

Our Children Our Communities Our Future

Australian Early Development Census

Factors found to affect children's success at school



Our Children • Our Communities • Our Future

Current research findings based on AEDC data

Research using Australian Early Development Census¹ (AEDC) data has provided insight into the association between preschool attendance in the year prior to starting school, and children's developmental outcomes in the first year of full time school. Children's development in the early years has been shown to be related to their success throughout school and into adulthood.

The predictive validity of the AEDC

Study 1:

All five of the AEDC domains have been found to predict later literacy and numeracy outcomes for children as measured by the National Assessment Program – Literacy and Numeracy (NAPLAN) in years 3 and 5 and 7. Of the five **AEDC domains**², the 'Language and cognitive skills (school based)' and the 'Communication skills and general knowledge' domains are the best predictors of scores on the NAPLAN assessments. The strength of the relationship between the AEDC scores and Year 3 NAPLAN scores on both numeracy and reading was similar; however as the children got older, there is some evidence that the AEDC was a better predictor of reading scores than of numeracy scores.

Research indicated that children who were vulnerable on one or more of the AEDC domains at age five were more likely to be in the bottom 20% of all students' scores on the NAPLAN assessments in Years 3, 5, and 7 than children who were not vulnerable on any AEDC domains. Children who were developmentally vulnerable in four or five AEDC domains were much more likely to have difficulties in reading and numeracy through primary school than those without vulnerabilities. For each additional domain that a child was vulnerable on in pre-primary there was an incremental increased percentage of children with low reading and numeracy scores in Year 7.

Study 2:

In this study the predictive validity of the Early Development Instrument, used to measure child development in the AEDC was investigated. Results showed that the **five domains**³ of the AEDC measured at age 4 perform well in comparison to the other assessments of child development in predicting age 8 mathematical thinking, language, literacy and behavioural outcomes. The discrimination of each of the domains of the AEDC was measured relative to the other AEDC domains and the other measures of child development.

Other commonly used instruments measured in the Longitudinal Study of Australian Children (LSAC); include Strengths and Difficulties Questionnaire (SDQ); the Peabody Picture Vocabulary Test (PPVT); the Who Am I; the Parents of Evaluation of Developmental Status (PEDS) and the Paediatric Quality of Life Inventory (PedsQL) assessments.

The research snapshot on *Predicting later cognitive and behaviour outcomes*⁴ provides more detail on the topic.

¹ Until 1 July 2014, the AEDC was known as the Australian Early Development Index (AEDI)

² http://www.aedc.gov.au/resources/detail/about-the-aedc-domains

³ http://www.aedc.gov.au/resources/detail/about-the-aedc-domains

⁴ http://www.aedc.gov.au/resources/detail/the-predictive-validity-of-the-aedc-predicting-later-cognitive-andbehavioural-outcomes

Language background other than English (LBOTE)

English Proficiency at school entry for bilingual children in Australia

Research using AEDC data explored the relationship between English language skills at school entry and attendance at different types of early childhood education and care (ECEC) including preschool, day care centres, and other informal non-parental care for bilingual children in Australia.

One fifth (17.8%) of Australian children were bilingual at school entry. Of these children, most were proficient in English when they entered school (85.6%), although 14.4% were rated as not yet proficient.

Preschool (including day care with a preschool program) was the most common form of ECEC that children attended in the year prior to full time school (80.6%) although a lower percentage of bilingual children attended preschool than children from English speaking backgrounds.

A higher proportion of bilingual children who had attended preschool were proficient in English when they started school (73.95%), compared to those who had not attended preschool (60.7%). Children who were not yet English proficient when they started school tended to have higher rates of attendance at day care without a preschool program, informal non-parental care or to be in parent care only in the year prior to school entry. For more information about this topic, see the research snapshot *English proficiency at school entry for bilingual children in Australia*⁵.

Early Developmental outcomes of Australian children from diverse language backgrounds at school entry

Research using the 2009 AEDC data was used to understand the interrelationships between language backgrounds, proficiency in English and early developmental outcomes at school entry.

Linguistically diverse children who were not yet proficient in English when they began school were significantly more likely to be developmentally vulnerable on four **AEDC domains**⁶ (Physical health and wellbeing; Social competence; Emotional maturity and Language and cognitive skills (school based)). In contrast, linguistically diverse students who entered school with proficient English language skills were slightly less likely to be developmentally vulnerable on Emotional maturity and Physical health and wellbeing domains. Bilingual children therefore appear to start school with some subtle developmental advantages.

