

# Grants Scheme

**Final Report - Part 2**

13 October 2008

(not for publication)

**Title of Project and Project Number:**

Data Repository for Teacher Education DS7-617 (previously DBIIF0714)

**Lead Institution:**

Monash University

**Partner Institution/s:**

None

**Project Leader/s and contact details:**

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David McGregor (until April 2008), Administrator  
Lucy Rogers (from April 2008), Administrator

## **1. Names of key stakeholders and how they were involved in or engaged with the project**

Guidance and contributions were provided by a reference group that included individuals representing diverse stakeholder groups and with extensive relevant expertise and experience. The organisations represented by reference group members included:

Australian Council of Deans of Education  
Department of Education, Employment and Workplace Relations (Digital Education Group, and links to other groups in the department)  
Australian Teacher Education Association  
Teaching Australia  
MCEETYA Quality Sustainable Teacher Workforce Working Group (QSTWWG)  
Australian Teacher Regulatory Authorities  
Australian Association for Research in Education  
National Education Forum.

In addition to the consultations with reference group members, and, through them, with their organisations and networks, the project engaged stakeholders in teacher education, researchers, and experts in data collections and management. This was done through formal and informal consultations.

Consultations with stakeholders in teacher education and education research included:

- meetings with executive committees and presentations at conferences of the ACDE and ATEA
- informal meetings with executive members of the AARE
- meetings with deans of faculties of education, representatives of school authorities, teacher regulatory authorities and/or teacher organisations in Western Australia, the Northern Territory, South Australia and Queensland
- informal meetings with a diversity of stakeholders and experts from universities and other education institutions, education authorities, and teacher associations at AARE 2007 and ATEA 2008 conferences
- meetings and electronic consultations with officers in DEEWR responsible for areas such as teacher quality, teacher education, early childhood education, vocational education and training, and learning and teaching in higher education, and with others connected with relevant government policy
- electronic consultations with peak nongovernment school authorities, teacher unions and others, who circulated documents and/or consulted with their affiliates and through their networks.

Consultations with experts in relevant data and data repositories included:

- electronic, telephone and face-to-face consultations with DEEWR officers responsible for higher education and school statistics
- electronic, telephone and face-to-face consultations with ABS officers responsible for Census and education and training statistics, and for aspects of data standards and management
- electronic and telephone consultations with DIAC officers

- electronic and telephone consultations with a number of social science researchers with expertise and experience with significant data collections and data standards.

## **2. Dissemination strategy**

### **2.1 Materials or outcomes that will be made available to the higher education sector or groups of stakeholders within the sector**

The immediate outcome of the study is the final report. The evidence and arguments in it may be of interest and value to organisations and individuals in Australia and overseas, especially those concerned with teacher education.

### **2.2 Ways in which the project outcomes have been or will be shared across the higher education sector both nationally and internationally**

Information about the project has been widely disseminated (see section 1 above).

In its electronic form the final report can be widely disseminated and its availability on the ACDE website widely publicised.

If implemented, the data repository for teacher education must be widely publicised if it is to be worthwhile. Key stakeholder organisations (ACDE, ATEA and AARE) are committed to its publicity and the training and support of members (and others) in its use.

### **2.3 Information on how the project material can be accessed (this should also be included in Part 1 of the Final Report for publication)**

The final report will be accessed from the ACDE website:

<<http://www.acde.edu.au/datarepository>>.

## **3. Linkages**

### **3.1 Disciplinary and interdisciplinary linkages or learning that emerged as a result of the project**

Disciplinary linkages and learnings were a part of the project. The data repository for teacher education required an investigation into the sort of data that is relevant to teacher education, and into defining the stakeholders in teacher education.

Inter-disciplinary linkages and learnings were not a significant aspect of the project scope.

However, the project involved some investigation of relevant initiatives in other fields, and data projects of the Medical Deans and the Council of Deans of Nursing and Midwifery were investigated and reported on in the final report. The literature and information sources were scanned for relevant initiatives in other disciplines, but none were seen as of sufficient relevance or importance to be considered in detail and referred to in the final report

### **3.2 Links with other ALTC projects which developed during the project and the anticipated benefits to the discipline**

There were some informal communications with other ALTC projects, but the substance of those communications involved matters of general project management and progress rather than the particular content of this scoping study.

See also 3.1 (disciplinary learnings) and 4.2 (outcomes, including value to the sector).

## **4. Evaluation**

### **4.1 Description of formative and summative evaluation processes used. If an independent evaluation has been undertaken please provide the evaluation report as an attachment**

No independent evaluation was carried out.

Formative evaluation involved informal monitoring of the progress of the project, showing the difficulty in keeping to the planned schedule (see also 4.4 below).

Formative and (near) summative evaluation of substantive developments in the project involved teleconferences and other input by reference group members.

#### **4.2 Evaluation outcomes including evidence of the impact of the project and value to the sector**

The immediate concrete outcome of the study is the final report. The evidence and arguments in it may be of interest and value to organisations and individuals in Australia and overseas, especially those concerned with teacher education. In its electronic form it can be widely disseminated and its availability on the ACDE website widely publicised.

The most substantial, but not certain, outcome of this scoping study would be the implementation of its recommendations and the establishment of a data repository for teacher education (DRTE). A DRTE has potential to be widely used for the benefit of all teacher education stakeholders, policy makers and others with an interest in teacher education and the sustainability and quality of the teaching profession. It may also provide a possible model for teacher education in other countries and for other fields in Australia that are not already well-served by data repositories and dedicated research institutes.

Evaluation of these outcomes – the impact of the project and value to the sector – cannot yet occur.

However, during the project there were discussions, information sharing and relationship building among some key stakeholders that may be sustained, whatever the final outcomes regarding the final report and any action on recommendations.

#### **4.3 Factors critical to the success of the approach**

Factors critical to the success of the project included the serious engagement by key stakeholders, in particular ACDE, the Australian Teacher Education Association (ATEA), the Australian Association for Research in Education (AARE) and relevant groups in DEEWR, and the willingness of significant data custodians and experts to provide advice and assistance. Being able to utilise pre-existing networks and relationships probably played a significant part in the success of the project.

#### **4.4 Factors that impeded its success**

The progress of the project was impeded to some extent by the need to develop broad specifications of the DRTE so that those consulted could make informed and constructive contributions – the specifications could not be developed without input from consultations, but constructive input was difficult without a clearer framework of specification of the proposed repository. The development of internal consultation papers and a public ‘Issues Paper’ helped break this cycle, but difficulties of iteration remained because of the broad scope of the project and diversity of those engaged in consultations in the context of the necessary limitations of project resources.

#### **4.5 General lessons learnt, including a reflection on the challenges and unexpected successes**

The major lessons may only become clear after the final report has been considered by major stakeholders (and others), and any action taken in response to the recommendations.

There was some failure to maintain activities associated with the project such as the website and all the planned newsletters. Time that might have been put into these was allocated to the research, writing and consultations directly related to the main project report. There was not input (as far as we are aware) arising directly out of the newsletter or website, but if these had been better maintained the project may have appeared more ‘professional’ as well as

possible additional valuable input may have been received. General project management of time and all activities was a challenge (see also 4.4).

## **5. International links**

**A list of international links and a description of their contribution to the project.**

There were no significant international links during the project. However, a number of teacher education contacts overseas were contacted seeking information about any major overseas data repositories of which we were not aware, and their views on the general proposal for a data repository for teacher education. While the general attitude of these contacts was positive, they were not able to add any significant information

## APPENDIX 1

### PERFORMANCE INDICATORS

<b>Project Details:</b>	
Project Reference No:	DS7-617 - previously DBIIF0714
Project Title:	Data repository for teacher education
Amount funded (ex-GST):	\$90896.00
Partner Institution/s:	

#### Performance Data

##### Dissemination

This section is related to the dissemination of your project outcomes and should be completed by the Project Team and Project Evaluator, if an independent evaluation has been conducted. Please tick box (✓) where the statement is applicable to your project.

1. Provision of information through a final report	✓
2. Provision of information through material on a website or conference presentations	✓
3. Provision of information through peer-reviewed publications such as journal articles	
4. Consultation and collaboration with and support for external groups of staff or other institutions during the project	✓
5. Potential for the project outcomes to be adopted into practice in the discipline or institution(s) of the project team within one year of completion of the project	✓
6. Potential for the project outcomes to be adopted into practice in disciplines or institutions outside the project team within one year of completion of the project	✓

##### Potential for Systemic Change

This section describes the potential your project has for systemic change and should be completed by the Project Team and Project Evaluator, if an independent evaluation has been conducted. Please tick box (✓) where the statement is applicable to your project.

1. Potential to change curriculum development learning and teaching practices and/or teaching management processes of the project leader	
2. Potential to change curriculum development learning and teaching practices and/or teaching management processes of most or all the members of the project team	
3. Potential change to Dept/School/Faculty or institution curriculum development, learning and teaching practices and/or teaching management processes in one or more of the institutions of the project team	✓
4. Potential change to the curriculum development, learning and teaching practices and/or teaching management processes in one or more institutions outside the project team.	✓

**Events**

If you have conducted an event during the duration of the project, please complete the following:

**EVENT 1:**

Event Name: Australian Council of Deans of Education annual conference - formal presentation session

Date of Event: 14 October 2007 Date of Event: \_\_\_\_\_

If the following data was collected during the event via participant survey, please complete the following:

	Strongly Agree	Disagree	Neutral/ Undecided	Agree	Strongly Agree
I intend to share information from this (seminar/colloquium/forum/other) with other colleagues					
I will recommend actions arising from this (seminar/colloquium/forum/other) and/or further discussion of issues identified to appropriate groups/colleagues in my (organisation/discipline/network/association)					

**EVENT 2:**

Event Name: Australian Teacher Education Association annual conference - formal presentation session

Date of Event: 10 July 2008 Date of Event: \_\_\_\_\_

If the following data was collected during the event via participant survey, please complete the following:

	Strongly Agree	Disagree	Neutral/ Undecided	Agree	Strongly Agree
I intend to share information from this (seminar/colloquium/forum/other) with other colleagues					
I will recommend actions arising from this (seminar/colloquium/forum/other) and/or further discussion of issues identified to appropriate groups/colleagues in my (organisation/discipline/network/association)					

(If necessary to add more than three events, please do so)

## **APPENDIX 2**

**List of conference papers and journal articles which arise from the project**  
(This should also be included in Part 1 of the Final Report).

(There were no publicly available papers prepared for the conference presentations)

## **ATTACHMENT 1**

**Independent evaluation report**  
(If one has been undertaken.)

## **ATTACHMENT 2**

**Proformas or other material produced for or used in the project**

The project *Issues Paper* is attached.

**Please send report via email to: [projects@altc.edu.au](mailto:projects@altc.edu.au)**



# **Data repository for teacher education scoping study**

## **Issues paper**

May 2008

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Support for this scoping study has been provided from the Australian Learning and Teaching Council (ALTC), an initiative of the Australian Government Department of Education, Employment and Workplace Relations. The views expressed in this document do not necessarily reflect the views of the Australian Learning and Teaching Council.

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## 1 Introduction

The Australian Council of Deans of Education (ACDE) believes that an effective national data repository for teacher education would enhance the quality of teacher education and the future development of the teaching profession.

The Australian Learning and Teaching Council (ALTC) (formerly the Carrick Institute for Learning and Teaching in Higher Education) has provided funds through its discipline-based initiatives scheme for the ACDE to carry out a scoping study to investigate the need and support for, and feasibility and specifications of such a national data repository with systematically managed, accessible and usable data.

The study is described in more detail in Appendix 2. For updates and further information about the project please go to the project website, <http://www.acde.edu.au/datarepository>.

This issues paper has been prepared to assist contributions to the draft report of this data repository for teacher education (DRTE) scoping study which is due in mid June 2008. The final report is due at the end of July.

Questions and issues for your comment are noted in italics, but please feel free to comment on any matters raised in the paper or other matters relevant to this scoping study. Please send your comments to project researcher, Barbara Preston, at [barbara.preston@netspeed.com.au](mailto:barbara.preston@netspeed.com.au) before 13 June. Earlier comments are welcome. Later comments can make a contribution to the final report. The draft report will be available for comment in late June.

## 2 Context

This study is being carried out in the context of Australian and international advocacy for large scale, high quality research to inform policy and practice in teacher education, including longitudinal studies and analyses based on national databases (House of Representatives 2007, pp. 5-18; Murray et al 2008, p. 235, Cochran-Smith & Zeichner 2005, p. 5). This advocacy arises from a recognition of the importance of high quality teacher education as a foundation for education from early childhood to post-school education, and the importance of policy at all levels being evidence-based. Yet, as in many other fields, there has been a paucity of large scale research to provide the necessary evidence along-side the existing smaller-scale research in teacher education.

The data repository for teacher education with which this scoping study is concerned could play an important part in ensuring the highest quality initial and post-initial teacher education, and thus highly competent and committed teachers of sufficient numbers and distribution. However, it would be only a part. It would provide infrastructure for some very significant research concerning teacher education and for policy and practice informed by such research and repository data. Other research and analyses would continue to be necessary, using a diversity of methods. An efficiently developed and maintained data repository for teacher education would not only provide ready access to richer and higher quality data than is now generally available, but, by lessening (even eliminating) the need for frequent, ad hoc data collections and searches to support discrete research and policy development exercises, it would free up resources (financial and human) to attend to implementing policies to improve quality in teacher education, the teaching workforce and the wider education systems.

