EARLY CHILDHOOD
NATIONAL REFORM SYMPOSIUM
Keynote speaker

Professor Edward (Ted) Melhuish
PROFESSOR OF HUMAN DEVELOPMENT
UNIVERSITY OF OXFORD
Early Childhood Education and Care (ECEC) & the Welfare of Nations

Edward Melhuish
University of Oxford

edward.melhuish@education.ox.ac.uk
Populations are changing

Australian Bureau of Statistics 2061: workforce will decrease by 15% while elderly increase by 50%.

Similar situation in other developed countries.

Economic sustainability will require maximizing the capacity of the workforce, with an increase in productivity to maintain living standards.
OECD 2012: Across OECD, 20% do not achieve basic minimum skills. The problem is twice as great for disadvantaged groups. Currently 24% of Australian children enter school with developmental problems.

Disadvantaged groups have greater risk:
- for poor health
- Social, emotional, behavioural problems
- Attention, cognitive and language problems
- Affects educational progress, literacy, numeracy, social skills, employability, health, adjustment and criminality.
The impact of family disadvantage upon well-being is persistent.

Early experience is critical in this link.

Two arguments for investing in early childhood.
2. Economic – we all benefit in the long-term
Indicators of school readiness by parental income, Australia

School readiness at 4-5 yrs

<table>
<thead>
<tr>
<th>SEIFA Q1</th>
<th>SEIFA Q2</th>
<th>SEIFA Q3</th>
<th>SEIFA Q4</th>
<th>SEIFA Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>50</td>
<td>52</td>
<td>55</td>
<td>58</td>
</tr>
</tbody>
</table>

Vocabulary at 4-5 yrs

<table>
<thead>
<tr>
<th>SEIFA Q1</th>
<th>SEIFA Q2</th>
<th>SEIFA Q3</th>
<th>SEIFA Q4</th>
<th>SEIFA Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>50</td>
<td>52</td>
<td>56</td>
<td>60</td>
</tr>
</tbody>
</table>
Why Focus on Early Childhood?

“If the race is already halfway run even before children begin school, then we clearly need to examine what happens in the earliest years.” (Esping-Andersen, 2005)

“Like it or not, the most important mental and behavioural patterns, once established, are difficult to change once children enter school.” (Heckman & Wax, 2004).
Countries in the OECD tend to prioritise spending on older children.

<table>
<thead>
<tr>
<th>Country</th>
<th>Early years share</th>
<th>Middle years share</th>
<th>Late years share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iceland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Early childhood spending is linked with lower poverty rates...

Early childhood spending as a proportion of median income - 2003

$r = -0.54$
0-3 years
THE IMPORTANCE OF THE CHILD’S LANGUAGE ENVIRONMENT

LANGUAGE DEVELOPMENT UNDERPINS COGNITIVE, EDUCATIONAL AND SOCIAL DEVELOPMENT

*Language development begins at birth*

A CHILD WITH POOR LANGUAGE AT 3 YEARS WILL BE AT RISK UNLESS INTERVENTION TAKEN.
Sensitive periods & Synaptic Development

Words Heard In 4 Years

Million words

<table>
<thead>
<tr>
<th>Family Status</th>
<th>Million words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welfare</td>
<td>10</td>
</tr>
<tr>
<td>Working Class</td>
<td>20</td>
</tr>
<tr>
<td>Professional</td>
<td>40</td>
</tr>
</tbody>
</table>
Achievement Gap starts early

![Graph showing vocabulary growth by child's age in months]

- College educated parents: 1,116 words
- Working class parents: 749 words
- Welfare parents: 525 words
INTERVENTIONS with DISADVANTAGED GROUPS

Examples

Abecedarian Project – childcare/preschool 0-6

Perry Preschool Project – preschool 3-6 years
Return on investment

Program Benefits Versus Cost

1992 dollars, 3% annual discount rate

Return on dollar invested age 21
7:1

Return on dollar invested age 40
16:1

1992 dollars, 3% annual discount rate
Non-intervention studies – General population

Day Care Project – London 1980’s

Effective Preschool & Primary Education – EPPE
3000 children followed from age 3

Effective Preschool Provision in Northern Ireland
EPPNI
London Day Care Project - 1980’s (Melhuish et al., 1990)

255 children studied 0-6 years

4 groups

1. Home - no non-parental care
   Relative day care - grandmother etc.
2. Child minder – individual carer
3. Nursery – Group day care
Childcare Quality

- **Home**: Highest quality, followed by average, lowest, and then most.
- **Relative**: Similar to Home, highest quality, followed by average, lowest, and then most.
- **C/minder**: Highest quality, followed by average, lowest, and then most.
- **Nursery**: Highest quality, followed by average, lowest, and then most.

