

An Assessment of the Phenomenon of "Teaching-Out-of-Field" in WA Schools

**FINAL
REPORT**

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EXECUTIVE SUMMARY

This research study provides an assessment of the phenomenon of teaching out-of-field in Western Australian (WA) schools. The study was commissioned by the Board of the Western Australian College of Teaching (WACOT) acting through its Director, Dr. Suzanne Parry. The terms of the research were agreed in May 2008, and a contract for the research executed in June 2008. The research was conducted by Dr. Andrew McConney and Dr. Anne Price, both lecturers at Murdoch University's School of Education

The terms of reference for this research specified that the central purpose of the study would be *to assess the extent to which the phenomenon of teaching out-of-field exists in WA schools*. This assessment was to be made across all three school sectors (Government, Catholic and Independent), as well as by region (Metro and Country). It was further agreed that the study would be conducted through the development and use of a confidential survey, delivered in both paper-and-pen and online (internet) formats, and administered to a representative sample of WACOT's active teacher members. Additionally, it was understood that the research study would provide a review of the relevant scholarly literature surrounding this topic. Such a review would serve to provide important context for understanding the phenomenon—and its assessment in WA schools—against broader national and international backdrops.

For the purposes of this research, teaching "out-of-field" means teaching in a subject or field for which the teacher has neither a major nor a minor tertiary (university) teaching qualification. Also, it means teaching at a level of schooling (e.g., primary) for which a teacher is not formally qualified.

The survey used to gather data regarding teachers' out-of-field teaching experiences over the past two school years was developed by this study's lead author, in consultation with a Working Group of the WACOT Board. As might be expected, the 23-item survey comprised mainly closed-ended (fixed response) demographic and Likert-type items. These items interrogated teachers' years of experience, qualifications held and main areas of tertiary study in addition to assessing their feelings regarding teaching out-of-field. As well, the survey comprised a few contingent and open-ended (free response) items that allowed respondents some latitude to further explain their responses. The survey was made available to potential respondents in both paper-and-pen and on-line modalities.

In all 2,275 invitations to participate in the survey were sent to a randomly drawn stratified sample of WA teachers, proportionally representative of the various levels of schooling, the State's three school sectors, and major regions (Metro and Country). By the close of the survey period, 535 active teachers (or 23.5%) had responded. This represented an at-best modest response to the invitation to participate that ultimately limits the confidence that can be placed in some of the finer-grained estimates of rates of teaching out-of-field in WA schools.

Based on the 535 survey responses received, the overall rate of teaching out-of-field in WA for both the 2007 and 2008 school years was estimated at 24%. More specifically, with regard to the *overall rate* of teaching out-of-field for both 2007 and 2008, we can say that we are 95% sure that the true percentage of the actively teaching population teaching out-of-field in WA schools was between 20% and 28% (i.e., $24\% \pm 4\%$).

As the sample of respondents was further disaggregated by region, school sector and level of schooling additional patterns emerged. Generally, observed rates of teaching out-of-field tended to be higher in Catholic and Independent schools as compared with Government schools. Similarly, rates of teaching out-of-field were observed to be considerably higher in Country WA schools, across all three school sectors, while maintaining the pattern that these rates tended to be substantially higher in Catholic and Independent schools as compared to Government schools. However, despite the consistency of these patterns we strongly emphasize that many of the estimates for rates of teaching out-of-field associated with smaller groups carry with them quite large confidence intervals that must be read with prudence and caution.

For the group of 123 teachers that reported teaching out-of-field, further analysis was conducted to identify what learning areas or levels of schooling were potentially impacted. The most frequent explanation given for out-of-field assignments was simply the fact of relief teaching. The second most frequent reason cited within this group was teaching in a primary school setting without appropriate qualification (in many cases teachers holding a secondary school teaching qualification had decided to move to teaching at the primary level). In the high-profile and reportedly high-need areas of mathematics and science, 7 of 43 maths teachers (16%) who participated in this research reported teaching out-of-field, and 6 of 34 science teachers (18%) reported teaching a science discipline without the necessary credentials or training.

Generally, these findings are consistent with previous research on the phenomenon of teaching out-of-field within Australia. For example, the Staff in Australian Schools (SiAS) 2008 report concluded that there was considerable evidence of out-of-field teaching at both the primary and secondary levels of schooling. The findings of this study are particularly consistent with those of Ingvarson, Beavis and Kleinhenz (2004) in Victoria. In the current study, in addition to a quantitatively similar overall rate of 24% teaching out-of-field, we also estimated out-of-field teaching rates of 16% and 18% in Maths and Science (including Physics, Chemistry and Biology). In Victoria, Ingvarson and his colleagues reported that up to 20% of primary teachers felt they were not qualified to teach at the year level at which they were working. At the secondary level about 15% of science teachers reported they were unqualified to teach in these areas, while in all other key learning areas from 25-30% of teachers reported teaching in an area for which they were not qualified.

On the question of years of experience for those teachers who report teaching out-of-field, this study found a plurality to have a high level of experience in the schools, most often 21 years or more. Although, because of the relatively modest response rate, we are not able to conclude with certainty that this is indeed the case across WA schools, this finding does call into some question the conventional wisdom on the street that it is most often new teachers who are disproportionately assigned to out-of-field roles.

In conclusion, the core business of this survey research has been to provide an assessment of the current state of the phenomenon of teaching out-of-field for WA schools, according to region, school sector and level of schooling. We have attempted to remain close to this mandate, and are confident in the overall rates reported for the 2007 and 2008 school years. Much more caution must be exercised in interpreting the estimates of teaching out-of-field for smaller subgroups comprised of only a few teachers.

We thank the five hundred and thirty-five WA teachers who participated in this research.

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SECTION 1. INTRODUCTION

project background

This research study is an assessment of the phenomenon of teaching out-of-field in Western Australian (WA) schools. The study was commissioned and sanctioned by the Board of the Western Australian College of Teaching (WACOT) acting through its Director, Dr. Suzanne Parry. The focus, scope and terms of the research were agreed in May 2008, and a contract for the research executed in June 2008. The research was conducted by Dr. Andrew McConney and Dr. Anne Price, both lecturers at Murdoch University's School of Education. The overall cost of this contracted research study was \$29,998.53.

The terms of reference for this research specified that the central purpose of the study would be *to assess the extent to which the phenomenon of teaching out-of-field exists in WA schools*. This assessment was to be made across all three school sectors (Government, Catholic and Independent), as well as by region (Metro and Country). It was further agreed that the study would be conducted through the development and use of a confidential survey, delivered in both paper-and-pen and online (internet) formats, and administered to a representative sample of WACOT's active teacher members. Additionally, it was understood that the research study would provide a review of the relevant scholarly and/or technical research literature surrounding this topic. Such a review would serve to provide important context for understanding the phenomenon—and its assessment in WA schools—against broader national and international backdrops.

It was the understanding of the researchers for this study that WACOT's primary purpose for commissioning this research is anchored to its ongoing interest in gauging the prevalence of this phenomenon in WA. In this regard, the aggregated data gathered from active teachers around their teaching placements and qualifications would be used by the College to better understand current teacher placement practices for WA schools. As a result, the findings of this research may allow WACOT to advocate—based on empirical research—a re-examination of appropriate teacher placement practices to thereby better serve the needs of its teacher members and importantly, their students.

definition

For the purposes of this research, teaching "out-of-field" means teaching in a subject or field for which the teacher has neither a major nor a minor tertiary (university) teaching qualification. Also, it means teaching at a level of schooling (e.g., primary) for which a teacher is not formally qualified.

For example, if a secondary science teacher's university degree major was biology, with a minor in biochemistry, and the teacher currently teaches physics, according to the definition used in this study, that teacher would be considered teaching "out-of-field." Similarly, if a

teacher holds a qualification for teaching at the secondary level, but currently teaches in a primary school setting, that would also constitute “teaching “out-of-field.”

[report structure](#)

This research report on the phenomenon of teaching out-of-field in WA schools is organized in five sections. This first section provides brief descriptions of the genesis, purpose and scope of the research, as well as the relevant definition of the phenomenon of teaching out-of-field used for this study.

The second section provides a relatively comprehensive, albeit not exhaustive, review of the available scholarly and technical literature relevant to the phenomenon of teaching out-of-field. Many of the papers and reports reflective of this body of work unsurprisingly originate from researchers and evaluators in the United States of America. However, there are a handful of key Australian reports (e.g., Staff in Australian Schools, 2008) that also provide important local context for this research study.

The third part of the report briefly overviews, mainly from a lay perspective, the survey method used in gathering the data for this study. This part of the report also briefly describes the dataset of active teachers provided to the researchers by WACOT, the stratified random sampling used in drawing the sample of participants for the study, and the approach taken in the analysis of data gathered.

The fourth section (survey findings and discussion) comprises the aggregated results of survey data gathered and analyses conducted for this study. To enhance clarity and accessibility for a variety of audiences, the study’s findings are organized and presented in the form of questions and answers. The questions are consistent with those initially asked by the WACOT Board and the smaller working group overseeing this research. The answers to these questions derive from the survey data gathered over the latter part of 2008.

The last section (appendix) provides the survey instrument, comprising 23 items of a variety of item-formats used to gather the data referred to above.

SECTION 2. REVIEW OF RELATED LITERATURE

[introduction](#)

The intent of this review is to draw together key themes concerning out-of-field teaching that have been raised in the Australian and international literatures. The review focuses on the prevalence, impact and possible future implications of out-of-field teaching on systems, teachers and students.

The definition for out-of-field teaching used in the 2008 survey conducted under the auspices of the Western Australian College of Teaching (WACOT) reflects how the term is most commonly conceived in the literature. That is:

Teaching in a subject/field for which a teacher has neither a major nor minor tertiary (university) teaching qualification. Also it means teaching at a level of schooling for which a teacher is not formally qualified.

In the USA, according to the Elementary and Secondary School Act (2002) 'No Child Left Behind' (NCLB), the term out-of-field refers to the teaching of an academic subject or a grade level for which a teacher is not 'highly qualified.' A 'highly qualified' teacher is defined as having a bachelor's degree; a regular state approved license or certificate and is competent in each of the academic subjects they teach. 'Competency' in a subject can be established if the teacher holds an undergraduate or graduate major in the subject, can pass a test on the subject, has an advanced teaching certificate in the subject or meets some other approved state evaluation for the subject (U.S.A. Department of Education Office of Postsecondary Education, 2005, p.6).

