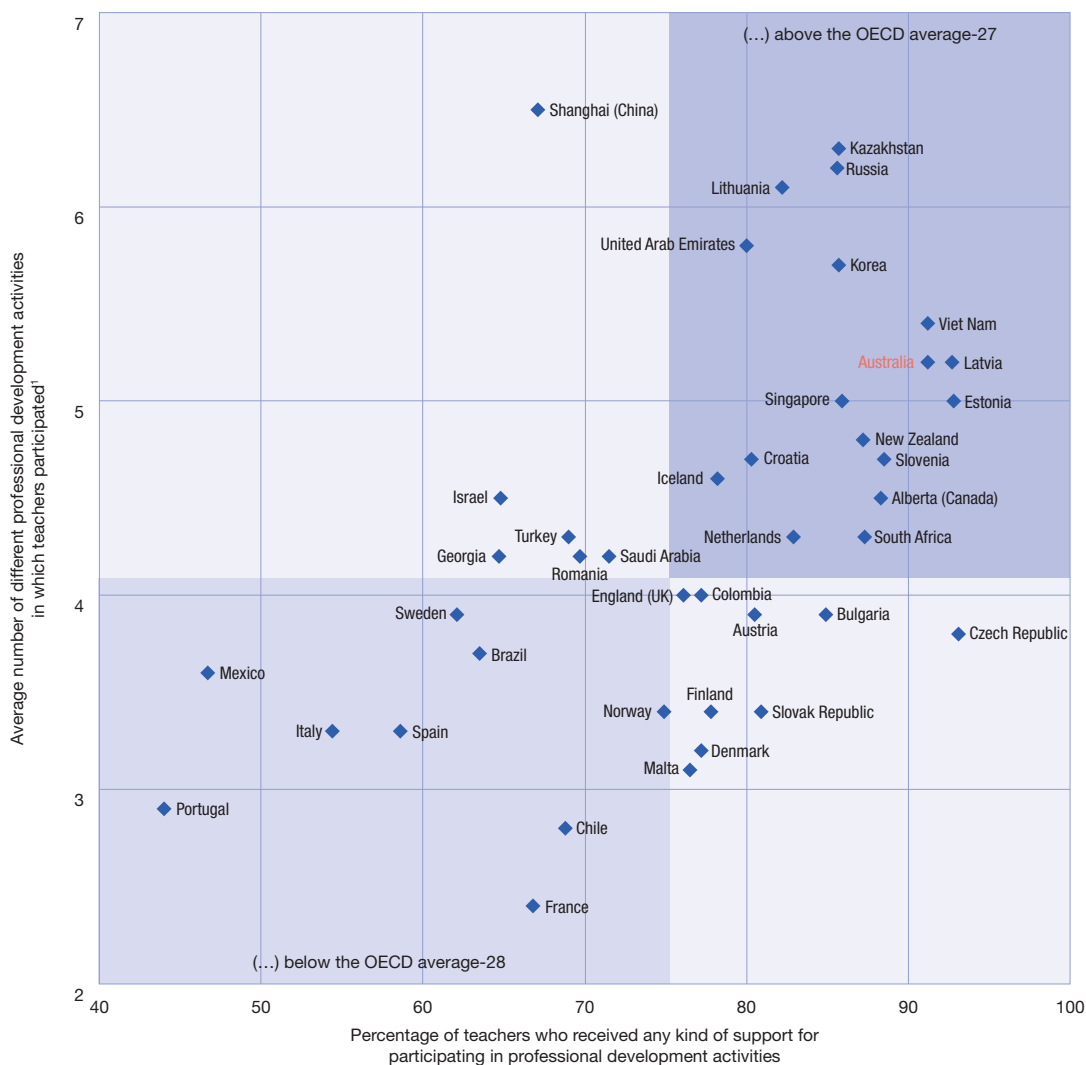
1. Refers to professional development activities in which teachers participated in the 12 months prior to the survey.

Notes: Only countries and economies with available data for average number of different professional development activities in which teachers participated and percentage of teachers who received any kind of support for participating in professional development activities are shown. The OECD average-27 includes all TALIS 2018 OECD countries, with the exception of Belgium, Hungary, Japan and the United States.

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Appendix

Notes for Tables

All tables are reproduced from OECD (2019), *TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners*. Paris, OECD Publishing. https://doi.org/10.1787/1d0bc92a-en

Five symbols are used to denote non-reported estimates:

a: The question was not administered in the country because it was optional or it is part of a questionnaire from a TALIS cycle the country has not participated in. Therefore, data are missing.

c: There are too few or no observations to provide reliable estimates and/or to ensure the confidentiality of respondents (i.e. there are fewer than 10 schools/principals and/or 30 teachers with valid data; and/or the item non-response rate [i.e. ratio of missing or invalid responses to the number of participants for whom the question was applicable] is above 50%).

m: Data were collected but subsequently removed for technical reasons (e.g. erroneous translation) as part of the data checking process.

p: Data were collected but are not reported for technical reasons (e.g. low participation rate) as part of the data adjudication process.

w: Data were withdrawn or were not collected at the request of the country concerned.

TABLE A2.1   Use of class time during a typical lesson reported by primary and lower secondary teachers – Australia

	Average proportion of time teachers report spending on each of these activities in an average lesson					
	Administrative tasks		Keeping order in the classroom		Actual teaching and learning	
	Mean	S.E.	Mean	S.E.	Mean	S.E.
Primary teachers	8	(0.2)	15	(0.3)	77	(0.4)
Lower secondary teachers	8	(0.2)	15	(0.3)	78	(0.4)

TABLE A2.2   Teaching practices reported by primary and lower secondary teachers – Australia

	Percentage of teachers who reported that they "frequently" or "always" use these strategies				Difference (Primary – Lower secondary)	
	Primary teachers		Lower secondary teachers			
	%	S.E.	%	S.E.	%	S.E.
Classroom management						
Tell students to follow classroom rules	64	(1.1)	58	(1.1)	**-6**	**(1.6)**
Tell students to listen to what I say	62	(1.1)	60	(1.1)	-2	(1.6)
Calm students who are disruptive	66	(1.2)	60	(1.1)	**-6**	**(1.6)**
When the lesson begins, tell students to quieten down quickly	65	(1.2)	68	(1.1)	3	(1.6)
Clarity of instruction						
Explain what I expect students to learn	96	(0.5)	93	(0.7)	**-3**	**(0.9)**
Explain how new and old topics are related	85	(0.9)	83	(0.9)	-2	(1.3)
Set goals at the beginning of instruction	87	(0.8)	82	(0.9)	**-5**	**(1.2)**
Refer to a problem from everyday life or work to demonstrate why new knowledge is useful	76	(1.1)	72	(1.0)	**-4**	**(1.5)**
Present a summary of recently learned content	76	(1.0)	74	(0.9)	-2	(1.3)
Let students practise similar tasks until I know that every student has understood the subject matter	77	(1.0)	67	(1.2)	**-10**	**(1.6)**
Cognitive activation						
Give tasks that require students to think critically	64	(1.2)	70	(1.3)	**6**	**(1.8)**
Have students work in small groups to come up with a joint solution to a problem or task	64	(1.1)	51	(1.0)	**-13**	**(1.5)**
Ask students to decide on their own procedures for solving complex tasks	52	(1.1)	44	(1.5)	**-8**	**(1.9)**
Present tasks for which there is no obvious solution	33	(1.1)	29	(1.0)	**-4**	**(1.5)**
Enhanced activities						
Let students use ICT for projects or classwork	62	(1.1)	78	(1.1)	**16**	**(1.6)**
Give students projects that require at least one week to complete	29	(1.1)	46	(1.2)	**17**	**(1.6)**

