

Development and Evaluation of the AEDI

Development of the AEDI

Overview

Phase 1: Modifications of the Canadian EDI including:

- a) Testing the applicability of the EDI for Australia.
- b) Refining the EDI instrument for use in Australia.
- c) Creating and pilot testing the AEDI.

Phase 2: Validation and Cycle 1 Testing including:

- a) Development and pilot testing of the web-based data entry system.
- b) Validation and testing of the AEDI in Australia.

Phase 3: Validation and Cycle 2 Testing including:

- a) AEDI/LSAC validation.
- b) Indigenous AEDI validation.
- c) AEDI change over time analysis.

Phase 1: Modification

Modification of the Canadian EDI required testing the EDI for Australia, refining the EDI instrument for Australia and pilot testing the “Australian Early Development Index”.

a) *Testing the applicability of the EDI for Australia (2001-2003)*

Perth North Metro Health Service EDI study

- Focus groups with teachers, principals, researchers and health professionals were conducted in 2001 to review and re-word the Canadian EDI for use in the Australian context.
- The EDI was piloted with seven schools in 2002 to refine the administration processes.
- The EDI was completed in 2003 on 4,300 children in their first year of school.
- Its local utility, acceptability and perceived value was confirmed.

b) *Refining the EDI instrument for use in Australia (April-June 2004)*

- A Technical Advisory Group made up of leading researchers and policy makers was formed to advise on the development of the AEDI Checklist.
- Professor David Andrich (an expert in analysing survey tools) from Murdoch University was commissioned to review the properties of the EDI as a survey tool using the 4,300 EDI checklists from the Perth North Metro study.

- This analysis found the EDI was working well as a survey tool but could be further improved by the removal of nine questions and collapsing some response categories.
- c) *Creating and pilot testing the “Australian Early Development Index” (AEDI) (May to June 2004)*
- The AEDI was created by modifying the original EDI and omitting the nine questions.
 - The AEDI was then piloted with teachers of 160 children in Perth in June 2004 to identify any unanticipated administrative or process issues.
 - Teachers completed both the EDI and the AEDI to ensure there were no difficulties with the AEDI and that teachers responded to questions in both checklists in the same way.
 - After further analysis by Andrich, the AEDI was found to work well and no further modifications were recommended.

Phase 2: Validation and Cycle 1 Testing (2004-2007)

In Phase 2 the AEDI was subjected to ongoing validation and testing. The key components of this were pilot testing the web-based system, ongoing validation and testing of the use of the AEDI in Australia and undertaking an AEDI/ Longitudinal Study of Australian Children validation study.

a) *Development and pilot testing of the web based data entry system (July-August 2004)*

- The Technical Advisory Group endorsed the decision to utilise web-based rather than paper based data entry for the AEDI.
- The Australian Council for Educational Research (ACER) developed a secure web-based data entry system for the AEDI checklist, which included online help and administration capacity to download data on completion.
- The data entry system was successfully piloted in Western Australia with only minor modifications needed to the system.

b) *Ongoing validation and testing of the use of the AEDI in Australia (September 2004-April 2007)*

- The AEDI was completed on over 30,000 children over three years. Data gathered over that time enabled comparisons between local areas to take place.

- The AEDI was administered to a sub-sample of teachers of approximately 750 children being surveyed in the 4 year old cohort of “Growing Up in Australia - the Longitudinal Study of Australian Children” (LSAC). The AEDI/LSAC Validation Study Report concluded that the AEDI as a teacher completed checklist has sound construct and concurrent validity when compared with data collected independently from teacher ratings and direct assessment of children. This validation study has allowed the AEDI data to be compared with other established measures of child development and found the AEDI can be confidently used as a population level indicator of children’s developmental status.
- The national evaluation of the community implementation of the AEDI was conducted by the Centre for Community Child Health (CCCH) between 2004 to 2007. See Section 3.7 for the evaluation findings.