[the prevalence of out-of-field teaching](#)

The Staff in Australian Schools (SiAS) 2008 report, based on a large-scale national on-line survey of teachers and school leaders investigated the extent of out-of-field teaching in Australia. The report concluded that there was considerable evidence of out-of-field teaching in both the primary and secondary sectors (DEEWR, 2008i, p. xiii). In particular, SiAS noted the prevalence of out-of-field teaching in the primary specialist areas of Languages Other Than English (LOTE) and Special Needs. In these areas, it was found that only approximately half of the teachers had at least a one-year tertiary qualification in the field. As well, only 30-40% of LOTE and Special Needs teachers surveyed had undertaken teaching methodology courses in these fields.

In the secondary sector, the survey focused on Mathematics, Physics, Chemistry and Information Technology (IT), which were areas of reported teacher shortages. It was found that an overwhelming majority (87%–95%) of those teaching senior secondary (Years 11 and 12) Maths, Physics and Chemistry had at least a one-year tertiary qualification in these

subject areas and that at least three quarters had completed teaching methodology training in the area. The incidence of out-of-field teaching was, however, found to be much more significant for IT teachers with only 60% having completed at least one-year of tertiary qualifications and only 46% had any methodology training in the field.

Incidences of out-of-field teaching were also found to be much higher in the lower secondary years (7/8-10). Only 75% of those teaching Mathematics, for example, reported having at least a one-year tertiary qualification in the field and only 50% had a three-year Mathematics qualification. Less than half of those teaching IT had a one-year qualification in the field and only 24% held a three-year qualification in IT.

Ingvanson, Beavis and Kleinhenz, in a survey of teachers at the end of their first year of teaching in the Australian state of Victoria, found that 13-20% of primary teachers reported that they felt they were not qualified to teach at the year level at which they were working. At the secondary level about 15% of Studies of Society and Environment (SOSE) and Science teachers reported they were unqualified to teach in these areas. In all other key learning areas from 25-30% of teachers reported teaching in an area they were not qualified (2004, pp. 14-15).

These statistics are supported by findings in the USA. Ingersoll's research based on the national US Schools and Staffing Surveys (SaSS) for example, drew attention to what he considered to be "the high levels of out-of-field teaching" which were a "leading source of underqualified teaching in American schools" (2003, p. 5). Clearly these findings provide evidence for the widespread existence of out-of-field teaching both in Australia and the USA. Ingersoll, however, also makes the point that there is room for some scepticism regarding the public reporting of the extent of out-of-field teaching because of its politically sensitive nature. He argues that data obtained from school officials who do not want the extent of out-of field teaching to become public knowledge, is open to question (2003, p. 9). Like Ingersoll, Thomas also suggests that determining the extent of out-of-field teaching can be problematic because principals are unlikely to want to publicise its extent if such data might impact on the reputation of their schools (2000).

Ingersoll also raises concerns about the validity and reliability of empirical research on out-of-field teaching because of the lack of consensus on how to measure it. In determining the prevalence of out-of-field teaching, Ingersoll argues for the need to include the number of classes a teacher without a specific undergraduate subject degree is teaching out-of-field (2001, 2003; Ingersoll & Curran 2004). So, for example, a qualified mathematics teacher who has an undergraduate major in mathematics and teaches mostly mathematics but takes one class of health per week should be considered teaching out-of-field. Taking such cases into consideration clearly increases the reported incidences of out-of-field teaching.

issues and concerns raised in the literature

Albert Shanker, former head of the American Federation of Teachers, called out-of-field teaching education's "dirty little secret" (Ingersoll, 2003, p. 5). This comment reflects concerns noted in the literature regarding the practice of out-of-field teaching. The existence of out-of-field teaching particularly troubles those who advocate the need for teacher professional standards as a means of ensuring teacher quality (e.g., Darling-Hammond, 2002; Ingersoll, 2003). Central to these debates, though, are contested notions about what constitutes 'quality' teaching and what it means to be 'qualified to teach.' It is also argued that the practice of out-of-field teaching has the potential to have a negative and inequitable effect on student outcomes, particularly for those students in poor communities and small, rural or remote schools (Darling-Hammond, 2002; Ingersoll, 2003, p.17; Ingersoll and Curran, 2004). Another concern raised in the literature is the possible negative impact the practice may have on teacher's efficacy and well-being (Pillay, Goddard & Wilss, 2005). Other critics contend that out-of-field teaching is problematic because it has the potential to mask the realities of teacher shortages (Thomas, 2000; Webster, Wooden & Marks, 2006).

Researchers such as Darling-Hammond have consistently argued that the effects of well prepared, highly qualified teachers has a greater impact on student achievement than other variables including student background and class sizes (Darling-Hammond 2000, 2002; Hattie, 2003). Professional associations often cite such research to support the need for professional standards and subject specialists (for example, the Science Teachers Association of Victoria submission to DEST, 2003, p. 6). Similarly, the Committee for the Review of Teaching and Teacher Education, in its recommendations, prioritises the need for appropriately qualified teachers of all subjects and all levels (DEST, 2003). The practice of assigning teachers to teach out-of-field has the potential to undermine these recommendations.

While there are, as yet, no mandated national standards for teachers in Australia, in keeping with the National Framework for Professional Standards for Teaching, all state based registration authorities have included reference to a certain level of subject content knowledge in their professional standards for registration (MCEETYA, 2003). Support for the need for high levels of subject knowledge is also evident in the development of subject specific teacher standards by various professional associations¹.

The importance of content or subject matter expertise is also central to the No Child Left Behind and Higher Education Act Title II school reform agendas. Consecutive USA Department of Education annual reports on teacher quality cite examples of educational research that supports the notion that along with pedagogical knowledge “subject mastery knowledge is essential for effective teaching.” The practice of out-of-field teaching is problematic for those who support the need for such professional standards for teachers. Where professional standards require that a teacher must have a credentialed level of content and pedagogical knowledge to teach effectively, critics ask how and why, for example, can a science teacher be assigned a Society and Environment class or a Chemistry teacher assigned a Biology class. The National Inquiry into School History, for example, argued that out-of-field teaching affects the quality of Studies of Society and Environment (SOSE) teaching (Taylor, 2000). It was reported that the problem was particularly acute in small urban secondary schools; medium sized private schools and most rural government schools where non-SOSE trained teachers are often given SOSE as a ‘top-up’ for their timetable. It was concluded that there is a prevailing notion within schools that anyone can teach SOSE and this is detrimental to the subject.

inequitable effects on students, schools and communities

As well as potentially undermining teacher professional standards, it is also suggested in the literature that there is a much higher incidence of teaching out-of-field in poor communities, rural and remote schools and metropolitan schools considered ‘hard to staff.’ The employment of under qualified teachers, including the requirement for teachers to teach out-of-field, is argued to be one of the major contributors to the relative underachievement of students in these schools (Darling-Hammond, 2000). Ingersoll’s US data showed there was a much greater prevalence of out-of-field teaching in high-poverty schools than in more affluent schools. His data also indicated that the degree of out-of-field teaching was much higher in small schools including small private schools, which had “among the highest overall levels of out-of-field teaching” (2003, p.17). This, Ingersoll claims, challenges the widely held view that, in terms of school choice, “small is beautiful” (2003, p 13).

In the Australian context, Thomas also contends that the economic divide entrenched in the school system will be exacerbated if students in remote rural and ‘hard to staff’ schools are deprived of well-qualified mathematics teachers (2000, p.1). This is a view supported by the Isolated Children’s Parents’ Association of Australia in their submission to the Department of

¹ E.G. Teacher Registration Boards such as the Victorian Institute of Teachers (ND), New South Wales Institute of Teachers (2008), Queensland College of Teachers (2006) and Western Australian College of Teaching (ND). Also *National Framework for Professional Standards for Teaching* (MCEETYA, 2003).

Education, Science and Technology (DEST) Review of Teaching and Teacher Education, *Australia's Teachers: Australia's Future* (2002). This submission raised concerns about the extent and impact of out-of-field teaching on student outcomes in rural and remote schools.

impact on teachers

A personal communication from an organiser of the Western Australian State School Teacher's Union (SSTUWA) indicates that teaching out-of-field is a factor that contributes to stress for teachers. It is considered to be a particular problem for new graduates faced with the extra demands of designing and implementing curriculum for an unfamiliar subject for which they have had no university preparation (SSTUWA, Personal Communication, 07/07/08). There is little empirical evidence in the literature however, related specifically to the impact that out-of-field teaching has on teachers. Ingersoll's data show that newly appointed teachers are the most likely to be assigned out-of-field which may be a contributing factor in high attrition rates for new graduates, although there is little specific evidence to support this (Ingersoll, 2000).

While the literature on early teacher attrition cites workload, problematic student behaviour, lack of influence over school policy, salaries and poor induction processes as contributing factors to teachers leaving the profession, out-of-field teaching is not specifically mentioned (Feng, 2005; Croasmum, Hampton & Herrmann, 1997; Alliance for Excellent Education, 2005). Feng suggests that the impact of out-of-field teaching on attrition rates is an area in need of further investigation (2005).

Pillay, Goddard and Wilss, did however, investigate the relationship between teacher burnout and competence. Based on data collected from a sample of mid-career teachers in primary and secondary schools in Queensland, they assert that 'teaching competence' can be compromised if a teacher has to teach a subject for which they have little discipline knowledge (2005). Teacher competence is defined, in this case, as teachers believing they have the prerequisite knowledge of the subject/s they teach and the skills to teach effectively (Little, 1995).

With regard to the impact on administration staff in schools, Taylor notes that the practice of managing and supporting out-of-field teaching provides a major distraction for Subject Coordinators who are required to provide extra support, mentoring and resources for out-of-field teachers in the SOSE learning area (2000). The specific impact of teaching out-of-field on teachers and their professional efficacy and the extent to which it may contribute to burn out or early attrition would appear to also be an area for further research.

masking teacher shortages

Another concern raised in the literature is that out-of-field teaching has the potential to mask the realities of teacher shortages, particularly in certain subject areas. Webster, Wooden and Marks, for example, make the point that many current labour supply indicators for teacher shortages, which are based on the number of people who have recognised teacher qualifications, hide the extent of teacher shortages (2006, p.186). They suggest, given the complexity and segmented nature of the teacher labour market, that more accurate indicators of a teacher shortage should include the numbers of teachers teaching subjects for which they are not fully qualified. They argue that, "having a teacher in front of a every class does not necessarily mean there are no shortages" (2006, p. 189). Similarly, Thomas contends that estimating the extent of the shortage of qualified mathematics teachers is problematic because little is known about who exactly is teaching mathematics. In this regard, attempts to estimate current shortages and forecast future needs are complicated because they fail to take account of existing hidden shortages masked by out-of-field teaching (2000, p. 10). The SiAS report similarly found that out-of-field teaching often hides teacher shortages, as school administrators use a variety of strategies to ensure classes are not left without a teacher. Almost half the Principals surveyed in both secondary and primary sectors admitted

to using strategies to overcome teacher shortages, including requiring teachers to teach out-of-field (DEEWR, 2008i, p. 21).

