GRATTAN Institute

Technical Supplement to *Top teachers: sharing expertise to improve teaching*

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Grattan Institute Technical Paper No. 2020-02, March 2020

This technical paper was written by Peter Goss. It was prepared to accompany the Grattan Institute Report, *Top teachers: sharing expertise to improve teaching*. The purpose is to provide further detail about the 2019 Grattan survey on instructional leadership, as well as the design of our proposed expert teacher career path. It is designed to be read in conjunction with the main report, which can be found at https://grattan.edu.au/report/top-teachers/. Julie Sonnemann, Daniel Petrie, Kirsten Sadler and Nathan Blane provided extensive research assistance and valuable contributions.

We would like to thank the members of Grattan Institute's School Education Program Reference Group for their helpful comments, as well as numerous government and industry participants and officials for their input.

The opinions in this report are those of the authors and do not necessarily represent the views of Grattan Institute's founding members, affiliates, individual board members, reference group members, or reviewers. Any errors or omissions are the responsibility of the authors.

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1 Results of the 2019 Grattan survey on instructional leadership

This appendix presents the results of the 2019 Grattan Institute survey on instructional leadership. The survey had five sections:

- Introduction;
- Questions for instructional leaders;
- Questions for teachers;
- Questions for principals; and
- Questions about demographics.

A total of 1395 people began the survey and 713 completed it. Where someone partially completed the survey, the completed responses were included in our analysis. The 713 complete responses came from 397 (self-identified) instructional leaders, 259 teachers, and 57 principals.

A complete analysis of the responses is provided for every question that was automatically coded. The survey also included free-text responses, which were used to inform our analysis and interpretation of the data. The questions are presented sequentially within each section, with the exception of questions with multiple possible responses. These questions require a tabular response rather than a figure. For ease of presentation, they are included at the end of each section.

Instructional leader survey branch

The instructional leader branch of the survey (Section 1.1) was filled out by people who responded Yes to the question *In your current job, do you have significant responsibility for providing instructional leadership directly to other teachers?*

These respondents identified themselves as occupying a range of formal roles including: instructional leaders, subject heads, faculty heads, and deputy principals.

Questions in this branch of the survey typically have between 398 and 454 responses, although some questions have fewer responses where they depend on answering Yes to a previous question.

Teacher survey branch

The teacher branch of the survey (Section 1.2) was filled out by people who responded No to the question *In your current job, do you have significant responsibility for providing instructional leadership directly to other teachers?*

Questions in this branch of the survey typically have between 245 and 327 responses, although some questions have fewer responses where they depend on answering Yes to a previous question.

Principal survey branch

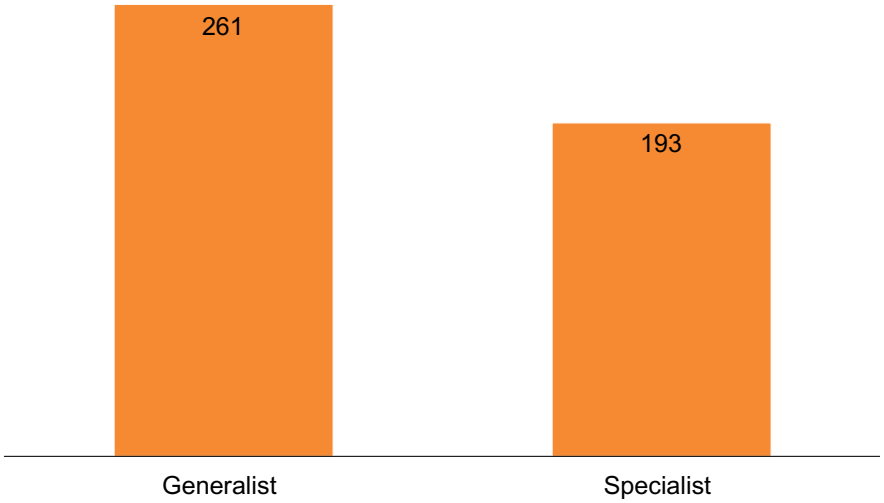
The principal branch of the survey (Section 1.3) was filled out by people who identified themselves as principals when asked *What role(s) do you have in your current job?* Questions in this branch of the survey have between 56 and 67 responses.

Demographics

All respondents were asked to fill in some basic demographic details (Section 1.4). Questions in this branch of the survey typically have more than 700 responses, although the question about part-time work has fewer responses because it was asked only of respondents who said No when asked *Do you work full time?*

1.1 Instructional leader branch

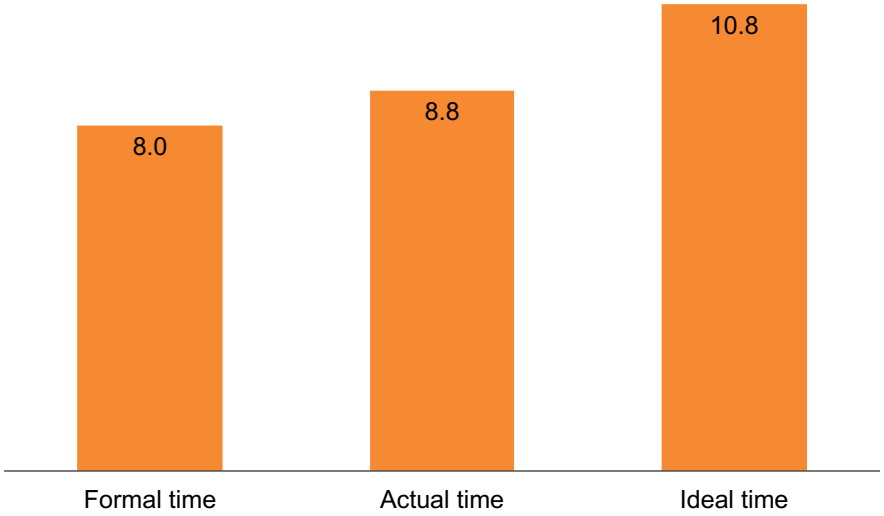
Question 2: As an instructional leader, were you recruited to be a specialist in 1 or 2 particular element(s) of teaching practice, or to be a generalist across many elements?
Number of instructional leaders who gave each response



Note: Sample size: 454.

Source: 2019 Grattan survey on instructional leadership.

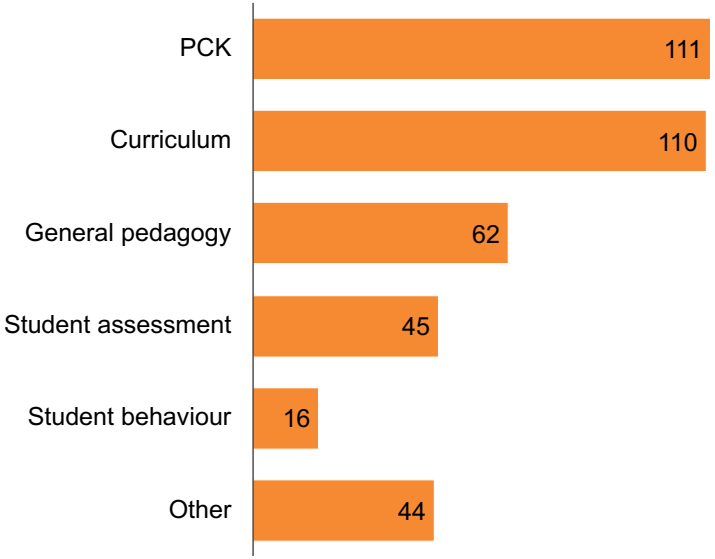
Question 3: Please estimate your hours per week for instructional leadership directly to other teachers – formal, actual, and ideal
Average response from instructional leaders, hours



Note: Sample size: 232.

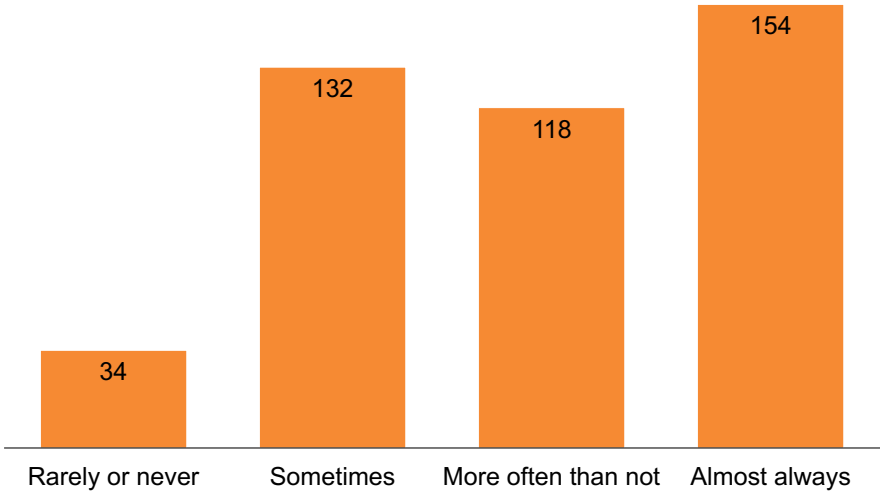
Source: 2019 Grattan survey on instructional leadership.

Question 4: Which element(s) of teaching practice were you recruited to specialise in as an instructional leader?
Number of instructional leaders who gave each response



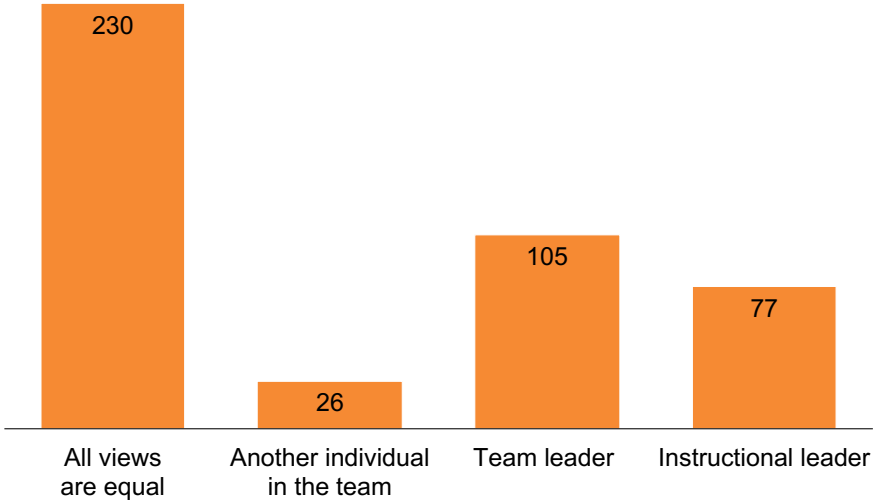
Notes: PCK = pedagogical content knowledge. Sample size: 186.
Source: 2019 Grattan survey on instructional leadership.

Question 5: In your school, when collaborative teams discuss pedagogy, how often is an instructional leader involved?
Number of instructional leaders who gave each response



Note: Sample size: 438.
Source: 2019 Grattan survey on instructional leadership.

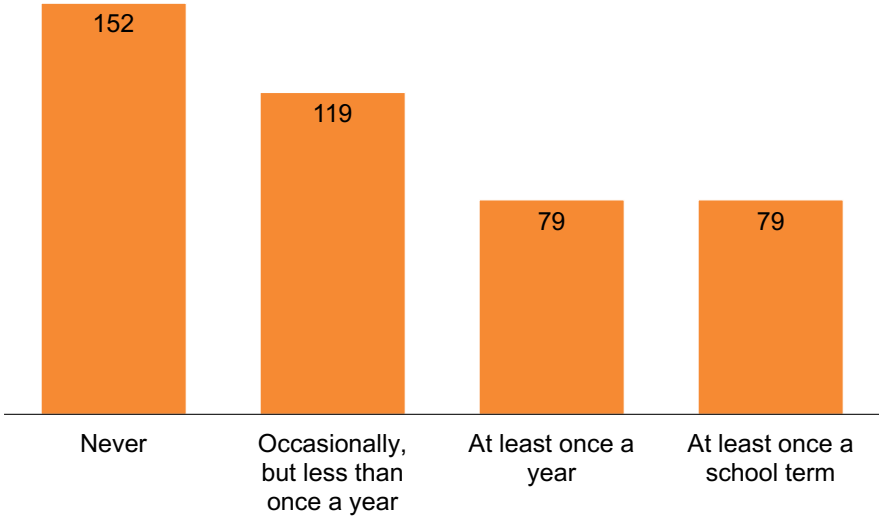
Question 6: When you meet with collaborative teams to discuss pedagogy, whose opinion carries the most weight?
Number of instructional leaders who gave each response



Note: Sample size: 438.

Source: 2019 Grattan survey on instructional leadership.

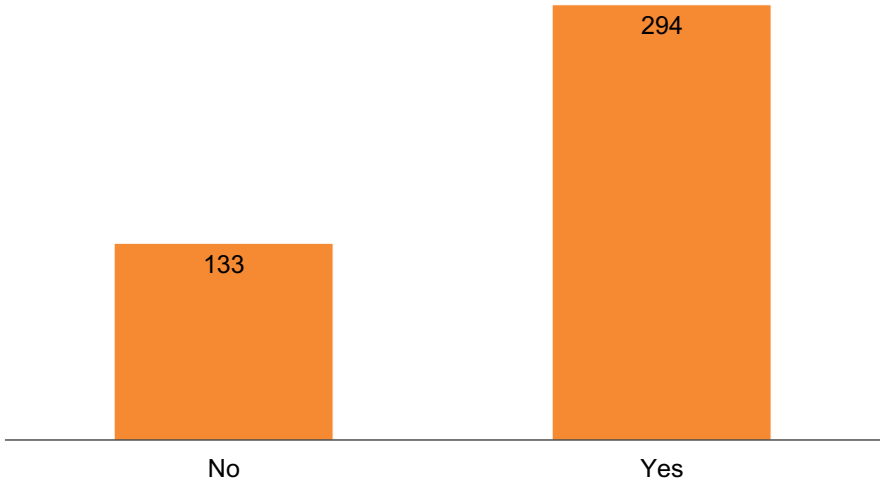
Question 7: As an instructional leader, how often has an external expert checked or questioned your pedagogical advice to other teachers, or suggested you use a different approach?
Number of instructional leaders who gave each response



Note: Sample size: 429.

Source: 2019 Grattan survey on instructional leadership.

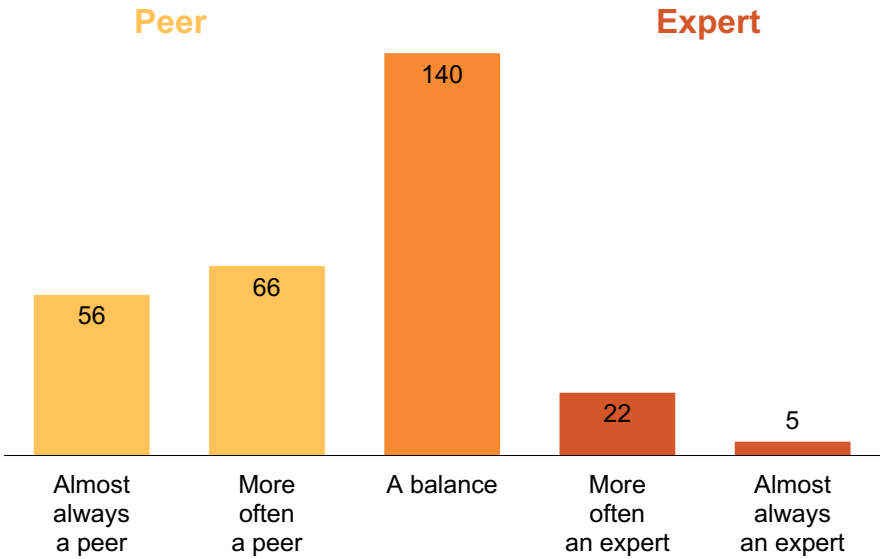
Question 8: As an instructional leader, do you participate in a cross-school network with other leaders?
Number of instructional leaders who gave each response



Note: Sample size: 427.

Source: 2019 Grattan survey on instructional leadership.

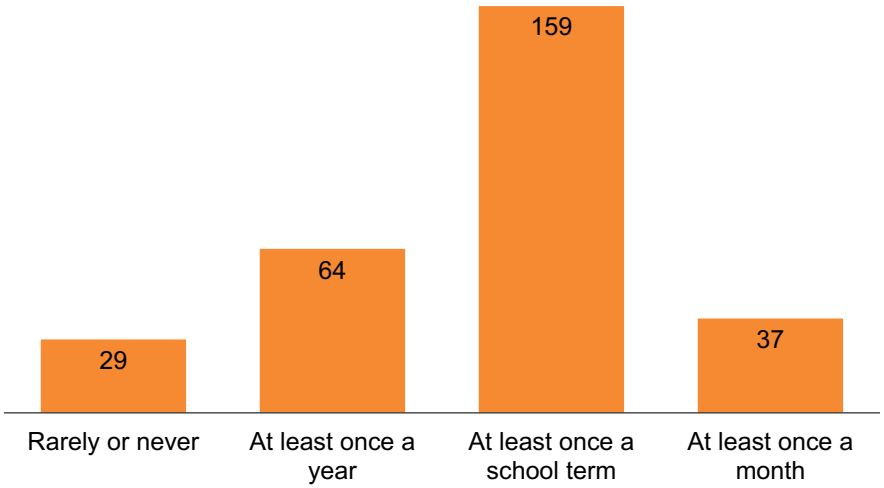
Question 9: In your leader network, is pedagogical advice generally provided by peers or experts?
Number of instructional leaders who gave each response



Notes: Only includes instructional leaders who answered Yes to Question 8. Sample size: 289.

