

Policy Insights

OUT-OF-FIELD TEACHING IN AUSTRALIAN SECONDARY SCHOOLS

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OUT-OF-FIELD TEACHING IN AUSTRALIAN SECONDARY SCHOOLS

PAUL R WELDON



INTRODUCTION

This report considers the extent to which Australian secondary school teachers are teaching subjects other than those in which they have specialised. It provides new data on the extent of out-of-field teaching overall and in a selection of subject areas, based on further analysis of the 2013 Staff in Australia's Schools (SiAS) survey. In addition, the report uses new questions in the SiAS 2013 survey to assess the proportion of students affected by out-of-field teaching in selected subjects.

THE REPORT IN A NUTSHELL

In this report, out-of-field teaching is defined as a secondary teacher teaching a subject for which they have not studied above first year at university, and for which they have not studied teaching methodology. Based on this definition, about 26 per cent of teachers at Years 7–10 are teaching a subject in which they have not specialised as part of their teaching load, as are about 15 per cent of teachers at Years 11–12.

Of particular concern, early career teachers are more likely to be teaching out-of-field than their more experienced colleagues: 37 per cent of Year 7–10 teachers with one-to-two years of experience are teaching a subject out-of-

field compared to 25 per cent of teachers with more than five years of experience.

About 16 per cent of class groups in Years 7–10 across Australia are being taught by an out-of-field teacher. In remote locations, about 26 per cent of class groups are being taught by an out-of-field teacher compared to 14 per cent in metropolitan locations. Similarly, 19 per cent of class groups in schools in low socioeconomic status (SES) locations have an out-of-field teacher compared to 13 per cent in schools in high-SES locations.

THE ISSUE OF OUT-OF-FIELD TEACHING

There is currently a great deal of interest in teacher quality in Australia and internationally. The many tasks of teaching, such as selecting appropriate learning activities, giving helpful explanations, asking productive questions, and evaluating students' learning, all depend on the teacher's understanding of what it is that students are to learn. Teachers are expected to have a thorough understanding of the subjects they teach as research has shown that this is a key attribute of highly effective teachers.¹

¹ Masters (2016); Teacher Education Ministerial Advisory Group (TEMAG) (2014); Darling-Hammond, Bransford, LePage, Hammerness & Duffy (2005).

To qualify as a secondary teacher in Australia, teachers must have completed higher education study to third-year degree level in at least one subject, and teaching methodology in that subject.² Teaching out-of-field – that is, teaching in a subject area for which a teacher has not specialised – is therefore of considerable concern. One outcome from the recommendations of the recent Teacher Education Ministerial Advisory Group (TEMAG) report was to improve the quality of initial teacher education and select the best candidates into teaching³. This may not be as effective if quality teachers are teaching outside of their fields of expertise.

This report uses new, further analysis of the 2013 SiAS survey⁴ data to consider the extent to which Australian secondary school teachers are teaching out-of-field.

THE STAFF IN AUSTRALIA'S SCHOOLS SURVEY

The Staff in Australia's Schools (SiAS) survey was commissioned by the Australian Government and has been conducted three times, in 2006–07, 2010 and 2013. It was designed to provide a detailed national picture of the Australian teacher workforce, and to gather information to assist in future planning. Analysis in this report is based on the most recent SiAS survey. In total, 5213 primary teachers from 876 schools and 10 349 secondary teachers from 760 schools took part in that survey.

2 AITSL (2011).

3 TEMAG (2014).

4 McKenzie, Weldon, Rowley, Murphy, & McMillan (2014).

The main report on the 2013 survey⁵ and the supplementary profiles report⁶ both provided some analysis of out-of-field teaching. This report looks at a wider set of subject areas and also provides an overall proportion of out-of-field teaching, enabling an analysis of the extent of out-of-field teaching based on teacher experience, geographic location and SES.

THE DEFINITION OF OUT-OF-FIELD TEACHING IN SIAS

The first definition of in-field teaching used in this report was agreed in 2007 by the SiAS steering committee and used in subsequent SiAS reports.⁷ To be in-field for the purposes of SiAS, a teacher had to have:

1. *either* studied the subject at second-year tertiary level or above, *or* trained in teaching methodology for that subject at tertiary level.

For comparative purposes, this report considers two additional definitions of in-field teaching:

2. that teachers had to have studied the subject (for at least one semester) at second-year tertiary level (but may or may not have studied teaching methodology in that subject);
3. that teachers had to have both studied one semester at second-year tertiary level *and* have studied teaching methodology in that subject.

5 McKenzie et al (2014), p.66.

6 Weldon, McMillan, Rowley, & McKenzie (2014), p.26.

7 The SiAS survey does not collect data on the specific qualifications required by teacher registration bodies for different curriculum areas.

