



Australian Government

Department of Education, Employment and Workplace Relations

Staff in Australia's Schools

**TEACHER WORKFORCE DATA AND PLANNING
PROCESSES IN AUSTRALIA**

Susanne Owen (ACE)

Julie Kos (ACER)

Phillip McKenzie (ACER)

January 2008

This report is based on consultations with a wide range of organisations and individuals in all States and Territories between September and December 2006. The report was commissioned by the former Australian Government Department of Education, Science and Training (DEST), which has since become the Australian Government Department of Education, Employment and Workplace Relations (DEEWR). The contributions through the consultations are gratefully acknowledged, as are the inputs from the project Advisory Committee and colleagues from ACER and ACE. The views expressed in the report are those of the authors and not necessarily of DEEWR or any other individual or organisation.



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IBN: 0 642 77712 8

Department of Education, Employment and Workplace Relations

Location Code: 133

GPO Box 9880

CANBERRA CITY ACT 2601

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EXECUTIVE SUMMARY

Background

Workforce planning is essential to ensure sufficient numbers of well-qualified teachers and leaders to meet the emerging needs of schools in the 21st century. Given the current ageing workforce profile in Australia, there are concerns about teacher shortage, especially in some specialist subject areas, in rural and remote locations and in leadership positions. Teacher demand and supply issues affect many people and can have substantial implications for the quality of learning, curriculum provision, and school budgets.

This report forms part of the Australian School Teacher and Leader project which was commissioned by the former Department of Education, Science and Training (DEST) in June 2006. The purpose of the project is to provide a detailed picture of the Australian teacher workforce and to gather information to assist future planning on teacher supply. This particular report focuses on longer-term approaches to workforce data and processes. The project also included the *Staff in Australia's Schools* survey, a national data collection involving all States and Territories and school sectors. The survey results are presented in a separate report.¹

The project has been conducted partly in response to the 2003 final report of the Australian Government's Review of Teaching and Teacher Education, *Australia's Teachers: Australia's Future - Advancing Innovation, Science, Technology and Mathematics*. This report identified data limitations and inadequacies making supply and demand forecasting difficult, also emphasising the importance of comprehensive statistics being reliably and regularly collected on a national and collaborative basis. The MCEETYA 2005 report identified specific data improvement areas including recruitment difficulties information by subject area and location; data about specialisations of teachers and graduates; more information about qualified teachers not in the teaching pool; inflows and outflows from teaching, and practices used by education systems to adjust to recruitment difficulties.

Methodology and Conceptual Framework

The project has been supported by an Advisory Committee who provided advice about the conduct of the key stakeholder consultations and facilitated initial contacts. Research methodologies include literature searches, interviews and emails with workforce planning experts in education and other occupations, as well as focus group consultations with key stakeholders. A draft discussion paper was written based on the preliminary literature review including information about workforce planning in other professions.

Almost 100 key stakeholder consultation focus groups and interviews involving about 350 participants were conducted across all States and Territories. These consultations have involved government and non-government education authorities, principals' association representatives, registration bodies, unions and subject associations, in addition to consultations with national groups. The face-to-face meetings were preceded by a request for the organisations concerned to prepare information about their current data sources, data use and prospective data needs.

An OECD conceptual framework was used to structure the consultations regarding data needs and gaps in relation to teacher workforce planning. Based on that framework and research from other occupations, a six part workforce planning model was developed to guide the analyses:

- Current teacher workforce profile descriptors

¹ *Staff in Australia's Schools 2007*, by McKenzie *et al.* (2007).

- Workforce flow profiles
- Teacher education profile
- Assess adequacy of teacher supply and distribution
- Estimate workforce supply and demand trends
- Projections and impact of future developments

The Australian Teacher Workforce: Research and Findings

The report summarised current research and information about the Australian school teacher and leader workforce. Some of the studies included collections of new data while others have primarily analysed existing data sources, mainly from the ABS and government authorities. The focus was on reports and studies that are reasonably large-scale in nature. The various studies examined the nature of the current teacher workforce and specific potential shortages in the future, and issues concerning pre-service teacher education, teacher and principal wellbeing, aspirations to the principalship, and teacher supply and demand.

The review of current research led to four main conclusions:

- There is a considerable body of data and reports available. The issues concerning the future of the teacher and leader workforce are clearly judged to be important, and a wide range of organisations and individuals have devoted substantial resources to collecting and analysing data.
- The surveys and reports indicate varying sample design quality. Few surveys provide technical details about sampling design, response rates and the likely representativeness of the results. Low response rates are evident in most of the surveys. There are issues of confidence in using the results as reliable estimates of the wider population and for providing a basis on which to make evidence-based policies.
- It is a major challenge to achieve reasonable response rates in voluntary teacher surveys. One of the problems may be that there are too many surveys jostling for attention, and there is not a regular, predictable cycle of data collection producing results that are seen as important across the whole teaching profession.
- There seems to be little sharing of data across the various organisations involved, or use of the data among the wider policy and research communities. Despite large overall costs being incurred, there is not a strong sense of pay-off for the teaching profession or the various groups involved in teacher workforce planning issues.

Responsibilities for Teacher Workforce Planning and Data

The consultations and other research outlined in this report highlight the fact that Australia has not had an organisation with responsibility for teacher workforce planning at the national level. National groups such as DEEWR, ABS, Graduate Careers Australia, and State and Territory government education authorities and non-government groups and other organisations collect data for various purposes. However there is a lack of consistency in terminology and different types of databases, with sometimes only restricted access to data being available.

Current data collections on the teacher and school leader workforce involve a range of organisations from jurisdictions and sectors. The state-level data are generally the most extensive, but there are concerns about the extent to which the data use common definitions and their capacity to be used by school systems to compare themselves with others, or be aggregated to give a picture for the country as a whole

In 1997 MCEETYA established arrangements for the regular monitoring of teacher supply and demand across Australia, with four major reports produced on a two-yearly basis between 1999 and 2005. In 2006, the Council of Australian Governments (COAG) established a Memorandum of Understanding (MOU) linking the Australian Government, the State and Territory governments and universities in relation to skills shortages for all workforce groups. The House of Representatives report *Top of the Class* (2007) recommended that the allocation of teacher education places should align the allocation of places across the teacher education system to meet the teacher shortages identified during the consultations on workforce priorities.

It is noteworthy that the April 2007 MCEETYA meeting agreed to the development of a strategic framework for a national approach to workforce planning in education, and referred this task to the Improving Teacher and School Leader Capacity (ITSLC) Working Group.

Current Teacher Workforce Planning Data

The current data regarding the Australian teacher and school leader workforce was mapped in relation to six key components and specific aspects:

- Current workforce profile for teachers and school leaders: demographic profile, employment status, current employment, employment history, initial qualifications, additional qualifications, formal/informal professional learning
- Workforce flow profiles for teachers and leaders: re-entrants from leave, migrants, graduates, resignations, retirements, potential reserve teacher pool- qualified and on recruitment record, qualified and on/not on recruitment records, underemployed teachers
- Teacher education profile: course details, undergraduate/postgraduate course commencers, course completers, tertiary course attrition
- Access adequacy of supply and distribution of teachers and school leaders: teacher and school leader vacancies, origins of newly appointed teachers, characteristics of newly appointed teachers, vacancy process outcomes, shortage coping techniques
- Estimate workforce supply and demand trends
- Projections of future workforce needs

Key data aspects warranting particular attention are as follows:

Teacher and leader workforce profile

Current employment: Subjects taught

Initial qualifications: Major/minor subjects

Additional qualifications: Major/minor subjects

Workforce flows

Re-entrants from leave, and migrants

- Qualifications by subject
- Year level/subject experience
- Locational availability

Resignation and retirement teachers

- Year level and subjects taught

Potential reserve pool

Qualified (on or not on recruitment records) but not actually teaching

- Qualifications by subject/specialisation
- Year level/subjects taught
- Locational availability
- Availability for work

Teacher education profile

Undergraduate/Postgraduate course completion

- Year level/subject taught
- Destination intentions

Course Attrition

- Level of schooling/subjects

Adequacy of teacher supply and distribution

Teacher/leader vacancy process details

- Fitness of match between applicants and vacancies
- Time to fill vacancies
- Nature/type of unfilled vacancies
- Unfilled or hard-to-fill vacancies

The consultations highlighted that various systems of terminology are used which potentially provide obstacles to greater data sharing and comparability. Payroll, personnel and recruitment records are not necessarily integrated within even the one organisation, although most employers are currently working on this.

The consultations indicated that a key area of data omission relates to factors involved in the attractiveness of the teaching career, including among secondary students, potential career changers, those who have registered but who are not teaching, and under-represented groups such as those from Indigenous origins. Such gaps indicate a need for more comprehensive data on teacher retention and attitudes towards teaching.

Areas of particular interest in informing policy are related to teacher education programs, including issues related to the practicum and improved school-university partnerships. Data regarding the availability of retraining, induction, re-entry and overseas recruits programs was also noted as important, including course satisfaction details. Data on schools' shortage coping techniques when appointees did not actually match vacancy requirements was also noted as an area of significant need.

The key stakeholder consultations also indicated the need to build on existing data about teacher education students and commencing motivations and intentions, completion intentions and destinations, practicum and early career experiences, hard-to-staff schools, and graduate satisfaction with courses undertaken.

The consultations also indicated that data inadequacies were particularly evident in regard to the school leader workforce. Priorities for improved data included attitudes and intentions among prospective and current leaders, the availability and impact of leadership induction programs and capacity building initiatives.

Other areas of significant data interest and need relate to factors influencing retention in the teaching career and having records about separation and retirement intentions.

Current and Emerging Data Needs

The consultations with key stakeholders in all States and Territories, across all levels of schooling and sectors, subjects and specialisations also raise a range of issues about the challenges faced by schools and the ways that schooling is changing. These are related to general issues across schooling of current shortages of specific types of teachers, concerns about possible future overall shortages of teachers and school leaders and the availability of sufficient teachers with skills in emergent educational

approaches. Emergent aspects include integrated approaches and partnerships; flexibility for a more mobile workforce; workforce reform and working with paraprofessionals; and information and communications technology. Specific emergent issues in schooling for which data needs exist include: Vocational education and training, early childhood education, catering for diverse and special needs among students, middle years of schooling and indigenous education.

The data collection framework needs to be sufficiently flexible to be able to incorporate new issues as they emerge, as is now happening for example in early childhood education and the middle years of schooling. The consultations also indicated that there needs to be an ongoing dialogue between those responsible for the data collection and analysis framework, and policy makers and those in the field, to ensure that the data is serving the needs of the latter groups. This orientation is supported by the 2007 Productivity Commission report, *Public Support for Science and Innovation*, which indicates that providing information on areas of shortage and over-supply can also guide students in making career choices, thereby significantly improving the efficiency and effectiveness of teacher labour markets.

Workforce Planning in Other Countries and Other Professions

In order to provide another perspective on Australian issues and approaches, the report summarised developments in teacher workforce data and planning internationally at the OECD level, as well as in the United States, England, Scotland and New Zealand. It also discussed recent developments in workforce planning for the health and nursing professions in Australia.

The experiences in other countries and professions suggest a number of implications for how to improve teacher workforce data and planning in Australia. Key ingredients in successful approaches appear to be:

- Agreement on a conceptual framework for teacher and school leader workforce planning which acknowledges the interconnections with the broader economic and political context, articulates the importance of a highly skilled, adaptable workforce, and identifies the factors that make teaching an attractive career choice.
- High-level political endorsement of the framework and a set of operating principles and strategic initiatives, including building stakeholder involvement.
- Allocation of the responsibility for implementing the framework to an expert taskforce with a clear mandate and adequate resourcing.
- The development of common data items and collection methodologies where multiple organisations are involved in data collection.
- The minimisation of data collection burdens on schools and teachers, including making greater use of routine administrative data collections, linking data sets, and ensuring that schools can see value in the data being collected.
- Strategies to encourage high response rates to surveys and improve data quality and use.
- Agreed protocols governing data access and use.
- Realistic timeframes for pilot testing and evaluation of any new data collections or planning processes.

Longer-Term Collaborative Approaches

The consultations expressed broad support for greater collaboration on teacher workforce data issues. However, the support was qualified by concerns about the challenges of building genuine collaboration in a competitive environment, possible uses of any data, and the need for the whole process to be properly explained and resourced.

The consultations and review of approaches in other countries and occupations suggest that there are four broad forms that greater collaboration on workforce data could take:

1. Developing a sector-wide approach to workforce planning and data collection that is closely connected to policy development needs. This, for example, is the type of approach recently implemented in Australia in regard to the health and nursing workforces.
2. Working towards coordination of current administrative data collections concerning teachers and school leaders, and sharing of the key data and indicators under agreed protocols governing access and use. This, for example, is the approach being implemented in England through the *Common Basic Data Sets* and the *Protocol on Data Sharing and Rationalisation in the Schools*
3. Rationalising of current one-off or irregular survey data collections from teachers and school leaders, and replacing them by an integrated regular survey that is well resourced and extensively promoted in order to maximise response rates. The *Schools and Staffing Survey* in the United States is an example of such a survey
4. Implementing collaborative data collections in areas that are widely judged to be important, but which currently receive little resourcing, for example on attitudes towards teaching as a career, and a longitudinal study of teacher education students through their pre-service education and into their early careers.

A set of recommendations was developed as follows:

Recommendation 1: *Noting MCEETYA's:*

- i) *agreement to develop a strategic framework for a national approach to workforce planning in education, including the need to develop a process to achieve common core data sets and definitions; and*
- ii) *its referral of this task to the Improving Teacher and School Leader Capacity (ITSLC) Working Group;*

it is suggested that the Australian Government propose to the ITSLC Working Group that it establish a workforce data sub-group to coordinate and oversee data collection and analysis in relation to Australian school teachers and leaders. As part of this, the sub-group could give consideration to utilising specific workforce planning expertise and communication links established with broader networks involved in workforce planning issues.

Recommendation 2: *It is suggested that the Australian Government propose to the ITSLC Working Group that it should consider reviewing existing data collection models from education and other professions and consult widely to develop a framework which outlines the principles for collaboration among key stakeholders, including protocols regarding the use of data and issues of public access.*

Recommendation 3: *It is suggested that the Australian Government propose to the ITSLC Working Group that, in relation to MCEETYA's agreement to develop a process to achieve common core data sets and definitions, and noting the potential of this to facilitate the pooling and sharing of workforce data by government and non-government systems in the long-term, it should consult widely to ensure its future implementation by teacher employers, teacher education institutions and teacher registration authorities, and a protocol on data sharing.*

Recommendation 4: *It is suggested that the Australian Government propose to the ITSLC Working Group that it consider development of a regular, well-resourced and well-promoted cycle of survey*

data collection from the Australian teacher and school leader workforce based on the data domains covered in the current Staff in Australia's Schools survey.

Recommendation 5: *It is suggested that the Australian Government propose to the ITSLC Working Group that it consider the development and implementation of data collections, involving collaboration with stakeholders, that address issues related to attitudes towards a teaching career and potential barriers to career entry among senior secondary students, potential career changers, those who are qualified but not currently teaching, and under-represented groups.*

Recommendation 6: *It is suggested that the Australian Government propose to the ITSLC Working Group that it consider the development and implementation of data collections, involving collaboration with stakeholders, in teacher education data, including establishing longitudinal studies regarding pre-service teacher education to early career phases and in regards to leadership programs and impacts.*

Concluding Comments

There are two broad priorities for teacher workforce data and planning in Australia. The first is to ensure that, within a highly diversified and decentralised system of teacher preparation and employment, individual decision makers have the data they need to make the best possible decisions for their circumstances. The second priority is that there needs to be greater collaboration on workforce planning matters across Australia because of the common issues affecting teachers no matter where they work.

The vision that needs to guide this process is that workforce planning data for such a key profession as teaching has to be a collective endeavour across all of the groups involved in schooling. Data collection and analysis need to be seen to be informing actions, with the ultimate goal being improvements in the quality of education for Australian students and the benefit of society.

1. INTRODUCTION

This report forms part of the *Staff in Australia's Schools* project. The project was commissioned by the former Australian Government Department of Education, Science and Training (DEST) in June 2006. It is intended to provide a detailed picture of the Australian teacher workforce, and to gather information to assist in future planning of teacher supply.

As well as this report, the other major component is a large-scale survey, *Staff in Australia's Schools* (SiAS). The survey involves random samples of Government, Catholic and Independent school teachers and leaders from all States and Territories. The survey was designed to help fill key data gaps and to more fully characterise the teaching profession in Australia. The survey results are reported in McKenzie *et al.* (2007).

The data domains used in the SiAS survey are examined later in this report as a possible platform for future data collections on the teacher and leader workforce. The SiAS survey results are detailed in a separate report.

To introduce the issues, the next two sections briefly review why teachers are a high priority in public policy, and the context in which teacher workforce planning takes place in Australia.

1.1 The importance of teachers

In 2006 there were just over 270 000 people working as teachers in Australian schools, or 240 000 teachers in full-time equivalent terms (ABS, 2007). Teaching is by far the largest employer of graduates in Australia. There are 60 per cent more teachers than nurses, and 50 per cent more teachers than accountants, which are the next two largest professions (Centre of Policy Studies, 2004).

The number of people working as teachers has grown by over 20 000 (8%) in the five years since 2001, or about 4 000 people per year (ABS, 2007). Underlying this net growth are large flows of people entering and leaving teaching each year.

Teachers are the most significant resource in schools. Research indicates that, of those variables potentially open to policy influence, teachers and teaching are the most important factors in student learning (OECD, 2005). Spending on teachers is by far the largest component of school budgets, accounting for 53 per cent of government expenditure on government schools in 2003-04 (Productivity Commission, 2006).

The demands on schools are becoming more complex and teachers' roles are changing. The consultations conducted for this project identified a number of developments that have implications for the skills and knowledge needed by teachers, and the demand for different types of teachers. These developments include: the closer integration of pre-school and early primary education; the role of 'middle schooling' as a bridge between primary and secondary education; an increase in the minimum school leaving age in several states; and new curriculum emphases, including on vocational education and training. As the OECD (2005) has observed, all countries face challenges in ensuring that teachers are able to meet the demands of more diverse student populations, higher expectations of schools, expanding fields of knowledge, and new types of responsibilities. While the number of teachers is an important issue, teacher workforce policy is concerned with far more than this.

There are concerns in Australia about teacher shortages, with particular subjects and specialisations and some rural and remote locations having significant recruitment difficulties (MCEETYA, 2005). The ageing teacher workforce profile signals ongoing concerns. The age profile of school leaders is even higher, with recruitment difficulties evident in a number of school systems (Preston, 2002; Gronn

& Rawlings, 2003; Barty et al, 2006). Significant concerns exist about replacing the large numbers of teachers and leaders expected to retire during the next 5 to 10 years – and also about supporting the large numbers of new people likely to enter teaching (OECD, 2005).

Teaching is clearly a very important profession. Teacher demand and supply issues affect many people, and can have substantial implications for the quality of learning, curriculum provision, and school budgets. This report examines the data available on the Australian teacher and leader workforce and the planning processes used to help ensure that there are sufficient numbers of well-qualified teachers and leaders to meet the emerging needs of schools.

1.2 The context of teacher workforce planning

Australia has a highly diversified and decentralised education system. It has the complexities of a federal political structure in which education is the responsibility of eight states and territories, and in which the Australian Government is playing an increasingly important role. Australia also has a substantial and growing non-government school sector that now enrolls one-third of all students and encompasses a wide variety of school types. In addition, government school systems have generally devolved more decision-making authority to the school level in recent years. Diversity and decentralisation of decision making are also characteristics of the university sector, which has the major responsibility for preparing new teachers and upgrading teachers' qualifications.

Decisions about teacher employment and teacher preparation are therefore taken by many different people and organisations in many different locations. In one sense, Australia has a number of different teacher workforces, distinguished by, for example, state and territory location, government and non-government school sector, primary and secondary level of schooling, and subject area specialisation.

On the other hand, the labour markets for the various sub-groups of teachers do not operate in isolation from one another. Unlike in some other countries, almost all Australian teachers – no matter in which types of schools they eventually teach – receive their pre-service teacher education in the same type of institution, namely a public university. The universities are also the major providers of further formal education and qualifications upgrading for teachers from all sectors and specialisations. Most states and territories now have a statutory teacher registration process that requires all teachers, no matter where they teach, to meet the same minimum requirements for registration to teach in that jurisdiction. While there are some differences in salaries and working conditions among teachers in different types of schools and locations, the differences are not so great that any one type of school is spared if there is an overall shortage of well-qualified teachers. The various different teacher labour markets are also linked by teacher mobility – within school sectors, across school sectors, and between states and territories.

Current approaches to teacher workforce planning are detailed in Chapters 4 and 5. At present, teacher workforce planning is largely concentrated at state and territory level and focused within jurisdictions. Constitutionally, schooling is a state responsibility and state and territory governments are the major employers of teachers. However, the Australian Government is the major funder of teacher education programs in universities – the principal source of new teachers and upgraded teacher qualifications – and is becoming increasingly involved in school funding and policy. Key questions examined in this report are whether there would be benefits from a more collaborative national approach to workforce planning and, if so, how that could be implemented.

1.3 Objectives of the report

The project is being conducted partly in response to the 2003 final report of the Australian Government's Review of Teaching and Teacher Education, *Australia's Teachers: Australia's Future - Advancing Innovation, Science, Technology and Mathematics*, which concluded that:

"[d]ata limitations and inadequacies make analysis and forecasting supply and demand difficult" and called for "[c]omprehensive statistics relating to teachers, teacher workforce trends and teacher education [to] be consistently, reliably and regularly collected on a national and collaborative basis" (Agenda for Action, Action 10).

Similarly, the MCEETYA report (2005) identified five areas of data improvement needed for supply and demand analyses as:

- Recruitment difficulties information including by subject area and location;
- Data about the specialisation of teachers and graduates, including the characteristics of teachers in the non-government sector;
- More comprehensive information on qualified teachers in the teaching pool, especially those available but not currently employed;
- Inflows and outflows from teaching; and
- Practices used by education systems to adjust to recruitment difficulties.

Against this background, this component of the project is intended to advise on longer-term approaches by:

- outlining the current availability of data on Australian teacher and school leader characteristics;
- outlining current processes used for Australian school teacher and leader workforce planning and the current availability of data for workforce planning;
- outlining the current availability of data that can be used for school teacher and leader workforce planning, in relation to international organisations and selected nations;
- consulting with key stakeholders on the adequacy of current data and workforce planning processes, and the ways these could be improved, including assistance the Australian Government may be able to provide; and
- providing recommendations on longer-term national collaborative approaches to obtain data for Australian teacher and school leader characteristics and to support Australian teacher and school leader workforce planning.

This report attempts to draw on the views expressed in the consultations, and experiences with workforce planning in other professions and in other countries, to propose some ways forward. The proposals developed include a suggested model for implementation of more collaborative and national approaches, a platform for agreed data definitions for data gathering and analysis, and the conditions governing data access and use.

1.4 Organisation of the report

This report has eight further chapters. Chapter 2 outlines the role of the Advisory Committee for the project, the methodology used in the consultations, and the conceptual framework used for the discussions and analyses. Chapter 3 summarises current research and information about the Australian school teacher and leader workforce. It outlines a range of key reports regarding issues related to workforce planning at the national and state and territory levels. It also draws some conclusions about the nature and quality of the workforce data currently available.

Chapter 4 describes the current responsibilities, data sources and processes regarding Australian teacher and school leader workforce planning. Chapter 5 outlines a six-step model for discussing teacher workforce data. Specific data sets and tables are presented, mapping the availability of the data against various sources and highlighting the strengths and limitations of currently available data and processes. Chapter 6 outlines some emerging issues in Australian schooling and the data needs they entail.

In order to provide another perspective on Australian issues and approaches, Chapter 7 summarises developments in teacher workforce data and planning internationally at the OECD level, as well as in the United States, England, Scotland and New Zealand. The chapter also discusses recent developments in workforce planning for the health and nursing professions in Australia. Such experiences suggest some useful ways forward for teacher workforce planning in Australia.

In Chapter 8, approaches to longer-term collaboration arising from the consultations with key stakeholders are outlined. This includes reporting on the collaborative potential for data collection, planning mechanisms, roles and implementation challenges. Recommendations concerning desirable directions for change and possible next steps are developed in Chapter 8. Chapter 9 concludes with a summary of the main themes arising from the consultations.

