ACER SUBMISSION TO THE PRODUCTIVITY COMMISSION INQUIRY INTO A NATIONAL EDUCATION EVIDENCE BASE

Information Required to Provide a Comprehensive Evidence Base

ACER believes that a comprehensive education evidence base can provide useful data to inform education policy development. An education evidence base can serve two major needs in Australian education: provision of data on students, schools and teachers to assist in research; and provision of a compilation of significant research findings on education. Of course, such an evidence base cannot provide all of the data required to understand the relationships that influence educational outcomes. Carefully designed research studies are important to understand these relationships.

There are many levels of data that can be used to provide a comprehensive evidence base in education. Moving from the lowest level of aggregation to the highest, there are student data, school data, jurisdictional data and national data, with other groupings, such as school sectors and regions within jurisdictions. While it is possible in some instances to aggregate from the student level to the national level, each level has its own characteristics that require more information than can be gained from aggregation alone. For example, education policies and practices vary across jurisdictions, and this variation assists in understanding jurisdictional differences; population composition and distribution influence policies and priorities, which in turn influence student outcomes. A national education evidence base should include data for each level above the student level for at least the school and jurisdiction level, and not rely on aggregations of the student data alone.

A national student database, such as the National Pupil Database (NPD) that has been established in England for state schools, is used mainly for administrative purposes. It is updated each year upon enrolment and for the school census. This includes data on gender and ethnicity; whether the student is 'in care' or 'looked after'; whether the student receives additional educational support or free school meals; and information on language background and proficiency in English. Separate tables in the database contain results on national tests and special educational services provided. Some of these data can change each year: a student may no longer be 'in care'; support arrangements change; English proficiency increases. This information is important, and the history is maintained.

There would be a similar challenge for a national education evidence base in Australia. Here, information on student characteristics currently identified in collections limits our ability to understand their influence in that they are based on point in time collections: a student may be identified as Indigenous for NAPLAN in Year 5 but not in Year 3; a student may be absent for 50 days in Year 9 but may have attended every day in previous years; a student may attend a school in a remote location until Year 6 then move to a metropolitan school for secondary education. Research that examines relationships among these items—Indigenous status, absenteeism, geographic location—and student achievement is compromised if it relies on contemporaneous data alone. A national education evidence base that captures aspects of a student's history would provide opportunities to explore these relationships in greater detail.

It is important to ensure that the achievement data contained in the database are based on reliable measures and are national. The NPD in England includes only results reported on national tests and

for each key stage. For Australia, NAPLAN is the only national assessment available at present, and it is administered to almost all students in Years 3, 5, 7 and 9. As such, NAPLAN data would be appropriate for inclusion in an Australian national database. NAPLAN scores are reported on a single vertical scale for each assessed domain, which provides a basis for estimating development in each domain. At present, NAPLAN assesses only literacy and numeracy; other areas of the curriculum are not assessed.

Another item of achievement currently available that could be considered a national 'measure' is the Australian Tertiary Admission Rank (ATAR), for those students who receive one.

In addition to achievement data from national assessments, the national education evidence base may include information on student attendance. These data are already collected by schools and reported to authorities and systems. Similarly, behaviour data could be included, although there is likely to be variability between schools, systems and jurisdictions in what is considered as a reportable behaviour; privacy issues may preclude the inclusion of these data.

Some information would not be appropriate for the national database. This includes reporting that is based on teacher judgements. There is too much variability in teachers' judgements of individual students' achievement levels, so that the inclusion of such a measure in the national database would be inappropriate.

Other data, collected within some jurisdictions, may not be appropriate for inclusion in a national education evidence base because they are based on different instruments. For example, surveys of students' attitudes to school or interest in science subjects, could be linked with data in the national education evidence base to assist in understanding relationships, although not be included in the national education evidence base itself unless collected in a nationally consistent way. The ability to link data from a national education evidence base to other databases is important to make research into relationships possible while keeping the size of the education database manageable. Such linkage would require unique identifiers, as well as agreed protocols regarding access, privacy and usage. In addition, the national education evidence base should be designed so that data collected in sample surveys, for example, could be linked to data previously collected about students and schools, thus reducing the burden on respondents.

An important component of the national education evidence base would be data on schools. The current version of *My School* is an excellent example. It contains information on, for example, school enrolments, resources and attendance. The purpose of *My School* is to provide information to parents; that information is based on official data provided by various authorities.

Additional Information for a National Educational Evidence Base

Additional data should be limited to what can be collected reasonably and accurately, and with respect for student and parent privacy. It is not necessary to incorporate into a national educational evidence base data already available in other databases, such as data on health and wellbeing. It would be more efficient and economical to ensure that linkage, rather than duplication, is possible.