The technical capabilities for a sophisticated, highly useful and cost-effective data repository have been advancing over recent years. Significant work supporting research, innovation and practical implementation has arisen out of the 2001 initiative, *Backing Australia's Ability* (<http://backingaus.innovation.gov.au/default2001.htm>), continuing through the National Collaborative Research Infrastructure Strategy Advisory Committee (NCRIS) (<http://www.ncris.dest.gov.au/>) for universities and other national research institutions, while many other initiatives are occurring in other spheres. Greater accessibility to and linking of existing data repositories are developing through initiatives such as the National Data Network (see section 4.1).

*What are some other initiatives that could usefully inform this scoping study?*

Data repositories and associated facilities are *infrastructure* (or 'e-infrastructure'), and have the characteristics of an on-going background operation supporting significant (more obvious) activities such as research and policy development. Activities such as management, development and maintenance of the repository are part of the infrastructure, as are data collection and organisation, promotion of the use of the facility, and much analyses and reporting based on the data in the repository. Appendix D considers the data repository for teacher education as infrastructure in detail.

The data repository for teacher education should be considered within wider requirements for data related to teacher education, the teaching profession, and other areas. For example, comprehensive work on teacher workforce planning provides crucial evidence for teacher education policy (such as provision of places in particular initial and post-initial courses, and qualitative development of courses), but it also would inform policies of school authorities

and teacher regulatory and representative organisations. The necessary data would include collections not in themselves directly related to teacher education (such as data on movements in and out of Australia of teaching professionals from the Department of Immigration and Citizenship, and data on current teachers and those with teaching qualifications not teaching from the Australian Bureau of Statistics and teacher regulatory authorities), but which would inform research and policies concerned with teacher education.

Ministers of education (responsible for early childhood education, school and post-school education and training) and their officers have been concerned to ensure much better quality data for teacher workforce planning and related responsibilities. Recent meetings of the Council of Australian Governments (COAG), the education ministers (MCEETYA), and the Australian Education Systems Officials Committee (AESOC) have considered these matters. Relevant recent reports include *Staff in Australia's Schools 2007* (McKenzie et al 2008) and *Teacher Workforce Data and Planning Processes in Australia* (Owen et al 2008), which are discussed in Appendix F.

The establishment of teacher regulatory authorities in most jurisdictions provides an opportunity for the collection of detailed, high quality and accessible data on registered teachers (generally only school teachers at this time). With appropriate systems and software these regulatory authorities could maintain data on matters such as when and where teaching qualifications were obtained, subject or other specialisations, and current and previous teaching positions, as well as standard demographic data (age and sex). They also maintain records of approved initial teacher education programs, which could be developed to include greater detail about the programs, and the databases could also include post-initial programs.

Similarly, data concerned with other aspects of teacher education may be most useful if seamless links can be made with other datasets, or, if appropriate, other data incorporated within the repository. For example, data on teacher education academics may often be best analysed with data on other academics, and data on teacher education course may in some cases be best analysed with data on other courses.

There will continue to be change and development in the context of research and policy requirements and priorities, newly available datasets, data management and co-ordination initiatives, and technical capabilities. Therefore flexibility and openness to innovation will be important. In general, the data repository for teacher education should be structured so that new datasets can be incorporated at minimal expense, and that effective links can be made to external datasets. It should be conceived as an on-going resource, not as a 'project' with a finite life. These issues are considered in detail in subsequent sections of this paper.

### 3 Criteria for evaluating features of the data repository for teacher education

#### 3.1 Value

The content and its organisation in the data repository for teacher education must be appropriate and valuable for significant purposes (primarily related to teacher education – both initial and post-initial, for teachers in all levels and areas of education, not just schools). The data and information in this repository (and/or in other repositories that are readily accessible and linked to this repository) should be able to meet the information needs of specific significant purposes without leaving gaps. That is, its value would be diminished if it did not provide adequate infrastructure for significant, relevant purposes.

Such purposes could include (but are not limited to) the following (which overlap).

**Evidence-based improvement of teacher education** - to understand and evaluate initial and post-initial teacher education programs (especially in terms of curriculum and pedagogy, including practicum), including in relation to the professional careers of graduates of particular programs.

**Management of student demand, recruitment and retention in programs** - to understand the nature of demand for teacher education programs and the characteristics of applicants and students (who stay in or leave a program); to inform, for example, general program planning and improvement, student support, marketing, and campaigns of active recruitment (including targeted incentives) of student teachers.

**Teacher workforce planning** (for school teachers, early childhood teachers, VET teachers and other categories of teachers) - by school and other authorities, professional bodies, universities and others - to inform, for example, the distribution of initial teacher education courses leading to particular specialisations and the numbers of places provided in programs of particular types in particular locations (similarly, for post-initial courses leading to advanced or changed specialisations, including educational leadership). Workforce planning can be closely connected with the quality of initial teacher education through the potential lessening of either teacher shortages or surpluses, which are both detrimental to the quality of initial (and post-initial) teacher education through a range of mechanisms including student demand, the availability of practicum places, and availability practicing teachers for secondment and other roles related to teacher education, including recruitment to on-going academic positions.

**Academic workforce planning** and human resource management within faculties of education.

**Quick and efficient access to data in response to ad hoc needs.** Speedy access to simple but accurate and timely data on a very wide range of topics related to teacher education is frequently sought by governments, policy-makers, researchers, and many others. Currently much of the desired data is not readily available without expenditure of substantial time and resources, and, even then, the quality of the data is not always assured.

*Please comment on the purposes listed above and the issues raised. Are there other significant purposes and issues?*

### 3.2 Utility

The repository must be accessible and user-friendly so it does in fact get used. To ensure this, testing its ease and effectiveness of use with real potential users (rather than experts) ('useability testing') may be helpful.

*Please comment on how utility and useability might be assured.*

### 3.3 Feasibility

The repository must be technically and financially feasible (and cost-effective) in establishment and long term development and maintenance.

*Please comment on how feasibility might be assured.*

### 3.4 Sustainability

The repository must be sustainable in several senses. It should be on-going, not a project of limited life. Its use (the outcomes of its use) should be of long term, non-trivial value. It should be of broad value across disciplines and areas by providing a model that others may learn from as well as providing a resource that can be widely used, including to add value to other existing and future data repositories through links and common elements (this might include a 'federated search engine').

*Please comment on how sustainability might be assured.*

### 3.5 Quality

In addition to the features noted above, to assure quality there must be consistency in data definitions and categorisation, and data catalogues need to be maintained.

*Please comment on how quality might be assured.*

### 3.6 Other

*Please indicate any additional criteria for evaluating features of a data repository for teacher education, and issues that need to be considered.*

#### 4 **Format and structure of the data repository for teacher education**

The data repository for teacher education may incorporate a combination of different formats and structures. Some may be freely available to users (especially the PDF and Excel documents), while others may have some form of restricted access.

The discussion here assumes that the data repository for teacher education would be accessed via a website.

*Are there feasible alternatives?*

The United States National Centre for Educational Statistics (NCES), 'located within the U.S. Department of Education and the Institute of Education Sciences, is the primary federal entity for collecting and analyzing data related to education' (<http://nces.ed.gov/>). The NCES could provide a model, though its scale is beyond that envisaged for a data repository for teacher education. It is a massive site with data in many formats and levels of detail and accessibility. Most data is freely available on the website, but some requires a restricted licence where the data includes individually identifiable information, which is confidential and protected by law (<http://nces.ed.gov/pubsearch/licenses.asp>). Some NCES data is presented as simple tables or text, other data allows detailed analyses using the 'Data Analysis System' (DAS) online or other tools. There are detailed research reports based on data in the site available in various formats (including PDF and RTF). The NCES site covers data on all education levels: early childhood education, schools, vocational and community colleges and universities, as well as associated institutions such as public and educational libraries.

*What issues for this study are raised by the NCES and other overseas data repositories?*

While the NCES is at the more complex end of a continuum, some Australian councils of university deans provide data on their websites that is at the simplicity end of the continuum. For example, the Council of Deans of Nursing and Midwifery (CDNM) website contains a 22-page PDF document that includes details in text, tables and a graph about all pre-registration nursing and midwifery courses, student commencements and completions for current and recent years, information from the Department of Immigration and Citizenship on movements in and out of Australia of professional nurses and midwives, information from Graduate Careers Australia on graduate destinations, and other information relevant to nurse and midwifery pre-registration education and workforce planning (<http://www.cdnm.edu.au/pdfs/DOHARep080303.pdf>). The major sources of data for this document were a survey completed by every school of nursing (and midwifery) in 2007 and student data from DEEWR. The data from schools of nursing parallels Department of Education, Employment and Workplace Relations (DEEWR) data, but was available well before the (official) data becomes available from DEEWR, and included some information not included in DEEWR datasets such as numbers of commencers with enrolled nursing qualifications, and details of courses such as provision of rural clinical placements. This CDNM work was funded by the Department of Health and Ageing (DoHA).

*What are the advantages and disadvantages (the benefits and costs) of a minimal collection compared with a larger scale repository?*

Possible useful formats for a data repository for teacher education are discussed below when particular areas of data content are considered. The discussion is based on the more complex

and comprehensive options for a repository, and some of the issues will not be relevant for less complex options.

An important aspect for detailed consideration in this scoping study is how data in the repository could be accessed. In particular, it is important to consider how the data could be interrogated online. Appropriate software is required to perform two tasks. First, it needs to implement the data access control policies associated with the repository – allowing each user access to only the data they have approval to access. Second, it needs to allow users to specify the manipulation and analysis to be performed on the data. The range of tasks includes

- defining a subset of data to be extracted and downloaded
- creating new variables to be defined and incorporated in the user’s view of the data
- allowing the user to specify tables, graphs and maps to be created from the data
- linking datasets to create new outputs for specialised analysis<sup>1</sup>.

Because of the detailed nature of some of the data being considered for the repository, there would need to be a well designed protocol for accessing and manipulating data. This can be illustrated by consideration of data relating to initial teacher education: The data may contain an identifier that links each beginning teacher to a course/unit at an institution. While access is restricted to the fully linked datasets because of the risk of disclosure of personal information through the matching of data elements to identified individuals, most unlinked datasets (or groups of sets) may be freely available to the public. Possible initial (preservice) teacher education data is set out here for illustrative purposes, and includes

- DEEWR data on commencements, enrolments or completions (comprehensive census data), with information on personal attributes (age, sex, Indigenous status, citizenship, residence postcode SES and rurality, etc) and units/courses enrolled in
- university/faculty provided student data that may cover teaching specialisations (such as secondary subjects) and other details. It could be available well before parallel data is available from DEEWR. As university data systems are developed over time, the level of useful and consistent detail, data quality, and timeliness and efficiency of collection using those systems could be significantly improved.
- faculty-provided data on projected future completions
- longitudinal survey data of teacher education students
- data on each course and/or, based on a classification scheme that serves the appropriate purposes (such as evaluation of models of teacher education), is valid and agreed.

It is possible that data on individual registered teachers from teacher regulatory authorities (registration boards) could be linked to this set of linked datasets via the course, institution and/or year of completion of qualification.

Possibly as part of this linked collection, or as a separate (and partially duplicating) collection, data on academic staff involved in teacher education programs (with information on their

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<sup>1</sup> There are two kinds of linking. First, linking at the unit record level (by matching the person/entity the data relates to, for example, by a unique identifier or a linking algorithm) – this may involve potentially serious privacy issues. Second, linking data files by shared characteristics (age, sex, postcode, course, school, etc) – this generally would not involve serious privacy issues.

qualifications and experience, as well as age and sex) could be linked to student enrolment data and course data.

In addition to initial teacher education-related datasets, there could be similar collections of linked datasets covering post-initial teacher education, research higher degrees, research activity, and other matters of concern to education faculties and teacher education.

Many other datasets may be linkable, even if only at the level of an institution, a state or territory, and/or a year. Such data could include that from tertiary entrance authorities, Universities Australia (on unmet demand), the Graduate Careers Council, among others. If not linkable, it could be provided as a simple Excel table or even a PDF document.

Possible content for the data repository is considered in detail in the following section.

Data should be collected and organised in a consistent way, utilising appropriate data standards and common definitions wherever possible. Standards and definitions utilised by ABS and/or DEEWR will generally be appropriate. In particular, the ABS *Information Paper: Measuring Learning in Australia: Dictionary of Standards for Education and Training Statistics, 2004* (ABS 2004) should be a reference wherever possible. In addition, NCVER develops and maintains statistical standards related to vocational education and training, documented in Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS) (<http://www.ncver.edu.au/avetmiss/index.html>).