Source: 2019 Grattan survey on instructional leadership.

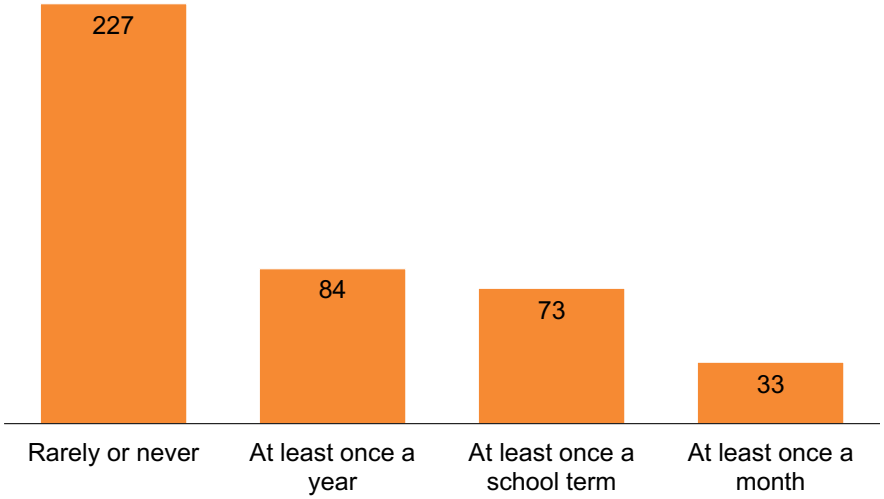
Question 10: How often do you attend the leader network?
Number of instructional leaders who gave each response



Notes: Only includes instructional leaders who answered Yes to Question 8. Sample size: 289.

Source: 2019 Grattan survey on instructional leadership.

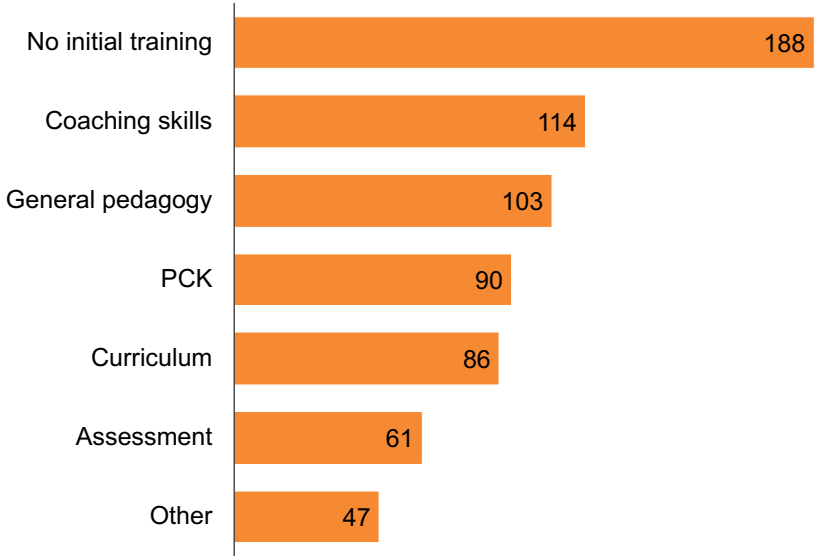
Question 11: As an instructional leader, how often are you given access to an expert to mentor, coach, and/or observe you and provide feedback?
Number of instructional leaders who gave each response



Note: Sample size: 417.

Source: 2019 Grattan survey on instructional leadership.

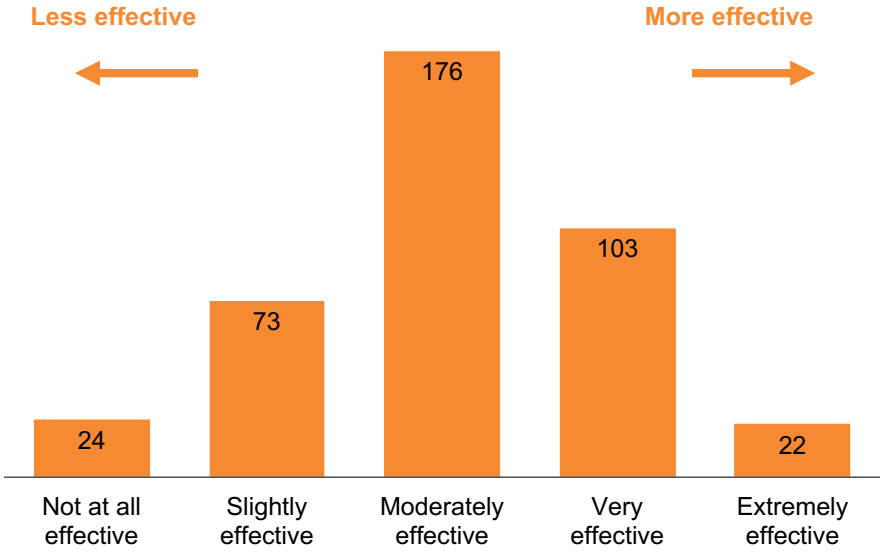
Question 12: In which area(s) were you provided initial training for the instructional leader role?
Number of instructional leaders who gave each response



Notes: PCK = pedagogical content knowledge. Instructional leaders were asked to select from a list of initial training areas. Sample size: 417.

Source: 2019 Grattan survey on instructional leadership.

Question 13: How effective is instructional leadership in your school?
Number of instructional leaders who gave each response



Note: Sample size: 398.

Source: 2019 Grattan survey on instructional leadership.

Question 1: Please rank the teaching elements below from the one you spend most time on (1) to least time on (5) as an instructional leader
Number of instructional leaders who gave each response

Response	Curriculum (e.g. science or literacy)	Pedagogical content knowledge (e.g. science or literacy)	General pedagogy (e.g. differentiated teaching)	Student assessment	Student behaviour and classroom management
1	85	79	118	50	116
2	105	93	116	79	55
3	99	98	86	126	39
4	93	113	89	108	45
5	66	65	39	85	193

Note: Sample size: 448.

Source: 2019 Grattan survey on instructional leadership.

Question 14: Please rank the following as barriers to you providing effective instructional leadership, from largest barrier (1) to smallest (8)
Number of instructional leaders who gave each response

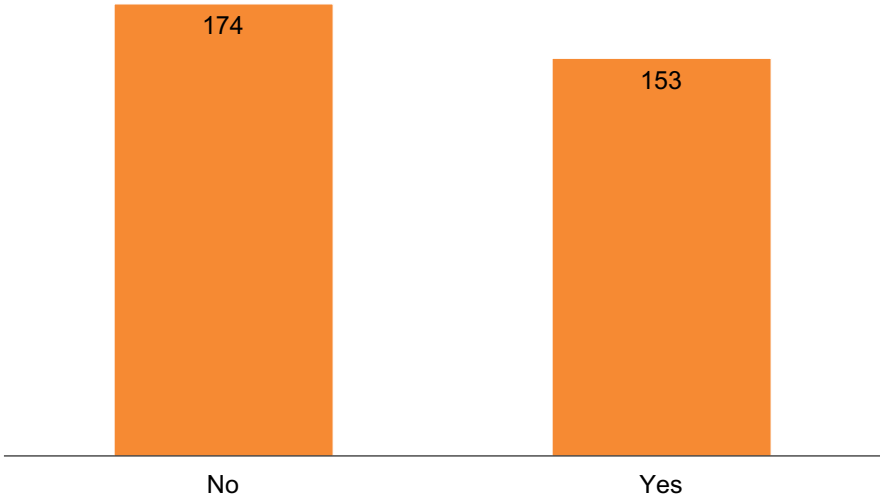
Response	Your lack of time (including competing demands)	Classroom teachers' lack of time	Lack of principal support for your role	Principal lacks deep understanding of pedagogy	Lack of peer respect	Insufficient professional development for instructional leaders	Lack of clarity on your responsibilities	Other (please specify)
1	133	134	25	24	11	12	26	34
2	120	115	25	29	17	32	52	9
3	64	54	39	37	22	102	66	15
4	28	36	39	38	59	93	88	18
5	24	33	63	63	73	50	79	14
6	20	17	100	81	64	67	39	11
7	6	8	75	97	118	28	41	26
8	4	2	33	30	35	15	8	272

Note: Sample size: 399.

Source: 2019 Grattan survey on instructional leadership.

1.2 Teacher survey branch

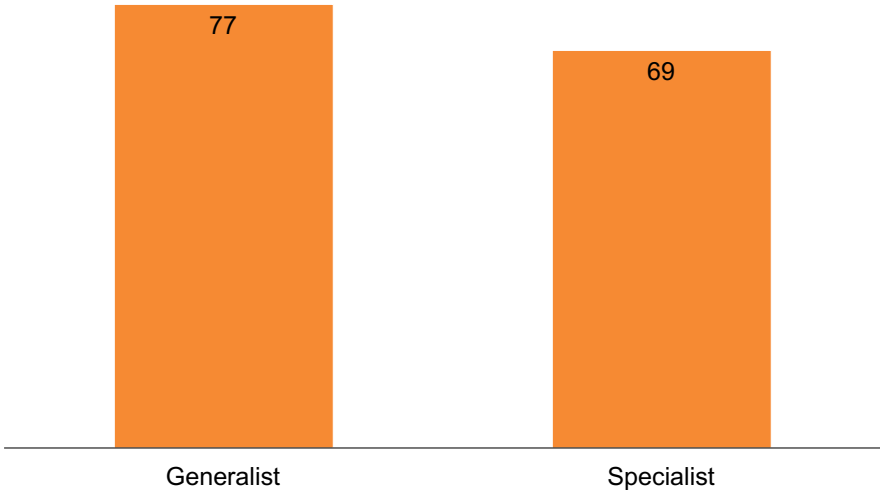
Question 15: Does your school provide you with mentoring or coaching?
Number of teachers who gave each response



Note: Sample size: 327.

Source: 2019 Grattan survey on instructional leadership.

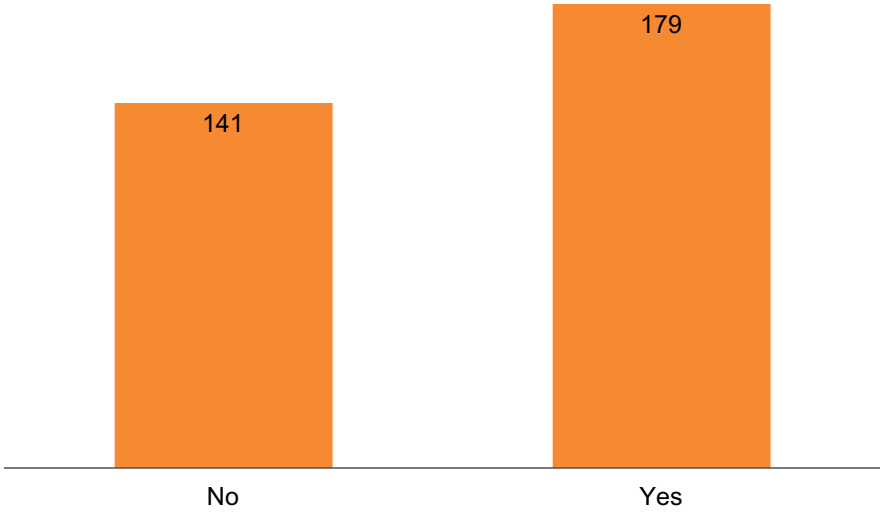
Question 16: Was your most recent mentoring or coaching session with a teacher who is a generalist or a specialist?
Number of teachers who gave each response



Notes: Only includes teachers who responded Yes to Question 15. Sample size: 146.

Source: 2019 Grattan survey on instructional leadership.

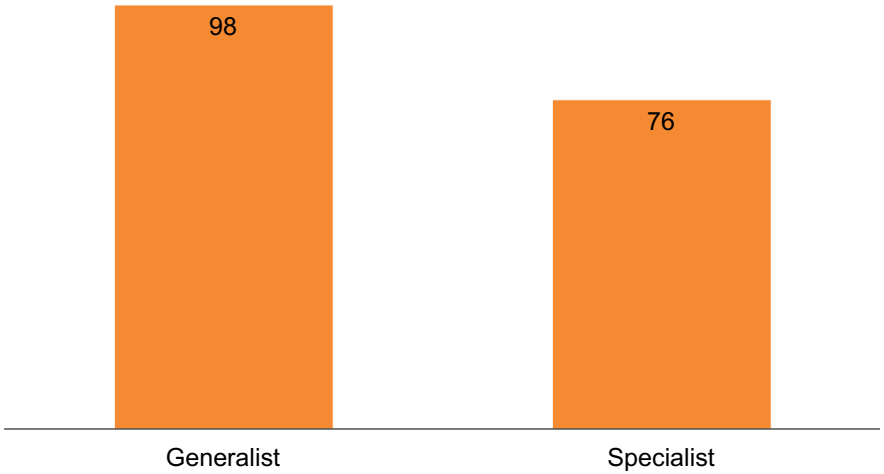
Question 17: Does your school facilitate observation and feedback on your teaching practice?
Number of teachers who gave each response



Note: Sample size: 320.

Source: 2019 Grattan survey on instructional leadership.

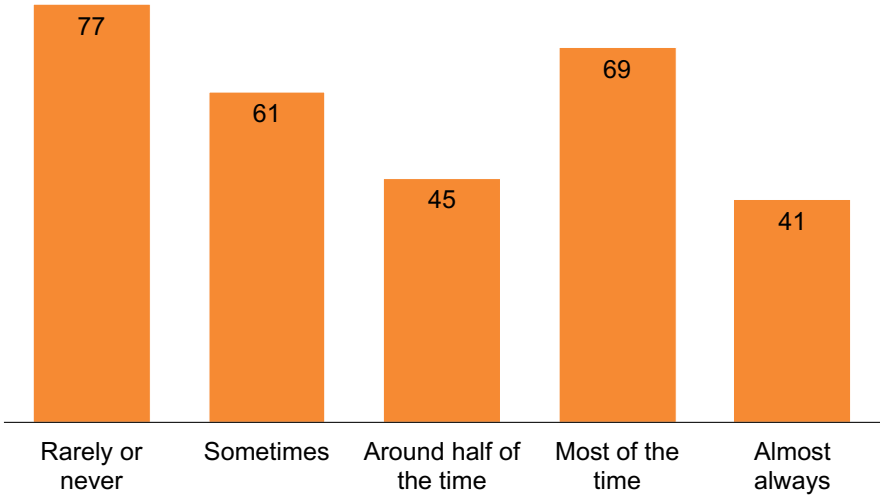
Question 18: Was your most recent observation by a teacher(s) who is a generalist or a specialist?
Number of teachers who gave each response



Notes: Only includes teachers who responded Yes to Question 17. Sample size: 174.

Source: 2019 Grattan survey on instructional leadership.

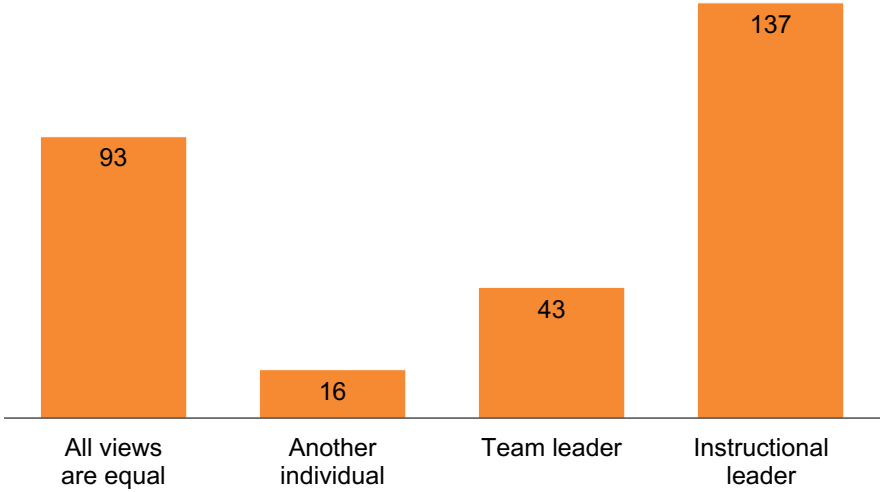
Question 19: In your school, when collaborative teams discuss pedagogy, how often would an instructional leader join the discussion?
Number of teachers who gave each response



Note: Sample size: 293.

Source: 2019 Grattan survey on instructional leadership.

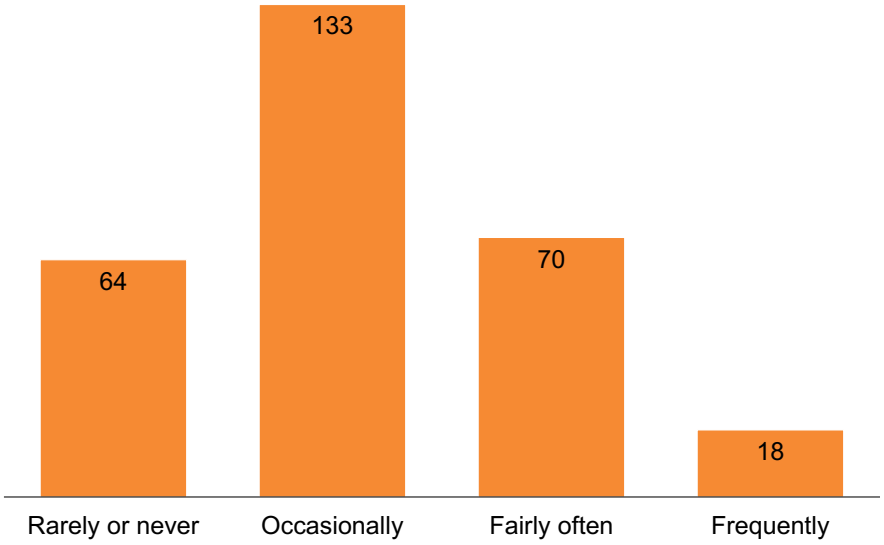
Question 20: When instructional leaders discuss pedagogy with collaborative teams, whose opinion carries the most weight?
Number of teachers who gave each response



Note: Sample size: 289.

