



Productivity Commission Inquiry into the National Education Evidence Base

Submission from the Faculty of Education, Queensland University of Technology

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General comments

The Faculty of Education strongly endorses the need for, and importance of, a comprehensive, consistent and robust national education evidence base to support informed policy decision-making and public investment. Ultimately, the best outcomes for children, families and the nation will be achieved through evidence-based policy making. International bodies such as the Organization for Economic Cooperation and Development (OECD) (2001; 2006; 2012) and the United Nations Children’s Fund (UNICEF) (2008; 2014) affirm the importance of coherent bodies of empirical evidence in driving government and non-government priorities for Early Childhood Education and Care (ECEC) and schooling. Constructing and utilizing a national education evidence base are considered here in relation to its affordances for optimizing children’s life chances and life outcomes.



Asserting the value of data sharing and harmonization of data sets (including longitudinal and administrative data), Australian researcher Zubrick (2016) notes the commitment of governments to optimize children’s development and learning and to understand “the processes that lead to typically good outcomes with reduced burdens and greater capabilities across the life course” (p. 217). We commend, therefore, the Australian Government’s commitment to work with states and territories and all relevant stakeholders to identify current gaps in our education evidence-base, priorities for future data collection and research, and ways in which to strengthen and link current data holdings.

Our submission is informed by our commitment to the design, use and dissemination of bodies of evidence in tackling real world challenges and driving education policy and practice. We speak from a position of national and international authority in education research. Our submission is, therefore, well placed to talk to the spectrum of matters spanning (i) Early Childhood Education and Care and (2) School education.

In support of this important endeavour, we offer the following general observations and comments:

- We believe that our national education evidence base should adopt a life course and ecological approach and needs to span critical transitions as children move from home to ECEC to school to tertiary education and to work.
- The design and implementation of research that seeks to build the evidence-base need to be underpinned by an expansive, rather than narrow, understanding of the purpose of education. They should be inclusive of cognitive and non-cognitive outcomes, and ultimately provide a balanced focus on achieving educational, social and economic goals.
- While focusing on ‘education’, a national evidence base should enable consideration of the broad range of factors and contexts that impact on the learning and educational outcomes of children and young people.



- Recognising the need for a staged approach, as a starting point, we believe that the immediate focus should be birth to 18 years and include formal ECEC services prior to school (i.e., those services that are regulated and receive public funding) as well as the compulsory years of schooling.
- We acknowledge and value current work and investment in key datasets such as the Australian Early Development Census (AEDC) and the ECEC Workforce Census. There is a need, however, for an ongoing funding commitment to these and other key datasets (current and/or planned).
- We recognise the challenge of working within a federated system, and, in particular, jurisdictional differences in service delivery and data collection and commend the progress that has been made towards development of a national education data dictionary. Notwithstanding this, there is a critical need to progress this work, prioritizing key data (e.g., child attendance in ECEC and school contexts).
- To enable data linkage, there is also a critical need to determine the unit(s) of measurement, thinking about how different data sets might 'speak' to each other. In ECEC, for example, there are service level data sets (e.g., from the Australian Children's Education and Care Quality Authority) and community level data (AEDC), but no capacity to track the health, development, learning and wellbeing of individual children in these services and communities.
- To enable monitoring of child outcomes, over time and different contexts, there is a need for some form of individual child identifier.
- In school education, the different presentations of the Australian Bureau of Statistics (ABS) data collections and the Australian Curriculum Assessment and Reporting Authority (ACARA) in the My School website (ACARA, 2016a) data prevent linking of the two data sets without considerable effort in transcribing and re-entering data. For example, it is impossible to link retention rates from Year 7 to 12 (presented by the ABS geographically) to students' socio-economic status (presented by ACARA by individual school). The state and territory governments also collect data about schools



and students in their jurisdictions, but this information lacks national consistency and is not made readily available to researchers.