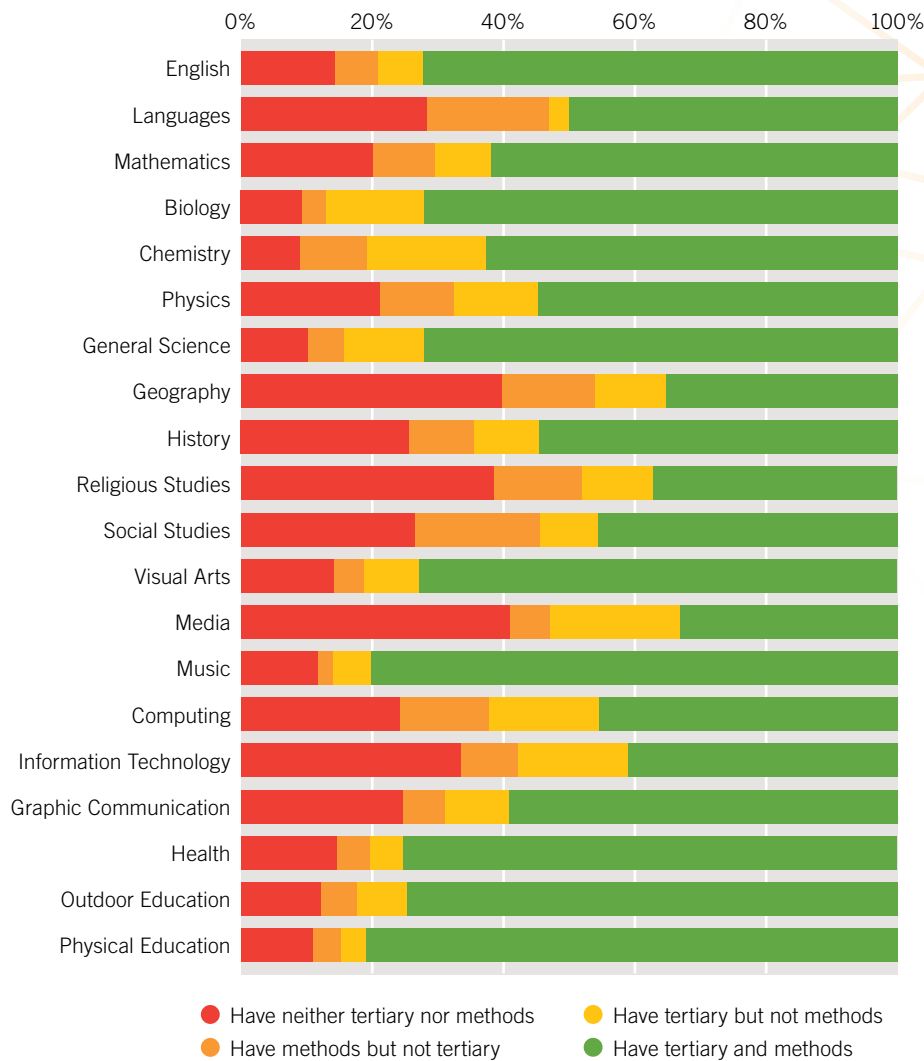


Figure 1 Proportion of Years 7–10 teachers teaching out-of-field in selected subjects

The results of the three definitions are provided in Figure 1 for selected subject areas, for teachers teaching Years 7–10. The results refer to teachers who have indicated that they are teaching out-of-field at least some of the time.

The two subject areas with the highest proportion of teachers are English and Mathematics. Taking these as examples, Figure 1 shows that if the definition of in-field teaching is that teachers should have both studied at second-year tertiary level *and* studied teaching methodology in the subject, about 28 per cent of English teachers nationally would be considered to be teaching out-of-field, as would 38 per cent of mathematics teachers.

Based on the definition that teachers should have at least one semester of study in the subject at second-year tertiary level, then 21 per cent of English teachers and 30 per cent of mathematics teachers would be considered to be teaching out-of-field.

Using the 2007 SiAS report definition, that teachers had to have *either* one semester of study at second-year tertiary *or* teaching methods in the subject, 14 per cent of English teachers and 21 per cent of mathematics teachers would be considered to be teaching out-of-field.

This report considers teachers of General Science to be in-field if they met the criteria for any of the science subjects included in SiAS (General Science, Biology, Chemistry, Physics, Earth Science, Environmental Science and Psychology). On this basis, 10 per cent of General Science teachers nationally did not have teaching methodology or second-year tertiary study in any of these areas.

Subjects with a high incidence of out-of-field teaching – using the SiAS definition – include Media (41 per cent), Geography (40 per cent), Religious Studies (38 per cent), and Information Technology (34 per cent). About one quarter of teachers are out-of-field by this definition in Languages⁸, History, Graphic Communication, Computing and Social Studies.

For some subjects, out-of-field teaching is a product of the way subjects are taught at

school. Mathematics is taught to all students in all year levels at every secondary school. As a result, even schools with several qualified mathematics teachers may find they are unable to cover every class. Since the generic subject Studies of Society and Environment (SOSE) or Human Society and Its Environment (HSIE) has been standard at the lower secondary level for many years it is not surprising that SOSE or HSIE teachers will have indicated that they teach one or more of History, Geography, and Social Studies out-of-field. Of SOSE or HSIE subjects, Geography is most likely to be taught by teachers who have not undertaken second-year tertiary study in the subject (54 per cent).

SPECIALISED IN, BUT NOT TEACHING THAT SUBJECT

To better understand out-of-field teaching, it is instructive to look at the proportions of teachers who indicated that they have specialised in a subject but are not currently teaching it. Figure 2 represents the proportion of teachers who have specialised but are not teaching the subject; those who have specialised and are teaching the subject, and those who have not specialised and are teaching the subject. In every subject, it is clear that the number of teachers who have specialised but are not currently teaching their specialisation far outweighs the number of teachers who are teaching that subject out-of-field.

⁸ In the case of languages, teachers are only considered to be in-field if the language they are teaching is the same one in which they are tertiary qualified. If they have methodology but are teaching a language other than the one they have studied, they are considered to be out-of-field.