Source: 2019 Grattan survey on instructional leadership.

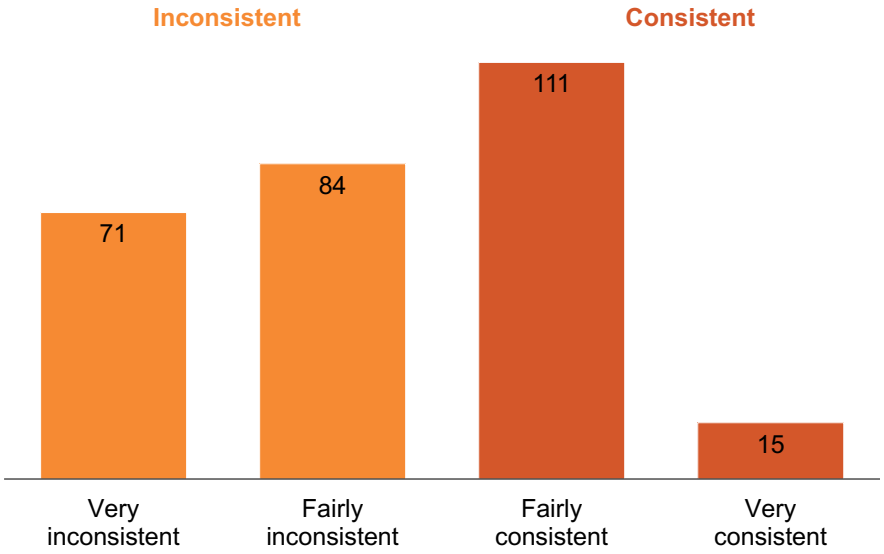
Question 21: How often have you changed your pedagogical practices based on the advice of an instructional leader?
Number of teachers who gave each response



Note: Sample size: 285.

Source: 2019 Grattan survey on instructional leadership.

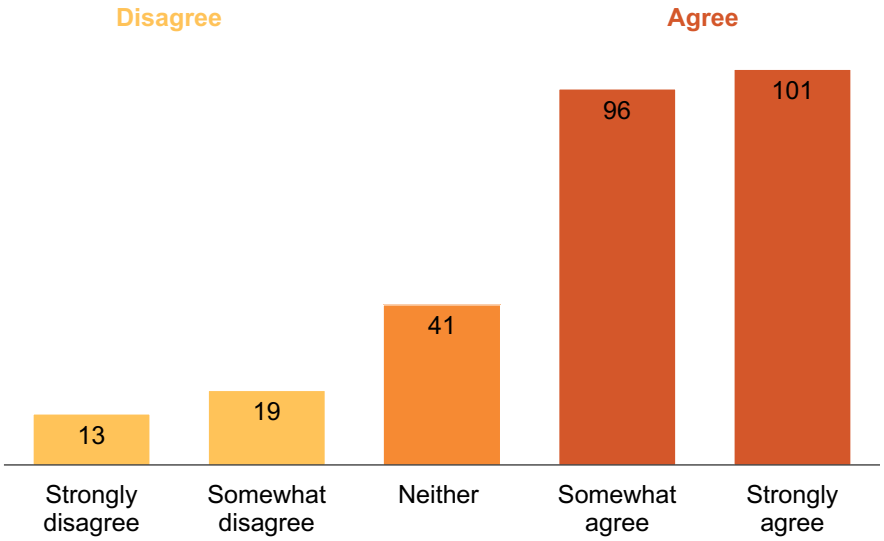
Question 22: Over the past five years, how consistent was the advice you were given on pedagogy for particular learning areas?
Number of teachers who gave each response



Note: Sample size: 281.

Source: 2019 Grattan survey on instructional leadership.

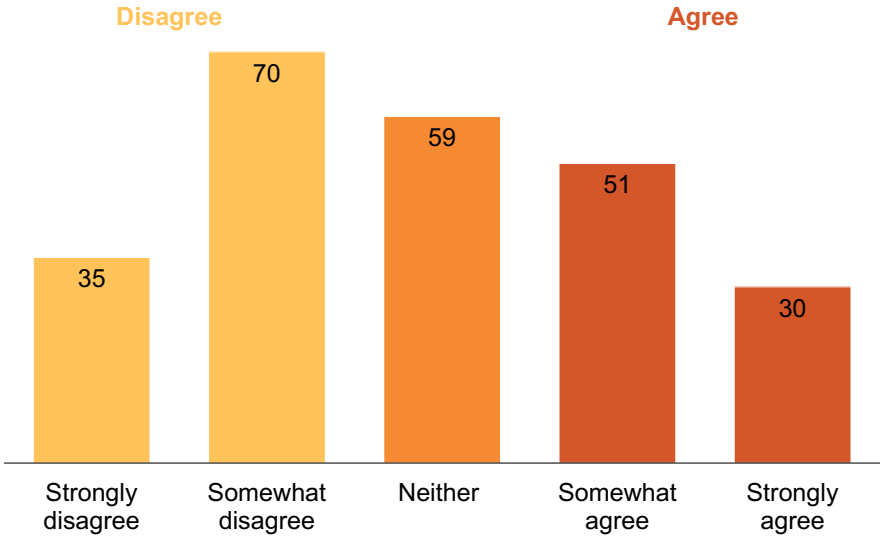
Question 23: In principle, do you agree that instructional leaders with deep pedagogical expertise can help you improve your teaching practice?
Number of teachers who gave each response



Note: Sample size: 270.

Source: 2019 Grattan survey on instructional leadership.

Question 24: Do you agree that the instructional leaders in your school are among the best teachers?
Number of teachers who gave each response



Note: Sample size: 269.

Source: 2019 Grattan survey on instructional leadership.

Question 25: Which of the following issues are barriers to attracting the best teachers to instructional leader (IL) roles?
Number of teachers who gave each response

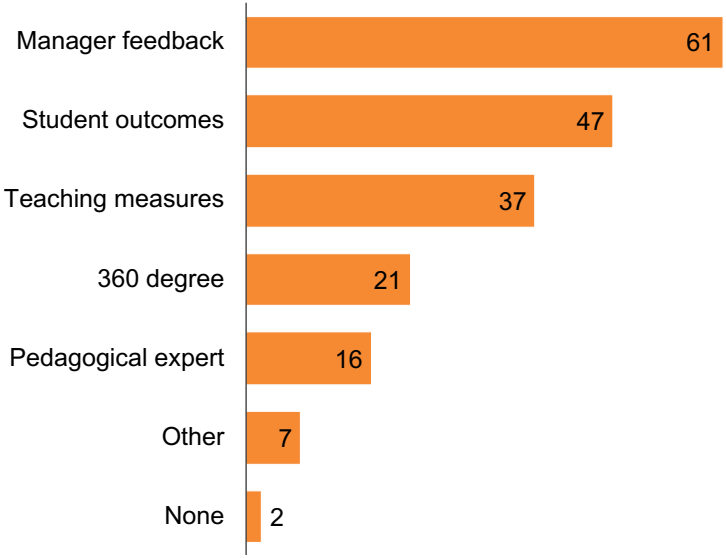
Response	Inadequate pay	High workload	Lack of teacher respect for ILs	Best teachers wanting to stay in classroom	Government keeps chopping and changing IL programs	Limited career paths for ILs	Lack of training and support for ILs	Other (please specify)
Not a barrier	1	15	104	38	33	64	36	18
Moderate barrier	117	74	97	103	81	121	114	6
Major barrier	43	157	48	110	136	63	99	22

Note: Sample size: 245.

Source: 2019 Grattan survey on instructional leadership.

1.3 Principal survey branch

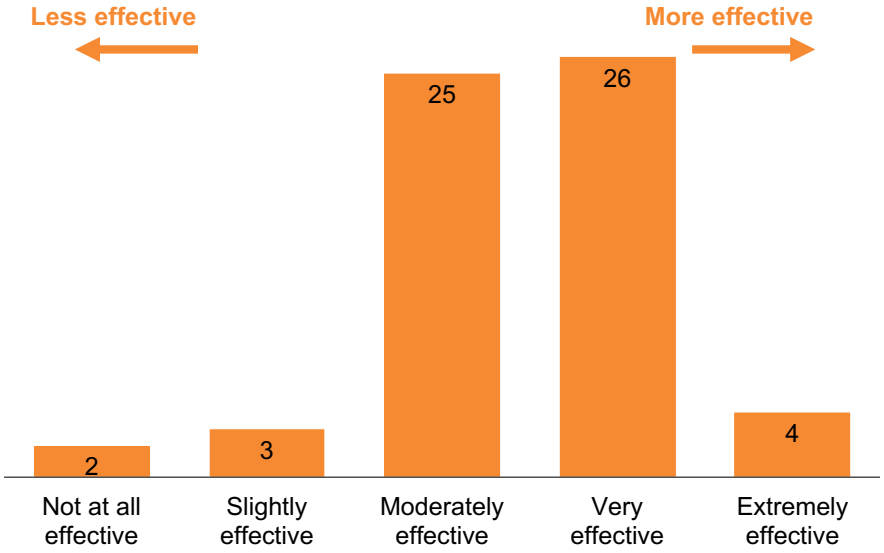
Question 33: Please select the measures used to assess the performance of instructional leaders in your school
Number of principals who gave each response



Note: Sample size: 64.

Source: 2019 Grattan survey on instructional leadership.

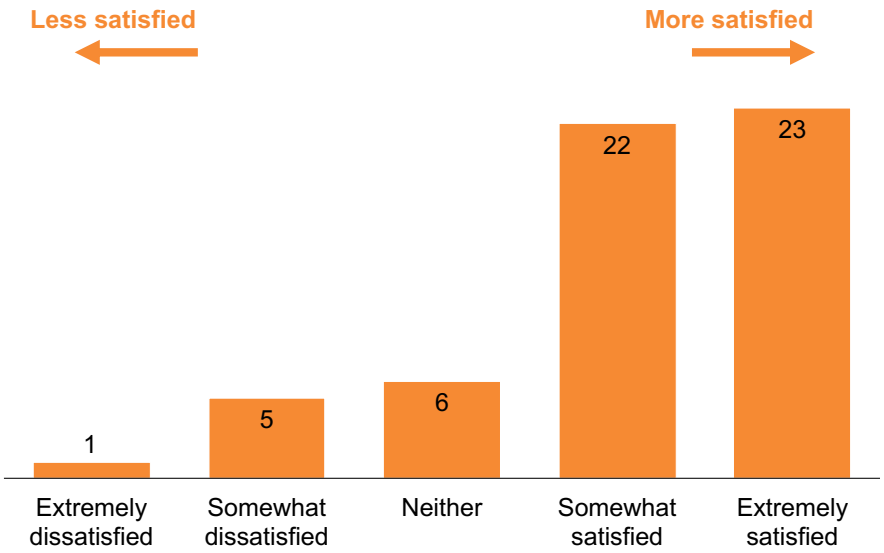
Question 34: How effective is instructional leadership in your school?
Number of principals who gave each response



Note: Sample size: 60.

Source: 2019 Grattan survey on instructional leadership.

Question 36: How satisfied are you with the quality of teachers you recruited to instructional leaders roles in your school?
Number of principals who gave each response



Note: Sample size: 57.

Source: 2019 Grattan survey on instructional leadership.

Question 32: Please rank the elements of teaching practice below, from the element you generally ask instructional leaders to spend the most time focusing on (1) to the element of least focus (6)
Number of principals who gave each response

Response	Curriculum (e.g. science or literacy)	Pedagogical content knowledge (e.g. science or literacy)	General pedagogy (e.g. differentiated teaching)	Student assessment	Student behaviour and classroom management	Other
1	9	15	34	2	5	2
2	13	17	17	11	5	4
3	12	15	10	22	8	0
4	22	12	3	18	11	1
5	6	6	2	12	34	7
6	5	2	1	2	4	53

Note: Sample size: 67.

Source: 2019 Grattan survey on instructional leadership.

Question 35: Please rank the following as barriers to principals working effectively with instructional leaders (ILs), from largest barrier (1) to smallest (8)
Number of principals who gave each response

Response	Lack of funding	Government keeps chopping and changing IL programs	Confusion from too many IL programs	Too little guidance on how to design IL roles	Lack of control over IL role design	Principal's lack of time to work with IL	Lack of confidence in IL's capability	IL advice undermines principal's objectives
1	19	4	2	4	2	26	2	0
2	16	6	4	10	3	16	4	0
3	8	7	8	16	6	6	6	2
4	8	7	13	9	7	2	7	6
5	4	9	15	5	11	2	6	7
6	0	6	10	6	15	2	10	10
7	3	14	2	4	9	2	13	12
8	1	6	5	5	6	3	11	22

Note: Sample size: 59.

Source: 2019 Grattan survey on instructional leadership.

Question 37: Please rank the following as barriers to attracting the best teachers to instructional leader (IL) roles, from largest barrier (1) to smallest (8)
Number of principals who gave each response

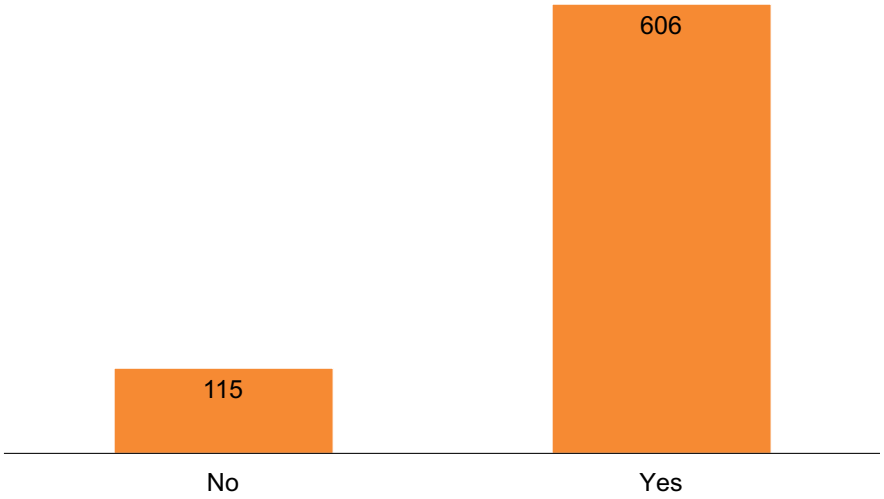
Response	Inadequate pay	High workload	Government keeps chopping and changing IL programs	Limited career paths for ILs	Lack of teacher respect for ILs	Best teachers wanting to stay in classroom	Perceived lack of support in IL role	Other (please specify)
1	4	22	2	6	3	12	2	5
2	8	13	5	6	4	13	6	1
3	6	7	8	11	9	11	3	1
4	8	6	6	7	6	7	15	1
5	15	2	6	12	6	4	8	3
6	8	4	8	6	14	5	9	2
7	3	2	16	6	11	3	12	3
8	4	0	5	2	3	1	1	40

Note: Sample size: 56.

Source: 2019 Grattan survey on instructional leadership.

1.4 Demographics of respondents

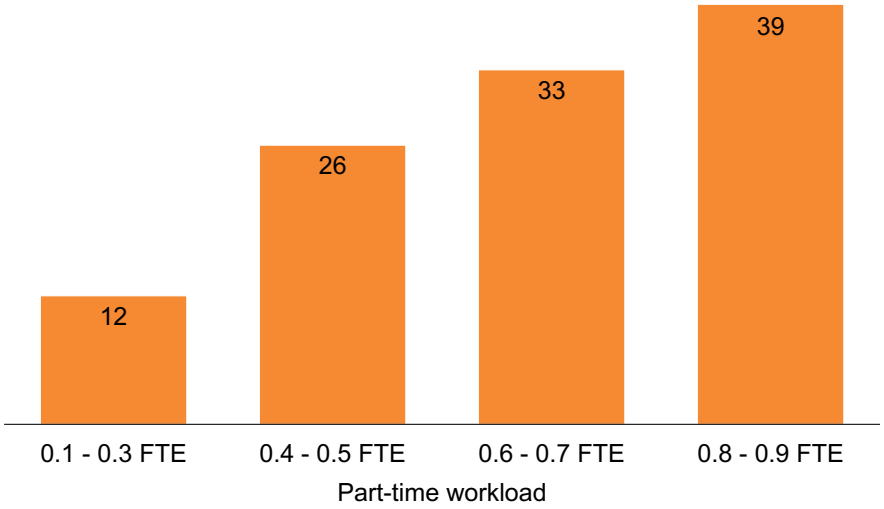
Question 26: Do you work full time?
Number of respondents



Note: Sample size: 721.

Source: 2019 Grattan survey on instructional leadership.