Phase 3: Validation and Cycle 2 Testing (2007-2010)

a) AEDI/LSAC validation

The capacity of the AEDI to predict children’s health, social and educational outcomes will be examined through the AEDI/ Longitudinal Study of Australian Children (LSAC) Predictive Study. LSAC follows two cohorts (birth and children from 4 years of age) over seven years. The AEDI results obtained from the 4 year old cohort and follow up data about the health and wellbeing outcomes from subsequent years of children’s lives will be analysed to determine the predictive validity of the AEDI.

b) Indigenous AEDI validation study

The Indigenous Australian Early Development Index (I-AEDI) Validation Study is being undertaken by the Kulunga Research Network in conjunction with the Telethon Institute for Child Health Research on behalf of the AEDI Partnership between the Centre for Community Child Health and the Telethon Institute for Child Health Research. It is an initiative funded by the Australian Government Department of Education, Employment and Workplace Relations (DEEWR) as a commitment to the National Agenda for Early Childhood and supported by Shell Australia. This study will examine the cultural validity of the AEDI for Indigenous children.

c) AEDI Change Over Time Analysis

To measure population progress over time in children’s development two or more cycles of AEDI data collection are needed. Progress over time analysis examines change between cycles in the AEDI at the community level in comparison to the overall national AEDI population change and socio-demographic change. In order to examine change over time, DEEWR has provided funding to the 2004-2007 Cycle 1 communities to repeat the AEDI.

Further reading:

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Brinkman, S., & Blackmore, S. (2003). **Pilot study results of the Australian Early Development Instrument. A population based measure for communities and community mobilisation tool**. In Beyond the Rhetoric in Early Intervention Conference Proceedings CD, Crime Prevention Unit. Adelaide, South Australia.

Hart, B., Brinkman, S., & Blackmore, S. (2003). **How well are we raising our children in the North Metropolitan Area? Early Development Index 2003**. North Metropolitan Health Service (WA), Perth, Western Australia (http://www.rch.org.au/emplibary/australianedi/EDI_Report.pdf).

Andrich, D., & Styles, I. (2004). **Final report on the psychometric analysis of the Early Development Instrument (EDI) using the Rasch Model**: A technical paper commissioned for the development of the Australian Early Development Instrument (AEDI), Telethon Institute for Child Health Research, Perth, Western Australia (http://www.rch.org.au/emplibary/australianedi/Final_Rasch_report.pdf).

Andrich, D., & Styles, I. (2004). **Report on the Rasch analysis of the Australian Early Development Instrument (AEDI) using 2004 data from 6 states**, Telethon Institute for Child Health Research, Perth, Western Australia (<http://www.rch.org.au/emplibrary/australianedi/SecondRaschReport.pdf>).

Brinkman, S., Silburn, S., & Lawrence, D. (2006). **Construct and concurrent validity of the Australian Early Development Index**, A report to the Technical Advisory Group for the Australian Early Development Index: Building Better Communities for Children Project. Telethon Institute for Child Health Research, Perth, Western Australia (http://www.rch.org.au/emplibrary/australianedi/AEDI_LSAC_Validation_Study_Report_Final.pdf).

Evaluation of the AEDI

A national evaluation of communities in Australia that implemented the AEDI between 2004 and 2006 was conducted by the Centre for Community Child Health. The results in Australia were similar to findings from Canada - communities have found that implementing the EDI or AEDI has led to many significant benefits for the community.

These include:

- Providing a common language for the community when discussing and planning for strategies and programs designed to facilitate optimal early childhood development.
- The AEDI implementation process has assisted in strengthening the relationships among services and community partnerships. This has been one of the most significant benefits noted in Canada and Australia.
- The AEDI mapping can lead to other useful community mapping exercises, for example the locations of local programs, resources and assets. This process can be useful in strategic planning for the needs of young children.
- The AEDI results have provided data to support the development and evaluation of community initiatives in a range of fields such as parent support, family and pre-school literacy, and nutrition.
- Providing data that can be used to support grant or funding applications.

- The AEDI results have prompted organisations to review existing programs and services they offer to improve children's outcomes.

Further reading:

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