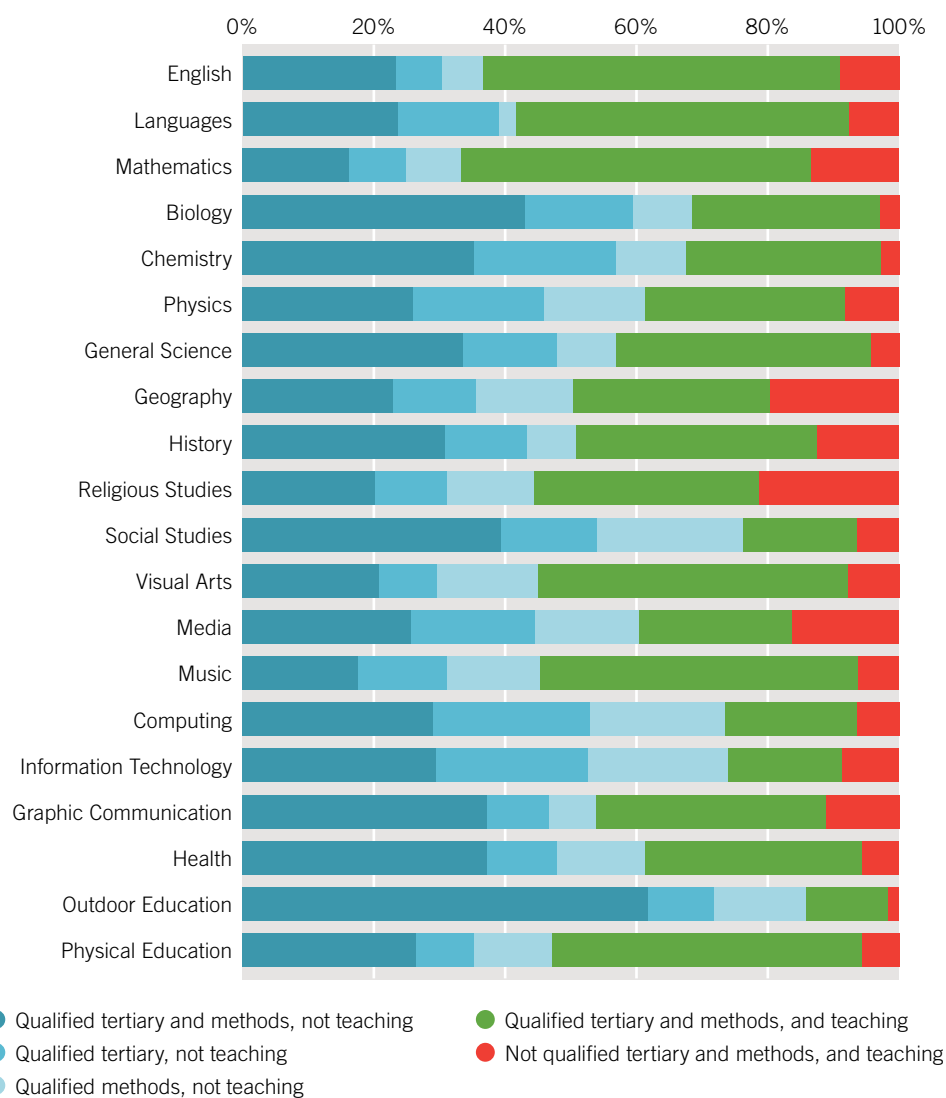


Figure 2 Proportions of all qualified secondary teachers in selected subjects, currently teaching and not currently teaching

One limitation of a survey is that it is a snapshot. It may well be the case that teachers who were not teaching a subject in Term 2, 2013 (the time of the survey) may well have done so at another point during that year. That said, Figure 2 does suggest that distribution plays a large part in out-of-field teaching, as does the tendency for teachers to be qualified to teach in more than one subject. Teachers who are not teaching a subject for which they are qualified may be at a school that does not offer that subject, or they may be teaching a subject that has a higher priority in that school.

For example, Figure 2 could include one teacher who is currently teaching Mathematics and General Science in-field and Physics out-of-field. Figure 2 could also include another teacher who is

qualified to teach Mathematics but is currently teaching Computing and Media in-field. If the first teacher leaves and the school finds a replacement who can teach General Science and Physics in-field, the school still has to find someone to teach the original teacher's Mathematics classes. As a result, there are likely to be cases where a teacher is teaching a subject out-of-field in a school where there are other teachers qualified to teach that subject, but have a full load in another subject area.

This multiple subject system makes supply and demand difficult to quantify. While the state teacher registration bodies could collect data on the subjects teachers are qualified to teach, New South Wales is the only state to collect these data. Such data would be useful from a supply-and-demand perspective in providing a clearer picture of supply by subject area, including more accurate profiles such as the age and gender of active, registered teachers by specialist subject. As Figure 2 demonstrates, however, these data would be of limited use in terms of understanding actual in-school demand and the complexities of variables such as school location, size and timetabling in determining who teaches what subject.

As was noted in the supplementary SiAS 2013 teacher profiles report, the notional reserve pool of teachers is large and little is known about why teachers are not teaching in a subject area for which they are qualified.⁹ The subject most commonly taught by teachers in the reserve pool is Mathematics, which

suggests that an increase in the number of qualified Mathematics teachers would have the knock-on effect of releasing teachers of Physics, Biology, Chemistry, Computing and IT among others, to teach instead in the subject areas for which they are qualified.

OUT-OF-FIELD TEACHING AND EXPERIENCE

The SiAS definition of in-field teaching is used throughout the rest of this report as it is a broad definition and is the definition accepted by the advisory committee for SiAS. The SiAS committee included representatives from all state governments, the Catholic and independent sectors, teacher unions and peak principal bodies. One further variable is worth considering: experience.

The SiAS definition takes into account formal qualifications. Further analysis demonstrated that many teachers who are out-of-field have nonetheless been teaching in that subject area for many years. For example, English teachers who are out-of-field had been teaching the subject at Years 7–10 for 8.4 years on average, while out-of-field Mathematics teachers had been teaching Mathematics to Years 7–10 for an average of 7.4 years.¹⁰

Figure 3 shows the proportions of those teaching out-of-field by those who had up to five years of experience teaching that subject and those who had more than five years of

⁹ Weldon et al. (2014), p.26 and Table 4.9, p.28.

¹⁰ Teachers were asked to indicate the number of years' experience they had teaching each subject. These may not be consecutive years but they do represent actual teaching experience.