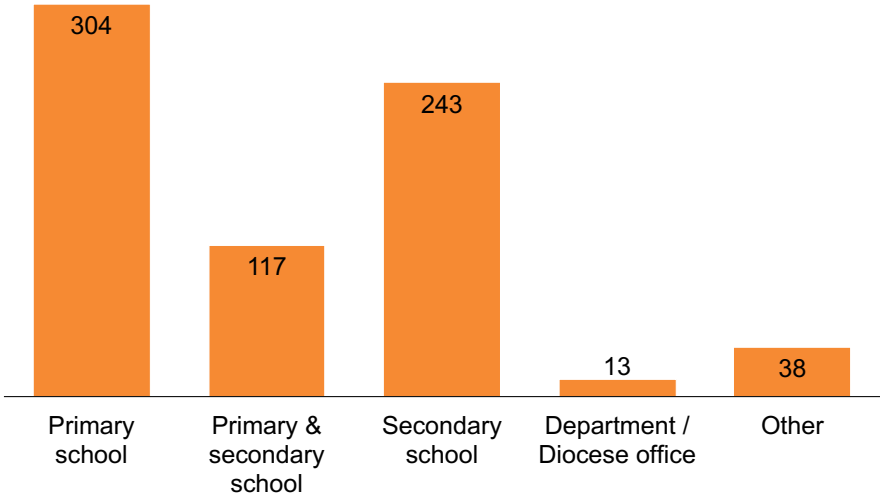
Question 27: About what proportion of full time do you work?
Number of respondents



Notes: Only includes respondents who answered in Question 26 that they work part-time. Sample size: 110.

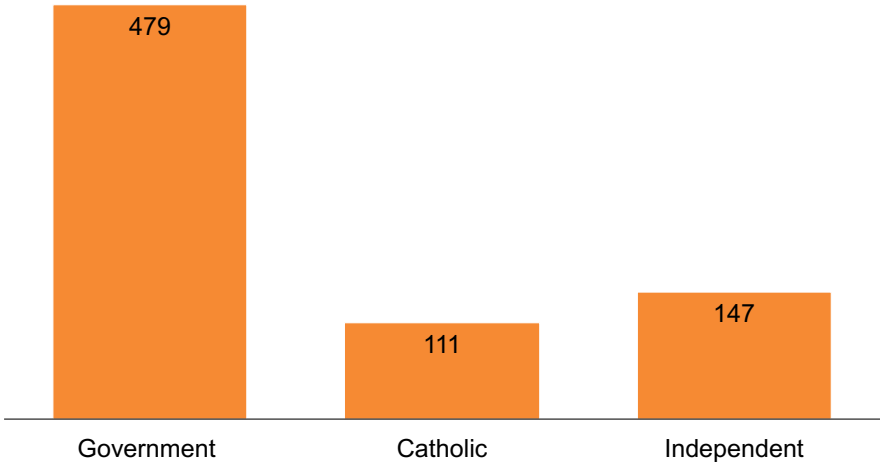
Source: 2019 Grattan survey on instructional leadership.

Question 28: What kind of organisation do you work for?
Number of respondents



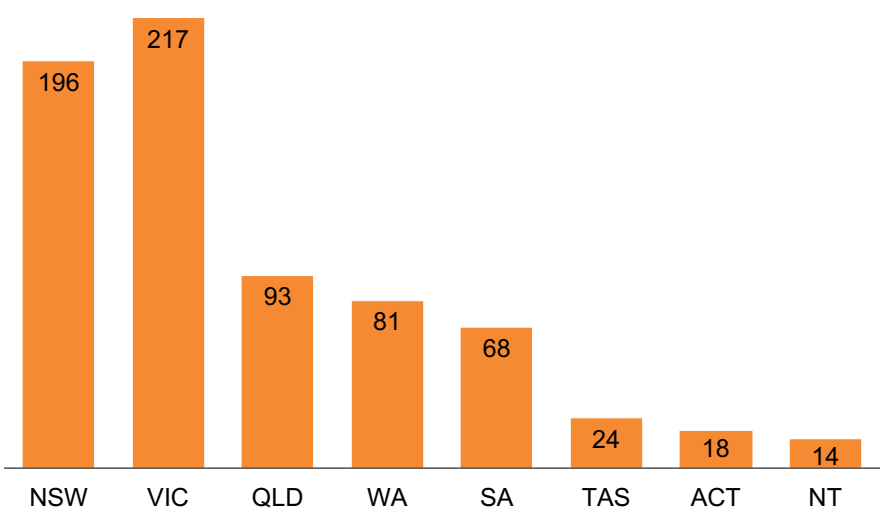
Notes: Respondents were given a selected choice of organisations. Sample size: 715.
Source: 2019 Grattan survey on instructional leadership.

Question 29: Which school sector(s) do you work in?
Number of respondents



Notes: Respondents could give more than one response. Sample size: 713.
Source: 2019 Grattan survey on instructional leadership.

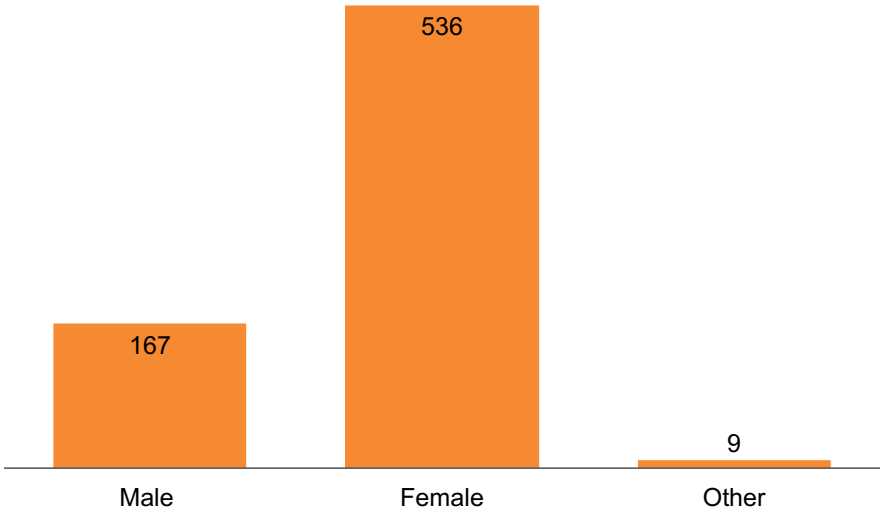
Question 30: Which state or territory do you work in?
Number of respondents



Note: Sample size: 711.

Source: 2019 Grattan survey on instructional leadership.

Question 31: What is your gender?
Number of respondents



Note: Sample size: 712.

Source: 2019 Grattan survey on instructional leadership.

2 How the model could work for various sizes of primary school

Part one of this appendix discusses our proposed allocation of Instructional Specialists to primary schools based on how many teachers each school has.

Part two shows how Instructional Specialists and Master Teachers could work for primary schools of different sizes.

Part three explores the size distribution of primary schools and provides the characteristics of small primary schools.

2.1 The Instructional Specialist time allocation depends on the number of teachers in a school

Our model suggests that schools should have about 0.3 Instructional Specialist FTE for every 10 teachers.[1] Each school could use its allocation to create fewer roles with more time release, or more roles with less time release (Figure 2.1).

For example, a government primary school with 300 students typically has about 20 teachers.[2] This would give it a 0.6 FTE Instructional Specialist allocation. The school could create one role with 0.5 FTE time release (and save some money), or two roles each with 0.3 FTE time release.

Smaller schools would get fewer Instructional Specialists, larger schools would get more.

Figure 2.1: The number of Instructional Specialists in a government primary school depends on the number of teachers

A primary school with this many **students**…	… typically has about this many **teachers**:	In our model this means this many **Instructional Specialist FTE**:	…which equates to this many Instructional Specialist **roles:** Time split 1: 50% IS role, 50% teaching	Time split 2: 30% IS role, 70% teaching
150	10	0.3	0.6	1.0
300	20	0.6	1.2	2.0
500	30	0.9	1.8	3.0
650	40	1.2	2.4	4.0
800	50	1.5	3.0	5.0

Notes: Government schools only. Includes primary schools and combined schools that offer up to Year 8.

Source: Grattan analysis.

1. This is enough so that half of the professional learning for every teacher is supported by an Instructional Specialist. See Appendix D in the main report.
2. Grattan analysis of ACARA's School Profile 2018 dataset, referred to subsequently as ACARA (2018). See https://www.acara.edu.au/contact-us/acara-data-access.

The impact of disadvantage on staff ratios in government primary schools

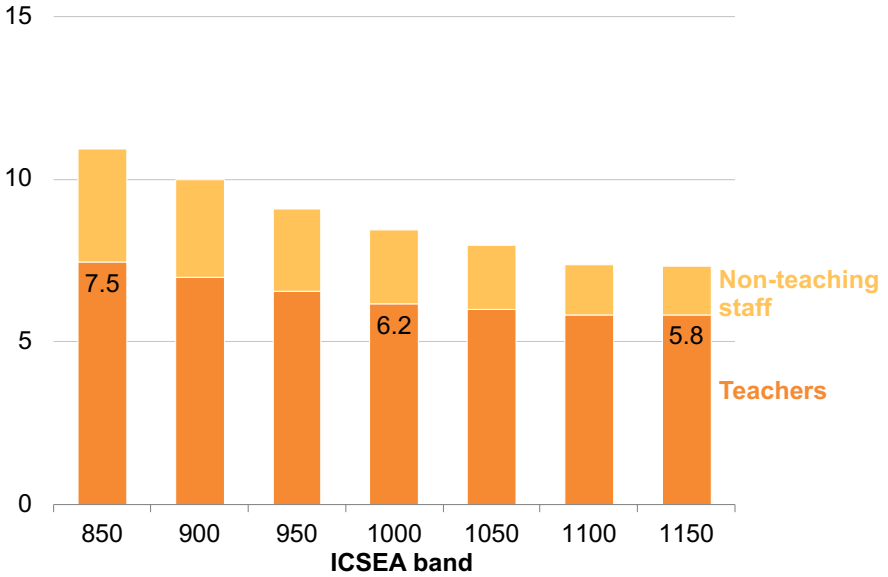
The number of teachers in a government school is largely driven by the number of students. But disadvantaged government schools – identified using a metric called ICSEA,[3] the Index of Community Socio-Educational Advantage – tend to have higher staff-to-student ratios than advantaged government schools (see Figure 2.2).[4]

To understand how this affects the number of Instructional Specialists, consider three 500-student government schools: one relatively disadvantaged (ICSEA 850), one average (ICSEA 1000), and one relatively advantaged (ICSEA 1150).

The disadvantaged school would typically have about 37 teachers, while the average school would have 31. The extra six teachers equate to an extra 0.18 FTE Instructional Specialist allocation,[5] which could be used to increase the time release for one Instructional Specialist from 0.3 FTE to 0.5 FTE. Some very disadvantaged schools may need a higher Instructional Specialist allocation than this.[6]

Meanwhile, the advantaged school would typically have about 29 teachers, and would have a slightly lower Instructional Specialist allocation than the average school of the same size.

Figure 2.2: Disadvantaged government primary schools have more teachers per student, plus many more non-teaching staff
Average number of staff per 100 students, by role, government primary schools with between 300 and 800 students, 2018



Notes: Full-time equivalent teachers and full-time equivalent non-teaching staff per 100 full-time student enrolments. Includes primary schools and combined schools that offer up to Year 8. Schools are grouped into 50-point ICSEA bands. For example, ICSEA band 1000 contains schools with ICSEA scores between 975 and 1024.

Sources: ACARA (2018), Grattan analysis.

3. The average ICSEA score is 1000, and the standard deviation of ICSEA is 100.
4. Disadvantaged Catholic primary schools tend to have more staff per student than advantaged Catholic primary schools. By contrast, average independent primary schools tend to have fewer staff per student than advantaged independent primary schools. (There are very few disadvantaged independent primary schools.)
5. Six teachers at 0.3 FTE per 10 teachers = 0.18 FTE Instructional Specialists.
6. Disadvantaged schools also tend to have a much higher ratio of non-teaching staff to students than advantaged schools. However, non-teaching staff do a wide range of tasks, so the number of non-teaching staff does not affect the number of Instructional Specialists in our model.

2.2 How the model would work for government primary schools of different size

There are nearly 5,000 government primary schools in Australia, and they come in very different shapes and sizes. One-third have fewer than 150 students — no more than one class per grade level. About 5 per cent have more than 800 students, but these very large schools teach one-in-six students who attend a government school. Staffrooms range from just a single teaching principal to more than 80 teachers.

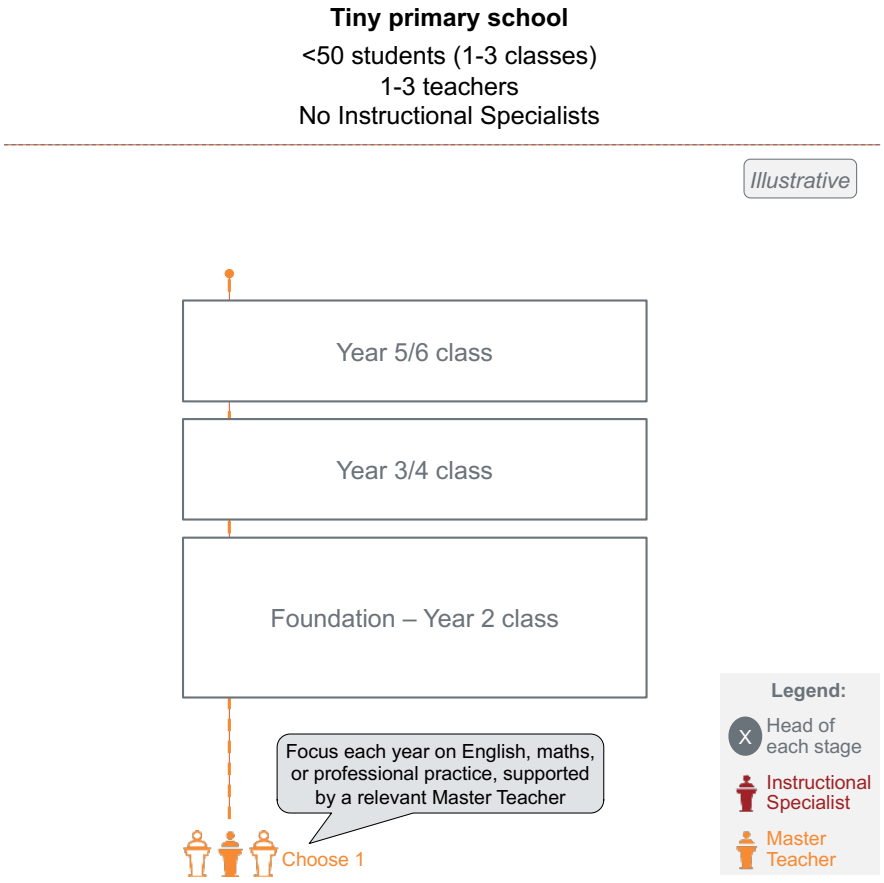
The smallest schools will not have a dedicated Instructional Specialist, while the largest may have five or more. Instructional Specialist roles will vary, depending on the size of the school. But access to specialist expertise is possible in every single case.[7]

2.2.1 Tiny primary schools

About 850 government primary schools are tiny, with fewer than 50 students. Most are in outer regional or remote areas. Nearly all are less advantaged than average, and many have students with high needs. Only about 20,000 government primary school students (1.5 per cent) attend such schools.

Tiny primary schools typically have one, two, or three teachers, often teaching classes that combine multiple year levels. Under our model, these tiny schools cannot afford a dedicated Instructional Specialist with time release. Instead, the school should focus each year on one of English, maths, or professional practice, and get support from a relevant Master Teacher (see Figure 2.3).

Figure 2.3: Illustrative model for a tiny primary school



7. This is also true for non-government schools. However, staff-student ratios and cross-school support models differ by sector, so non-government schools would have to adapt these illustrative approaches for how to use Instructional Specialists and Master Teachers to support schools of different size.

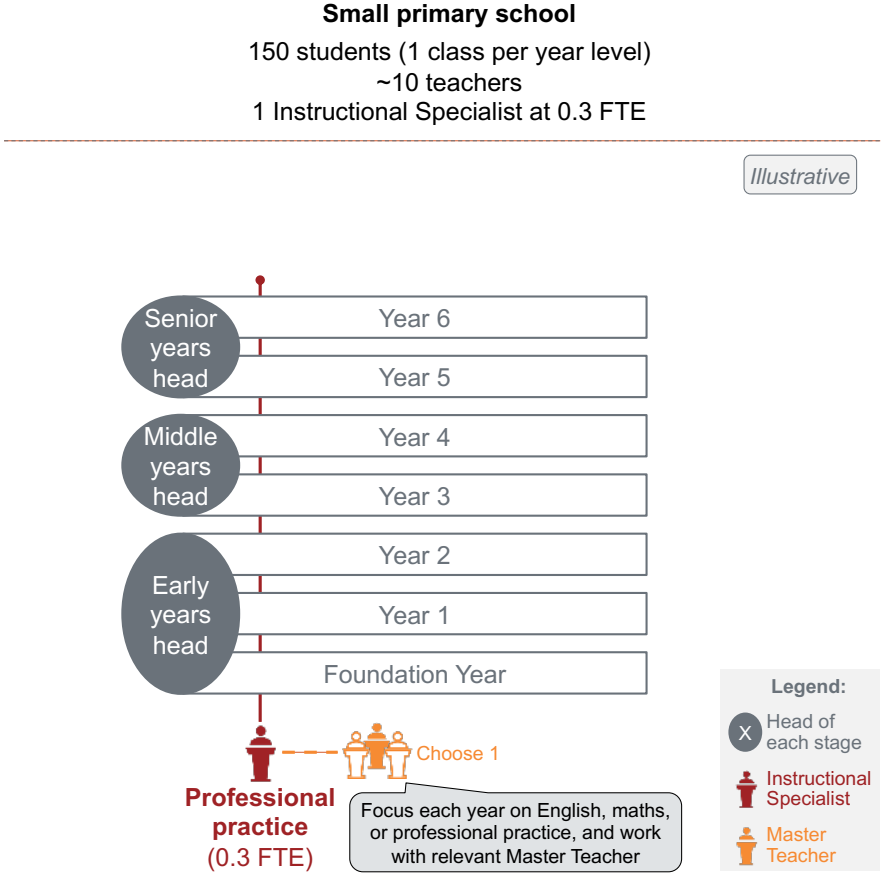
2.2.2 Small primary schools

There are about 700 government primary schools with between 50 and 150 students – no more than one class per year level. Two out of three are less advantaged than average, and 80 per cent are outside a major city. Combined, these small schools educate about 70,000 students, or 5 per cent of all government secondary students.