TABLE A2.3 Teachers' working hours – Australia

			Average number of hours (i.e. 60 minutes) teachers report having spent on the following activities during the most recent complete calendar week																					
	Total working hours		Teaching		Individual planning or preparation of lessons either at school or out of school		Team work and dialogue with colleagues within the school		Marking/ correcting student work		Counselling students		Participation in school management		General administrative work		Professional development activities		Communication and co-operation with parents or guardians		Engaging in extracurricular activities		Other work tasks	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Primary teachers	43.7	(0.4)	23.6	(0.2)	7.4	(0.1)	3.4	(0.1)	3.3	(0.1)	2.3	(0.1)	2.0	(0.1)	3.4	(0.1)	1.7	(0.1)	1.4	(0.0)	1.1	(0.1)	2.6	(0.1)
Lower secondary teachers	44.8	(0.3)	19.9	(0.2)	7.3	(0.1)	3.7	(0.1)	4.9	(0.1)	2.5	(0.1)	2.4	(0.1)	4.1	(0.1)	1.7	(0.1)	1.3	(0.1)	1.8	(0.1)	2.6	(0.1)
Difference (Primary – Lower secondary)	**-1.1**	**(0.5)**	**3.7**	**(0.3)**	0.1	(0.1)	**-0.3**	**(0.1)**	**-1.6**	**(0.1)**	-0.2	(0.1)	**-0.4**	**(0.1)**	**-0.7**	**(0.1)**	0	(0.1)	0.1	(0.1)	**-0.7**	**(0.1)**	0	(0.1)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A2.4 Principals' time on work tasks – Australia

| | Average proportion of time principals report spending on the following tasks | | | | | | | | | | | | | |
| | Administrative tasks and meetings | | Leadership tasks and meetings | | Curriculum and teaching-related tasks and meetings | | Student interactions | | Parent or guardian interactions | | Interactions with local and regional community, business and industry | | Other | |
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Primary principals	32.9	(1.4)	20.9	(0.7)	**14.7**	**(0.8)**	**14.9**	**(1.0)**	10.3	(0.5)	4.0	(0.2)	2.4	(0.7)
Lower secondary principals	33.5	(1.8)	**25.0**	**(1.2)**	11.2	(0.5)	11.9	(0.7)	10.1	(0.4)	**6.2**	**(0.6)**	2.0	(0.7)
Difference (Primary – Lower secondary)	-0.6	(2.3)	**-4.1**	**(1.4)**	**3.5**	**(0.9)**	**3**	**(1.2)**	0.2	(0.6)	**-2.2**	**(0.6)**	0.4	(1.0)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A2.5 Teachers' views on their colleagues' attitudes towards innovation – Australia

| | Percentage of teachers who "agree" or "strongly agree" with the following statements | | | | | | | |
| | Most teachers in the school strive to develop new ideas for teaching and learning | | Most teachers in the school are open to change | | Most teachers in the school search for new ways to solve problems | | Most teachers in the school provide practical support to each other for the application of new ideas | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	88	(0.7)	81	(0.8)	82	(0.9)	89	(0.7)
Lower secondary teachers	83	(0.9)	74	(0.9)	75	(0.8)	84	(0.8)
Difference (Primary – Lower secondary)	**5**	**(1.1)**	**7**	**(1.2)**	**7**	**(1.2)**	**5**	**(1.1)**

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.1 Change in teachers' teaching experience from 2008 to 2018

Percentage of teachers by years of experience as a teacher

Column key — each experience group (Fewer than or equal to 5 years; 6 to 20 years; More than 20 years) has: TALIS 2008 (%, S.E.); TALIS 2013 (%, S.E.); TALIS 2018 (%, S.E.); Change between 2008 and 2018 / TALIS 2018 − TALIS 2008 (% dif., S.E.); Change between 2013 and 2018 / TALIS 2018 − TALIS 2013 (% dif., S.E.).

Fewer than or equal to 5 years

	2008 %	S.E.	2013 %	S.E.	2018 %	S.E.	Δ08–18 % dif.	S.E.	Δ13–18 % dif.	S.E.
Alberta (Canada)	a	a	25.1	(1.3)	22.5	(1.6)	a	a	-2.6	(2.1)
Australia	24.3	(1.1)	18.8	(1.1)	23.3	(0.9)	-1.0	(1.5)	**4.5**	(1.5)
Austria	10.1	(0.6)	a	a	25.0	(0.9)	**14.9**	(1.1)	a	a
Brazil	25.2	(1.2)	20.5	(1.0)	13.2	(1.1)	**-12.0**	(1.6)	**-7.2**	(1.5)
Bulgaria	13.4	(0.8)	7.1	(0.7)	13.6	(1.1)	0.2	(1.3)	**6.5**	(1.3)
Chile	a	a	29.0	(1.8)	28.3	(1.5)	a	a	-0.7	(2.3)
Croatia	a	a	22.7	(0.9)	18.2	(0.9)	a	a	**-4.5**	(1.3)
Cyprus	a	a	14.2	(0.9)	8.9	(0.8)	a	a	**-5.2**	(1.2)
Czech Republic	a	a	14.5	(0.8)	15.9	(0.7)	a	a	1.4	(1.1)
Denmark	25.5	(1.3)	17.2	(1.2)	17.2	(1.1)	**-8.3**	(1.7)	0.1	(1.6)
England (UK)	a	a	26.2	(1.0)	22.7	(1.0)	a	a	**-3.6**	(1.4)
Estonia	14.8	(0.7)	9.9	(0.7)	12.9	(0.8)	-1.9	(1.1)	**3.0**	(1.0)
Finland	a	a	18.4	(0.9)	16.1	(0.8)	a	a	-2.3	(1.2)
Flemish Comm. (Belgium)	23.3	(0.9)	19.7	(1.0)	19.3	(1.0)	**-4.0**	(1.4)	-0.4	(1.4)
France	a	a	11.5	(0.8)	15.6	(1.1)	a	a	**4.1**	(1.4)
Georgia	a	a	7.2	(0.6)	6.4	(0.6)	a	a	-0.8	(0.8)
Hungary	14.4	(2.3)	a	a	10.3	(0.7)	**-4.2**	(2.4)	a	a
Iceland	33.0	(1.3)	19.3	(1.2)	19.3	(1.2)	**-13.6**	(1.7)	0.6	(1.7)
Israel	a	a	20.6	(1.3)	22.9	(1.4)	a	a	2.2	(1.9)
Italy	13.2	(0.8)	8.3	(0.6)	17.5	(0.9)	**4.3**	(1.2)	**9.2**	(1.0)
Japan	a	a	20.0	(0.8)	20.6	(0.7)	a	a	0.6	(1.1)
Korea	19.2	(1.2)	20.4	(1.1)	21.4	(1.2)	2.2	(1.7)	1.0	(1.6)
Latvia	a	a	5.6	(0.7)	10.5	(1.2)	a	a	**4.9**	(1.5)
Lithuania	10.8	(0.9)	a	a	4.5	(0.6)	**-6.3**	(1.1)	a	a
Malta	26.3	(1.4)	a	a	24.6	(2.1)	-1.7	(2.5)	a	a
Mexico	19.6	(1.6)	17.9	(0.9)	17.6	(1.4)	-2.0	(1.9)	-0.3	(1.4)
Netherlands	p	p	20.3	(1.6)	16.6	(1.2)	p	p	-3.7	(2.2)
New Zealand	a	a	17.9	(0.9)	20.5	(1.2)	a	a	2.6	(1.4)
Norway	17.4	(1.1)	23.6	(1.6)	21.4	(0.9)	**4.0**	(1.4)	-2.2	(1.8)
Portugal	10.2	(0.6)	2.8	(0.3)	2.6	(0.3)	**-7.6**	(0.7)	-0.2	(0.4)
Romania	a	a	16.8	(0.9)	13.2	(0.8)	a	a	**-3.6**	(1.2)
Russia	a	a	11.9	(0.9)	13.1	(0.8)	a	a	1.1	(1.3)
Shanghai (China)	a	a	15.5	(0.9)	15.3	(0.8)	a	a	-0.2	(1.2)
Singapore	a	a	42.5	(0.9)	28.8	(0.8)	a	a	**-13.7**	(1.2)
Slovak Republic	20.1	(1.2)	16.9	(0.8)	14.6	(0.7)	**-5.5**	(1.4)	**-2.3**	(1.1)
Slovenia	17.5	(0.8)	a	a	10.0	(0.9)	**-7.5**	(1.2)	a	a
Spain	16.3	(0.8)	8.4	(0.8)	16.5	(0.8)	0.2	(1.1)	**8.1**	(1.1)
Sweden	a	a	12.3	(0.8)	17.1	(0.9)	a	a	**4.7**	(1.2)
Turkey	41.0	(2.2)	a	a	31.1	(0.9)	**-9.9**	(2.4)	a	a
United States	a	a	p	p	23.5	(2.0)	a	a	p	p