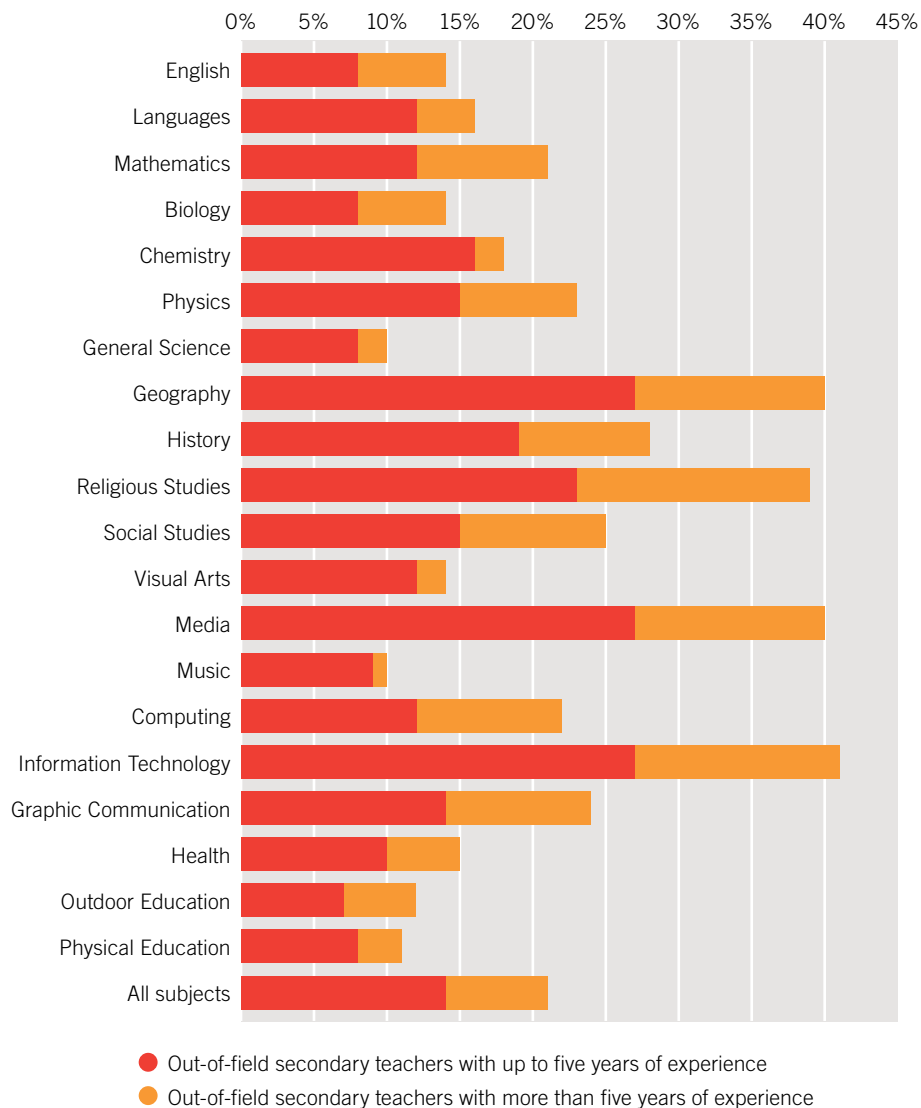


Figure 3 Proportions of Year 7–10 subject teachers out-of-field by level of experience teaching that subject

experience, for selected subjects at Years 7–10. On this basis, the 14 per cent of English teachers who are teaching out-of field include eight per cent with five years’ experience or less and six per cent with more than five years’ experience. In Mathematics, of the 21 per cent who are teaching out-of field, 12 per cent have five years’ experience or less and nine per cent have more than five years’ experience.

The SiAS survey collected some data on professional development; however, it is not possible to establish a clear sense of the extent to which teachers who are formally out-of-field in a subject – defined in terms of the lack of specific tertiary subject or teaching methodology specialisation –

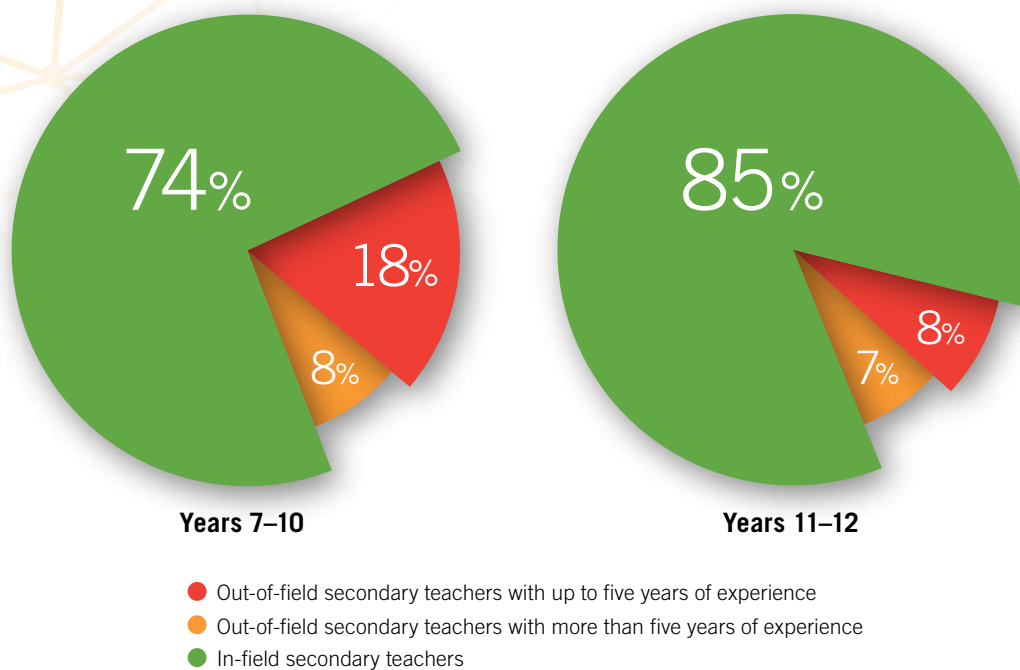


Figure 4 Proportions of teachers of Years 7–10 and Years 11–12 teaching out-of-field, at least some of the time

have undertaken further study in that subject. It may be that some teachers with many years of experience in an out-of-field subject have had considerable professional development in the area.