Children from English speaking backgrounds also enter school with a range of language skills. Children from an English speaking background who were considered not yet proficient in their home language had the highest rates of developmental vulnerability; around twice those of their linguistically diverse peers who were also not yet proficient in English. More details on this topic can be found in the research snapshot *Early Developmental outcomes of Australian children from diverse language backgrounds at school entry*⁷

⁵ http://www.aedc.gov.au/resources/detail/english-proficiency-at-school-entry-for-bilingual-children

⁶ http://www.aedc.gov.au/resources/detail/about-the-aedc-domains

⁷ http://www.aedc.gov.au/resources/detail/early-developmental-outcomes-of-australian-children-from-diverselanguage-backgrounds-at-school-entry

Preschool and the transition to school

Children who attended preschool were less likely to be developmentally vulnerable across all five **developmental domains**⁸ assessed by the AEDC. Preschool programs may provide stimulating and structured learning opportunities which encourage academic and social development and prepare children for the school environment. In contrast, higher rates of developmental vulnerability were seen for children that attended day care without a preschool program and those that received informal non- parental care or parental care only. Preschool attendance was less common among children from most disadvantaged communities.

Whilst preschool had a positive effect on children from both advantaged and disadvantaged communities, there were still higher rates of vulnerability among children living in disadvantaged communities that attended preschool than children from advantaged communities that did not attend preschool. The highest rate of vulnerability was among children from disadvantaged communities who did not attend preschool.

Research highlights the importance of preschool attendance for promoting strong developmental outcomes and successful school transitions for all children. Accordingly lower rates of preschool attendance by disadvantaged children may be contributing to early developmental vulnerabilities and inequities. For more information, see the research snapshot on *Early childhood education and care and the transition to school*⁹.

Children with additional health and developmental needs (AHDN)

The AEDC measure of early childhood development includes Additional Health and Development Needs (AHDN). The first years of full time schooling offer new demands, environments and relationships. These can all have lasting implications on a child's early educational trajectory. Children with AHDN can face extra challenges in primary school. This includes meeting the demands of school, fitting in with peers, and obtaining additional resources.

Pathways through school for children with AHDN: a conceptual model

A model for understanding the complex processes that can impact on school functioning for children with additional health and developmental needs (AHDN) has been developed. The model centres on children's ability to function within their daily environments, and the interactions between their functioning and various risk and protective factors.

Many of the children who experience difficulty due to AHDN have not received a formal diagnosis either because their condition is not severe enough to reach diagnostic cut-offs, or their difficulties are yet to be formally identified. Irrespective of diagnosis, the needs of children experiencing AHDN and the impact of their condition on school functioning is complex and can change over time. School failure is not inevitable and many children with AHDN experience positive school outcomes, suggesting it is possible to intervene to promote better outcomes for these children.

Findings suggest that children may experience different levels and types of needs that fluctuate over time, and which do not depend on their condition or diagnosis. Rather, children's needs are determined by the impact their condition has on their functioning and their unique risk and protective factors. See the research snapshot *Pathways through school for children with AHDN: a conceptual model*¹⁰ for more information on the topic.

⁸ http://www.aedc.gov.au/resources/detail/about-the-aedc-domains

⁹ http://www.aedc.gov.au/resources/detail/early-childhood-education-and-care-and-the-transition-to-school ¹⁰ http://www.aedc.gov.au/resources/detail/pathways-through-school-for-children-with-additional-needs

Factors that help or hinder children with AHDN to succeed at school

Given that the transition period to formal schooling is a critical time that helps to shape long-term educational trajectories, it is important to address risk factors and promote protective factors early in the child's formal education. Current research suggests that many of the risk and protective factors are operating from the earliest experiences at school.

A mixture of influences was identified, ranging from the child's characteristics to the environments in which they are operating, including numerous factors at the service-system level. The many protective factors identified suggest it is important to not only describe and respond to children's limitations, but also to acknowledge the child's capabilities and strengths as well as other protective factors operating at the family and service-system level so that these can be drawn on and developed to help them succeed, these are described in more detail in the research snapshot, *Factors that help or hinder children with AHDN to succeed at school*¹¹.

Shaping learning trajectories for children with AHDN

Three trajectories of academic performance over the primary school years (from ages 4-5 and 10-11) were identified in this research: Twenty five per cent of children performed steadily above average, 52 per cent of children performed close to average, and the remaining 25 per cent of children performed consistently below average.

This research aimed to describe the academic trajectories of primary school children with both established and emerging health and developmental conditions, whilst also investigating the impact of socio-economic disadvantage on the relationship between AHDN and academic trajectories.