6 to 20 years

	2008 %	S.E.	2013 %	S.E.	2018 %	S.E.	Δ08–18 % dif.	S.E.	Δ13–18 % dif.	S.E.
Alberta (Canada)	a	a	54.3	(1.2)	58.1	(2.0)	a	a	3.8	(2.3)
Australia	40.2	(1.1)	44.5	(0.9)	48.0	(1.2)	**7.7**	(1.6)	**3.4**	(1.5)
Austria	32.7	(1.0)	a	a	31.0	(0.8)	-1.6	(1.3)	a	a
Brazil	55.4	(1.3)	58.8	(0.8)	58.3	(1.6)	2.8	(2.0)	-0.5	(1.8)
Bulgaria	38.6	(1.4)	36.8	(1.2)	30.0	(1.1)	**-8.6**	(1.8)	**-6.8**	(1.6)
Chile	a	a	39.7	(1.4)	48.9	(1.5)	a	a	**9.1**	(2.1)
Croatia	a	a	47.6	(1.4)	58.2	(1.2)	a	a	**10.6**	(1.5)
Cyprus	a	a	65.4	(1.4)	65.1	(1.2)	a	a	-0.3	(1.8)
Czech Republic	a	a	45.9	(1.1)	44.4	(1.1)	a	a	-1.5	(1.5)
Denmark	35.9	(1.4)	51.6	(1.8)	57.6	(1.1)	**21.7**	(1.8)	**6.0**	(2.1)
England (UK)	a	a	56.9	(1.1)	59.1	(1.0)	a	a	2.2	(1.5)
Estonia	39.2	(1.1)	35.9	(1.2)	31.1	(1.0)	**-8.1**	(1.5)	**-4.8**	(1.6)
Finland	a	a	50.4	(1.0)	52.1	(1.0)	a	a	1.8	(1.2)
Flemish Comm. (Belgium)	42.6	(1.2)	51.1	(1.2)	50.0	(1.4)	**7.4**	(1.8)	-1.1	(1.8)
France	a	a	56.8	(1.0)	50.7	(1.1)	a	a	**-6.1**	(1.5)
Georgia	a	a	38.1	(1.3)	37.1	(1.0)	a	a	-1.0	(1.7)
Hungary	38.1	(1.7)	a	a	40.2	(1.0)	2.1	(2.0)	a	a
Iceland	43.8	(1.2)	56.3	(1.6)	54.7	(1.5)	**10.8**	(1.9)	-1.7	(2.2)
Israel	a	a	46.4	(1.3)	42.8	(1.4)	a	a	-3.5	(1.9)
Italy	33.4	(0.9)	44.9	(1.1)	46.3	(0.9)	**12.9**	(1.2)	1.4	(1.4)
Japan	a	a	36.7	(1.0)	40.0	(1.0)	a	a	**3.2**	(1.4)
Korea	46.8	(1.2)	36.5	(1.2)	41.2	(1.2)	**-5.6**	(1.7)	**4.7**	(1.7)
Latvia	a	a	37.4	(1.0)	28.5	(1.3)	a	a	**-8.9**	(1.7)
Lithuania	40.0	(1.1)	a	a	29.8	(1.0)	**-10.2**	(1.5)	a	a
Malta	56.4	(1.7)	a	a	56.6	(1.8)	0.2	(2.5)	a	a
Mexico	45.9	(1.6)	49.3	(1.2)	54.8	(1.3)	**8.9**	(2.0)	**5.5**	(1.8)
Netherlands	p	p	47.2	(1.5)	55.1	(1.9)	p	p	**7.9**	(2.4)
New Zealand	a	a	51.8	(1.2)	53.1	(1.4)	a	a	1.3	(1.8)
Norway	43.5	(1.2)	48.1	(1.3)	54.0	(1.0)	**10.6**	(1.5)	**5.9**	(1.6)
Portugal	63.7	(1.6)	56.1	(1.1)	34.3	(1.1)	**-29.4**	(1.9)	**-21.7**	(1.5)
Romania	a	a	51.5	(1.3)	54.3	(1.1)	a	a	2.8	(1.6)
Russia	a	a	31.3	(1.3)	32.9	(1.2)	a	a	1.6	(1.8)
Shanghai (China)	a	a	53.9	(0.8)	46.5	(1.0)	a	a	**-7.4**	(1.3)
Singapore	a	a	45.0	(0.9)	57.8	(1.0)	a	a	**12.8**	(1.4)
Slovak Republic	38.2	(1.2)	45.5	(1.1)	48.3	(1.0)	**10.1**	(1.5)	2.8	(1.4)
Slovenia	36.9	(1.1)	a	a	47.6	(1.4)	**10.7**	(1.8)	a	a
Spain	48.5	(1.1)	49.6	(1.2)	47.5	(1.0)	-1.0	(1.5)	-2.1	(1.5)
Sweden	a	a	59.0	(1.2)	58.4	(1.1)	a	a	-0.6	(1.6)
Turkey	47.0	(2.0)	a	a	57.3	(1.0)	**10.3**	(2.3)	a	a
United States	a	a	p	p	50.6	(2.7)	a	a	p	p