- We believe that data need to be available in a timely manner (real time where possible), accessible and in a useable format, and able to be localized. Again, we point to the AEDC, as a good starting point for this approach to data sharing.
- Collecting data and making it available will not provide the evidence-base in itself. There is a related need for prioritizing and funding of programs of research and carefully designed data analytic approaches to inform future education provision, as well as investment in researcher training to work in data analytics with large and complex data sets.
- Strong research intensive Faculties of Education, such as QUT, are a rich resource and partner for state and national governments and their relevant Departments to provide analysis and advice on national and state data sets and education policy. We would welcome the opportunity to work even more closely than we currently do with the Federal and State authorities on issues of national education importance.

Scope of the Inquiry

To inform ongoing investment and sector development, our national education evidence base needs to span birth to 18 years and the full array of education contexts. Education begins at birth and relevant data are and should be collected across the full range of contexts in which children and young people learn.. A social justice and participation agenda underpins the inclusion of all children in a national evidence base. ECEC, as the foundation of a modern education system, sits within the Commonwealth Department of Education and Training and should be included in a national education evidence base. Over one million children currently attend ECEC services such as centre-based long day care, preschool/kindergarten, family day care or outside school hours care and projected public investment is \$40 billion over the next four years (Early Childhood Australia, 2016).



International bodies such as the Organization for Economic Cooperation and Development (OECD; 2001; 2006; 2012) and the United Nations Children’s Fund (UNICEF; 2008; 2014) lend weight to the arguments for a national evidence base to drive government and non-government priorities for ECEC and school education. In relation to ECEC, international policy reviews (OECD, 2006; 2012, 2015) and a growing body of research, are catalysts for Australia’s ambition to implement a range of ECEC reforms aimed at increasing access to higher quality ECEC services and enhancing educational outcomes. This is particularly important when it comes to the design and implementation of policies and programs to address disadvantage and support the successful transition to school. It is important to ensure the capacity to monitor and evaluate critical transitions across education.

The national education evidence-base should include all children, not only those in formal education and care settings. If the nation is to improve educational outcomes for all children, we need to identify and understand the impact of different family choices and circumstances in relation to early learning and schooling, and the impact of these choices on children’s health, development, learning and wellbeing. This is particularly significant as the media and anecdotal evidence suggest that the ‘home schooling’ movement is growing in popularity in Australia.

A challenge for evidence-based practice is that it must recognise the ethical and social nature of educational practice. Any attempt to provide an evidence-base for schools needs to confront this challenge head-on, how does the choice of what constitutes evidence worth collecting and curating include this concern for what may be ‘educationally worthwhile’ (Biesta, 2007; 2010). This necessarily requires a consideration of the unique position of school teachers and principals in the data that they find most useful, how they make decisions on data presented to them and how this decision making could be supported.



Objectives of the Inquiry

According to West (2016, p.1) there is growing research evidence to show that “skills other than academic achievement and ability predict a broad range of academic and life outcomes” (p.1). In the United States, there are new federal requirements for states to provide other measurements of school quality and student success that reflect “non-cognitive” or “social-emotional” skills (p.1). These non-cognitive skills may include self-regulation, prosocial skills, the development of moral values and empathy.

Acknowledging the holistic and integrated nature of development and learning in early childhood, and throughout the school years, it is critical to ensure a broad definition of ‘education outcomes’. There is some evidence to suggest that Australia has moved towards a narrower definition of education outcomes, with a strengthened focus on cognitive or formal academic outcomes and reduced focus on social, emotional and physical wellbeing outcomes. The most recent Australian Early Development Census (AEDC) data celebrate improvement in language and cognitive skills (school-based) but show decline in areas such as social competence and physical health and wellbeing. All developmental domains need equal attention to promote early learning and support successful transition and achievement in school. The objective should be to improve educational outcomes in a broader sense – these are not limited to academic outcomes. Given children spend much of their life in education settings, these settings have important roles to play in health and wellbeing. School belonging, in the form of school connectedness, is the extent to which students feel valued and cared for by their school community as a result of their sense of belonging and relatedness to others in their school community (Ciani, Middleton, Summers, & Sheldon, 2010; Osterman, 2000). A link has been found between school connectedness and positive outcomes such as peer support, teacher support, interest in studies and higher academic achievement (Monahan, Oesterle, & Hawkins, 2010). Other social factors that should also be considered include a focus on equity, access, diversity



and resourcing which may be of interest to better understanding proximal and distal features associated with educational success.