2. METHODOLOGY AND CONCEPTUAL FRAMEWORK

2.1 Methodology

The project was supported by an Advisory Committee that includes representatives from DEEWR, government education authorities, the National Catholic Education Commission (NCEC), the Independent Schools Council of Australia (ISCA), the Australian Bureau of Statistics (ABS), Teaching Australia (through the School Principals Associations – APPA and ASPA and the Joint Council of Professional Teaching Associations, JCPTA) and the Australian Council of Deans of Education (ACDE). Committee members are listed in Appendix 1. The Advisory Committee provided advice and support in the conduct of the key stakeholder consultations.

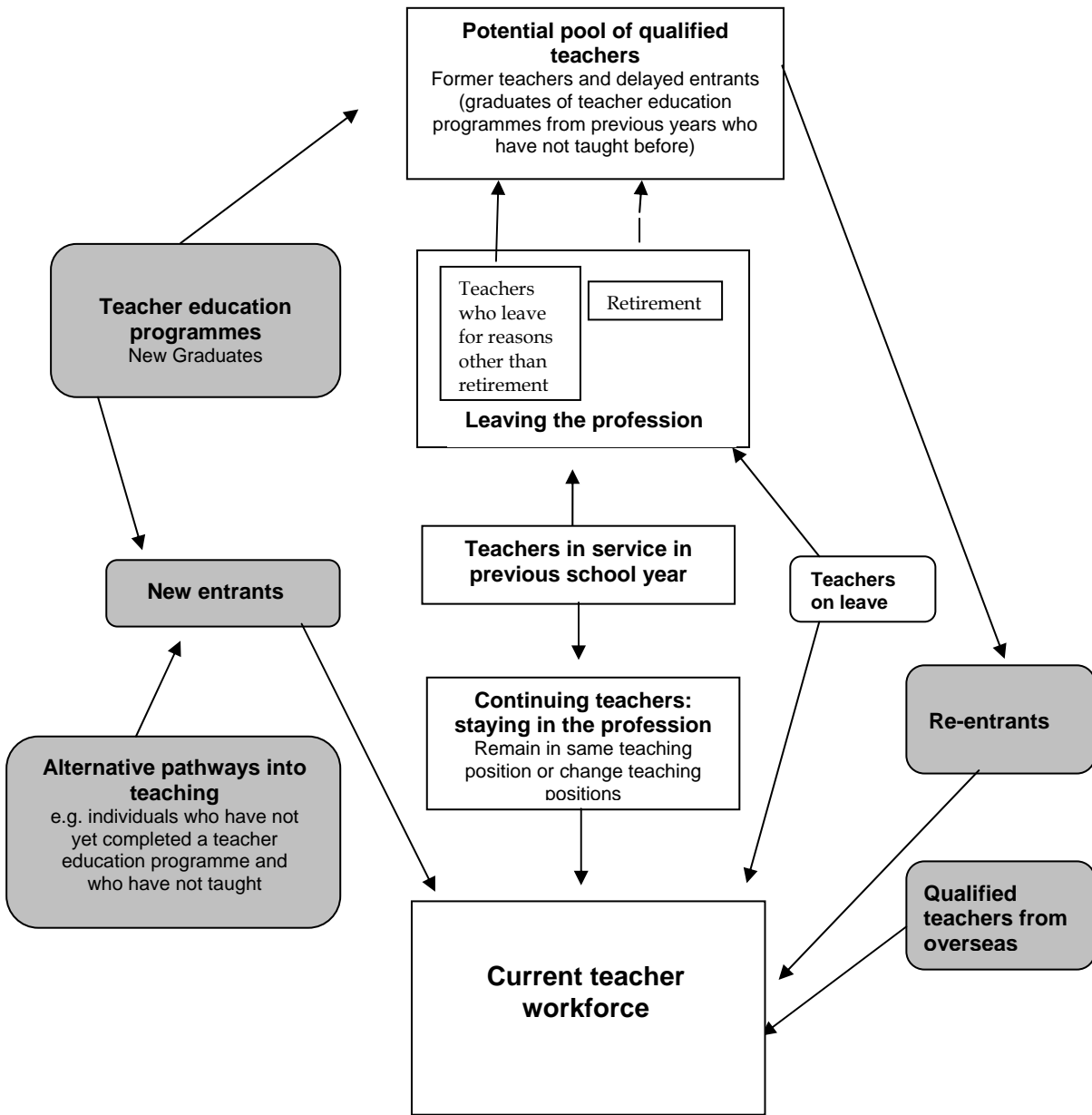
Research methodologies have included literature searches, interviews with workforce experts and focus group consultations with key stakeholders. A draft discussion paper was written based on the preliminary literature review including information about workforce planning in other professions. (Key parts of this literature are discussed in Chapters 3 and 7.) The Advisory Committee provided feedback on that paper, helped identify key stakeholders and facilitated initial contacts. Additional research was also conducted through interviews and emails with workforce planners in teaching and other occupations, both within Australia and overseas.

Appendix 2 provides further details on the consultations. Almost 100 key stakeholder consultation focus groups and interviews involving about 350 participants were conducted across all States and Territories, including consultations with national groups and expert workforce planners. The face-to-face meetings were preceded by a request for the organisations concerned to prepare information on their current data sources, the use they make of other information, and their prospective data needs.

The main source of information for the report has come from consultations across Australia with people and organisations actively involved in teacher workforce issues on a daily basis – as employers of teachers in the government and non-government sectors, human resource managers, leaders of teachers’ unions and professional associations, school principals, statisticians, researchers, teacher educators, and other university representatives. To our knowledge, such an extensive and broad range of views and experiences on Australian teacher workforce data and planning processes has not been gathered before.

2.2 Conceptual Framework

Figure 2.1 provides the conceptual framework that was used to structure the consultations on data needs and gaps regarding teacher workforce planning. It was based on the model for analysing teacher demand and supply developed by the OECD (2005) in the study of teacher policy issues in 25 countries, including Australia. The framework separates the potential sources of supply of teachers from the factors influencing the demand for teachers. Teacher supply issues relate to a consideration of data about teachers staying in the profession or alternatively leaving due to retirement or other reasons. Examining recruitment options of new entrant graduates, re-entrants returning from leave, teachers from overseas and attracting a wider pool of qualified teachers who have delayed entry to employment or are former teachers is another aspect.



SUPPLY

Student Population

Overall growth/decline; age structure
 Govt. changes to starting and finishing ages
 Subject choices and geographic distribution
 Post-compulsory participation rates

Organisation of Schooling

Class size, student-teacher ratio, teaching load, required teaching time
 Required instruction time
 Curriculum structure

DEMAND

Figure 2.1: Mapping teacher supply and demand (adapted from OECD, 2005)

The framework indicates that profile data regarding undergraduate and postgraduate commencers and completers are required, including subjects and specialisations, and data regarding graduate destinations. Data about potential re-entrants to the teaching profession, their availability and qualifications are also required, in addition to data on teacher retirements and separations by level of schooling/subject, teacher age, and motivations.

Figure 2.1 indicates that teacher demand is influenced by overall student population growth and student subject selections, student-teacher ratio trends, the organisation of schools and projected growth areas. The framework in Figure 2.1 was used to help structure the consultations that informed this report (see Appendix 2).

Teacher and school leader workforce planning involves the use of comprehensive data to estimate the required numbers and types of teachers to meet current and future requirements. Generally people require four years of accredited higher education before commencing teacher employment and there is a potentially long ‘lead time’ between identifying a need to recruit new teachers and having sufficient numbers of well-qualified people.

Important aspects of workforce planning include: defining the teacher and school leader labour market and workplace organisational structures; using data to identify determinants of supply and demand; analysing shortages and surpluses; and identifying workforce education and training needs. Understanding teacher and leader workforce profiles and activities, and ensuring systematic processes for addressing factors influencing workforce and workplace change, are other important aspects of the process.

Based on the OECD framework and research work from other occupations (AHWAC, 2006; 2004), a six-part workforce planning model was developed to guide the analyses:

- Current workforce profile descriptors
- Workforce flow profiles
- Teacher education profile
- Adequacy of supply and distribution
- Workforce supply and demand trends
- Projections and impact of future developments

Each of these components was used to map the data currently available from different sources – national, states and territories, individual institutions, professional associations and so on – and to help identify the major data gaps and priorities for future development.

3. THE AUSTRALIAN TEACHER WORKFORCE: RESEARCH AND FINDINGS

This chapter presents information from a range of key reports and findings concerning the Australian school teacher and leader workforce. Some of the studies have included collections of new data while others have primarily analysed existing data sources, mainly from the ABS and government authorities. The focus is on reports and studies that are reasonably large-scale in nature, and as such it does not cover all of the different kinds of research that relate to teacher and school leader workforce issues.

The intention of this chapter is to provide a context for the current project and its focus on mapping data sources and processes and considering longer-term approaches to workforce planning. This overview is also intended to give some indication of the quality of the available data, its availability and use.

3.1 National Reports and Findings

MCEETYA reports on teacher supply and demand

Some of the background work which is important in setting a context in relation to this project consists of a series of workforce reports (MCEETYA 1999, 2001, 2003, 2005) entitled *Demand and Supply of Primary and Secondary School Teachers in Australia*. These workforce supply reports have helped to monitor the supply and demand aspects of the Australian teacher workforce in government schools, with more recent reports also including the non-government sector.

Incorporated into the reports are published data; qualitative research; issues-based research papers on workforce ageing, gender trends and teacher salaries; and a literature review including Australian and international research. The 2003 report included the results of two specially commissioned surveys. The *National Survey of Teachers* was conducted in 2002 on behalf of MCEETYA and collected data from a national sample of around 2 300 teachers. The 2002 *National Survey of Principals* collected data from about 350 respondents across Australia.

Skilbeck and Connell's (2004) report, *Teachers for the Future: The Changing Nature of Society and Related Issues for the Teaching Workforce*, involved a literature review and about 250 questionnaires and interviews about attraction and retention of quality teachers in their first 10 years of employment, was also commissioned by MCEETYA.

The most recent MCEETYA report (2005) indicates:

- The national labour market for supply of *primary* school teachers was in balance at the time this report was prepared. Education authorities generally reported an adequate supply of generalist teachers, although recruitment difficulties were experienced in some geographic locations. Recruitment of specialist primary teachers of Languages other than English and Special Education were causing difficulties to varying degrees in both the government and non-government sectors.
- At secondary level, education authorities commonly reported difficulties in filling vacancies located in rural, remote and difficult to staff metropolitan locations and for particular specialisations. Finding specialist relief staff is exacerbating the difficulties. Recruiting teachers of mathematics, science and technology continue to present the most difficulties, and filling vacancies for teachers of Languages other than English also presents consistent concerns.

- The age structure of the national teaching workforce remains an issue. Based on 2001 Census of Population and Housing data, an average of 3.6 per cent of the teaching workforce will reach retirement age per year over the next ten years. The impact of these retirements will depend largely on the success of initiatives by education authorities to attract new teachers to the profession and to retain current teachers.
- Gender trends remain a matter for concern. Data from the Australian Bureau of Statistics *Schools Australia*, show that the proportion of female teachers at both primary and secondary level has increased slightly (by less than one percentage point) since 2001. At 2003, females made up 79.1 per cent of primary teachers and 55.3 per cent of secondary teachers across Australia.
- Based on broad-brush calculations using national data, which do not take into account the characteristics of individual jurisdictions, there is the potential for significant teacher shortages between now and 2014. The extent to which such shortages may occur will be largely reliant on the success of initiatives introduced to attract new people to the teaching profession and retain current teachers in the profession. A sizable teaching pool already exists, and there are large numbers of people in the workforce who possess teaching qualifications but are not working as teachers.

Australia's Teachers: Australia's Future – Advancing Innovation, Science, Technology and Mathematics (DEST, 2003)

The 2003 report of the Committee for the Review of Teaching and Teacher Education entitled *Australia's Teachers: Australia's Future – Advancing Innovation, Science, Technology and Mathematics*, highlights teacher shortage although it is focused on particular specialist areas. Its conclusions relate widely to areas of teacher supply and demand including the issues of attraction and retention, teacher education and professional development. While high retirement rates are acknowledged, resignations and up to 25 per cent attrition among early career teachers are outlined as areas of significant concern (DEST, 2003: 87). The Report also called for greatly improved national data collection and analysis, in relation to teacher workforce planning (Agenda for action, p. 17).

Who's Teaching Science? (Australian Council of Deans of Science, 2005)

The objective of this study was to examine issues associated with the quality and supply of science teachers. A survey was conducted using a random sample of schools and teachers and seeking information about level of university education, age profile and career attitudes particularly related to chemistry, physics, biology and earth sciences/geology teaching. Around 1 200 secondary science teachers and 260 heads of science departments from schools across all states and territories and school sectors completed the survey. The response rate was 40 per cent. Survey results indicate the mature-aged science teacher profile. One-third entered teaching from other occupations, with over 90 per cent holding tertiary science qualifications. Around 15 per cent of respondents, who were mainly teaching junior science, lacked a minor in any of the four disciplines.

Science, ICT and Mathematics Education in Rural Australia (DEST, 2006)

This research from the National Centre of Science, Information and Communication Technology (ICT), and Mathematics Education for Rural and Regional Australia (SiMERR Australia) outlines survey questionnaire findings from about 3 000 teachers and 1 000 parents/caregivers in rural locations, supplemented by a second phase involving about 550 interviews. The teacher response rate was 26 per cent. The research generates base-line data about staffing, professional development opportunities and resources and issues impacting on student learning. Results of particular interest for

workforce planning purposes relate to the difficulties in staffing remote area locations, with 35 per cent of respondents in remote areas highlighting difficulties in science recruitments, 40 per cent indicating ICT recruitment problems and 65 per cent reporting significant difficulties in recruiting mathematics teachers (SiMERR, 2006: 51).

Secondary student interviews

There are a range of studies which have included focus group interviews to examine career decision making for secondary students including:

- *School Students Making Education and Career Decisions: Aspirations, Attitudes and Influences: Final Report* (DEST, 2004): Focus group interviews of 339 year 10 and year 12 students, 63 parents and 12 career advisers plus individual interviews of principals and staff regarding educational and career decision making.
- *Indigenous Students' Aspirations: Dreams, Perceptions and Realities* (DEST, 2005): A survey of 1 668 Indigenous and non-Indigenous students, five focus group interviews of 133 students and in-depth interviews of career advisers and upper secondary Indigenous students.
- *Senior Secondary Student Attitudes to Teaching as a Career* (DEST, 2003). Reports on four focus group interviews involving 80 students from various sectors and locations and their attitudes to teaching as a career.

Teachers in Australian Schools (Australian College of Educators, 2001)

Other workforce data related to teachers in government and non-government schools was collected through surveys from the Australian College of Educators (formerly Australian College of Education) in 1963, 1979, 1989 and 1999. The (1999) survey *Teachers in Australian Schools* was commissioned by the former Australian Government Department of Education, Training and Youth Affairs (DETYA), with ACE also receiving assistance from Griffith University and the University of Queensland. The sample comprised primary and secondary schools and teachers were stratified by state and sector. About 10 000 teachers completed the survey, which gave a response rate of 44 per cent. Data were collected regarding the personal profile of the teaching profession, current position, professional qualifications, career intentions, further professional development and membership of organisations.

Results of particular interest from the survey for workforce planning purposes are that around 35 per cent of teachers indicated an intention to leave the teaching profession within three years of the survey for family, study or travel purposes; about 25 per cent planned to retire at age 55 years and 25 per cent between ages 56 and 60 years, with 13 per cent planning retirement after reaching 60 years. About one-quarter of teachers were intending to apply for a promotion within the period of three years from the survey timeframe.

Australian Secondary Principals Association (ASPA) surveys

Retirement and teacher shortage issues related to particular subject areas, specialisations and locations are a particular focus for online surveys of members conducted by the Australian Secondary Principals Association (ASPA) on an annual basis since 2003. ASPA's most recent report, *Teacher Supply Survey 2006*, was based on responses from almost 400 school leaders in government secondary schools, a coverage of about 25 per cent of such schools. Respondents indicated the percentage of classes in each broad subject area where teachers did not have qualifications at a second or third year level of tertiary studies, with one-third of schools reporting the occurrence of out-of-field teaching.

Lack of qualified teachers had resulted in a range of coping strategies being utilised including loss of curriculum diversity, with 6 per cent indicating withdrawal of technology and languages subjects due to teacher shortage. About 12 per cent of remote area schools reported the withdrawal of languages from school curriculum offerings. Respondents also indicated anticipated retirement rates of their staff in the next five years by subject area, with high numbers of retirements from the English, mathematics, society and environment, science and technology subject areas being predicted. Respondents also indicated that around 33 per cent of principals and over 50 per cent of deputy/assistant principals were expected to retire within five years.

While high retirement rates related to age are an issue for the teacher workforce, there is also increasing concern about high resignation rates among teachers in their first five years in the profession. In 2003 ASPA conducted a *Survey of Beginning Teachers* which collected responses from about 540 beginning teachers. Almost half indicated they were teaching at least one subject out of their area of training, especially those teaching mathematics. Nearly half of the respondents wanted more pre-service preparation in managing student behaviour, assessment and standards and about 35 per cent felt there had been inadequate subject content preparation, with many raising issues related to the practicum.

A Joint Principals Associations Survey of Teachers in their first three years of teaching in government and non-government schools occurred late in 2006. The results are available on the ASPA website.

Australian Education Union surveys

Another key survey in regard to beginning teachers is the Australian Education Union (AEU) *Beginning Teacher Survey* conducted in 2005 and again in 2006. The 2005 survey involved responses from about 1 200 teachers in government schools. It indicated that nearly half of the respondents did not anticipate being in the profession in 10 years time, with 19 per cent expecting to be working in another industry. About one half of the respondents indicated that they had been asked to teach in an area outside of their qualifications, and 50 to 60 per cent expressed concerns regarding workload, behaviour management, pay and class sizes.

The AEU also conducts an annual *State of our Schools* survey that collects information from principals who are union members in government schools. Relevant workforce issues examined in the survey include out-of-field teaching and areas of recruitment difficulty. From the 2005 survey results of approximately 1 100 respondents about 30 per cent indicated out-of-field teaching in mathematics, 25 per cent in technology/ICT, and 20 per cent in science. The principals reported that a lack of relief teachers is a significant concern, and that there is insufficient choice in the qualifications and quality of staff, especially in rural areas.

DEEWR surveys of teacher education students

Various surveys are also underway to provide additional data about the pre-service teacher education students. *The Survey of Final Year Teacher Education Students* (DEST, 2006) was conducted with the support of the Australian Council of Deans of Education, who facilitated initial contact with the universities for disseminating surveys to final year education students. The survey was conducted between July and November 2005, with 1 875 responses from a target population of 16 000 being received. The main workforce planning topics were demographic details of final year teacher education students (e.g. age, gender); reasons for wanting to join the teaching profession; and post-graduation and career intentions.

The survey results support other research about teachers mainly entering the profession for reasons of wanting to make a difference (87%), working with children (82%) and working in an area of specialisation/interest (74%). Almost 90 per cent of final year students intended to teach within 12

months of graduation or to work overseas; 80 per cent were prepared to teach in rural and remote areas or hard-to-staff schools; and about 70 per cent intended to work as a teacher for at least five years.

Monash University longitudinal studies of teacher education students

The report by Richardson and Watts (2006), *Who Chooses Teaching and Why? Profiling Characteristics and Motivations across Three Australian Universities*, is based on a large-scale Australian study that examines the background characteristics and motivations of first-year teacher education graduate and undergraduate students at three urban universities. High response rates were achieved, ranging from 75 per cent to 89 per cent across the institutions. A *Factors Influencing Teaching Choice Scale* ('FIT-Choice') was used to determine the influence of various factors on the decision to become a teacher. The results indicate that teaching ability-related beliefs, personal and social utility values and positive prior teaching and learning experiences are the key factors in the decision to teach, rather than encouragement from others or teaching being a fallback career choice.

Watts and Richardson are also currently involved in an ongoing longitudinal research program which is internationally based regarding recruitment, induction and retention. This three phase research tracks the same participants from pre-service teacher education commencement to graduation and then for two years after graduation. The research will include analyses of teacher mentoring, self-efficacy and professional commitment, school contextual factors, and stress and burnout.

Australian Council of Deans of Education analyses of demand and supply

Substantial analyses of teacher workforce trends and potential shortages have been commissioned by the Australian Council of Deans of Education (ACDE), including *Teacher Supply and Demand to 2005: Projections and Context* (Preston, 2000), *Policy and Politics of Teacher and Nurse Supply and Demand Projections* (Preston, 2001) and *Tracking Demands in Principal and Teacher Demand and Supply* (Preston, 2002).

Preston used ABS school and Census data, faculty of education surveys, Department of Immigration and Multicultural Affairs data regarding departures and arrivals and net separations from teaching for each age group in calculating the projections. Annual settler numbers (permanent immigrant) of around 16 per cent of annual graduate numbers and net long-term visitors of around 9 per cent, plus departures and average annual resignations of 15 per cent of teacher education graduates have been part of the calculations.

The projections were intended to inform policy about initial teacher education numbers, with findings highlighting impending teacher shortfalls due to the significant numbers of the 1970s entrants to teaching reaching retirement age. Preston's projections for 2005 assumed that teacher education graduate supply was likely to meet only 70 per cent of the demand for new secondary teachers and about 90 per cent of the projected demand for new primary school teachers.

In other work, Preston (2002) highlighted the ageing nature of the principal workforce group and the unattractiveness of the work as key factors in the likely future shortages of school leaders.

Centre for the Economics of Education and Training (CEET) mobility analyses

The CEET work involved analyses of ABS Labour Force Surveys commissioned by the former Australian Government Department of Employment and Workplace Relations (now the Department of Education, Employment and Workplace Relations) to examine mobility across various occupations. Data on arrivals and departures of migrants by occupation was also used. Shah's (1999) paper: *Teachers: Older, Wiser and Needed*, which is based on occupational trends, age and gender data, indicated increased net replacement demand for teachers of about three per cent per annum.

3.2 State and Territory Reports and Findings

As well as reports and research studies at the national level, states and territories have undertaken work relevant to teacher workforce planning. A selection of these reports are summarised in this section.

Victorian Parliamentary Committee: pre-service teacher education (2005)

In Victoria in 2003, the Education and Training Committee of the Parliament established an inquiry into the suitability of current pre-service teacher training courses. The Inquiry into the Suitability of Pre-service Teacher Training Courses, *Step Up, Step In, Step Out* (2005) outlines the findings from written submissions, over 200 witnesses and focus group discussions, as well as interstate and overseas meetings.

Improved accountability for teacher education courses including satisfaction surveys and stakeholder consultations, targeted marketing to improve attraction to the profession and matching student placements to workforce needs, are relevant to workforce planning. Other relevant recommendations focused on a more extensive and better designed practicum, and teacher induction and mentoring of beginning teachers.

Wellbeing of Regional Professions: Policing, Nursing and Teaching in Western Australia (Edith Cowan University, 2006)

Another relevant report in connection with various professions including teaching is the Western Australian Report by Edith Cowan University: *Wellbeing of Regional Professions: Policing, Nursing and Teaching in Western Australia* (2006). This research involved almost 3 600 responses from teachers, and a response rate of 40 per cent. Over 80 per cent of the 2 000 teacher respondents who were based in rural and remote areas indicated an intention to remain in the profession for the foreseeable future.

The Privilege and the Price (Victorian Department of Education and Training, 2004)

Wellbeing of principals was a major focus in the Victorian report *The Privilege and the Price: A Study of Principal Class Workload and its Impact on Health and Wellbeing*. The study involved responses from 680 principals and assistant principals, which was a response rate of 57 per cent. The project was conducted in four stages: an international literature review; focus group interviews; a survey; and a final report. The study identified a number of issues influencing principal workload, and affecting their health and well-being.

Aspiring to the Principalship? (Gronn & Lacey, 2004)

Gronn and Lacey (2004) examined aspirations towards principalship in a three-phase research project involving teachers in government schools in Queensland, Tasmania and Victoria. Focus group interviews, a survey and individual interviews were involved in researching aspirations for the principals' role and the views of recently retired principals. Issues such as work demands including paperwork, conflict between management and leadership roles, limited staff management skills, insufficient student welfare support, lack of suitably trained staff and remuneration were cited in relation to health and wellbeing.

