THE FRASER MUSTARD CENTRE

WORKING IN PARTNERSHIP TO TRANSLATE RESEARCH INTO POLICY AND PRACTICE.

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OVERVIEW OF THIS SESSION

• Overview of our experiences setting up the Fraser Mustard Centre
• Some case studies of research translation
• Audience discussion:
  • Other examples of working across government and research?
  • What are the challenges?
  • What are the opportunities?
THE FRASER MUSTARD CENTRE

- A research partnership aimed at improving developmental, health and educational outcomes for children and young people
- Aims to help close the ‘gap’ between new evidence and practice/policy
- Established in July 2012 between the Department for Education and Child Development (DECD) and the Telethon Kids Institute
- Named in recognition of Dr Fraser Mustard’s contribution to Child Development in South Australia
THE FRASER MUSTARD CENTRE – CONCEPT

To improve child development, educational and health outcomes through:

- the application of epidemiological and population health methods to issues
- better capacity to evaluate universal, targeted and intensive programs and services
- opportunity to bid for grant funds in the broader competitive research grant funding processes
- ‘in-house’ research translation
- broader links to national and international governments and experts
THE FRASER MUSTARD CENTRE – GOVERNANCE

• Formally established in July 2012 between the Department of Education and Child Development and the Telethon Kids Institute.

• The work of the Fraser Mustard Centre is governed by a Deed of Agreement developed by the Crown Solicitor’s Office.

• The Deed allows for DECD business units to grant funds to the Telethon Kids Institute for the purpose of undertaking applied research projects which are consistent with the aims of the Centre.

• Members of the governance group:
  • Chief Executive, DECD
  • Deputy Chief Executive, Child Safety, DECD
  • Executive Director, Children and Young People, DECD
  • Executive Director, Strategy and Performance, DECD
  • Executive Director, Primary and Population Health, DECD
  • Director, Office of the Chief Executive, DECD
  • Director, Telethon Kids Institute
  • Director of Operations, Telethon Kids Institute
  • Co-Directors of the Fraser Mustard Centre
## THE FRASER MUSTARD CENTRE – CO-LOCATED

### Business Intelligence Unit
- Director
- Manager, Performance Analysis
- Manager, Strategic Data Development
- Manager, Solutions and Services
- Executive Assistant
- Statistician
- Statistical Analyst
- Performance Analyst
- Strategic Analyst
- Demographer
- Data Manager
- Project Officer x2
- Client Services Officer x2
- Program Manager - Measurement
- Senior Project Manager
- Senior Research Officer
- Data Analyst x2

### Telethon Kids Institute
- Co-Director
- Deputy Director & Research Fellow
- Office Manager & Research Assistant
- Senior Research Fellow
- Operations Manager
- Research Fellow
- Research Officer
- Research assistant
- PhD candidates x3
THE DIVIDE BETWEEN GOVERNMENT AND RESEARCH
WHERE ARE WE NOW?

The social gradient in development and wellbeing is sizeable, consistent across the life course and has not substantially shifted over recent years.

The systems of support we have are not, on the whole, shifting trajectories.

Number and proportion of children starting school vulnerable on the AEDC 2012 (top) and reporting low wellbeing in the middle years (bottom).
WHERE ARE WE NOW?

The social gradient in development and wellbeing is sizeable, consistent across the life course and has not substantially shifted over recent years.

The systems of support we have are not, on the whole, shifting trajectories.

The overall distribution of student achievement scores has remained stable over a decade (NSW to 2006 top; SA to 2013 bottom).
THE IMPLEMENTATION CHALLENGE

We need researchers to respond to the issues children and young people have told us about.

We need DECD to respond to the evidence.

We all need to work together to make the research translation cycle faster.

We need a system of measurement and research that brings together efforts across both health, early childhood and school education.

“Science is focussed on what we do not know.

Social policy and the delivery of … human services are focused on what we should do.”