The extent of experience of teachers in out-of-field subjects raises further questions. It may be that teachers tend not to teach out-of-field across a wide variety of subjects but instead stick to the same ones. Further research would be needed to test this possibility. Why are teachers spending so many years teaching at least some of their classes outside their specialisations? Is it choice or necessity? And how experienced are they, really? If seven years of teaching Mathematics includes two years at Year 7, two at Year 8, two at Year 9 and one at Year 10, then every two years or so such a

teacher would be teaching concepts they have not taught before and their depth of knowledge may be questionable. On the other hand, a teacher with seven years of experience teaching Year 7 Mathematics at the same school may be quite confident about teaching concepts and their depth of knowledge.

PROPORTION OF ALL TEACHERS TEACHING OUT-OF-FIELD

About 86 per cent of secondary teachers teach Years 7–10 and about 69 per cent teach Years 11–12. Figure 4 shows that of those teaching Years 7–10, 26 per cent are teaching out-of-field at least some of the time and 18 per cent have five years' experience or less teaching

in the subject. The incidence of out-of-field teaching is much lower at senior secondary level; eight per cent teaching out-of-field have five or fewer years' experience teaching in the subject area.

In considering these figures, it is important to note that teachers often teach more than one subject and most teachers will be teaching only a proportion of their classes in a subject which for them is out-of-field.

Having established an overall proportion of teachers teaching out-of-field for at least some of the time, it is possible for the first time to compare levels of out-of-field teaching by state, sector, location, SES and the years of experience of teachers.

EARLY CAREER TEACHERS

As Figure 5 shows, early career teachers are put in the position of having to teach outside their subject specialisations considerably more often than their more experienced colleagues. More than one-third of all teachers in their first two years of teaching are teaching out-of-field at Years 7–10 at least some of the time, compared to one-quarter of teachers who have more than five years of teaching experience.

The figures suggest that one way of improving the retention of early career teachers in secondary schools would be to ensure that they are not required to teach outside their subject areas for at least the first two years of their teaching career.

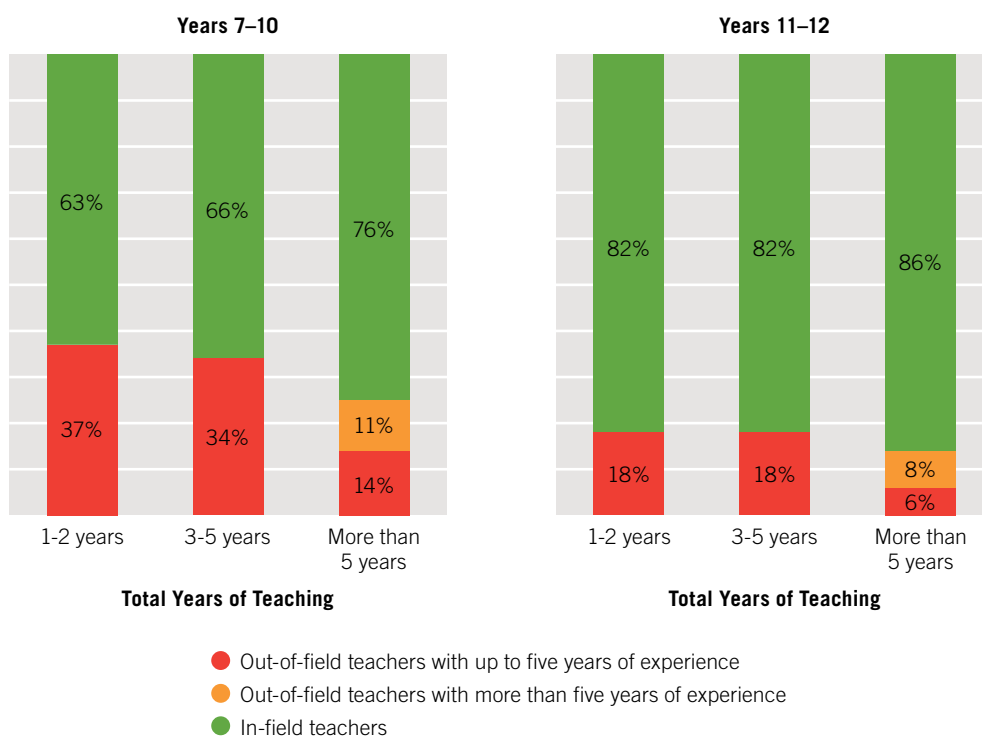


Figure 5 Proportions of teachers of Years 7–10 and Years 11–12 who are teaching out-of-field at least some of the time, by years of experience as a teacher (percentages may not equal 100 due to rounding)

