Early Interventions and Child Outcomes: Evidence from the UK

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UK Studies on Early Childhood Experience

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, first-born, 2 parent families, UK-born

4 groups

1. Home - no non-parental care
2. Relative day care - grandmother etc.
3. Child minder – individual carer
4. Nursery – Group day care
0-3 years child care experience

Controlling for family background factors

1. Language development linked to quality of care 0-3 – particularly communication and responsiveness

2. These effects persisted


4. Influenced 1989 Children Act

EPPSE STUDY in UK

<table>
<thead>
<tr>
<th>(3+ yrs)</th>
<th>School starts</th>
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<tbody>
<tr>
<td>25 nursery classes</td>
<td>600 Schools approx. 3,000 chd</td>
</tr>
<tr>
<td>34 playgroups</td>
<td>800 Schools approx. 2,500 chd</td>
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<tr>
<td>31 private day nurseries</td>
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</tr>
<tr>
<td>20 nursery schools</td>
<td></td>
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<tr>
<td>24 local authority day care nurseries</td>
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<tr>
<td>7 integrated centres</td>
<td></td>
</tr>
<tr>
<td>home</td>
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</table>

<table>
<thead>
<tr>
<th>6yrs</th>
<th>7yrs</th>
<th>16yrs</th>
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<tbody>
<tr>
<td>Key Stage 1</td>
<td>600 Schools approx. 3,000 chd</td>
<td></td>
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<tr>
<td>Key Stage 2</td>
<td>800 Schools approx. 2,500 chd</td>
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Quality and Duration matter
(months of developmental advantage on literacy)

Effects of child, home, and pre-school compared

EFFECTS UPON LITERACY

Mean EFFECT

- gender
- low birth weight
- home pre-school
- social class
- home environment
**Home Learning Environment**

Parents asked about activities in the home.

A home learning environment (HLE) index constructed (Melhuish et al., 2001).

Several activities linked to development.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>not occur</td>
<td>very frequent</td>
<td></td>
<td></td>
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Reading to child  
Library visits  
Painting & drawing  
Playing with letters  
Playing with numbers/shapes  
Songs/poems/nursery rhymes

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**Measuring the effectiveness of primary schools**

- Data every child in England in state school
- 600,000 children in each year,  
  N = 15,771 primary schools

We used data to calculate the **effectiveness** of each school
EFFECTIVENESS

• Schools where children make greater progress than predicted on the basis of initial attainment and pupil and area characteristics can be viewed as more effective.

• Schools where children make less progress than predicted can be viewed as less effective.

We have a continuous scale of school effectiveness.

Modelling later outcomes

Child development:
- e.g. literacy
- numeracy
- sociability
- behaviour problems
Effects upon Age 11; literacy and numeracy

Combined Impact of Pre- and Primary School - Maths

Reference Group: No Pre-School and low Primary School Effectiveness
Pre-school Quality and Self-regulation and Pro-social behaviour (age 11 and 14)

Pre-school quality

- Low
- Medium
- High

Self-regulation

- Effect size

Pro-social behaviour

- Effect size

Trajectories for Numeracy

- Residual Score

Time

- Group %
What matters

3 elements for good educational and social success

**Good** Home Learning Environment (before school)

**Good** preschool for longer duration

**Good** primary schools

Those children with all 3 will out-perform those with 2 who will out-perform those with 1 who will out-perform those with 0

All other things being equal

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**Effect sizes for 16 year olds**

![Bar chart showing effect sizes for literacy and numeracy across various factors such as family income, mother's education, father's education, socio-economic status, high-quality preschool, and secondary school quality.](chart.png)
EFFECTIVE PRE-SCHOOL PROVISION IN NORTHERN IRELAND (EPPNI)

Study in Northern Ireland
850 children followed from 3 to 11 years of age.
Similar results to EPPE in England.

At age 11, allowing for all background factors,
The effects of quality of pre-school persist until age 11 years

High quality pre-school – improved English and maths,
And improved progress in maths during primary school.

Children who attended high quality pre-schools were 2.4 times more likely in English, and 3.4 times more likely in mathematics, to attain the highest grade at age 11 than children without pre-school.

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.

Conclusions

• From age 2 all children benefit from preschool.
• The quality of preschool matters.
• Part-time ECEC has equal benefit to full-time.
• Preschool effects persist to adulthood
• High quality preschool boosts development
• Preschool lifts population curve.
• Disadvantaged children benefit most.
• High quality preschool can reduce SEN.
• Parenting is also very important