The New South Wales Public Education Inquiry (Vinson, 2002)

A key document in relation to New South Wales Education is the Public Education Inquiry, funded by teachers from the Public Education Fund with a contribution from the Parents and Citizens Association. Headed by Tony Vinson, it included submissions and public hearings, with a focus on ensuring clear strategic future directions for the long term. Several issues relating to teacher shortages emerged in relation to the attractiveness of teaching as a career and as a profession, the various pathways into teaching, the retention and ongoing professional development of existing teachers, flexible and innovative teaching practices, and school leadership.

3.3 Summary and Conclusions

This chapter summarised current research and information about the Australian school teacher and leader workforces. Some of the studies included collections of new data while others have primarily analysed existing data sources, mainly from the ABS and government authorities. The focus was on reports and studies that are reasonably large-scale in nature.

Section 3.1 reviewed national reports and findings, including studies conducted by MCEETYA, DEEWR, the Australian Council of Deans of Science, the Australian College of Educators, the Australian Secondary Principals Association, the Australian Education Union, the Australian Council of Deans of Education, and Monash University. Section 3.2 reviewed selected studies that focused on teacher workforce issues in the states and territories, including reports by parliamentary inquiries, school authorities and academics. The various studies examined the nature of the current teacher workforce and specific potential shortages in the future, and issues concerning pre-service teacher education, teacher and principal wellbeing, aspirations to the principalship, and teacher supply and demand.

Four broad conclusions can be drawn from the Australian research and findings presented in this chapter.

- First, there is a considerable body of data and reports available. The issues concerning the future of the teacher and leader workforce are clearly judged to be important, and a wide range of organisations and individuals have devoted substantial resources to collecting and analysing data.
- Second, the surveys and reports indicate varying sample design quality. The samples are sometimes not randomly drawn, but rather involve using a sample which is readily accessible, such as volunteer members of an association. Few surveys provide technical details about sampling design, response rates and the likely representativeness of the results. Low response rates are evident in most of the surveys. There are issues of confidence in using the results as reliable estimates of the wider teacher or leader population and for providing a basis on which to make evidence-based policies.
- Third, it is a major challenge to achieve reasonable response rates in teacher surveys. Schools and teacher education institutions are busy places and there are many demands on people's time. Even well-resourced and well-promoted surveys often struggle to achieve response rates high enough to give confidence in the generalisability of the results. One of the problems may be that there are too many surveys jostling for attention, and there is not a regular, predictable cycle of data collection producing results that are seen as important across the whole teaching profession. From the perspectives of schools and teachers each new survey comes 'out of the blue' and therefore each survey requires its own special process of consultation, permission to conduct the survey, and promotion. Each new survey has to be 'sold' to convince stakeholder organisations that it is worthwhile and to convince busy principals and teachers to participate.

This process is not only time consuming and costly, but it generally does not result in reasonable response rates.

- Fourth, there seems to be little sharing of data across the various organisations involved, or use of the data among the wider policy and research communities. Not surprisingly, organisations seem to be focused on data or research to meet their own needs, and there appears to be little sense of wider applicability or collective endeavour in planning and using the data. One consequence is that, despite large overall costs being incurred (in terms of direct survey costs and teachers' time), there is not a strong sense of pay-off for the teaching profession or the various groups involved in teacher workforce planning issues.

4. RESPONSIBILITIES FOR TEACHER WORKFORCE PLANNING AND DATA

This chapter describes the current responsibilities for workforce planning and various key sources of data which are available regarding the teacher and school leader workforce in Australia, together with an assessment of the strengths and limitations of the data for workforce planning purposes.

4.1 Planning Responsibilities at the National Level

Australia has not had an organisation with responsibility for teacher workforce planning at the national level. As outlined in Chapter 1, Australia has a number of teacher workforces, and planning activities are focused in the states and territories but with some common national elements. However, a number of organisations are responsible for collecting and collating data at national level that are relevant to workforce planning (see section 4.3), and there have been collaborative efforts to pool state and territory data to provide a national picture of the teacher labour market.

In 1997 MCEETYA established arrangements for the regular monitoring of teacher supply and demand across Australia. From 2001 onwards MCEETYA allocated these responsibilities to the Teacher Quality and Educational Leadership Taskforce (TQELT), which was established by MCEETYA in July that year.

Four major reports on teacher supply and demand were published by MCEETYA in 1999, 2001, 2003 and 2005. (These documents are discussed in Chapter 3 of this report.) These biennial reports used increasingly detailed data and projection methodologies, and included: analysis of data provided by government and (latterly) non-government school authorities; reviews of the teacher labour market in Australia and overseas; data from national surveys of teachers and school leaders conducted in 2002; projections of teacher supply and demand over the next 10 years; initiatives undertaken by jurisdictions to promote teaching as a career and address supply issues; and the identification of priorities for improving data on teacher demand and supply.

In 2005 the TQELT was replaced by a MCEETYA Working Group on Improving Teacher and School Leadership Capacity. The Working Group's terms of reference did not include responsibility for providing advice on issues around the supply and demand for teachers (ABS, 2006a).

It is significant that the April 2007 MCEETYA meeting agreed to the development of a strategic framework for a national approach to workforce planning in education, and referred this task to the Improving Teacher and School Leader Capacity (ITSLC) Working Group of MCEETYA. This is expected to include national teacher and school leader workforce planning, including the need to develop a process to achieve common core data sets and definitions.²

In 2006 the Council of Australian Governments (COAG) put in place a Memorandum of Understanding (MOU) which links the Australian Government, the State and Territory governments and the universities on workforce planning matters. This MOU is concerned with skills shortages across the whole of the Australian workforce, not just in the teacher workforce. The recent House of Representatives report on teacher education, *Top of the Class*, concluded that:

[T]he MOU process for identifying workforce priorities is not specific enough to address shortages in teaching. The process should be tightened in order to align the allocation of

² Chapter 8 of the present report recommends a number of issues for the Australian Government to bring before the ITSLC Working Group.

teacher education places with workforce requirements and, in particular, specific teacher shortages. (Australia, House of Representatives, 2007, p.64)

It suggested that this could be achieved as follows:

- *when MCEETYA agrees on its workforce priorities and provides advice on education and training that addresses skills shortages under the MOU process, it should use its teacher supply and demand data to provide advice on areas of shortage in the teaching workforce including specific subject areas;*
- *when the Australian Government advises State and Territory Ministers of the number of new higher education places and seeks their advice on priorities for allocation, it should provide information in respect of the total number of teacher education places in areas of identified teacher shortage;*
- *when the Australian Government receives advice from State and Territory Ministers, it should inform the universities of the priorities in areas of identified teacher shortage and invite them to apply for places to specifically address teacher shortages; and*
- *in making its final decision on the allocation of teacher education places, the Australian Government should align the allocation of places across the teacher education system to meet the teacher shortages identified during the consultations”* (Australia, House of Representatives, 2007, p.64).

“The committee recommended (Recommendation 5) that the Australian Government, in making its final decision on the allocation of teacher education places, should align the allocation of places across the teacher education system to meet the teacher shortages identified during the consultations on workforce priorities”.(Australia, House of Representatives, 2007, p.65)

The Committee’s recommendation, if it was to be implemented, would require comparable teacher workforce data of sufficient quality to be available at the national level. The Productivity Commission (2007) indicates that providing information on areas of shortage and over-supply can also significantly improving the efficiency and effectiveness of teacher labour markets.

4.2 Planning Responsibilities at State and Territory Level

In their capacity as the major employers of teachers, all state and territory governments have processes for monitoring teacher demand and supply in their jurisdictions and identifying workforce priorities.

For example, in 2005-06 in Queensland, the Department of Education, Training and the Arts together with the Department of Premier and Cabinet, Queensland Treasury and the Office of Economic and Statistical Research undertook an investigation of teacher supply and demand issues up until 2015 (Queensland, Department of Education, Training and the Arts, 2006). Arising from this work the Department is implementing a comprehensive Teacher Demand and Supply Annual Situation Report detailing status and forecasting demand in specialist areas, developing a risk management plan to map and respond to the key factors influencing teacher supply and demand, and enhancing the type of information collected from universities regarding pre-service teachers.³

As another illustration of state approaches to workforce planning, Victoria established the Teacher Supply and Demand Reference Group in 2000. The rationale for the group was to improve communication and collaboration on teacher supply and demand among major stakeholder organisations and to ensure a common understanding for their respective decision-making

³ The Queensland initiatives are discussed in more detail in Chapter 5, section 5.6.

responsibilities. The group is chaired by the Department of Education, which provides the secretariat services. It includes the Deans of Education in Victorian universities, and representatives of the Catholic Education Office, primary and secondary principals associations, and government and independent teacher unions. The group has produced five annual reports that include projections of teacher demand and supply (most recently to 2010). The most recent report drew on data from the ABS, the Department of Education, the Victorian Institute of Teaching and the Victorian Tertiary Admissions Centre (Victoria, Department of Education, 2006).⁴

4.3 Responsibilities for Teacher Workforce Data at the National Level

There are two different forms of teacher workforce data at a national level. The first presents information for Australia as a whole, and does not include disaggregation by state and territory or school sector. Such information typically comes from sample surveys, and the surveys generally do not have large enough samples to generate reliable estimates at state or sector level. On the other hand, sample surveys are often able to tap important workforce issues – such as attitudes to teaching or career intentions – that are not available from other sources.

The second form of national data is based on assembling information from data already maintained by state and sector school authorities. Provided these data use common definitions and collection methodologies, such information enables states and territories and sectors to compare themselves with each other and the country as a whole, as well as for a national picture to be developed. Both forms of data are important for providing a national perspective on workforce issues.

Current data collections on the teacher and school leader workforce involve a range of organisations from jurisdictions and sectors. There are various national and state and territory data agencies, committees and processes involved with different aspects. These groups include the ABS, DEEWR, state and territory education employers, and non-government organisations.

Figure 4.1 depicts the various existing responsibilities for national data collection of relevance to the school teacher and leader workforce. It includes data responsibilities for higher education, schools and early childhood and the various data management committees/taskforces and specific data collections concerned. The links to Ministerial Councils (MCEETYA), Chief Executive Officers (AESOC) and national data agencies (the ABS, Graduate Careers Australia and Productivity Commission) are also shown.

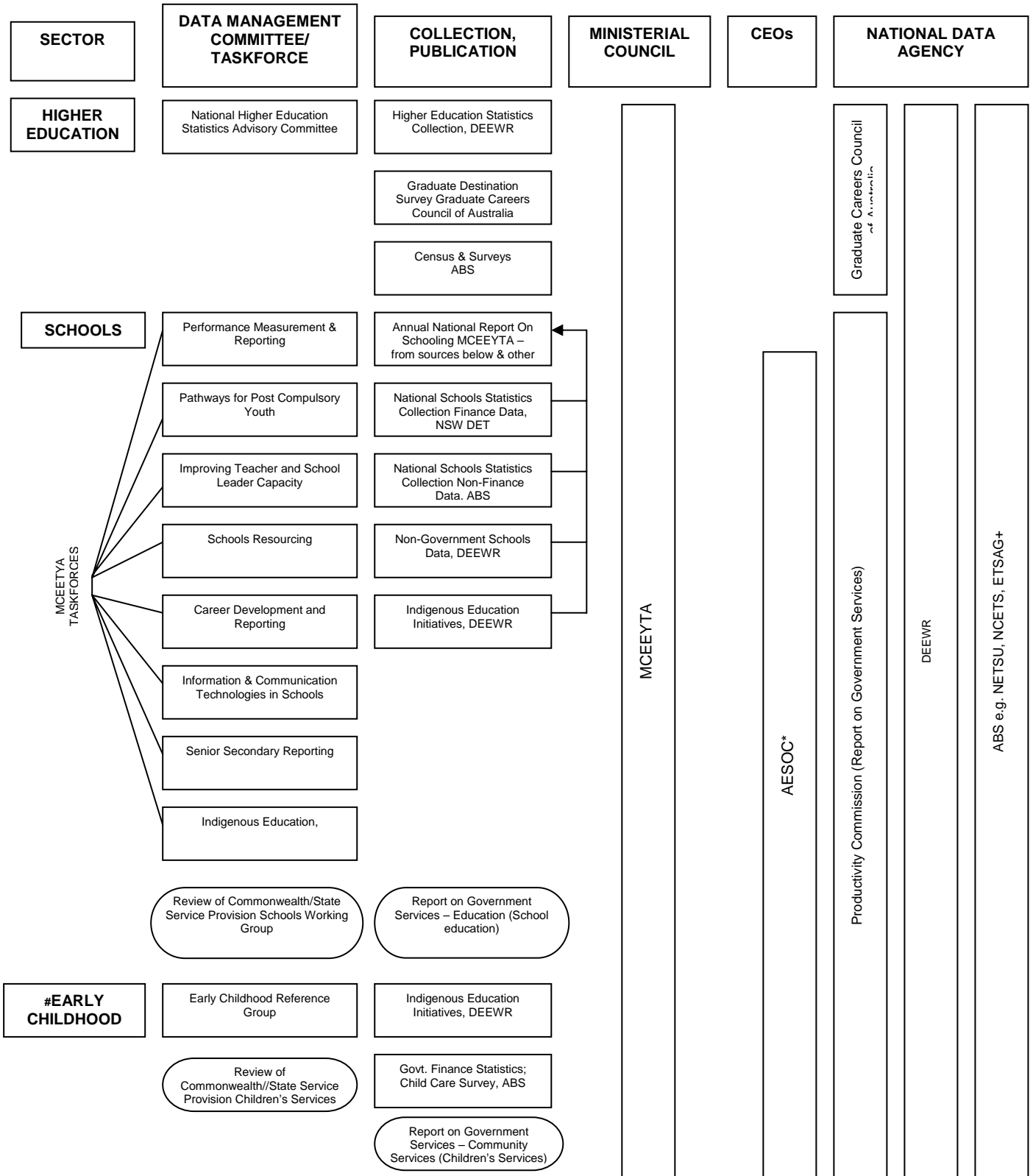
In Chapter 2 of this report, a six-part workforce planning model was outlined as a way of structuring the analyses throughout the report. Table 4.1 focuses on the responsibilities of the various groups indicated in Figure 4.1 for the particular types of data that are needed for this model. The ‘Data Areas’ column indicates key information of relevance for teacher and school leader workforce planning. This includes current workforce profile descriptions: numbers of teachers/leaders by subject/level of schooling/specialisation, age and sex, location, whether full-time or part-time, and qualifications. Workforce flows into and out of the profession, including profiles of graduates from teacher education programs and data regarding vacancies for assessing the adequacy of the supply and distribution of teachers and school leaders to meet demand, are also important components. Based on such data, analyses of supply and demand trends can be conducted and projections of future workforce needs developed.

The scope and terminology of all currently available data sources warrant consideration regarding their usefulness for large-scale and comprehensive workforce planning processes. For example, data from individual institutions such as occurs in Independent schools and for individual universities and

⁴ The Victorian approach is discussed in more detail in Chapter 5, section 5.6.

schools of education can be problematic in comprehensive workforce planning exercises. In such situations there is generally a lack of consistency of terminology, and different types of databases are sometimes used. In addition, State/Territory centralised employer data for government schools and registration board databases have been developed to meet specific payroll/personnel or membership purposes. Various formats and terminologies are used, with only restricted access generally being available.

While national agencies such as ABS, DEEWR, GCA and the Department of Immigration and Citizenship (formerly the Department of Immigration and Multicultural Affairs) publish data for wider access, the level of detail is sometimes too aggregated for workforce planning purposes.



#Community Services departments in WA, QLD & VIC, administer preschools

*Australian Education Systems Officials Committee (AESOC)

+ National Education Training Statistics Unit; National Centre for Education and Training; Education and Training Statistics and Advisory Group

Adapted from ABS, 2004: Measuring Learning in Australia)

Figure 4.1: Responsibilities for National Data Collection and Collation on the Teacher and Leader Workforce

Table 4.1: Current Workforce Planning Data Roles

DATA AREAS	INSTITUTIONS	STATE/TERRITORY	NATIONAL	COMMENT
Current workforce profile description				
Demographic profile, subjects/specialisations, employment status, qualifications, Professional Learning data collection and monitoring	Government, Catholic and Independent schools (various data sets, sometimes on limited database or manual records)	State/territory education departments Registration boards Catholic Education system Some denominational/specialist Independent schools	ABS Census/Other surveys DEEWR	Electronic data generally available on personnel & payroll systems in State/Territory systems Registration boards hold data on initial and additional qualifications
Workforce flows				
Re-entry, resignations, retirement, potential pool, underemployed teacher data	Government, Catholic and Independent Schools (minimal data on limited database or manual records)	State/territory education departments Registration boards	ABS Census/Other surveys	Minimal data on personnel & payroll systems in State/Territory systems
Migrant availability, qualifications assessment		Registration boards	Dept of Immigration & Citizenship Teaching Australia	Overseas qualifications assessment undertaken by NOOSR until recently
Teacher education profile				
Setting number of undergraduate positions	Universities		DEEWR	
Setting number and mix of postgraduate positions	Universities		DEEWR	
Teacher Education courses	Universities	Registration boards		
Student destinations	Universities		GCA DEEWR	
Assessing adequacy of supply and distribution of teachers and leaders				
Vacancy positions	Individual schools	State and territory government authorities		
Vacancy match	Individual schools			
Shortage coping techniques	Individual schools			Union surveys Professional Association surveys
Origins of Recruitment	Catholic/Independent schools	State and territory government authorities Catholic/some denominational/specialist systems for Independent schools		Limited data
Supply and demand trends				
	Individual Catholic and Independent schools	State/Territory government systems Some Catholic and denominational/specialist Independent school systems		Based on supply and demand data factors
Projections and impact of future developments				
	Individual Catholic and Independent Schools	State/Territory government systems Some Catholic and denominational/specialist Independent school systems	ABS projections	Based on education models for the future

4.4 National Data on Teachers and School Leaders

To provide further information about current workforce planning responsibilities and data roles, a range of national data sets is outlined in this section, including an assessment of their usefulness in supporting teacher and school leader workforce planning. These national data sets are as follows:

- National Schools Statistics Collection and related data reports
- ABS Census and Labour Force Surveys
- Department of Immigration and Citizenship overseas movements data
- Teaching Australia/AEI-NOOSR assessing authority for teacher skilled migration
- DEEWR employment prospects data

-
- DEEWR Higher Education Statistics Collection
 - Australian Vice-Chancellors Committee application/enrolments data
 - Graduate Careers Australia student destination and course satisfaction data
 - Australian Council of Deans of Education (ACDE)

National Schools Statistics Collection

The NSSC is a collaborative arrangement between state, territory and Australian Government education authorities and the ABS. It has been conducted annually since 1981 (1984 for non-government schools), and provides nationally comparable data for government and non-government schools in all states and territories. Information is collected on the number and characteristics of schools, students and staff for all establishments providing full-time primary, secondary, or special education including distance education. Data collection in relation to staff includes number, sex, teaching/non-teaching roles, sector of school (government/non-government), non-government affiliation (Catholic, Independent), major function (school/ non-school) and state/territory.

The NSSC data are compiled in cooperation with MCEETYA, from collections conducted by the State and Territory Departments of Education (government series) and DEEWR (non-government series). Various methodologies are used for different data domains ranging from accessing central administration records to direct collection of data from schools.

There are several other related sources of data that provide information on the teacher workforce and school staffing. The ABS series *Schools Australia* (Cat. No. 4221.0) and the Productivity Commission's annual *Report on Government Services* (ROGS) draw on the NSSC to provide information on student-teacher ratios, the number of full-time equivalent teaching and non-teaching staff by State/Territory and school sector and, in the ROGS, classification of staff numbers and expenditure by in-school and out-of-school location for primary and secondary schooling.

The NSSC data collections are very important for providing broadly-based numerical information about school staffing and other aspects of schools, by state/territory and school sector on a census basis. However, they do cover other key aspects of the teacher workforce such as qualifications and specialisation by subject area or role.

ABS Census and Labour Force Surveys

The ABS Census of Population and Housing also provides information on the teacher and school leader workforce. The Census gathers comprehensive information every five years from every Australian household by person. In terms of the teacher workforce, this includes profile characteristics regarding age and sex, work status, income, qualifications and geographic location.

For ABS purposes, teachers are generally classified at 4-digit level in the Australian and New Zealand Standard Classification of Occupations (ANZSCO) which in 2006 replaced the previous Australian Standard Classification of Occupations (ASCO). The new classification provides an updated and slightly more detailed classification of different types of teachers (e.g., by including the classification 'Middle School Teachers'). 'Education Professionals', including school teachers, are classified as a sub-major of major group 2 'Professionals'. School principals are classified under major group 1 'Managers'. The ANZSCO classifications for teachers and school leaders are shown in Table 4.2.

Table 4.2: ABS Occupational Classification of Teachers and School Leaders

ANZSCO code	Teacher and school leader classifications
24	Education Professionals
241	School Teachers
2411	Early Childhood (Pre-Primary) School Teachers 241111 Early Childhood (Pre-Primary) School Teacher
2412	Primary School Teachers 241213 Primary School Teacher
2413	Middle School Teachers 241311 Middle School Teacher
2414	Secondary School Teachers 241411 Secondary School Teacher
2415	Special Education Teachers 241511 Special Needs Teacher 241512 Teacher of the Hearing Impaired 241513 Teacher of the Sight Impaired 241599 Special Education Teachers nec
242	Tertiary Education Teachers
2422	Vocational Education Teachers242211 Vocational Education Teacher
249	Miscellaneous Education Professionals
2491	Education Advisers and Reviewers
2392	Private Teachers and Tutors
2493	Teachers of English to Speakers of Other Languages 249311 Teachers of English to Speakers of Other Languages
134	Education, Health and Welfare Services Managers
1343	School Principals 134311 School Principal
1344	Other Education Managers 134411 Faculty Head 134412 Regional Education Manager 134499 Education Managers

Note: Only the education classifications relating to schools are shown.

Source: ABS (2006b).

For workforce planning purposes the strengths of the Census data are the fact that it covers all teachers, thereby permitting detailed regional analysis and it collects extensive data on demographic variables, qualifications, working hours, and earnings. Preliminary data from the 2006 Census will be available in mid-2007.

Limitations of the Census data for workforce planning are that occupational classifications are fairly broad (see Table 4.2) and do not describe specific areas of teacher specialisation. Also, only the highest level of qualification is recorded, and initial qualification, university, year of registration and information regarding any additional teaching courses are not collected. The scale and five-yearly nature of Census data also means that it can take some time for all the data to be released, and that available data are not necessarily current.

The ABS monthly *Labour Force* surveys provide labour force estimates for people aged 15 years and over. Supplementary questions on special topics are included regularly. Data on occupation and industry is collected quarterly, and cross-tabulated by gender and employment status, together with average working hours for those employed. The *Labour Force* survey provides the benefits of frequency of data collection and the possibilities for comparative analysis of teachers and other occupations. However, even though the sample size is substantial (around 30 000 dwellings, which covers about 0.45 per cent of the Australian population) the fact that it covers all those aged 15 years

or older means that mean even for a relatively large occupation like teaching it is difficult to use these data for detailed workforce planning purposes.

Other ABS surveys on the labour force and from which some data on teachers can be obtained include:

- *Survey of Education and Work* conducted annually regarding qualifications and training experience;
- *Survey of Education and Training* regarding educational attainment and participation in education and training over the previous twelve months;
- *Survey of Employment and Earnings* for industry and sector estimates of employee numbers;
- *Survey of Employee Earnings and Hours* to determine estimates of salary based income;
- *Survey of Employer Arrangements and Superannuation* examining working hours, working arrangements and actual and expected job duration;
- *Employee Earnings, Benefits and Trade Union Membership* survey conducted annually;
- *Career Experiences* survey (discontinued since 2002);
- *Retirement and Retirement Intentions* (2005) survey conducted in Monthly Population Survey on a biannual basis, examining retirement trends, factors influencing retirement decision, income arrangements;
- *Job Vacancy by Industry*;
- *Transition from Education to Work* survey conducted annually regarding workers' job changing behaviours and tenure;
- *Persons not in Labour Force* (conducted annually); and
- *Labour Force Status and Other Characteristics of Migrants*, conducted irregularly.

Migration and overseas data sources

The regular Department of Immigration and Citizenship data collections include information from teaching professionals who are migrating permanently or travelling temporarily into and out of Australia. Self-report data is collected on passenger cards and includes age, sex, country of previous or intended residence, occupation, purpose of migration (permanent migration, employment, education), and duration of stay.

Limiting factors in using this data for workforce planning purposes are the lack of information regarding teaching specialisations and lack of knowledge about whether those entering or permanently leaving Australia have actually worked in the listed profession.