In many cases it will be appropriate to explain the basis of a variable in particular collections. For example, DEEWR age data is based on age (in years) at 30 December the preceding year. Thus, a beginning teacher with a birthday in January, will have an actual age at recruitment in February (say, 25) two years older than their 'age' at completion in November two months earlier (in this case, 23). In other areas it will be important to make clear the detail of classifications used. For example, the ANZSCO occupational classifications do not include 'school principals' (or 'other education managers' such as 'regional education manager') under 'education professionals', but under 'education, health and welfare services managers'. Similarly, 'child care centre managers', who are often qualified early childhood teachers, are classified under 'education, health and welfare services managers', and not under the 'education professionals' classification of 'early childhood (pre-primary) teachers'.

Data catalogues would need to be developed for data that is structured and unstructured (such as most text-based data).

*Issues to be considered include (with costings where appropriate)*

- *determining the major technical and administrative issues to be resolved at a fundamental or general level for the data repository, and what needs be resolved in relation to particular datasets or collections or elements of the repository*
- *options for repository structures, including indications of what is fundamental and necessary, and what can be added*
- *what should be the nature of linking between various datasets – at the unit record level, or a relevant shared characteristic?*
- *options for software*
- *data standards – appropriate data dictionaries, etc.*

#### 4.1 An alternative to a dedicated data repository for teacher education?

This issues paper is presented on the basis of consideration of a dedicated *data repository for teacher education*, with many different issues, options and possibilities to consider. However, there is an alternative model of utilising existing depositories, and adding new data collections (such as those discussed in this paper) to existing depositories wherever possible (such as the Australian Social Science Data Archive) or to a new, but simple, depository.

A new dedicated ('data for teacher education') portal could be developed, and, with appropriate software, searches and some of the data manipulations discussed in this issues paper could be possible.

Alternatively, datasets could all be within repositories connected to the new National Data Network, which, at the time of writing this issues paper, is still in pilot stage. The NDN is convened by the Australian Statistician (pending the establishment of a permanent government structure).

The overarching strategy of the NDN is to:

a. develop low cost infrastructure that:

i. enables Custodians to:

more easily respond to the ever increasing User demand for information

adopt improved data management and access arrangements

better align with statistical standards and thereby more easily integrate their information resources with others, through the use of NDN tools and other NDN services,

ii. enables Users to:

be aware of existing information resources

access a range of NDN-based analytical tools and services for effective and low cost access and use of information resources.

The NDN comprises of a central administrative hub, a centralised metadata catalogue and a participant facility to publish resources and register users (nodes).

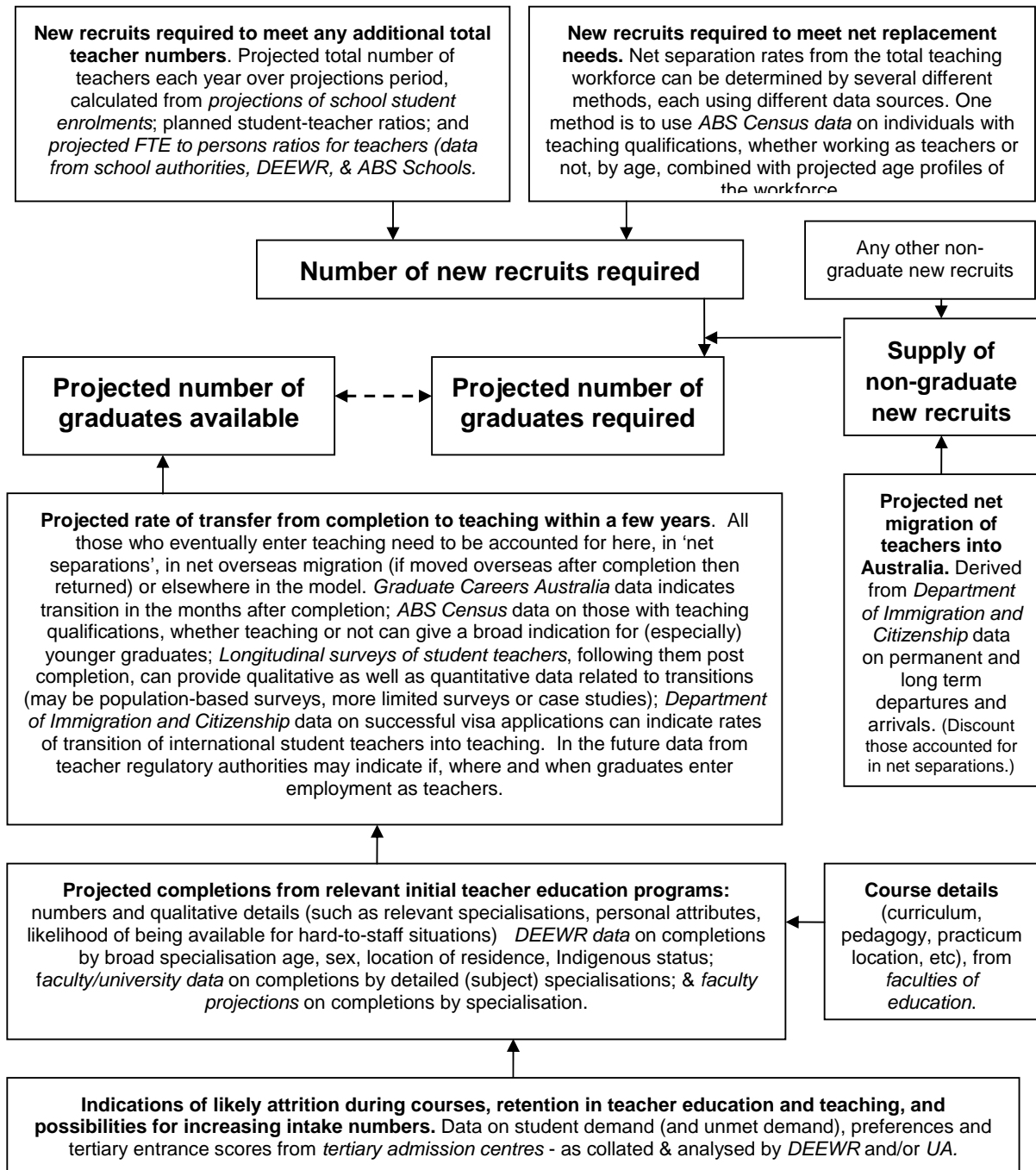
<http://www.nationaldatanetwork.org/NDN/NDNHome.nsf/Home/About%20Us>

It is not yet clear whether the NDN (or alternatives) could adequately perform the functions that are envisaged for the data repository for teacher education - in terms of timeliness as well as capabilities (based in both content and software) that can meet particular needs related to teacher education.

*Alternative models are not further discussed here, but comments and suggestions are welcome.*

## Figure 1. Data requirements for workforce planning

- An illustration of major elements in a possible model for projecting supply and demand for teacher education graduates at a particular level (eg. secondary) in a particular jurisdiction. The work could inform plans for future initial teacher education intakes (numbers and desired student attributes), course development or modification, pedagogy and curriculum, as well as school authorities' teacher recruitment, retention and staff development strategies.



## 5 Content of the data repository

The possibilities for datasets within the repository are considered here under the headings of (a) intending, current and former teacher education students and others with professional teaching qualifications; (b) courses; and (c) academics. Figure 1 illustrates how data from some of the sources discussed below can be incorporated in a workforce planning analysis that can be used to inform policy and practice in many aspects of teacher education.

The datasets being considered include those that can be readily extracted from available sources (such as DEEWR higher education statistics), data that will need expert manipulation before it can be in a useful form (such as some of the proposed ABS Census data), data that involves new collections that are relatively straight forward (such as that proposed to be collected from faculties of education), and data from new data collections that involve significant funding and on-going commitment (such as the proposed longitudinal survey of student teachers). Each will need to be considered on its merits, though some will be of less value without others.

The features of the depository should be such that such datasets (as determined of potential value through this scoping study) can be incorporated – in the longer term if not immediately or in the short term.

*As you read through this section, consider the following questions: Are there other possible significant datasets? What is the cost-benefit value of the different data-sets, and how essential are different sets for particular significant purposes?*

*For some datasets there may be significant copyright and/or cost matters to be resolved, and other issues that you may wish to comment on.*

### 5.1 Intending, expected, current and former teacher education students and other individuals with professional teaching qualifications

There are three major possible datasets covering current teacher education students and others with university-level teaching qualifications

- data that has already been collected by the DEEWR, which is available through various mechanisms
- data not collected by DEEWR but that could be available from universities using their student management information systems or other relatively low cost mechanisms
- data collected as part of a possible on-going longitudinal study of student teachers that follows them after their time as students.

These will be considered in turn, the longitudinal study in detail.

A number of other datasets are then considered, which cover intending student teachers, expected completions, former teacher education students and others with university-level teaching qualifications, and historic and other relevant data. In some cases an explanatory note and link to the original data source may be an alternative or valuable addition to the dataset. In some cases it may not be possible or appropriate to collect the data immediately,

frequently and/or regularly, but a location for the data within the repository should be assured. These other possible datasets include

- data collected from faculties of education regarding expected (projected) numbers of completions in specified specialisations over coming years
- Graduate Careers Australia data on graduate destinations (undergraduate and postgraduate, initial and post-initial teacher education)
- teacher regulatory authority (registration board) data incorporating qualifications, specialisation, year and institution of initial and any post-initial qualifications, demographic data, and current employment status
- Data on undergraduate applications, offers and acceptances
- Department of Immigration and Citizenship data on movements in and out of Australia on individuals with teaching qualifications, and on successful visa applications of former international student teachers
- Australian Bureau of Statistics (ABS) Census data on individuals with teaching qualifications (whether teaching or not), and individuals who are teaching (not all of whom would have their teaching qualification classified as their highest qualification)
- ABS Schools collection data on school teachers
- historic teacher education statistics
- data from other sources, including original collections from research projects
- international sources related to teacher education.

### **5.1.1 DEEWR student data**

DEEWR data on initial teacher education enrolments and completions is classified separately from other undergraduate and graduate enrolments in the field of education (FoE) of Education through a ‘special course type code’ of ‘courses for initial teacher training’ - courses leading to ‘initial registration as nurses’ (and midwives) and ‘provisional registration as a medical practitioner’ are similarly classified. Post-initial teacher education data is not so differentiated from other courses in the Education FoE (or Broad Discipline Group). However, for Education courses of the levels where the courses could be either initial or post-initial (graduate bachelors, graduate diploma and masters in particular), those courses that are not classified as ‘courses for initial teacher training’ can be considered generally post-initial (though there will be courses classified as Education which are developed for non-teachers, and there will be non-teachers in courses broadly intended for teachers).

Even so, within the ‘teacher education’ (initial and post-initial) classification there are some problems (reflecting difficulties or errors of university data entry and inherent classification problems). These problems are outlined in the following section on data on student teacher enrolments not collected by DEEWR, and are apparent, for example, in 2006 commencing student data at the level of ‘detailed field of education’ (which includes ‘Teacher Education: Primary’, ‘Teacher Education: Secondary’ and ten other categories), in which 22% are classified simply as ‘Teacher Education’, and another 3% as ‘Teacher Education not elsewhere classified’ (Table 64 at [http://www.dest.gov.au/NR/rdonlyres/EA269F70-8F15-47B1-AD12-013E783BF7B9/19014/3\\_10TeacherEducationstudents.xls](http://www.dest.gov.au/NR/rdonlyres/EA269F70-8F15-47B1-AD12-013E783BF7B9/19014/3_10TeacherEducationstudents.xls)).

DEEWR data is available to external users through three mechanisms. These will be outlined, though required data could be provided by DEEWR on an agreed and regular basis in an appropriate form.

First, there is data freely available on the DEEWR website, published in Excel tables and PDF documents. This is commonly sought data such as commencements, load and completions by field of education (including 'special course type code'), and/or course level, and/or mode of study, sex, citizenship, and institution.

Also freely available on the website are aggregated datasets providing additional detail on matters such as age and Indigenous status. The aggregated datasets are self extracting zip archives, and require appropriate analysis software and expert data loading.

Data can also be obtained on a custom basis that can include much greater detail regarding courses, residence location, NESB status and much more, and can be provided on a unit level as well as course level. Custom data can be in formats as required, for example, as Excel tables or other spreadsheet formats, or as fixed-format flat ASCII files ready for loading into appropriate analysis software. If the data is in unit record files with postcodes (of term residence) then mapping is possible (most usefully if postcodes are subsequently classified according to ABS Statistical Divisions or Statistical Subdivisions). Mapping is also possible with information on location of campus entered. Detailed information about individuals in courses with small enrolments may lead to privacy issues, and varying levels of access may be appropriate for different levels of data.

#### **5.1.2 Data on student teacher enrolments not collected by DEEWR**

Faculties of education experience high levels of demand for student data that is not part of the DEEWR collection (or is not classified as needed in the DEWR collection, or the data is needed before the DEEWR data becomes available). These requests, from school authorities and others, are ad hoc and uncoordinated. There are often multiple requests from different agencies seeking similar data, but using different definitions, formats and methodologies. Meeting such requests is a highly inefficient use of education faculties' human and financial resources. Yet the need for the data is genuine and significant.