Children with both established and emerging AHDN and children from disadvantaged backgrounds were more likely to be in the low or average performing academic trajectory. Children with emerging AHDN who were also from a disadvantaged background, were more likely to be in the low trajectory.

Differences in academic development already present at school entry remained stable over time. The effect of cumulative advantage saw children with strong early academic skills continue to improve over time, whilst children who displayed poor early academic skills fell slightly more behind. Poor academic outcomes were not inevitable for children with AHDN – a number of children with AHDN were within the highest performing academic trajectory.

Academic trajectories indicate that early intervention is crucial for children experiencing difficulties to improve their educational pathways. The finding that children with AHDN can have high academic achievement reinforces the potential of interventions to help these children reach their optimal learning potential. A greater allocation of resources is required for children with AHDN living within socio-economically disadvantaged settings, to better address the needs of children who are doubly disadvantaged. For more information, see the research snapshot *Shaping learning trajectories for children with AHDN*¹².

¹¹ http://www.aedc.gov.au/resources/detail/factors-that-help-or-hinder-children-with-additional-needs-to-succeed-at-school

¹² http://www.aedc.gov.au/resources/detail/shaping-learning-trajectories-for-children-with-additional-health-and-developmental-needs

Positive mental health in children

The public health literature on child mental health is very strongly focused on reporting disorder or problems, but lacks both concepts and data on positive mental health. As a result, the success of mental health promotion efforts is often reported in terms of whether the initiative was able to reduce mental health difficulties. Yet positive mental health means more than just the absence of mental health difficulties. This lack of concepts and measures of positive mental health is an important evidence gap that limits our ability to identify the best possible strategies for promoting good mental health outcomes (not just preventing bad outcomes).

To address this gap we examined and compared theories about mental health from writers in the fields of psychology, sociology and philosophy to develop concepts of positive mental health that could be applied to mental health promotion.

The findings suggest that child mental health policies should include strategies to promote positive mental health as well as preventing mental health difficulties. Efforts to promote mental health should address the environments that influence children's mental health, as well as strengthening individual mental health. This may require engaging with individuals, families, communities, and the values of the broader society. It is also important to develop indicators of positive mental health that will enable policies to be evaluated for their impact over time.

Measuring positive mental health in Australian children

Child mental health is a public health issue of global importance: estimates indicate that up to a fifth of all children will experience disabling mental illness at one time or another. However, effective mental health promotion requires an understanding of positive mental health as well as mental health difficulties. To date, this understanding has been hampered by a lack of concepts and measures of positive mental health (also known as mental health competence).

This study used data collected from the Australian Early Development Index (AEDI) and the Longitudinal Study of Australian children (LSAC). The aims of the study were firstly, to develop a measure of mental health competence suitable for use in Australian children, and secondly, to identify factors in children's lives that predicted high levels of competence.

A measure of mental health competence was able to be derived from key child strengths measured in the AEDI. Parent education and mental health were important predictors of mental health competence, and to a large extent these factors were able to compensate for the adverse effects of family hardship. A greater number of girls than boys had high levels of competence. There was a social gradient operating for positive mental health outcomes, with children from disadvantaged areas less likely to have high mental health competence. These conclusions are similar to findings from previous research, which suggests that the newly-developed measure is sound.

Socio-economic status

The aim of this research was to determine to what extent early measures of ability are related to later ability for Australian children, and whether socio-economic status determines the mobility of children's developmental performance over time.

Australian results show that of the children with poor early developmental performance as measured by the AEDC, it is those with higher socio-economic position that are able to achieve developmental mobility and better school outcomes than those resident in low socio economic areas.

On average, regardless of socio-economic status, children who begin school with good early development will remain on educational trajectories that are superior to children who begin school with poor early development.

If a child starts with high scores on the AEDC and resides in a high socio-economic area, then they will continue on a high educational trajectory throughout their schooling. If a child starts with low scores on the AEDC and resides in a low socio-economic area then they will continue on a poor developmental trajectory.

AEDC data shows that those children who reside in areas of high socio-economic position and have started school with low AEDC scores are able to improve their educational trajectories. If a child starts with high scores on the AEDC but resides in a low socio-economic area, then it appears that their early high scores provide a buffer throughout school and they are able to achieve at an average level of academic achievement throughout school.

The findings support the theory that early child development strategies can close the learning gap and improve equity in achieving lifelong learning and full developmental potential among young children. This is detailed in the research snapshot on the *Impact of socio-economics and school readiness for life course educational trajectories*¹³.

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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.

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¹³ http://www.aedc.gov.au/resources/detail/the-impact-of-socio-economics-and-school-readiness-for-life-course-educational-trajectories