- Shonkoff 2000: 182
<table>
<thead>
<tr>
<th>Question</th>
<th>Activity</th>
<th>DECD decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are we trying to change?</td>
<td>Define issue and strategic alignment</td>
<td>Is the issue is something DECD should address?</td>
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<tr>
<td>Why should we change?</td>
<td>Impact</td>
<td>Impact and prevalence of the issue and what is currently known about what works to change it?</td>
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<td>Prevalence</td>
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<td>What works</td>
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<tr>
<td>What needs to change?</td>
<td>Identify what should be done</td>
<td>What policy and practice changes are required, including seeking new evidence?</td>
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<tr>
<td>How are we going to change it?</td>
<td>Develop &amp; assess options</td>
<td>Approve interventions for achieving the changes?</td>
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<tr>
<td>Did our interventions work?</td>
<td>Evaluate</td>
<td>Scale up across the organisation?</td>
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<tr>
<td>How do we effectively implement the intervention?</td>
<td>Evaluate implementation</td>
<td>Embed and maintain the intervention?</td>
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</table>
WHERE ARE WE STARTING FROM?

Education systems are good at looking for improvements in teacher quality for solutions.

Less common to focus ‘beyond the school gate’ and on population approaches.

Very low levels of R&D investment in the education sector.

Education attracts 0.57% of total government spend on R&D.

(Australian Bureau of Statistics. 81090DO002_201213 Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2012-13)
WHAT DO WE HAVE?

DECD has committed to measure outcomes at key transition points.

Levering the machinery of the agency means low cost collection and management of data.

The infrastructure exists to link this data to other administrative collections make data available for research.
We asked the question:

Can you get State government to engage in the issues identified through the evidence?
AEDI REPORT FOR SOUTH AUSTRALIA

Replicated the analyses of the 2009 national report for SA children

Presented a set of policy issues in response to the results.

For example:

• Follow up of children requiring further assessment
• Gap between boys and girls
• System-wide response to children arriving at school hungry

Report was circulated internally

A report based on the 2012 results has been drafted.
CASE STUDY 1: TROUBLE WITH BOYS?

The 2009 Australian Early Development Index (AEDI) showed that there are large differences between South Australian boys and girls in child development outcomes at school entry.

DECD commissioned the Fraser Mustard Centre to produce a report to document trends in gender differences, identify the drivers of these developmental pathways and inform potential strategies for intervention.
The gender gap compounds the socioeconomic gradient (darker shades indicate greater disadvantage).

Within neighbourhoods with the same SEIFA score, the difference in the proportion of boys and girls vulnerable on one or more domains ranges from 14-20 percentage points.

There is a 33 percentage point difference in the rate of vulnerable children between boys in the most disadvantaged suburbs and girls in the least disadvantaged suburbs.
THE GENDER GAP ACROSS OTHER OUTCOMES

Females are doing better than males in terms of educational outcomes.

Females are completing high school, attending university and obtaining degrees in higher proportions than are males.

Many more males are completing apprenticeships. There are more males in the workforce and men earn higher salaries than women.

Males are more likely than females to have special needs and experience developmental disorders.

More boys also have behavioural problems, including bullying and disruptive classroom behaviour, and are more likely to repeat grades at school and to be perpetrators of crime.

<table>
<thead>
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<th>Females</th>
<th>Males</th>
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<td>Self-esteem</td>
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<td>Apprenticeships and Traineeships</td>
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<td>Grade repetition</td>
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<tr>
<td>Juvenile delinquency</td>
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PERCENTAGE OF LOW BIRTH WEIGHT (< 2500 G) BOYS AND GIRLS BORN IN SOUTH AUSTRALIA FROM 2006-2009
PERCENTAGE OF BOYS AND GIRLS WITH IDENTIFIED SPECIAL NEEDS UPON SCHOOL ENTRY IN 2009 (AEDI DATA)
PISA READING SCORES FOR 15 YEAR OLD MALES AND FEMALES
2000 TO 2009

<table>
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<tr>
<th>Year</th>
<th>Aust avg M</th>
<th>Aust avg F</th>
<th>OECD avg M</th>
<th>OECD avg F</th>
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<td>2003</td>
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<td>2006</td>
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<td>2009</td>
<td>500</td>
<td>490</td>
<td>480</td>
<td>470</td>
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SOUTH AUSTRALIAN YEAR 3 (8 YEARS OLD) NAPLAN READING TREND FROM 2008-2011
PERCENTAGE OF 20 TO 24 YEAR OLDs WITH YEAR 12 OR HIGHER FORMAL QUALIFICATION FROM 2002 TO 2011