The most commonly sought data covers the teaching specialisations of completing student teachers (or, more problematically, commencing or all student teachers). This covers the level of education being prepared for (such as early childhood, primary, secondary, or VET), and specialisations, especially, but not only, secondary subject specialisations. The former are part of the FoE classifications used by DEEWR for courses (see *Australian Standard Classification of Education* (ASCED), ABS Cat. No. 1272.0, p. 150). However, a number of courses include students preparing for different levels (such as some students preparing to be primary teachers, and others in the course preparing to be secondary teachers), and some students may in fact have specialisations that qualify them to teach at different levels (such as secondary *and* VET, or primary *and* secondary). The ASCED does not have a 'Teacher Education: Middle School' classification, and those undertaking such as specialisation would properly be classified as 'Teacher Education, not elsewhere classified'. Another complication involves the different qualifications within the early childhood specialisation that are not recognised in ASCED, notably the 0-5 specialisation that does not qualify to teach in primary schools, the 0-8 and 3-8 qualifications that do qualify to teach in both before school settings and primary schools, and 5-8 which qualifies for primary school teaching, but (strictly) not for

teaching in before-school settings. These distinctions are becoming very important as increasing priority is being given to early childhood education in before-school settings.

With some minor exceptions, DEEWR-collected data does not permit accurate enumeration of completing students by specialisation (maths, or English, or Japanese, say). Yet such data can be of great policy importance for university course development and academic recruitment, as well as school authority workforce planning.

Appendix E is concerned with classification and methodological issues related to student teacher specialisation data. The experience of a DEEWR (DEST) EIP project (Ballantyne et al 2002) that collected such data and other exercises could be built on.

In addition to the initial teacher education data, there may also be information on post-initial teacher education courses and students that is of great value for significant planning and evaluation purposes, but is not part of the DEEWR collection.

Initial and post-initial student data collected directly from universities should be compatible with the DEEWR higher education statistics collection as far as possible, and organised in the data repository for teacher education so that it can be combined and manipulated with other datasets.

University student administration software may, in many cases, make collection of all or most of the necessary data a straightforward exercise. And, if this is currently not the case, development of the classifications in the system and the ways students are classified and data entered may make it so in the future.

*Please comment on the issues raised here and in Appendix E regarding important student enrolment data not collected (or incompletely collected) by DEEWR.*

### **5.1.3 Longitudinal surveys following cohorts of student teachers**

This long section discusses possible longitudinal surveys of cohorts of student teachers. Such an initiative is consistent with the first recommendation of the February 2007 House of Representatives report on teacher education (HoR 2007, p. 10)

The committee recommends 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 preparation, the first five years of service and through their careers.

Investigating the ‘effectiveness of different models of teacher education’ through a longitudinal study of cohorts of student teachers would involve some complex methodological, as well as administrative and financial issues. But the potentially very rich data resulting could be invaluable for this and other purposes related to teacher education.

What is being considered here is an ongoing collection of data, following cohorts (waves) of student teachers beyond their years at university. The data collected would be publicly accessible for diverse research and analysis purposes, as well as having research and analysis carried out as a core part of the initiative. It would not be a ‘project’ limited to a few years.

Similar collections of data have been advocated overseas. The panel who prepared *Studying Teacher Education*, the Report of the American Educational Research Association Panel on Research and Teacher Education (ed. Cochrane-Smith & Zeichner 2005) argued for large scale longitudinal studies and

accurate national databases that make many kinds of cross-institutional and multivariate analyses possible. (p. 2)

....

Most important, the research and policy communities need to develop a comprehensive, up-to-date demographic profile about prospective teachers, current teachers and the reserve pool of teachers. We also need to know how demographic variables – separately and together – are related to how teachers are prepared, where they teach, and how long they stay in teaching.

We need a comprehensive database of who is in the teacher education pipeline, utilising consistent definitions of types of programs and routes. (p. 7)

In the boxes below is information about three Australian longitudinal studies that have some features relevant to considering possible features of a longitudinal study of student teachers (including management, methodology, administration, funding, data management, and analysis and reporting). The three studies outlined are the Longitudinal Surveys of Australian Youth (LSAY), ‘Factors influencing Teacher Choice’ (FIT Choice) longitudinal surveys of student teachers, and the Household, Income and Labour Dynamics in Australia (HILDA) Survey. There are other longitudinal studies that may have relevant features. These include the Australian Research Council-funded longitudinal studies following student nurses and midwives (‘Nurses and Midwives e-cohort’ - <http://nurses.e-cohort.net/>) and medical students (the ‘Doctors e-cohort’ study - <http://doctors.e-cohort.net/>) into their careers. However, the voluntary, self-selected nature of participation in these surveys results in the samples not being representative of the cohorts, and thus limits the range of conclusions that can be drawn from analysis of the data. Being ARC –funded, they also have the limitation of being projects with finite timelines (as is FIT Choice).

Issues regarding longitudinal surveys of cohorts of student teachers are outlined under the heads of Purposes; Study management; Study design; Survey administration; Data storage and maintenance; Analytical services and reports; Funding quantum and sources.

*Under each heading we need to consider: how the issues raised should be resolved?  
What other issues are there?*

### **Purposes**

1. A primary and on-going purpose of the data collected through longitudinal surveys of student teachers would be to investigate the effectiveness of different models of teacher education, and inform teacher education course improvement/development.

There are two levels at which data from systematic longitudinal surveys of initial teacher education students can be used. First, the survey data, combined with course data in appropriate detail, can be used to investigate ‘models of teacher education’ broadly defined. Second, a particular model, course, intervention or initiative can be investigated using the national survey data and comparable data from all (or an appropriate higher rate of sampling) of the students involved in the model, course, intervention or initiative under investigation. In either case, the quantitative analysis of data from the longitudinal survey could well be supplemented with data (qualitative and quantitative) and insights from other studies.

The difficulties in such investigations need to be taken into account.

- a. What is meant by ‘models’ of teacher education? What are the questions that planners of teacher education and other stakeholders need answered? If defined broadly by standard definitions of course type/length then a smaller

sample may suffice compared with what would be necessary if the classification of ‘models’ is finely grained.

- b. What is an appropriate measure of ‘effectiveness’ of particular models of initial teacher education? The ultimate purpose of teacher education concerns student learning outcomes; is this appropriate or a step beyond what is feasible?<sup>2</sup> What are some simple and valid measures of teacher (and initial teacher education) success over the years after graduation? Actually working as a teacher may be one measure. Self-rated measures of professional satisfaction and efficacy, and positive career aspirations may be other measures. Standard appraisals at the end of a probationary period or at other stages in teachers’ careers (where they exist) may also be appropriate. Use of graduate outcomes/destinations as indicators of course/model effectiveness requires controlling for (or otherwise accounting for) individuals’ attributes that influence graduate outcomes/destinations but are not a consequence of that particular course/model. The numbers surveyed would need to be sufficient to do this, and appropriate information obtained. Many of the personal attribute and background items of LSAY could be relevant, and commonality of items would permit some rich comparative analysis between the student teacher cohort/s and the LSAY cohorts (which include some student teachers).
- c. Detailed data about different courses (classifying them according to ‘models’, and a range of other information) would need to be collected separately (see section 6.2), and each individual surveyed linked to the course undertaken (including specific units if annual surveys carried out). There will be complications because of the relatively high rate of transfer between courses, attrition and, sometimes, later re-entry (to same or different course), but this will be manageable if surveys are undertaken annually, though analysis of what will be complex data may require sophisticated tools.

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<sup>2</sup> The panel who prepared *Studying Teacher Education*, the Report of the American Educational Research Association Panel on Research and Teacher Education (ed. Cochrane-Smith & Zeichner 2005)

acknowledged the difficulty in producing research that examines the impact of teacher preparation on the eventual achievement of pupils in K-12 classrooms. This kind of research depends on a chain of causal evidence with several critical links: empirical evidence demonstrating the link between teacher preparation programs or structures and teacher candidates learning (i.e. candidates’ knowledge growth, skills and dispositions); empirical evidence demonstrating the link between candidates’ learning and their practices in actual classrooms; and empirical evidence demonstrating the link between the practices of graduates of teacher preparation programs and what their pupils learn. Individually each one of these links is complex and challenging to estimate. When they are combined, the challenges are multiplied: There are often substantial time lags between the teacher preparation periods and the eventual measures of pupils’ achievement ; there are many confounding and intervening variables (which are themselves difficult to measure) that influence what teacher candidates are able to do and what their pupils learn; and the sites where teacher candidates complete fieldwork and eventually teach are quite different from one another in terms of context, school culture, resources available, students and communities. Unravelling the complicated relationships between and among these variables and the contexts and conditions in which they occur is exceedingly complex, and of course this entire enterprise assumes in the first place that there is consensus about appropriate and valid outcome measures, an assumption that is arguable. (p. 3)

2. Inform decisions regarding recruitment of student teachers and their support during courses; inform decisions about deployment of beginning teachers, induction and other forms of professional and personal support; inform decisions about provision of post-initial teacher education (nature, and location of courses, mode of study, teachers targeted). For such purposes, items common with the FIT-Choice surveys (see Box 2) may be especially appropriate.

*Are these purposes reasonable given the nature of the data? Are there are other significant purposes for which the survey/s could be of value, which are themselves important and which can assist in broadening support for and use of the data collected? What additional types of items (if any) would be appropriate?*

*Can the purposes/needs be adequately met with existing data sources?*

### **Longitudinal surveys study management**

The initiative would need management by an appropriately structured board or committee that has expertise, independence and transparency. The primary management could rest with the governing board of the data repository for teacher education, or, for the longitudinal study as a distinct entity, an appropriate constituted managing committee. Depending on the nature of the funding, the funding body/ies may also play a significant role in management.

### **Longitudinal surveys study design**

The broad features of the study design should be considered at this stage, the detail to be determined by the study managers. In particular

1. *Sample selection and cohort size.* Selection of participants in the survey would need to assure representativeness and thus a random (or stratified random) selection process would be appropriate, with strategies to ensure very high response rates from those selected (or their replacement by matching individuals). There were around 24,000 domestic initial teacher education commencements in 2006, and this is unlikely to decrease over coming years. This is twice the LSAY cohort size, twelve times the total FIT Choice sample size, and a little more than the HILDA cohort size. A sample of around 4,000 would represent around one in six teacher education commencers. A smaller sample may result in confidentiality issues if units and courses with relatively small enrolments are identifiable and if relatively unusual individual personal characteristics and experiences are identifiable and linked to the units/courses. In addition, the original sample size must take account of the challenges of retaining an adequate proportion over successive years. With considerable effort and cost, LSAY generally achieves a retention of around 90% from one survey year to the next. At this rate, the original sample would halve in around seven years.
2. *Nature of surveys.* This could, like LSAY, be an initial written questionnaire (completed around initial teacher education course commencement), followed telephone interviews or online survey completion.
3. *Content of surveys.* This could be broadly similar to LSAY items (identical items where possible and appropriate so comparisons between the datasets are possible), plus key link to units/courses being undertaken while students and details about the nature of work and workplaces and other activities after course participation, and other items as appropriate (such as some items identical to FIT Choice and any other appropriate student teacher specific studies).

4. *Frequency of surveys of each cohort.* If annual from the time of commencement, rich information may be possible on issues related to course progression and satisfaction, as well as accurate and detailed information about the actual nature of the initial teacher education program undertaken, and about post-graduation experiences. In line with the HoR recommendation (above), an annual survey for about eight years (based on an average initial teacher education course length of about three years, then five years post completion), then subsequent interviews every four to six years may be most cost-effective.
5. *Frequency of cohort 'waves'.* A new cohort approximately every four years may be cost-effective - sufficient to pick up significant changes in teacher education, in student cohorts and in patterns of post course experiences.

#### **Longitudinal survey administration**

This may be best contracted to an experienced company with established protocols and systems, ensuring continuity and appropriate confidentiality (as with LSAY and HILDA).

#### **Data storage, maintenance and access**

The data would best be stored in the data repository for teacher education (DRTE), rather than a separate facility such as the Australian Social Science Data Archives (ASSDA) where LSAY data is stored, so that it can be linked with the essential data on courses, and data on enrolments collected by DEEWR and from faculties of education. It could also be deposited in ASSDA so that it can be accessed alongside LSAY data – or a link to the ASSDA and the LSAY data provided on the DRTE site.

While directly identifying information will not be associated with the data in the DRTE (or other depository), there may still be confidentiality issues, especially associated with units and courses with smaller enrolments. Therefore access to the data would still need to be restricted.

#### **Analytical services and reports**

High quality analysis and reporting must be assured if the substantial resources put into data collection (including the time of current and former student teacher respondents) are not to risk being wasted. While the data may be used by a range of researchers and policy-makers, analysis and reporting directed to the primary purposes of the data collection should be part of the overall project (as it is for the projects outlined in the boxes here). That work could be commissioned from external research organisations, or from researchers associated with the DRTE.

#### **Funding quantum and sources**

Carrying out high quality surveys of large numbers of individuals requires substantial funds. This is in contrast to other datasets being considered for the DRTE where the initial collection of the data is for other purposes or is not an expensive exercise. Similarly, adequate analysis and reporting require substantial funds.

The longitudinal surveys initiative is being considered as on-going, not a project of limited life. Therefore, the funding source would need to be able to provide such on-going funding.

The LSAY costings provide an indication of quantum. A minimum of around a half the LSAY budget (around \$800,000 per annum) may be appropriate – assuming a sample of around one in six commencing initial teacher education students, surveyed every year for

about eight years (then once around every four years), a new cohort ‘wave’ about every four years.