More than 20 years

	2008 %	S.E.	2013 %	S.E.	2018 %	S.E.	Δ08–18 % dif.	S.E.	Δ13–18 % dif.	S.E.
Alberta (Canada)	a	a	20.6	(1.3)	19.4	(1.5)	a	a	-1.2	(2.0)
Australia	35.5	(1.3)	36.6	(1.2)	28.7	(1.0)	**-6.7**	(1.7)	**-7.9**	(1.6)
Austria	57.2	(1.2)	a	a	44.0	(0.9)	**-13.2**	(1.5)	a	a
Brazil	19.4	(1.0)	20.7	(0.7)	28.5	(1.6)	**9.1**	(1.9)	**7.7**	(1.8)
Bulgaria	48.0	(1.5)	56.1	(1.2)	56.4	(1.4)	**8.4**	(2.1)	0.3	(1.8)
Chile	a	a	31.3	(1.8)	22.9	(1.3)	a	a	**-8.4**	(2.2)
Croatia	a	a	29.8	(1.1)	23.6	(0.9)	a	a	**-6.1**	(1.4)
Cyprus	a	a	20.5	(1.2)	26.0	(1.2)	a	a	**5.5**	(1.6)
Czech Republic	a	a	39.7	(1.2)	39.7	(1.1)	a	a	0.1	(1.6)
Denmark	38.5	(1.4)	31.3	(1.4)	25.2	(0.9)	**-13.4**	(1.6)	**-6.1**	(1.7)
England (UK)	a	a	16.8	(1.1)	18.2	(0.8)	a	a	1.4	(1.4)
Estonia	46.0	(1.1)	54.2	(1.5)	56.0	(1.2)	**10.0**	(1.6)	1.8	(1.9)
Finland	a	a	31.2	(0.9)	31.7	(0.9)	a	a	0.5	(1.2)
Flemish Comm. (Belgium)	34.0	(1.1)	29.2	(1.0)	30.7	(1.4)	-3.4	(1.8)	1.4	(1.8)
France	a	a	31.8	(1.1)	33.7	(1.2)	a	a	1.9	(1.7)
Georgia	a	a	54.6	(1.5)	56.5	(1.1)	a	a	1.8	(1.9)
Hungary	47.4	(1.4)	a	a	49.5	(1.0)	2.1	(1.8)	a	a
Iceland	23.2	(1.1)	24.9	(1.3)	26.0	(1.3)	2.8	(1.6)	1.1	(1.8)
Israel	a	a	33.0	(1.3)	34.3	(1.4)	a	a	1.3	(2.0)
Italy	53.4	(1.1)	46.8	(1.2)	36.2	(0.8)	**-17.2**	(1.4)	**-10.6**	(1.5)
Japan	a	a	43.3	(1.1)	39.5	(1.1)	a	a	**-3.8**	(1.6)
Korea	34.0	(1.1)	43.1	(1.5)	37.3	(1.2)	**3.4**	(1.7)	**-5.8**	(1.9)
Latvia	a	a	57.1	(1.4)	61.0	(1.5)	a	a	4.0	(2.1)
Lithuania	49.2	(1.2)	a	a	65.7	(1.1)	**16.5**	(1.7)	a	a
Malta	17.4	(1.3)	a	a	18.9	(1.2)	1.5	(1.8)	a	a
Mexico	34.5	(1.7)	32.8	(1.3)	27.5	(1.3)	**-7.0**	(2.1)	**-5.3**	(1.9)
Netherlands	p	p	32.5	(1.1)	28.4	(1.3)	p	p	-4.1	(1.7)
New Zealand	a	a	30.3	(1.2)	26.4	(1.2)	a	a	**-3.9**	(1.6)
Norway	39.1	(1.5)	28.3	(1.3)	24.5	(0.9)	**-14.6**	(1.7)	**-3.7**	(1.6)
Portugal	26.1	(1.6)	41.1	(1.0)	63.1	(1.1)	**37.0**	(1.9)	**22.0**	(1.6)
Romania	a	a	31.7	(1.0)	32.5	(1.0)	a	a	0.8	(1.4)
Russia	a	a	56.7	(1.5)	54.0	(1.5)	a	a	-2.8	(2.1)
Shanghai (China)	a	a	30.5	(0.9)	38.2	(1.1)	a	a	**7.7**	(1.5)
Singapore	a	a	12.5	(0.6)	13.4	(0.7)	a	a	0.9	(0.9)
Slovak Republic	41.7	(1.4)	37.6	(1.2)	37.1	(0.9)	**-4.6**	(1.7)	-0.5	(1.5)
Slovenia	45.6	(1.1)	a	a	42.5	(1.5)	-3.2	(1.9)	a	a
Spain	35.2	(1.4)	42.0	(1.2)	36.0	(1.1)	0.8	(1.7)	**-6.0**	(1.6)
Sweden	a	a	28.7	(1.2)	24.5	(0.9)	a	a	**-4.1**	(1.5)
Turkey	12.0	(1.3)	a	a	11.6	(0.5)	-0.4	(1.3)	a	a
United States	a	a	p	p	26.0	(1.6)	a	a	p	p

Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

TABLE A3.2 Teachers' work experience

| | Teachers' years of work experience | | | | | | | |
| | As a teacher at the current school | | As a teacher, in total | | In other education roles, not as a teacher | | In other non-education roles | |
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Alberta (Canada)	7	(0.3)	13	(0.4)	1	(0.1)	5	(0.3)
Australia	8	(0.2)	15	(0.2)	2	(0.1)	5	(0.1)
Austria	13	(0.2)	18	(0.2)	2	(0.1)	2	(0.1)
Belgium	12	(0.2)	15	(0.2)	1	(0.1)	2	(0.1)
- Flemish Comm. (Belgium)	13	(0.3)	16	(0.3)	1	(0.1)	2	(0.1)
Brazil	8	(0.3)	16	(0.3)	3	(0.2)	6	(0.2)
Bulgaria	13	(0.4)	22	(0.3)	1	(0.1)	3	(0.2)
CABA (Argentina)	10	(0.3)	16	(0.4)	4	(0.2)	8	(0.3)
Chile	8	(0.3)	14	(0.3)	4	(0.2)	3	(0.2)
Colombia	9	(0.3)	17	(0.4)	2	(0.1)	3	(0.1)
Croatia	11	(0.3)	15	(0.3)	1	(0.1)	2	(0.1)
Cyprus	5	(0.2)	16	(0.2)	2	(0.1)	3	(0.2)
Czech Republic	13	(0.2)	18	(0.2)	1	(0.1)	2	(0.1)
Denmark	10	(0.2)	15	(0.3)	2	(0.1)	4	(0.2)
England (UK)	7	(0.2)	13	(0.2)	2	(0.1)	4	(0.1)
Estonia	15	(0.4)	23	(0.3)	3	(0.1)	4	(0.2)
Finland	10	(0.2)	16	(0.2)	1	(0.1)	2	(0.1)
France	9	(0.2)	17	(0.3)	3	(0.1)	2	(0.1)
Georgia	18	(0.3)	24	(0.3)	1	(0.1)	2	(0.1)
Hungary	14	(0.3)	21	(0.2)	1	(0.1)	2	(0.1)
Iceland	10	(0.3)	15	(0.3)	8	(0.3)	10	(0.3)
Israel	10	(0.4)	16	(0.3)	3	(0.1)	4	(0.2)
Italy	8	(0.2)	18	(0.2)	1	(0.1)	4	(0.1)
Japan	5	(0.2)	17	(0.2)	0	(0.0)	1	(0.1)
Kazakhstan	12	(0.3)	17	(0.2)	1	(0.1)	1	(0.1)
Korea	5	(0.3)	16	(0.3)	0	(0.0)	1	(0.0)
Latvia	16	(0.5)	24	(0.4)	2	(0.2)	3	(0.2)
Lithuania	17	(0.3)	25	(0.3)	2	(0.1)	2	(0.2)
Malta	7	(0.5)	13	(0.4)	1	(0.1)	3	(0.1)
Mexico	10	(0.3)	15	(0.3)	1	(0.1)	4	(0.2)
Netherlands	11	(0.3)	16	(0.3)	2	(0.1)	5	(0.3)
New Zealand	8	(0.2)	16	(0.3)	1	(0.1)	5	(0.2)
Norway	10	(0.2)	15	(0.2)	2	(0.1)	5	(0.1)
Portugal	11	(0.3)	23	(0.2)	1	(0.1)	2	(0.1)
Romania	11	(0.2)	17	(0.3)	2	(0.1)	2	(0.1)
Russia	15	(0.4)	21	(0.3)	2	(0.2)	2	(0.1)
Saudi Arabia	6	(0.2)	13	(0.3)	1	(0.0)	1	(0.1)
Shanghai (China)	12	(0.2)	17	(0.2)	0	(0.0)	0	(0.0)
Singapore	6	(0.1)	12	(0.2)	1	(0.1)	2	(0.1)
Slovak Republic	12	(0.2)	18	(0.2)	2	(0.1)	2	(0.1)
Slovenia	17	(0.4)	20	(0.4)	0	(0.0)	1	(0.1)
South Africa	9	(0.3)	15	(0.4)	1	(0.1)	2	(0.1)
Spain	9	(0.3)	17	(0.3)	3	(0.1)	4	(0.1)
Sweden	8	(0.2)	16	(0.2)	2	(0.1)	6	(0.2)
Chinese Taipei	12	(0.2)	16	(0.2)	1	(0.1)	1	(0.1)
Turkey	4	(0.1)	11	(0.1)	0	(0.0)	1	(0.0)
United Arab Emirates	5	(0.1)	13	(0.1)	1	(0.0)	2	(0.0)
United States	8	(0.5)	15	(0.4)	3	(0.2)	7	(0.4)
Viet Nam	11	(0.2)	16	(0.2)	0	(0.0)	0	(0.0)
OECD average-31	10	(0.1)	17	(0.1)	2	(0.0)	3	(0.0)
TALIS average-48	10	(0.0)	17	(0.0)	2	(0.0)	3	(0.0)

