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Education Evidence Base
Productivity Commission
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Melbourne Vic 8003

Submission to the National Education Evidence Base: Fiona Stanley

I realise that there are two reviews being conducted by the Productivity
Commission about national data. I have more expertise in the Data
Availability and Use review and have already been interviewed for that and am preparing a
submission as well as being part of the University of Melbourne's collective response. However I
would like to make some comments about the Education data review, acknowledging that the
Telethon Kids Institute where I still work has also made several submissions (including one from
Professor Stephen Zubrick which I have not seen). I also set up ARACY and was associated with the
validation and implementation of the Australian Early Development Index (now Census); we brought
it from Canada in the late 1990s, tested it in metropolitan Perth and then rolled it out nationally with
the Melbourne based Centre for Community Child Health (Dr Sharon Goldfield and Professor Frank
Oberklaid).

Points:

1. **Total population data are the most powerful as they include all children and young people
   and the families that support them.** Your document does not clearly differentiate the total
   population data bases from the surveys, cohorts and other studies that are samples of the
   population. Total population data, such as that based on complete ascertainment of for eg
   school outcomes, birth registrations, AEDC, etc attempts to get 100% participation. Surveys,
   cohort studies and other data collected by contacting people and asking their consent will
   always be biased as to who participates and who does not. Such biased participation has
   unpredictable influences on analyses and cause considerable errors. As long as the
   statisticians are aware of these deficiencies and try to ascertain how the biases might be
   influencing outcomes, then these studies are of course very useful, as they tend to obtain
   more in depth information not available in public sector data. In our West Australian studies
   we always seek consent to link the survey or cohort to our total population data so we can
   assess bias and also improve follow up and completeness (we know who is under-
   represented). Population data become much more useful and informative if it can be linked
   across agencies (see DPP in 2 and point 7 below on record linkage).

2. **Data must follow the causal pathways from early child development to adult participation**.
   Our West Australian analyses suggest that some of the most powerful factors influencing
   educational outcomes are those operating well before school (Malacova etc al). In WA, with
   our ARC funded Developmental Pathways Project (DPP) we have linked data capacity across
   13 state bureaucracies including birth, health, education, child protection, disability, mental
   health, police, public housing, community, and corrective services. We can follow 100% of
   children from their antenatal period through to adulthood, with every contact with each

agency being available for anonymous analyses. Using these data, Malacova and colleagues found that infant birthweight, maternal age, being single and other social maternal factors including where the family lived, were more important than almost any school factors. In the WA Aboriginal Child Health Survey (Zubrick et al) found that Aboriginal children were behind at the beginning of school and never caught up. The AEDC is probably the most important total population predictor we have in Australia to measure the antecedents along the developmental pathways in to educational outcomes in both primary and even secondary school (demonstrated by Clyde Hertzman from University of British Columbia who developed the Canadian AEDI). Thus to analyse any school data (eg NAPLAN), the statisticians should control for the percentage of children who are vulnerable on the AEDC domains. Only then can you really evaluate how well a school is doing.

3. **Analyses must allow for confounding factors and effect modification which will vary enormously geographically even across relatively small urban distances**. This is really an extension of 2 above. Unless there is an appreciation of the social determinants of educational outcomes then the analyses will not be informative as to what really needs to be done to improve educational success in Australia. This kind of thinking underpinned the Kim Beasley (senior) Disadvantaged Schools Program in the Hawke government which poured resources into schools in low socio-economic areas across the nation. We were still monitoring the positive effects of that in our data in the 1990s.

4. **The Australian Early Development Census is a very important tool as it reflects the antecedent pathways into school performance**. It is an exciting data set as it enables the proper evaluation of primary and secondary school assessments. In fact you could make the case for analysing later school outcomes **only** by controlling for the AEDC results as the early childhood environment and characteristics are the most important predictors of educational success (or failure) as mentioned above. Australia is one of the only countries to have this index collected nationally even though it is only done every 3rd year which means that 2 out of 3 years of births miss out on the assessment. Nearly 98% of all children are part of the AEDC every 3 years.

5. **GIS coding of data enables geographic analyses and comparisons which can be very informative (as long as they are controlled for the socio-economic factors and AEDC results mentioned earlier)**. Analyses of outliers are often the most helpful (ie schools in poor areas with high levels of vulnerability on the AEDC who do well and schools who are in good areas and with low levels of vulnerability who do poorly); the characteristics of such schools and their communities will inform the best policies and practices around them to ensure the best outcomes. Challis Primary School in Perth, WA is an excellent example of how a poor area school with high levels of AEDC vulnerability turned itself around to become a staggering outlier with vastly improved AEDC results and major improvements in school outcomes. This was a result of engaging with parents and the community to improve the educational environments **pre-school**. This is the same principle as the successful Beasley program.

6. **The Manitoba Centre for Health Policy in Winnipeg, Canada has a range of service provider data including detailed educational outcomes**. Their model of data collection, linkage and analysis is worth looking at as an ideal benchmark for us to follow in Australia, as we have most of the "bits" of data and capacity that they do. A report on educational outcomes by Marni Brownell and others some years ago changed the understandings of educational data there and engaged the education department bureaucrats who are now extremely

supportive of the ways in which such data can evaluate the school systems and how to improve them. Brownell and colleagues analysed Year 12 outcomes based on the available schools data and then re-analysed it based on birth cohorts (ie including ALL the children who should have been included in the schools data). The social gradients were considerably greater when all eligible children were included in the analyses; truanting, failure to complete high school and all outcomes had a much steeper social gradient than when looked at without the birth cohort data.

7. **Data linkage is the bringing together of records on the same individual to get more information and is a cheap and effective way to enhance population data and interrogate data more intelligently.** It enables analyses of variables not available on one data set but available on another. An early example of this was our initial WA linkages in the late 1970s where race was not on death certificates; we linked Midwives notifications of birth (with Aboriginal status identified) to all infant deaths to describe for the first time in Australia the gap between Aboriginal and non-Aboriginal populations in infant mortality and by cause. The exciting thing about linking educational data in Australia is that we have the AEDC and other antecedent information on perinatal data sets (birthweight, gestational age, maternal factors, Aboriginal status etc) which means that we can analyse the real pathways in to educational success and failure. Linkage is also very useful to obtain data which may be sensitive or difficult to obtain in a survey. In order to link, we need to use unit record data with identifiers (as we don't have unique IDs as in Scandinavia) which can be used for linkage. The WA model of privacy protecting data linkage has now been made available nationwide via a National Collaborative Research Infrastructure grant to the Population Health Data Network (Merran Smith is heading this). Hence each state and territory now has the capacity to link data using best practice. Another point to make about having data from each state and territory is that between state comparisons can be made which could evaluate their different educational policies.

References

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Yours sincerely,

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