There could be different funding sources for different aspects of the surveys, though a single, assured, source would be best. Quality, impartiality/independence, authoritativeness and long term continuity must be assured, whatever the funding sources and mechanisms. While large scale, but short term, funding, such as from the ARC, may be possible and result in valuable analysis and reports, it should not be relied on.

**Box 1 Longitudinal Surveys of Australian Youth (LSAY)**

**Who is surveyed?** Cohorts of around 10,000 commence at age 15 (a random sample of about one in 30 of the total Australian age cohort). The sampled individuals are contacted once a year for ten years. A new cohort is selected (approximately) every three years (1995, 1998, 2003, 2006, and planned for 2009). Around 500 initial teacher education graduates would/will be included in each recent cohort (around one in 30 of the approximately 16,000 domestic initial teacher education graduates – who will be undertaking teacher education courses at varying ages).

**Focus of surveys** ‘The LSAY research program provides a rich source of information to help better understand young people and their transitions from school to post-school destinations, as well as exploring social outcomes, such as wellbeing. Information collected as part of the LSAY program covers a wide range of school and post-school topics, including: student achievement, student aspirations, school retention, social background, attitudes to school, work experiences and what students are doing when they leave school.’

**Management** is by DEEWR, working closely with NCVET and Wallis Consulting, and advised by a Strategic Advisory Committee that includes representatives of the states and territories, community organisations and other stakeholders in the program and its outcomes.

**Funding** Total funding provided by DEEWR of around \$1.6m per annum, just over half for analytical services and reports, the remainder for data collection.

([http://www.dest.gov.au/sectors/training\\_skills/programmes\\_funding/programme\\_categories/key\\_skills\\_priorities/l say.htm#](http://www.dest.gov.au/sectors/training_skills/programmes_funding/programme_categories/key_skills_priorities/l say.htm#)).

**Data collection** has been done by the Wallis Consulting Group since 2000

(<http://www.wallisgroup.com.au/>).

*Confidentiality* ‘The names and contact details for every LSAY participant are kept in a secure database at Wallis Consulting Group. These details are stored separately from the data collected during the annual interviews.’

**Data is deposited** with the Australian Social Science Data Archives (ASSDA - <http://assda.anu.edu.au/>) at the Australian National University. Permission to use the data and access requirements are managed by ASSDA.

**Analytical services and reports** are provided by National Centre for Vocational Education Research (NCVER) (<http://www.ncver.edu.au/l say/index.html>) collaborating with the Australian National University's Social Policy Evaluation, Analysis and Research Centre (SPEAR) (<http://econrssh.anu.edu.au/spear.htm>). The Australian Council of Educational Research formerly provided this service (and administered the program), and technical and analytic reports are on the ACER website (<http://www.acer.edu.au/l say/research.html>).

**Box 2**            **'Factors influencing Teacher Choice' (FIT Choice) longitudinal surveys of student teachers**

**Project website** <http://users.monash.edu.au/~hwatt/FITindex.htm>

**Who is surveyed** To date more than 2000 participants from Australia, the U.S., the U.K., Germany and Norway, who enrolled in undergraduate and graduate-entry teacher education courses (covering secondary, primary, early childhood, and other specialisms) at participating universities. Participants span a diverse range of ages and include a significant number who have switched from previous careers into teaching; include those who completed their teaching qualification or not; those who are now teaching professionals, or for a variety of reasons are not.

**Focus of surveys** A 'large-scale longitudinal program of research which investigates motivations for selecting teaching as a career, teaching self-efficacy, and experiences of beginning teachers. . . . It addresses problems of recruitment and retention in the current climate of teacher shortages. It establishes profiles of motivations for career choice at teaching degree entry, traces changes in perceived competencies and professional commitment from degree exit through to early professional experiences, and identifies factors and contextual processes conducive to or inhibitory of retention.'

**Project management and implementation** Carried out by Monash University academics, Dr Helen Watt and Dr Paul Richardson, working with colleagues at universities in Australia and overseas.

**Funding** is provided by the Australian Research Council (Discovery Large Grant) and several participating universities.

**Box 3 Household, Income and Labour Dynamics in Australia (HILDA) Survey**

**Project website** <http://www.melbourneinstitute.com/hilda/>

The Household, Income and Labour Dynamics in Australia (HILDA) Survey is a household-based panel study which began in 2001. It has the following key features:

- It collects information about economic and subjective well-being, labour market dynamics and family dynamics.
- Special questionnaire modules are included each wave.
- The wave 1 panel consisted of 7682 households and 19,914 individuals.
- Interviews are conducted annually with all adult members of each household.
- The panel members are followed over time.
- The funding has been guaranteed for twelve waves.
- Data releases occur in January. Data releases usually occur in January. Release 6 of the HILDA data (waves 1 to 6) is now available.

**Funding and initiation** The HILDA Survey was initiated, and is funded, by the Australian Government through the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) (<http://www.fahcsia.gov.au/internet/facsinternet.nsf/research/ldi-hilda.htm>). Funding is at over \$5m per annum to 2011.

**Survey design and management** Responsibility for the design and management of the survey rests with a group comprising:

- Melbourne Institute of Applied Economic and Social Research (University of Melbourne);
- Australian Council for Educational Research; and
- Australian Institute of Family Studies.

**Data collection** has been sub-contracted to The Nielsen Company (<http://au.acnielsen.com/site/index.shtml>), a private market research company.

#### 5.1.4 Projections of future graduate numbers

Figures for projected (or estimated) future completions of initial teacher education programs can be important inputs for modelling future teacher supply and demand. Usually completions with primary, secondary, and/or early childhood qualifications are differentiated (see, for example, Preston 2000). Such data is also useful for universities' own planning purposes – for example if some other universities are planning to significantly expand or contract in particular areas, other universities can plan to compensate in the context of overall expected demand for places by students and demand for graduates by potential employers and others.

Useful projections of future graduate numbers are difficult to develop using DEEWR data. There are several reasons for this. First, DEEWR data does not always include key disaggregation such as primary and secondary, or secondary and VET (see sections 5.1.1 and

5.1.2), which are usually essential for projections for workforce planning purposes. Second, initial teacher education (like initial nurse education, and unlike initial medical education) has high rates of apparent and real attrition, of transfers between institutions and programs, and of changes in type of attendance (such as from full time to part time), and thus reasonable estimates of future completion numbers from particular programs cannot be estimated with accuracy. Third, data on actual enrolments provides no indication of future plans for course establishment or termination, expansion or contraction, or changes in important specialisations. Usually faculties and schools of education are able to provide reasonable estimates for future completions according to classifications necessary for common workforce planning purposes.

Such projections are not 'hard data', and estimates may be made with more or less confidence, depending on the nature of courses and students involved and the further into the future the projections are made. However, estimates made by those most closely involved with the courses will be of better quality than estimates made by those external from the institutions using 'hard data' of recent enrolments (commencements and completions). Therefore the judgements of informed teacher educators and faculty administrative staff would be the best source of such data.

This data may not need to be collected on an annual basis, but when collected it should be collected and presented in a way that permits continuity of series with data on actual completions collected from universities (see above) and/or DEEWR.

### **5.1.5 Graduate Careers Australia**

Graduate Careers Australia (GCA, formerly the Graduate Careers Council) data is important in understanding graduate destinations, where initial (and post initial) teacher education graduates' destinations can be compared with those of graduates of other courses. However, the graduate destinations survey data does need careful interpretation – because, for example, in recent years almost a quarter of initial teacher education graduates (survey respondents) are not working full time when surveyed around four months after completion, but almost all will probably be working fulltime within a few years. In recent years, almost 90% of those working full time when surveyed were working as teachers.

All GCA's annual files are stored at the Australian Social Science Data Archive, those from 1989 in SPSS format. Some data is freely available on the GCA website; detailed published reports and custom tables are available (generally for a cost).

The GCA is also carrying out research into the plans and expectations of university students, and the links between students' university experiences and their employment – the 'University and Beyond' survey. In 2007 around 32,000 responses were received, and responses from Education students were roughly proportional to their representation within total student numbers (GCA 2008, p. 2) - around one in 20.

*Should GCA data be considered for inclusion in a data repository for teacher education? If so, how should it be included, and can it be integrated or linked to with other data in the repository? What about linking to (or information about) GCA data in existing repositories?*

### 5.1.6 Teacher regulatory authority data on registered teachers

Teacher regulatory authorities have been or are being established around the country. This provides an opportunity for the collection of detailed, high quality and accessible data on registered teachers (generally only school teachers at this time). With appropriate common systems and software these regulatory authorities could maintain data on matters such as when and where teaching qualifications were obtained, subject or other specialisations, and current and previous teaching positions, as well as standard demographic data (age and sex). Such common systems would provide benefits for the authorities themselves (for their management, administration and policy development), as well as a very valuable sources of data for school authorities and users of the data repository for teacher education.

If data is collected with classifications comparable with the longitudinal survey particularly rich analysis may be possible (common identification of particular individuals would not be necessary).

*Issues for consideration here include the costs and benefits for regulatory authorities in developing and maintaining such common data systems, and the possibilities of co-ordination of financial or other support to ensure such systems that are mutually valuable for the authorities and the data repository for teacher education.*

Teacher regulatory authorities could also in the future carry out surveys similar to those carried out annually for the Australian Institute of Health and Welfare by the nursing and midwifery regulatory authorities (or state/territory departments of health), and published by the AIHW. The most recent report, *Nursing and midwifery labour force 2005* (AIHW 2008)

provides information on the nursing and midwifery labour force, based primarily on estimates derived from the 2005 Australian Institute of Health and Welfare (AIHW) Nursing and Midwifery Labour Force Census. This census collects information on the demographic and employment characteristics of nurses and midwives who were registered or enrolled in Australia at the time of the survey. It is conducted annually by state and territory health departments, with the questionnaire administered in most jurisdictions by the nursing and midwifery registration boards, in conjunction with the registration renewal process. (p. viii)

All re-registering nurses and midwives are surveyed (it is a census), but participation is voluntary, and the response rate for the 2005 survey was 55%, compared with 77% for the 2001 survey. The AIHW has been criticised for the delay between data collection and publication (two to three years), and some problems related to response rates, administration in some jurisdictions, and other data quality matters. However, the rich and generally good quality data provides detail on demographic characteristics, specialist qualifications, hours and place of work, clinical area and work setting. The published reports also include data from DEEWR on enrolments and completions, and migration data from the Department of Immigration and Citizenship. There are parallels between this annual data collection covering registered and enrolled nurses and the Staff in Australia's Schools survey outlined in Appendix F (McKenzie et al 2008).

*What is the feasibility, and the advantages and disadvantages of a similar survey in the future of all registered teachers? How would surveys administered through regulatory authorities compare with surveys carried out with methodologies similar to that of the SiAS survey (a two stage sample design where schools are selected, then teachers within sampled schools, the selection process aiming for representation of all Australian teachers)? Who should fund and manage any such surveys?*

### **5.1.7 National data on undergraduate applicants, offers and acceptances**

DEEWR is working with tertiary admission centres (TACs) in each state and with universities to develop the National Data Collection for Undergraduate Applicants and Offers. In April 2008, DEEWR reported on 2008 data (and that of some previous years) and provided additional contextual information on applicants and offers for university places (DEEWR 2008). This is the first edition of a new annual report, and includes statistics (national and by state and territory) on number of applicants, number of offers made, number of offers accepted, level of unmet demand, analysis of trends in key fields identified as areas of skill shortage, a review of offer and acceptance rates on key applicant demographics, and information on factors affecting current and future demand.

This report is similar to Universities Australia (formerly the AVCC) 'unmet demand' survey reports published since 2001 (UA 2008, p. 2).

There are limitations in the data on undergraduate applicants and offers from TACs (and thus reported in these DEEWR and UA documents). For 2006 only about 60% of initial teacher education commencements were picked up in the TAC data published in the reports (more recent DEEWR commencements data with which to compare the TAC-derived 2007 or 2008 data is not yet available). This reflects the lack of inclusion of (a) applicants for post-graduate initial teacher education programs (increasing from 21% in 2005 to 25% in 2006, according to DEEWR published data), (b) overseas student applicants (around 5% of commencements), and (c) direct applicants (around 15% of successful domestic, undergraduate initial teacher education applicants in 2006).

From 2010, information on the number of direct applications will be available in the National Data Collection for Undergraduate Applicants and Offers, but those applying for post-graduate initial teacher education courses, and overseas students will still not be included. Even so, it is valuable data - indicating unmet demand and the scope for increases in intakes and how this varies between the states. This would be valuable information for universities, school authorities and others considering the attractiveness of teacher education programs and teaching careers, and priorities to be given to new initiatives and their publicity.

*Some issues include: The availability of this data for the DRTE; its comprehensiveness (would other data need to be sought from TACs?); possibilities for linking with other datasets. What is the quality of this data for initial teacher education (for example, what proportion of enrolments would not be captured in 'acceptances'?) Can this data be integrated with or linked to other data?*

### **5.1.8 ABS Census data**

The most relevant ABS Census data is that for those with teaching qualifications (as their highest qualification), and those in the 'education professionals' occupations. Data for other individuals (all adults, say) may be important for comparative purposes.