Notes: Those observations where teachers' years of work experience as a teacher at the current school is higher than as a teacher in total are discarded from the analysis. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

TABLE A3.3   Principals' work experience

| | Principals' years of work experience | | | | | | | | | |
| | As a principal at the current school | | As a principal, in total | | In other school management roles | | As a teacher, in total | | In other jobs | |
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Alberta (Canada)	5	(1.1)	13	(5.0)	4	(0.6)	23	(3.8)	5	(0.9)
Australia	5	(0.4)	7	(0.6)	12	(0.9)	23	(1.3)	2	(0.3)
Austria	7	(0.4)	8	(0.4)	3	(0.5)	29	(0.8)	2	(0.2)
Belgium	6	(0.4)	7	(0.4)	4	(0.4)	17	(0.5)	2	(0.4)
- Flemish Comm. (Belgium)	7	(0.5)	8	(0.5)	4	(0.4)	16	(0.7)	2	(0.4)
Brazil	6	(0.5)	8	(0.5)	6	(0.6)	16	(0.7)	5	(0.6)
Bulgaria	11	(0.8)	13	(0.8)	2	(0.4)	21	(1.0)	2	(0.3)
CABA (Argentina)	6	(0.5)	8	(0.6)	8	(1.0)	27	(0.7)	8	(0.9)
Chile	8	(0.6)	10	(0.7)	5	(0.7)	22	(1.0)	3	(0.6)
Colombia	8	(1.0)	13	(1.6)	6	(1.5)	16	(1.2)	8	(1.5)
Croatia	9	(0.8)	10	(0.7)	2	(0.5)	15	(0.8)	3	(0.3)
Cyprus	5	(0.5)	6	(0.5)	10	(0.7)	30	(0.5)	2	(0.6)
Czech Republic	11	(0.5)	12	(0.6)	3	(0.4)	18	(0.8)	2	(0.3)
Denmark	7	(0.5)	9	(0.7)	4	(0.4)	14	(0.9)	4	(1.0)
England (UK)	5	(0.4)	6	(0.5)	13	(1.0)	25	(0.8)	4	(0.9)
Estonia	10	(0.6)	14	(0.6)	5	(0.6)	22	(0.9)	6	(0.7)
Finland	7	(0.6)	12	(0.8)	3	(0.3)	15	(0.8)	3	(0.4)
France	4	(0.4)	10	(0.5)	5	(0.3)	17	(0.8)	4	(0.5)
Georgia	9	(0.7)	11	(0.8)	6	(0.6)	23	(1.0)	5	(0.8)
Hungary	8	(0.5)	10	(0.6)	6	(0.8)	22	(0.8)	2	(0.3)
Iceland	7	(0.7)	10	(0.9)	5	(0.5)	13	(1.0)	5	(0.6)
Israel	8	(0.5)	9	(0.6)	7	(0.6)	23	(0.8)	4	(0.6)
Italy	5	(0.5)	10	(0.6)	7	(0.5)	22	(0.6)	3	(0.4)
Japan	3	(0.1)	5	(0.2)	5	(0.3)	29	(0.6)	1	(0.3)
Kazakhstan	6	(0.4)	9	(0.7)	8	(0.6)	22	(0.7)	3	(0.5)
Korea	2	(0.1)	3	(0.4)	4	(0.3)	28	(0.6)	2	(0.4)
Latvia	12	(1.1)	14	(1.1)	7	(0.8)	29	(1.0)	4	(0.8)
Lithuania	14	(0.8)	16	(0.8)	5	(0.5)	21	(0.9)	2	(0.4)
Malta	5	(0.6)	7	(0.9)	5	(0.6)	16	(1.5)	3	(0.7)
Mexico	5	(0.6)	10	(0.9)	4	(0.5)	21	(1.1)	m	m
Netherlands	6	(0.5)	12	(0.6)	6	(0.5)	15	(0.8)	3	(0.5)
New Zealand	5	(0.7)	8	(0.9)	9	(1.3)	21	(1.6)	6	(1.6)
Norway	6	(0.4)	8	(0.5)	4	(0.3)	14	(0.7)	4	(0.5)
Portugal	8	(0.6)	11	(0.7)	7	(0.6)	23	(0.9)	3	(0.6)
Romania	7	(0.5)	8	(0.6)	5	(0.5)	23	(0.7)	3	(0.6)
Russia	10	(0.8)	11	(0.8)	7	(0.7)	22	(1.1)	3	(0.4)
Saudi Arabia	5	(0.4)	8	(0.5)	3	(0.4)	11	(0.7)	1	(0.3)
Shanghai (China)	6	(0.3)	10	(0.5)	11	(0.6)	m	m	0	(0.1)
Singapore	4	(0.3)	9	(0.5)	8	(0.5)	15	(0.7)	2	(0.5)
Slovak Republic	9	(0.6)	10	(0.5)	4	(0.4)	22	(0.9)	2	(0.5)
Slovenia	9	(0.8)	10	(0.8)	4	(0.6)	16	(0.7)	3	(0.5)
South Africa	6	(0.8)	8	(0.6)	9	(0.7)	23	(0.9)	1	(0.3)
Spain	6	(0.5)	7	(0.5)	7	(0.5)	24	(0.7)	4	(0.7)
Sweden	4	(0.4)	9	(0.8)	5	(0.9)	13	(0.7)	6	(0.6)
Chinese Taipei	4	(0.2)	7	(0.4)	11	(0.4)	21	(0.7)	1	(0.2)
Turkey	3	(0.2)	7	(0.6)	4	(0.4)	12	(0.8)	1	(0.4)
United Arab Emirates	5	(0.3)	10	(0.3)	7	(0.3)	12	(0.4)	2	(0.2)
United States	7	(1.7)	9	(1.7)	5	(1.1)	12	(1.8)	5	(0.6)
Viet Nam	5	(0.3)	10	(0.7)	6	(0.5)	14	(0.8)	1	(0.4)
OECD average-30	7	(0.1)	10	(0.2)	5	(0.1)	20	(0.2)	3	(0.1)
TALIS average-47	7	(0.1)	9	(0.1)	6	(0.1)	20	(0.2)	3	(0.1)

Notes: Those observations where principals' years of work experience as a principal at the current school are higher than as a principal in total are discarded from the analysis. High-performing PISA countries in bold. For explanation refer to Reader's Guide.