[alternative views on out-of-field teaching](#)

Whilst much of the literature points to the possible negative effects of out-of-field teaching, there is literature to suggest that teaching out-of-field may not be as problematic as suggested. Skilbeck, for example, questions the evidence to support taken for granted assumptions that teaching out-of-field is necessarily detrimental to student learning (2003, p. 12). His scepticism is supported by Becker's research which found that teachers with a mixed academic subject load, some of which can be assumed to be teaching out-of-field, demonstrated more constructivist approaches in their teaching (2000). Using measures to study levels of constructivist approaches to teaching, Becker found that conventionally assigned teachers (i.e. those who neither taught out-of-field or a mixed academic subject load) had the lowest mean score on each of these measures. Conversely, teachers who taught a very mixed-subject teaching load consistently scored the highest on each of these measures.

Olitsky, in a small ethnographic study of a Physics teacher who taught Physics to a diverse urban year 8 class in one semester and then Chemistry (for which she was not subject qualified) in the next semester, found more students participated and reported enjoying science when the teacher was teaching out-of-field (2006). While teaching in-field, analysis of classroom interactions revealed greater social distance between teacher and students as she often engaged in 'front stage' performances accentuating her role as expert and as science an elitist discourse. When teaching out-of-field, while clearly less organised and knowledgeable, this teacher was able to engage students in her 'backstage' performances as she openly struggled with the content. These practices, it is asserted, lessened the social distance between teacher and students, made science language more achievable and encouraged the development of science identity and group membership.

Such research is indicative of debates within the education literature as to what attributes or characteristics a 'quality teacher' demonstrates (OECD, 2005, p.2; Webster et al., 2006, p.202; Kleinhenz and Ingvarson, 2007). While some characteristics are measurable such as qualifications and subject or content knowledge, others such as the ability to create effective learning environments for different types of students; to be enthusiastic and creative; and to work effectively with colleagues and parents, although harder to quantify and measure are no less significant (OECD, 2005, p.3).

Educators within the constructivist or critical traditions argue that there is more to quality (or good) teaching than imparting defined knowledge and skills. As important, is the ability to facilitate students' learning through inquiry and to enable students to create knowledge, develop arguments, communicate and apply understanding to solve real problems (Becker, 2000, p. 3, Kincheloe, 2003, p. 49).

[reasons for the occurrence of out-of-field teaching](#)

One seemingly obvious reason, posited in the literature, for the continuing occurrence of out-of-field teaching is related to teacher supply and demand issues. Current and projected teacher shortages in particular subject specialisations, in many rural and remote and some metropolitan locations, both within Australia in internationally, are well documented². Such shortages, combined with fluctuations in student numbers, clearly create staffing problems both at the local school level and for whole systems.

² Department of Education, Employment and Workplace Relations (DEEWR), 2003; Western Australian Department of Education and Training (DET) 2008i; DET 2008ii; Ministerial Council for Employment, Education, Training and Youth Affairs (MCEETYA), 2004; DEEWR, 2008; Teaching Australia, 2007; OECD, 2005, p. 3.

The Organisation for Economic and Cooperation and Development (OECD) recognises that one solution adopted by many systems to address teacher shortages in particular subject areas or year levels is to assign teachers to teach in areas for which they are not fully qualified (OECD, 2005, p.5.) Ingersoll goes further to suggest that school organisation and staffing management contribute as much to the problem as issues of supply (Ingersoll, 2001 & 2003). He maintains that principals and administrators make staffing decisions in the context of often-limited time and resources and little regulation of how teachers are employed once on the job. In these cases choices are made, for example, between employing a new science teacher or a LOTE teacher, relocating someone or doubling class sizes. Assigning teachers to teach out-of-field under these conditions becomes a pragmatic and acceptable administrative practice.

possible solutions

Those concerned by the practice of out-of-field teaching have offered a range of possible solutions. Most short-term solutions acknowledge that within the current context of teacher shortages and demands for flexibility in staffing profiles to meet changing workforce and community demands, the practice of out-of-field teaching is likely to continue.

Teaching Australia's Advice to the Minister, for example, advocates alternative approaches to school staffing organization to address teacher supply issues and the changing nature of schooling. (2007, pp. 24–27). This report suggests a range of initiatives including associate teachers, pathways for qualified teachers to retrain in areas of high need and capitalising on technologies to deliver teacher expertise to a wider range of locations. Sophisticated on line delivery of curriculum content to isolated schools where teachers may have limited expertise in a particular subject area is another suggestion. The report cites a number of examples of current solutions to general and specific teacher shortages where teachers are required to teach out-of-field.³

Ingersoll also advocates the need to change the way schools are managed once teachers are on the job (2003, p. 23). He asserts that States and districts need to rethink how school staffing decisions are made and by whom. Ingersoll also suggests that rural schools need to share itinerant specialists and there should be a greater use of distance education and technology as well as administrative support, extra Professional Development (PD) and mentoring support for out-of-field teachers. The US-based Centre for the Future of Teaching and Learning advocates the establishment of accurate databases to provide policy makers with a clear picture of the extent of out-of-field teaching. This would help to ensure particular schools and or students are not inequitably exposed to out-of-field teaching (2007). The need for more accurate databases on the teacher workforce in Australia is also a key recommendation of the recent DEEWR report on Teacher Workforce Data and Planning Processes report (2008ii).

Thomas also proposed the need to provide study leave to secondary teachers teaching mathematics out-of-field, arguing that teachers should not be expected to obtain proper qualifications in their own time and at their own cost. Rather she suggests Commonwealth funding for tertiary places and state funding for leave (2000). The Science Teacher's Association of Victoria submission to DEST made similar recommendations for teachers required to teach out-of-field including the need for well-designed PD, short courses and mentoring from qualified teachers (2003). The WA Department of Education and Training, Education Workforce Initiatives Report, recommended the use of ICT, flexible learning and 'expert teachers' to support teachers out-of-field, particularly in regional and remote areas where staffing profiles limit the number of subject specialists a school can employ (DET, 2008i, p.49).

³ E.G. South Australia offers a professional development pathway that counts towards a Graduate Certificate or Masters in Education for existing teachers to re-train as maths teachers. Course costs and teacher relief are paid for, but not other expenses. New South Wales offers re-training programs for qualified teachers in various areas of shortage.

In the USA, concerns over the impact of out-of-field teaching have led to mandatory requirements for schools to publicly disclose to parents the numbers of students taught by underqualified teachers under the NCLB legislation (Ingersoll, 2003, p. 7). In some states in the USA it is a requirement that teachers with an out-of-field permit undertake a prescribed number of coursework hours per year toward the appropriate certification for the out-of-field assignment (Pasco County, 2008).

conclusion

An overview of the literature concerning out-of-field teaching indicates that it is a common and continuing practice in Australia and overseas. There is debate as to the extent to which it is detrimental to student outcomes depending on pedagogical beliefs, how student learning is measured and what is considered quality teaching. There is little in the literature that is concerned directly with the impact on teachers and to what extent it may be causally linked to teacher stress, burnout or attrition. This would appear to be an area for further research. Various commentators have put forward a range of solutions to provide support for teachers teaching out-of-field, acknowledging that given continued teacher shortages, the realities of staff to student ratios in small communities, changing workforce patterns in a globalised economy and the need or desire for greater staffing flexibility in the teaching workforce, the practice is likely to continue.

The Phenomenon of "Teaching-Out-of-Field" in WA Schools

FINAL
REPORT
2009

SECTION 3. METHOD

This part of the report overviews, mainly from a lay perspective, the survey methods used in gathering the data on which the findings for this study have been based. Included here therefore, are brief descriptions of the dataset of active teachers provided to the researchers by WACOT, the stratified random sampling used in drawing the sample of participants for the study, and the approach taken in the analysis of data gathered.

population

In the first instance, an electronic dataset representing all "active" WA teachers (i.e., all teachers currently registered with WACOT) was provided to the researchers by WACOT. This dataset comprised 33,181 teachers, which effectively defined both the target and accessible populations for this survey research. Eleven percent of this teacher population were classified as 'early childhood' teachers, 47% were classified as 'primary,' 2% as 'middle school' and 40% as 'secondary.' In addition, the dataset also provided a school sector identifier that allowed the classification of teachers according to whether they teach in Government, Catholic or Independent schools. Last, the dataset also provided the most recent mailing address available for each teacher member of WACOT holding active status.

sample

As a result of the lead researcher's initial consultation with the WACOT Board on the purpose and parameters for this study, it was agreed that it would be desirable to strive for a 95% *level of confidence* along with a *confidence interval* on the order of 3 points. In practice, these guidelines would mean that estimates around the rates of teaching out-of-field for WA teachers could be reported with a relatively high degree of confidence that the "true" rate lay within that observed and reported for the responding sample. (For comparison purposes, national polling estimates typically carry a 95% level of confidence and a 4-point confidence interval.)

The agreed to confidence parameters meant that the overall size of the sample responding to the teaching out-of-field survey needed to be 1,034 active teachers. Further, to ensure proportional representation of the various WA regions and school sectors, the sample needed to (a) be drawn randomly; and (b) to be drawn in proportion to the presence of the various groups in the active teacher population. This sampling procedure is commonly known as *proportional stratified random sampling*.

The initial sampling frame for the study, organised by the various strata (groups) sampled, is given in Table 1. As can be seen in the table, the initial sample of potential respondents drawn also included a 20% *oversample* given the likelihood of relatively high rates of non-response. This first sample represented in Table 1 was drawn in mid-July 2008 and 1241

invitations to participate in the survey were mailed in July, 2008. The survey was also available for on-line completion. Initially, invitees were asked to respond no later than 8 August 2008.