In our model, a school with 150 students could afford to employ one Instructional Specialist with 0.3 FTE time release. The role would necessarily be a generalist one, focusing on professional practice and supporting all teachers in the school (see Figure 2.4).

Access to subject expertise would come through a Master Teacher. Each year the principal and professional practice Instructional Specialist should agree on what topic they want to focus on, and work with a relevant Master Teacher. This is likely to be a Master Teacher in English, maths, or professional practice, but it could occasionally be a Master Teacher in humanities and social sciences (HASS), or science.

Figure 2.4: Illustrative model for a small primary school



2.2.3 Small-to-medium primary schools

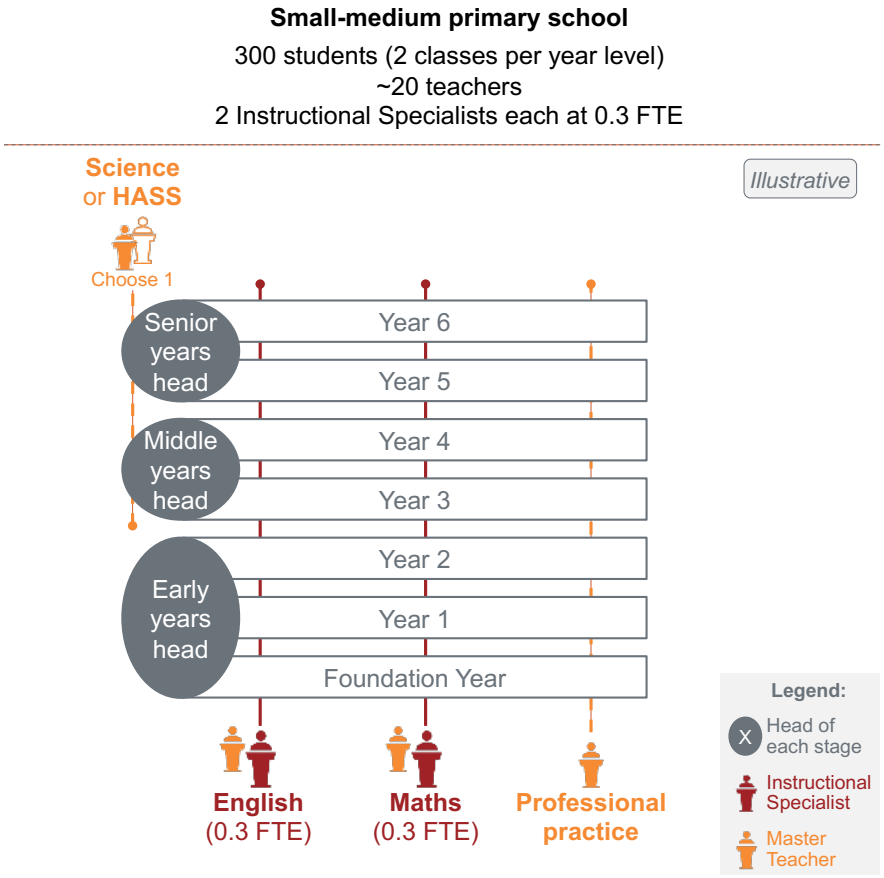
Over 2,000 government primary schools have between 150 and 500 students, with two-to-three classes per grade level. Schools in this size range are common in major cities, regional cities, and regional towns. They teach 45 per cent of students who attend government primary schools. Those in major cities are slightly more likely to be above-average advantage, while nearly 80 per cent of those in regional areas are less advantaged than average.

A government school with 300 students typically has about 20 teachers, giving it an Instructional Specialist allocation of 0.6 FTE. It could employ 2 Instructional Specialists with 0.3 FTE time release: one for English, and one for maths (Figure 2.5). Each would be supported by a Master Teacher and would be part of a regional network. To broaden access to expertise, the school would get extra support from a professional practice Master Teacher, plus either a science or HASS Master Teacher each year.

As schools get larger, their Instructional Specialist allocations increase, giving them more flexibility in how to deploy the roles.

A government school with 500 students typically has about 30 teachers, and an Instructional Specialist allocation of 0.9 FTE. It could use this allocation in two ways (see Figure 2.6 and Figure 2.7 on the following page).[8] Option 1 is similar in design to a 300-student school, but with more release time (0.5 FTE) for the English and maths Instructional Specialists.[9] Option 2 is to create three Instructional Specialist roles, each with 0.3 FTE time release, allowing the school to add a professional practice role.

Figure 2.5: Illustrative model for a small-to-medium primary school



8. The school would get extra support from either a science or HASS Master Teacher under both options.
9. The school would have to invest some of its own funds to increase the Instructional Specialist allocation from 0.9 FTE to 1.0 FTE in this option.

Figure 2.6: Illustrative model for a medium primary school

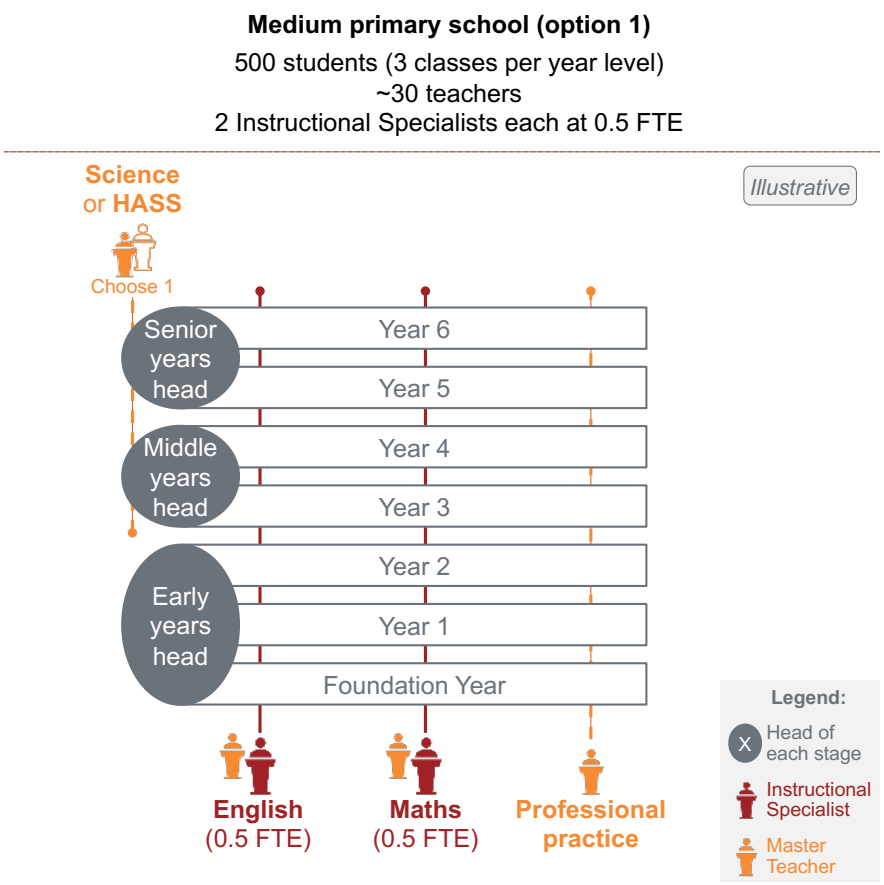
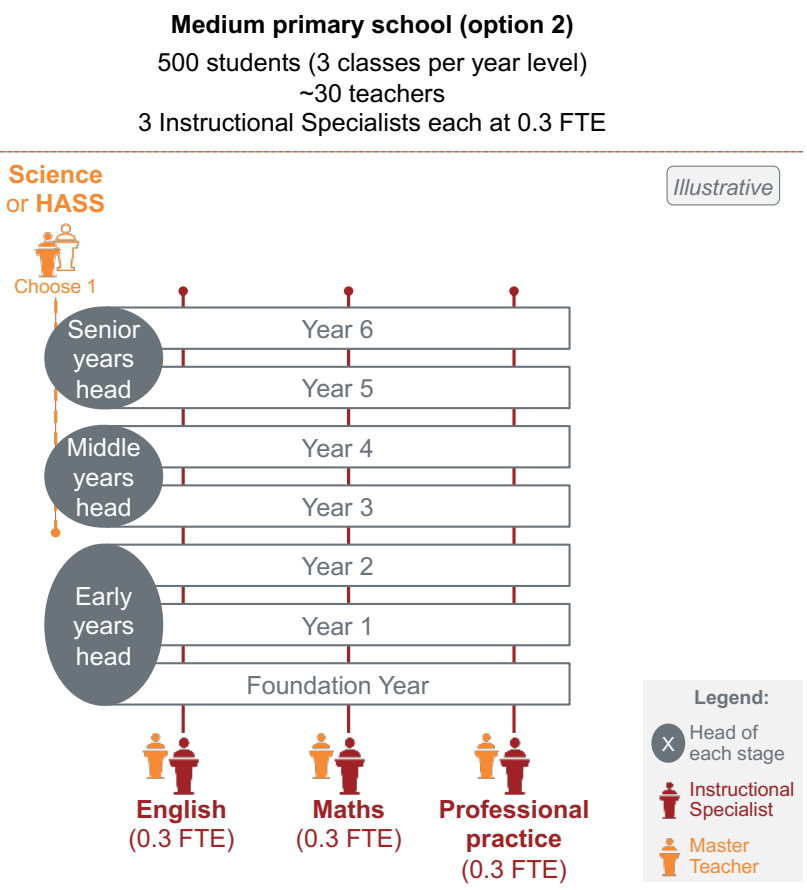


Figure 2.7: Alternative model for a medium primary school



2.2.4 Large primary schools

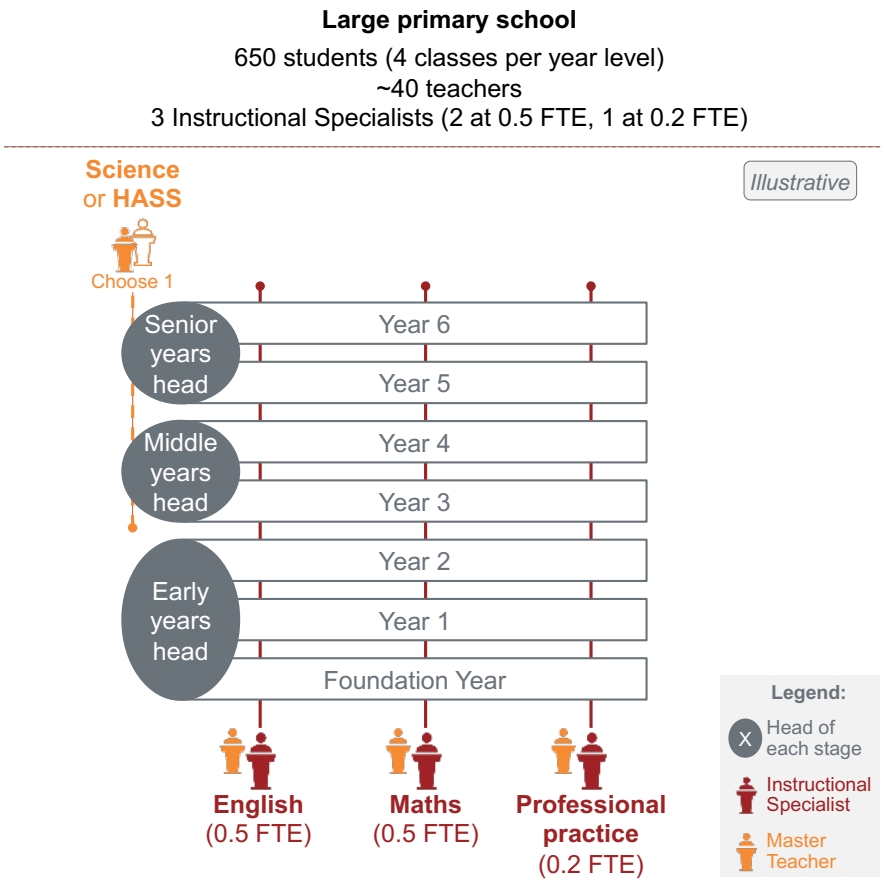
About 800 government primary schools have between 500 and 800 students. Those schools educate a third of all students who attend government secondary schools. Most of these large primary schools are in major cities, and they tend to be more advantaged than average.

In our model, a primary school with 650 students would have about 40 teachers – 28 regular classroom teachers (4 classes at each of 7 grade levels) plus a mix of art, language, PE, and other teachers. This gives 1.2 FTE for Instructional Specialists, enough for three substantive roles (Figure 2.8).

Rather than creating three roles at 0.4 FTE time release (or four roles at 0.3 FTE), we suggest three roles with varied time release. The English and maths Instructional Specialists need 0.5 FTE release time to support the large number of classroom teachers.[10] The practical benefit of this model is that that these two Instructional Specialist can share the responsibility of teaching one class, minimising the disruption for students (see Box 1 on the next page). The remaining 0.2 FTE release time would work well for a professional practice Instructional Specialist to support beginning teachers.

The school could create science and HASS Instructional Specialist roles, but this would reduce the release time for the English and maths roles, making time-tabling harder and disrupting more students.

Figure 2.8: Illustrative model for a large primary school



10. Even with 0.5 FTE time release, an English or maths Instructional Specialist could not provide regular one-on-one support to 25+ teachers. They would have to focus on the teachers who need the most support, or vary support over time.

Box 1: A horizontal 50:50 job split is a practical way to manage two Instructional Specialists in a primary school

One primary school we visited demonstrated a practical way to release instructional leaders from part of their teaching load.

The school has two instructional leaders – one in numeracy and the other in literacy – each released from half of their teaching time.

Rather than disrupting two classes, they both teach part-time into the same class. Their time is split horizontally (by content area) instead of vertically (by day). The numeracy instructional leader teaches maths and integrated sessions. The literacy instructional leader teaches all English and literacy sessions.

Students in the instructional leaders' class are taught by not one but two highly skilled experts in each content area. When one is absent, the other is their relief teacher. Students get learning continuity and can build strong relationships with both teachers.

The school identified one downside to this arrangement, when there are added demands on the instructional leaders' time. For example, the school gives the instructional leaders opportunities to develop their leadership skills by back-filling when school leaders are away. But when this happens, there is no back-fill for their instructional leader responsibilities and, as one said, 'coaching time is gone'.

2.2.5 Very large primary schools

Only about 250 government primary schools out of 4,800 have more than 800 students. But these very large primary schools educate 15 per cent of government school students and are becoming more common.[11] Nearly all are in major cities, and 80 per cent are more advantaged than average.

With five or more classes per year level, these schools typically have 50 or more teachers and 1.5 Instructional Specialist FTE. They could create five Instructional Specialist roles if they wanted to diversify their expertise, or three roles with more release time if they wanted to deepen it (See Figure 2.9 and Figure 2.10 on the following page).

Regardless of the model, Instructional Specialists in very large primary schools will need to support many other teachers. The scale of this role means that very large primary schools are likely to be a good training ground for many of the next generation of Instructional Specialists and Master Teachers.