Data about overseas teachers is now collected by Teaching Australia (formerly the National Institute for Quality Teaching and School Leadership, NIQTSL) which has become the assessing authority for teacher skilled migration. Until November 2006 this role was undertaken by the National Office of Overseas Skills Recognition (NOOSR). Data regarding the percentage of applicants from various countries deemed to have minimum level entry qualifications and who meet language and registration requirements is published. Limitations on this data for workforce planning purposes are that there is no follow-up data about the numbers of applicants who succeed in securing employment as teachers in Australia and there is no breakdown for the subject specialisations of teacher applicants.

Department of Education, Employment and Workforce Relations

DEEWR (formerly the Department of Employment and Workplace Relations) publishes data about employment prospects for various industries and occupations, including skills shortages, vacancy trends and qualifications requirements, which can be used to inform the workforce planning process. In regard to the teacher workforce, the ANZSCO codes related to early childhood (pre-primary),

primary, secondary and special education teachers are currently used (see Table 4.2). DEEWR uses information from employers, industry groups, education and training providers, and union organisations to assess skills shortages, as well as econometric studies of industry and occupation trends. A Jobs Prospects Matrix is also published, providing an overall job prospect rating for each occupation. The work by Shah (1999) on the teacher workforce cited in Chapter 3 was based on data prepared for DEEWR.

4.5 National Data on Higher Education

DEEWR maintains undergraduate and postgraduate teacher education data. The *Higher Education Statistics Collection* includes data related to higher education courses at undergraduate and postgraduate levels. DEEWR data provides information about new entrants to teaching courses, course completions and total enrolment numbers. The limitations of the data on pre-service teacher education students for workforce planning purposes relate to the fact that it is not possible to identify those doing non-education courses such as an Arts or Science degree who may intend to enrol in a graduate diploma of education, the lack of specific information about areas of subject specialisation⁵, and anticipated course completion dates.

The *Australian Vice-Chancellors Committee* (AVCC) provides relevant workforce planning data regarding application numbers for teacher education courses at universities, number of places offered, enrolment numbers, and eligible applications not offered places. These data provide an indication of the demand for teacher education courses.

Graduate Careers Australia (formerly Graduate Careers Council of Australia) conducts annual surveys of graduates from all university courses. The newly-named Australian Graduate Survey (AGS) incorporates the Graduate Destination survey, Course Experience Questionnaire (CEQ) and Postgraduate Research Experience Questionnaire (PREQ). The Graduate Destination survey includes information about basic demographics, courses studied, major fields of study, commencement and graduation date, employment status, earnings, job search strategies and further study intentions. The surveys are conducted about six months after completing the requirements for an award, with a response rate of about 50 per cent.

The *Australian Council of Deans of Education* (ACDE) provides some information on numbers of teacher education students, entrants and completions on its website. As noted in Chapter 3, the ACDE has commissioned research about teacher workforce projections, including information in relation to States/Territory supply and demand aspects.

In addition, in June-2007 the Australian Council of Deans of Education was awarded Carrick Institute funding for a scoping study for a national data repository directed at quality improvement and efficiency in the initial and continuing education of teachers. The scoping study, which is to be completed by June 2008, is investigating the role, nature, management and location of such a repository, its establishment and funding, and further developmental work and transitional arrangements.

⁵ As was noted in section 4.2, the Queensland Department of Education, Training and the Arts is enhancing the type of information collected from Queensland universities regarding pre-service teachers to include data on subject specialisations.

4.6 State and Territory Data on Teachers and School Leaders

The States and Territories have a range of relevant workforce data sources through government and non-government employers and the registration boards.

Government school employers

Government employers generally maintain centralised databases for payroll and personnel purposes and some jurisdictions conduct additional workforce surveys for specified purposes. However, the consultations indicated that the databases are highly system-specific, there is sometimes a lack of consistency between payroll and staffing systems within the same jurisdiction, and considerable variance in terminologies across States and Territories. This makes aggregation of these data for workforce planning purposes at the national level problematic.

Non-government school employers

Catholic school authorities have varying arrangements in regard to teacher and leader data. In some States and Territories they are quite centralised in regard to employee operations and records, while in others such functions are conducted at diocesan level. Given the individual nature of databases and terminology and limited centralised record keeping, aggregation of data for workforce planning purposes is problematic.

Independent schools maintain staffing and other data at individual school level and there is generally little data aggregation across schools. However, some schools with religious affiliations such as the Lutheran group do maintain centralised workforce data records including basic demographics, registration status, qualifications, affiliations, current study, and previous teaching experience.

Teacher Registration Authorities

Teacher registration authorities have been established in recent years in most States and Territories with various titles including College of Teachers (Queensland), Institute of Teachers (NSW) and Teachers Registration Board (South Australia and Tasmania). In 2004 the Australasian Forum of Teacher Registration and Accreditation Authorities (AFTRAA) was established. This includes the chairpersons and registrars of teacher registration authorities in the states and territories and New Zealand. Members of AFTRAA promote national exchange of information regarding registration and profession teaching standards, and they have established a framework of common elements for recognition of pre-service teacher education programs. Mobility of registered teachers between jurisdictions is supported through mutual recognition agreements.

In terms of individual registration authorities, legislation, collection processes and databases vary but at a minimum data on registering teachers' age, sex, and initial and additional qualifications are collected. Data regarding re-entrants, graduate registrants and overseas and interstate registrants is collected, with some information published in annual reports and on websites. Evidence of qualifications and the specific course undertaken through provision of an academic transcript is generally required as part of the registration process, although details of specific subjects and specialisations are not usually recorded.

Some teacher registration authorities collect additional information from their members through periodic surveys. For example, the Victorian Institute of Teaching has commissioned studies on the teacher registration and induction process by collecting perspectives from new teachers, principals and mentors (Wilkinson et al, 2005). AFTRAA members are increasingly collaborating on their data collections to ensure greater consistency and provide comparability.

In terms of workforce planning, a potential strength of the teacher registration data is that it covers not only currently employed teachers but also those who are registered but not currently teaching. Limitations are that the scope of registration varies across situations and states, and with the exceptions of Queensland and South Australia, the registration processes are less than five years old and there is not yet a substantial accumulation of data. In some states where registration or accreditation is a recent introduction, only graduates and newly-appointed teachers from overseas and interstate are required to register. In addition, where re-registrant data is available it is not necessarily a reliable indicator of re-entry to the profession as those renewing registration after the due date may be included in these figures.

In general terms, though, the likely future introduction of teaching standards and professional development requirements as key aspects of the registration renewal processes means that teacher registration authorities may provide the most comprehensive records about teacher and school leader professional learning.

4.7 Individual School and University Data

Individual schools from all sectors also maintain some professional learning records and a range of data about their particular teacher workforce group using a variety of electronic databases and, in some instances, manual record-keeping processes. These records are generally for specific school purposes and are not intended to be pooled for broader planning purposes.

Individual universities and Faculties of Education often collect extensive student data for specific purposes, such as monitoring progress of student teachers from different backgrounds and courses, and there is some sharing of aggregate data among institutions, for example among ACDE members. However, in general terms, the institutional data uses institution-specific definitions and databases that limit the scope for broader use of the data for workforce planning purposes.

4.8 Data Collected by Other Organisations

Organisations such as the AEU, Independent Education Union and Principals Associations hold data on members, generally maintaining member records at the State and Territory level. As was detailed in Chapter 3, the AEU and the Principals Associations also conduct periodic surveys of principals and beginning teachers, and the results of such surveys are widely disseminated.

4.9 Summary and Conclusions

This chapter described the current responsibilities for workforce planning and various key sources of data which are available regarding the teacher and school leader workforce in Australia, together with an assessment of the strengths and limitations of the data for workforce planning purposes.

Australia has not had an organisation with responsibility for teacher workforce planning at national level. Planning activities are focused in the states and territories, and the chapter illustrated the approaches taken in several states. It is noteworthy that the April 2007 MCEETYA meeting agreed to the development of a strategic framework for a national approach to workforce planning in education, and referred this task to the Improving Teacher and School Leader Capacity (ITSLC) Working Group.

There are two different forms of teacher workforce data at a national level. The first presents information for Australia as a whole, and does not include disaggregation by state and territory or school sector. Such information typically comes from sample surveys, and the surveys generally do not have large enough samples to generate reliable estimates at state or sector level. The second form of national data is based on assembling information from data already maintained by state and sector school authorities.

Current data collections on the teacher and school leader workforce involve a range of organisations from jurisdictions and sectors. There are various national and state and territory data agencies, committees and processes involved with different aspects. These groups include the ABS, DEEWR, state and territory education employers, and non-government organisations.

The state-level data are generally the most extensive, but there are concerns about the extent to which the data use common definitions and their capacity to be aggregated to give a picture for the country as a whole.

5. CURRENT TEACHER WORKFORCE PLANNING DATA

This chapter reports on information obtained in the consultations from the key stakeholder groups with the purpose of mapping the currently available workforce planning data and identifying areas for improvement.

5.1 Mapping of the teacher and school leader workforce data

As outlined in Chapter 1, the consultations and data mapping were organised around a workforce planning model process that involves six components:

- Current workforce profile for teachers and school leaders
- Workforce flow profiles for teachers and leaders
- Teacher education profile
- Adequacy of supply and distribution of teachers and school leaders
- Workforce supply and demand trends
- Projections of future workforce needs

Each of these components and some specific data aspects will now be outlined and mapped against data sources using information provided by the key stakeholder groups involved in the consultations.

Tables 5.1 to 5.4 provide a map of the first four components. The tables present the specific data aspects and the detailed type of information involved. Data sources are identified as:

- National (ABS, DEEWR, GCA or Teaching Australia/NOOSR)
- State/Territory (Employers–government, Catholic, independent; or Teacher Registration)
- Local (individual schools or universities)
- Other sources

The tables are not intended to identify specific organisations but to map the availability of particular types of workforce information across various agency groups. The degree of availability of information is indicated by the following symbols:

- *generally identified* in databases collected by this group
- ◉ *sometimes identified* in databases collected by this group
- *rarely identified* in databases collected by this group

Additional data regarding the leader workforce is also indicated on each table, using italics for the type of information and * next to the symbol, as reflected in the following tables and descriptions.

5.2 The current teacher and school leader workforce profile

An essential aspect of workforce planning is having accurate and detailed data about the current workforce. Key specific data aspects and types of information may include:

- demographic profile (numbers, age, sex, Indigenous, ethnicity)
- employment status (full-time, part-time, relief, permanent, contract)
- current employment (location, salary, role, year level/subjects taught + *teaching duties for leaders*)
- employment history (location, salary, role, year level/subjects taught, leave records, previous occupation)

- initial qualifications (course, university, conferral/completion year, course length, major/minor subjects)
- additional qualifications (course, university, course length, conferral year, major/minor subjects)
- formal/informal professional learning (topic, length, year, provider, other information about professional learning, employer requirements, retraining program availability and leadership program course availability for leaders).

Table 5.1 analyses the current data collections in the above regards at the national, state/territory, and local levels.

National level: Australian Bureau of Statistics

The five yearly Census, the Labour Force surveys and other surveys (as shown) can provide some types of information related to specific data sets. The data scope is indicated under Comments, and shows that some types of information are only available at the broad two digit occupational classification (Education Professionals) but not at the 4 digit ANZSCO occupational level. Some detailed cross-tabulation is possible such as demographic/employment profile and employment status, using the Labour Force Survey data for sex and status but not for age. Detailed cross-tabulations are not possible for some types of information as data is subject to high standard errors due to the relatively small numbers in the samples.

State/Territory: Government employers

At the State/territory level, government employers databases generally maintain demographic profile details regarding age and sex, some have Indigenous records on a self-report basis although generally not ethnicity. Employee status type of information is generally available through centralised payroll systems and this is linked to current employment (location, salary), with some government employers having employment history records on a database in terms of location, salary, role and leave records. Information on previous occupations, year level/subjects taught, initial qualifications at the level of course/subjects, and additional qualifications and professional learning are rarely recorded. Details regarding school leaders' teaching duties are generally not maintained.

Catholic and Independent employers

The Catholic employers are at varying stages of workforce data being centralised within databases at the whole system or diocese level, although payroll processes tend to be relatively centralised. Therefore record-keeping is similar to that of government employers but the degree of availability on a database is less consistent due to the variations in database structure. Independent school employers generally do not keep any centralised records or workforce databases. However, some denominational groups such as Lutheran schools have centralised databases, keeping similar records to government employers.

Teacher Registration Boards

Teacher registration board databases vary from state to state. As newly established organisations in some jurisdictions, some are only registering new entrants to the profession and new recruits from interstate and overseas. However, in terms of initial qualifications and additional qualifications, these organisations hold probably the most extensive information, although at this stage, major and minor subjects are rarely recorded on the databases. At the present time the various state databases vary in structure and scope, but AFTRAA is working towards greater harmonisation of data.

Individual schools

Individual schools within the government, Catholic and independent sectors maintain various teacher and leader workforce records for internal purposes, using a range of terminologies and record keeping processes, with some using databases, while others keep only manual records.

Professional development providers

Professional development providers may keep records regarding particular aspects of professional learning, especially where these are mandated for all teachers or connected to programs which are linked to roles or pay increments for particular groups of teachers and leaders.

In summary, some profile data is available from a range of different sources but there are issues of consistency of terminology, processes and accessibility.

Table 5.1: Current data collections on teacher and leader workforce profile

SPECIFIC DATA ASPECTS	TYPE OF INFORMATION	TABLE 5.1 : CURRENT DATA COLLECTIONS ON TEACHER AND LEADER WORKFORCE PROFILE								● Generally identified in databases collected by this group ◎ Sometimes identified in databases collected by this group ○ Rarely identified in databases collected by this group		
		National				State/Territory				Local	Other	Comment
					Teaching Australia/NOOSR		Employers		Teacher	Individual Schools		
	<i>*Additional leader data items shown in italics+ *</i>	ABS	DEEWR	GCA		Govt	Catholic	Indep	registration			
Teacher/leader workforce profile												
<i>Demographic profile</i>	Numbers, Age, Sex Indigenous Ethnicity	*ABS 5 yearly Census: ● Labour Force Survey: ◎ *School leaders :ANZSCO classification .Education managers at the 4-digit level				● ◎ ○	◎ ◎ ○	○ ○ ○			Some denominational groups within Independent Sector have centralised records e.g Lutheran	NSSC codes generally used in centralised systems
<i>Employment status</i>	Full-time/Part-time/Relief Permanent/contract	*ABS 5 yearly Census: ● Labour Force Survey: ◎ *School leaders :ANZSCO classification .Education managers at the 4-digit level.				● ●	◎ ◎	○ ○				NSSC codes generally used in centralised systems Many Catholic schools are part of centralised payroll and recruitment record system
<i>Current employment</i>	Location, Salary Role Year level/ Subjects taught <i>Teaching Duties*</i>	*ABS 5 yearly Census: ◎ Labour Force Survey: ◎ Employee Earnings, Benefits and Trade Union Membership: ◎ *School leaders :ANZSCO classification .Education managers				● ◎ ○ ○*	◎ ○ ○ ○*	○ ○ ○ ○*				

<i>Employment history</i>	Location, Salary Role Year level/Subjects taught Leave records Previous occupations	*ABS 5 yearly Census: ☉ Survey of Persons not in the Labour Force: ☉ *School leaders :ANZSCO classification .Education managers				☉ ☉ ○ ☉ ○	☉ ○ ○ ☉ ○	○ ○ ○ ○ ○		Individual school records variously collected often manually, and not readily accessible		Some centralised employers have manual records only
<i>Initial qualifications</i>	Course, University Conferral year Course length Major/minor subjects	*ABS 5 yearly Census: ☉ Survey of Education and Work: ☉ *School leaders :ANZSCO classification .Education managers				☉ ☉ ○ ○	○ ○ ○ ○	○ ○ ○ ○	☉ ☉ ☉ ○			
<i>Additional qualifications</i>	Course, University Course length Conferral year Major/minor subjects	*ABS 5 yearly Census: ☉ Survey of Education and Work: ☉ *School leaders :ANZSCO classification .Education managers				○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	☉ ☉ ☉ ○			
<i>Formal /informal professional learning</i>	Topic, Length, Year, Provider Other informal professional learning Employer PD requirements Retraining program availability Leadership program course availability*	*ABS 5 yearly Census: ☉ Survey of Career Experience (2002): ☉ *School leaders :ANZSCO classification .Education managers				○ ○ ☉ ☉ ○*	○ ○ ☉ ○ ○*	○ ○ ○ ○ ○*		Individual school PD records	Variously collected PD provider records	Registration boards considering PD requirements and evidence for teaching standards within full registration and renewal processes Religious education, graduate certificates and courses by some Catholic and Independent employers sometimes required Non government schools accreditation has PD requirements based on school records, often manual, which are aggregated centrally for collections

5.3 Workforce flows

Workforce planning needs information about those entering and leaving the profession. Key specific data areas and types of information are:

- re-entrants from leave (qualifications, year level/subjects, locational availability, motivations, refresher course provision, participant satisfaction)
- migration flows -- teachers from overseas and Australian teachers moving overseas (qualifications, age, sex, ethnicity, year level/subjects, locational availability, overseas induction program participant satisfaction)
- graduates (age, sex, ethnicity, Indigenous, university, course, year, year level/subjects, locational availability, induction policy/course, early career experiences)
- resignations (age, sex, Indigenous, ethnicity, year level/subjects taught, intentions timeline, motivation for leaving, destination)
- retirement (age, sex, Indigenous, ethnicity, year level/subjects taught, intentions timeline, motivation for leaving, legal retirement age requirement, delayed retirement schemes, destination)
- potential reserve teacher pool, qualified and on recruitment record (personal profile, qualifications, year level/subjects taught, locational availability, current occupation, reason for not teaching, year last taught, refresher course provision, availability for work)
- potential reserve teacher pool, qualified and not on recruit record (personal profile, qualifications, year level/subjects taught, locational availability, current occupation, reason for not teaching, year last taught, refresher course provision, availability for work)
- underemployed teachers – relief, part-time (personal profile, qualifications, year level/subjects taught, locational availability, reasons for underemployment)

Table 5.2 analyses the current data collections in the above regards at the national, state/territory, and local levels.

National level: ABS

The ABS has a variety of surveys that collect data on workforce flows including the *Survey of Labour Mobility*, *Survey of Persons not in the Workforce*, *Labour Force Status and Other Characteristics of Migrants*, *Retirement and Retirement Intentions*, and the Census. A 2007 *Survey of Employment Arrangements, Retirement and Superannuation* will provide an additional data source. Some types of information are only available at the broad one or two digit occupational classification (Education Professionals) but not at the 4 digit ANZSCO occupational level. Generally, detailed cross-tabulations are not possible from these data.

National level: Teaching Australia/NOOSR

Teaching Australia (and formerly NOOSR) hold data on teachers from overseas who have applied for assessment of their qualifications in the process of skilled migration. The minimum requirements are qualifications equivalent to an Australian Bachelor degree, or one year of pre-service professional teaching studies, 30 days practicum, and English language proficiency. Data is maintained regarding pre-primary, primary and secondary classifications and applicants' country of permanent residence.

In 2005, NOOSR assessed 1 294 applications from teachers seeking to migrate to Australia and just over 80 per cent met the requirements. The United Kingdom (498 successful assessments), India (163), Singapore (81) and South Africa (72) were the main countries concerned. There has

been an increasing proportion of applicants (about 15 per cent in 2005) who are international students who have studied in Australia and applied for migration on completion of their studies.

The data are used for workforce planning purposes but locational availability within Australia, and year level/subject data are not available; nor is there information about subsequent success in gaining teaching employment in Australia.

State and Territory Government Employers

Data regarding workforce flows among State/Territory government teacher workforces is available in varying degrees from centralised databases, with more data available about workforce entrants than workforce departures (such as resignations and retirements) or long-term career intentions. Some data about the potential reserve pool of teachers is available from some jurisdictions for prospective teachers who have registered for employment. Some jurisdictions have some data about relief and part-time teachers who are seeking additional work but this information is usually maintained at the school level for internal purposes.

Catholic and Independent School Employers

Catholic diocese employers who have centralised databases maintain some records about those entering and leaving from the profession in terms of age/sex, initial qualifications but little information about motivations and intentions. Independent school employers generally do not have centralised data in these areas.

Teacher Registration Boards

State teacher registration boards have data regarding qualified and registered teachers, whether employed as teachers or not. However, this does not provide details about workforce entrants and leavers, although some data on overseas entrants is available. Most registration boards also maintain records about the potential reserve pool for those who continue to be registered as teachers, but who are not currently working as teachers. However, details of their year level and subject/specialisations, locational availability, current occupation, reasons for not teaching, and availability for work are not usually recorded.

Principals Associations Surveys

The annual ASPA surveys of school leaders seek information about leaders' predictions of the number of staff in various subject areas who are intending to retire within the immediate future. The Principals Associations including secondary, primary, Catholic and Independent school groups, have recently sent a jointly developed survey to all early career teachers (in their first five years) which includes questions about early career experiences and career intentions.

Teacher Union Surveys

The AEU survey of beginning teachers provides some data about the workforce flows including qualifications and teaching out-of-field, satisfaction with their pre-service teacher education, professional development opportunities and induction support, and career intentions.

Table 5.2: Current data collections on workforce flows

SPECIFIC DATA ASPECTS	TYPE OF INFORMATION	TABLE 5.2: CURRENT DATA COLLECTIONS ON WORKFORCE FLOWS								● Generally identified in databases collected by this group ◎ Sometimes identified in databases collected by this group ○ Rarely identified in databases collected by this group		
		National				State/Territory				Local	Other	Comment
							Employers		Teacher			
		ABS	DEEWR	GCA	Teaching Australia/NOOSR	Govt	Cath	Indep	registration	Individual Schools		
Workforce entrants												
<i>Re-entrants from leave</i>	Qualifications Year level/ Subjects exp Location availability Motivations Refresher course provn Participant satisfaction	Survey of Labour Mobility: ◎				◎	○	○				Some denominational groups within Independent Sector have centralised records
<i>Migrants</i>	Qualifications Age, Sex, Ethnicity Year level/subject exp Locational availability Overseas Induction prog Participant satisfaction	ABS 5 yearly Census: ◎ LF Status & Other Characteristics of Migrants:◎			◎	◎	◎	○	◎			
<i>Graduates</i>	Age, Sex Ethnicity Indigenous Uni, Course, year Year level/subjects Locational availability Induction policy/course Early career experiences					●	◎	○		Usually individual school induction	Union surveys	

Workforce separations												
<i>Resignations</i>	Age, Sex, Indigenous Ethnicity Year level/subjects taught Intentions timeline Motivation for leaving Destination	ABS 5 yearly Census: ☉ Survey of Persons not in the Labour Force : ☉				☉ ○ ○ ○ ○ ○	☉ ○ ○ ○ ○ ○	○ ○ ○ ○ ○ ○			Leader Prof Assoc annual survey	Also some National surveys of teachers
<i>Retirement</i>	Age, Sex, Indigenous Ethnicity Year level/subject, Intentions timeline Motivation for leaving Legal retirement age req Delayed retire schemes Destination	ABS 5 yearly Census: ☉ Retirem't and Retirem't Intentions : ☉				☉ ○ ○ ○ ○ ○ ○	☉ ○ ○ ○ ○ ○ ○	○ ○ ○ ○ ○ ○ ○			Leader Prof Assoc annual survey	
Potential reserve pool												
<i>Qualified and on recruitment records but not teaching</i>	Personal profile Qualifications Year level/subjects taught Locational availability Current occupation Reason for not teaching Year last taught Refresher course provn Availability for work	ABS 5 yearly Census: ☉ Survey of Persons not in the Labour Force : ☉				☉ ☉ ☉ ☉ ○ ○ ○ ○ ○ ☉	☉ ☉ ☉ ☉ ○ ○ ○ ○ ○ ☉	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	☉ ☉ ○ ○ ○ ○ ○ ○ ○ ○		Some agency pool records Some centralised relief teachers in Catholic system	
<i>Qualified but not on recruitment records</i>	Personal profile Qualifications Year level/subjects taught Locational availability Current occupation Reason for not teaching Year last taught Refresher course provn Availability for work	ABS 5 yearly Census: ☉ Survey of Persons not in Labour Force: ☉				○ ○ ○ ○ ○ ○ ○ ○ ○ ○	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	☉ ☉ ○ ○ ○ ○ ○ ○ ○ ○		Some agency pool records	
<i>Underemployed teachers – relief, part-time</i>	Personal profile Qualifications Year level/subjects taught Locational availability Reason for underemploy	Labour force survey: ☉ Survey of Education & Training: ☉				☉ ☉ ☉ ☉ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	☉ ☉ ○ ○ ○	Some individual schools have manual records	Agency pool records	

5.4 Teacher Education Profile

Graduates from teacher education programs are one of the most significant groups for teacher supply and inflow to the profession. Key data areas and types of information needed for workforce planning include the following:

- course details (structure, duration, organisation, content, entry requirements, accreditation)
- undergraduate/postgraduate course commencers (match to workforce needs, age, sex, Indigenous, ethnicity, motivations for teaching, destination intentions, projected year of availability, progression rates by course/uni/year)
- course completers (age, sex, Indigenous, ethnicity, year level/subjects, course satisfaction, destination outcomes)
- tertiary course attrition age, sex, Indigenous, ethnicity, year level/subjects, course satisfaction, destination outcomes)

Table 5.3 analyses the current availability of data in the above areas at the national, state/territory, and local levels.