Legend:
- Light blue: Lowest
- Dark blue: Average
- White: Most
MAJOR RESULTS

After controlling for family background factors

1. Language development related to quality of care in first 3 years – particularly communication and responsiveness

2. These effects persisted to 6 years of age

Results from this study informed the childcare regulations in the 1989 Children Act
Similar results found in several countries:

- Quality of childcare affects development.
- The biggest effects in first 3 years for language development.
- Those children with good language development then do better on literacy and most educational outcomes.
3+ years
General Population - EPPE STUDY in UK

- **25 nursery classes**
  - 590 children

- **34 playgroups**
  - 610 children

- **31 private day nurseries**
  - 520 children

- **20 nursery schools**
  - 520 children

- **24 local authority day care nurseries**
  - 430 children

- **7 integrated centres**
  - 190 children

- **home**
  - 310 children

School starts:
- **6yrs**
- **7yrs**
- **16yrs**

**Key Stage 1**
- 600 Schools
- approx. 3,000 chd

**Key Stage 2**
- 800 Schools
- approx. 2,500 chd
Quality and Duration matter
(months of developmental advantage on literacy)
Social class and pre-school on literacy (age 7)

- Pre-school
- No pre-school
- Expected minimum

Social class by occupation:
- Professional
- Skilled
- Un/semi skilled

Mean year 2 reading level: 1.8 to 2.8
Modelling later outcomes

- Child development:
  - e.g. literacy
  - numeracy
  - sociability
  - behaviour problems

Factors:
- Family Factors
- Child Factors
- Home-Learning Environment
- Pre-school
- Primary School
- Secondary School
Effect size in standard deviation units

Effects upon Age 11; literacy and numeracy

- Literacy
- Numeracy

Factors:
- Family income
- Mother's Education
- Father's Education
- Socio-economic status
- Home learning environment
- High-quality preschool
- Primary school
Pre-school Quality and Self-regulation and Pro-social behaviour (age 11 and 14)
Effect sizes for 16 year olds

- Family income
- Mother's education
- Father's education
- Socio-economic status
- Home learning environment
- High-quality pre-school
- Primary school
- Secondary school quality

Effect size
Trajectories for Numeracy

<table>
<thead>
<tr>
<th>Residual Score</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 Years</td>
</tr>
<tr>
<td></td>
<td>5 years</td>
</tr>
<tr>
<td></td>
<td>6 years</td>
</tr>
<tr>
<td></td>
<td>7 years</td>
</tr>
<tr>
<td></td>
<td>10 years</td>
</tr>
<tr>
<td></td>
<td>11 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1 1 8.2%</td>
</tr>
<tr>
<td>2 2 2 19.6%</td>
</tr>
<tr>
<td>3 3 3 18.8%</td>
</tr>
<tr>
<td>4 4 4 17.3%</td>
</tr>
<tr>
<td>5 5 5 23.2%</td>
</tr>
<tr>
<td>6 6 6 12.9%</td>
</tr>
</tbody>
</table>
Policy Impact in the UK

- **2004** - Free ECEC place from 3 years - 15 hours/week
- **2013** - Free ECEC place from 2 years - 15 hours/week (40% most deprived)
- **2016** - 15 hours/week increases to 30 hours/week
- Maternity leave increased to 1 year
- New Early Years curriculum
- New training programs for EY staff
- Acceptance that EY is part of state responsibilities
International evidence

Evidence is consistent - ECEC is essential part of infrastructure for optimising global wellbeing.

NORWAY, FRANCE, SWITZERLAND – population studies – all preschool increased education, employment, incomes.

DENMARK – high quality preschool- better 16 years outcomes

NORTHERN IRELAND - high quality preschool increased grades in English X 2.4 and math X 3.4.
Benefits of preschool have also been evident in Asia and South America.

- In Bangladesh, children attending preschool achieved higher attainment levels at primary school.
- Uruguay has followed suit - studies identified better attainment in secondary school for children who attended preschool.
- Argentina found increases in primary school attainment from children who spent at least 1 year in preschool.

Pre-school in random sample of children born in 1958 in UK

Effects on cognition and socialisation are long-lasting.

Controlling for child, family and neighbourhood, there were long-lasting effects from pre-school education.

pre-school leads to **better cognitive scores at 7 and 16 years**

In adulthood, pre-school was found to increase the **probability of good educational qualifications** and **employment at age 33**, and **better earnings at age 33**.
Across OECD countries, 15-year-olds who attended preschool were, on average, a year ahead of those who had not.

“The bottom line: Widening access to pre-primary education can improve both overall performance and equity by reducing socio-economic disparities among students, if extending coverage does not compromise quality.”

Gains from ECEC

Education and Social Adjustment
• Educational Achievement improved
• Special education and grade repetition reduced
• Behaviour problems, delinquency and crime reduced
• Employment, earnings, and welfare dependency improved
• Smoking, drug use, depression reduced

Decreased Costs to Government
• Schooling costs
• Social services costs
• Crime costs
• Health care costs
1. Early years are very important
2. ECEC is part of infrastructure for a successful society
3. High quality ECEC boosts development
4. Parenting is also very important
5. ECEC can lift population curve.
6. Disadvantaged children benefit greatly from high quality ECEC.
Example References


http://www.child-encyclopedia.com/Pages/PDF/Melhuish-BarnesANGxp1.pdf