11. In 2008 there were only about 100 government primary schools with more than 800 students.

Figure 2.9: Illustrative model for a very large primary school

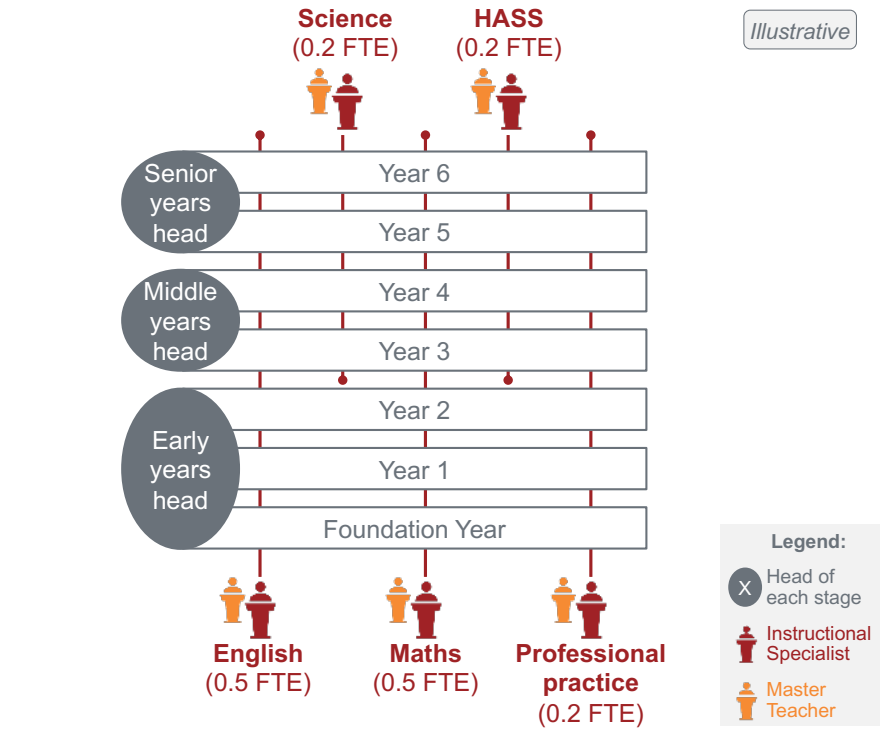
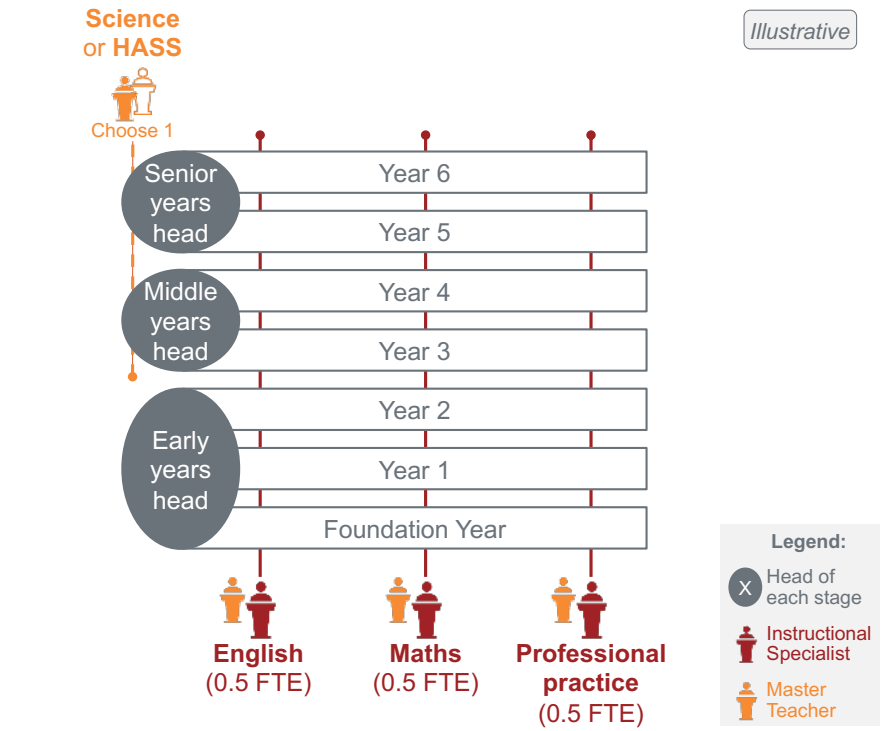


Figure 2.10: Alternative model for a very large primary school



2.3 Demographics of primary schools

Box 2: Definition of primary schools for this analysis

The analysis in this section includes combined schools that functionally operate more like a primary school than a secondary school. This includes combined schools which offer only up to Year 8.

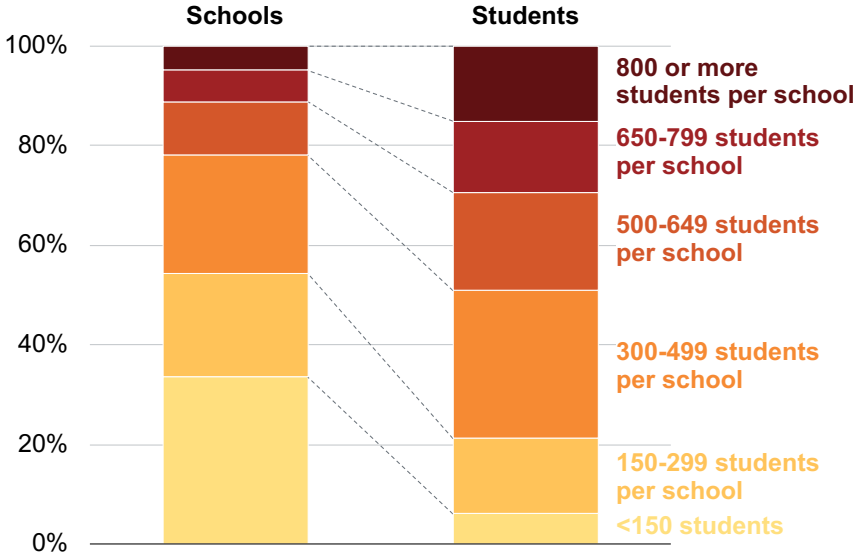
2.3.1 Government primary schools

Half of all government primary schools have more than 300 students, but they educate 80 per cent of the students who attend government primary schools (Figure 2.11). The largest 10 per cent of government primary schools – those with more than 650 students – educate close to one-third of all government primary school students.

Given that a typical 300-student school could afford to employ both an English and maths Instructional Specialist at 0.3 FTE under our model – genuine specialisation – this means that our model provides good Instructional Specialist support for 80 per cent of government primary school students.

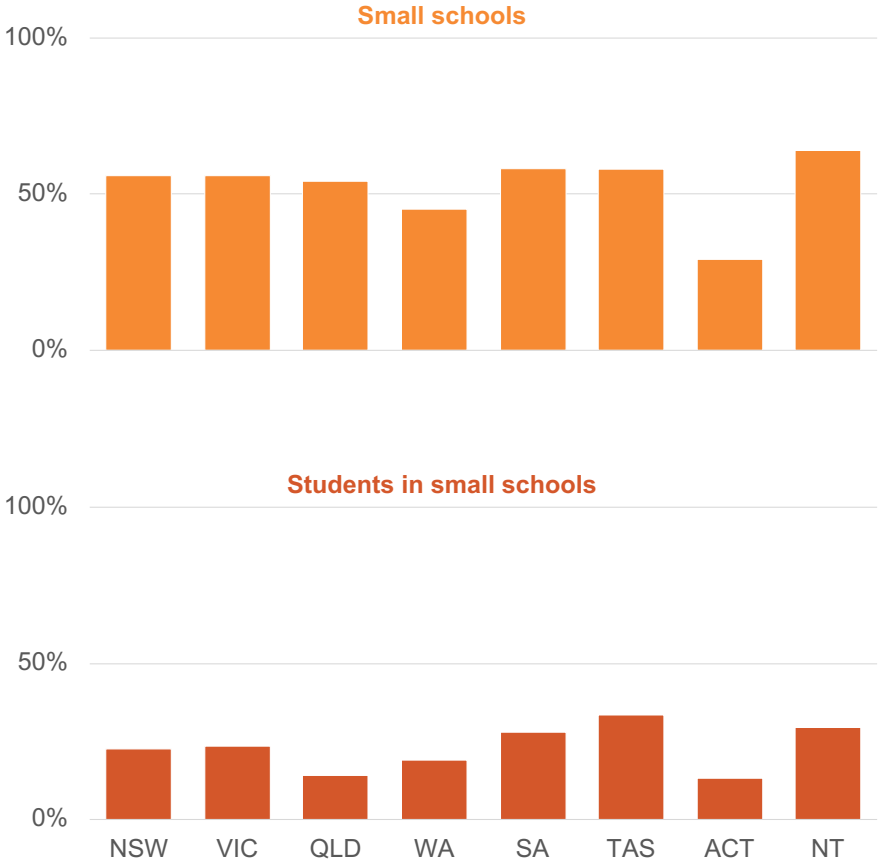
All states have government primary schools with fewer than 300 students, but in all jurisdictions they educate well less than half of the students who attend government schools (Figure 2.12 on the next page).

Figure 2.11: Nearly 80 per cent of primary students who attend a government school are at a school with at least 300 students
Percentage of schools and students by school size, government schools, Australia, 2018



Note: Includes primary schools and combined schools that only offer up to Year 8.
Sources: ACARA (2018), Grattan analysis.

Figure 2.12: All states have small government primary schools, but they educate few students
Percentage of small government primary schools (fewer than 300 students) and students in those schools, by state, 2018



Note: Includes primary schools and combined schools that only offer up to Year 8.
Sources: ACARA (2018), Grattan analysis.

2.3.2 Non-government primary schools

Students in Catholic and independent primary schools are much more likely to attend small schools than their peers in government primary schools. Just one-fifth of students in the government sector attend primary schools with fewer than 300 students, compared to one-third in Catholic primary schools and two-thirds in independent primary schools (Figure 2.13 on the following page). In the Northern Territory, more than 80 per cent of non-government primary school students attend schools with fewer than 300 students, and many of those students would be in schools with no or one Instructional Specialist.

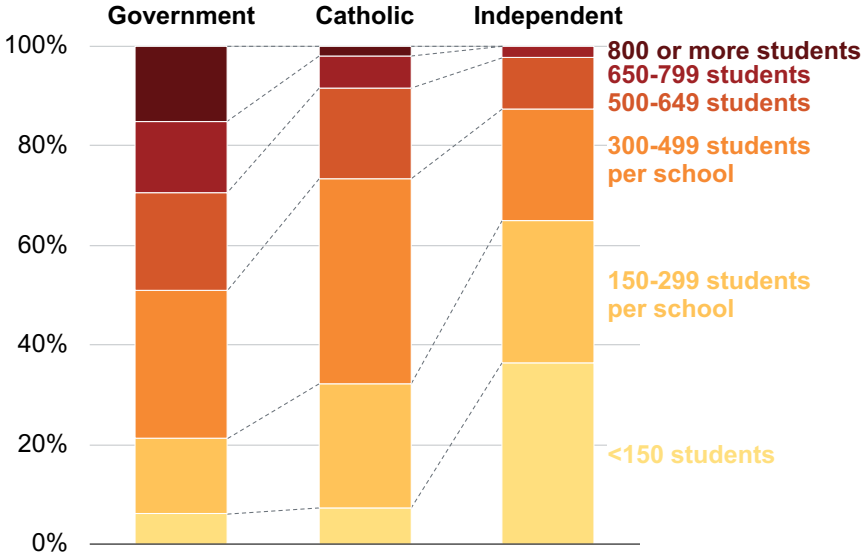
2.3.3 Characteristics of small primary schools

Not only do the Catholic and independent sectors have many more students in small primary schools (fewer than 300 students), those schools look very different to small government primary schools (Figure 2.14 on the next page). Most small government primary schools are disadvantaged (ICSEA <1000) and located outside major cities. By contrast, most small non-government primary schools (especially independent schools) are advantaged, and many are in major cities.

Looking at the very smallest primary schools – those with fewer than 50 students – the picture is even more stark. There are just 24 such tiny schools that are both advantaged and in major cities, and more than 90 per cent of them are independent schools. By contrast, 90 per cent of the 659 tiny schools that are disadvantaged and outside major cities are government schools. It seems that government primary schools are small by necessity, while independent primary schools can be small by choice.

Figure 2.13: Primary school students in the Catholic and independent sectors are much more likely to attend a small school

Percentage of primary students by school size, by sector, Australia, 2018

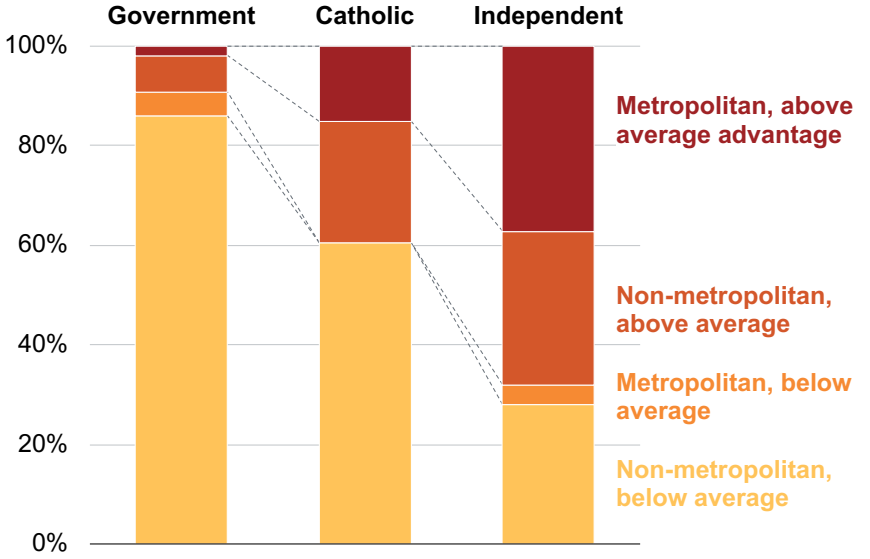


Note: Includes primary schools and combined schools that only offer up to Year 8.

Sources: ACARA (2018), Grattan analysis.

Figure 2.14: Many small non-government schools are metropolitan and advantaged

Percentage of primary schools with fewer than 300 students, by location and socio-educational advantage, Australia, 2018



Notes: Above average advantage means an ICSEA of 1000 or more. Below average means an ICSEA of less than 1000. Includes students who attend primary schools and combined schools that offer up to Year 8.

Sources: ACARA (ibid), Grattan analysis.

3 How the model could work for various sizes of secondary school

Part one of this appendix discusses our proposed allocation of Instructional Specialists to secondary schools based on how many teachers each school has.

Part two shows how Instructional Specialists and Master Teachers could work for secondary schools of different sizes.

Part three explores the size distribution of secondary schools and provides the characteristics of small secondary schools.

3.1 The Instructional Specialist time allocation depends on the number of teachers in a school

Our model suggests that schools should have about 0.3 Instructional Specialist FTE for every 10 teachers.[12] Each school could use its allocation to create fewer roles with more time release, or more roles with less time release (Figure 3.1).

For example, a government secondary school with 600 students typically has about 50 teachers.[13] This would give it a 1.5 FTE Instructional Specialist allocation. The school could create three roles each with 0.5 FTE time release, five roles each with 0.3 FTE time release, or some other combination.

Smaller schools would get fewer Instructional Specialists, larger schools would get more.

Figure 3.1: The number of Instructional Specialists in a government secondary school depends on the number of teachers

A secondary school with this many **students**…	… typically has about this many **teachers**:	In our model this means this many **Instructional Specialist FTE**:	…which equates to this many Instructional Specialist **roles:** Time split 1: 50% IS role, 50% teaching	Time split 2: 30% IS role, 70% teaching
300	30	0.9	1.8	3.0
600	50	1.5	3.0	5.0
900	70	2.1	4.1	7.0
1,200	90	2.7	5.4	9.0
1,800	130	3.9	7.8	13.0

Notes: Government schools only. Includes combined schools that offer Year 9 or above.

Source: Grattan analysis.

12. This is enough so that half of the professional learning for every teacher is supported by an Instructional Specialist. See Appendix D in the main report.
13. Grattan analysis of ACARA (2018)

The impact of disadvantage on staff ratios in government secondary schools

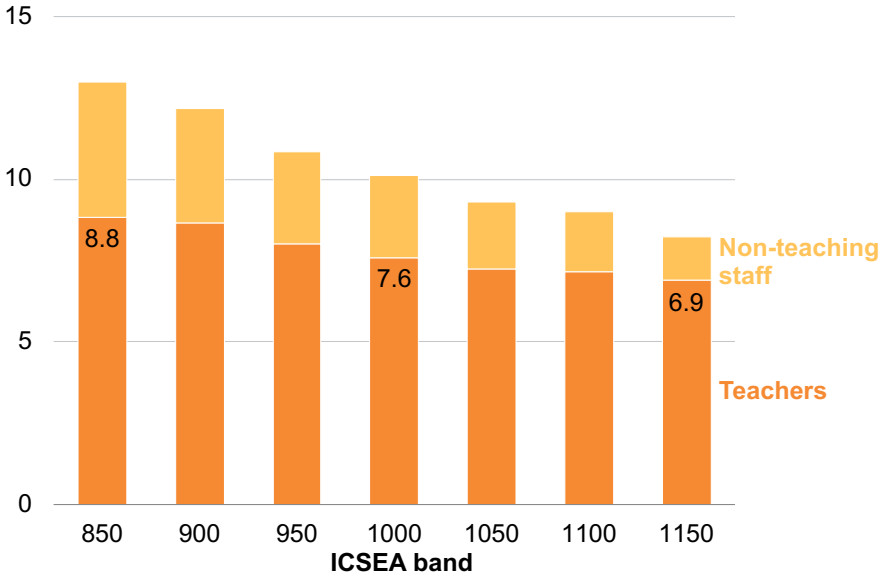
The number of teachers in a government school is largely driven by the number of students. But disadvantaged government schools tend to have higher staff-to-student ratios than advantaged government schools (see Figure 3.2).

To understand how this affects the number of Instructional Specialists, consider three 1,000-student government schools, one relatively disadvantaged (ICSEA 850), one average (ICSEA 1000), and one relatively advantaged (ICSEA 1150).

The disadvantaged school would typically have about 88 teachers, while the average school would have 76. The extra 12 teachers equate to an extra 0.36 FTE Instructional Specialist allocation,[14] which could be used to hire a part-time literacy Instructional Specialist or boost the time allocation of two Instructional Specialists from 0.3 FTE to 0.5 FTE. Some very disadvantaged schools may need a higher allocation than this, especially during the early phases of implementation.[15]

Meanwhile, the advantaged school would typically have about 69 teachers, seven fewer than the average school of the same size, and would therefore have a 0.21 FTE smaller Instructional Specialist allocation.[16]

Figure 3.2: Disadvantaged government secondary schools have more teachers per student, plus many more non-teaching staff
Average number of staff per 100 students, by role, government secondary schools with between 600 and 1,800 students, 2018



Notes: Full-time equivalent teachers and full-time equivalent non-teaching staff per 100 full-time student enrolments. Includes secondary schools as well as combined schools that offer Year 9 or above. Schools are grouped into 50-point ICSEA bands. For example, ICSEA band 1000 contains schools with ICSEA scores between 975 and 1024.

Sources: ACARA (2018), Grattan analysis.