Table 1. Sampling Frame by Strata

Stratum	Fraction	Target Sample Size	Oversample (20%)	Field Sample Size
Gov EC Metro	0.04756	49	10	59
Gov EC Country	0.02360	24	5	29
Gov EC Relief	0.01025	11	2	13
Cath EC Metro	0.01094	11	2	14
Cath EC Country	0.00362	4	1	4
Cath EC Relief	0.00033	0	0	0
Ind EC Metro	0.00940	10	2	12
Ind EC Country	0.00172	2	0	2
Ind EC Relief	0.00018	0	0	0
Gov Primary Metro	0.19559	202	40	243
Gov Primary Country	0.10382	107	21	129
Gov Primary Relief	0.06281	65	13	78
Cath Primary Metro	0.04629	48	10	57
Cath Primary Country	0.01799	19	4	22
Cath Primary Relief	0.00247	3	1	3
Ind Primary Metro	0.03409	35	7	42
Ind Primary Country	0.00868	9	2	11
Ind Primary Relief	0.00021	0	0	0
Gov Middle Metro	0.00621	6	1	8
Gov Middle Country	0.00377	4	1	5
Gov Middle Relief	0.00217	2	0	3
Cath Middle Metro	0.00133	1	0	2
Cath Middle Country	0.00084	1	0	1
Cath Middle Relief	0.00003	0	0	0
Ind Middle Metro	0.00461	5	1	6
Ind Middle Country	0.00127	1	0	2
Ind Middle Relief	0.00000	0	0	0
Gov Secondary Metro	0.14472	150	30	180
Gov Secondary Country	0.06679	69	14	83
Gov Secondary Relief	0.04478	46	9	56
Cath Secondary Metro	0.05422	56	11	67
Cath Secondary Country	0.01257	13	3	16
Cath Secondary Relief	0.00157	2	0	2
Ind Secondary Metro	0.06495	67	13	81
Ind Secondary Country	0.01034	11	2	13
Ind Secondary Relief	0.00030	0	0	0
Total	100.00%	1034	207	1241

Notes. Gov=Government; Cath=Catholic; Ind=Independent; EC=Early Childhood

Teachers' responses to the initial invitation to participate in this survey could best be described as lukewarm. As a result, a postcard reminder was mailed in the latter part of August 2008 to the 983 teachers who had not responded initially. This reminder did result in a number of additional responses, but not sufficient to achieve the confidence interval originally envisioned.

As a result, a second proportionally stratified sample, comprising 1,034 teachers not included in the first sample, was randomly drawn. This second draw involved no oversampling. As the phenomenon under study would not be considered a time sensitive one (as teachers' placements typically last a school year) the survey was kept open for the balance of 2008. In the final analysis, five hundred and thirty-five active teachers responded to the survey, constituting an overall response rate of 23.5% (535/2275).

survey

The survey used to gather data regarding teachers' out-of-field teaching experiences over the past two school years was developed by this study's lead author, in consultation with a Working Group of the WACOT Board. In addition, attention was given to the survey items and format used in the relevant sections of the US Schools and Staffing Survey (2003-04). The survey, as mailed to invited teacher participants, is appended to this report (please see Appendix 1).

As might be expected, the 23-item survey comprised mainly closed-ended (fixed response) demographic and Likert-type items. These items interrogated teachers' years of experience, qualifications held and main areas of tertiary study in addition to assessing their feelings regarding teaching out-of-field. As well, the survey comprised a few contingent and open-ended (free response) items that allowed respondents some latitude to further explain their responses.

As noted previously, the survey was made available to potential respondents in both paper-and-pen and on-line modalities. Somewhat surprisingly, the great majority of survey respondents (~80%) chose to respond using the paper-and-pen format.

analysis

All survey data were initially entered in an electronic spreadsheet (MS Excel) and cleaned and sorted. The data were then imported into the Statistical Package for the Social Sciences (SPSS) and further coded in that environment. The majority of the descriptive statistics provided have been generated in SPSS. In the main, descriptive statistics such as "crosstabs" have been used to answer to questions posed for this assessment of the phenomenon of teaching out-of-field in WA schools. The intent of this approach has been to enhance the accessibility and clarity of the study's findings for as many audiences as possible.

ethics

This study has been approved by the Murdoch University Human Research Ethics Committee (Permit No. 2008/105).

An information letter that covered the survey assured potential teacher participants of the strict confidentiality of their individual responses, and that the findings associated with the research study would only be reported in aggregated form.

Participants were further assured of their ability to withdraw from the study at any point without penalty or censure.

SECTION 4. FINDINGS & DISCUSSION

This fourth section of the research report (survey findings and discussion) comprises the aggregated results of survey data gathered and analyses conducted for this study. In the interests of enhancing the accessibility and clarity of the research findings for a variety of audiences, the study's findings are organized and presented in the form of questions and answers. The questions are consistent with those asked by the WACOT Board and the smaller working party overseeing this research. The answers to these questions derive wholly from the teaching out-of-field survey data gathered over the second school semester of 2008.

questions and answers

Question 1

How many teachers responded to the teaching out-of-field survey?

Answer

During the second school semester of 2008, a total of 2,275 invitations to participate in WACOT's *Teaching Out-of-Field* survey were mailed. This constituted a statistically representative sample of the population of *active* teachers for Western Australia, as defined by the dataset maintained by WACOT. This sample had been randomly drawn (in two drawings) by strata, according to Region (Metro vs. Country WA vs. Relief), School Sector (Government, Catholic and Independent) and Level of Schooling (Early Childhood, Primary, Middle School and Secondary).

Overall, 535 WA teachers responded (an overall response rate of 23.5%). The majority of respondents (about 80%) answered in pen-and-paper format by return post, as opposed to responding via the web-based, online option. In Table 2 below, survey respondents are broken down by region, school sector and by level of schooling.

As can be seen in Table 2, 329 (61%) of survey respondents teach in Metro WA schools as compared to 139 (26%) from Country WA schools. Similarly, Table 2, as well as Figures 1 and 2 demonstrate that the plurality of survey respondents teach in the Primary (232 respondents, 43%) and Secondary (217 respondents, 41%) levels of schooling. These relative proportions of active WA teachers responding to the survey invitation would be expected given the proportionally stratified sampling frame designed for this research study.

Table 2. Survey Respondents by WA Region *School Sector * Level of Schooling

WA Region/ School Sector		Level of Schooling					Total
		Early Childhood	Primary	Middle School	Secondary	NA	
Metro	Government	35	98	2	78		213
	Catholic	5	23	0	24		52
	Independent	4	18	2	40		64
	Total	44	139	4	142		329
Country	Government	17	52	1	38		108
	Catholic	1	6	0	11		18
	Independent	2	4	0	7		13
	Total	20	62	1	56		139
Relief	Government	4	31		19		54
	Total	4	31		19		54
NA	not answered					13	13
	Total					13	13
Grand Total		68	232	5	217	13	535

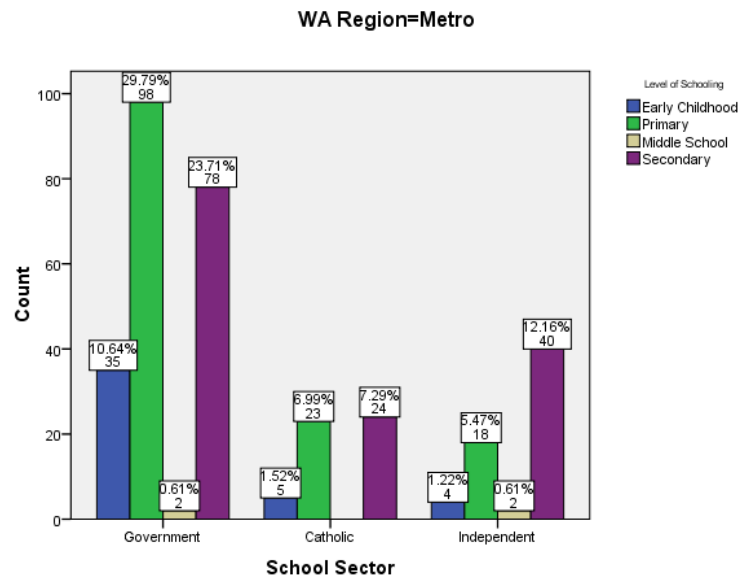


Figure 1. Metro Area Respondents to Teaching Out-of-Field Survey by School Sector and Level of Schooling.

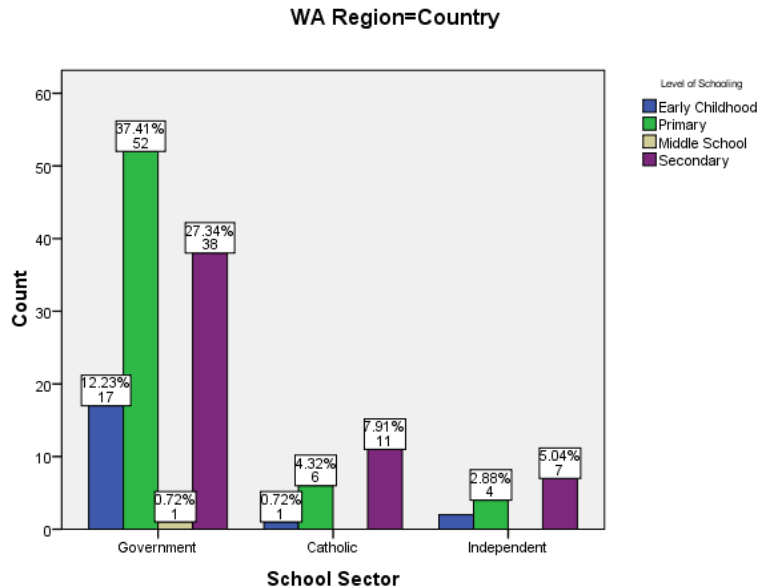


Figure 2. Country Area Respondents to Teaching Out-of-Field Survey by School Sector and Level of Schooling.

Question 2

How many teachers reported teaching out-of-field in 2007?

Answer

Overall, 123 out of 535 WA teachers reported teaching out-of-field in 2007. As shown in Table 3, this represents an overall teaching out-of-field rate of 24%. When the confidence level and the confidence interval associated with this survey and its response rate are put together, we can say that we are 95% sure that the true percentage of the actively teaching population that is teaching out-of-field in WA is between 20% and 28% (i.e., $24\% \pm 4\%$).

Below, in Tables 4 and 5 respondents are broken down by region (Metro vs. Country WA), School Sector (Government, Catholic and Independent) and by Level of Schooling (Early Childhood, Primary, Middle School and Secondary).