![Graph showing percentage of 20 to 24 year olds with Year 12 or higher formal qualification from 2002 to 2011 for males and females.]
RATIO OF FEMALE TO MALE UNIVERSITY ENROLMENTS

Figure 4b: Proportion of females enrolled in an undergraduate course, all students or domestic students, 1989–2006

Source: This graph is derived using selected series published in DETYA (2000). Figures after 2000 were obtained using online published data from DEEWR (2001–2007).
POLICY IMPLICATIONS

Gender differences on many domains does not indicate that all boys or all girls are at risk, but at a population level these differences can amount to large numbers of children and young people experiencing less than optimal development and opportunities.

These disparities are worth responding to if effective interventions can be identified.

The evidence considered suggests that few of the differences between males and females are caused by unmodifiable genetic or biological differences. Therefore, the policy question is how to reduce socially determined inequities.
PROPOSED RESPONSES (1)

RECOMMENDATION:

Is the uptake or ‘reach’ of services consistent with known risk factors (including gender)?

Analysis of the uptake of existing services and allocation of resources is needed.

Is coverage / participation in services proportionate to the prevalence of needs across the population of children?
RECOMMENDATION:

Are boys and girls exposed to the same ‘dose’ of risk and protective factors?

Collect more detailed evidence about the influence of the home environment on child development.

Are there differences in the level and quality of language heard by boys compared with girls?

Number of words spoken to children aged 2-30 months (n = 252)

Source: Gilkerson et al. Impact of adult talk, conversational turns, and TV during the critical 0-4 years of child development.
CASE STUDY 2: LENA

Language Environment Analysis (LENA) is a technical innovation that uses advanced speech recognition technology to objectively measure the amount of parent and child talk.
Research Grant Applications – so far unsuccessful (ARC Discovery, NMHRC Project Grant)

1: Establish the temporal associations between trajectories of Parent Talk, Child Talk and Parent-Child Talk from 6 months to 5 years.


3: Examine the effects of trajectories of Parent Talk, Child Talk and Parent-Child Talk on child health and developmental outcomes at ages 3 years (ASQ) and 5 years (AEDI), and differences by socioeconomic group, parent language ability and gender.

4: Simulate how interventions to close socioeconomic gaps in Parent Talk would improve social inequality and overall levels of child health and development for Australian children.
CASE STUDY 2: LENA

- NHMRC success rate ~ 13% in South Australia (and dropping)
- Extremely time consuming with long lead times
- Despite significant policy implications and potential intervention opportunities it’s difficult to source funding through traditional academic competitive funding
- In the meantime DECD has funded a pilot study to provide process data and to provide some indicative results (n = 18)
- Ms Veronica Smyth has commenced her PhD, and will utilise LENA and the SA ECD Demonstration Linked Data.
CASE STUDY 3: BEATING THE ODDS

The AEDC demonstrated considerable diversity in results across communities in 2009.

There remains much greater variation in AEDC outcomes between communities within the same socioeconomic disadvantage grouping (SEIFA quintile) than between groups.

This piece of work set out to use the AEDI and NAPLAN to identify off-diagonal communities or those that ‘beat the odds’.
CASE STUDY 3: BEATING THE ODDS

AEDC

Distribution of vulnerability across local government areas upon starting school
Children in government schools, 2009

NAPLAN

Distribution of low NAPLAN achievement across local government areas at Year 3
Children in government schools, 2012
## CASE STUDY 3: BEATING THE ODDS