DEEWR's *Higher Education Statistics Collection* requires universities to submit de-identified data regarding undergraduate and post-graduate teaching students. The strengths are that this yields information about new entrants into courses, including course and university, course level, age, sex, home postcode, Indigenous status, full or part-time attendance, country of birth, citizenship and Australian residency status. The limitations are that no details of subjects and specializations are provided nor expected completion dates, student intentions on completion, motivation for undertaking the course, whether seeking work part or full-time, therefore making the data less useful for workforce planning purposes.

Graduate Careers Australia (GCA)

GCA data regarding graduate destinations is useful in terms of destination and course satisfaction, and the results are published on an institution-by-institution basis.

Teacher Registration Boards

Teacher registration board records for new graduates require sighting of documents regarding conferral/completion of minimal qualifications requirements. Teacher registration boards also generally have responsibility for accrediting teacher education courses. However, the databases vary across jurisdictions and are not accessible for external use.

Australian Vice Chancellors Committee (AVCC)

The AVCC publishes data regarding the number of places offered, enrolment numbers and number of eligible applicants not offered places.

Universities and Schools of Education

Universities and Schools of Education have processes and information regarding teacher education courses and student profile details but databases vary and are generally not accessible. Some universities have small scale research projects regarding student motivations and intentions.

In summary, some teacher education profile data are available from DEEWR, but information on the motivations, intentions and destinations of student teachers is not generally available. There is

also little published information available on course completions and teaching practicum approaches.

5.5 Adequacy of Supply and Distribution of Teachers

Using data to assess the adequacy of teacher supply and distribution among schools is an essential component of workforce planning. Specific data that are needed include:

- Teacher and school leader vacancies (number, year level/subject, location, role)
- Origins of newly appointed teachers (numbers, graduates, re-entrants, overseas recruits, interstate recruits)
- Characteristics of newly appointed teachers (age, sex, Indigenous, ethnicity, qualifications, year level/subjects taught, prior experience)
- Vacancy process outcomes (numbers of applications, fitness of match, time to fill, number/type of unfilled or difficult to fill vacancies)
- Shortage coping techniques (use of unqualified/out of field teachers, use of relievers, teacher/leader overload, combined classes, reduced curriculum)

Table 5.4 documents the current availability of data in the above regards.

Australian Bureau of Statistics

The ABS collects job vacancy data by industry, and the *Labour Mobility* survey provides data by industry and occupation. These surveys provide some information about teachers but the sample sizes do not allow detailed analyses.

Government School Employers

Teacher and leader vacancies are generally recorded centrally in government systems. Details of newly appointed teachers are also recorded centrally for payroll and personnel processes. Information is generally not collected on the extent of match between teacher qualifications and vacancy requirements, or on the strategies schools use to cope with staffing shortages.

Catholic and Independent School Employers

Data on staffing vacancies in Catholic schools are centrally recorded in some systems. However, there is little centrally available data on recruitment outcomes or on shortage coping techniques.

Individual Schools and Universities

Some schools maintain records of outcomes of vacancy processes for internal purposes only. Some universities collect information from recent graduate teachers but in general such data are not available across a whole jurisdiction.

Principals Association Surveys

ASPA surveys are undertaken regarding match of teachers to vacancies and shortage coping techniques used by schools, with the results published annually.

Teacher Union Surveys

AEU surveys are undertaken annually regarding beginning teachers and their early career experiences and match to qualifications, with the results published on relevant websites.

In summary, teacher vacancy data is generally available in most school systems, but information on support programs for new recruits and schools' shortage coping techniques is not currently collected or matched to qualifications and vacancy areas.

Table 5.4: Current adequacy of teacher supply and distribution data

SPECIFIC DATA ASPECTS	TYPE OF INFORMATION	TABLE 5.4: CURRENT ADEQUACY OF TEACHER SUPPLY AND DISTRIBUTION DATA								● Generally identified in databases as collected by this source group ◎ Sometimes identified in databases s collected by this source group ○ Rarely identified in databases as collected by this source group		
		National				State/Territory				Local	Other	Comment
					Teaching Australia/NOOSR		Employers		Teacher registration	Individual Schools		
		ABS	DEEWR	GCA		Govt	Cath	Indep				
Outcomes of vacancy process												
<i>Teacher/leader Vacancies</i>	Number Year level/subject Location Role	Job Vacancy by industry: ◎				● ● ● ●	◎ ◎ ◎ ◎	○ ○ ○ ○			Some denominational/specialist groups within Independent Sector have centralised processes	
<i>Origins of newly appointed teachers</i>	Numbers Graduates Re-entrants Overseas recruits Interstate recruits	ABS Survey of Labour Mobility: ◎				◎ ◎ ◎ ◎ ◎	○ ○ ○ ○ ○	○ ○ ○ ○ ○				
<i>Characteristics of newly appointed teachers</i>	Age, Sex, Indigenous Ethnicity Qualifications Year level/ subjects taught Prior Experience	ABS Survey of Labour Mobility ◎				● ○ ● ● ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○		Specific research projects on early career experiences	Unions – Data re: early career experiences	
<i>Teacher /leader Vacancy process details</i>	Number of applicants Fitness of match Time to fill No./type of unfilled or difficult to fill vacancies					● ○ ○ ◎	○ ○ ○ ○	○ ○ ○ ○				
<i>Shortage coping strategies</i>	Use of unqualified /out—of-field teachers Use of relievers Teacher/leader overload Combined classes Reduced curriculum					○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○			Leaders Association surveys Union surveys Relief teacher agency records	

5.6 Data and projections for workforce supply and demand needs

A further key stage in workforce planning considers data and processes to identify priorities for meeting current and future workforce needs. To illustrate, this section outlines approaches from Queensland, Victoria and Western Australia which involve using existing data and initiating new data collections in making projections about future supply and demand needs. As was noted in Chapter 4, a key strategy in improving teacher workforce planning involves cross-sectoral reference groups and networks, as evident in these states.

Illustrative Example 1 – Queensland Department of Education Training and the Arts

The Queensland Department of Education Training and the Arts *Workforce Strategy 2004-2008* outlines three strategic outcomes: Workforce Sustainability (recruitment and selection); Workforce Capability (performance development); and Workforce Optimisation (looking after staff).

Workforce Sustainability, which is focused on teacher supply matching current and future demand, includes turnover, graduate appointments, attrition and renewal aspects of the teacher workforce. Improved data strategies in relation to identified gaps have resulted in a teacher qualifications survey, pre-service teacher survey and exit survey being implemented.

The Teacher Qualification Survey was undertaken in all school locations (approx 1,300) in May 2006. The Teacher Qualification Survey was developed to assist with informing further development of strategies to improve supply of appropriately qualified specialist teachers in the special education and secondary school sectors.

The Teacher Qualification Survey gathered information for over 30,000 permanent teachers, and school leaders (more than 90% of permanent teaching staff). The survey updates department staffing records regarding:

- Current studies (including study areas and expected year of completion)
- Completed formal qualifications (including subject and other specialist areas)
- Subject areas where the teacher has gained significant experience (five years or more)

Queensland Department of Education Training and the Arts is committed to working with Queensland universities and Education employers to ensure a match between teacher graduates and employment opportunities. Expected completion data is obtained from universities for undergraduate and postgraduate students in specified teaching subject areas. In addition, an online survey of Pre-service Teachers regarding their teaching and location preferences and career aspirations has also been developed. The survey includes:

- University course/campus details and expected completion timeline
- Level of schooling and subject specialisation area information
- Intended school sector (and location preferences for government schools)
- Any previous qualifications, highest level attained and broad fields of study
- Further study intentions and preferences (e.g. Special Education, Secondary Mathematics, Secondary Science, Industrial Technology, ICT, and LOTE)
- Preferred employment type and interest in teaching in rural and remote areas
- Teaching intentions beyond graduation including timeline and location
- Preferences for job information and induction support preferences
- Promotion aspirations and roles

- Reasons for choosing teaching, initial information sources regarding teaching and preferred methods of receiving further information
- Previous full time employment history

A survey of the current teacher applicant pool regarding teaching and location preferences as well as interests in developing additional skills in specialist teaching areas has also occurred. This information guides workforce planning strategies in order to best ensure timely and equitable employment opportunities for teaching graduates. Having this information also better assists in the recruitment of teacher applicants and redeployment/retraining of the existing workforce.

Using various data sources, including those listed above, teacher supply and demand estimates and projections are calculated. Projected student enrolments (linked to projected student-teacher ratios and subject participation rates) provide an estimate of projected teacher demand requirements by level of schooling and specialisation. The replenishment requirement profile involves calculating the projected total attrition rate using the teacher age profile, annual attrition rate, and annual attrition age profile. In terms of supply, a recruitment capability profile for levels of schooling and specialisations of undergraduate and postgraduate completion data and teacher credentials data is developed and compared with the replenishment requirement profile.

The main elements of this approach are as follows:

Demand (by level of schooling and specialist area)

Student population demand
 Estimate student demand numbers
 Estimate future teacher demand
 Replenishment Requirement profile
 Age distribution of teachers
 Annual attrition and age profile trends

Supply (by level of schooling and specialist area)

Recruitment Capability Profile
 Expected teacher education graduate numbers
 Teacher credentials

Reports on workforce management issues are provided at region and school level to assist managers with workforce monitoring and planning. Numerous human resources performance indicators have been developed to signal priorities, challenge performance and measure progress. The *Regional HR Snapshot* and *Workforce Management Performance Report (Skyscraper)* provide a performance profile in relation to:

Workforce Sustainability (Recruitment and Selection and Team Balance)

Turnover and attrition
 Teacher demographics (age and experience)
 Renewal (Attrition and Transfer)

Workforce Capability (Performance Development)

Professional Development
 Leadership Capability

Workforce Optimisation (Looking After Staff)

Staff Morale
 Absenteeism
 Health, Safety & Wellbeing

Illustrative Example 2: Victorian Department of Education

Victorian Government schools operate under a devolved system whereby a school receives a budget allocation (the Student Resource Package or SRP) to operate the school and the school can then determine how it spends the money. Under the SRP individual schools receive funding based on the size of the school according to student enrolments plus funding for special programs and government initiatives. Since the introduction of the SRP, there has been no notional teacher allocation based on student enrolments.

To project future teacher employment numbers, firstly student enrolments projections for the projection period are used as the base. The student enrolment projections are based on the February census results extrapolated forward to project enrolments of graded students for all school sectors over the next 15 years.

The student enrolment projections are then adjusted to give student enrolment projections for August by adding the average actual difference between February and August enrolments for the previous four years. The August student enrolment projections take into account different retention levels, ungraded, special and language school students in each sector.

Teacher-student ratios as at August the previous year are used to calculate the total full-time equivalent number of teachers required in each of the government, Catholic and independent schools sectors from the student enrolment projections.

Projected attrition rates of Government teaching service staff are calculated, based on previous trends of separations and extrapolation of the current teaching staff profile by age. These projected attrition rates are then used to project numbers of separations for each of the projected years. The projected attrition of teachers from Catholic schools is based on attrition rates supplied by the Catholic Education Office. As equivalent information is not available from independent schools, the government school rates are applied.

The three-year average full-time equivalent of government teaching service staff commencing from unpaid leave is calculated and applied to each year of the projection period as a net leave outflow. Those returning from leave are calculated as a net inflow.

Although there is no data on unpaid leave available for Catholic and independent schools, these sectors have a much lower family leave entitlement period (two years compared to seven years in government schools). Leave outflows and inflows are therefore assumed to be equal and the net leave outflow is calculated at zero for the non-government sector.

The number of FTE teachers for each sector are converted to a number using the number to FTE ratio for each sector as at August in the previous year. The numbers of replacement teaching staff required to replace employed teaching staff on long-term paid leave (e.g. long service leave) are not included in these projections.

To provide additional data to support workforce planning projections for the Victorian Department of Education, a range of data collection approaches are being implemented as follows:

Teacher Recruitment Census (February full census):

- FTE recruitment numbers, FTE vacancies ;

- Recruitment difficulties by subject/length of time required, time fraction whether filled as at census day and recruitment source;
- Geographic distribution of difficult to fill vacancies;
- Difficult to fill vacancy recruitment strategies and incentives used to fill;
- Subjects dropped/not offered for lack of suitable qualified teacher length of time required and time fraction
- Department teacher supply initiatives awareness and comment on department or school initiatives.

Casual Relief Teacher Recruitment (CRT) (August - Snapshot week full census)

- Number of CRTs recruited and total weekly hours used, Source of CRT, Teaching background of CRTs, Difficulties in recruiting CRT's by subject and actions taken to employ CRT for difficult vacancies and actions taken when no CRT available.

Forecasting Teacher Demand by Subject : Questionnaire for Principals Interview (biennial sample survey of 100 Government secondary schools)

- Intention to increase staff numbers by specific subject over the forecast period
- Total teaching staff (FTE) requirements for future Years- 7-10, 11-12 over the forecast period
- Additional and/or replacement classroom teacher by subject – 7-10, 11-12 over the forecast period
- Reductions of classroom teachers by subject – 7-10, 11-12 over the forecast period
- Subjects in which principals anticipate having difficulty recruiting teachers and possible reasons for difficulty
- Subjects dropped/not offered for lack of suitable qualified teacher and substitute subjects

Forecasting Teacher Demand by Subject: an individual teacher survey of current teaching allotment by subject code, year level and lessons.

Illustrative Example 3: Western Australian Strategic Issues Working Party and Report

The Western Australian report *Teacher Supply and Demand and Student Placements in Western Australia- Strategic Issues (2006)* was written by a specially-convened Working Party with responsibility for addressing issues of teacher supply and demand. Strategies outlined in the report relate to a series of goals in terms of providing accurate and timely advice; improving the status of teachers, attraction and retention issues; addressing new technology and rural education; ensuring placements for teacher education students and encouraging recruitment to country areas; and promoting State and Commonwealth interaction for teacher workforce planning and funding.

In terms of providing accurate and timely advice, data regarding permanent and non-permanent teachers including resignation rates by sector; qualified teachers not working; teacher education completers' intentions and preparedness for non-metropolitan and hard-to-staff locations; and specialist secondary subject areas is being considered. Links with the universities, registration and cross sector groups are involved.

In February 2007 the Minister for Education and Training established a Taskforce to review education workforce supply and demand in Western Australia.⁶ The Taskforce, which is chaired by Professor Lance Twomey, is to advise the Minister on current and future workforce supply and demand. The terms of reference include:

- Review the State's capacity to meet its educational needs with a focus on: current and future workforce needs; alternative delivery strategies; and the capacity to respond rapidly to teacher shortages.
- Consider the standing of the teaching profession with a view to providing strategies for raising the status of teaching.
- Generate a framework to inform future workforce planning for all education sectors.

The Taskforce is to finalise its report by December 2007.

5.7 Overall Assessment of Data Availability

Three key themes emerged from the consultations about the adequacy of currently available teacher and leader workforce data: the need for data to be able to address policy imperatives; inconsistencies in data terminology and accessibility; and the lack of motivational, attitudinal and longitudinal data.

The stakeholder consultations have highlighted the need for systematically-collected and accessible data to inform policy and strategies. Comments of the following type were common:

Data sharing on teaching workforce attributes by ALL states would be a step towards ascertaining our position in national terms and also a combined view of issues specific to the teacher workforce nationally. (State government education official)

While more coordinated national approaches to data were generally supported, concerns were also raised, particularly in regard to data being used for interstate comparisons:

National data on supply and demand from the university level onward is needed....but we have too many accountability requirements already, and state competition will become even more of a problem, particularly if data shows one state looks more negative than another. (Teacher union official)

Such views are discussed further in Chapter 8.

National or even state and territory aspects were perceived as of less importance to some schools in workforce planning issues, particularly those in the Independent sector. While the national perspective was generally acknowledged as important, some expressed a cautionary note that improvements in data quality should not distract from the more significant issue of actually implementing strategies to improve staffing and schools.

While there are many specific data areas identified in the tables presented for workforce planning purposes across all sectors which are of interest, some key aspects warranting particular attention are as follows:

Teacher and leader workforce profile
Current employment: Subjects taught

⁶ See: <http://www.educationworkforce.wa.gov.au/about.html>

Initial qualifications: Major/minor subjects
 Additional qualifications: Major/minor subjects

Workforce flows

Re-entrants from leave, teachers from overseas and Australian teachers moving overseas

- Qualifications by subject
- Year level/subject experience
- Locational availability

Resignation and retirement teachers

- Year level and subjects taught

Potential reserve pool

Qualified (on or not on recruitment records) but not actually teaching

- Qualifications by subject/specialisation
- Year level/subjects taught
- Locational availability
- Availability for work

Teacher education profile

Undergraduate/Postgraduate course completion

- Year level/subject taught
- Destination intentions

Course Attrition

- Level of schooling/subjects

Adequacy of teacher supply and distribution

Teacher/leader vacancy process details

- Fitness of match between applicants and vacancies
- Time to fill vacancies
- Nature/type of unfilled vacancies
- Unfilled or hard-to-fill vacancies

Other areas raised in the consultations to be of interest in informing policy are related to teacher education programs, including issues related to the practicum and improved school-university partnerships. Data regarding the availability of retraining, induction, re-entry and overseas recruit programs was also noted as important, including course satisfaction details. Data on schools' shortage coping techniques when appointees did not actually match vacancy requirements was also noted as an area of significant need, with some states and territories now introducing new data collection processes regarding recruitment difficulties (e.g. Queensland and Victoria as outlined in Section 5.6).

The consultations highlighted that various systems of terminology are used which potentially provide obstacles to greater data sharing and comparability. Payroll, personnel and recruitment records are not necessarily integrated within even the one organisation, although most employers are currently working on this.

It was generally believed that a key area of data omission and of significant importance relates to factors involved in the attractiveness of the teaching career, including among secondary students, potential career changers, those who have registered but who are not teaching, and under-represented groups such as those from Indigenous origins. Such gaps indicate a need for more comprehensive data on attitudes towards teaching.

Other areas of significant data interest and need relate to factors influencing retention in the teaching career and having records about separation and retirement intentions.

The key stakeholder consultations also indicated the need to build on existing data about teacher education students and commencing motivations and intentions, completion intentions and destinations, practicum and early career experiences, hard-to-staff schools, and graduate satisfaction with courses undertaken.

The consultations also indicated that data inadequacies were particularly evident in regard to the school leader workforce. Priorities for improved data included attitudes and intentions among prospective and current leaders, the availability and impact of leadership induction programs and capacity building initiatives.

6. CURRENT AND EMERGING DATA NEEDS

The previous chapter outlined the current availability of data for teacher and school leader workforce planning, and the main gaps and concerns about those data. This chapter highlights emerging school policy issues identified by key stakeholders in the consultations as areas warranting improved data or which may require data in the future. It also discusses framing data needs within change management contexts.

6.1. Emerging Issues in Schooling

The consultations with key stakeholders in all States and Territories across all levels of schooling and sectors, subjects and specialisations raised a range of issues about the challenges faced by schools and the ways that schooling is changing. These can be grouped into broad themes as follows:

General issues across schooling

- Current shortages of specific types of teachers
- Concerns about possible future general shortages of teachers and school leaders
- The availability of sufficient teachers with skills in emergent educational approaches: integrated approaches and partnerships; flexibility for a more mobile workforce; workforce reform and working with paraprofessionals; and information and communications technology

Specific issues in schooling

- Vocational education and training
- Early childhood education
- Catering for diverse and special needs among students
- Middle years of schooling
- Indigenous education

The following sections elaborate these concerns. While many of the stakeholders consulted expressed their concerns in terms of emerging issues for the workforce, this was underpinned by the need for data to ensure that policies, strategies and programs are established which are effective and based on accurate and current information.

6.2. General Issues across Schooling

Current shortages of specific types of teachers

It was widely acknowledged by stakeholders in the consultations including employers from all sectors and jurisdictions, principals, subject associations and teacher unions, that there are some current specific shortages of teachers and school leaders.

In secondary education, the areas of mathematics, science and technology were identified as major concerns, and both primary and secondary education experience shortages of Languages other than English (LOTE) and Special Education teachers. Shortages are particularly significant in some rural and remote locations. In particular sectors, states/territories and locations there were also other very specific teacher supply issues in some subjects and specialisations, in addition to difficulties in attracting teachers to remote areas and also to more challenging metropolitan locations. Recruiting school leaders to particular rural and remote locations was also raised as an issue, with declining numbers of staff reported to be applying for these positions.

Employing suitable relief teachers was an additional area of concern and this is particularly evident in rural and remote locations and in some secondary specialist areas.

Table 6.1 outlines concerns about current teacher shortages and the data needs and specific data aspects which are required to support effective policies and strategies associated with attraction, recruitment, retention and development for different target groups. The data aspects and needs are presented using the components of the workforce planning model outlined in Chapter 5.

Table 6.1: Current Specific Teacher Shortages and Consequent Data Needs

Concerns about teacher shortages	Data on workforce inflow	Data on current teachers, leaders & teacher education profile	Data on adequacy & distribution of teachers	Data on current teacher & leaders profile & workforce inflows & outflows
	Attraction	Development	Recruitment	Retention
	Teacher ed. students Overseas recruits Career changers	Teacher ed. students Teacher retraining Leaders succession/PD	Graduates Overseas Leadership Potential pool & hard to fill positions	Current teachers/ leaders Early career Re-entry
Current specific subject shortages: Secondary maths Secondary science Secondary technology LOTE and Special Education (prim/sec) Remote and disadvantaged locations Current shortage of leaders in remote areas Current shortages of relief teachers	Teacher education students subject/specialisations, motivations and intentions and interest in teaching in hard-to-staff schools Relevant career changers' attitudes and motivations towards teaching and locational availability Relevant overseas teachers and motivations and attitudes towards teaching in rural/remote Australia	Teacher education commencers subject/specialisations match to workforce needs Current teacher motivations and no. and type of programs for retraining Leadership aspirant data and succession PD programs and data re PD/ support for current leaders	Teacher Education graduate completers major/minor subjects and destination intentions and outcomes Data regarding leadership motivations for particular locations Relevant potential pool qualifications/subject/ specialist areas and motivations, & match of skills of appointees to hard to fill vacancies /shortage coping techniques used by schools Relevant overseas teacher qualifications and major/minor subjects and locational availability	Relevant current teacher and leader qualifications, retention/separation intentions and retention motivation factors Relevant potential re-entrants qualifications, motivation and timelines intentions Early career teacher /re-entry teacher experiences and support

A range of data needs is evident. In the United Kingdom, the National Skills Task Force (NSTF) argued that vague terminology makes it hard to categorise the problem and discern the scale of the problems that underlay reported skill shortages (Keep, 2005). They distinguished between external and internal recruitment problems, and divided the issues into three different categories:

- External recruitment problems as indicated by either:
 - (1) *hard-to-fill vacancies*: these exist when employers have considerable difficulty in filling vacancies at current levels of remuneration and conditions of employment, and in a reasonable location. Hard-to-fill vacancies are typically for specialised and experienced workers, and can co-exist with unemployment in the occupation
 - (2) *skill shortage vacancies*: these are when hard-to-fill vacancies are due to a shortage of applicants with the required experience, knowledge or skills
- Internal recruitment problems as indicated by a (3) *skill gap*, which applies where existing employees lack the required qualifications, experience and/or specialised skills to meet needs.

The third category, skill gaps, tends to be transitory, often applies to recent recruits, and can be largely addressed by training on the job. The first two categories are likely to signal more fundamental issues relating to either a shortage of well-qualified people in the labour market, or insufficiently attractive employment conditions to encourage them to apply.