As can be seen in Table 4, the overall rate of teaching out-of-field for Government schools in the Perth Metro region in 2007 was 13.6%, as contrasted with 28.8% for Catholic schools and 29.7% for Independent schools in the Metro area, respectively.

As shown in Table 5, overall rates of teaching out-of-field were higher in the Country regions of WA in 2007 (as compared to rates for Metro schools). For country-area Government schools in 2007, the overall rate of teaching out-of-field was 25.9%, as contrasted with 44.4% for Catholic schools and 38.5% for Independent schools, respectively.

Particularly noticeable for Country region WA schools were the much higher rates of teaching out-of-field in Secondary schools, as compared to the rates seen for Metro area secondary

schools. In Government secondary schools in Country WA, the rate of teaching out-of-field was 50%. This was seen to be similarly high for Catholic (45.5%) and for Independent (57.1%) secondary schools in Country WA.

Table 3. Survey Respondents (Overall) Who Reported Teaching Out-of-field in 2007

Did you teach out-of-field in 2007?		Frequency	Percent	Valid Percent	Cumulative Percent
	No	384	71.8	74.7	74.7
	Yes	123	23.0	23.9	98.6
Valid	Answer not interpretable	1	.2	.2	98.8
	Not answered	6	1.1	1.2	100.0
	Total	514	96.1	100.0	
Missing	System	21	3.9		
Total		535	100.0		

Clearly, in addition to reporting these survey-based *estimates* for rates of teaching out of field disaggregated by WA region, level of schooling and school sector, it is also important here to interrogate the level of confidence that we can justifiably place in these estimates. As noted above, for the *overall rate* of teaching out-of-field for 2007 we can say that we are 95% sure that the true percentage of the actively teaching population teaching out-of-field in WA schools in 2007 was between 20% and 28% (i.e., $24\% \pm 4\%$).

However, as the sample of respondents is disaggregated according to the strata of interest for the study, we become somewhat less confident about the point estimates. For example, 78 Metro-area teachers working in Government secondary schools responded to the survey. Given a population of 4,802 secondary Government school teachers in Metro WA, a 95% level of confidence would mean that the confidence interval for this estimate would grow to ± 8 points. That is, we can be 95% confident that the true rate of teaching out-of-field in Metro WA Government secondary schools lies between 7% and 23% (i.e., $15.4\% \pm 8\%$). Alternatively, if we are willing to accept a slightly lower—although not unusual—confidence level, we can be 90% confident that the true rate of teaching out-of-field in Metro WA Government secondary schools lies between 9% and 21% (i.e., $15\% \pm 6\%$).

Similarly, 38 Country-area teachers working in Government secondary schools responded to the survey. Given a population of 2,216 secondary Government school teachers in Country WA, a 95% level of confidence would mean that the confidence interval for this estimate would swell to ± 16 points. That is, we can be 95% confident that the true rate of teaching out-of-field in Country WA Government secondary schools lies between 34% and 66% (i.e., $50\% \pm 16\%$). Alternatively, if we are willing to accept a slightly lower confidence level, we can be 90% confident that the true rate of teaching out-of-field in Country WA Government secondary schools lies between 37% and 63% (i.e., $50\% \pm 13\%$).

In other words—in large part due to the poor response rate overall—as the final sample of WA teachers responding to the teaching out-of-field survey is disaggregated to more and more disaggregated and stratified groups, greater levels of prudence must be applied in judging the accuracy of the observed rates of teaching out-of-field.

Table 4. Metro WA (Perth) Region Survey Respondents Who Reported Teaching Out-of-field in 2007 by School Sector*Level of Schooling

Metro WA 2007			Level of Schooling					Total
			Early Childhood	Primary	Middle School	Secondary	not answered	
School Sector	Government	Count	35	98	2	78		213
		Out-of-field Count	4	13	0	12		29
		Out-of-field %	11.4%	13.3%	0%	15.4%		13.6%
	Catholic	Count	5	23	0	24		52
		Out-of-field Count	2	8	0	5		15
		Out-of-field %	40%	34.8%	0%	20.8%		28.8%
	Independent	Count	4	18	2	40		64
		Out-of-field Count	0	5	1	13		19
		Out-of-field %	0%	27.8%	50.0%	32.5%		29.7%
Total		Count	44	139	4	142		329
		Out-of-field Count	6	26	1	30		63
		Out-of-field %	13.6%	18.7%	25.0%	21.1%		19.1%

Table 5. Country WA Region Survey Respondents Who Reported Teaching Out-of-field in 2007 by School Sector*Level of Schooling

Country WA 2007			Level of Schooling					Total
			Early Childhood	Primary	Middle School	Secondary	not answered	
School Sector	Government	Count	17	52	1	38		108
		Out-of-field Count	1	7	1	19		28
		Out-of-field %	5.9%	13.5%	100.0%	50%		25.9%
	Catholic	Count	1	6	0	11		18
		Out-of-field Count	1	2	0	5		8
		Out-of-field %	100.0%	33.3%	0%	45.5%		44.4%
	Independent	Count	2	4	0	7		13
		Out-of-field Count	0	1	0	4		5
		Out-of-field %	0%	25%	0%	57.1%		38.5%
Total		Count	20	62	1	56		139
		Out-of-field Count	2	10	1	28		41
		Out-of-field %	10.0%	16.1%	100.0%	50.0%		29.5%

Question 3

How many teachers reported teaching out-of-field in 2008?

Answer

Overall, 123 WA teachers reported teaching out-of-field in 2008 (the same number, although not exactly the same individuals, who did in 2007). As shown in Table 6, this represents an overall teaching out-of-field rate just under 24%. When the confidence level and the confidence interval associated with this survey and its response rate are put together, we can say that we are 95% sure that the true percentage of the actively teaching WA population that taught out-of-field in 2008 lies between 20% and 28% (i.e., 24% ± 4%).

Table 6. Survey Respondents (Overall) Who Reported Teaching Out-of-field in 2008

Did you teach out-of-field in 2008?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	397	74.2	75.0	75.0
	Yes	123	23.0	23.3	98.3
	Answer not interpretable	2	.4	.4	98.7
	Not answered	7	1.3	1.3	100.0
	Total	529	98.9	100.0	
Missing	System	6	1.1		
Total		535	100.0		

Below, in Tables 7 and 8 respondents are broken down by region (Metro vs. Country WA), School Sector (Government, Catholic and Independent) and by Level of Schooling (Early Childhood, Primary, Middle School and Secondary).

As can be seen in Table 7, the overall rate of teaching out-of-field for Government schools in the Perth Metro region in 2008 was 16.4%, as contrasted with 26.9% for Catholic schools and 29.7% for Independent schools in the Metro area, respectively.

As shown in Table 8, overall rates of teaching out-of-field were higher in the Country regions of WA in 2008 (as compared to rates for Metro schools). For country-area Government schools in 2008, the overall rate of teaching out-of-field was 23.1%, as contrasted with 44.4% for Catholic schools and 46.1% for Independent schools, respectively.

Particularly noticeable for Country region WA schools were the much higher rates of teaching out-of-field in Secondary schools, as compared to the rates seen for Metro area secondary schools. In Government secondary schools in Country WA, the rate of teaching out-of-field was 44.7%. This was seen to be similarly high for Catholic secondary schools (45.4%). The rate for Independent country secondary schools ballooned in 2008 to 71.4% as compared to 57.1% in the previous year.

Table 7. Metro WA (Perth) Region Survey Respondents Who Reported Teaching Out-of-field in 2008 by School Sector*Level of Schooling

Metro WA 2008			Level of Schooling					Total
			Early Childhood	Primary	Middle School	Secondary	not answered	
School Sector	Government	Count	35	98	2	78		213
		Out-of-field Count	2	15	1	17		35
		Out-of-field %	5.7%	15.3%	50%	21.8%		16.4%
	Catholic	Count	5	23	0	24		52
		Out-of-field Count	2	6	0	6		14
		Out-of-field %	40%	26.1%		25%		26.9%
	Independent	Count	4	18	2	40		64
		Out-of-field Count	0	6	1	12		19
		Out-of-field %	0%	33.3%	50%	30%		29.7%
Total		Count	44	139	4	142		329
		Out-of-field Count	4	27	2	35		68
		Out-of-field %	9.1%	19.4%	50%	24.6%		20.7%

Table 8. Country WA Region Survey Respondents Who Reported Teaching Out-of-field in 2008 by School Sector*Level of Schooling

Country WA 2008			Level of Schooling					Total
			Early Childhood	Primary	Middle School	Secondary	not answered	
School Sector	Government	Count	17	52	1	38		108
		Out-of-field Count	1	7		17		25
		Out-of-field %	5.9%	13.5%		44.7%		23.15%
	Catholic	Count	1	6	0	11		18
		Out-of-field Count	1	2		5		8
		Out-of-field %	100%	33.3%		45.4%		44.4%
	Independent	Count	2	4	0	7		13
		Out-of-field Count	0	1		5		6
		Out-of-field %		25%		71.4%		46.1%
Total		Count	20	62	1	56		139
		Out-of-field Count	2	10		27		39
		Out-of-field %	10%	16.1%		48.2%		28.0%

Similar to the case for 2007, in addition to reporting these survey-based *estimates* for rates of teaching out of field disaggregated by WA region, level of schooling and school sector, it is also important here to report the level of confidence that we can reasonably place in these estimates. As noted above, for the *overall rate* of teaching out-of-field for 2008 we can say that we are 95% sure that the true percentage of the actively teaching population teaching out-of-field in WA schools in 2008 was between 20% and 28% (i.e., $24\% \pm 4\%$).

However, as the sample of respondents is further broken down according to the strata of interest for the study, we become less confident about the proportion estimates. For example, 40 Metro-area teachers working in Independent secondary schools responded to the survey. Given a population of 2,155 secondary Independent school teachers in Metro WA, a 95% level of confidence would mean that the confidence interval for this estimate would grow to ± 14 points. That is, we can be 95% confident that the true rate of teaching out-of-field in Metro WA Independent secondary schools lies between 16% and 44% (i.e., $30\% \pm 14\%$). Alternatively, if we are willing to accept a slightly lower—although not unusual—confidence level, we can be 90% confident that the true rate of teaching out-of-field in Metro WA Independent secondary schools lies between 18% and 42% (i.e., $30\% \pm 12\%$).

In other words—in large part due to the poor response rate overall—as the final sample of WA teachers responding to the teaching out-of-field survey is disaggregated to more and more disaggregated (stratified) groups, greater levels of caution must be applied in judging the accuracy of the observed rates of teaching out-of-field.