TABLE A3.4   Change in the proportion of female principals from 2008 to 2018

| | Percentage of female principals | | | | | | | | | |
| | TALIS 2008 | | TALIS 2013 | | TALIS 2018 | | Change between 2008 and 2018 (TALIS 2018 - TALIS 2008) | | Change between 2013 and 2018 (TALIS 2018 - TALIS 2013) | |
	%	S.E.	%	S.E.	%	S.E.	% dif.	S.E.	% dif.	S.E.
Alberta (Canada)			43.1	(3.8)	29.7	(6.7)			-13.4	(7.7)
Australia	38.2	(4.8)	38.6	(5.5)	40.2	(4.8)	1.9	(6.8)	1.6	(7.3)
Austria	29.2	(3.5)			49.9	(3.6)	**20.7**	(5.1)		
Brazil	76.0	(2.8)	74.5	(2.1)	76.5	(3.5)	0.6	(4.4)	2.0	(4.0)
Bulgaria	69.0	(6.0)	71.5	(3.5)	72.9	(3.4)	3.9	(6.9)	1.4	(4.9)
Chile			53.4	(3.9)	49.6	(3.7)			-3.8	(5.4)
Croatia			59.9	(3.7)	52.6	(4.7)			-7.4	(6.0)
Cyprus			53.1	(4.3)	51.7	(5.6)			-1.4	(7.0)
Czech Republic			48.4	(3.6)	52.4	(3.3)			4.0	(4.9)
Denmark	37.8	(5.3)	32.4	(4.4)	35.4	(4.9)	-2.4	(7.2)	2.9	(6.6)
England (UK)			38.1	(4.1)	41.4	(4.5)			3.3	(6.1)
Estonia	56.4	(3.2)	60.2	(3.4)	56.6	(3.5)	0.3	(4.8)	-3.6	(4.9)
Finland			40.6	(4.0)	46.5	(4.3)			5.9	(5.9)
Flemish Comm. (Belgium)	38.2	(4.3)	38.8	(5.1)	40.3	(3.7)	2.1	(5.6)	1.5	(6.3)
France			41.7	(3.7)	41.3	(3.9)			-0.4	(5.4)
Georgia			60.0	(3.4)	60.1	(4.2)			0.1	(5.4)
Hungary	49.0	(5.4)			63.0	(4.2)	**14.1**	(6.9)		
Iceland	49.1	(5.2)	54.6	(4.7)	60.4	(5.0)	11.3	(7.2)	5.8	(6.9)
Israel			52.6	(6.0)	50.0	(3.0)			-2.6	(6.7)
Italy	45.8	(4.9)	55.2	(4.2)	68.7	(3.9)	**22.9**	(6.3)	**13.5**	(5.8)
Japan			6.0	(1.9)	7.0	(1.9)			1.0	(2.7)
Korea	15.0	(4.2)	13.3	(2.2)	19.6	(2.6)	4.6	(4.9)	6.3	(3.4)
Latvia			77.0	(4.2)	83.8	(3.0)			6.8	(5.2)
Lithuania	52.5	(4.3)			57.2	(4.4)	4.7	(6.2)		
Malta	41.4	(6.5)			46.0	(6.5)	4.7	(9.1)		
Mexico	34.7	(5.1)	40.8	(3.7)	35.4	(3.4)	0.7	(6.2)	-5.4	(5.1)
Netherlands			30.8	(7.7)	37.9	(4.5)			7.1	(8.9)
New Zealand			32.0	(6.0)	41.5	(4.3)			9.5	(7.3)
Norway	41.4	(4.1)	58.2	(8.0)	53.7	(4.6)	**12.4**	(6.2)	-4.5	(9.2)
Portugal	40.0	(4.1)	39.4	(4.3)	43.2	(3.8)	3.2	(5.6)	3.8	(5.8)
Romania			63.9	(4.3)	61.2	(4.5)			-2.6	(6.2)
Russia			77.6	(4.8)	69.2	(4.8)			-8.3	(6.8)
Shanghai (China)			41.1	(3.6)	44.5	(3.7)			3.4	(5.2)
Singapore			52.5	(4.8)	47.2	(3.0)			-5.3	(5.6)
Slovak Republic	60.3	(4.9)	60.0	(4.2)	66.4	(3.8)	6.1	(6.2)	6.4	(5.7)
Slovenia	57.4	(4.0)			62.7	(4.6)	5.4	(6.1)		
Spain	39.6	(5.3)	44.7	(5.0)	49.3	(3.6)	9.7	(6.3)	4.6	(6.1)
Sweden			54.9	(4.9)	68.7	(5.0)			**13.8**	(7.0)
Turkey	8.8	(6.3)			7.2	(1.2)	-1.6	(6.4)		
United States					48.5	(8.5)				

Note: High-performing PISA countries in bold. For explanation refer to Reader's Guide.

TABLE A3.5   Teachers' age profiles – Australia

	Teachers' age		Percentage of teachers					
	Average		Under age 30		Age 30 to 49		Age 50 and above	
	Mean	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	42	(0.2)	20	(0.9)	51	(1.1)	29	(0.8)
Lower secondary teachers	42	(0.2)	18	(0.8)	52	(1.1)	30	(0.9)
Difference (Primary – Lower secondary)	0	(0.3)	2	(1.2)	-1	(1.6)	-1	(1.2)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.6   Principals' age profiles – Australia

	Principals' age		Percentage of principals					
	Average		Under age 40		Age 40 to 59		Age 60 and above	
	Mean	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary principals	52	(0.8)	11	(3.0)	69	(4.7)	20	(3.9)
Lower secondary principals	51	(0.9)	11	(2.6)	69	(4.9)	19	(3.8)
Difference (Primary – Lower secondary)	1	(1.2)	0	(4.0)	0	(6.8)	1	(5.40)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.7   Gender distribution of teachers and principals – Australia

	Percentage of female teachers/principals	
	%	S.E.
Primary teachers	86	(0.7)
Lower secondary teachers	62	(1.0)
Difference (Primary – Lower secondary)	**24**	**(1.2)**
Primary principals	59	(4.6)
Lower secondary principals	40	(4.8)
Difference (Primary – Lower secondary)	**19**	**(6.6)**

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.8   Student diversity – Australia

	Percentage of teachers teaching in schools with the following composition									
	More than 10% of students are non-native speakers		More than 10% of students have special needs		More than 30% of students come from socioeconomically disadvantaged homes		More than 10% of students are immigrants or with migrant background		At least 1% of students are refugees	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	49	(0.1)	37	(0.1)	24	(0.1)	41	(0.1)	48	(0.1)
Lower secondary teachers	36	(0.1)	36	(0.1)	25	(0.1)	41	(0.1)	62	(0.1)
Difference (Primary – Lower secondary)	**13**	**0.1**	**1**	**0.1**	**-1**	**0.1**	0	0.1	**-14**	**0.1**

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.9　School practices related to diversity – Australia

	Percentage of teachers working in a school with diverse ethnic and cultural student background where the following diversity-related practices are implemented															
	Supporting activities or organisations encouraging students' expression of diverse ethnic and cultural identities				Organising multicultural events				Teaching how to deal with ethnic and cultural discrimination				Adopting teaching and learning practices that integrate global issues throughout the curriculum			
	According to teachers		According to principals		According to teachers		According to principals		According to teachers		According to principals		According to teachers		According to principals	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	74	(1.0)	86	(0.1)	79	(0.9)	91	(0.1)	68	(1.0)	85	(0.2)	81	(0.8)	94	(0.1)
Lower secondary teachers	81	(1.0)	85	(0.1)	75	(1.0)	89	(0.2)	69	(1.0)	76	(0.2)	83	(0.9)	88	(0.2)
Difference (Primary – Lower secondary)	**-7**	**(1.4)**	**1**	**(0.1)**	**4**	**(1.3)**	**2**	**(0.2)**	-1	(1.4)	**9**	**(0.3)**	-2	(1.2)	**6**	**(0.2)**

Note:　Figures in bold indicate significant differences between the cohorts

TABLE A3.10　School safety – Australia

| | Percentage of principals reporting that the following incidents occurred at least weekly in their school | | | | | | | | | | | | | |
| | Vandalism and theft | | Intimidation or bullying among students | | Physical injury caused by violence among students | | Intimidation or verbal abuse of teachers or staff | | Use/possession of drugs and/or alcohol | | A student or parent/guardian reports postings of hurtful information on the Internet about students | | A student or parent/guardian reports unwanted electronic contact among students | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	4	(1.5)	21	(2.7)	9	(1.9)	10	(2.4)	1	(0.6)	1	(0.6)	3	(1.3)
Lower secondary teachers	5	(1.7)	37	(6.2)	7	(2.5)	12	(3.6)	0	(0.2)	11	(2.5)	16	(3.5)
Difference (Primary – Lower secondary)	-1	(2.3)	**-16**	**(6.8)**	2	(3.1)	-2	(4.3)	1	(0.6)	**-10**	**(2.6)**	**-13**	**(3.7)**

