Australian Early Development Census
An Australian Government Initiative

Our Children
Our Communities
Our Future

Research Snapshot

Gender differences in the AEDC **and into the school years**

Background

Consistent with all measures of child development, the Australian Early Development Census (AEDC) shows differences in development between boys and girls on school entry. While males and females are biologically different and develop at different rates throughout early childhood, researchers are interested in whether these differences continue into later areas of life and whether there may be a need to target interventions on the basis of gender.

Key gender differences have been identified in domains such as health, social and emotional development and language and cognitive skills. For example, at birth, more girls fall into the low birth weight category than boys. Boys, on the other hand, are more likely to suffer from a range of health issues including congenital abnormalities and development disorders. Boys are more likely to have problems with their behaviour than girls and are more likely to bully and to be disruptive in the classroom environment. In terms of language and cognitive skills, it is girls who tend to outscore boys on tests of verbal communication and reading literacy. This trend emerges early in life but narrows by the time children reach mid to late adolescence.

Tests of numeracy tend to show that boys, on average, outscore girls but that the difference in performance is small. However post schooling; men tend to outperform women when comparing income levels and job status.

Aim

This Research Snapshot aims to explore gender differences in 2012 AEDC performance and whether these differences continue into the school years.

Key findings

AEDC Developmental Vulnerability

The AEDC data collections have highlighted a large difference in the child development outcomes of Australian boys and girls at school entry. In 2012, more boys (28.2%) were developmentally vulnerable on one or more domains of the AEDC than girls (15.7%). Also, more boys were developmentally vulnerable on each of the five domains of the AEDC than girls (see Figure 1).

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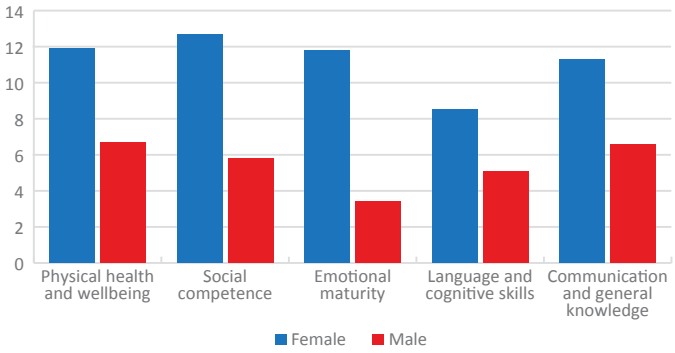
Figure 1. Gender differences in developmental vulnerability on each domain of the AEDC (2012)



Later school performance (NAPLAN Reading and Numeracy)

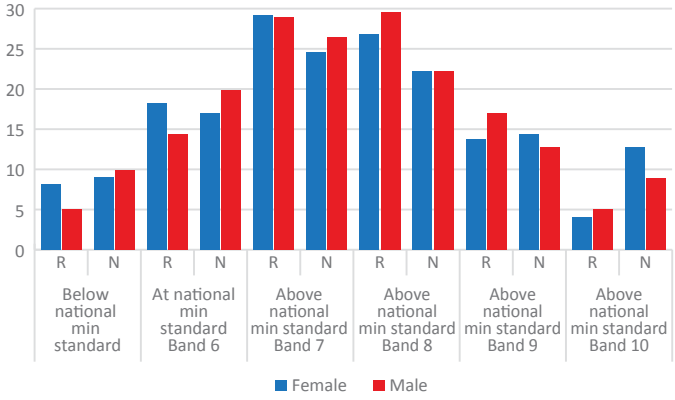
The AEDC data show that more boys than girls are developmentally vulnerable at school entry. However, it is important to consider whether this gender difference continues throughout the school years particularly for the key domains of Reading and Numeracy. This can be assessed by looking at performance on NAPLAN (National Assessment Program—Literacy and Numeracy) tests which are conducted in Years 3, 5, 7 and 9.

The most recent NAPLAN results available show that at Year 9, the last time children sit the NAPLAN tests, girls scored higher than boys in Reading. More girls than boys scored in the top end of the scale and boys dominated in the lower end of the scale, in particular in the *below national minimum standard* and *at national minimum standard* categories (see Figure 2). This shows that not all girls outscored all boys, but rather that there were more boys at the lower end of the distribution, lowering their overall average score relative to that of girls.

For Numeracy the reverse was true; a higher proportion of boys scored in the top end of the scale and more girls scored in the lower end of the scale; this time raising the average score of boys relative to that of girls.

These results indicate that by the time students reach Year 9 NAPLAN the difference in performance between boys and girls is small and, in practical terms, any effect of gender is negligible for reading and numeracy skills.

