Inequalities in education outcomes

Education, Employment, Evaluation Sector

IFS
Thematic overview

• Inequalities in:
  – Educational outcomes/ trajectories
    • School results; staying on post-16; NEET; HE participation
  – Social and behavioural outcomes
    • Teenage attitudes and behaviours, Social skills, Adult crime, health.

• Dimensions of inequality considered
  – Parental SES
  – Ethnicity
  – Neighbourhood characteristics
  – Month of birth
Project overview

• “Explaining the socio-economic gradient in child outcomes”:
  – Focus on role of “attitudes, behaviours and beliefs” in education and social outcomes
  – Early childhood through to teens

• Widening participation in Higher Education:
  – Uses unique linked administrative datasets
  – Big disparities in HE attendance by “deprivation” (FSM and local area)
  – Explained entirely by differences in school results esp. at A’level

• The impact of early cognitive and non-cognitive skills on later outcomes:
  – Importance of social skills for later life outcomes, both economic and social
  – Differences by SES in acquisition and impact

• Month of birth work:
  – Big summer-born penalty at school (and HE) due to school admissions
  – Policy implications
The socio-economic gradient in child outcomes: the role of attitudes, behaviours and beliefs

Institute for Fiscal Studies
CMPO
University of Oxford
“Explaining the socio-economic gradient in child outcomes”

• Routes through which socio-economic position (SEP) affects
  – Educational attainment and progression
  – Social and emotional development

• Different life stages
  – Early years (MCS)
  – Primary (ALSPAC)
  – Secondary (LSYPE)

• Role of different factors, including parenting activities, and parent and child behaviours, attitudes and beliefs
“Explaining the socio-economic gradient in child outcomes”

Examples of transmission mechanisms considered:

- Home learning environment (3,5)
- Parenting style and rules (3,5)
- Family health and well-being (3,5,9)
- Family-child interactions (3,5,9,13)
- Aspirations and expectations for age 16 and HE (9,13)
- Ability beliefs (8,13)
- Locus of control (8,14)
- Poor behaviour at school, anti-social behaviour (8,9,13)
- Experiences of bullying (8, 13)
- Material resources (13)
Socio-economic gradients (MCS)

- Birthweight - Kg
- Suffered Post-Natal Depression
- Read to Every Day at 3
- Regular Bed Times at 3
Socio-economic gradients (ALSPAC)

YP ability beliefs

YP locus of control

Hyperactivity

Mother hopes YP will go to uni
Socio-economic gradients (LSYPE)

YP ability beliefs

YP locus of control

Parent child ed- interactions

Material resources
Summary of findings

- 'Raw' gap
- After controlling for family background and schools
- Including additional controls for attitudes, behaviours, and beliefs
Summary of findings

• Pre-school: home learning environment, parenting styles and rules, family health

• Primary: early years influence, parental aspirations child’s ability beliefs, locus of control, emotional and behavioural development

• Teenage years: child’s own expectations and aspirations for education; bullying, anti-social behaviour, education behavioural problems
Widening Participation in Higher Education: Analysis using Linked Admin Data

Institute for Fiscal Studies
Haroon Chowdry, Claire Crawford, Lorraine Dearden, Alissa Goodman
Institute of Education
Centre for Economic Performance
Widening Participation in HE

Research Questions:

• How does the likelihood of HE participation vary by socio-economic background?

• How much of this gap can be explained by prior achievement?

• How does the type of HE participation vary across socio-economic groups?
New longitudinal admin data

- Linked individual-level administrative data
  - School, FE and HE records from NPD, ILR and HESA

- Consider two cohorts:
  - In Year 11 in 2001-02 or 2002-03
  - Potential age 19 HE entry in 2004-05 or 2005-06 (age 20 entry in 2005-06 or 2006-07)

- State and private school students
Summary of findings
Big gaps in HE participation by deprivation score

% attending HE age 18 or 19

Richest 2nd 3rd 4th Poorest
Summary of findings

But no gap in HE participation conditional on A level score

- 25% of richest get top A levels
- 3% of poorest get top A levels
- 45% of richest get top A levels
- 84% of poorest get top A levels

% attending HE age 18 or 19

- 301+: Richest (25%)
- 181-300: 2nd (3%)
- 1-180: 3rd (45%)
- None: Poorest (84%)
Summary of findings

Similar finding for participation in “high status” university
### HE participation (state school males)