Question 4

What Levels of Schooling and Learning Areas are impacted by WA teachers teaching out-of-field in 2007 and 2008?

Answer

Overall, 123 WA teachers (about 24% of valid responses) reported teaching out-of-field in 2007 and 2008. As shown in Figure 3, the most common reason given by these teachers related to their teaching out-of-field in both years was that their placements were due to relief teaching roles in the schools (about 16% of teachers gave this reason). The second most common identifiable reason for teaching out-of-field was teaching in a primary school setting without appropriate qualifications. Sixteen teachers (13%) gave this explanation for their out-of-field placement in 2008, as compared to 18 teachers (14%) in 2007.

For the reportedly “high need” learning area of mathematics, 7 teachers (6% of those who reported teaching out-of-field) cited a lack of appropriate training in mathematics. From a proportional perspective, 7 of the 43 teachers (16%) who reported teaching some form of mathematics as a discrete subject also reported teaching out-of-field in 2008. The size of this rate seems relatively consistent with that reported in the 2008 SiAS, which noted that an overwhelming majority (87%–95%) of those teaching senior secondary (Years 11 and 12) Maths, Physics and Chemistry had at least a one-year tertiary qualification in these subject areas and that at least three-quarters had completed teaching methodology training in the area. However, we are unable to determine a confidence interval for this observed rate (i.e., 16% of maths teachers teaching out-of-field) as the dataset provided does not allow calculation of the size of the population of secondary maths teachers in WA at the current time.

For the similarly high-profile learning area of science, 6 teachers (5% of those who reported teaching out-of-field) cited a lack of appropriate training in science. From a proportional perspective, 6 of the 34 teachers (18%) who reported teaching some form of science as a discrete subject also reported teaching out-of-field in 2008. Similar to mathematics, this rate is an order of magnitude relatively consistent with that reported in the 2008 SiAS. However, we are again unable to determine a confidence interval for this observed rate (i.e., 18% of

science teachers teaching out-of-field) as the dataset provided does not allow calculation of the size of the population of secondary science teachers in WA at the current time.

Levels of Schooling and Learning Areas Impacted by Teaching Placements Out-of-Field

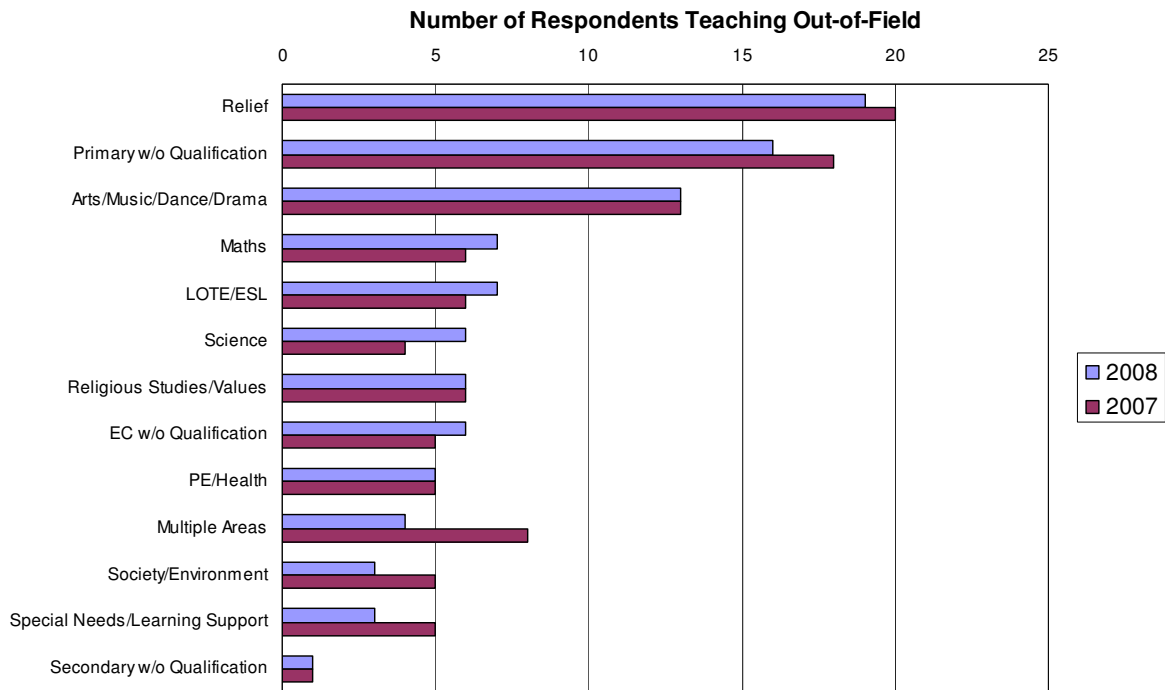


Figure 3. Levels of Schooling and Learning Areas Impacted by Respondents Teaching Out-of-Field in 2007 and 2008.

Previously, we had pointed up the SiAS finding on the prevalence of out-of-field teaching in the primary specialist areas of Languages Other Than English (LOTE) and Special Needs. In these areas, SiAS reported that only about half of the teachers had at least a one-year qualification. In this study, 7 teachers (6%) reported LOTE as an out-of-field assignment in 2008, and a similar number reported this for 2007.

Similarly, a survey of teachers at the end of their first year of teaching in Victoria, found that 13-20% of primary teachers reported that they felt they were not qualified to teach at the year level at which they were working. At the secondary level the Victorian study found about 15% of Studies of Society and Environment (SOSE) and Science teachers reported that they were unqualified to teach in these areas (Ingvarson, Beavis and Kleinhenz, 2004). In this study, only 3 teachers reported SOSE as an out-of-field teaching area in 2008, and only 5 reported similarly for 2007.

However, despite the relatively moderate observed rates for teaching out-of-field in mathematics and science, there were also worrying indicators that these rates may be underestimated by the current survey. For example, one Head of Department in Mathematics commented that

As head of Mathematics I have numerous staff teaching out of area each year - this year 5 out of 9 teach out of area (ie non maths teachers) some are maths minor.

Similarly, a science teacher observed that:

There are currently 8 teachers out of 18 in our Science Dept currently teaching either out of subject area or out of field.

While infrequent, these types of unsolicited observations perhaps suggest a need for additional research on the phenomenon with a greater degree of focus on the high-profile, high-need areas of science and mathematics at the secondary level.

To illustrate the teacher placement “reasoning” in play for those 120+ teachers who reported teaching out-of-field in 2007 and 2008, a selection of teachers’ explanations for their placements in 2008 are given below, organized by reason category, consistent with those used for Figure 3. (It should be noted that these placement explanations are in the main provided *verbatim*, absent corrections for spelling and/or grammar.)

Reason: Relief Teaching Role

- I am Early Childhood trained K-3, but have taught yrs 4-7, Phys Ed, Music, French and any other fill in required in Primary Schools.
- As a day-relief staff I am placed in any subject/specialist field as required for that day.
- As a relief teacher I can be asked to take home ec, D&T, maths, music, english. As a relief teacher I do not have full professional responsibility for lesson content and assessment & reteaching at the point of need.
- I am relieving at primary school and am secondary trained. Have no primary school background. Am also teaching out-of-field at TAFE. The "reason" for this is sheer desperation on behalf of schools/TAFE - no teachers willing to work at lower socioeconomic schools (at least as relief teachers)
- Doing relief teaching so always out of area. The school I do relief at has 4 home Ec teachers, 2 qual, 2 out of their area 1 P/Ed 1 art
- I have done relief teaching for approx. 20 years from pre-school to Yr 12 in all subjects. I enjoy the variety and am able to adapt to teach out of field subjects with competency. Staff are very helpful. You learn as you go. This can be done well!
- (I think this is applicable) I am primary relief teacher. Sometimes I relieve for specialist teachers - e. g. Music, LOTE, IT-Library and Phys Ed. Teachers need DOTT time and I often "do my own thing" when relieving in those areas.

Reason: Teaching Primary without Qualification

- I am early childhood trained, however am teaching yr 2s
- Trained to teach at secondary level - teaching at primary level. When I moved to primary level there was a shortage of LOTE teachers at that level.
- I had to resign my permanent position with the Education Department when I had children. At a later date I did some relief teaching at Primary Schools. I found this experience very enjoyable and rewarding and have been working as a fixed Term Teacher in Primary Schools since.
- Secondary trained teaching primary. Trained as a Visual Arts teacher but am ICT Specialist Teacher at a Primary School.
- Secondary trained and taught for many years but chose to move from full-time secondary to part-time primary when a position at my local school became available.
- I am early childhood trained but teach primary music because it suits my full-time study timetable
- I used to be a science high school teacher and now I am a primary school teacher.
- Qualified to teach in secondary, I have chosen to teach in primary. I left teaching in 1989 and returned in 2004.
- Having recently resumed work after 2 lots of maternity leave I felt that a PS timetable would offer the flexibility to allow me to fulfil my parent responsibilities. Having worked in the Primary sector for most of my teaching career, I felt confident and competent to take the position - more so than taking on a secondary position due to the many changes that had occurred in my absence i.e. courses of study (I've had no opportunity to PD i.e. COS).

Reason: Teaching Arts/Music/drama without Qualification

- I am teaching Dance, Drama and Music. I have previous experience in dance and drama and no experience in music at all.
- I am currently teaching 'media' but as I am not qualified I teach more of a graphic design program. The reason is timetabling and shortage of staff I'm assuming.
- Maternity Leave - Dance, Supervision with Dance
- I am employed as a primary school music specialist and my teaching degree only provided one unit that involved teaching the arts. I have played music for 22 years so have some experience and a great interest in the subject.
- teaching yr 8 art due to being under load and no art teacher available
- take a beginner music ensemble
- Have taught primary art (1 day per week) for 10 years - no fine arts degree.
- Came back to my permanent school after a semester of acting principal in remote area and was made to teach art to whole school - definitely not my area - I hate it.
- I undertook to try teaching Art part-time, which I am currently studying & have always had a passion for.