Shah and Burke (2005) use a similar framework in the Australian context to argue that, as a single indicator of skill shortages does not exist, it is necessary to use a suite of measures to assess job market conditions and design appropriate policy responses. This is particularly so in the teacher labour market where there is such a variety of routes into the profession and sources of potential recruits.

As outlined in Chapter 5, to enable planning to address specific subject teacher shortages, improved data is needed regarding:

- The teaching pool: those currently employed (as previously identified in *Table 5.1: Current data collections on teacher and leader workforce profile*)
- Re-entrants from leave, the potential pool of teachers, teachers from overseas and Australian teachers moving overseas (see *Table 5.2: Current data collections on workforce flows*)
- Teacher education graduates (see *Table 5.3: Teacher education profile*)
- Teacher vacancies (see *Table 5.4: Current adequacy of teacher supply and distribution data*).

Data regarding primary and secondary teacher and leader vacancies and shortages in remote areas is also needed. This includes:

- Workforce inflow data in relation to people with relevant subject and role specialisations to attract them to the profession, particularly the motivations of any career changers, teacher education students and overseas teachers, and their willingness to work in locations where there are shortages (as identified in *Table 5.3 and Table 5.2*)

In terms of teacher development policies:

- There are data issues of ensuring there are sufficient numbers of teacher education students undertaking courses in the subjects and role specialisations where shortages are most evident (see *Table 5.3*).
- Planning would be assisted by data on current teachers and their intentions and motivations for retraining in areas of need. Information on the availability of retraining and development programs is also required (see *Table 5.1*), as well as on potential aspirants for leadership positions and the availability of professional development courses for succession planning (*Table 5.1*).

In terms of recruitment into teaching, data priorities include:

- The qualifications, motivations, destination intentions and outcomes in relation to teacher education graduates (see *Table 5.3*)
- The potential pool of qualified teachers, and overseas teachers (see *Table 5.2*).
- Motivations for teachers to undertake positions in particular locations, match of skills to vacancies in hard-to-fill situations and shortage coping techniques used by schools when

a vacancy cannot be filled with the appropriate person, are other areas where more comprehensive data are needed (see *Table 5.4*).

In regard to teacher retention, priority areas include workforce outflow data related to current teachers and leaders and their separation/retirement intentions (see *Table 5.2*)

Other data needs relate to:

- Inflow data for re-entrants (see *Table 5.2*)
- Availability of ongoing targeted support programs for re-entrants and the potential supply pool of teachers (see *Table 5.2*)
- Early career teachers and their qualifications, intentions, motivations and timelines (see *Table 5.3*).

Possible future shortages

Another emerging issue and area for additional data as identified by a wide range of stakeholders, including employers from all sectors and states and territories, relates to concerns about the age profile of the teacher and school leader workforce and more data is needed about this aspect (as related to *Table 5.1*).

This concern reflects an expectation that there will be significant retirements in the next five to ten years. As a consequence, it was recognised in the consultations that current shortages of teachers across secondary (and in some cases primary) sectors, in relation to subject and role specialisations and locations (which is currently an issue mainly for remote and some rural locations), may become more widespread.

Table 6.2 outlines the issues and specific data needs which are a consideration in addressing future general shortages of teachers and school leaders:

Table 6.2: Possible Future General Shortages and Consequent Data Needs

Concerns about future general teacher & leader shortages	Data on workforce inflow	Data on current teachers, leaders & teacher education profile	Data on adequacy & distribution of teachers	Data on current teacher & leaders profile & workforce inflows & outflows
	Attraction	Development	Recruitment	Retention
	Teacher ed. students Overseas recruits Career changers	Teacher ed. students Teacher retraining Leaders succession/PD	Graduates Overseas Leadership Potential pool & hard to fill	Current teachers/ leaders Early career Re-entry
Concern that teacher workforce age profile could give rise to general teacher shortages Concern about aging leadership profile and future shortages	Senior secondary school student motivations/attitudes towards teaching Teacher education students/career changers/potential pool subject/specializations, motivations and intentions Current teacher attitudes towards leadership positions	Teacher Education commencers & completers major/minor subjects and destination intentions and outcomes No. and type of leadership qualifications and skill building courses and attitudes of current teachers towards leadership	Teacher Education completers major/minor subjects and destination intentions and outcomes Relevant potential pool qualifications/ subject/specialist areas and motivations, locational availability Overseas teacher qualifications and major/minor subjects and locational availability Motivations, skills and locational availability for leadership roles	Current teacher/leader workload and conditions data and retirement/separation intentions Longitudinal data tracking teacher education commencers and completers and attitudes/experiences including early career and induction Re-entrants' experiences and support

Table 6.2 identifies that in dealing with possible future shortages of teachers and school leaders, there is a need for workforce inflow data about attraction to the profession across all subject areas and roles and levels of schooling and for leadership, including all locations and especially in remote areas.

In terms of subject and role specialisations, data on motivations, locational availability and intentions is needed regarding senior secondary students, as well as teacher education students and career changers (see *Table 5.3*), and those who are qualified as teachers and in the potential supply pool but not currently involved in teaching (see *Table 5.2*).

Information on the availability of professional development programs for building knowledge and skills of teacher education students and details of subject specialisations, motivations and destination outcomes is also needed (see *Table 5.3*), as is data related to skill-building programs and intentions of current teachers towards leadership positions (*Table 5.1*).

For recruitment policies, profile data about teacher education graduates, workforce inflow data about the potential supply pool and overseas teachers in terms of qualifications and specialist teaching areas, intentions and motivations and locational availability (see *Table 5.2*), as well as the background skills and interest of current teachers in leadership positions in rural and remote areas (see *Table 5.1*) were other aspects raised through the consultations.

In terms of retaining people in the teacher and school leader workforce, data is needed about re-entrants (this relates to *Table 5.2*) and current teachers' and leaders' workload and conditions (see *Table 5.1*), and workforce outflow retirement/separations intentions (see *Table 5.2*). Longitudinal data that follows teacher education students into and during their early career experiences in the workforce would be particularly helpful in this regard (this relates to *Table 5.2* on graduates' early career experiences).

Availability of sufficient teachers with skills in emerging approaches to schooling

Stakeholders also indicated in the consultations a number of ways in which schooling is changing in the various states and territories and sectors, and raised concerns about whether there will be sufficient numbers of well-qualified teachers to meet these emerging needs.

Table 6.3 outlines some of these emerging approaches and their consequent data needs:

- Integrated services (Education, Health, Early Childhood)
- Workforce reform and the role of paraprofessionals
- Flexibility and mobility, especially in remote locations
- Rethinking educational delivery using ICT.

Data needs in terms of attraction policies are concerned with collecting information about the motivations and availability of qualifications courses for teacher education students, career changers (see *Table 5.3*), overseas recruits and the qualified potential pool (see *Table 5.2*) to undertake the work of teachers within changing structural conditions and educational approaches. This includes attracting paraprofessionals who already work in the school environment and understand the local situation and community and supporting them to upskill and have a more significant role, with data on their motivations and the availability of upgrading courses being important. Similarly in terms of new structural arrangements, integrated services such as schools which include health and/or early childhood facilities are beginning to become a consideration and this may require more teachers with skills in working in partnership with the community and other services.

In terms of pre-service programs for teacher education students and the professional development of current teachers and leaders, data about their motivations and also courses to support new approaches to schooling delivery and integrated services and partnerships, including using ICT in innovative ways, is needed (this relates to *Table 5.3* on teacher education and *Table 5.1* on professional learning).

Table 6.3: Emerging Schooling Approaches and Consequent Data Needs

Emerging approaches to schooling	Data on workforce inflow Attraction Teacher ed. students Overseas recruits Career changers	Data on current teachers, leaders & teacher education profile Development Teacher ed. students Teacher retraining Leaders succession/PD	Data on adequacy & distribution of teachers Recruitment Graduates Overseas Leadership Potential pool & hard to fill	Data on current teacher & leaders profile & workforce inflows & outflows Retention Current teachers/ leaders Early career Re-entry
Integrated services (Education/Health/Early childhood) Workforce reform (paraprofessionals) Flexibility and mobility (remote) Rethinking educational delivery using ICT	Data on Motivations/course availability for attracting paraprofessionals/potential pool remote location residents/overseas/career changers towards a teaching career	Current teacher/leader motivational and PD course availability for up-skilling for working in partnership with the community and other services Courses and PD for teacher education students and current teachers/leaders to support new methods of educational delivery including the use of ICT	Graduate commencers and completers qualifications, specialisations, motivations and destination intentions related to remote location teaching and accommodating mobility across state/territory borders Overseas, potential pool and current teachers and leaders motivations, skills and destination intentions related to remote locations and vacancy descriptors match to qualifications/skills and shortage coping techniques	Workload impact data and current teacher/leader attitudes regarding integrated services, paraprofessionals and ICT and other reforms in supporting teachers' work

There were also emerging issues raised in the consultations regarding the recruitment of increasingly flexible and mobile workforces. Gaining data about the subjects and role specialisations, intentions and motivations of graduate, overseas, and 'grey nomad' teachers (more mature-aged teachers who have either retired or taken long-term leave) who are willing to be mobile and undertake flexible appointments which support remote communities and areas of specialist shortage, was indicated as important (see *Table 5.2*). Data on the barriers to flexibility needs to be identified and appropriate action taken. Data concerning vacancy descriptors, the closeness of match between applicants and position requirements, and shortage coping techniques used by schools, were also identified as areas of particular interest (see *Table 5.4*).

In terms of policies to retain teachers and school leaders, priorities were seen to include seeking data from current teachers and leaders, early career teachers and those re-entering the workforce about the impact on workload and career intentions of emerging educational approaches such as integrated services and ICT delivery.

6.3 Specific Issues in Schooling

Vocational education and training

The need for an increased emphasis on vocational education and training (VET) was frequently raised in the consultations by stakeholders involved in the provision of secondary education across all states and territories and across sectors. Their comments were made in respect to the increase in the compulsory education leaving age and the need for teachers to have a wider range of teaching skills to meet the needs of a more diverse student population, with ongoing teacher

development seen as being essential. Emerging policy priorities were evident in regard to retraining of teachers to meet shortages of VET teaching skills essential (see *Table 5.1* on retraining programs), providing teacher education programs for people from occupational and industry backgrounds needed in schools (see *Table 5.3*), and developing teacher capacity to work in partnership with industry and TAFE.

Early childhood education

The moves towards a common national starting age for school, and closer integration of early childhood education and primary schooling, are increasing the need for more qualified teachers in the provision of education for this age group. This issue was raised throughout the consultations but was seen as particularly significant for remote and disadvantaged communities. Increasingly the early childhood teacher is involved in working with integrated services and in community capacity building, especially involving development of skills of parents and within the wider community. Data is needed about the personal and professional qualifications and availability of early childhood teachers, including the broader range of skills required and teacher development opportunities (this relates to *Table 5.1*). In addition, data is also needed about the possible interest of community-based paraprofessionals in gaining formal teaching qualifications, and in the availability of courses to support such pathways, particularly those which are relevant to, and structured for remote locations (see *Table 5.3*).

Catering for diverse and special needs among students

Another area of significant and widespread interest was in regard to teachers catering for an increasingly diverse range of students and those with special needs. Regarding special education needs, concerns were expressed about the full range of teachers including specialist staff who support mainstream teachers, those working in special schools, specialist teachers in particular fields of needs, and mainstream teachers' skills. Given the ageing of the special education teacher workforce, there is a need for profile data about this part of the overall teacher and leader workforce, including their career and separation/retirement intentions (this relates to *Table 5.2*). The limited availability of pre-service and professional development courses in special education in some states was also raised as a concern.

Middle years of schooling

Middle schooling is another emerging area for many states and territories within restructured arrangements for primary and secondary education. Key stakeholders highlighted this issue in terms of the appropriate balance of generalist and specialist teachers available for new forms of schooling provision. As a consequence, more data is needed about secondary teachers' motivations, skills and qualifications in teaching across several subjects and in using a whole child approach, and about primary teachers developing sufficient specialist skills to cover several subject areas at a higher level (see *Table 5.1*).

Indigenous education

Supporting Indigenous people to undertake the role of a teacher is an important issue in the provision of quality education, especially in remote communities. Given the difficulties of supplying teachers in these situations, many jurisdictions are offering individualised and sometimes very short-term arrangements to meet the needs of schools in remote locations. There is a widely-acknowledged need to attract more Indigenous people into teaching, including by offering pathways for Indigenous people currently working as paraprofessionals in schools and related services.

Table 6.4 summarises these issues and the associated data needs.

Table 6.4: Specific Issues in Schooling and Consequent Data Needs

Specific issues in schooling	Data on workforce inflow Attraction Teacher ed. students Overseas recruits Career changers	Data on current teachers, leaders & teacher education profile Development Teacher ed. students Teacher retraining Leaders succession/Professional learning	Data on adequacy & distribution of teachers Recruitment Graduates Overseas Leadership Potential pool & hard to fill	Data on current teacher & leaders profile & workforce inflows & outflows Retention Current teachers/ leaders Early career Re-entry
Specific Issues Areas: Vocational Early Childhood Diverse & Special Need Middle Schooling Indigenous	Motivational/courses available for attraction of overseas, career changers, potential pool and other relevant people e.g. vocationally skilled/early childhood/Indigenous	Current teacher qualifications and motivational data & availability of PD programs for upskilling and retraining for vocational, middle schooling, special needs, Indigenous Teacher education course availability and data regarding teacher education qualifications, subject/specializations, motivations and locational availability	Graduate completers motivations and destination intentions related to particular fields and remote location teaching	Current teacher qualifications and expertise

Table 6.4 indicates that workforce planning in regard to schools having sufficient numbers of well-qualified teachers in VET, early childhood education, special needs and so on requires data that informs decisions about the attractiveness of teaching in these areas, the development of teachers' skills and knowledge, the distribution of teachers, and retention in the profession.

In terms of attraction to the profession, workforce planning data regarding teacher education students and career changers and the qualified potential pool and overseas teachers is needed regarding motivations and availability of appropriate qualifications and courses (see *Table 5.3*: on teacher education students and their intentions and *Table 5.2* on other workforce entrants)

For teacher development policy, data about the current teachers and leaders including qualifications, and courses available, especially in regard to retraining and data on motivations, is useful (this relates to *Table 5.1*).

For recruitment, specific data aspects relate to assessing the adequacy of supply and distribution in terms of graduate completer destinations, motivations related to particular fields and remote location teaching (see *Table 5.3*).

In terms of improving teacher retention, data needs relate to workforce outflows and separation/retirement data by subjects/specialisations (see *Table 5.2*) and in regard to current teachers and their qualifications and expertise (see *Table 5.1*).

6.4 Change Management and Data Needs

Some of the current and prospective changes in schooling identified in the consultations are quite significant. Emergent data needs in relation to teacher workforce planning within a context of significant change are very complex, particularly where the changes involve a blurring of levels of schooling, and the participation of a wider range of education providers as well as non-education agencies.

A range of workforce issues arise within change contexts. These include:

- Educating for new skills and team roles
- Education and training issues
- Pay and employment conditions
- Examining certification and licensure aspects

A helpful framework for considering workforce planning issues framework in change contexts has been developed by the Scottish Integrated Workforce Group (2002):

- Clarify the context
- Clarify demand issues (nature of planned and unplanned service changes and impact factors)
- Consider workforce demand needs within change context (staffing numbers changes, additional skills requirements for existing staff, identifying recruitment for additional skills)
- Consider supply capability and capacity (additional staff recruitment requirements, retention of current staff, redeployment issues, current staff retraining needs, new staff training requirements, staff availability)
- Identify workforce planning gaps (requirements not meeting supply plans: shortage gap or shortage delay?)
- Take action to correct gaps

Several states and territories are currently involved in the early stages of pilot projects involving significant educational change which may have considerable workforce planning and data collection implications in the future.

As an example, South Australia is currently considering significant changes in schooling. A review of senior secondary curriculum and certification is underway, with the minimum school leaving age being progressively increased to 17 years. Six 'super schools' are evolving involving significant restructuring of early childhood, primary and secondary education across 18 existing sites. There is extensive consultation occurring with staff, parents, school councils and other groups about an education brief and vision, with the buildings themselves being designed as learning spaces. The Early Years focus involves reconsideration of schools and child care facilities, the trend being for children to be involved in early years programs from increasingly young ages. Integrated services for children and young people are becoming the new directions for the future, especially in the education and health areas, with providers being from government and private agencies.

Given the integration aspects, a range of complex workforce planning issues are currently being identified in South Australia in relation to teacher registration, skills mix and professional development needs, and emerging skills needs of graduates. Identification of emerging workforce data needs is currently underway.

6.5 Implications of the Emerging Issues

The consultations provided ample evidence that Australian schooling is a dynamic sector in which major changes are underway. Most of the stakeholder groups were more focused on identifying appropriate policies to ensure that all schools have the number and mix of well-qualified teachers and leaders that they will need in the future, rather than on data needs *per se*.

However, the discussions in the consultations about the future of Australian schooling had two broad implications for thinking about the data needed to support informed policy making. First, the data collection framework needs to be sufficiently flexible to be able to incorporate new issues as they emerge, as is now happening for example in early childhood education and the middle years of schooling. Second, there needs to be an ongoing dialogue between those responsible for the data collection and analysis framework, and policy makers and those in the field, to ensure that the data is serving the needs of the latter groups.

7. WORKFORCE PLANNING DATA IN OTHER COUNTRIES AND PROFESSIONS

This chapter outlines workforce planning and data processes which are occurring in relation to the teacher workforce at an international level and within selected countries. Some case studies regarding recent data and planning developments in the Australian health and nursing workforces are also presented. The implications of developments in workforce planning data for teachers in other countries, and for other professions in Australia are discussed in terms of the Australian teacher and school leader workforce.

7.1 Developments at the OECD Level

OECD reports

Teacher supply and demand are increasingly significant issues within the wider political and economic contexts, not only for Australia but on a global level, as reflected in OECD reports such as *Teacher Demand and Supply: Improving Teacher Quality and Addressing Teacher Shortages* (2002) and *Teachers Matter: Attracting, Developing and Retaining Effective Teachers* (2005). These reports outline key policy issues related to teacher attraction, development, recruitment and retention. The 2005 report is based on analysis of teacher policies and practices in 25 countries, including Australia.

The 2005 OECD report included a discussion on improving the information base to support teacher policy. It identified a range of key areas in which data are lacking in many countries as well as at the international level (p. 219), including:

- The nature and severity of teacher shortages.
- The characteristics of entrants to teacher education, progression rates within teacher education and the impact of programs on teachers' work.
- The destinations of teacher education graduates, the reasons some graduates do not enter teaching, and early career experiences.
- Attrition and turnover rates for teachers by background characteristics and school type, the reasons for leaving, and the destinations they choose.
- Teachers' attitudes towards their work, including the major sources of job satisfaction and dissatisfaction.
- Teacher time use, including the subjects taught and their relation to qualifications, and non-classroom tasks and responsibilities.
- Teachers' salaries, non-salary benefits and working conditions, in relation to occupations requiring similar qualifications.
- The provision and outcomes of professional development.

The consultations conducted for this project indicated that similar data gaps are evident in Australia (see Chapters 4 and 5).

OECD Indicators and Data Collections

The OECD is working with countries to improve international data on teachers and their work, and to extend the indicators currently published in the annual *Education at a Glance*. The 2006 indicators on teachers cover:

- Educational expenditure per student (Indicator B1)
- Expenditure in institutions by service category and resource category (B6)
- Total intended instruction time for students (D1)
- Class size and ratio of students to teaching staff (D2)
- Teachers' salaries (D3)
- Teaching time and teachers' working time (D4)

The *Education at a Glance* data on teachers are supplemented by special purpose OECD data collections. For example, the 2000 Programme for International Student Assessment (PISA) indicated that in half of the OECD countries the majority of 15-year-old students attend schools where principals believe that student learning is hindered by a teacher shortage or inadequacy (OECD, 2005). Australia was at about the median point of the 28 countries, with about 55 per cent of 15 year-olds attending schools where principals expressed this concern. A 2001 survey of upper secondary education in 15 OECD countries (not including Australia) indicated that, on average, about 15 per cent of full-time teachers and 30 per cent of part-time teachers are not fully qualified (OECD, 2004), and that shortages are most evident in areas like ICT, mathematics, foreign languages and science.

The more general point to make from these international comparisons is that it is beneficial for Australia to be able to place its data on teachers (and schools more generally) in an international context. Viewing Australian teacher data relative to other countries helps to provide benchmarks and to better understand Australia's comparative performance in addressing, say, teacher shortages, and to help identify future policy priorities. Although care is needed in making international comparisons, this broader perspective can help to generate new ideas for overcoming deficiencies, and strengths can be better appreciated. Where feasible, therefore, teacher data in Australia need to use definitions and methodologies that enable international comparisons to be drawn.

It is noteworthy that Australia is participating in the OECD's *Teaching and Learning International Survey (TALIS)*, which is being conducted to help fill a number of the data gaps identified by OECD (2005) and to support policy development on teachers, teaching and learning. The survey will involve data collections from national samples of secondary school principals and teachers. The areas to be covered include: teacher feedback and appraisal; school leadership; teachers' experience, qualifications and responsibilities; professional development; and school climate. The Australian data collection will be in late 2007 and it is expected that the international report will be available in 2009.

7.2 United States of America

Schools and Staffing Survey (SASS) data collection

The Schools and Staffing Survey (SASS) is a long-standing and widely-used data collection on teacher workforce issues in the United States. It is managed by the National Center for Educational Statistics (NCES) which is funded through the federal US Department of Education. The US Census Bureau conducts the data collections. The SASS model deserves serious consideration for adaptation for use in Australia. It is therefore described in detail in this section.

The SASS has been specifically designed to collect extensive data on public and private primary and secondary schools. It was implemented in the 1987-88 school year and has been conducted at 5-yearly intervals since. The most recent collection, the fifth, was in the 2003-04 school year and the sixth is scheduled for 2007-08.

Content and process of the SASS

There are four key components in the SASS as follows:

- ***School Questionnaire***: There are over 10 000 public schools and about 3 000 private schools involved. Questions covered include: grades offered, number of students enrolled, staffing patterns, teaching vacancies, high school graduation rates, programs and services, and college application rates.
- ***Teacher Questionnaires***: There are around 70 000 private and public school teachers selected in the sample. Randomly selected schools forward their teacher identifiers list and 3 to 8 teachers per school are sampled, also including 2 300 new teachers per sector. Questions include: education and training, teaching role, certification, workload, perceptions and attitudes about teaching.
- ***Principal Questionnaire***: About 13 000 school principals answer questions related to demographic characteristics, training, experience, salary, judgments about seriousness of school problems, perceptions about school decision-making, school climate.
- ***School District Questionnaire***: There are over 5 000 school districts in the sample. Questions relate to school district student enrolments, number of full-time equivalent teachers, teacher recruitment and hiring practices, teacher dismissals, existence of teacher union, length of contract year, teacher salary schedules, school choice, graduation requirements and professional development.

The SASS involves extensive promotion and support, including field officers who follow-up schools to encourage participation. Personal contact is made with each school, teacher listing identifiers are collected and the teacher sample drawn, and the principal, school and teacher questionnaires supplied. The field officer also has responsibility for checking completed questionnaires and all aspects of follow-up. Response rates above 80 per cent are generally achieved for all aspects of the survey process.

A year after the main Teacher survey, a follow-up survey is sent to a sub-sample of the teachers who took part. Two different forms are used:

- ***Current Teacher questionnaire*** (including those remaining in the same school, 'stayers', and those transferring, 'movers'). Questions include: teaching status and roles; ratings of various aspects of teaching; time spent on different aspects of the job, professional development, and ratings of various strategies for retaining more teachers.
- ***Former Teacher questionnaire*** (those who have left the profession). Questions include: employment status, ratings of various aspects of teaching and their current jobs, reasons for leaving teaching, and ratings of various strategies for retaining more teachers.

Response rates for the 2004-05 *Teacher Follow-Up Survey* were above 90 per cent.

Questionnaire content is reviewed from cycle to cycle to include emerging issues although care is taken to ensure that key data are collected in a similar way to facilitate trend analysis. The broad

similarity of the questionnaires from cycle to cycle is seen to encourage school and teacher participation and to increase awareness of SASS among potential users.

SASS data access and use

To protect respondents' confidentiality, all data are de-identified. For those with authorisation and who agree to the data use protocols, restricted use data files, while not containing personal identifiers, do enable linkage to other datasets, thereby allowing researchers to perform analyses at the micro level, something which is not possible in the public-use data. For example, researchers with authorisation can examine state-level data for public schools and teachers.