Figure 2. Gender differences in Year 9 NAPLAN Reading (R) and Numeracy (N) in each performance band (2013)

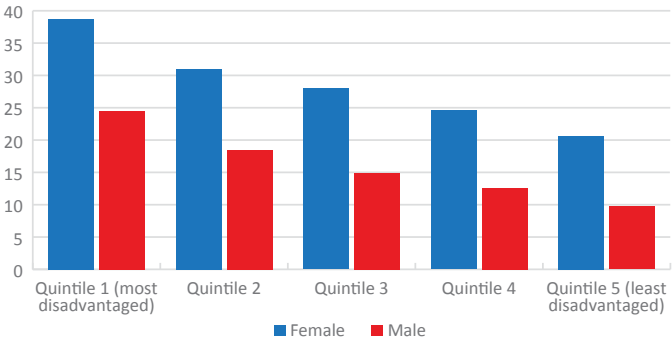


Putting gender differences in context

Inequality in development on school entry exists on the basis of several factors, not solely gender. Child development outcomes also vary by socio-economic gradient, that is, children living in the least disadvantaged areas of Australia outperform those children living in the most disadvantaged areas. The AEDC results show that this socio-economic gradient in child development is found for both boys and girls (see Figure 3).

This same socio-economic gradient is found for both boys and girls on NAPLAN (1). So, while the gender gap narrows between the AEDC and later NAPLAN Reading and Numeracy testing, the socio-economic gradient does not. This result shows us that we cannot think in terms of gender alone when aiming to reduce inequality in child development.

Figure 3. Gender differences in vulnerability on one or more domains of the AEDC by socio-economic quintiles (2012)



Implications

For Policy and Practice

The large gender gap in child development observed in AEDC results at school entry is not observed for Year 9 NAPLAN testing. However, NAPLAN is focused on academic outcomes with no assessment of the social and emotional outcomes of children and it is in these domains that the largest gender gaps in AEDC results have been observed. Efforts across Australia to measure social and emotional development during the school years in addition to academic outcomes are gathering speed. As these data become available it will be important to assess whether the early gender differences in social and emotional development observed in the AEDC persist throughout school.

Data linkage will allow us to follow the actual AEDC cohorts (2009 and 2012) through their own NAPLAN testing and measurement of social and emotional outcomes. The use of longitudinal data will provide better evidence about whether the gender gap for these children decreases as they get older and whether the boys living in socio-economically disadvantaged areas at school entry catch up to their peers or if they maintain a poor trajectory throughout their school lives.

Further research is needed before recommending if early childhood interventions should be targeted on the basis of gender alone. Evidence currently available suggests that a universal strategy with additional support to children from socio-economically disadvantaged backgrounds is the most sensible intervention strategy.

For Research

Data linkage provides an opportunity for researchers to monitor developmental trajectories for children from birth through to the AEDC at school entry, to later NAPLAN testing and ultimately into later life. It will also be of interest to investigate gender differences in social and emotional outcomes through school as such data become available. An understanding of the drivers of gender specific trajectories will help to determine if gender specific interventions would be of value.

Study Details

The data reported are on the basis of the 2012 AEDC data collection and the 2013 NAPLAN National Report.

For further information

Details of the research paper

A report detailing gender differences across the lifespan and examining data from South Australia, including the AEDC programme, has been published:

Kinnell, A., Harman-Smith, Y., Engelhardt, D., Luddy, S. & Brinkman, S. (2013). Boys and Girls in South Australia: A comparison of gender differences from the early years to adulthood. Published by the Fraser Mustard Centre. Department for Education and Child Development and the Telethon Institute for Child Health Research. Adelaide. ISBN 978-0-9876002-2-6.

NAPLAN data are available in the 2013 National Report: Australian Curriculum, Assessment and Reporting Authority (2013). *NAPLAN Achievement in Reading, Persuasive Writing, Language Conventions and Numeracy: National Report for 2013*, ACARA, Sydney.

If you would like further details about this work, please contact Associate Professor Sally Brinkman: **Sally.Brinkman@telethonkids.org.au**

About research snapshots

AEDC Research Snapshots provide a brief and accessible overview of research being undertaken in relation to the AEDC. The AEDC programme is funded by the Australian Government. For further up-to-date information consult the AEDC website and its many resources: **www.aedc.gov.au.**

About the organisation

The Telethon Kids Institute is one of the largest, and most successful medical research institutes in Australia, comprising a dedicated and diverse team of more than 500 staff and students. Established in 1990, the Telethon Kids Institute was among the first to adopt a multidisciplinary approach to major health issues: clinical research, laboratory sciences and epidemiologists all under the one roof, to tackle complex diseases and issues in a number of ways. At the Telethon Kids Institute, we are committed to ensuring that the benefits of our research are translated into real therapies and policies to improve the health and wellbeing of children.

References

1. Australian Government. Review of Funding for Schooling—Final Report. Canberra: Australian Government, 2011.

Since 2002, the Australian Government has worked in partnership with eminent child health research institutes, Centre for Community Child Health, Royal Children's Hospital, Melbourne, and the Telethon Kids Institute, Perth to deliver the Australian Early Development Index programme to communities nationwide. On 1 July 2014, the Australian Early Development Index (AEDI) programme became known as the Australian Early Development Census (AEDC), and was launched through a new website www.aedc.gov.au. The Australian Government continues to work with its partners, and with state and territory governments to implement the AEDC.