Reason: Teaching Mathematics without Qualification

- Yea, in my first year of appointment in this school I was asked to teach health, society and environment and maths.
- Teaching yr 8 maths - qualified teacher shortage. Teaching IT in primary. Not qualified to just most experienced teacher in DHS
- I also teach one hour a week of year 12 Modelling with Maths, though I am not responsible for planning. Students have work to go on with which is set by their regular teacher. The reason for me teaching this class is a peculiarity of timetabling which requires the maths teachers to be "double booked" for that particular period. It's pretty much a weekly relief lesson.
- My choice - I started teaching some maths and/or science classes in my 4th year of teaching - moved into science/maths 17 years ago and have taught exclusively maths for about 7 years
- When I applied for my post 22 years ago, the requirement was for Maths. Even though my specialisation is English, graduating in a former more rigorous milieu than the present, my basic knowledge of maths was easily adequate for the job.
- Technically, mathematics was not part of my Grad Dip Ed, however I did take units at university. So although it is not technically my minor, it could have been. So in answer to the question, I am technically teaching out-of-field as per your definition, however, still feel qualified to do so.
- Maths teaching for staff member on leave
- Teaching Maths to lower ability students - reason I am currently doing one year Grad Cert in Maths so I can correctly teach subject. D&T- Mechanical Workshop - no experience or help to teach the subject. Extra hours researching how to teach the subject so the students do not suffer.

Reason: Teaching LOTE/ESL without Qualification

- I am teaching LOTE, yet not a qualified LOTE teacher. Our school had trouble finding a LOTE teacher for 2008, so I was asked to do the job. As a result, my school also had to change the LOTE language from Italian, to Indonesian.
- As a native born Italian who has completed her degrees in Australia & have taught Italian in out of school (extension) programs & TAFE, my principal considered me qualified to run the LOTE program at our school. LOTE teachers are hard to find & I consented to being seconded from my classroom.
- I have been teaching LOTE from yr 1-7 until this year. I now teach yr 5-9, but 2 LOTE. I am working in a middle school setting which is 5-8. I have also taught yr 7 art for one year when short of teaching.
- I teach French to Year 12; I have no University Qualification in it.
- Although my placement as ESL teacher fits your definition of 'out of field', I consider 40 years experience in teaching primary literacy with constant in service, journal reading and specific ESL training more than equips me for the position. My other task as learning support co-ordinator required 12 full days of training over 2 years.

- I am teaching IEC - Intensive Language students. The reason is the school wants to expose these students to different areas (basically, needs to fill up their timetables) but provides no training for the teachers required to do this.

Reason: Teaching Science without Qualification

- Science - no other science teachers. Did it last year as well with success so I am back teaching it. Poor timetabling.
- I teach yr 11 chemistry. Whereas I am qualified to teach yr 11 & 12 Human Biology and Biology.
- My training was for primary schooling but is recognised as appropriate for middle school in Australia. As an Environmental Science person, I had never taught Chemistry/Physics at this level. R. E. is brand new to me. I got year 11 as they needed someone and I was prepared to give it a go
- Lack of competent and/or available teaching staff in this area. Also, new school with small number of staff.
- The current teacher shortage, coupled with the school not renewing a science teacher's contract due to his poor performance resulted in classes being collapsed and me picking up a year 9 science class for term 4.
- Teaching maths, English & Science Yrs 7-9 to cater for a range of students I coordinate.
- Robotics - year 10
- Science specialist [in a primary setting]

Reason: Teaching Religious Studies without Qualification

- Teach values education to all classes yr 4-7 (school is only yr 4-7) to provide DOTT time for teachers
- I am the coordinator for the Christian Service Learning Programme for the whole of year 9 (250 students). I have no qualifications in this field.
- R. E. - As a Catholic in a Catholic School, it's expected. Nothing in degree so ongoing study? PD required.
- Teaching RAPS (Religious and Philosophical Studies). No formal university qualification. Have undertaken considerable in-service professional development courses. Given an opportunity to introduce RAPS Course in a PIT capacity across junior School (PP-6).
- RE- I am a Christian & have trained in the church setting, but have no formal qualifications.

Reason: Teaching Early Childhood without Qualification

- my Murdoch degree did not specify early childhood even though my experience & devt psych helps - my teaching pracs were primary. However I have been teaching part-time in PP for 8 years. NOTE I wish my exp taken more into account.
- I applied for a 0.2 position as the DOTT provider for the Pre-Primary, and won the position
- I currently teach Year Ones and Pre-Primaries Italian. While I have a qualification to teach LOTE, I am not Early Childhood trained. I have been given this position as I have a very difficult Year 6/7 class (including Special Needs Students), and it is an effort to give me a "break" so to speak.
- Teaching pre-primary but qualified yr 1-10 (PE)
- Currently teaching pre-primary. This position ensured me 2 full days teaching rather than 4 half days.

Reason: Teaching PE/Health without Qualification

- Voluntarily teach phys ed cycling and any water based activity based on my personal sporting interests. relief classes are often out of field and cause the most stress in the classroom and dealing with admin
- I'm teaching Phys Ed, being a qualified Primary school teacher. Reason - 1 was advertised as phys ed 2 - applied - got the job
- Taught Yr 9 Health Education this year in Sem 1 as my French position was only a total of 0.8 - had other classes to build up to 1.0.
- Phys ed - due to teacher shortages we are required to take some upper school Phys Ed classes- more as a supervisory role as course is recreational. Religious education - if you are catholic you are expected to teach RE.

- Year 10 PE one semester, 2 periods per week cycling 'option' due to my being a keen racing cyclist

Reason: Multiple &/or Mixed

- My training was for primary schooling but is recognised as appropriate for middle school in Australia. As an Environmental Science person, I had never taught Chemistry/Physics at this level. R. E. is brand new to me. I got year 11 as they needed someone and I was prepared to give it a go.
- Teaching maths, English & Science Yrs 7-9 to cater for a range of students I coordinate.
- For semester 1, I taught year 8 and 9 Dance. It wasn't my choice, but as a new graduate I didn't feel I could refuse these two classes and still keep my Drama load. I also teach one hour a week of year 12 Modelling with Maths, though I am not responsible for planning. Students have work to go on with which is set by their regular teacher. The reason for me teaching this class is a peculiarity of timetabling which requires the maths teachers to be "double booked" for that particular period. It's pretty much a weekly relief lesson.
- I have no Science or Society and Environment training and these areas are difficult to teach at times.

Reason: Teaching Special Needs/Learning Support without Qualification

- After 13 years of classroom teaching, I moved into Learning Support. I have no qualifications for this other than a passion for this area, my classroom experience and a couple of units completed during my university studies. I have had many opportunities for professional learning whilst I have been working in this area.
- supporting EAL/D students in mainstream subjects across school
- EALD- no teaching qualification or university training in this area. Reason: timetabling, no qualified EALD teacher at the school

Reason: Teaching Secondary without Qualification

- primary teaching method trained and teaching secondary classes.

Reason: "Other"

- Library Resource teacher - also working as Administrator. This works best for the school as I provide DOTT relief in my library resource role.
- CAREERS & the new course of study CAE have followed on from WORK STUDIES which was traditionally picked up by the Society & Environment Learning Area at our school. Last year I taught all Society & Environment.
- 50% of my classes are teaching the "Careers of Enterprise" in upper school. The other half is Society & Environment in lower school which is aligned with my qualifications
- Don't possess an Agricultural Degree & have taught all my life in Ag college
- was recruited to teach agriculture by DIRECTOR OF STAFFING 1978 because of my earlier basic diploma in the area!
- Aviation. No Training. Dumped into the position. Courses of study. Absolute disgrace.
- I am teaching Technology and Enterprise electives this year (Childcare, Food and Culture, Tourism, Entertaining with Food.) Our school does not have a dedicated Home Economics teacher this year.
- I am currently teacher/librarian for Kindy to Year 7 and I do not have a library qualification.
- Have been teacher librarian for 14 3/4 years at present school suddenly dumped on me/ no notification when there could have been to do relief in yr 6/7 with hearsay of getting a replacement teacher. Not so. Obviously other plans were in motion without me knowing or being consulted. New position created - mine terminated.

Question 5

What are the levels of teaching experience and types of credentials held by WA teachers who report teaching out-of-field in 2008?

Answer

As portrayed in Table 9 below, the levels of teaching experience since obtaining a teaching qualification (credential) varied considerably for the 123 survey respondents who reported teaching out-of-field in 2008. However, for both the Metro and Country regions of WA, the plurality of teachers teaching out-of-field reported 21 or more years of experience (41% in the case of Metro area teachers, and 46% in the case of Country WA teachers).

Table 9. Levels of Experience for Survey Respondents Who Reported Teaching Out-of-field in 2008

WA Region		Experience since Credentialed						Total
		less than 1 year	1 to 5 years	6 to 10 years	11 to 15 years	16 to 20 years	21 years or more	
Metro	Early childhood	0	1	3	0	2	3	9
	Primary	1	1	2	6	3	9	22
	Middle	0	1	1	0	0	3	5
	Secondary	1	6	2	6	2	9	26
	Multiple levels	0	0	0	1	0	1	2
	Other	0	0	0	1	0	3	4
	Total	2	9	8	14	7	28	68
Country	Early childhood		1	0	1	0	3	5
	Primary		0	1	0	1	3	5
	Middle		1	2	0	0	0	3
	Secondary		3	2	3	2	10	20
	Multiple levels		1	0	0	0	1	2
	Other		1	0	1	0	1	3
	NA		1	0	0	0	0	1
Total		8	5	5	3	18	39	
Relief	Early childhood		0	0	0		1	1
	Primary		1	0	1		3	5
	Secondary		0	2	0		0	2
	Multiple levels		2	0	1		1	4
	Other		0	0	0		2	2
	Total		3	2	2		7	14

Only a modest proportion of the 123 teachers who reported teaching out-of-field on this survey held 5 or less years teaching experience since gaining their teaching qualification (16% in the case of Metro WA teachers, and 21% in the case of Country WA teachers). These findings cast considerable question on the commonly heard “street wisdom” that it is newly-qualified graduate teachers who most often are given teaching assignments outside of their areas of qualification.

Table 10 below provides a breakdown of the tertiary credentials held by the 123 teachers who reported teaching out-of-field in 2008. For both Metro and Country WA, these teachers reported holding a variety of tertiary qualifications. In both regions, a plurality of teachers held a Bachelor of Arts (BA) and/or Graduate Diploma in Education (Grad Dip Ed) qualifications. It was also evident that few postgraduate degrees are held by this group (14 out of 225 total degrees, or 6%) although it is unknown how this compares to the overall teaching population in WA. (It should also be noted that the counts presented in Table 10 do not represent tertiary qualifications held uniquely by individual teachers. Therefore, while there are 123 teachers in this group, 225 degrees are counted, or just under 2 tertiary qualifications per teacher.)