Public-use version of SASS data is available in an abridged form to researchers and the general public, with State names or codes and most detailed geographic descriptors of community size deleted, and very small groups of schools – such as charter schools and Bureau of Indian Affairs schools -- excluded due to concerns about potential identification. All NCES public-use data files can be accessed free of charge from the NCES website.

For restricted and public-use files, any combination of the school, principal and teacher datasets within each available SASS school sector can be merged using the school control number. The public teacher, school, principals datasets may be merged with the district dataset on the restricted-use versions only.

SASS by State reports provide access to considerable publicly-available information at the state level.⁷ A data CD with electronic codebook software also provides access to public-use data, allowing users to find variables by sector, by keyword and by questionnaire item.

NCES allocates considerable resources to easy-to-use data interfaces and to training users who wish to access the more detailed data.

The NCES uses data generated from SASS to produce reports on issues in education. Data is also used by various types of agencies including teacher professional groups, school and research organisations, universities, foundations, and media and government agencies. Periodic NCES reports such as *Secondary Use of the Schools and Staffing Survey* provide details on the uses to which SASS has been put, and the availability of resultant reports. Hundreds of publications have been identified as involving the use of SASS data. These reflect a range of topics including teacher certification, working conditions, teacher and principal workforce trends, teacher induction, teacher supply and demand, merit pay, new teachers, out-of-field teaching, pay incentives, and teacher retention and attrition.⁸ For example, Ingersoll's (2003) influential research on out-of-field teaching using SASS data has drawn attention to the high proportion of new teachers being given out-of-field assignments in areas such as mathematics and science, and the impact of this experience on teacher attrition rates and the status of the profession.

Implications of the SASS model for Australia

The SASS model of data collection from the teacher and school workforces would offer several substantial benefits for Australia compared to the present situation.

- It is a regular, high profile data collection conducted every five years and so schools, teachers and potential users can build it into their own planning.

⁷ Public access is available and downloadable on: <http://nces.ed.gov/surveys/sass/>

⁸ See: <http://nces.ed.gov/surveys/sass/index.asp>

- It would reduce the survey burden on schools and teachers by minimising the need for a number of different surveys from various organisations in different timeframes.
- Its reputation, conduct by an independent agency, and extensive resourcing for field operations encourage high response rates and thereby improve data quality and use, including in the analysis of trends
- There are clear protocols governing access and use, and considerable resources invested in dissemination and training.

The possibility of something like the SASS being introduced in Australia was canvassed during the consultations. It received a positive response, for example:

Perhaps we could have a survey every five years rather than continually collecting data. Resources are going to be a barrier, so it needs to be properly funded. (State government official)

There needs to be a co-operative federal approach, where the Australian Government and the states...work together so they don't double-up on data. It'll mean less work for schools (Teacher union official)

7.3 England

In England teacher workforce data has involved indicators in areas such as the overall workforce size and student-teacher ratios; vacancy rates for classroom teachers, assistant principals, deputy, head teachers; and flows of teachers including those entering and leaving teaching, and qualifications (but not at the level of subjects); and curriculum. Traditionally, data collections regarding teachers have involved a variety of different aspects and agencies: adult sections of the Schools Census, a Personnel form, Secondary School Curriculum and Staffing Survey, Pay Survey from the Office of Manpower Economics; and a Resignation and Recruitment Survey from the National Employers Organisation for School Teachers.

A New School Census: School Workforce Level from 2010

A new *School Census: School Workforce Level* is being developed to provide a more streamlined approach to teacher workforce data collection. It will involve an automated process of extracting data held in school management systems and sending this to local authorities for validation and checking before final submission to the relevant government department. Various data items will be collected each term.

The new *Common Basic Data Sets regarding the Workforce* will undergo pilot processes in 2008 and 2009, with implementation scheduled for 2010. The overall purpose of the new workforce data process is to reduce the burden of data collection on schools, to support evidence-based policy making, and to reduce costs by collecting data less often and by using an automated system.

The key aspects of the *Common Basic Data Sets* are as follows:

- **Staff details:** teacher number, family name, given name, former family name, national insurance number, gender, date of birth, ethnicity, role status, absence on census day
- **Contract/agreement:** type, start date, end date, role, date of arrival at school, salary group, salary rate, hours worked per week, weeks worked per year
- **Absence:** first day, last day, working days lost, absence category, payroll absence

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- **Curriculum:** subject code, hours, year group
 - **Qualifications:** qualification code, class of first degree, country of origin, subject specialisation, date of award
 - **School level information regarding Teacher Vacancies** is also collected regarding vacancy posts, vacancy subjects, vacancy tenure/full or part time, temporary filling of vacancy and vacancy advertising.

Data collections in relation to the *Common Basic Data Sets* will be spread across different school terms. The new Census will involve successive collections to build an ongoing picture of the school workforce with continuous data over various censuses, snapshots at points in time, and matching data.

Protocol on data rationalisation and sharing

Specified school workforce data will be able to be matched, using confidentiality protocols, to other sources of data for statistical, research and policy purposes. For example, it will be possible to match individual records with data from the General Teaching Council to analyse the experiences of beginning teachers or teachers from different types of pre-service programs. The new approach has been formalised through a *Protocol on Data Sharing and Rationalisation in the Schools Sector*.⁹ This has been developed jointly by the Department for School Education and Skills (DfES) and a range of central and local government authorities, professional associations and research groups.

The *Protocol* carries the signatures of the chief executives of 17 organisations. It specifies a commitment to four principles:

1. Data should be collected once and used many times
2. Collection and sharing of data should be fully automated
3. The value of any data should demonstrably outweigh the costs
4. Personal data on individuals should be properly protected

The *Protocol* specifies a commitment among these organisations to put the principles into practice by:

- Fully implementing the *Common Basic Data Set*
- Supporting a shared technological infrastructure
- Rationalising other data collection
- Providing added value analyses back to schools
- Acting responsibly with personal data

The *Protocol on Data Sharing* is an evolving document that is periodically updated and revised, including through the addition of new signatory organisations (10 organisations signed the first document in 2004, and 17 in 2005).

⁹ Further information is available at: <http://www.teachernet.gov.uk/management/ims/datacollections/swfcpilot>

Development and implementation of the new approach

The process of developing the new *School Workforce Level of the School Census* was initiated under the National Statistics Education and Training Theme Working Group in 2003. It involved an initial review of the fitness for purpose of School Workforce Statistics; and review of quality, sources and mechanisms. The report was presented to a Review Board. On the basis of this, the new School Census: School Workforce Level process was developed. Data items were then presented for feedback to focus groups involving representatives from a range of schools and Local Education Authorities.

Planning and initial preparations are currently underway, including an audit of systems and data and preparation and maintenance of workforce data. In January 2008 pilots for primary and secondary schools in 36 Local Authorities will occur, with a larger sample, especially secondary schools, joining in later in the year to provide data on curriculum, qualifications and staff details. Schools not involved in the pilot will undergo an audit of systems and data and become involved in training. In 2009, all schools from all pilot Local Authorities will be involved, with all schools in all Local Authorities eventually being involved in a 'dry run' following training. In January 2010 it is anticipated that the first live inclusion of the Workforce level in the full School Census will occur.

In a further development, the Higher Education Statistics Agency has developed a new survey, the *Destinations of Leavers from Higher Education*. This is intended to be a longitudinal survey involving two stages, an early follow-up of all leavers after six months followed by another survey to occur three years later. In relation to the follow up survey, during the current pilot stage, a range of questions and approaches are being trialled. These include trialling of incentives such as small donations to a range of charity groups to gauge the impact on response rates; use of various initial and follow-up contact approaches by telephone, email, SMS text reminders; use of additional questions to meet the needs of individual institutions and gaining views about publication of results.¹⁰

Implications for Australia

The English approach to developing a new approach to school workforce data collection has several implications for Australia:

- The need for a cooperative approach among the key stakeholder groups
- A focus on capitalising on routine, automatic data collections and providing links between them
- The need to reduce data burden collections on schools and teachers and to provide value back to schools
- The need for pilot testing and a staged approach to implementation
- The benefits of a clear and public statement on data sharing and confidentiality protection

¹⁰ Further information is available: http://www.hesa.org.uk/dlhe_longitudinal/DLHE_Dev_Long_Stage.htm

7.4 Scotland

Scotland collects data from all primary, secondary and special schools which are publicly funded, with separate censuses in regard to pupils and teachers. This information is used for policy making in regard to the teacher workforce and ensuring an adequate supply of newly trained teachers and for broader policy monitoring. A separate census of independent schools is also undertaken.

The Data Exchange in Education and Children's Services Group, with representatives from local authorities, teacher unions, principals' associations and staff from the Scottish Executive, has responsibility for deciding on the census content. The committee operates with National Statistics guidelines, with data collection clearly linked to purpose and ensuring a minimisation of burden on data providers.

Data processes involve a staff census collected electronically through local authorities, using information already stored on school management information systems. Secure data exchanges involve partnerships between local authorities, schools, the Scottish Qualifications Authority, HM Inspectorate of Education, teacher training institutions, Higher Education Funding Council and Scottish Executive Education Department.¹¹

Data collection on teachers occurs in September and involves six key areas:

1. Individual level component involving details for each staff member (including registration number, gender, date of birth, school indicator, start date, class contact time, ethnic background, professional development, promotion role, employment status, main subject and other subject qualifications)
2. School level component regarding support staff information
3. Local Authority level component regarding centrally employed staff
4. Staff flow component about staff leaving or joining schools
5. Centrally employed Teaching Staff component
6. Centrally employed staff flow component

Processes for estimating teacher supply and demand involve individual level data on age, sector and gender being used to create profiles of the workforce, with this information being considered within the context of teacher leavers and returnees and trend data of comparative consecutive years. Student projections and relevant policies are used to determine projected need, with the projected shortfall of teachers then calculated. University drop-out rates are taken into account in calculating the number of teacher training places required.

Individual secondary subject requirements are an increasing focus of teacher supply estimates. This is facilitated by the detailed information collected on teaching roles and subject qualifications, and the capacity to link school data to teacher education data.

7.5 New Zealand

The main data collection process conducted by the New Zealand Ministry of Education is the Roll Returns from all schools. The March collection focuses on school resourcing and the July census gives details of aspects such as student enrolments, ethnicity, subjects, age by school type, and region.

¹¹ Further information is available on: <https://www.scotxed.net/jahia/Jahia/lang/en/pid/346>

In addition, every three years since 1998, a Teacher Census has been conducted to support teacher supply monitoring and other teacher related analysis, planning and policy work. The census is completed by over 90 per cent of teachers. It collects information on teacher gender, ethnicity, age, role, highest qualification, other tertiary qualifications, current studies, professional development, location of initial teaching qualification, and teaching experiences in other countries. Other areas covered include the use of Maori and other languages in teaching, teacher registration, secondary teachers' subject areas, and mobility across school sectors.

The Teacher Census is linked to other data sources. Information about state school teachers is collected from the teacher payroll database, with private school teacher data collected separately via the March roll collection. Data published about the teacher workforce includes:

- numbers employed at state schools by type of school, tenure and age;
- numbers of state school teachers by type of school, designation, gender;
- number and FTE teaching staff at private schools by tenure, school sector, school type; and
- time series of staff numbers and qualifications at state schools, average salary by school type, and departure rates from teaching.

The information collected by the Teacher Census is used to help with teacher supply monitoring, in ascertaining the range of teaching subjects of secondary school teachers, for professional development planning, and in developing career pathways and planning in relation to specialist teacher qualifications. The Teacher Census is reported to have helped New Zealand in better managing workforce supply and shortages, and in developing improved responses. For example, the issues of length of pre-service teacher education courses, entry standards for teaching, and recruitment difficulties in some specialist subject areas have been highlighted in recent years, with resultant policy work in these areas. A suite of data cubes have been developed to help increase the availability and accessibility of information.

The New Zealand teacher data processes were developed through consultation with various sector groups including teacher unions, the NZ Education Institute, professional associations, the NZ School Trustees Association, and Statistics New Zealand.¹²

The NZ Teacher Census is conducted more frequently than the *Schools and Staffing Survey* in the United States (every 3 years, rather than 5 years for the SASS) and involves a full census of all teachers rather than a sample survey. Perhaps because of this, the NZ census does not collect as extensive a set of data as the SASS (for example, there is no information on attitudes to teaching or career intentions) and it does not seem to be as widely used outside of government.

7.6 Australian National Health Workforce Planning

Examining other occupations and their workforce data collections also provides some new ideas for considering teacher workforce planning issues in Australia.

The health workforce has become a significant priority for the Australian Health Ministers, with considerable investment occurring to coordinate national health workforce action including a national strategic framework. A range of committees has been established to better coordinate

¹² Further information about the NZ Teacher Census is available on- <http://educationcounts.edcentre.govt.nz>

health data collections and workforce planning. These include the Australian Medical Workforce Advisory Committee (AMWAC), the Australian Health Workforce Advisory Committee (AHWAC), and the National Nursing and Nursing Education Taskforce (N3ET); the work of the latter is described in more detail in the next section.

In 2004 the Australian Health Ministers Conference adopted the *National Health Workforce Strategic Framework* (AHMC, 2004). The framework summarises the changing nature of the health system, a vision for the future development of the system, a set of seven guiding principles for developing health workforce policy, and a set of strategies for achieving the vision and for guiding stakeholder investment in the health workforce.

The seven guiding principles for developing health workforce policy are:

1. the importance of ensuring and sustaining health workforce supply;
2. workforce distribution to optimise Australians' access to health care;
3. ensuring health organisations are places where people want to work;
4. common cohesive action among stakeholders to ensure the health workforce is sufficient and always skilled and competent;
5. optimal use of skills and workforce adaptability;
6. recognising that health workforce policy and planning must be informed by the best available evidence and linked to the broader health system; and
7. recognising that health workforce policy involves all stakeholders working collaboratively

The strategies agreed by the Health Ministers include:

- leading and encouraging and supporting the health workforce research, planning and policy development agenda, including national supply and demand studies, to meet the population and consumer health care needs;
- continuing to develop health workforce information, sharing both data and information about potential solutions to challenges; and
- continually improving health workforce data collections; putting in place common language and data sets and consistent data collection processes (AHMC, 2004).

The 2004 Framework represented a very public and high profile commitment by Health Ministers to fundamentally change health workforce policy and planning in Australia.

7.7 Changes in Nursing Workforce Data and Planning

The National Nursing and Nursing Education Taskforce (N3ET) was established by Health Ministers for a fixed term (2004-2006) to implement the Strategic Framework in the area of the nursing workforce, and to implement a number of the recommendations from the report of the National Review of Nursing Education, *Our Duty of Care*. The Australian Health Workforce Committee (AHWAC) Taskforce also gave N3ET the responsibility for some recommendations related to various nursing workforce reports regarding the Critical Care Workforce, Midwifery and Mental Health Nurse Supply. Various recommendations ranging from skills mix and work organization of nurses, the image of nursing and midwifery, attraction and retention of nurses and national education standards were involved, with the Taskforce working closely with stakeholders.

The two-year project involved the development of 10 *National Principles for Decision Making Frameworks*, *National Minimum Data Sets for Nurse Practitioners* (including 32 agreed data

elements), *Media and Communication Principles for Nursing and Midwifery in Australia*, and principles for *Working Together to Achieve National Outcomes*. The Taskforce's work emphasised the importance of a whole of workforce approach and national initiatives using collaborative approaches.

Improved data to inform policy nursing workforce policy was a particular focus of the Taskforce. A key mechanism for collaborative data collection was developed in the report *Towards Consistent Standards of Nursing and Midwifery*. This involves moving from state-based registration to national registration to increase workforce flexibility and mobility.

In addition, to address the lack of consistency between employer databases and to provide accurate information about the current and potential pool of nurses, a Nursing and Midwifery Labour Force Census has been instituted. The survey is forwarded to nurses through the registration renewal process, which operates through a memorandum of agreement, with clear protocols about what data is collected, and how the data are used and published. The use of nursing registration bodies to distribute the survey through the registration process is of particular interest for teaching because it covers all those who are registered, not just those who are currently employed, thereby providing information from all members of the potential supply pool.

The surveys are sent by the nurse registration boards to the Australian Institute of Health and Welfare (AIHW) to manage the data analysis process. Each state is supplied with its own data and can then apply to the AIHW for the data from other states under agreed protocols for use.

7.8 Implications for Australian Teacher Workforce Planning

This review of developments in teacher workforce planning internationally, and in the health and nursing workforces in Australia, suggests a number of implications for thinking about how to improve teacher workforce data and planning in Australia. Key ingredients in successful approaches appear to be:

- Agreement on a conceptual framework for teacher and school leader workforce planning which acknowledges the interconnections with the broader economic and political context, articulates the importance of a highly skilled, adaptable workforce, and identifies the factors that make teaching an attractive career choice.
- High-level political endorsement of the framework and a set of operating principles and strategic initiatives, including building stakeholder involvement.
- Allocation of the responsibility for implementing the framework to an expert taskforce with a clear mandate and adequate resourcing.
- The development of common data items and collection methodologies where multiple organisations are involved in data collection.
- The minimisation of data collection burdens on schools and teachers, including making greater use of routine administrative data collections, linking data sets, and ensuring that schools can see value in the data being collected.
- Strategies to encourage high response rates to surveys and improve data quality and use.
- Agreed protocols governing data access and use.
- Realistic timeframes for pilot testing and evaluation of any new data collections or planning processes.

8. LONGER-TERM COLLABORATIVE APPROACHES

This chapter outlines key stakeholder responses regarding longer-term collaborative data collection areas and approaches as raised during the consultations. Views about mechanisms for longer-term approaches, the possible roles of various stakeholders and challenges for implementation are also discussed.

8.1 Support for Greater Collaboration on Teacher Data Issues

The consultations expressed broad support for greater collaboration on teacher workforce data issues. However, the support was qualified by concerns about the challenges of building genuine collaboration in a competitive environment, possible uses of any data, and the need for the whole process to be properly explained and resourced. The following quotations reflect the views expressed.

All systems should have to collect a minimum core set of data in a similar way. (Government representative on a cross-sector planning group)

We are more than happy to be involved, but it needs to be funded properly and the data cannot be used against the profession. (Non-government school authority official)

The willingness is there. It must have adequate resourcing. (State teacher registration authority official)

There needs to be a co-operative federal approach, where the Australian Government and the states...work together so they don't double-up on data. It'll mean less work for schools. (Teacher union official)

It must be appropriately resourced and be representative, including people who are closely connected to schools...there must be good modes of communication, a clear set of purposes owned by education, and the concept must be marketed (what are the benefits?) (Principals association official)

On-going data collection (and access to it), dissemination, and use are important, but the nature and purpose [of the collection] must be clearly articulated. (Professional development provider)

The competition and lack of connectedness between sectors, schools and universities makes it [collaboration] difficult. (Independent schools organisation official)

We're all for it, but national data broken down by states has the potential to be abused...and there are difficulties about talking openly about state issues without being run down. (Teacher union official)

8.2 Forms of Greater Collaboration

The consultations and review of approaches in other countries and occupations suggest that there are four broad forms that greater collaboration on workforce data could take. In order of importance, these four forms are:

1. Developing a sector-wide approach to workforce planning and data collection that is closely connected to policy development needs. This, for example, is the type of approach recently implemented in Australia in regard to the health and nursing workforces (see Sections 7.6 and 7.7).

2. Working towards coordination of current administrative data collections concerning teachers and school leaders, and sharing of the key data and indicators under agreed protocols governing access and use. This, for example, is the approach being implemented in England through the *Common Basic Data Sets* and the *Protocol on Data Sharing and Rationalisation in the Schools Sector* (see Section 7.3).
3. Rationalising of current one-off or irregular survey data collections from teachers and school leaders, and replacing them by an integrated regular survey that is well resourced and extensively promoted in order to maximise response rates. The *Schools and Staffing Survey* in the United States is an example of such a survey (see Section 7.2).
4. Implementing collaborative data collections in areas that are widely judged to be important, but which currently receive little resourcing, for example on attitudes towards teaching as a career, and a longitudinal study of teacher education students through their pre-service education and into their early careers.

Each of these forms of collaboration is now discussed in turn.

A Sector-Wide Approach to Workforce Planning and Data Collection

As was documented in Chapter 4, Australia has not had an organisation with responsibility for teacher workforce planning at national level. Planning activities are focused in the states and territories. However, a number of different organisations are responsible for collecting and collating data at a national level that are relevant to workforce planning, and there have been collaborative efforts through MCEETYA to pool state and territory data to provide a national picture of the teacher labour market.

It is noteworthy that the April 2007 MCEETYA meeting agreed to the development of a strategic framework for a national approach to workforce planning in education, and referred this task to the Improving Teacher and School Leader Capacity (ITSLC) Working Group of MCEETYA. This is expected to include national teacher and school leader workforce planning, including the need to develop a process to achieve common core data sets and definitions. The Working Group could give consideration to utilising specific workforce planning expertise, and establishing links with other relevant groups. This chapter sets out some suggestions which could be considered by the Working Group.

The recommendations that follow have been framed in terms of the April 2007 MCEETYA resolution. In the event that the ITSLC Working Group does not establish a workforce data subgroup, it would be important to maintain another mechanism for the development and implementation of teacher workforce data issues such as, for example, improving data collection and quality at national level.

Chapter 3 argued that there may well be too many surveys of the teacher and leader workforce jostling for attention, and there is not a regular, predictable cycle of data collection producing results that are seen as important across the whole teaching profession. There seems to be little sense of wider applicability or collective endeavour in planning and using the data.

The example of the health workforce is instructive could also be relevant to the work to be undertaken by the ITSLC. As was outlined in Section 7.6, in 2004 the Australian Health Ministers Conference adopted the *National Health Workforce Strategic Framework* (AHMC, 2004). The framework summarises the changing nature of the health system, and a vision for the future development of the system. There is also a set of seven guiding principles for developing health workforce policy (see Section 7.6), and a set of strategies for achieving the vision and for guiding stakeholder investment in the health workforce (Section 7.6).

Chapter 7 also outlined some protocols for teacher data collections from England and the United States. England's jointly-developed school sector data sharing and rationalisation protocols specify principles of collecting data once and using it many times; fully automated collection and data sharing; data value outweighing costs and protection of individual personal information. The US Schools and Staffing Survey data protocol agreements for authorised persons which provide access beyond public-use data sets for detailed data and analysis purposes, are also of worthy of consideration in the Australian context.

Recommendation 1: Noting MCEETYA's:

- iii) agreement to develop a strategic framework for a national approach to workforce planning in education, including the need to develop a process to achieve common core data sets and definitions; and*
- iv) its referral of this task to the Improving Teacher and School Leader Capacity (ITSLC) Working Group;*

it is suggested that the Australian Government propose to the ITSLC Working Group that it establish a workforce data sub-group to coordinate and oversee data collection and analysis in relation to Australian school teachers and leaders. As part of this, the sub-group could give consideration to utilising specific workforce planning expertise and communication links established with broader networks involved in workforce planning issues.

Recommendation 2: It is suggested that the Australian Government propose to the ITSLC Working Group that it should consider reviewing existing data collection models from education and other professions and consult widely to develop a framework which outlines the principles for collaboration among key stakeholders, including protocols regarding the use of data and issues of public access.

Coordination and Sharing of Current Collections

Chapters 4 and 5 outlined the existing national and state and territory data sources in relation to the teacher and school leader workforce. Nationally-collected data sources sometimes lack the level of detail required for workforce planning at the level of subjects and teaching area experience. At the state and territory level, the consultations indicated data gaps, lack of consistency of terminology and varying processes. In addition, schools are often burdened with requests for additional data from a range of groups.

The various government and non-government school system databases have different origins and have evolved in somewhat different ways. There could be substantial benefits in developing better coordinated data collections on a national basis and using common definitions. This would reduce administrative and financial costs over the long-term (e.g. by sharing developmental work), enable individual school systems to benchmark their operations against the country as a whole (e.g. in terms of attrition from the teaching profession, or in staffing isolated schools), and improve the information base for national responses to teacher supply issues, such as the allocation of teacher education places in areas of shortage.

One approach towards a more consistent national approach is for government and non-government school systems to ensure that their own regular data collections use common definitions for core data items in order to facilitate pooling and sharing of the data.