Data for those with teaching qualifications (as their highest qualification), whether teaching, in other employment or not in the workforce etc, by age and sex (and state/territory or finer locational classification, and, perhaps income, place of usual resident five years ago, etc) could be useful to include as an indicator of destinations of teacher education graduates, as well as be valuable for planning post-initial teacher education and for a range of purposes related to teacher workforce planning. In fact such data can be the basis of effective methods for

estimating current and future net separation rates from the teaching profession – one of the most difficult but important components of (Preston 2000, pp. 35-36). (Unfortunately the 2006 Census did not seek information on year of qualification - only ‘before 1998’ or ‘1998 or after’ - or place of qualification.)

Not all qualified teachers have their teaching qualification accounted for in the Census (their highest qualification may not be their professional teaching qualification), so parallel data for those working in ‘education professionals’ occupations (where, for example, ‘school teaching’ is further classified according to schooling level and ‘special education teachers’) would also be valuable.

The specification and obtaining of such data would not be a simple matter. It would require carefully specified custom data from ABS, or (for 2001 and 2006 Census data) work by an expert subscriber to ABS Table Builder<sup>3</sup> There would also be licensing costs involved in the use of the data. However, the data obtained would be of potentially very high value.

*Issues to be considered include: What Census data should be included? How can and should it be obtained? What are the costs? Can Census data be integrated with or linked to other data?*

#### **5.1.9 ABS Schools collection data**

The ABS Schools collection (Cat. No. 4221.0) includes high quality data on teacher numbers and FTE, by state and territory, school sector, and, for FTE only, by level of schooling (note that this limitation is a problem for teacher workforce planning and other purposes). This data is obtained through an annual census of school authorities and schools. Combined with initial teacher education completions data, indicators such as ‘training rates’ can be obtained for the states and territories and Australia as a whole. The Schools collection also includes data on school numbers and student enrolment numbers.

*Should any inclusion in the DRTE of Schools collection data be limited to teacher only data, or include some data on student and/or schools (such as data necessary to derive student teacher ratios)?*

#### **5.1.10 Historic teacher education statistics**

Historic teacher education statistics of useful quality are hard to come by. This is partially explained by the official statistics (published by ABS, then by the Commonwealth Department of Education) until the 1990s usually not differentiating between pre-service (initial) and in-service (post-initial) graduate diplomas and BEds. Quality data (if limited by jurisdiction) was collected and published by some of the teacher education reviews of the late 1970s and 1980, and in some Commonwealth authority reports in those decades. High quality data was collected and published in 1989 by the Discipline Review of Teacher Education in

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<sup>3</sup> ‘Table Builder is a product that, for the first time in ABS history, gives users remote access to the complete Census Unit Record file. Table Builder is designed for experienced users of Census data and allows for the extraction and manipulation of an unlimited number of Census tables. Confidentialisation of the data is conducted during delivery of the data. Table Builder allows users to create tables, graphs and thematic maps of Census data.’

<http://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/8b5b19557daa72c1ca2572aa007e4dee!OpenDocument>

Mathematics and Science (Speedy 1989). Important data from these and other historic sources could be included, probably most usefully as Excel spreadsheets.

*What other useful sources of historic teacher education statistics or there that are not noted above?*

#### **5.1.11 Data from other sources, including ongoing collections or research projects**

There are a number of research projects that have, are currently, or will in the future, collect data that might be relevant to a data repository for teacher education. In some cases data could be incorporated in the repository, or links to project websites or to published documents may be appropriate.

Possible data for consideration includes that from the 2006-2007 Staff in Australia's Schools (McKenzie 2008 et al) survey, and any future similar surveys. Such data could be included as selected data or full datasets, or text introductions provided for the data with links or references to reports (or datasets) elsewhere.

Another possible dataset could be selected data from the FIT-Choice project (see Box 2), with links or references to the project website and other project documents.

*What are some potentially useful research projects or other possible data sources? How should they be incorporated? What are any likely costs, copyright or confidentiality issues involved?*

#### **5.1.12 International data sources related to teacher education**

International data on teacher education (and the teaching profession), such as that published by the OECD, could also be included in the data repository for teacher education.

*What is the nature, value and accessibility of international data that may be suitable for the DRTE?*

### **5.2 Detailed information about individual teacher education courses.**

Data on individual courses, and, perhaps, individual units, would be an important component of the data repository for teacher education. Such data would be of value for many purposes, including for course selection by potential students (or sponsors of potential students, such as school authorities in regard to post-initial teacher education).

Data would include identifying information (course name and code, institution and campus at which it is provided), length, structure (including exit points) and modes; the timing, nature and duration of practicum; features of curriculum and pedagogy, facilities/resources and staffing (for secondary teaching, in particular, some of the data may reside with disciplines other than education). Collection of such information may be associated with a future system of national accreditation of teacher education courses. Linked with the longitudinal surveys of student teachers and other datasets, this could provide a richly researchable database that may very usefully inform improvements in teacher education.

*What are some relevant classifications of teacher education programs (or aspects of teacher education such as practicum) and relevant research projects/reports/papers?*

*What are current and future possible/likely classifications and analyses of courses for purposes of external course accreditation/approval?*

### 5.3 Information about academic staff

DEEWR collects data on academic staff according to academic organisational unit (AOU), age, sex, Indigenous status, institution among other matters. The AOU classifications include 'Education' which is usually, but not always, a reasonable match with 'teacher educator' in an education faculty or school. Selected data from DEEWR's annual collection on academic staff could be incorporated in the repository, but first an investigation may be necessary of the data's appropriateness (especially – who is actually included in the Education AOU?).

Information could be collected also from faculties of education. This might include the nature of contracts (such as secondments of specialist school teachers), qualifications/specialisations, and relevant experience outside universities.

In the current situation of difficulties in recruiting both education academics and school principals (and senior educators in other education sectors), when both tend to be drawn from the pool of experienced teachers holding or undertaking higher degrees, some substantial research involving significant new data collections, investigation of existing collections, and integration and analysis of the data may be of great benefit to workforce planning in universities and education sectors outside universities. Existing data collections would include DEEWR staff collection (especially age and qualifications in the Education AOU), and DEEWR data on higher degree students (by age and other characteristics), as well as data from school/employing authorities on their senior staff, and relevant ABS Census data.

*What data, in addition to that collected by DEEWR, would be valuable for faculties of education and others? What are the cost-benefits of collecting data from faculties of education?*

## 6 Funding and management of a data repository for teacher education

When considering the funding, control and management of the data repository for teacher education, priority should be given to ensuring that the repository is independent of particular interests, has integrity, and, of course, appropriate expertise.

It should be ensured that jurisdictional and sectional distinctions of funders do not impede the ultimate quality and effectiveness of the facility. It is possible that the most appropriate funding sources (which will understandably seek some control over mission, objectives, and/or management) will be jurisdictionally distinct. They may have different areas of responsibility, operate in different ways, and be accountable to different authorities (or levels of government). Given the nature of faculties of education and their core mission, those with the greatest interest in a high quality data repository for teacher education are associated with the university sector on the one hand, and with school authorities (and other education providers) on the other. Significant possible funders of the data repository for teacher education, the Higher Education Endowment Fund<sup>4</sup> on the one hand, and governments and authorities responsible for schools, VET and early childhood education on the other hand, are jurisdictionally quite distinct. This issues paper has been drafted on the basis that the focus is on a ‘data repository for *teacher education*’, and thus it would easily come under the general auspices of higher education funding and control. However, a broader focus may be more effective (and more efficient – and thus cost-effective) for Australian education as a whole. This broader focus may include datasets (and their collection) such the Staff in Australia’s Schools survey (McKenzie et al 2008; see also discussion and recommendations in Owen et al 2008, which are outlined in Appendix E).

The management structure and stated mission of the repository will need to take account of (appropriately represent) major funders and their jurisdictions.

Alternatively, the repository could be established and funded under Commonwealth legislation, and have a governing board representative of key interests. Here there would be similarities with Teaching Australia, the Australian Institute of Health and Welfare, and the National Centre for Vocational Education Research (NCVER)<sup>5</sup>, which is a ‘not-for-profit company owned by the federal, state and territory ministers responsible for training’<sup>6</sup>.

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<sup>4</sup> Or the new Education Investment Fund announced by the Australian Government on 13 May 2008, which will cover VET institutions, as well as higher education.

<sup>5</sup> These organisations are being discussed in this section because their structure and funding may be worth considering for both their positive and negative features, and that they might be familiar to readers of this issues paper. Of course their actual functions differ from that of the data repository for teacher education.

<sup>6</sup> According to its website, NCVER is ‘unique in Australia’s education system. It is responsible for collecting, managing, analysing, evaluating and communicating research and statistics about vocational education and training (VET). NCVER’s vision is for policy and practice in vocational education and training to be based on sound evidence. Its mission is to be Australia’s leading provider of quality, independent information relating to vocational education and training to governments, the sector, industry, and the community. A board of eight directors, who represent state, territory, and federal governments, industry, unions, and training authorities, manage NCVER.’ <http://www.ncver.edu.au/aboutncver/who.html>

*What are feasible options for management structures and missions in relation to different focuses of the repository and/ or different mixes of funding sources?*

Funding for a data repository for teacher education (DRTE) could be from one or more on-going or long-term sources, and/or one (or more) on-going sources plus several ad hoc sources. The funding of the basic ‘deep infrastructure’ aspects of the repository will be essential. More discretionary will be funding of other aspects such as any original data collection, and data analysis and reporting with research and policy documents. However, without the latter the former’s value is diminished, just as a bridge is of diminished value if it is not actually used for crossing a river - the value of infrastructure lies not just in its enabling capacity, but in what it actually enables.

Some funding sources may be restricted to (or prefer) *establishment*, and/or *capital* and/or *recurrent* funding – though distinctions between those categories may not be clear, especially for data repositories or other forms of e-infrastructure. Also, there may be very valuable support/advocacy from significant sources, without actual funding.

Funding would need to cover management (governing board or similar, plus internal management, including expert database management), promotion and communications, analysis, publication and dissemination.

*Are there other broad principles and issues for funding and management?*

*Some possible sources of funding and/ or support are discussed below. Please comment on these and any other possible sources.*

## 6.1 Establishment and funding under specific Government legislation

Establishment and funding could come under the EEWR portfolio, paralleling the Australian Government establishment (through specific legislation) and funding of the Australian Institute of Health and Welfare, a statutory authority which receives over \$8.5 million a year in direct government funding, and over \$16 for contracted services and sales. An alternative model is that of NCVER, which is a company jointly owned by federal, state and territory ministers, or Teaching Australia, which is a company owned by the federal minister.

## 6.2 Higher Education Endowment Fund

Details about the Higher Education Endowment Fund (HEEF) and its background are at <http://www.heef.dest.gov.au/>. The HEEF program objectives and principles for recommendations for funding are set out in Box 4.

As a ‘general rule HEEF grants for the 2009 round will be in excess of \$10m’ (HEEF Advisory Board 2008, p. 4), and funded projects are expected to be completed within 5 years (p. 5).

Expressions of interest for the 2009 round must be submitted by 3 July 2008 (p. 8), and applications must be submitted by 30 October 2008 (p. 11).

**Box 4 Higher Education Endowment Fund Program Objectives and Principles (excerpts from HEEF Advisory Board 2008, pp.1-2)**

The Australian Government's objectives for the HEEF are to:

- advance the development of a world-class Australian higher education sector, by providing ongoing support for strategically-focused investments in capital expenditure and research facilities; and
- encourage a culture of philanthropic investment in Australian higher education institutions.

The investments should deliver additional capacity to the higher education sector. Desired outcomes will include:

- enhanced teaching, learning and research in areas of national, international and regional importance;
- increased quality and accessibility of the facilities available for researchers and teachers across the higher education sector;
- advancement of strengths and niche centres of excellence within institutions;
- enhanced critical mass;
- stronger participation in international linkages and collaborations; and
- economic, social and/or environmental benefits to Australia.

. . . . To realise the objectives for the HEEF, the Advisory Board will use the following principles to identify strategically focused investments that can be recommended to the Ministers for funding. For the purpose of the HEEF guidelines the term 'Investment' refers to funded projects which comprise capital expenditure and/or research facilities.

*Expected impacts*

1. Investments will build the teaching, learning and/or research capacity of institutions and individuals and through that the development of a world-class Australian higher education sector which has strength across all disciplines.

*Desired collaboration and co-investment*

2. Collaboration is encouraged where it will more effectively support the advancement of the Australian higher education sector.

3. Internal and external co-investment is encouraged where relevant.

*Required capabilities*

4. Investments should show a strong alignment with the proposing higher education institution's (or institutions') strategic goals and missions.

5. Institutions should have, or show how they will acquire, the research, teaching and learning expertise to ensure the facilities are used to best effect.

6. Institutions should have, or show how they will acquire, the management expertise, the planning and project management skills, and all other components necessary for the investment to be successful.

7. Institutions will demonstrate financial viability and have clear and effective financial arrangements in place for the management of the investment, including expected revenues and expenses.

