My maths is OK; I can do my job; why is that a problem?

How Perceptions of Adult Numeracy Influence Skills Policy in England

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Numeracy in the UK policy environment

• Great majority of investment is from national government and devolved administrations: England, Scotland, Wales and NI.

• Big push on basic skills from 2001 to 2010 but no change to numeracy levels of the working population.

• Current strategy is to grow higher and intermediate skills through new technical routes and apprenticeships for labour market entrants and upskilling existing workers through employer training.

• Numeracy and literacy a continuing priority but significant cuts to adult education since 2010.

• Focus of policy in England is children and young people; not adults.

• Over half of expenditure on maths for adults goes to apprentices
Adult numeracy levels are average but static; young peoples’ are weak.

Percentage of 16-19 year-olds with low numeracy (below level 2)
Better numeracy feeds through to higher labour productivity

- Skills (labour composition) accounted for around 20% of total UK labour productivity growth from 2002-07 and continued to make a positive contribution from 2008-13 even during the recession.
- Skills play a key role in the effective use of technology – there is a complementary relationship between workforce education and the adoption of new technologies.
- Better earnings and employment returns to maths (and English) qualifications than any others at the same level.

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<th>Earnings</th>
<th>Employment</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>All Below L2 of which</td>
<td>2%</td>
<td>0.5 ppt</td>
<td>-0.5</td>
</tr>
<tr>
<td>Entry Level Eng</td>
<td>5%</td>
<td>2 ppt</td>
<td>-0.5</td>
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<tr>
<td>Entry level Maths</td>
<td>3%</td>
<td>0 ppt</td>
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</tr>
<tr>
<td>L1 English</td>
<td>7%</td>
<td>2 ppt</td>
<td>-1</td>
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<tr>
<td>L1 Maths</td>
<td>6%</td>
<td>1 ppt</td>
<td>N/A</td>
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<td>L1 Eng &amp; Maths</td>
<td>12%</td>
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<td>ESOL</td>
<td>6%</td>
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<td>Other L1</td>
<td>1%</td>
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<td>All Thin L2</td>
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<td>L2 English</td>
<td>7%</td>
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Despite all this, little focus on adult numeracy as an issue. Why?

• Numeracy virtually always conjoined with literacy and digital skills despite these presenting different issues which require different solutions.

• Perception by policymakers raising the numeracy of school leavers by having them re-take qualifications is the priority.

• Little appetite for large scale interventions, partly because national government is devolving adult skills funding to city regions.

• Productivity analysis and skills survey results are quite theoretical and abstract. Politicians not experiencing pressure to act in the face of practical problems.

• Individuals and employers will not invest time and money into training unless they believe there will be some benefits to them.
Poor numeracy is hidden and marginal

Tasks passed to experts
Low expectations of employers
Individuals over-estimating what they can do
Automation
“We get by”
Maths = School

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Further Education Policy, Research and Strategy
Not a priority for employers

- Relatively low level of demand for qualifications by employers.
- Numeracy well down the skill shortage list.
- Maths (and English) seen as a signifier of general educational ability rather than skills and knowledge relating to specific jobs.
- Beyond a basic level, tasks requiring maths are often carried out by specialists.
Not a priority for individuals

- Many individuals with quite poor numeracy think they are good at maths (31% of people at EL2 or below claim to be good).
- The effects of poor numeracy are more likely to show themselves as a general lack of confidence and avoidance of certain tasks.
- Many people have no desire to re-connect with a subject they did not enjoy and feel that they failed at. The lower someone’s skills, the less likely they are to participate in further training.
Disconnect between maths and numeracy

\[ e^y \, dy = \left( 2x - 4 \right) \, dx \]
\[ \int e^y \, dy = \int \left( 2x - 4 \right) \, dx \]
\[ e^y = x^2 - 4x + c \]

- Employers tend to have a narrow understanding of what numeracy is in relation to job roles and be unaware of how improving numeracy can benefit organisations.
- When people think of maths they think of the subject they studied at school. They don’t think of solving practical problems using numbers and mathematical skills.

- The standard, most recognised, qualification is the GCSE which only partially tests functionality – it also provides a foundation for higher level study in the subject.
What does this mean for policy?

The challenge

• Just focusing on young people will take too long to make a substantial change to the numeracy of the workforce.

• Most individuals and employers won’t take action because they are managing well enough and Government will struggle to persuade them.

• The need for upskilling and re-training likely to become more pressing which will bring poor numeracy into greater focus.

The response

• Bear down on the “I can’t do maths culture”. Get the creators of vocational programmes to define what maths is necessary for their industries.

• Flexible offer so that relevant and accessible provision is there when people do need it.

• Target those with the lowest skills.

• Commission more research into the complexity of using numeracy in the workplace.