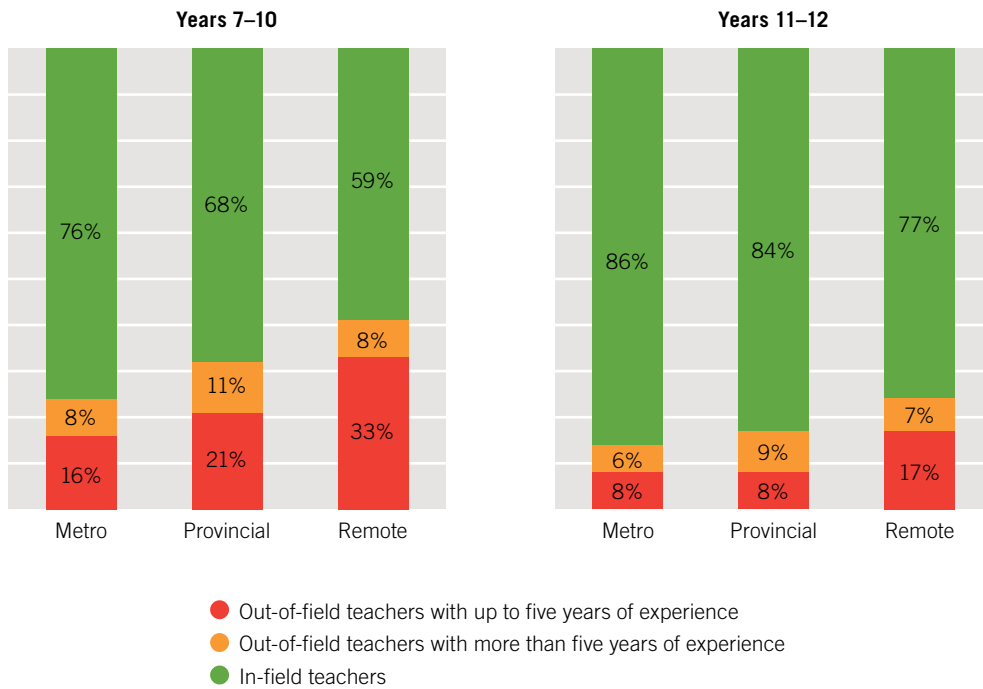


Figure 6 Proportions of teachers of Years 7–10 and Years 11–12 who are teaching out-of-field at least some of the time, by geographical location (percentages may not equal 100 due to rounding)

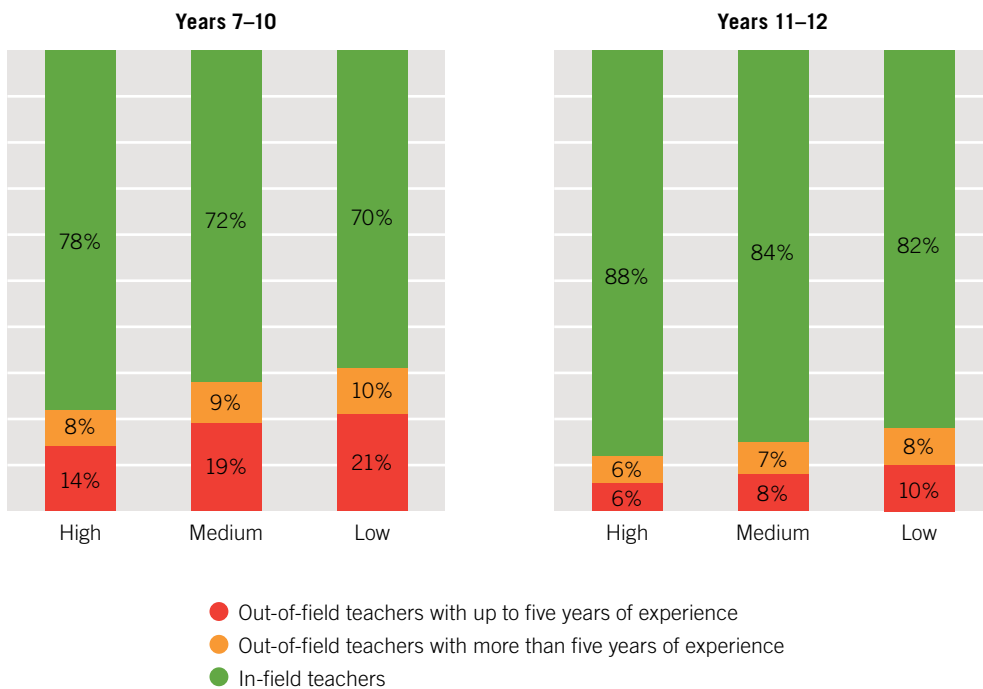


Figure 7 Proportions of teachers of Years 7–10 and Years 11–12 who are teaching out-of-field at least some of the time, by school socioeconomic status (percentages may not equal 100 due to rounding)

LOCATION

The extent of out-of-field teaching increases with distance from metropolitan locations, as shown in Figure 6. This is likely to be linked in part to a higher number of early career teachers teaching in rural and remote locations, where there is typically a greater number of smaller schools, and consequently a greater need to provide classes over a wide range of subject areas, which is likely to necessitate out-of-field teaching. It may also be the case that regional, rural and remote locations have more difficulty attracting teachers in subject areas that are experiencing shortages such as Mathematics, Languages, IT, General Science, Biology, Chemistry, Physics, Earth Science,

Environmental Science and Psychology. The extent of subject-area shortages is difficult to ascertain as out-of-field teaching is generally not reported: hard-to-fill vacancies do not tell the whole story.

SOCIOECONOMIC STATUS

Figure 7 shows that the incidence of out-of-field teaching tends to be slightly higher in schools serving communities with a lower SES. The differences are small between schools serving medium- and low-SES communities and there are links with location and the size of schools: many regional and rural schools are small and serve lower SES communities than in

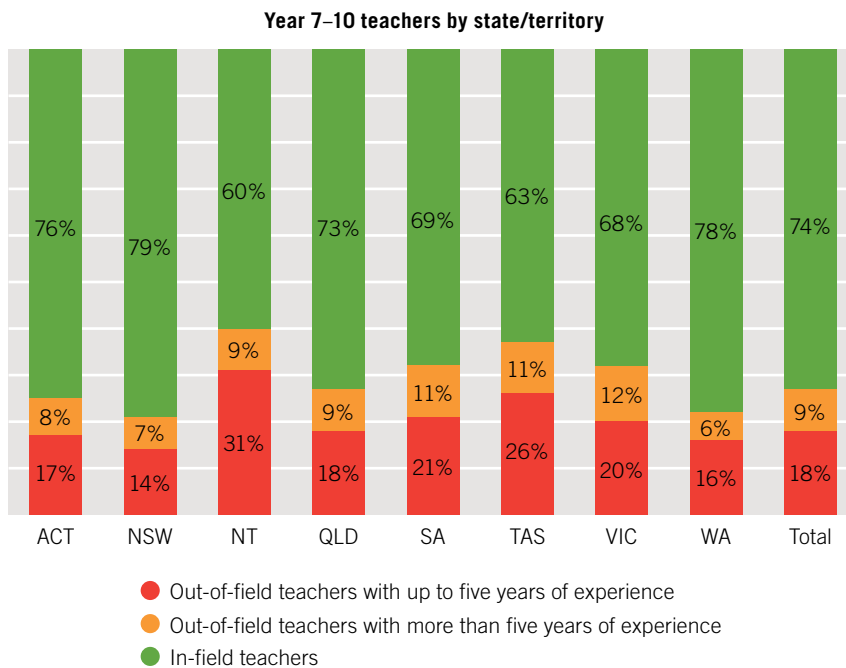


Figure 8 Proportions of teachers of Years 7–10 who are teaching out-of-field at least some of the time, by state/territory (percentages may not equal 100 due to rounding)