Some of the issues for the DRTE being considered in this scoping study include

- HEEF funding should be distributed equitably across all disciplines, and is intended to ‘build the teaching, learning and/or research capacity’ (see principle 1). There are around 100,000 teacher education students (initial and post initial), more than ten per cent of all Australian university students. Australian research in education (much of it related to teaching and teacher education) is of very high international standing and national and international impact (for example, the Thompson Scientific Index indicates that Australian education research is very highly ranked internationally and in comparison to other fields of research in Australia; see also Research Evaluation Programme 2000).
- Data repositories of the type envisaged, in terms of their establishment and ongoing maintenance and development, are ‘infrastructure’ (see Appendix D) and can be considered areas of ‘capital expenditure and/or research facilities’.
- ‘Maintenance’ would include the routine loading of data and metadata into the repository ready for access through the repository’s analysis software.
- However, *collection* of original data may be outside the scope of HEEF funding. However it can be argued that content (and thus data collection) is part of e-infrastructure (see Appendix D).
- Similarly, data analysis and preparation of research and policy reports based on the data may be outside the scope of HEEF funding, but an argument can be mounted that they are, at least in part, ‘e-infrastructure’.

### 6.3 COAG, MCEETYA, and/or AESOC

Governments and authorities responsible for schools, early childhood and adult VET have a significant interest in both quality teacher education and in the sort of data that may be available through the data repository for teacher education. Recent reports concerned with the needs for school authorities for better data (Owen et al 2008, and McKenzie et al 2008) have documented a high level of need for a greatly improved and national approach to data collection and management, especially in relation to teacher workforce planning – this is discussed in detail in Appendices E and F. The data repository for teacher education could play a significant part in meeting such a need, and complement (or be linked to) related data collections.

Alternatively, a single data repository which covered a broader collection of datasets concerning the teaching workforce (broadly defined) and its professional education and development could more comprehensively and coherently meet the needs of governments and authorities responsible for schools, early childhood and adult VET, as well as teacher education. This would require higher levels of commitment (funding and management participation) from those governments and authorities.

### 6.4 Department of Education, Employment and Workplace Relations

Funding for the data repository for teacher education could be part of DEEWR’s cross-portfolio responsibilities, especially if appropriate representation is assured from state and territory, university and other stakeholders. Alternatively, DEEWR could oversee a data

repository of wider scope, though that wider scope would need definition and is beyond what is being considered in this issues paper.

Funding for the longitudinal survey of student teachers and other elements of the data repository for teacher education could be provided by DEEWR, paralleling its funding of LSAY (Box 1), and funding for HILDA (box 3) by the Department of Families, Housing, Community services and Indigenous Affairs. The Department of Health and Ageing is funding student and course data collection by councils of deans for several health professions.

*Are there other possible sources of funding and/or support for a data repository for teacher education?*

## **7 Legal and related administrative matters**

A 272 page report by Anne Fitzgerald and Kylie Pappalardo (2007), *Building the infrastructure for data access and reuse in collaborative research: An analysis of the legal context*, provides information about and guidelines for legal and administrative matters concerning data repositories. To summarise the Executive Summary (p. 11)

This Report examines the legal framework within which research data is generated, managed, disseminated and used. It provides an overview of the operation of copyright law, contract and confidentiality laws, as well as a range of legislation - privacy, public records and freedom of information legislation – that is of relevance to research data. The Report considers how these legal rules apply to define rights in research data and regulate the generation, management and sharing of data. The Report also describes and explains current practices and attitudes towards data sharing. A wide array of databases is analysed to ascertain the arrangements currently in place to manage and provide access to research data. Finally, the Report encourages researchers and research organisations to adopt proper management and legal frameworks for research data outputs. It provides practical guidance on the development and implementation of legal frameworks for data management with the objective of ensuring that research data can be accessed and used by other researchers. (Summary provided with the link to the report, ARC Centre for Creative Industries and Innovation website, [http://www.creative.org.au/linkboard/results.chtml?filename\\_num=174635](http://www.creative.org.au/linkboard/results.chtml?filename_num=174635))

The authors, in summarising the key points of their report, note that it

has examined the legal context in which research data is generated, organised, managed, disseminated and used, identifying the key legal issues that must be addressed in developing legal frameworks for the effective management of research data. It emphasises the importance of developing and implementing appropriate legal frameworks to support open access availability and sharing of research data outputs among members of research communities.

This report recommends that researchers involved in e-Research should

- be able to identify the legal rights that exist in relation to data, how and when they arise and how they can be allocated and contractually dealt with among the parties
- adopt data policies and principles as the basis for legal frameworks for data management, access and use
- implement legal frameworks for management of research data (including access to and use of the data), based on an understanding of the operation of relevant laws and regulations
- use practical tools that guide and assist them in the management of research data (such as Data Management Plans and Data Management Toolkits)

- effectively manage data generation and use, so that legal rights, obligations and requirements do not act as an impediment to open access and use of research data. (p. 264, sections 10.04 and 10.05)

Many aspects of the data repository for teacher education have significant legal implications. Some have been referred to in this issues paper. As specific proposals are developed these implications will become clearer. It will be important to keep in mind the recommendations listed above.

*Are there important matters not covered here that should be? Are there other significant issues, references or sources?*

## **8                    Need and support for a data repository for teacher education**

This issues paper has canvassed a range of matters concerned with the need and support for, and feasibility and specifications of a national data repository for teacher education with systematically managed, accessible and usable data.

*Considering the organisations and networks with which you are associated, and your own particular requirements, how would you describe the need and support for a data repository for teacher education? Or alternatives?*

Thank you

We look forward to receiving your responses to this issues paper.

## Appendix A Definitions and abbreviations

<b>ACDE</b>	Australian Council of Deans of Education, the peak association of the deans of faculties of education and heads of schools of education in Australian universities and other higher education institutions
<b>ASSDA</b>	Australian Social Science Data Archive
<b>Data</b>	‘Any information that can be stored in digital form’ (Fitzgerald & Pappalardo 2007, p. 19). Also included as ‘data’ are numerical projections or estimates of future values (such as expected completions of initial teacher education courses for future years).
<b>Datasets</b>	‘Compiled collections of data, which may be collected from diverse sources and be in different formats’ (Fitzgerald & Pappalardo 2007, p. 21)
<b>Database</b>	(or ‘ <b>data archive</b> ’ or ‘ <b>repository</b> ’) ‘A collection of data and datasets, often compiled from a range of sources and usually organised to permit data to be readily retrieved, managed and updated. Typically databases involve software programs which enable the data to be collected, copied, stored, retrieved and distributed.’ (Fitzgerald & Pappalardo 2007, p. 22)
<b>Data enclave</b>	A controlled, secure database or area within a database (environment) in which only eligible persons may obtain access to the data. The data may be restricted for the general public ‘because of, for example, confidentiality obligations, third party licensing agreements or national security obligations’. (Fitzgerald & Pappalardo 2007, p. 22)
<b>DEEWR</b>	Australian Government Department of Education, Employment and Workplace Relations.
<b>DRTE</b>	Data repository for teacher education; the abbreviation is used for convenience in this paper
<b>e-infrastructure</b>	(or ‘ <b>cyberinfrastructure</b> ’) In Australia the UK and European terminology of ‘e-infrastructure’ is most common. ‘Cyberinfrastructure’ tends to be used in the USA. In this project ‘e-infrastructure’ is used. The data repository for teacher education being considered in this scoping study is a potentially valuable element of Australian (and international) e-infrastructure. E-infrastructure is discussed in detail in section 3.
<b>GCA</b>	Graduate Careers Australia, formerly the Graduate Careers Council ( <b>GCC</b> )
<b>Initial teacher education</b>	Pre-service professional education for those preparing to teach in schools, early childhood settings, VET and other areas of education; initial teacher education programs may be at undergraduate or graduate levels; ‘post-initial’ or ‘in-service’ teacher education programs are for qualified teachers (or equivalent).
<b>UA</b>	Universities Australia, formerly the Australian Vice-Chancellors’ Committee ( <b>AVCC</b> )

*Are there other terms that should be included here? Are there better definitions?*

## Appendix B Project description

Version 1.1 March 2008

### Background

The Australian Council of Deans of Education (ACDE) believes that an effective national data repository for teacher education will enhance the quality of teacher education and the future development of the teaching profession.

The Australian Learning and Teaching Council (ALTC) has provided funds through its discipline-based initiatives scheme for the ACDE to carry out a scoping study to investigate the need and support for, and feasibility and specifications of such a national data repository with systematically managed, accessible and usable data. The study actively engages stakeholders in teacher education, researchers and experts in data management.

The context is of fast-evolving national and international developments in concepts and technologies of infrastructure for e-research (or 'cyberinfrastructure'), and a recognition of the importance of effective management of data - covering collection, generation, storage, organisation, use, interpretation, access and long term archiving and preservation, and, in each aspect, links and consistency between different data repositories.

### Rationale

The ultimate goal is for a greatly enhanced research capacity to

- understand and evaluate teacher education
- make effective decisions for its improvement
- be innovative and responsive to developments external and internal to the field
- recognise and share a diverse range of good practices both within and beyond Australia
- meet the complex requirements for the teaching profession over coming decades.

The field of teacher education does not have an adequate Australian evidentiary basis upon which to make and justify decisions about the structure, content and quality of courses, and struggles to meet many legitimate requests for data from external bodies. Yet there is a great deal of data and other information collected about teacher education on both a systematic and ad hoc basis.

The human and financial resources currently expended on responding to multiple ad hoc, often duplicating, often idiosyncratic requests for data could be better deployed on quality improvement. The DEEWR higher education statistics collection is a major systematic collection, yet it does not cover some matters crucial for informing policy for teacher education and for teacher workforce planning. There is also a lack of appropriate and accessible longitudinal data that can be used to research teacher education pedagogy and practice and evaluate different models of teacher education, including approaches to clinical experience and entry requirements. As a result, many of the inquiries into teacher education in the past thirty years have had to base their conclusions largely on collective opinion and

assertion rather than on solid evidence about how features of teacher education relate to the quality and sustainability of the teaching profession.

A national data repository could also provide support for research projects that might be funded through a new Educational Research Fund, as recommended by the February 2007 House of Representatives report on the inquiry into teacher education, *Top of the Class*<sup>7</sup>. Other recommendations of that inquiry would also be facilitated by an effective data repository for teacher education.

### Project objectives and outcomes

The major, tangible outcome of the project will be the final report on the need and support for, and feasibility and specifications of a national data repository for teacher education. This will describe, evaluate and make recommendations on aspects and options for a data repository in sufficient detail for decision-making on practical implementation to be possible. The project will aim for recommendations that are feasible in the short term without constraining more ambitious developments in the longer term.

In addition, the project will aim to develop among stakeholders, researchers and more widely an understanding of and support for the concept of a data repository for teacher education. It will be important that a repository is widely used if and when it is established.

‘Sustainability’ will be a key objective – in the sense of the outcomes being of *long term* value, and of being of *broad* value across disciplines and areas by providing a model that others may learn from as well as providing a resource that can be widely used, including to add value to other existing and future data repositories through links and common elements.

### Possible features of a data repository for teacher education

The ACDE envisages the following features of a repository

- the data in the repository (drawn from new and existing collections) provides the information necessary to support high quality research and practice and inform important decision-making in teacher education and related areas
- new collections of data are appropriately compatible with existing data collections (such as DEEWR higher education students and staff collections)
- the data repository has a research oriented data model
- data is collected and maintained over the long term
- data collection is not unnecessarily burdensome for university staff or others
- data is collected and organised according to appropriate data standards
- data is available in a timely manner
- appropriate software ensures that the data is readily and efficiently accessible in a usable and user-friendly form, and can respond to complex queries and immediately provide tables, graphs or maps

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<sup>7</sup> House of Representatives Standing Committee on Education and Vocational Training 2007, *Top of the Class: Report on the inquiry into teacher education*, The Parliament of the Commonwealth of Australia, Canberra, <http://www.aph.gov.au/house/committee/evt/teachereduc/report.htm>

- data is readily available to all deans of education, education researchers and to others (including the public) on an agreed basis – this indicates that a web-based system should be considered.

Possible new data collections include

- longitudinal surveys following cohorts of student teachers including beyond their pre-service experience
- detailed information about individual teacher education courses
- information about staff not covered by the DEST collection
- student enrolment data by teaching specialisation, and current/previous year commencements/completions (by course or course type).

### Project procedures

There will be consultation through early 2008 with deans of education, education researchers, teacher educators, those who seek data from faculties/schools of education (especially school authorities), the teaching profession, others who have an interest in data related to teacher education, data management experts, and others. Consultations will be face-to-face, electronic and by telephone.

There will be an occasional email newsletter providing up-to-date information on progress and seeking responses on specific matters. There will be a project page on the ACDE website (<http://www.acde.edu.au>).

There will be internal formative evaluation at appropriate stages during the project.

The project will be completed in mid 2008.

### Reference Group

The Reference Group includes individuals representing diverse stakeholder groups and with extensive relevant expertise and experience. The Reference Group will meet at least twice via teleconference.

### Project personnel

The project is being directed by Professor Sue Willis, ACDE President. Working on the project are researcher, Barbara Preston, and consultants with high level database and/or data software expertise will be involved.