**All AEDC Communities (local government areas)**

<table>
<thead>
<tr>
<th>Adelaide</th>
<th>Northern Areas</th>
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<tbody>
<tr>
<td>Adelaide Hills</td>
<td>Norwood Payneham St Peters</td>
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<td>Alexandrina</td>
<td>Onkaparinga</td>
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<td>Barunga West</td>
<td>Peterborough</td>
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<tr>
<td>Burnside</td>
<td>Playford</td>
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<td>Campbelltown</td>
<td>Port Adelaide Enfield</td>
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<td>Ceduna</td>
<td>Port Augusta</td>
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<tr>
<td>Charles Sturt</td>
<td>Port Pirie and Districts</td>
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<tr>
<td>Clare and Gilbert Valleys</td>
<td>Prospect</td>
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<tr>
<td>Coober Pedy (*)</td>
<td>Renmark Paringa</td>
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<tr>
<td>Copper Coast</td>
<td>Robe/Kingston (*)</td>
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<td>Far North and Flinders (*)</td>
<td>Salisbury</td>
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<td>Flinders Ranges</td>
<td>Southern Mallee/Karooonda East Murray (*)</td>
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<td>Gawler</td>
<td>Streaky Bay</td>
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<td>Goyder</td>
<td>Tatiara</td>
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<td>Grant</td>
<td>Tea Tree Gully</td>
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<td>Holdfast Bay</td>
<td>The Coorong</td>
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<tr>
<td>Kangaroo Island</td>
<td>The Lands (*)</td>
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<td>Lower Eyre Peninsula (*)</td>
<td>Tumby Bay</td>
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<td>Mallala</td>
<td>Unley</td>
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<td>Marion</td>
<td>Victor Harbor</td>
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<td>Mid Murray</td>
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<td>Mitcham</td>
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<td>Mount Barker</td>
<td>Wattle Range</td>
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<td>Mount Gambier</td>
<td>West Torrens</td>
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<tr>
<td>Mount Remarkable/Orroroo/Carrieton (*)</td>
<td>Whyalla</td>
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<tr>
<td>Murray Bridge</td>
<td>Yankalilla</td>
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CASE STUDY 3: BEATING THE ODDS

All AEDC Communities (local government areas)

Government school students beating the socioeconomic trend on the AEDC 2009

- Adelaide
- Adelaide Hills
- Alexandrina
- Barunga West
- Burnside
- Campbelltown
- Ceduna
- Charles Sturt
- Clare and Gilbert Valleys
- Coober Pedy (*)
- Copper Coast
- Far North and Flinders (*)
- Flinders Ranges
- Gawler
- Goyder
- Grant
- Holdfast Bay
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- Lower Eyre Peninsula (*)
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- Onkaparinga
- Peterborough
- Playford
- Port Adelaide Enfield
- Port Augusta
- Port Pirie and Districts
- Prospect
- Renmark Paringa
- Robe/Kingston (*)
- Salisbury
- Southern Mallee/Karoonda East Murray (*)
- Streaky Bay
- Tatiara
- Tea Tree Gully
- The Coorong
- The Lands (*)
- Tumby Bay
- Unley
- Victor Harbor
- Wakefield
- Walkerville
- Wattle Range
- West Torrens
- Whyalla
- Yankalilla
CASE STUDY 3: BEATING THE ODDS

All AEDC Communities (local government areas)

Government school students beating the socioeconomic trend on the AEDC 2009

AND

beating the socioeconomic trend on NAPLAN 2012 (Year 3 Reading)
## CASE STUDY 3: BEATING THE ODDS

Government school students beating the socioeconomic trend across AEDC and NAPLAN, 2009 and 2012

<table>
<thead>
<tr>
<th>Community groups based on AEDI data from full population (all schools)</th>
<th>2009</th>
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<th>2012</th>
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<tr>
<td><strong>Area</strong></td>
<td><strong>AEDI (Government schools only)</strong></td>
<td><strong>NAPLAN Reading</strong></td>
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POLICY IMPLICATIONS

From 2009 to 2012 there has been little change in the overall pattern of child development outcomes for South Australia (inequality decreased slightly because outcomes declined for children living in higher socioeconomic areas).

Initial signs are that few disadvantaged communities are “beating the odds” and recorded low levels of vulnerability across both collections.

This may be a sign that systemic socioeconomic impacts on child development cannot be addressed effectively on a community-by-community basis.

Alternatively, more evidence about effective community-level interventions, including the level of resources required, may be needed.
POLICY IMPLICATIONS

There is more work to be done to talk those on the ground to investigate the reasons for expected (and unexpected) results.

What can “off-diagonal/beating the odds” analysis tell DECD about factors which could improve outcomes of children and young people?

What should be investigated further?

Should this method be used in the future to evaluate outcomes over time for schools, communities, individuals?