However, it is important to note that the act of collecting and analysing data in and of itself will not improve educational outcomes. Careful research designs that include both qualitative case studies and measures of mechanisms for change (e.g., classroom practices, teacher attitudes, teacher beliefs, pedagogical programs used, behaviour management, support for learning / wellbeing, professional learning for the workforce) are needed. If data are collected on these variables this makes possible 'natural experiments' in which statistical models can include both external determinants and educational experiences in relation to outcomes for children. When statistical data are used alongside rich case studies, more nuanced understandings are possible and can guide future practice.

While we point to the importance of non-cognitive domains, as key outcomes in their own right, they are also important factors in the pathway to academic success. Non-cognitive skills, such as the ability to regulate attention and emotion, are more highly predictive of academic achievement than IQ and are associated with ongoing productivity across the lifespan (McClelland, Acock, Piccinin, Rhea, & Stallings, 2013; McClelland & Wanless, 2012). Self-regulation skills also serve as a buffer against expected poorer academic outcomes in children from disadvantaged backgrounds (Ursache, Blair, & Raver, 2012). In addition, the development of prosocial skills, moral values and children as active citizens are important to society and productivity as a whole.

A significant volume of data is already produced in education that are at best, poorly utilised, and at worst, misunderstood. Two examples are the NAPLAN and My School datasets. These data, which contain important information about literacy and numeracy performance; relative school funding; and enrolment demographics in schools; are often used in inappropriate ways that were not part of the initial design brief for the datasets: to construct league tables; to promote competition between schools to improve results; and to overly narrow the teaching and learning



focus. For example, the Gonski Report (2011) into funding of schools in Australia, observed that the lack of nationally consistent data about the broader goals of education had forced a reliance on NAPLAN data as a poor proxy for quality outcomes. It is important to attend to how data are used, anticipate the potential for misguided and unintended use, and to support training in making better decisions about data use and reporting.

What is needed?

1. Existing national data sets for both school education and prior-to-school education need to be presented in ways that allow comparisons between them, for example, a national data dictionary. The data that are currently collected by states and territories should enable the creation of nationally consistent and comparable data sets that are made available to researchers.
2. In relation to ECEC, we commend the work being undertaken by the national ECEC body, ACECQA, to provide enhanced public access to data collected through the quality assessment and rating of ECEC services. This is an important and useful dataset that has meaning for a broad range of stakeholders (e.g., parents, researchers, policy makers). Consideration should be given to optimizing access to similar publically held education datasets. We note that ACECQA data are not included in Table 1 but recognize that this table was not intended to be comprehensive. We note that the Report on Government Service Provision is also not mentioned in the Table, and suggest that many remain unaware of this important data set.
3. This raises the need for some form of national clearinghouse that identifies and describes current education evidence bases, how they can be accessed and used, and, in the future, which can be linked. We note the lack of focus on teaching approaches, classroom experiences, school level implementation of particular programs or support for learning approaches in



terms of data collection. For example, no data sets exist on successful case studies where the alignment of curriculum, assessment and teaching has produced enhanced outcomes. Future research could provide exemplars of exceptionally strong case studies for teachers to emulate. The Government response to the Teacher Education Ministerial Advisory Group Report included the commitment to instruct the Australian Institute for Teaching and School Leadership to provide a national focus on research and data that highlight the most effective teaching practices in all areas of education. We encourage this work to continue. We also suggest that brief measures of executive function or self-regulation, particularly in the early years, might be included as important general non-cognitive skills known to have ramifications for lifelong learning and productivity (Best, Miller, & Naglieri, 2011; Miller, Nevado-Montenegro, & Hinshaw, 2012).

4. We support the conclusions of the Government's response to the TEMAG report in relation to building on existing sources in relation to teacher workforce data, in particular, the Staff in Australia's Schools Survey and the National Teaching Workforce Dataset. We recommend a broader approach to workforce data collection than currently exists. This could take the shape of a workforce census that addresses the limitations of previous workforce studies and includes collection, not only of descriptive data about the characteristics of teachers but also their attitudes, support experiences and requirements, professional learning and development, mentoring, and key practices / approaches used.