As Chapter 7 detailed, other professions in Australia and education authorities in other countries have moved towards nationally consistent data collection processes, definitions and minimum

data sets. There would be substantial benefits from ensuring that current administrative data collections on the teacher workforce by government and non-government authorities use common data definitions and collection techniques, and that key data can be shared and pooled subject to privacy and confidentiality requirements. Nationally-agreed processes which capitalise on routine, automatic data collections and which provide links between them are likely to be very helpful in reducing administrative and financial costs, and in reducing data burdens on schools. This would assist government and non-government authorities that wish to view their operations in a broader framework, as well as helping to address teacher supply and demand issues that have a national dimension.

Chapter 5 described the data collection processes which several Australian states have commenced in an effort to improve their workforce planning in terms of teacher and school leader supply and demand aspects. These initiatives include surveys of all permanently employed teachers regarding current study areas and expected year of completion, completed formal qualifications and areas of teaching experience (by curriculum and other specialist areas and level of schooling), pre-service student teacher surveys regarding their teaching, location preferences and career aspirations, university data about undergraduate and graduate student completion numbers in each teaching subject area, and principals' forecasts of teacher demand by subject specialism.

These state initiatives provide pointers for priority areas for nationally consistent and usable data collections. Feasibility studies on ensuring consistency in particularly high priority areas, such as pre-service teachers' qualifications and intentions, could be considered. It would be important for any such work to be based on the concepts and measures in the *Education Data Dictionary* developed by the ABS.

Recommendation 3: *It is suggested that the Australian Government propose to the ITSLC Working Group that, in relation to MCEETYA's agreement to develop a process to achieve common core data sets and definitions among government and non-government school authorities, and noting the potential of this to facilitate the pooling and sharing of workforce data by government and non-government systems in the long-term, it should consult widely to ensure its future implementation by teacher employers, teacher education institutions and teacher registration authorities, and a protocol on data sharing.*

Developing a Regular Teacher and Leader Survey

A key collaborative data collection which was widely supported in the consultations was for a survey such as the current *Staff in Australia's Schools* (SiAS) survey to be conducted on a regular, predictable cycle. Such a regular, high profile data collection would enable schools, teachers and potential users to build it into their own planning, reduce the survey burden on schools and teachers by minimising the need for a number of different surveys from various organisations and, if well-resourced, encourage high response rates and thereby improve data quality and use, including in the analysis of trends.

The experience of the United States with the SASS provides helpful lessons for Australia in the value of such an approach. Such surveys can obtain attitudinal and other data from teachers and school leaders that are difficult to extract from routine administrative data collections. In Australia's case a three-yearly cycle would seem appropriate in the first instance given the workforce changes now underway and the need to fill pressing data gaps.

The data domains in the current SiAS survey provide a useful basis for the development of a future survey cycle. Those domains have been developed through extensive consultation and are

intended to provide a point of comparison with earlier surveys of the teacher workforce conducted by the Australian College of Educators. The domains being used are as follows:

The SiAS *Teacher Survey* covers the following topics:

- Basic demographics (including age, sex, country of birth and Indigenous status);
- Qualifications;
- Motivation for becoming a teacher;
- Current teaching position (including basis and length of employment, curriculum areas taught, salary and workload);
- Professional learning activities (including number of activities engaged in, the impact of those activities, and desired areas for future development);
- Career in teaching (including pathway to teaching, past occupations, length of time as a teacher, and if relevant, amount of time spent working in different school sectors and jurisdictions);
- Early career teachers will be asked questions about their perceived readiness for teaching and the usefulness of the programs that were available to them once commencing work as a teacher;
- Future career intentions (including intentions and motivations for promotion within schools or leaving the profession);
- Job satisfaction; and
- Views on strategies to enhance attracting and retaining teachers.

The SiAS *Leader survey* (for Principals and Deputy/Vice Principals) covers the following topics, with about 40 per cent of the items being identical to the Teacher survey:

- Basic demographics (including age, sex, country of birth and Indigenous status);
- Qualifications;
- Motivation for becoming a teacher and a leader;
- Current leadership position (including basis and length of employment, salary and workload);
- Professional learning activities (including number of activities and preparation for the leadership role);
- Career in teaching (including pathway to teaching, past occupations, length of time as a teacher and leader, and if relevant, amount of time spent working in different school sectors and jurisdictions);
- Future career intentions (including intentions and motivations for promotion within schools and leaving the profession);
- Job satisfaction;
- School staffing (including areas of decision-making authority, salary structures, vacancies, retention, and attrition)
- Preparedness of recent graduates;
- Views on attracting and retaining staff.

It would be important for the survey data items to use relevant concepts and measures in the *Education Data Dictionary* developed by the ABS.

The areas of data need discussed in Chapters 5 and 6 of this report would provide a means of prioritising the data items, including in regard to the profile of the teacher and leaders workforces, workforce flows, and the adequacy of current teacher supply and distribution.

Recommendation 4: *It is suggested that the Australian Government propose to the ITSLC Working Group that it consider development of a regular, well-resourced and well-promoted cycle of survey data collection from the Australian teacher and school leader workforce based on the data domains covered in the current Staff in Australia's Schools survey.*

Collaboration in Priority Areas

Longitudinal and attitudinal data gathering in relation to teacher education students in the pre-service to early career phases was another area which was widely identified by various stakeholders as important in informing teacher workforce planning.

Attracting people to the teaching profession was one of the most significant issues raised in the consultations. Data collection about attitudes and attraction to teaching was a key area identified by a range of groups as an issue of relevance to the school teacher and leader workforce. Of particular interest were attitudinal factors related to attraction to teaching for senior secondary students, potential career changers, those who are qualified but not currently teaching, and under-represented groups, such as people from Indigenous origins.

It was noted in the consultations that information about the potential pool of qualified teachers who are not currently teaching could possibly be obtained through collaboration with teacher registration authorities. Specific data about this group of teachers is currently unavailable from any source although they are an important group in teacher workforce planning and supply, given that qualifications requirements have been met in obtaining registration status.

Many stakeholders, including some of the registration boards involved in the consultations, noted that with the introduction of teacher registration processes in most of the states and territories, and the establishment of a national body, AFTRAA, there are some opportunities for collecting data through the renewal of registration processes. It was indicated that a collaborative approach and appropriate funding and other supports, would be essential.

Recommendation 5: *It is suggested that the Australian Government propose to the ITSLC Working Group that it consider the development and implementation of data collections, involving collaboration with stakeholders, that address issues related to attitudes towards a teaching career and potential barriers to career entry among senior secondary students, potential career changers, those who are qualified but not currently teaching, and under-represented groups.*

Many stakeholders highlighted the need to build on and complement existing DEEWR and other data about teacher education students which currently includes basic profile information related to courses undertaken, age, sex and full or part-time basis for study. Graduate Careers Australia also collects destination outcomes and course satisfaction data but there is no data regarding subjects and specialisations. Additional to this, there needs to be attitudinal data collected on commencing motivations and intentions, completion intentions and destinations, practicum experiences, internships and early career experiences, and interest in teaching in hard-to-staff locations.

In addition, reflecting some university studies which have been previously described in this report, many key stakeholders believed that there also needed to be longitudinal studies undertaken about attitudes and experiences of pre-service teacher education students from commencement to early career years. Areas identified for data collection included attraction factors for the profession, course and practicum experiences in building teaching skills, the impact of emergent practicum models involving school-university partnerships and more details regarding graduate destinations and course satisfactions. Induction, coaching and mentoring programs as supports for beginning teachers were also noted as data collection areas for the future. Data on post-graduate programs and leadership courses including motivations, success in obtaining leadership positions and impact on schools, was another significant area of interest.

It is noteworthy that the recent House of Representatives inquiry into teacher education has recommended that the Australian Government “commission a comprehensive longitudinal study into the effectiveness of different models of teacher education across Australia. The longitudinal study should follow cohorts of students from selection into courses, through pre-service teacher education, the first five years of service and through their careers” (Australia, House of Representatives, 2007, p.10).

***Recommendation 6:** It is suggested that the Australian Government propose to the ITSLC Working Group that it consider the development and implementation of data collections, involving collaboration with stakeholders, in teacher education data, including establishing longitudinal studies regarding pre-service teacher education to early career phases and in regards to leadership programs and impacts.*

8.3 Workforce Data Planning Mechanisms and Roles

A range of possible mechanisms and roles was outlined by stakeholders and these have been briefly referred to in the previous section but will now be described in further detail.

There was generally an acknowledgement by stakeholders that while education is essentially a state and territory responsibility, a national perspective on some issues is also important. Collaboration between the states and territories and other stakeholders was recognised as essential. Most stakeholders also identified a role for the Australian Government at a national level in terms of coordination and funding. The importance of this relationship between the Australian Government and other stakeholders being founded on principles of collaboration was repeatedly emphasised in the consultations, particularly in relation to supporting general and targeted approaches to recruitment, development and retention for the teacher workforce.

Other aspects for national responsibility raised by various stakeholders related to the interconnections between education and the economy at the national and international level. Demographic information about the teacher and leader workforce, attracting skilled and appropriately-motivated people to the profession and ensuring attractive pay, career opportunities and leadership pathways, were identified as areas for national action.

While a specially-established group for national workforce planning was sometimes suggested, with representation from all key stakeholder groups, many stakeholders also emphasised the importance of teacher workforce planning operating within broader structures, with clear relationships with groups such as MCEETYA, AESOC and COAG. This was felt to increase the likelihood of agreed action occurring within the national policy arena.

The consultations suggested that any new national group established to coordinate data collection on the teacher workforce would need to establish clear communication structures with wider

networks to ensure that commitment to data gathering to improve workforce planning is maintained and stakeholder needs are met.

Many stakeholders highlighted that such a data coordination group would need to develop protocols for their collaborative work to ensure there were clear principles about working together and sharing data. From various specific aspects raised by different stakeholder groups, transparency, integrity, accountability, and leadership seemed to be the types of underpinning concepts being discussed for successful collaboration and communication. These are similar to the types of principles which national nurse workforce collaborative groups have identified (N3ET: *Principles for Working Together*, 2005).

The majority of stakeholder views emphasised the importance of public availability of data to enable additional research to occur and action to follow. Public access to data with appropriate protocols in place would potentially reduce the number of data requests being made to individual organisations. However, some government employing authorities expressed a concern about teacher workforce data being widely available because of the risks of data being misused and potentially misleading comparisons being drawn.

The importance of the data being based on common terminology and with links to other data sources such as the ABS was emphasised by many stakeholders.

8.4 Implementation Challenges

As indicated at the start of this chapter, there were strongly consistent views expressed by stakeholders about the challenges in implementing a longer-term and more collaborative national approach to teacher and school leader workforce data collection.

A very significant issue for many stakeholders was a concern about the number of surveys and data requests occurring, particularly from a national level. The lack of coordination of this national work was emphasised. Stakeholders also highlighted the lack of clear purpose and focus involved in many of these processes, poor definition of terms, and insufficient feedback or information about follow-up steps. Any new approach would have to overcome concerns about potential additional burdens.

Another challenge is that there is a widespread perception from stakeholders' experiences in other national projects that working together in a truly cooperative manner is problematic due to limited consultation which usually occurs and the use of funding processes to ensure compliance.

Another challenge which was widely expressed was a concern about the politicisation involved in national data collection activities and research. Stakeholders frequently commented on the selective use of research and data, and expressed concern about the misuse of data for political purposes.

Stakeholders also expressed concern with the media's negative use of data. They felt that comparative data on schooling was used to reinforce a negative image of education and to create a climate of crisis. In several consultations, stakeholders expressed concern that negative media reports about schools and teachers were contributing to a declining status of the teaching profession.

Competition between various groups in the area of workforce supply and educational issues more broadly, was also viewed as causing a potential challenge for collaborative data collection work. Many stakeholders expressed concern about the on-going competition and tension between

governments and school sectors, and they were concerned about the lack of trust which exists. In terms of teacher supply, stakeholders believed that competition between sectors, between states and between schools is the norm rather than working together.

Smaller states and territories have a particular concern about working on a national level as they sometimes perceive that in national programs the uniqueness of the issues they face can be overlooked.

There was a concern that collaborative data collection involves time and resources, which are in short supply for many stakeholders. For example, establishing databases for common data collection and sharing is likely to involve additional costs. Some state government and Catholic employers, and teacher registration boards, have only recently updated their databases at considerable expense.

The need to ensure that new approaches do not impose additional burdens on schools and teachers was also emphasised by many stakeholders.

A final area of concern which was raised by a minority of stakeholders, specifically in relation to workforce planning, was a belief that the necessary data are already available. In their view, the more important priority is policy action to improve schools.

9. CONCLUDING COMMENTS

The consultations conducted for this report have suggested two broad priorities for teacher workforce data and planning in Australia. The first is to ensure that, within this diversified and decentralised system of teacher preparation and employment, individual decision makers have the data they need to make the best possible decisions for their circumstances. The second priority is that there needs to be greater collaboration on workforce planning matters across Australia because of the common issues affecting teachers no matter where they work. Those seeking to improve teacher recruitment in any one state or sector, will struggle to achieve satisfactory outcomes if not enough teachers have been trained or there are more attractive careers elsewhere.

It is fair to say that most people we spoke to wished to improve teacher workforce data and planning processes, including by having greater access to data relevant to their particular needs. There was broad support for the concept of a more collaborative and national approach. If the recommendations of the 2007 House of Representatives report were to be implemented they would be a major step towards a national framework for teacher workforce planning. The quality and comparability of the teacher workforce data available at the national level is more important than ever before.

Nevertheless, the general support for a more collaborative national approach was qualified by concerns about what this may mean in practice in terms of data privacy, potential data uses, jurisdictional issues, and implementation costs.

The consultations and review of approaches in other countries and occupations suggest that there are four broad aspects of greater collaboration on workforce data that need to be seriously considered.

- Developing a sector-wide approach to workforce planning and data collection that is closely connected to policy development needs.
- Working towards coordination of current administrative data collections concerning teachers and school leaders, and sharing of the key data and indicators under agreed protocols governing access and use.
- Rationalising current one-off or irregular survey data collections from teachers and school leaders, and replacing a number of them by an integrated regular survey.
- Implementing collaborative data collections in areas that are widely judged to be important, but which currently receive little resourcing.

In Chapter 8, a set of recommendations was developed to move this agenda forward. Chief among these was that, noting MCEETYA's agreement to develop a strategic framework for a national approach to workforce planning in education, the Australian Government should propose to the MCEETYA Improving Teacher and School Leadership Capacity Working Group that it establish a workforce data sub-group to coordinate and oversee data collection and analysis in relation to Australian school teachers and leaders. As part of this the sub-group could give consideration to utilising specific workforce planning expertise and communication links established with broader networks involved in workforce planning issues.

The vision that needs to guide this process is that workforce planning data for such a key profession as teaching has to be a collective endeavour across all of the groups involved in schooling. Data collection and analysis need to be seen to be informing actions, with the ultimate goal being improvements in the quality of education for Australian students and the benefit of society.

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APPENDIX 1: ADVISORY COMMITTEE MEMBERSHIP

Terry Blanchard	National Catholic Education Commission
Glenis Bray	Department of Education and Training, Western Australia (to May 2007)
Patrick Bryan	Department of Education, Training and the Arts, Queensland (from April 2007)
Cathy Crook	Department of Education and Training, Australian Capital Territory (from November 2006)
Chris Duncan	Australian Bureau of Statistics
Graham Gallas	Teaching Australia (to May 2007)
Brenton Holmes	Teaching Australia (from May 2007)
Warwick Gibbons	DEEWR
Kate Griffiths	Department of Education and Training, Western Australia (from May 2007)
Paul Hunt	DEEWR (Chair from November 2006)
Audrey Jackson	Independent Schools Council of Australia
Peter Johnson	Department of Education and Training, New South Wales
Christiana Knapman	DEEWR (from February 2007)
Scott Lambert	DEEWR (Chair to November 2006)
Andrew Mahoney	Department of Education, Tasmania (from October 2006)
Patrick McGrath	Australian Primary Principals Association (Teaching Australia)
Michelle Morthorpe	Australian Joint Council of Professional Teaching Associations (Teaching Australia)
Carol Penglase	Department of Employment, Education and Training, Northern Territory (from September 2006)
John See	Australian Secondary Principals Association (Teaching Australia)
Scott Smith	Department of Education, Training and the Arts, Queensland (to April 2007)
Jim Tangas	Department of Education, Victoria (from February 2007)
Barry Thompson	Department of Education and Childrens Services, South Australia
Diane Wasson	Department of Education and Training, New South Wales
Sue Willis	Australian Council of Deans of Education

Some Committee meetings were also attended by:

Martin Clifford	Department of Education and Training, Western Australia
Karen Collins	Australian Bureau of Statistics
Jane Evans	Department of Education, Tasmania (to September 2006)
Graham Gallas	Teaching Australia (to April 2007)
Carol Harris	Department of Education and Training, Australian Capital Territory (to September 2006)
David Hewitt	Association of Independent Schools of Western Australia
Marten Koomen	Department of Education, Victoria
Jeannie Mackinder	DEEWR
Sue Murphy	Department of Employment, Education and Training, Northern Territory (to September 2006)
Barbara Preston	Australian Council of Deans of Education
Alison Thorn	Australian Bureau of Statistics

APPENDIX 2: ORGANISATION OF THE CONSULTATIONS

This Appendix provides further details about the consultation areas, consultation framework questions and methodologies used to collect data. Focus groups, interviews and literature searches were involved. The Appendix also summarises information about the participants in the interviews and focus groups.

Consultation areas

Areas of research were as follows:

- Mapping data sources and processes in relation to current teacher and school leader profiles and development, workforce flow profiles and retention, teacher education, adequacy of supply and recruitment;
- Data improvement in regard to attraction, development, recruitment, retention;
- Emerging trends and data needs;
- Longer-term collaborative approaches;
- Learning from other workforce planning approaches; and
- Directions for change in workforce planning.

Consultation framework questions

The following questions provided a framework to support participants in their preparations for the consultations. It drew on the main teacher policy issues identified through the research literature, especially the OECD (2005) multi-country review of teacher policy.

The attractiveness of teaching and leadership positions

- What disaggregated data is being collected regarding pre-service teacher education student profiles and the motivation for students entering this course of study?
- What data is available in relation to previous occupations which career change entrants have been involved in and what has attracted them to become part of the teaching workforce?
- What data exists regarding attracting teachers to undertake school leadership roles?
- What data and processes are needed to improve information about the attractiveness of teaching and leadership roles?
- What data definitions and categories (including where relevant a taxonomy of teaching areas) are required in this area?

Developing teachers' and leaders' knowledge and skills

- What data are available regarding the preparation of teachers, including alternative pathways and re-entry programs, and what data gathering processes are currently involved?
- What data are available about student teachers' backgrounds, capacities, and career intentions?
- What data exist on current teachers' range of study and professional learning activities in relation to upgrading or retraining to meet areas of shortage?
- What data and processes are needed to improve information about teacher and leader shortages and development?
- What data definitions and categories (including where relevant a taxonomy of teaching areas) are required in this area?

Recruitment of teachers and leaders

- What data and processes exist regarding indicators of teaching shortages, and the nature of unfilled or hard-to-fill teaching vacancies?
- What data and processes exist for monitoring difficulties in filling leadership positions?
- What data and processes are needed to improve information about teacher and leader recruitment?
- What data definitions and categories (including where relevant a taxonomy of teaching areas) are required in this area?

Retention of teachers and leaders

- What data and processes exist for monitoring teacher career intentions and motivations, including teachers early in their career?
- What data exists about school leaders' career intentions and motivations?
- What data and processes are needed to improve information about teacher and leader retention?
- What data definitions and categories (including where relevant a taxonomy of teaching areas) are required in this area?

Data collection and participants

Based on the health workforce planning models (AWAC, 2006; 2004), OECD (2002; 2005) teacher supply and demand conceptual framework components and a preliminary literature review, a discussion paper was developed to inform and stimulate the consultations. The Advisory Committee provided feedback, also identifying and supporting initial contacts with key stakeholder groups in each State and Territory and with national bodies. Workforce planning experts from education and other occupations were also identified within Australia and overseas, with personal interviews and email research conducted.

Consultations involving focus groups and interviews were conducted in each capital city between September and December 2006 including members of the same organisation or of different stakeholder groups. Generally specially-convened sessions were established although some consultations were linked to the agendas of relevant meeting groups. Most focus groups involved three to ten people,

The discussion paper was forwarded about two weeks prior to the consultation meetings, with various versions dependent on the stakeholder group. For example, teacher employers who were expected to have considerable data detail on their databases were forwarded a version with a detailed form to supporting mapping against specific data sets. A less detailed version of the form was used for other stakeholder groups where it was likely that more limited data was collected. The focus of these stakeholder consultations was to identify more broadly any data being collected by their organisations and to ascertain views about data collection issues and improvements needed, including the potential for longer-term collaborative approaches.

Participants in the focus group consultations included teachers from subject associations, employer representatives from government and non-government authorities, union officials, university teacher education leaders, and principal association or registration board representatives.

Table A2.1 indicates the scope of stakeholder consultations. Table A2.2 shows the national and state and territory consultation sessions conducted, including details of the number of participants from each type of stakeholder group.

Table A2.1: Range of Stakeholders Consulted**Australian Government**

- The former Department of Education, Science and Training (DEST), now the Department of Education, Employment and Workplace Relations
- Australian Bureau of Statistics (ABS)
- The former Department of Employment and Workplace Relations (DEWR), now the Department of Education, Employment and Workplace Relations
- Australian Education International -National Office of Overseas Skills Recognition (AEI-NOOSR)

National Teacher Employer Organisations

- National Catholic Education Commission (NCEC)
- Association of Independent Schools (AIS)
- Lutheran Schools Australia
- Rudolf Steiner Schools of Australia

National Professional Organisations

- Australian Joint Council of Professional Teaching Associations (AJCPTA)
- Australian Association of Mathematics Teachers (AAMT)
- Australian College of Educators (ACE)
- Australian Principals Association Professional Development Council (APAPDC)
- Australian Association of Special Education (AASE)
- Teaching Australia
- Australian Primary Principals Association (APPA)
- Australian Secondary Principals Association (ASPA)

National Teacher Union Organisations

- Australian Education Union (AEU)
- Independent Education Union (IEU)

National Higher Education Organisations

- Australian Council of Deans of Education
- Australian Council Deans of Education (ACDE) Annual Conference
- Graduate Careers Australia (GCA)

Workforce Planners and Researchers

- Barbara Preston (ACDE)
- Chandra Shah (Centre for the Economics of Education and Training: Monash University)
- Helen Watt, Paul Richardson and Peter Gronn (Monash University)
- N3ET taskforce (National Nursing and Nursing Education Taskforce)
- National Health Workforce Secretariat

State and Territory Government employers

- New South Wales Department of Education and Training
- Queensland Department of Education and the Arts
- Western Australia Department of Education and Training
- South Australian Department of Education & Children's Services
- Tasmanian Department of Education
- Northern Territory Department of Employment, Education and Training
- Australian Capital Territory Department of Education and Training
- Victorian Department of Education

Teacher registration authorities

- State/Territory teacher registration authorities
- Australasian Forum of Teacher Registration and Accreditation Authorities (AFTRAA)

State and Territory Professional Associations

- State/Territory subject association bodies
- Leadership Development Centres
- State/Territory government principals associations
- State/Territory non-government principals associations

State and Territory Teacher Unions

- Independent Education Union
- Australian Education Union

Table A2.2: Consultations by State and Territory and national group: number of individuals consulted, and total consultations organised

	Employers			Registr auth	Higher educ	Princ. Assoc	Other Prof Assoc	Teachr unions	Other	Total Consul ¹
	Gov	Cath	Indep							
ACT	8	7	1	n.a.	1	6	1	1	-	6
NSW	3	8	1	1	1	4	3	2	--	9
NT	3	2	1	1	2	3	1	2	--	8
QLD	5	10	3	1	1	5	2	2	1	8
SA	8	2	4	1	3	17	8	2	--	13
WA	8	2	4	1	1	5	1	2	3	9
TAS	4	4	1	1	2	6	3	2	--	11
VIC	4	2	2	2	1	13	1	3	-	8
National	13	1	3	1	62*	3	7	3	9**	27

Notes

1. This column shows the number of consultations organised. Some consultations with particular groups involved several meetings in order to accommodate the timing of different participants and/or to gain different perspectives. Some sessions combined participants in various groupings e.g. employers and principals or various principal groups. Some sessions held involved various diverse groups e.g. the members of cross-sectoral workforce planning groups.

* Higher education includes ACDE conference of Deans of Education consultation

** Expert workforce planners

No. of pa