Question 6

To what extent do WA teachers who report teaching out-of-field perceive control over their teaching placement? Similarly, to what extent do these teachers enjoy, perceive school support, and consider their out-of-field teaching effective for their students?

Answer

Of the 123 WA teachers who reported teaching out-of-field in 2007, 112 also answered a series of survey questions related to the degree to which they perceived control over their teaching placement, and the degree to which they enjoyed this role, believed it effective for their students, felt supported by their schools and had accessed professional development for the out-of-field learning area or level of schooling. As shown in Table 11, seventy-five of these 112 teachers perceived that they held moderate (40%) or great (27%) control over their teaching placement, and not surprisingly those who enjoyed such control also *enjoyed* teaching out-of-field to a moderate or great extent (56%). Similarly, those teachers who reported moderate or great control over their placement also reported feeling supported by their schools in this role (53%) and felt that their out-of-field teaching had been effective in terms of their students’ learning (56%). However, even for those teachers who reported some degree of control over their placement, only about half reported having professional development in the out-of-field area (49%).

Of the 123 WA teachers who reported teaching out-of-field in 2008, about 115 also answered a series of survey questions related to the degree to which they perceived control over their teaching placement, and the degree to which they enjoyed this role, believed it effective for their students, felt supported by their schools and had accessed professional development for the out-of-field learning area or level of schooling. As shown in Table 12, about 75 of these 115 teachers perceived that they held moderate or great control over their teaching placement, and not surprisingly those who enjoyed such control also *enjoyed* teaching out-of-field to a moderate or great extent (56%). Similarly, those teachers who reported moderate or great control over their placement also reported feeling supported by their schools in this role (51%) and felt that their out-of-field teaching had been effective in terms of their students’ learning (55%). However, even for those teachers in some control of their placement, only about half reported having professional development in the out-of-field area.

Table 10. Types of Tertiary Qualification held by Survey Respondents Who Reported Teaching Out-of-field in 2008

WA Region		Level of schooling currently teaching in WA						Total
		Early childhood	Primary	Middle	Secondary	Multiple levels	Other	
Metro	Bachelor of Arts (BA)	2	9	2	9	1	2	25
	Bachelor of Science (BSc)	0	2	0	4	0	0	6
	Graduate Diploma	2	10	1	11	0	2	26
	Diploma of Teaching	2	3	1	9	1	2	18
	Master of Education (MEd)	2	1	0	3	0	1	7
	Master of Arts (MA)	0	0	0	3	0	0	3
Country	Bachelor of Arts (BA)	2	0	1	9	0	1	13
	Bachelor of Science (BSc)	0	1	0	1	0	1	3
	Graduate Diploma	1	3	1	7	0	2	14
	Diploma of Teaching	2	2	0	6	0	0	10
	Master of Education (MEd)	0	0	0	1	0	1	2
	Master of Science (MSc)	0	0	0	0	0	1	1
Relief	Bachelor of Arts (BA)	1	2	0	1	2	1	7
	Bachelor of Science (BSc)	0	1	0	1	0	1	3
	Graduate Diploma	0	2	0	2	2	0	6
	Diploma of Teaching	0	2	0	0	1	2	5
	Master of Education (MEd)	1	0	0	0	0	0	1

Table 11. Survey Respondents Who Reported Teaching Out-of-field in 2007 by Self-Perceived Control over Placement, Enjoyment, School Support, Professional Development, and Effectiveness

		Self-perceived Control over Placement				
		No extent	Small Extent	Moderate extent	Great extent	Not answered
		Count	Count	Count	Count	Count
Professional Enjoyment Teaching Out-of-Field?	No extent	0	0	5	0	0
	Small extent	7	4	6	1	1
	Moderate extent	10	10	11	4	0
	Great extent	1	5	23	25	0
	Not answered	2	5	0	0	0
Supported by School Teaching Out-of-Field?	No extent	4	2	3	2	0
	Small extent	8	5	9	2	1
	Moderate extent	5	7	21	8	0
	Great extent	1	5	12	18	0
	Not answered	2	5	0	0	0
Professional Development for Subject/Level Teaching Out-of-Field?	No extent	10	7	17	7	1
	Small extent	5	6	8	6	0
	Moderate extent	2	3	18	7	0
	Great extent	1	4	1	10	0
	Not answered	2	4	0	0	0
Effectiveness (for Students' Learning) in Teaching Out-of-Field?	No extent	1	1	1	0	0
	Small extent	8	7	9	1	0
	Moderate extent	7	7	16	10	1
	Great extent	2	5	18	19	0
	Not answered	2	4	0	0	0

Table 12. Survey Respondents Who Reported Teaching Out-of-field in 2008 by Self-Perceived Control over Placement, Enjoyment, School Support, Professional Development, and Effectiveness

		Self-perceived Control over Placement				
		No extent	Small Extent	Moderate extent	Great extent	Not answered
		Count	Count	Count	Count	Count
Professional Enjoyment Teaching Out-of-Field?	No extent	5	2	4	0	0
	Small extent	7	3	5	2	0
	Moderate extent	9	8	10	5	0
	Great extent	1	5	23	27	0
	Not answered	2	3	1	0	0
Supported by School Teaching Out-of-Field?	No extent	6	3	3	2	0
	Small extent	8	4	9	2	0
	Moderate extent	5	6	19	11	0
	Great extent	3	5	11	18	0
	Not answered	2	3	1	1	0
Professional Development for Subject/Level Teaching Out-of-Field?	No extent	13	8	16	6	0
	Small extent	6	5	9	6	0
	Moderate extent	2	2	14	10	0
	Great extent	1	3	2	12	0
	Not answered	2	3	1	0	0
Effectiveness (for Students' Learning) in Teaching Out-of-Field?	No extent	3	0	2	0	0
	Small extent	7	5	8	1	0
	Moderate extent	10	7	12	10	0
	Great extent	2	6	18	23	0
	Not answered	2	3	1	0	0

This research study was commissioned in mid-2008 by the Board of the Western Australian College of Teaching (WACOT). The survey used to gather the study's data was developed and administered over the second school semester of 2008. In all 2,275 invitations to participate in the survey were sent to a randomly drawn stratified sample of WA teachers, proportionally representative of the various levels of schooling, the State's three school sectors, and major regions (Metro and Country). By the close of the survey period, 535 active teachers (or 23.5%) had responded, primarily by pen-and-paper, but also via the online version of the survey. This represented an at-best modest response to the invitation to participate that ultimately limits the confidence that can be placed in some of the finer-grained estimates of rates of teaching out-of-field in WA schools.

Based on the 535 survey responses received, the overall rate of teaching out-of-field in WA for both the 2007 and 2008 school years was estimated at 24%. More specifically, with regard to the *overall rate* of teaching out-of-field for both 2007 and 2008, we can say that we are 95% sure that the true percentage of the actively teaching population teaching out-of-field in WA schools was between 20% and 28% (i.e., $24\% \pm 4\%$).

As the sample of respondents was further disaggregated by region, school sector and level of schooling additional patterns emerged. Generally, observed rates of teaching out-of-field tended to be higher in Catholic and Independent schools as compared with Government schools (about twice as high in many cases). Similarly, rates of teaching out-of-field were observed to be considerably higher in Country WA schools, across all three school sectors, while maintaining the pattern that these rates tended to be substantially higher in Catholic and Independent schools as compared to Government schools. However, despite the consistency of these patterns across school sectors and regions, we strongly emphasize that considerable prudence must be exercised in the interpretation of these estimates because of the relatively small numbers of respondent teachers who comprise these subgroups. In some cases, for example, estimates of rates of teaching out-of-field carried with them confidence intervals as high as fifteen percentage points ($\pm 15\%$).

These findings are not inconsistent with previous research on the phenomenon of teaching out-of-field within Australia. For example, the Staff in Australian Schools (SiAS) 2008 report, based on a large-scale national on-line survey of teachers and school leaders, concluded that there was considerable evidence of out-of-field teaching at both the primary and secondary levels of schooling. In the state of Victoria, Ingvarson and his colleagues (2004) reported that up to 20% of primary teachers felt they were not qualified to teach at the year level at which they were working. At the secondary level about 15% of SOSE and Science teachers reported they were unqualified to teach in these areas, while in all other key learning areas from 25-30% of teachers reported teaching in an area they were not qualified.

The findings of this study are particularly consistent with those of Ingvarson, Beavis and Kleinhenz (2004) in Victoria. In the current study, in addition to a quantitatively similar overall rate of 24% teaching out-of-field, we also estimated out-of-field teaching rates of 16% and 18% in Maths and Science (including Physics, Chemistry and Biology) based on the reports of the 43 Maths and 34 Science teachers who participated. Unfortunately, valid comparison to previous systematic research on this phenomenon in the WA context is not possible, as we are unaware of the existence of prior similar studies.

Additionally, in both the Australian (e.g., Thomas, 2000) and US (e.g., Ingersoll, 2003) contexts it has been suggested that there is a higher incidence of teaching out-of-field in poor communities, rural and remote schools and metropolitan schools considered 'hard to staff.' In particular, Ingersoll's US data showed there was a much greater prevalence of out-of-field teaching in high-poverty schools than in more affluent schools. His data also indicated that the degree of out-of-field teaching was much higher in small schools including small private schools, which had "among the highest overall levels of out-of-field teaching" (2003, p.17). Although these issues are clearly important to the study and understanding of the

phenomenon of teaching out-of-field in the WA context, they nevertheless are beyond the purpose and terms of reference for this study. As a result, we refrain from speculating on them here, preferring instead to remain within the bounds dictated by the mandate for this research as well as the limits of the data gathered, and leaving answers to these questions to future research.

In conclusion, the core business of this survey research has been to provide an assessment of the current state of the phenomenon of teaching out-of-field for WA schools, according to region, school sector and level of schooling. We have attempted to remain close to this mandate, and are confident in the overall rates reported for the 2007 and 2008 school years. Much more caution must be exercised in interpreting the estimates of teaching out-of-field for smaller subgroups comprised of only a few teachers. While as educational researchers we will always advocate for further empirical study of important phenomena such as teaching out-of-field, the use of the findings reported here for improving the educational experiences of WA students, teachers and schools we leave to the wisdom of Western Australia's educational policy makers.

We thank the five hundred and thirty-five WA teachers who participated in this research.

The Phenomenon of "Teaching-Out-of-Field" in WA Schools

FINAL
REPORT
2009

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