14. 12 teachers at 0.3 FTE per 10 teachers = 0.36 FTE Instructional Specialists.
15. Disadvantaged schools also tend to have a much higher ratio of non-teaching staff to students than advantaged schools. However, non-teaching staff do a wide range of tasks, so the number of non-teaching staff does not affect the number of Instructional Specialists in our model.
16. 7 teachers at 0.3 FTE per 10 teachers = 0.21 FTE Instructional Specialists.

3.2 How the model would work for government secondary schools of different size

Government secondary schools come in very different shapes and sizes. One-third have fewer than 300 students. About 3 per cent have more than 1,800 students, but these very large schools teach one-in-ten students who attend a government school. Staffrooms range from fewer than 10 to more than 200 teachers. Some schools could have one Instructional Specialist, others as many as 20. The roles will look very different. But all schools get access to specialist expertise.[17]

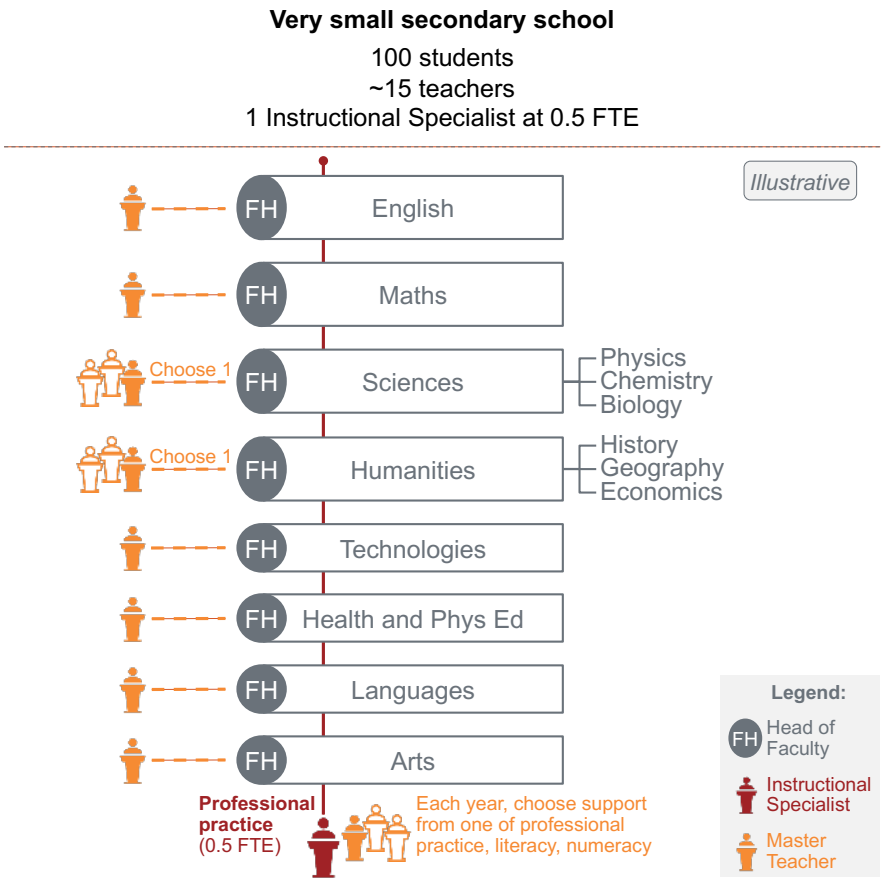
3.2.1 Very small secondary schools

About 450 government secondary schools have fewer than 300 students. Most are in outer regional or remote areas. Many have students with high needs. Only about 60,000 (6 per cent) of government secondary school students attend such schools.

Very small secondary schools tend to have high staff-to-student ratios, reflecting the need to cover all areas of the curriculum and the additional needs of their students. Even so, the smallest schools can only realistically afford one Instructional Specialist under our model. We suggest that this role focus broadly on professional practice (see Figure 3.3), rather than being a subject specialist. And each year they could choose support from a Master Teacher in professional practice, literacy, or numeracy, depending on the needs of the school.

Subject by subject improvement in such a small school is the responsibility of the head of each faculty. They would be supported by a Master Teacher in their subjects, and by liaising with Instructional Specialists in larger schools.

Figure 3.3: Illustrative model for a very small secondary school



17. This is also true for non-government schools. However, staff-student ratios and cross-school support models differ by sector, so non-government schools would have to adapt these illustrative approaches for how to use Instructional Specialists and Master Teachers to support schools of different size.

3.2.2 Small secondary schools

There are about 300 government secondary schools with between 300 and 600 students. Only one out of six is more advantaged than average, and 60 per cent are outside a major city. Combined, these very small schools educate about 140,000 students, or 13 per cent of all government secondary students.

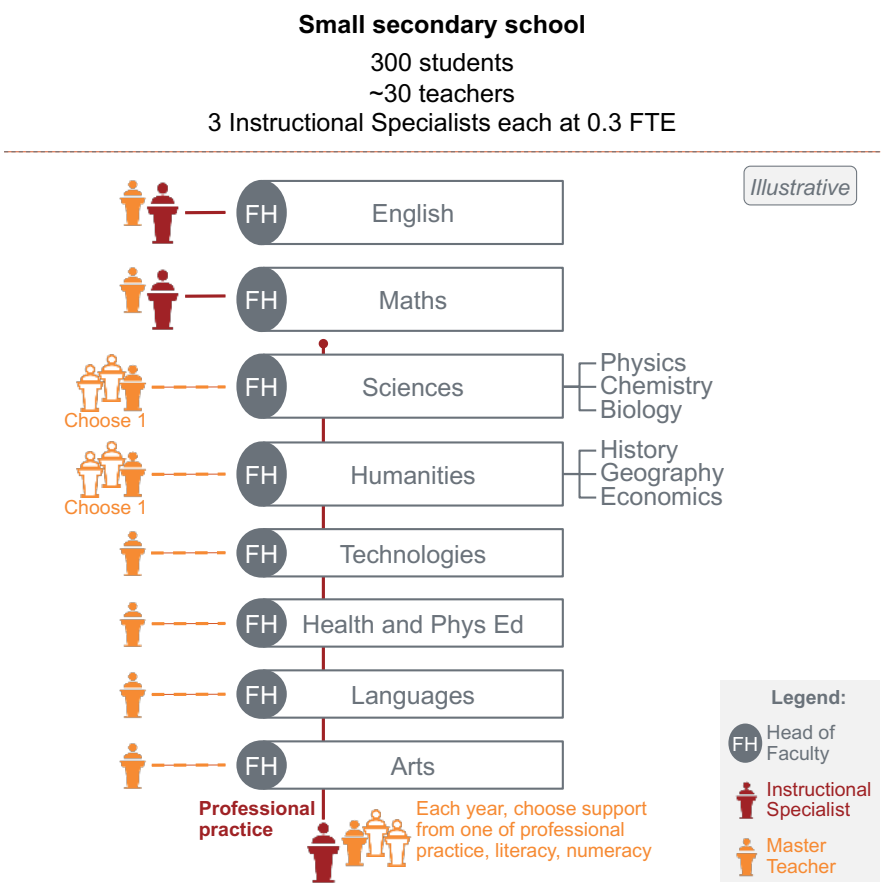
A government secondary school with about 300 students typically has about 30 teachers. In our model, it could afford to employ three Instructional Specialists, each with 0.3 FTE time release.[18] The roles could be allocated to cover English, maths, and professional practice (see Figure 3.4).[19]

The professional practice role supports all faculties, with a specific focus on mentoring new teachers. Each year they could choose support from a Master Teacher in professional practice, literacy, or numeracy, depending on the needs of the school.[20] The other two Instructional Specialists would be directly supported by a Master Teacher in their specialist area and participate in a peer network.

The heads of other faculties would be responsible for improving practice in their subjects. They would be supported by a Master Teacher in their subject areas, and would liaise with Instructional Specialists in larger schools.

Schools with 400-to-500 students would still have a limited number of Instructional Specialist roles, but could give them more release time.

Figure 3.4: Illustrative model for a small secondary school



Note: Unless otherwise specified, Instructional Specialists have 0.3 FTE time release.

18. Combining the Instructional Specialist and faculty head roles may be sensible given the small number of staff and limited time release for improving instruction.
19. An alternative is to create two Instructional Specialist roles with 0.5 FTE time release, for example to devote more time to literacy and numeracy.
20. The professional practice Instructional Specialist is well placed to lead the cross-curricula priorities of literacy and numeracy because they already work across the whole school. The English and maths Instructional Specialists can then focus on their subjects.

3.2.3 Medium to large secondary schools

About 560 government secondary schools have between 600 and 1,200 students, or roughly 4-to-8 classes per grade level. Schools in this size range are common in major cities and regional cities and towns. They teach half of all students who attend government secondary schools. Those in major cities are equally split between above- and below-average advantage, while 90 per cent of those in regional areas are less advantaged than average.

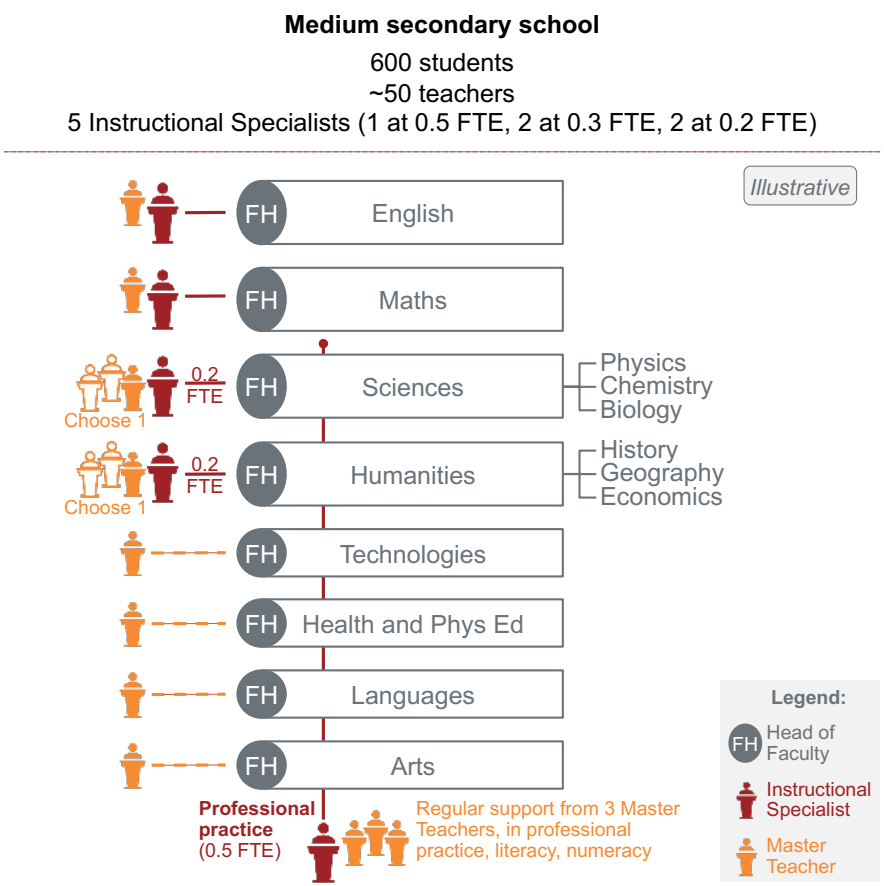
Their relatively large staffrooms – usually from 50 to 90 teachers – means that they can employ from 5 to 10 Instructional Specialists and build expertise across a range of subjects.

Schools at the lower end of this range might hire five Instructional Specialists to cover English, maths, sciences, humanities, and professional practice (see Figure 3.5).[21]

Five Instructional Specialists is much better than three, but still has limitations. In particular, the science and humanities Instructional Specialists must cover quite disparate disciplines with limited time release.[22] This challenges the notion of subject specialisation.

Medium-sized secondary schools could resolve this challenge by choosing one science and one humanities subject to focus on each year. For example, if the humanities Instructional Specialist chose one year to focus on history, they would work with a history Master Teacher for the year, accompanied by the school's Head of History.

Figure 3.5: Illustrative model for a medium secondary school



Note: Unless otherwise specified, Instructional Specialists have 0.3 FTE time release.

21. For a school with 600 students, our model suggests an Instructional Specialist allocation of 1.5 FTE. Schools with up to 900 students may choose a similar model of five Instructional Specialists but give the roles more time release.
22. The core humanities subjects are history, geography, and economics/ business/ commerce. The core science subjects are physics, chemistry, and biology. Each subject needs very different pedagogical content knowledge.

The heads of smaller faculties remain responsible for improving practice in their subjects, with support from a Master Teacher.

The cross-curricula priorities of literacy and numeracy could be resolved by creating specific roles, by giving the responsibility to the professional practice Instructional Specialist, or by adding literacy to the English role and numeracy to the maths role.[23] The model shown in Figure 3.5 on the preceding page gives the professional practice Instructional Specialist extra time release (0.5 FTE rather than 0.3 FTE) to do this role, with the support of Master Teachers in both literacy and numeracy.

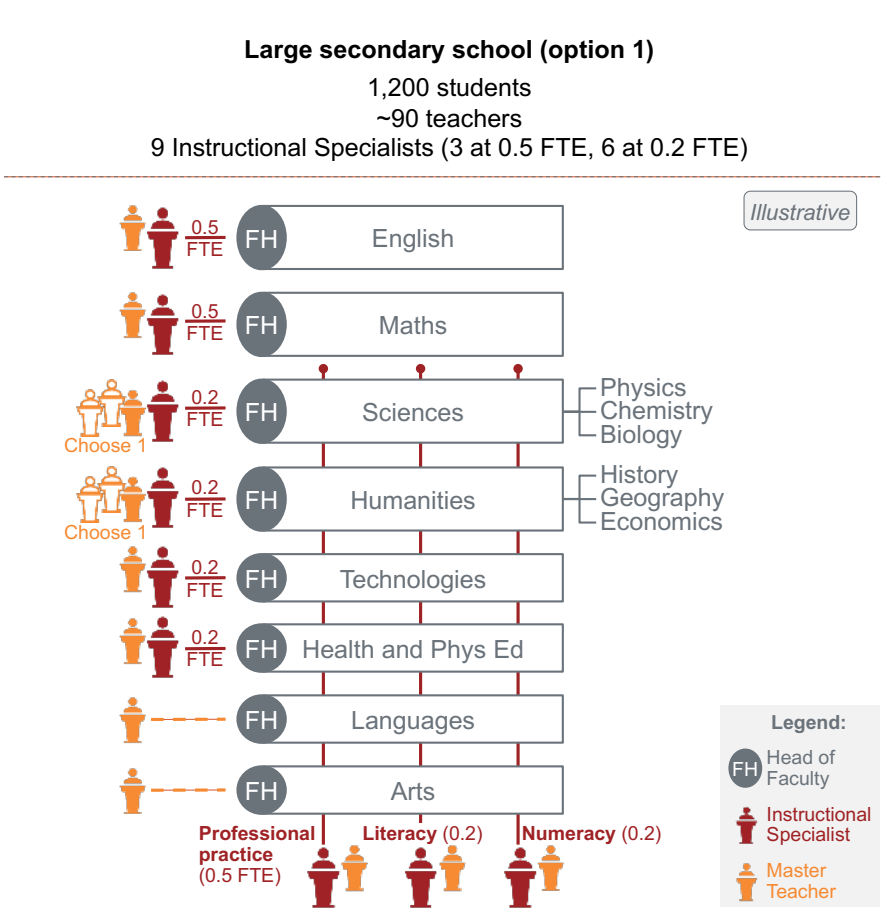
As schools get larger, their Instructional Specialist allocations increase. Not only do they have a greater ability to specialise, they also have more flexibility in how to deploy the roles.

In a 1,200-student school, the English and maths Instructional Specialists must support a larger faculty, and probably need 0.5 FTE time release to focus on their specific subjects. The school might also be able to afford to create 0.2 FTE roles for each of literacy and numeracy.

The school has choices to make in the other areas. One option is to spread the Instructional Specialists broadly (see Figure 3.6). The benefit of spreading the roles broadly is that the school gains dedicated experts in two new faculties, potentially technologies and health and physical education.

Meanwhile, the humanities and science Instructional Specialists still face the challenge of improving teaching across very different subjects. Again, a way to resolve this challenge is to choose one subject each year on a rolling basis, and spend 12 months working with the school's head of subject and the relevant Master Teacher.

Figure 3.6: Illustrative model for a large secondary school



23. The decision depends on the school's context and needs and the capabilities and experience of the specific individuals in the Instructional Specialist roles.