5. Notwithstanding current national interest in ECEC Workforce Development (SCSEEC, 2012), there is a critical gap in comprehensive and reliable workforce data in this area of education. Data currently provided in the annual Report on Government Service Provision (ROGSP) provides a useful starting point. However, the shift away from an annual Commonwealth census has resulted in gaps within these data. There is a need, therefore, for a firm and ongoing commitment to an annual/bi-annual



ECEC census led by the Commonwealth Government. This should be streamlined, user-friendly and online and be linked to service accountability requirements for funding eligibility.

6. The data collected should be from a broad evidence base that includes quantitative (what worked where) and qualitative (how/why did this work there) over time (does this continue to work and is it sustainable). Quantitative data should be based on reliable and valid measures with a history of sound psychometric testing where feasible, with a focus on those measures that have been used in other contexts of similar size and scope to allow for comparability. The measures should also be suitable for the Australian education context and should be of reasonable burden and cost.
7. Data across all relevant contexts should be collected ethically and with integrity. Participants should provide consent for use of the data in a repository or similar. We need efficient and effective ways of obtaining and using individual child, teacher/class, and school level data. There may also be the possibility for data pooling or aggregation and comparability across jurisdictions.
8. We need to think very carefully about what the ethical use of data may mean, including the type of data being collected, and what the data can be reasonably expected to tell us. This requires a re-evaluation of the concept of validity, from the traditional expression of the statistical properties of the tests (i.e., construct, content and criterion validity), to a more nuanced approach that puts those that are using the data, the contexts in which they work, the likely impacts of those uses (i.e., the stakes associated) as central to any process of validation (Kane, 2015).
9. We note that improving an education evidence base in Australia should not be about adding MORE assessment or data collection burden on children, families, and educators where appropriate data exist, but rather improving



efficiency, access to and use of existing datasets. This might include leadership on data collection decisions made at the school level (e.g., achievement testing through the PAT-M and PAT-R and other tests at various intervals). For example, how often is data collection or testing necessary? Are the data scored and used appropriately? Are data made available to researchers to analyse in a way that allows for broader educational research questions to be addressed that move beyond the use of data to track children's achievement? Consideration needs to be given to which are the most appropriate data collection tools to use. Administrative dataset linkage on ECEC use, hours of care and quality linked with Australian Early Development Census (AEDC) data, NAPLAN, and school experiences would be highly valuable to explore positive and problematic educational trajectories for students.

10. Some areas where further data are needed include: the degree of parental engagement with their child throughout their school years; parents' perceptions of the value of education and where they think academic excellence comes from as opposed to 'blaming the teaching profession'; the impact of teachers' ongoing professional learning on their students' learning; and whether pedagogy within schools is capable of meeting the demands of 21st century learning, particularly developing student capacity to engage in solving problems within and across subject domains (e.g., integration of STEM disciplines within schools).
11. At present, all ECEC data are system-level data and do not provide insight into what is happening for individual children participating in ECEC services. To monitor and evaluate children's broad education outcomes, and to identify and evaluate interventions to improve outcomes for all children and particular target groups, a national education evidence-base needs to extend to individual child data with the capacity in the data to track individual children. We also need data on the programs and practices that are being used at teacher/classroom or school levels. Again, recognising the holistic



and integrated nature of learning, an effective national education evidence-base would enable linkage of a range of child, family and community data.

12. Administrative data sets that could provide information regarding which children have received special education/ allied health referral or service provision would be helpful. These data sets might include attendance data and other special services or funding provided to individual children and might be reasonable proxy measures for special/additional needs provision. Furthermore, the introduction of the National Disability Insurance Scheme (NDIS) and increased funding for early intervention needs to be supported by an effective database that enables linkage to other child and ECEC/education datasets to monitor progress towards enhanced education outcomes for these children.