Additional measures that could be considered but are not yet available are measures of 'twenty-first century skills'. These are skills that go beyond those currently measured in NAPLAN, allowing young people to manage the demands created by new technologies and changes in society (including workplaces). A national education evidence base could help in monitoring these skills to ensure that all Australian students learn to participate fully in society.

ACER supports the suggestion for a collection of data on participation in early childhood education and care. It may be more efficient, however, for such a collection to be considered a separate collection that would allow linkage to a school education database. Similarly, data on non-school education and training—in vocational education and training, higher education, or other qualification and non-qualification programs—may be more efficiently managed in a separate collection with links to a school education database.

At present, there is no national assessment of student achievement in Year 1. It is important to monitor student outcomes early using valid and reliable instruments, as early intervention can reduce problems later in a student's school career. When a national measure is available, it can provide much needed data for a national educational evidence base.

Monitoring enrolments in schools subjects is an important practice, as it can assist in managing the teacher workforce as well as directing incentives for study in particular areas. There is currently concern in Australia and other countries that fewer students are enrolling in science, technology, engineering and mathematics (STEM), because these subjects are essential in the twenty-first century. All jurisdictions currently record student enrolments for the senior secondary certificate through their boards of studies and these data are provided to the Australian Government Department of Education and Training, which maintains a national database of enrolment numbers in each subject organised in eight key learning areas. Junior secondary enrolments in learning areas tend to be recorded within the school only, with some jurisdictions collecting information from government schools. ACER would support any proposal to develop a collection of subject enrolments in Years 7–10 across Australia and to incorporate that collection in a national educational evidence base.

Role of Technology

Increased use of technology could benefit data collection. It could reduce time required for data capture and, in many cases, increase data quality. However, it is still necessary to ensure that data are entered accurately, to conduct checks on the data to ensure quality and to scale the responses to provide summary statistics for student achievement.

There remain problems of technological capability in schools: older metropolitan schools may not be as technologically capable as other schools, and they may experience similar difficulties to rural and remote schools. Some regions of Australia, urban and rural, do not have access to the national broadband network; some schools do not have adequate technology support; some schools have older technology equipment that cannot handle modern demands. Schools must be able to access data on their students, as well as provide data to the national education evidence base, and it is necessary to ensure that the technology can support schools to do so.

For users of a national education evidence base, it would be important for access to be available regardless of location. The issues paper cites access issues in relation to some of the databases held by the Australian Bureau of Statistics. There could be similar issues with a national education evidence base.

Costs and Benefits of Options

The costs of maintaining a national educational evidence base must not fall unduly on schools and other education providers. As we have suggested above, the information contained in a national educational evidence base should be basic information on students and data available on national population measures. As NAPLAN is a population measure collected annually from students in Years

3, 5, 7 and 9, it can be matched to the student database. This process may require verification from schools, but it does not require schools to manually enter data.

Other data that may be entered by schools can include attendance or changes of residence. This type of information would be maintained by schools regardless of whether it would be included in a national education evidence base, so the cost to schools would be negligible.

There are administrative benefits of a national education evidence base, in that it would allow for the easier enrolment of students and maintenance and rollover of student data, with the caveats surrounding technology that we noted above. In addition, student records must remain secure and access limited.

For researchers, a national education evidence base that records changes in a student's status, would provide richer data to understand student background. We noted earlier that many studies use student information collected at the time of an assessment, but that information may not reflect earlier experiences. The earlier information may have had a greater influence on the student's achievement on a particular assessment; a national education evidence base would contain data that would help to explain such differences.

Researchers may also benefit from using a national education evidence base by reducing some of the background information collected during their research.

Use of Evidence to Improve Outcomes

The most valuable use of a national education evidence base would be the ability to monitor 'achievement gaps' in Australian education, and to provide data for deeper understanding of those gaps. The current NAPLAN national reports provide summary statistics by sex, Indigenous status, geographic location, language background, parent education and parent occupation. There are some summaries that incorporate two of these factors, such as sex and jurisdiction, but there is no further analytical modelling. While it is important to report differences, policies to improve student outcomes can be derived from further analyses, especially for students from groups identified as achieving lower on achievement measures.

A separate research database, similar to the What Works Clearinghouse (WWC) in the US, is important to assist teachers to improve student outcomes (http://ies.ed.gov/ncee/wwc/). The WWC is a part of the Institute of Education Sciences within the US Department of Education. It provides practice guides, intervention reports, single study reviews and quick reviews 'to provide educators with the information they need to make evidence-based decisions'. There are currently more than 11,000 reports and reviews in the Clearinghouse, based on scientific evidence.

A similar evidence base comprising scientific evidence is important to improve outcomes in Australian education. In this context, the 'Evidence for Learning' initiative of Social Ventures Australia (http://evidenceforlearning.org.au/) to make evidence about what works and why more widely available to schools and education systems is a commendable development.