For example, after adjustment for demographic and socioeconomic characteristics, which students have higher than expected achievement scores (beyond measurement error)? Are there schools with a much higher concentration of these students than other schools? What can we learn about these schools and students?
CASE STUDY 4: INTRODUCING A MEASURE OF WELLBEING

What we know:

Experiences in the middle years of schooling can have critical and long lasting effects and are powerful predictors of adolescent adjustment and success.

This developmental period (6-12 years) is characterized by cognitive, social, emotional, and biological changes that set the stage for development in adolescence and adulthood.

During the middle years children’s personalities, behaviours, and competencies consolidate into forms that persist through the life course.

Importantly research has shown that Social and Emotional Learning (SEL) programs can make a difference.
CASE STUDY 4: INTRODUCING A MEASURE OF WELLBEING

Policy Context:

The ultimate goal of education is to create good citizens as reflected in the Melbourne Declaration which identifies successful learners, confident and creative individuals and active and informed citizens as the three dimensions of Goal 2.

In Australia there has been a significant focus on the formal aspects of literacy and numeracy partly encouraged, partly enforced through NAPLAN and the public release of school specific data by the MySchool website.

Need for a counterbalance measure to support all aspects of learning and development.
Goal 2: All young Australians become successful learners, confident and creative individuals, and active and informed citizens.
Goal 2: All young Australians become successful learners, confident and creative individuals, and active and informed citizens.

Confident and creative individuals...

- have a sense of self-worth, self-awareness and personal identity that enables them to manage their emotional, mental, spiritual and physical wellbeing
- have a sense of optimism about their lives and the future
- are enterprising, show initiative and use their creative abilities
- develop personal values and attributes such as honesty, resilience, empathy and respect for others
- have the knowledge, skills, understanding and values to establish and maintain healthy, satisfying lives
- have the confidence and capability to pursue university or post-secondary vocational qualifications leading to rewarding and productive employment
- relate well to others and form and maintain healthy relationships
- are well prepared for their potential life roles as family, community and workforce members
- embrace opportunities, make rational and informed decisions about their own lives and accept responsibility for their own actions.
CASE STUDY 4: INTRODUCING A MEASURE OF WELLBEING

Middle Development Instrument
A self-report survey which asks students about:
• their social and emotional development
• physical health and well-being
• relationships and connectedness with parents, adults and peers
• experiences at school, and
• how they time spent time during and after school.
CASE STUDY 4: INTRODUCING A MEASURE OF WELLBEING

Middle Development Instrument

Selected for further work to adapt the tool for use with Australian students on the basis that:

• it was designed specifically to measure developmental progress and well-being with children across the middle years
• it provided a means for obtaining the ‘voice’ of students and allowed children to report on aspects of their lives relevant to their wellbeing
• the MDI measured multiple developmental ‘domains’ and multiple contextual assets
• it placed children’s social and emotional wellbeing in the context of the home, schools and the broader community
• the quality of the evidence on the validity and reliability of the instrument was robust and the psychometric properties appeared to be strong
• there was evidence that the instrument was relatively easy to use from the perspective of students and educators
• the information could be collected at a low cost compared with other methods of data collection.
CASE STUDY 4: INTRODUCING A MEASURE OF WELLBEING

Journey with the Middle Development Instrument (MDI)

- Existing relationship with authors and Clyde Hertzman’s group
- Study trip to UBC – brought back the MDI
- Partnership formalised
- Successful Australian Research Council Linkage Grant with a partnership between DECD, DET WA, Telethon Kids Institute and HELP UBC
- Government moving quicker than the research
- DECD SA in 2014 measured the wellbeing of 17,620 children
- International interest through the OECD
CASE STUDY 4: INTRODUCING A MEASURE OF WELLBEING

Key findings:

• The strong interest from schools and students in measuring wellbeing. In Term 4 2014, 17,620 Year 6-9 students from more than 190 government and non-government schools undertook the survey.

• 185 tailored school reports distributed on 11 February 2015. (69,714 different data items).

• The survey portal developed to administer the survey online proved capable of hosting students in large numbers.