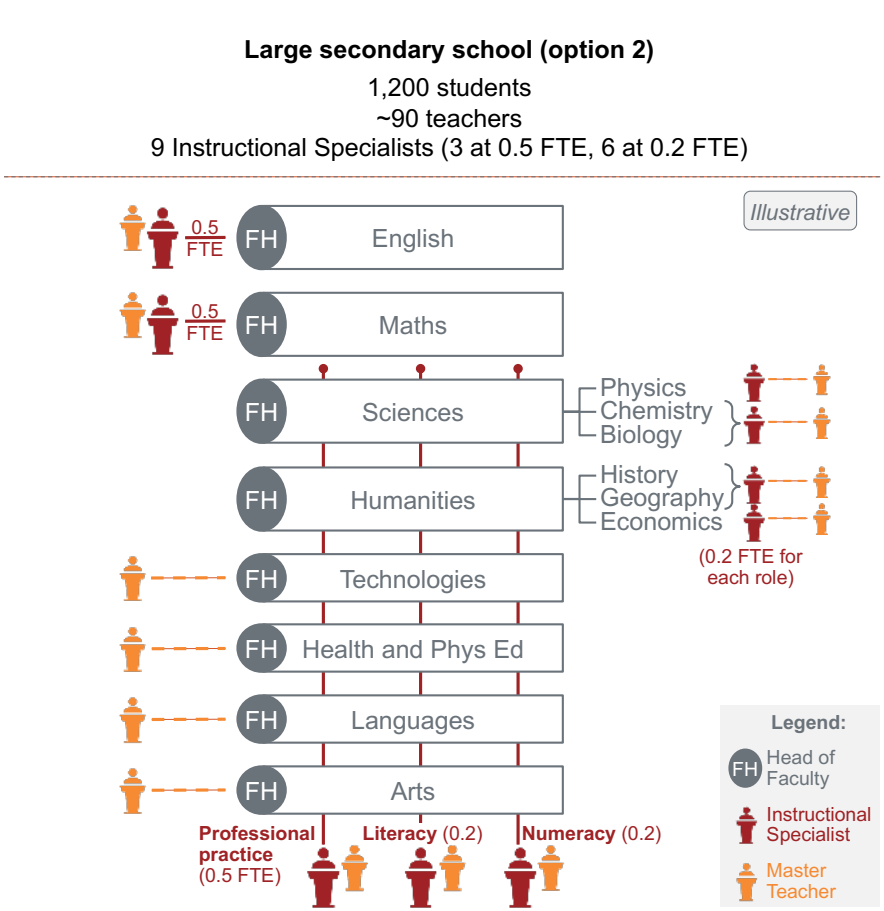
A second option for a secondary school with about 1,200 students is to focus the science and humanities Instructional Specialists narrowly (see Figure 3.7), enabling them to be genuine specialists.[24]

Rather than a single science Instructional Specialist working across the whole science faculty, the school could choose to have a physics Instructional Specialist and a chemistry/biology Instructional Specialist.[25] In humanities, it could have a history/geography Instructional Specialist and an economics Instructional Specialist. These specialists would liaise directly with their subject's Master Teacher, possibly alternating between Master Teachers if they cover two subjects.

Regardless of whether a 1,200-student school chose the broad or narrow approach to Instructional Specialist roles, the professional practice role should have more release time to support the regular influx of new teachers that comes with being a bigger school.

Lastly, note that neither option has a dedicated Instructional Specialist for either languages or arts. Instead, the heads of these faculties would work with a relevant Master Teacher. This is not just a matter of scale, but of expertise. Some teachers will have genuine specialist expertise in teaching both biology and chemistry, for example. But vanishingly few could be specialist teachers in the various languages taught in a large school, or in the wide range of areas that fall into the arts. A better model is to provide access to a diverse range of Master Teachers who work across multiple schools.[26]

Figure 3.7: Alternative model for a large secondary school



24. This was the option shown in Figures 4.4 and 4.5 of the main report.
25. The time allocation for Instructional Specialists in our model does not allow for three science and three humanities roles until schools have 1,500+ students.
26. To prevent overwhelming the Master Teachers in languages and arts, the head of each faculty should choose one subject to focus on each year.

3.2.4 Very large secondary schools

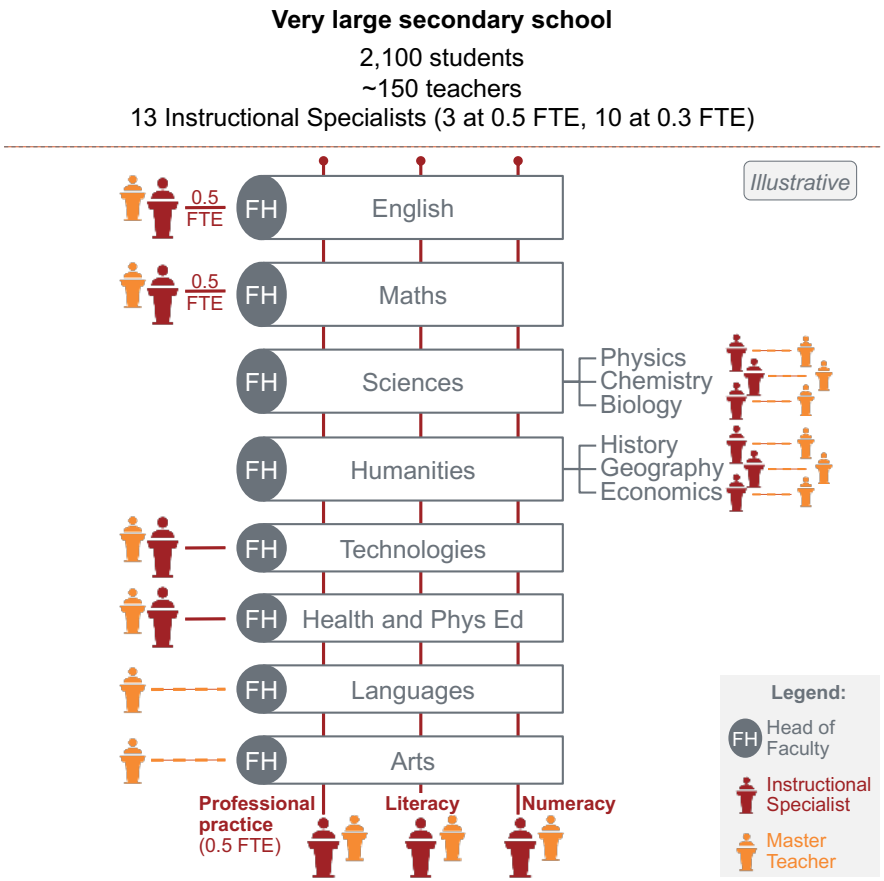
Only about 220 government secondary schools have more than 1,200 students, but they educate one-in-three of all students who attend government secondary schools. Nearly all of these very large schools are in major cities, and they tend to be slightly more advantaged than average.

The largest government secondary school in the country, Brisbane State High School, has 200 teachers and more than 3,000 students.[27] Very large schools require great leadership, but they also provide the opportunity to build deep expertise, which can potentially benefit other schools.[28]

In our model, a school with 2,100 students could afford to have 13 Instructional Specialists (see Figure 3.8). This offers good coverage of English and maths, plus roles for literacy and numeracy.[29] And a school this size can have dedicated expertise for all six core science and humanities subjects, as well as an Instructional Specialist covering technologies and HPE.

Each of these 13 Instructional Specialists would work directly with a relevant Master Teacher – and their peers in other schools – in their specific subject area. The day job is to develop better ways to teach their specific subject. Given this ability to create deep specialisation, very large schools are likely to be a good training ground for many of the next generation of Instructional Specialists and Master Teachers.

Figure 3.8: Illustrative model for a very large secondary school



Note: Unless otherwise specified, Instructional specialists have 0.3 FTE time release.

27. In Western Australia, Churchlands Senior High School has about 2,700 students. In Victoria, Balwyn High School has 2,200. In NSW, Cherrybrook Technology High School has just under 2,000 students.
28. Eddie Woo, the celebrated maths teacher, effectively had an Instructional Specialist role at the largest government high school in NSW, Cherrybrook Tech.
29. The subject faculties are too big for an IS to also cover literacy and numeracy.

3.3 Demographics of secondary schools

Box 3: Definition of secondary schools for this analysis

The analysis in this section includes combined schools that functionally operate more like a secondary school than a primary school. This includes all schools which include Year 9 or above, because those schools will require teachers with subject expertise.

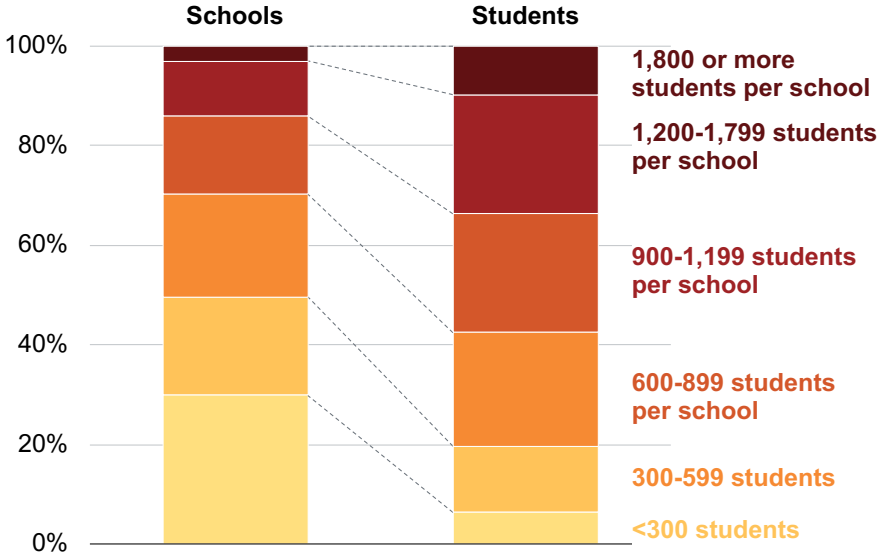
3.3.1 Government secondary schools

Half of all government secondary schools have more than 600 students. Those schools educate 80 per cent of the students who attend government secondary schools (Figure 3.9). The largest 15 per cent of government secondary schools – those with more than 1,200 students – educate more than one third of all government secondary school students.

Given that a typical 600-student school could afford to employ five Instructional Specialists at 0.3 FTE under our model – genuine specialisation – this means that our model provides good Instructional Specialist support for 80 per cent of government secondary school students.

There are government secondary schools with fewer than 600 students in all states, but they educate well less than half the government school students except in Tasmania and the Northern Territory (Figure 3.10 on the next page). These two jurisdictions may require a higher proportion of Master Teachers to provide expert support to all their secondary schools.

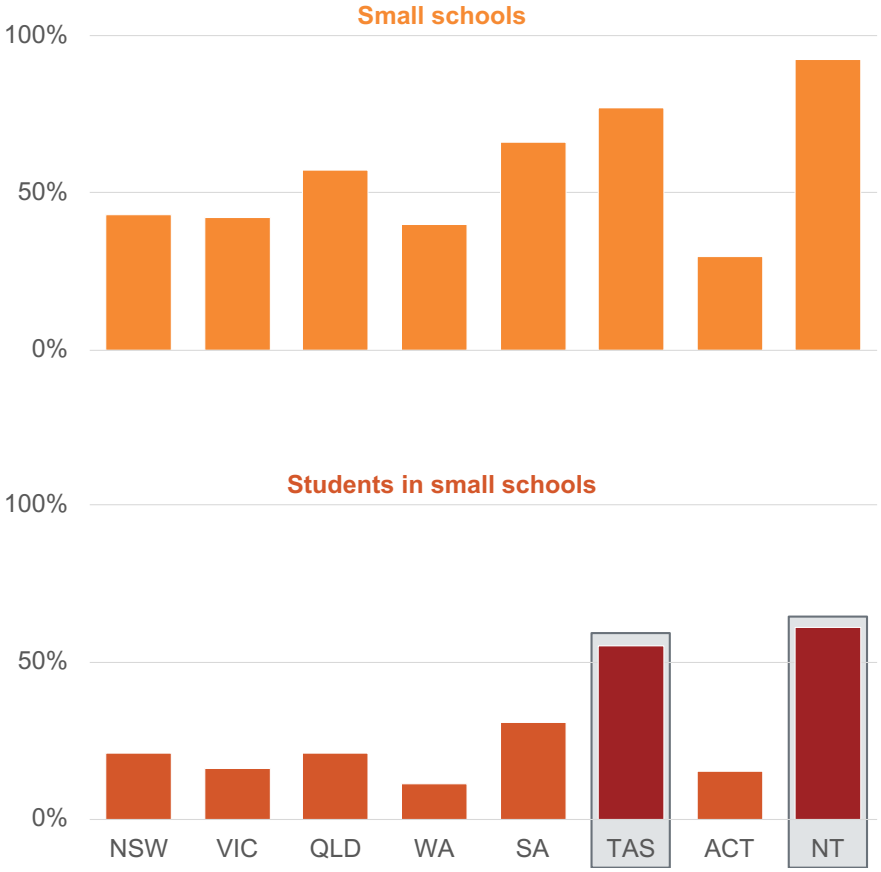
Figure 3.9: About 80 per cent of secondary students who attend a government school are at a school with at least 600 students
Percentage of schools and students by school size, government schools, Australia, 2018



Note: Includes secondary schools as well as combined schools that offer Year 9 or above.

Sources: ACARA (2018), Grattan analysis.

Figure 3.10: All states have small government secondary schools, but they educate few students except in Tasmania and the NT
Percentage of small government secondary schools (fewer than 600 students) and students in those schools, by state, 2018



Note: Includes secondary schools as well as combined schools that offer Year 9 or above.

Sources: ACARA (2018), Grattan analysis.

3.3.2 Non-government secondary schools

The size distribution of secondary schools is similar for both government and non-government schools (Figure 3.11 on the following page). Even in the Northern Territory and Tasmania, no more than about two-in-five non-government students attend schools that are too small to have a diverse range of Instructional Specialists.

The number of teachers per 100 students in Catholic secondary schools is relatively consistent regardless of the level of school advantage. However, advantaged independent schools tend to have more teachers (and many more non-teaching staff) for a given number of students than disadvantaged independent schools.

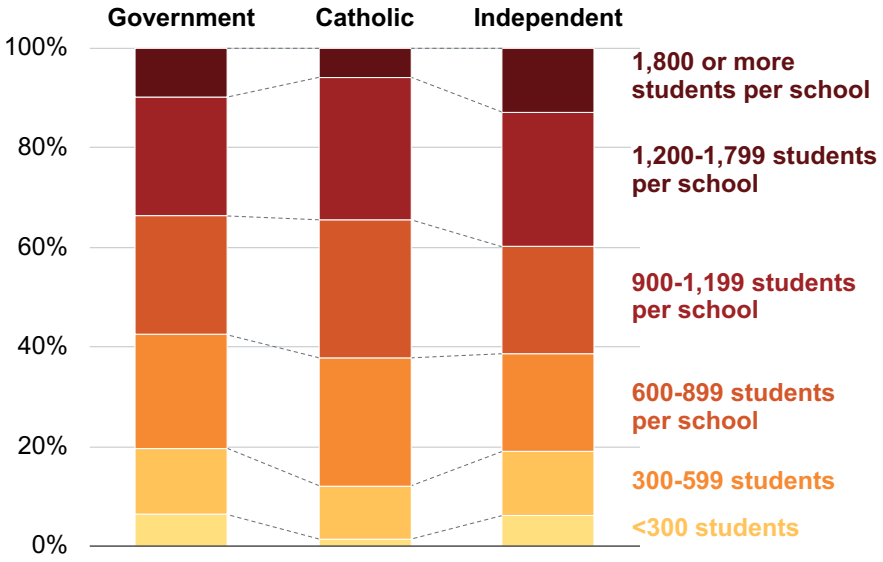
3.3.3 Characteristics of small secondary schools

Most small government secondary schools (fewer than 600 students) are disadvantaged (ICSEA <1000) and located outside major cities. Meanwhile, most small non-government secondary schools (especially independent schools) are advantaged, and many are in major cities (Figure 3.12 on the next page).

Put another way, there are just 52 government secondary schools that are small, advantaged, and in major cities, compared to 145 independent schools – even though the government sector has twice as many secondary schools overall. It seems that government secondary schools are small by necessity, while independent secondary schools can be small by choice.

Figure 3.11: Secondary schools have similar size distributions across the three school sectors

Percentage of secondary students by school size, by sector, Australia, 2018

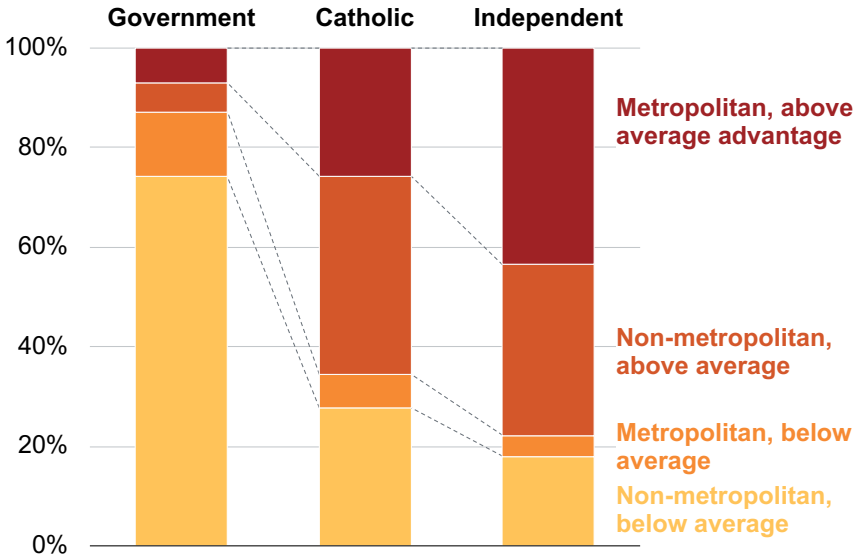


Note: Includes secondary schools as well as combined schools that offer Year 9 or above.

Sources: ACARA (2018), Grattan analysis.

Figure 3.12: Small government secondary schools are typically disadvantaged and outside major cities, while small independent schools are the opposite

Percentage of secondary schools with fewer than 600 students, by location and socio-educational advantage, Australia, 2018



Notes: Above average advantage means an ICSEA of 1000 or more. Below average means an ICSEA of less than 1000. Includes students who attend secondary schools as well as combined schools that offer Year 9 or above.

Sources: ACARA (ibid), Grattan analysis.