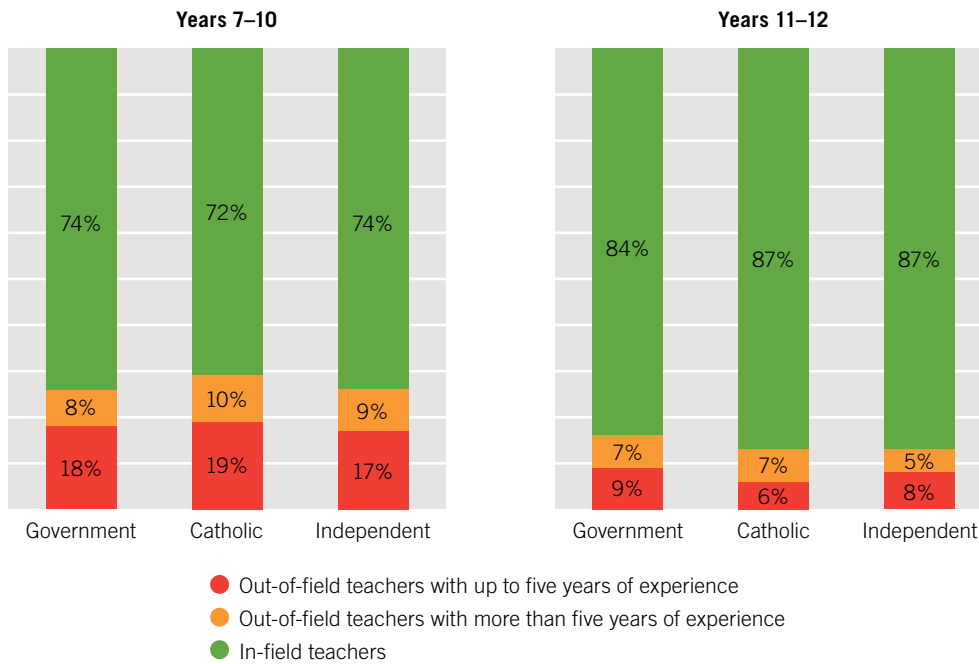


Figure 9 Proportions of teachers of Years 7–10 and Years 11–12 who are teaching out-of-field at least some of the time, by sector (percentages may not equal 100 due to rounding)

metropolitan locations. It may also be the case that many teachers in high-demand subjects choose to teach at schools serving high-SES communities.

STATE AND TERRITORY FACTORS

The differences presented for state and territories in Figure 8 can be at least partly explained in a similar way. The Northern Territory and Tasmania have a higher incidence of out-of-field teaching than other states; however, they are also more likely to have small schools or, particularly in the case of the NT, be serving remote locations.

GOVERNMENT AND NON-GOVERNMENT SECTOR

Considered nationally, out-of-field teaching is at much the same level across the government and non-government sectors, as shown in Figure 9. There are likely to be greater differences within states and by location. For example, a survey of teachers in WA in 2007 and 2008 found that the overall rate of teaching out-of-field was 14–18 per cent in government schools and 27–30 per cent in non-government schools in the Perth metropolitan region. In country locations, the figures were considerably higher: 26 per cent

in government schools and 39–44 per cent in non-government schools.¹¹

OUT-OF-FIELD TEACHING BY CLASS GROUPS

SiAS data on out-of-field teaching are based on the proportion of teachers teaching out-of-field *at least some of the time*. It is difficult to gauge the actual extent of out-of-field teaching when the extent of an individual teacher's out-of-field load is unknown.

To address this issue, the 2013 SiAS survey asked teachers to list the subjects that they were currently teaching and to specify how many class groups they were teaching at each of Years 7–10 and Years 11–12. These variables provide an indication of the proportion of classes each teacher teaches in-field and out-of-field. Figure 10 over the page presents the overall proportions by classes and teachers for selected subjects for Years 7–10. The proportions of teachers are the same as those presented in Figure 3 and are provided as a point of comparison.

About 10 per cent of Mathematics classes in Years 7–10 are being taught by an out-of-field teacher with five years of experience or less in the subject. A further seven per cent are being taught by a teacher who is out-of-field, using the SiAS definition, but has been teaching the subject for more than five years.

A total of 17 per cent of Mathematics *classes* in Years 7–10 are being taught by an out-of-field teacher, whereas a total of 21 per cent of mathematics *teachers* are teaching the subject out-of-field. These figures highlight the fact that teachers tend to teach multiple subjects and the majority of the classes they take are in subjects for which they are qualified.

There continue to be equity issues in the distribution of teachers. In Years 7–10, about 26 per cent of classes in schools in remote locations are taught by an out-of-field teacher compared to 14 per cent of class groups in metropolitan locations. Nineteen per cent of class groups in schools in low-SES locations are taught by an out-of-field teacher compared to 13 per cent in schools in high-SES locations.

POLICY IMPLICATIONS AND FURTHER RESEARCH

Further research on out-of-field teaching is important. As McConney and Price have noted, the impact of out-of-field teaching on both students and teachers is the subject of continued debate.¹² There is evidence that teachers who feel they have some control over the out-of-field subjects allocated to them tend to feel more supported, more capable and more comfortable teaching out-of-field.¹³ It would be worth establishing the extent to which out-of-field teachers are supported by in-field teachers and by the school leadership, particularly in relation to access to high-quality professional learning.