Note:　Figures in bold indicate significant differences between the cohorts

TABLE A3.11   Teacher–student relations – Australia

| | Percentage of teachers who "agree" or "strongly agree" with the following statements about what happens in their school | | | | | | | | | |
| | Teachers and students usually get on well with each other | | Most teachers believe that the students' wellbeing is important | | Most teachers are interested in what students have to say | | If a student needs extra assistance, the school provides it | | Teachers can rely on each other | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	98	(0.3)	99	(0.2)	98	(0.3)	93	(0.6)	93	(0.5)
Lower secondary teachers	97	(0.3)	99	(0.2)	96	(0.4)	94	(0.5)	93	(0.5)
Difference (Primary – Lower secondary)	**1**	**(0.4)**	0	(0.3)	2	(0.5)	-1	(0.8)	0	(0.7)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.12   Classroom discipline – Australia

| | Percentage of teachers who "agree" or "strongly agree" with the following statements about their target class | | | | | | | |
| | When the lesson begins, the teacher has to wait quite a long time for students to quieten down | | Students in the class take care to create a pleasant learning atmosphere | | The teacher loses quite a lot of time because of students interrupting the lesson | | There is much disruptive noise in the classroom | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	**21**	**(1.0)**	**80**	**(0.8)**	**33**	**(1.1)**	23	(1.0)
Lower secondary teachers	**26**	**(1.1)**	**70**	**(1.3)**	**29**	**(1.2)**	25	(0.9)
Difference (Primary – Lower secondary)	-5	(1.5)	10	(1.5)	4	(1.6)	-2	(1.3)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.13 School resourcing – Australia

	Percentage of principals reporting that the following shortages of resources hinder the school's capacity to provide quality instruction "quite a bit" or "a lot"															
	Shortage of qualified teachers		Shortage of teachers with competence in teaching students with special needs		Shortage of vocational teachers		Shortage or inadequacy of instructional materials		Shortage or inadequacy of digital technology for instruction		Insufficient Internet access		Shortage or inadequacy of library materials		Shortage of support personnel	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary principals	12	(2.9)	19	(3.4)	3	(1.4)	0	(0.2)	13	(2.9)	15	(2.9)	2	(0.8)	13	(2.7)
Lower secondary principals	16	(3.0)	18	(3.2)	17	(5.3)	6	(2.7)	12	(3.9)	12	(3.4)	7	(2.1)	7	(1.7)
Difference (Primary – Lower secondary)	-4	(4.2)	1	(4.7)	**-14**	**(5.5)**	**-6**	**(2.7)**	1	(4.9)	3	(4.5)	**-5**	**(2.2)**	6	(3.2)

	Percentage of principals reporting that the following shortages of resources hinder the school's capacity to provide quality instruction "quite a bit" or "a lot"													
	Shortage or inadequacy of instructional space		Shortage or inadequacy of physical infrastructure		Shortage of teachers with competence in teaching students in a multi-cultural or multilingual setting		Shortage of teachers with competence in teaching students from socio-economically disadvantaged homes		Shortage or inadequacy of necessary materials to train vocational skills		Shortage or inadequacy of time for instructional leadership		Shortage or inadequacy of time with students	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary principals	19	(3.4)	19	(3.4)	9	(2.4)	11	(2.4)	1	(0.4)	27	(3.6)	9	(2.1)
Lower secondary principals	11	(2.3)	14	(3.3)	6	(2.8)	5	(1.9)	6	(2.0)	28	(5.0)	13	(3.5)
Difference (Primary – Lower secondary)	8	(4.1)	5	(4.7)	3	(3.7)	**6**	**(3.1)**	**-5**	**(2.0)**	-1	(6.2)	**6**	**(3.1)**

Note: Figures in bold indicate significant differences between the cohorts

TABLE A3.14   Priorities for policy intervention – Australia

	Percentage of teachers who reported the following spending priorities to be of "high importance"																	
	Investing in ICT		Investing in instructional materials		Supporting students from disadvantaged or migrant backgrounds		Reducing class sizes by recruiting more staff		Improving school buildings and facilities		Supporting students with special needs		Offering high-quality professional development for teachers		Improving teacher salaries		Reducing teachers' administration load by recruiting more support staff	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	45	(1.1)	14	(0.8)	41	(1.1)	66	(1.1)	38	(1.1)	61	(1.2)	59	(1.1)	49	(1.1)	62	(1.1)
Lower secondary teachers	32	(1.0)	15	(0.9)	37	(1.0)	58	(1.0)	37	(1.0)	47	(1.1)	55	(1.1)	47	(1.3)	59	(1.1)
Difference (Primary – Lower secondary)	**13**	**(1.5)**	-1	(1.2)	**4**	**(1.5)**	**8**	**(1.5)**	1	(1.5)	**14**	**(1.6)**	**4**	**(1.6)**	2	(1.7)	3	(1.6)

Note: Figures in bold indicate significant differences between the cohorts

| | Percentage of teachers who report that the following elements were of "moderate importance" or "high importance" in deciding to become a teacher | | | | | | | | | | | | | |
| | Teaching offered a steady career path | | Teaching provided a reliable income | | Teaching was a secure job | | The teaching schedule fit with responsibilities in my personal life | | Teaching allowed me to influence the development of children and young people | | Teaching allowed me to benefit the socially disadvantaged | | Teaching allowed me to provide a contribution to society | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	79	(0.8)	79	(0.7)	81	(0.7)	58	(0.9)	98	(0.3)	84	(0.7)	95	(0.5)
Lower secondary teachers	80	(0.8)	82	(0.7)	83	(0.8)	66	(1.1)	96	(0.4)	80	(0.7)	93	(0.5)
Difference (Primary – Lower secondary)	-1	(1.1)	**-3**	**(1.0)**	-2	(1.1)	**-8**	**(1.4)**	**2**	**(0.5)**	**4**	**(1.0)**	2	(0.7)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A4.2 Content of teacher education or training programs – Australia

| | Percentage of teachers for whom the following elements were included in their formal education or training | | | | | | | | | | | | | | | | | | | |
| | Content of some or all subjects taught | | Pedagogy of some or all subjects taught | | General pedagogy | | Classroom practice in some or all subjects taught | | Teaching in a mixed-ability setting | | Teaching in a multicultural or multilingual setting | | Teaching cross-curricular skills | | Use of ICT for teaching | | Student behaviour and classroom management | | Monitoring students' development and learning | |
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	91	(0.6)	91	(0.6)	95	(0.4)	93	(0.5)	75	(0.9)	59	(1.0)	63	(1.1)	59	(1.0)	81	(0.8)	79	(0.8)
Lower secondary teachers	91	(0.6)	92	(0.6)	96	(0.4)	93	(0.6)	74	(0.9)	59	(1.0)	66	(1.2)	65	(0.9)	84	(0.8)	77	(0.9)
Difference (Primary – Lower secondary)	0	(0.8)	-1	(0.8)	-1	(0.6)	0	(0.8)	1	(1.3)	0	(1.4)	-3	(1.6)	**-6**	**(1.345)**	**-3**	**(1.1)**	2	(1.2)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A4.3 Access to induction activities in primary and lower secondary schools – Australia

	Percentage of principals reporting that new teachers at the school have access to							
	Formal induction activities		Formal induction activities, only for teachers new to teaching		Informal induction activities		No induction activities	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary principals	81	(3.2)	7	(2.0)	94	(1.9)	1	(0.5)
Lower secondary principals	93	(4.3)	5	(2.5)	92	(3.0)	0	(0.1)
Difference (Primary – Lower secondary)	-12	(5.4)	2	(3.2)	2	(3.6)	1	(0.5)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A4.4 Types of induction activities in primary and lower secondary schools – Australia

	Percentage of teachers for whom the following provisions are included in teacher induction at their school																			
	Courses/ seminars attended in person		Online courses/ seminars		Online activities		Planned meetings with principal and/ or experienced teachers		Supervision by principal and/ or experienced teachers		Networking/ collaboration with other new teachers		Team teaching with experienced teachers		Portfolios/ diaries/ journals		Reduced teaching load		General/ administrative introduction	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary principals	73	(0.7)	53	(0.8)	33	(0.8)	99	(0.1)	93	(0.4)	87	(0.7)	77	(0.7)	44	(0.8)	49	(0.8)	95	(0.2)
Lower secondary principals	85	(0.5)	55	(0.8)	36	(0.6)	98	(0.2)	90	(0.4)	93	(0.4)	62	(0.6)	49	(0.7)	62	(0.5)	99	(0.1)
Difference (Primary – Lower secondary)	-12	(0.9)	-2	(1.1)	-3	(1.0)	1	(0.2)	3	(0.6)	-6	(0.8)	15	(0.9)	-5	(1.063)	-13	(0.9)	-4	(0.2)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A5.1 Types of professional development undertaken by teachers – Australia