• The measurement of students’ wellbeing as a self-complete survey undertaken during a normal classroom lesson and facilitated by the school staff allowed the data to be collected for almost all children (minus students absent on the day of collection or opting out), as quickly as possible and at relatively low cost.
Key findings – Sleep and nutrition example:

- A third (32.2%) of children reported having a good night’s sleep three times a week or less. Approximately one in five children are going to bed after 11 pm each weeknight (although the total time spent asleep by these children is unknown).

- Across age groups, older children were more likely to report regularly not getting a good night’s sleep than younger children (Year 6, 24.1% compared to Year 9, 39.8%).

- Approximately one in four (23.7%) of children ate breakfast three times a week or less. Older children were almost twice as likely to regularly skip breakfast than younger children (Year 6, 15.2% compared to Year 9, 32.3%).
Case Study 4: Introducing a Measure of Wellbeing

Key findings – School climate example:

- 48 per cent of students had a strong sense of school belonging (‘high’ on the scale).
- School belonging drops markedly as students get older – 60 per cent of Year 6 students have a high level of school belonging, compared with just 37 per cent of Year 9 students.
- Boys and girls are equally likely to report high levels of school belonging, while students living in more affluent areas are more likely to report high levels of school belonging than students from more disadvantaged areas (42% of children living in the most disadvantaged SEIFA quintile compared to 55% of children living in the least disadvantaged quintile).
CASE STUDY 4: INTRODUCING A MEASURE OF WELLBEING

Future directions:

• Role of these measures in school planning and review cycle – optimal frequency of collections?

• Link to administrative data: associations between the MDI domains, NAPLAN, attendance and behaviour.

• Link to AEDC data – can we modify early developmental vulnerability?

• Optimal measure/collection of wellbeing: how do we best address needs for in-depth school/classroom measures, mental health screening tools and population measures of human development?
INTERNATIONAL COLLABORATION

It is now possible to collect detailed wellbeing data from students in 2015.

The Programme of International Student Assessment (PISA) is collecting academic achievement measures in 2015.

School systems provide the identifying information to enable PISA data to occur.

The obvious question: Could we bring these data sources together?

Could we do this across collaborating internal education systems?
INTERNATIONAL COLLABORATION

From humble beginnings we are now in discussion with:

Australia, Canada, Chile, Columbia, Hong Kong, Mexico, Slovenia, Thailand and the United States

Academic achievement and wellbeing: striking a balance

A proposal to collect self-report measures of students’ wellbeing in parallel to the 2015 Programme for International Student Assessment (PISA) results
TRANSLATING RESEARCH INTO PRACTICE AND POLICY

With good timing, relevant data and high quality analysis, you can get governments to engage with research findings.

But it requires perseverance, optimism, strong relationships, resilience, self-esteem and an eye on the longer-term goal.

In other words, you need character strengths and noncognitive skills... the same domains we have measured amongst students as part of the Middle Years Development Instrument (MDI).
TRANSLATING RESEARCH INTO PRACTICE AND POLICY

What we’ve done well:
• Built the relationships
• Shared knowledge from both sides
• Embedded some of the ideas into government’s thinking

What remains to be done:
• Change policy and practice
• Change how resources are invested (and disinvested)
• Find where this fits in the research community
• Crack the cross-disciplinary code (research funding and across government)
BUSINESS INTELLIGENCE WORK PROGRAM

• GOVERNANCE
• INFORMATION QUALITY
• COMMUNICATION
• CAPACITY BUILDING
• POLICY SETTING
• EVALUATION
• PERFORMANCE REPORTING
• RESEARCH
• BUSINESS INTELLIGENCE
• PERFORMANCE ANALYSIS
BUILDING AN INFORMATION SYSTEM

DEMOGRAPHIC DATA
- Parent education, school card, residence SES, number of residence moves

SERVICE USE
- VET, higher education

POPULATION MEASURES OF WELLBEING, DEVELOPMENT AND LEARNING
- Maternal / child health
- Education programs and interventions
- Emergency department & hospital admissions
- Nutrition

CLINICAL AND COHORT DATA, AD HOC SURVEYS
- AEDC
- MDI
- SACE
- RR
- NAPLAN
- LENA
- EPOCH
THANK YOU

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Sally.Brinkman@telethonkids.org.au