## **Appendix C Data requirements of a teacher workforce projections model**

This appendix discusses data used in possible future modelling of school teacher supply and demand projections that could be used to inform initial teacher education intakes and other research topics and policy areas of concern to teacher educators, school authorities, and teacher professional regulatory and representative organisations. The model is based on that used in Preston 2000, with additional inputs such as net migration. Similar models would be possible for early childhood (non-school) teachers and VET teachers, though key areas of uncertainty are more significant.

An illustration of such a model is provided in Figure 1 (p. 14).

In the areas below concerned with teachers and student teachers, additional information on specialisations, especially secondary subject specialisations would be very desirable (Owen et al. 2008). While collection of such data for student teachers (completions) is quite feasible for the data repository for teacher education (see Appendix E, and section 5.1.3 on a longitudinal survey of student teachers), it is not currently readily available.

The focus here is on options for including the relevant data within the data repository for teacher education (DRTE), providing links to external data sources, or providing information about external data sources.

### **School student enrolment projections, primary and secondary, by state and territory, for five to ten years into the future**

DEEWR and state/territory authorities prepare primary and secondary school student enrolment projections that are generally accessible on request. As these are irregularly updated and for some purposes projections from different sources would be preferable, and as they are not directly related to teacher education, it may not be appropriate to maintain any actual student enrolment projections in the DRTE. However, information on access to such information would be appropriate. (A more refined projections model may require disaggregation of government and nongovernment school enrolment projections.)

### **Student-teacher ratios, primary and secondary, by state and territory (with information to assist estimates for future years)**

The student-teacher FTE ratios data is published annually by ABS as part of the *Schools* (Cat. No. 4221.0) collection. This simple, regularly published data could be placed in the DRTE.

### **Persons to full-time equivalent ratios for teachers, primary and secondary, by state and territory (with information to assist estimates for future years)**

This data is not readily available, though it is important for a range of teacher workforce research and policy areas. The ABS *Schools* (Cat. No. 4221.0) collection does not publish the data disaggregated by primary and secondary levels, but just by school sector and states and territories. However, unpublished raw data collected by ABS from school authorities (and individual independent schools) would include the necessary information. Alternatively, school authorities would have the data in human relations management systems for teachers for whom they are responsible, and may make such data available. However, collection from independent schools is likely to be difficult outside the ABS collection process.

**Estimated future net separation rates of teachers (FTE)**

There are a number of methods for estimating future net separation rates of teachers. All are problematic to some degree – for example an individual school authority may maintain good data on individuals who move in and out of teaching in their jurisdiction, but data is nonexistent (or poor) regarding movements between jurisdictions (including between individual independent schools).

ABS Census data provides a basis for a method which incorporates data on the population with teaching qualifications, whether teaching or not, by age, combined with teacher workforce age projections and projected total teacher workforce numbers. Refinements of this method include incorporating FTE to persons ratios by age, and age of new entrants (particularly, initial teacher education graduates). This Census data could be placed in the DRTE as it becomes available every five years.

**Net overseas migration (with information for estimates for future years)**

Some information, including by occupation (such as secondary school teacher) by category of long term or permanent movement, by country of origin or destination, is available from the Department of Immigration and Citizenship (DIAC) on request (for very recent data), or in ad hoc published reports. Relevant data (such as that in Birrell et al, 2006, p. 67) could be deposited in the DRTE, and be available for a range of purposes, including planning future initial and post-initial teacher education course for overseas trained teachers, as well as general teacher workforce planning

The ABS Census provides data on individuals' locations five years earlier (at the previous Census), as well as detailed information on occupation, qualifications, and so on. *ABS Migration, Australia* (Cat. No. 3412.0) provides information on overseas migration by age, sex and country of birth, but not qualification or occupation.

Nationally consistent data on migration of teachers could become available in the future in collections made and managed by teacher regulatory authorities.

**Net interstate migration of qualified teachers (with information for estimates of availability for actual teaching vacancies and for estimates for future years)**

The ABS Census provides data on individuals' locations five years earlier (at the previous Census), as well as detailed information on occupation, qualifications, and so on. *ABS Migration, Australia* (Cat. No. 3412.0) provides information on interstate migration by age, sex and country of birth, but not qualification or occupation.

Nationally consistent data on interstate migration of teachers could become available in the future in collections made and managed by teacher regulatory authorities.

**Current shortage or surplus of teachers (with information for estimates of availability for actual teaching vacancies and for estimates for future years)**

This is very difficult to measure, and the appropriate measures are matters of debate. There tend always to be surpluses in certain localities and/or teaching specialisations co-existing with shortages in other localities and teaching specialisations. This is probably best estimated as required for a particular project, in consultation with school authorities and others (such as principals associations). Baseline (current or recent year) shortages (and surpluses) are important to estimate because they do, in part, get carried over from year to year.

## Appendix D Data repository for teacher education as infrastructure

The data repository for teacher education with which this scoping study is concerned should be viewed as *infrastructure*, an element of Australian (and international) e-infrastructure (or cyberinfrastructure, to use the USA term).

On his paper, ‘The new Holy Grail: an Australian e-infrastructure’, T. Alex Reid (2007) discusses the features of infrastructure in general and e-infrastructure in particular. Resources or facilities that can be considered infrastructure

- are shared in some way – they are generally a ‘public good’
- are on-going, not ad hoc, and are usually developed and modified incrementally and smoothly
- have a degree of invisibility – they are taken for granted, and are assumed to be there for use as required and can be relied on
- comply with relevant standards, are not idiosyncratic
- are accessible and relatively simple to use
- are available free or at low cost so that any cost of use is not a significant impediment to use
- appear seamless – elements are integrated (p. 2).

Infrastructure *enables* significant activities such as communication, travel and transport. Its value lies in its enabling capability. Similarly, the value of e-infrastructure (or cyberinfrastructure) lies in the research, communication, management and so on that it enables.

Reid cites elements and features of e-infrastructure (in addition to the above). Drawing from the work of NCRIS, he notes the following (inter alia)

- ‘data storage management, access, discovery and curation’
- high performance computing (software and hardware)
- support services to assist researchers (and other users) in effectively making full use of the infrastructure (p. 10).

He comments that ‘one area that does seem to be missing from the NCRIS remit is that of developing, building or collecting content’ (though content has been part of other e-infrastructure-related initiatives) (p. 10). The collection and structuring of content is a significant component of the data repository for teacher education being considered in this scoping study.

Fitzgerald and Pappalardo (2007) emphasise the importance of understanding both data management and the legal framework as part of e-infrastructure.

Regarding data management, they note that new collaborative research platforms have been made possible by advances in information and communications technologies, but that they

require active and professional management of the processes by which data is generated, organised, evaluated and disseminated. The importance of professional management of

research data and information has consistently been identified as central to data and information infrastructures. (p. 8)

Regarding the legal framework they note that

It has become increasingly apparent that to achieve seamless access to data it is necessary not only to adopt appropriate technical standards, practices and architecture, but also to develop legal frameworks that facilitate access to and use of research data, whether on an inter-organisational basis or across national borders. The benefits that may potentially be gained through advances in information and communications technologies will not be achieved solely by engineering but will result from a combination of social, legal and technical factors. (p. 9)

Matters concerned with the legal framework of e-infrastructure such as the data repository for teacher education are discussed in section 8.

The characteristics of e-infrastructure noted here should be kept in mind as the features of the data repository for teacher education are being considered and recommendations developed.

## Appendix E Student teacher specialisations data

Data on secondary initial teacher education completions (actual and expected) by teaching area is frequently sought from education faculties by school authorities and others. If this area is to become a dataset within the data repository for teacher education, an agreed set of classifications and guidance for collection will need to be developed. While secondary specialisations are the category most frequently sought, data collection including other specialisations would ensure a consistent, comprehensive and coherent dataset.

### Draft guidance notes

Each student teacher should be fully accounted for but not double-counted. In most cases secondary student teachers will be preparing to become qualified to teach in two areas (usually a major and a minor teaching area). Therefore students undertaking two specialisations should be counted as 0.5 in each area. If a student's teaching areas are all in one of the listed areas (such as physics and chemistry, both in 'Science', or history and geography, both in 'Social sciences'), each should be counted to a total of 1.0. If a student is undertaking specialisations in one secondary teaching area and one non-secondary area (such as non-school adult VET), the secondary specialisation should be counted at 0.5 (and the adult VET where appropriate also at 0.5). Thus the sum of completions for all secondary specialisations should be the same as the total FTE for all secondary completions.

(The list of specialisations is broadly consistent with the Australian Standard Classification of Education for teacher education, with sub-classifications and additions, and excluding 'nursing education teacher training'. The list of secondary specialisations is based on a recent such data collection exercise in one state.)

### Early childhood (total)

(non-school settings only)	(non-school and school)	(school only)
0-3 years	0-8 years	5-8 years
0-5 years	3-8 years	

### Primary (total)

Primary special education	Other primary specialisations?
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### Middle school (total)

### Secondary (total)

Art	IT	Social Sciences & Environment
Business	LOTE (please specify)	Special education
Career Education	Mathematics	TESOL
Design and Technology	Music	VET (in schools)
Drama	Physical & Health Education	Other (please specify)
English	Science	
Home Economics	School psychology	

### Adult VET (total)

### Higher Education (total)

### Other (such as Teacher Librarianship or Adult TESOL)? (total)

*Please provide suggested amendments to these guidance notes and the specialisation classifications (for example, should history be separately classified?).*

*Should post-initial teacher education in particular specialisations (special education, teacher librarianship, Indigenous education, educational leadership, and so on) be also included?*

## Appendix F Staff in Australia's Schools: Teacher workforce planning data needs

The Staff in Australia's Schools project was commissioned by DEEWR in June 2006, and conducted by the Australian Council for Educational research and the Australian College of Educators. The two reports of the project (Owen, Kos & McKenzie 2008, and McKenzie et al 2008) were published in January 2008. Those reports will be outlined in turn.

*Teacher Workforce Data and Planning Processes in Australia* (Owen, Kos & McKenzie 2008) is based on consultations with a wide range of organisations and individuals in all states and territories in 2006, and a review of Australian and international reports and other literature. It discusses

- the current availability of research and data on Australian teacher and school leader characteristics
- current processes and data used for school teacher and leader workforce planning;
- approaches to teacher workforce planning and data taken in international organisations and other countries
- approaches to workforce planning and data taken in other professions in Australia
- recommendations on longer-term national collaborative approaches to obtain data to support Australian teacher and school leader workforce planning. (p. 14)

The report is detailed, and much is of relevance to this scoping study for a data repository for teacher education. One theme is the lack of data on teaching specialisations in many collections (from diverse sources, and on student teachers, beginning teachers, other current teachers, qualified teachers not currently teaching, and immigrant and emigrant teachers). The lack of consistency in definitions and other features between collections, and the limited scope of some collections were also commented on.

The recommendations in the report are 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. (pp. 9-10)

The report authors conclude that

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. (p. 10)

These conclusions, with a sharper focus on teacher education (initial and post-initial), are relevant to this scoping study for a data repository for teacher education.

***Staff in Australia's Schools 2007*** (McKenzie et al 2008) outlines the results of the Staff in Australia's Schools survey of the four populations of Australian primary teachers, secondary teachers, primary leaders and secondary leaders ('leaders' were defined as those in principal and deputy or vice principal roles or equivalent).

The survey arose out of concerns expressed in Australian and international reports about inadequacy of data regarding matters such as the nature and severity of teacher shortages,

out-of-field teaching, teacher attrition and retention, reasons for entry and leaving, and the potential supply of graduates, entrants from other careers, or re-entrants to teaching (pp. 1-2). The survey updated and extended the 1999 survey of teachers in Australian schools carried out by the Australian College of Educators (then the Australian College of Education), which followed earlier surveys in 1963, 1979 and 1989 (p. 2).

The surveys were administered online, and covered the following topics for primary and secondary teachers

- basic demographics (including age, sex, country of birth and indigenous status)
- qualifications and current study
- motivation for becoming a teacher
- current teaching position (including basis and length of employment, levels and 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).

In addition, early career teachers were 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
- views on strategies to enhance attracting and retaining teachers.

The primary and secondary leaders survey covered

- basic demographics (including age, sex, country of birth and indigenous status)
- qualifications and current study
- 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.

In addition the following topics were covered in items completed by school principals only

- school staffing (including areas of decision-making authority, salary structures, vacancies, retention, and attrition)
- preparedness of recent graduates

- views on attracting and retaining staff. (pp. 4-5)

The teacher samples were intended to be representative of primary and secondary teachers in all states and territories and sectors. A two-stage cluster design was used to determine the sample, with schools first selected, then a fixed number of teachers within each school and the principal and deputy/vice principal invited to take part (see p. 5 of information about sample selection). The final response rates were lower than intended: 30% for primary teacher, 33% for secondary teachers, 35% for primary leaders, and 37% for secondary leaders (pp. 9-10). Non-response bias was discussed and investigated (pp. 14-15; Appendix 4, section A4). The report does not disaggregate results at the state/territory level because of the greater variability of response rates at that level.

The report includes more than 100 pages of tables and text on survey results, providing a very rich source of data and analysis, much of which is relevant to teacher education (initial and post-initial).

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