<table>
<thead>
<tr>
<th>Quintile</th>
<th>No controls</th>
<th>Individual and school controls</th>
<th>Plus Key Stage 2 results</th>
<th>Plus Key Stage 3 results</th>
<th>Plus Key Stage 4 results</th>
<th>Plus Key Stage 5 results</th>
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</thead>
<tbody>
<tr>
<td>4th deprivation quintile</td>
<td>0.065**</td>
<td>0.048**</td>
<td>0.029**</td>
<td>0.017**</td>
<td>0.003*</td>
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<td>3rd deprivation quintile</td>
<td>0.134**</td>
<td>0.085**</td>
<td>0.055**</td>
<td>0.035**</td>
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<tr>
<td>2nd deprivation quintile</td>
<td>0.201**</td>
<td>0.118**</td>
<td>0.079**</td>
<td>0.052**</td>
<td>0.017**</td>
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<td>Least deprived quintile</td>
<td>0.288**</td>
<td>0.160**</td>
<td>0.110**</td>
<td>0.076**</td>
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<td>Observations</td>
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<td>550,972</td>
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<tr>
<td>R-squared</td>
<td>0.053</td>
<td>0.128</td>
<td>0.253</td>
<td>0.333</td>
<td>0.436</td>
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<td>F-test of extra controls</td>
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Conclusions

• Widening participation in HE to students from deprived backgrounds is largely about tackling low prior achievement
• Focusing policy interventions post compulsory schooling unlikely to eliminate raw socio-economic gap in HE participation
  – But does not absolve universities
The impact of early cognitive and non-cognitive skills on later outcomes

Pedro Carneiro, Claire Crawford, Alissa Goodman
The importance of social skills
Degree attainment by social maladjustment and parent SES

Source: NCDS
## Effect of skills on adult outcomes

### Differences by SES?

<table>
<thead>
<tr>
<th>Social skills (age 7)</th>
<th>Highest qualification O-levels</th>
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Conclusions

• Non-cognitive skills important for a range of outcomes
• Low SES individuals benefit relatively more from non-cognitive skills
• Early investments in non-cognitive skills may be cost-effective?
And finally....
When you are born matters: the impact of date of birth on child cognitive outcomes in England

Claire Crawford, Lorraine Dearden & Costas Meghir
Institute for Fiscal Studies
Education outcomes by date of birth

KS2

Proportion achieving expected level

Nov85 Feb86 May86 Aug86 Nov86 Feb87 May87 Aug87 Nov87 Feb88 May88 Aug88

Day of Birth

KS3

Proportion achieving expected level

Nov85 Feb86 May86 Aug86 Nov86 Feb87 May87 Aug87 Nov87 Feb88 May88 Aug88

Day of Birth

KS4

Proportion achieving expected level

Nov85 Feb86 May86 Aug86 Nov86 Feb87 May87 Aug87 Nov87 Feb88 May88 Aug88

Day of Birth

KS5

Proportion achieving expected level

Nov85 Feb86 May86 Aug86 Nov86 Feb87 May87 Aug87 Nov87 Feb88 May88 Aug88

Day of Birth

HE participation age 19

Proportion achieving expected level

Nov85 Feb86 May86 Aug86 Nov86 Feb87 May87 Aug87 Nov87 Feb88 May88 Aug88

Day of Birth

Males

Females
Summary

- August-born children experience significantly poorer educational outcomes than September-born children.

- Explanations tested:
  - Age of sitting the test (absolute age) effect
    - They are younger when they sit the tests
  - Age of starting school effect
    - They start school at a younger age
  - Length of schooling effect
    - They receive less schooling prior to the test
  - Age position effect
    - They are the youngest relative to others in their class

- Almost entirely due to differences in the age at which they sit the tests.

- Starting school earlier is marginally better for August born children
  - They benefit from having more time in school
Possible policy options?

• Flexibility in school starting age not enough!
• Age adjustment of tests/testing when ready
  – Could use principle that proportion reaching expected level should not vary by month of birth
    • We show a simple linear adjustment could be appropriate
  – Alternatively could set expected level by age (rather than school year)
    • e.g. reach Level 4 by age 11½ rather than end of Year 6
    • But requires more testing opportunities (“testing when ready”)
Ongoing/ future work

• Social mobility
  – Collaboration with Paul Gregg/CMPO
  – Changes in correlations between parental income and GCSE results

• Disadvantaged pupil premium

• Month of birth: social outcomes

• Children born out of wedlock