	Average number of different professional development activities in which teachers participated in the 12 months prior to the survey		Percentage of teachers who participated in the following professional development activities in the 12 months prior to the survey																			
			Courses/seminars attended in person		Online courses/seminars		Education conferences where teachers and/or researchers present their research or discuss educational issues		Formal qualification program		Observation visits to other schools		Observation visits to business premises, public organisations or non-governmental organisations		Peer and/or self-observation and coaching as part of a formal school arrangement		Participation in a network of teachers formed specifically for the professional development of teachers		Reading professional literature		Other types of professional development activities	
	Mean	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	5	(0.0)	92	(0.5)	82	(0.9)	56	(0.9)	11	(0.7)	32	(0.9)	9	(0.7)	72	(0.8)	62	(1.0)	92	(0.5)	31	(1.3)
Lower secondary teachers	5	(0.0)	93	(0.6)	71	(0.9)	63	(1.0)	12	(0.7)	18	(0.9)	16	(0.8)	70	(0.9)	61	(1.0)	84	(0.7)	31	(1.0)
Difference (Primary – Lower secondary)	0	(0.0)	–1	(0.8)	**11**	**(1.3)**	**–7**	**(1.3)**	–1	(1.0)	**14**	**(1.3)**	**–7**	**(1.1)**	2	(1.204)	1	(1.4)	**8**	**(0.9)**	0	(1.6)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A5.2 Characteristics of effective professional development in primary and lower secondary education – Australia

	Percentage of teachers who feel professional development activities in the 12 months prior to the survey had a positive impact on their teaching practices		Percentage of teachers for whom the most effective professional development activities had the following characteristics																								
			It built on the teacher's prior knowledge		It adapted to the teacher's personal development needs		It had a coherent structure		It appropriately focused on content needed to teach the teacher's subjects		It provided opportunities for active learning		It provided opportunities for collaborative learning		It provided opportunities to practise/apply new ideas and knowledge in the teacher's own classroom		It provided follow-up activities		It took place at the teacher's school		It involved most colleagues from the teacher's school		It took place over an extended period of time		It focused on innovation in the teacher's teaching	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	94	(0.5)	99	(0.2)	81	(1.0)	84	(0.8)	83	(0.9)	89	(0.8)	90	(0.7)	93	(0.6)	67	(1.1)	61	(1.0)	59	(1.0)	52	(1.0)	76	(0.8)
Lower secondary teachers	92	(0.5)	97	(0.3)	72	(1.2)	84	(0.8)	74	(0.9)	83	(0.8)	86	(0.7)	88	(0.8)	52	(1.1)	53	(1.2)	47	(1.2)	40	(1.1)	67	(1.2)
Difference (Primary – Lower secondary)	**2**	**(0.7)**	**2**	**(0.4)**	**9**	**(1.6)**	0	(1.1)	**9**	**(1.3)**	**6**	**(1.1)**	**4**	**(1.0)**	**5**	**(1.0)**	**15**	**(1.6)**	**8**	**(1.6)**	**12**	**(1.6)**	**12**	**(1.5)**	**9**	**(1.4)**

Note: Figures in bold indicate significant differences between the cohorts

TABLE A5.3 Content of professional development in primary and lower secondary schools – Australia

	Percentage of teachers for whom the following topics were included in their professional development activities															
	Knowledge and understanding of my subject field(s)		Pedagogical competencies in teaching my subject field(s)		Knowledge of the curriculum		Student assessment practices		ICT skills for teaching		Student behaviour and classroom management		School management and administration		Approaches to individualised learning	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	88	(0.8)	82	(0.8)	88	(0.7)	84	(0.8)	63	(1.0)	55	(1.0)	44	(1.1)	72	(1.1)
Lower secondary teachers	82	(0.8)	74	(0.9)	83	(0.7)	77	(0.9)	67	(1.0)	44	(1.0)	45	(1.2)	65	(1.1)
Difference (Primary – Lower secondary)	**6**	**(1.1)**	**8**	**(1.2)**	**5**	**(1.0)**	**7**	**(1.2)**	**-4**	**(1.4)**	**11**	**(1.4)**	-1	(1.6)	**7**	**(1.6)**

	Percentage of teachers for whom the following topics were included in their professional development activities													
	Teaching students with special needs		Teaching in a multicultural or multilingual setting		Teaching cross-curricular skills		Analysis and use of student assessments		Teacher-parent/ guardian co-operation		Communicating with people from different cultures or countries		Professional development activities with other content	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	59	(1.1)	23	(0.8)	58	(1.1)	77	(0.9)	27	(1.0)	19	(0.8)	27	(1.1)
Lower secondary teachers	58	(1.0)	23	(0.9)	56	(1.3)	68	(1.0)	27	(0.9)	19	(0.8)	25	(1.0)
Difference (Primary – Lower secondary)	1	(1.5)	0	(1.2)	2	(1.7)	**9**	**(1.3)**	0	(1.3)	0	(1.1)	2	(1.5)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A5.4 Primary and lower secondary teachers' needs for professional development – Australia

	Percentage of teachers reporting a high level of need for professional development in the following areas													
	Knowledge and understanding of my subject field(s)		Pedagogical competencies in teaching my subject field(s)		Knowledge of the curriculum		Student assessment practices		ICT skills for teaching		Student behaviour and classroom management		School management and administration	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	2	(0.3)	3	(0.4)	3	(0.4)	6	(0.5)	18	(0.8)	6	(0.5)	5	(0.5)
Lower secondary teachers	4	(0.5)	3	(0.4)	5	(0.6)	6	(0.5)	11	(0.8)	5	(0.4)	5	(0.5)
Difference (Primary – Lower secondary)	**-2**	**(0.6)**	0	(0.6)	**-2**	**(0.7)**	**0**	**(0.7)**	**7**	**(1.1)**	1	(0.6)	0	(0.7)

	Percentage of teachers reporting a high level of need for professional development in the following areas													
	Approaches to individualised learning		Teaching students with special needs		Teaching in a multicultural or multilingual setting		Teaching cross-curricular skills		Analysis and use of student assessments		Teacher-parent/ guardian co-operation		Communicating with people from different cultures or countries	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	8	(0.6)	11	(0.6)	7	(0.6)	9	(0.6)	7	(0.6)	3	(0.4)	4	(0.5)
Lower secondary teachers	8	(0.6)	12	(0.7)	7	(0.5)	9	(0.7)	7	(0.6)	3	(0.4)	4	(0.5)
Difference (Primary – Lower secondary)	0	(0.8)	-1	(0.9)	0	(0.8)	**0**	**(0.9)**	0	(0.8)	0	(0.6)	0	(0.7)

Note: Figures in bold indicate significant differences between the cohorts

TABLE A5.5 Barriers to primary and lower secondary teachers' participation in professional development – Australia

	Percentage of teachers reporting the following barriers to their participation in professional development												
	Do not have the prerequisites		Professional development is too expensive		There is a lack of employer support		Professional development conflicts with the teacher's work schedule		Do not have time because of family responsibilities		There is no relevant professional development offered		There are no incentives for participating in professional development	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Primary teachers	**9**	**(0.5)**	**51**	**(1.1)**	23	(0.9)	49	(1.2)	31	(1.1)	20	(0.8)	34	(0.9)
Lower secondary teachers	6	(0.4)	44	(1.1)	23	(0.9)	**60**	**(1.1)**	31	(0.9)	22	(0.8)	35	(1.1)
Difference (Primary – Lower secondary)	**3**	**(0.6)**	**7**	**(1.6)**	0	(1.3)	**-11**	**(1.6)**	0	(1.4)	-2	(1.1)	-1	(1.4)

Note: Figures in bold indicate significant differences between the cohorts