¹¹ McConney & Price (2009a)

¹² McConney & Price (2009b)

¹³ McConney & Price (2009a)

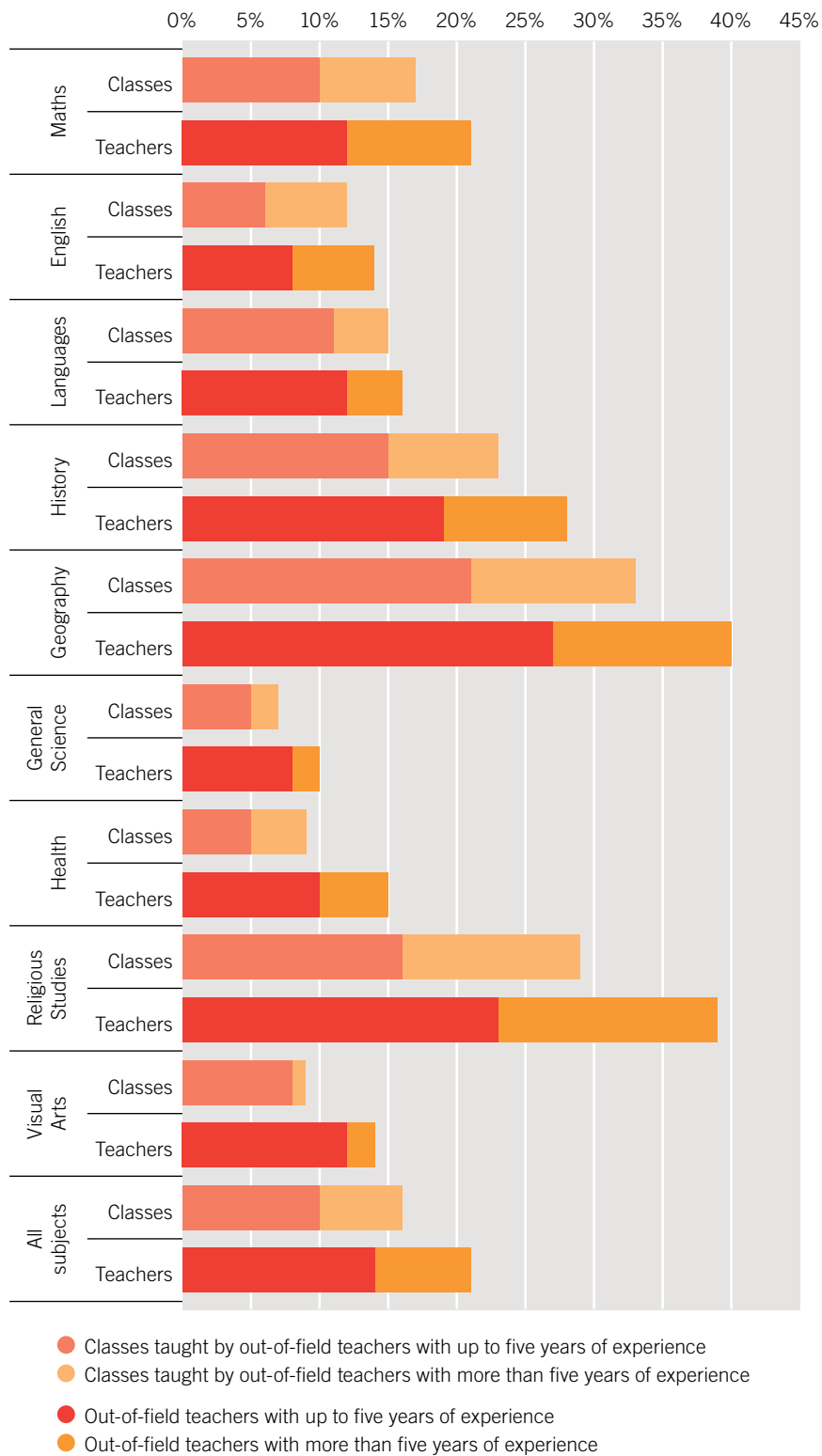


Figure 10 Proportions of Years 7–10 classes being taught by an out-of-field teacher, and proportion of teachers teaching out-of-field, by selected subjects

It is likely that a proportion of out-of-field teaching is due to the complexity of school timetabling. Schools need to ensure a teacher in every class while working with a set number of teachers, each of whom is likely to be qualified to teach in at least two subject areas. Some teachers will be part-time or will have additional duties and therefore be unavailable on certain days or at certain times. There is a need to better understand the contexts in which teachers find themselves teaching out-of-field and the impact of the practice on schools, and on student attitudes and achievement.

There are few incentives for teachers to gain an additional qualification in a subject they regularly teach out-of-field. Once they are qualified as a teacher the only point at which there may be incentive to gain formal recognition in another subject is when applying for a role at a different school. There does not appear to be any data on the extent to which qualified teachers undertake training that formally qualifies them to teach in an additional field as this is not data that is collected by teacher registration bodies, with the possible exception of NSW.

While government initiatives exist at state level and a range of both professional development opportunities and university qualifications are available, more data are needed to gauge their uptake and impact. It would also be useful to better understand teachers' patterns of professional development in their in-field and out-of-field subjects.

WHERE TO FROM HERE?

There is currently strong growth in student numbers in most states and territories in Australia and demand for secondary teachers will increase during the next 10 to 15 years¹⁴. In light of the recent work to improve the quality of initial teacher education, further work is required to better understand the demand for teachers across different subjects and the nature of the pressures on schools that cause out-of-field teaching.

As well as collecting additional data on the extent and distribution of secondary teachers by subject, it would be worth investigating how schools manage resourcing and timetables. This would allow us to learn from successful solutions and provide indicators of best practice that could reduce the incidence of out-of-field teaching and may also improve the retention of early career teachers.

¹⁴ Weldon (2015)

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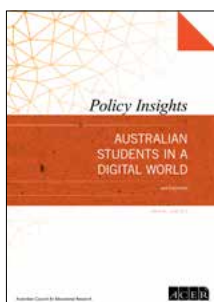
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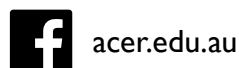


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