13. Further work is required to ensure that ECEC data bridges the historical divide between 'care and education', 'childcare and preschool', and presents a comprehensive picture of children participating in ECEC prior to school entry. This data collection would enable richer, more nuanced understandings of the multiple, complex factors contributing to educational success enabling resources to be directed for greater effect. These data would also provide information about appropriate targeting of teacher and school staff professional development and potentially enable parents to be more engaged in the "issues that matter" to educational success and thriving.

Issues and opportunities

Data sharing

The Australian Early Development Census (AEDC) the Longitudinal Study of Australian Children (LSAC), the Longitudinal Study of Indigenous Children (LSIC),



the Australian Children's Education and Care Quality Authority (ACECQA), the Australian Bureau of Statistics (ABS), and Government Services Reports would all provide useful data for data linkage and data sharing. In considering LSAC, there is a need to begin a new birth cohort. Beginning in 2004, it is now 8 years since the current cohort were participating in early years education and there have been significant changes to the Australian ECEC and the school system over this period (e.g., introduction of the National Quality Framework for ECEC, universal access to preschool).

High priorities for data linkage would be use of ECEC services including information about non-formal care such as family day care, and other service accessed such as Early Years Centres, and playgroups, linked with the AEDC, NAPLAN data, Medicare data, Centrelink data, and school administration / achievement datasets as well as the newly proposed workforce census. The Australian Longitudinal Learning Database as proposed appears to address many of the requirements for contemporary educational research and should be a priority.

Privacy

Recognition of trusted users offers an excellent approach to allowing access to linked datasets and could be granted based on track record of ethical use of existing data. Data access arrangements should include the requirement for data users to upload research findings to a central online repository publicly available which ensures there is no duplication of research, and also helps to translate research findings to the policy and public domains. Opt-out consent is a model employed by a number of international studies that have great power, through sheer numbers, to produce results likely to be relevant to the population as a whole. Australian educational researchers have difficulty with jurisdictional ethical applications and consent rates that require parents to complete paper consent forms for students to participate in research. We propose that if the research is in the national interest for improving educational outcomes, and students are required



only to engage in activities that would be considered everyday practice within schools (e.g., pen and pencil survey, interaction with teaching staff or learning materials), then opt-out consent is highly appropriate, low-risk and beneficial. The opt-out option would reduce the potential for bias many-fold whereas any opt-in process potentially establishes bias from the outset.

Data comparability

Considerable progress has been made towards the development of a national data dictionary, as evidenced in continued improvement in national ECEC reports (e.g., ROGSP). However, differences in systems and terminology across jurisdictions continue to present challenges in this area (evidenced by complex notations to explain data limitations and inconsistencies in national ECEC data tables). Movement towards more national approaches in ECEC and school education should make it easier to draw together and compare data across states and territories. Strong leadership on data collection decisions made at the school level is needed. Currently schools use many different achievement tests to measure student progress. If a small, reliable and valid suite of data collection tools was suggested to education systems and institutions, the opportunity for more consistent data linkage nationally with comparable data would be achievable. It is also important that software and infrastructure are in place and of high quality.

Data capture, processing and management

There are a number of designs that can improve the causal inference of educational data including regression-discontinuity approaches and instrumental variables estimation. With improved data linkage across sectors these designs become possible even without the collection of any new data. The Integrated Data Infrastructure (IDI) Project in New Zealand offers insight into processes of data linkage across sectors (http://www.stats.govt.nz/browse_for_stats/snapshots-of-nz/integrated-data-infrastructure.aspx). We support an ethos that data should be linked unless there is a clear imperative and argument for it not to be, however we



stress the importance of a commitment to regular, funded evaluations of the effects of national data collection on people and institutions.

Data governance

It would be useful for an established agency such as the ABS to take carriage of a national education data resource. Much of the infrastructure and policy around data handling would be already established. Whatever institution takes carriage, it will be important to raise awareness of the existence of, potential for, and limits to the national education data resource. The National Centre for Longitudinal Data (Department of Social Services) offers a model of governance with a shared repository for LSAC, LSIC, and HILDA data users (<https://www.dss.gov.au/about-the-department/national-centre-for-longitudinal-data>).

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