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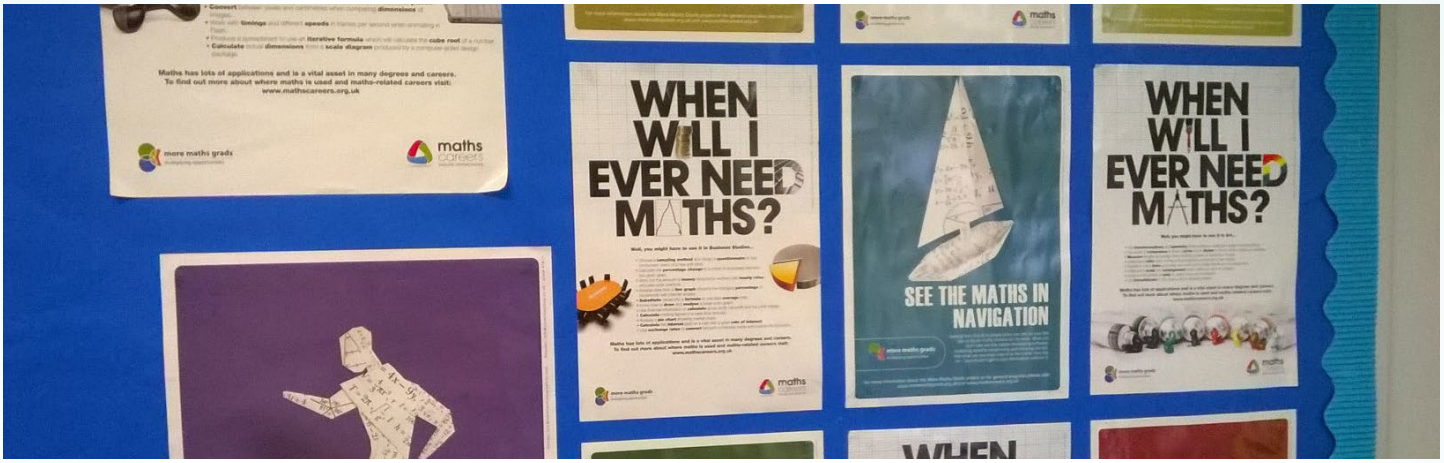

Post-16 maths for all: the role of Core Maths

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Core Maths qualifications were introduced in 2014 to increase post-16 maths participation in England, which is low compared to international competitors. This policy note summarises a three-year study investigating the adoption of Core Maths in schools and colleges. It highlights that Core Maths is well received by teachers and students, but national uptake remains low compared to the government's initial hopes, and further support for Core Maths is needed.

The post-16 maths problem

The government, business and Higher Education (HE) have long called for more students to continue studying maths post-GCSE because it is vital for study, work, life, and citizenship. Robust maths skills similarly underpin delivery of the government's Industrial Strategy and levelling up agenda.

England has poor adult numeracy skills, and low post-16 maths participation rates, which are seen as holding the country back in economic and social terms. There is a risk that the disruption caused by the COVID-19 pandemic could exacerbate these problems further. Increasing Core Maths uptake could help address all of these concerns, making Core Maths a significant curriculum innovation.

The government's target is that the majority of, if not all, students should be studying maths in some form up to the age of 18. However, currently only about 20% of students do so, while over 200,000 learners with good GCSE maths passes drop the subject completely each year.

The most well-known post-16 maths qualification is A-level Mathematics. However, it is generally only accessible to those students who achieve very high grades at GCSE Mathematics. Core Maths qualifications were designed to provide a different type of course, which develops problem solving and critical thinking. The kind of real-world mathematical fluency that Core Maths promotes is especially relevant as students return to school after six months of disruption caused by COVID-19.

Our three-year project (2017-2020) used a wide range of data and engaged with diverse stakeholders to investigate how Core Maths provision has been developing across England.

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What did we find?

- Core Maths is well liked by teachers and most students who experience it. Real-world application of maths and personal finance aspects are especially valued. It is perceived to support a range of other subjects and to build students' mathematical confidence. In some settings it has also promoted a new, more collaborative, style of thinking and working in the maths classroom.
- The national uptake of Core Maths has been relatively weak (Figure 1) and does not match current policy aspirations. Less than 5% of students who could be doing Core Maths are currently doing so.
- Uptake of Core Maths has been limited by a number of systemic issues. These include: the (poor) fit of Core Maths with the new linear two-year qualification model; funding issues; staff availability; and lack of support from the government and Higher Education.
- Government, HE and employers are not signalling sufficiently strongly the value of Core Maths, meaning schools and students select other options that are perceived to be more valuable.

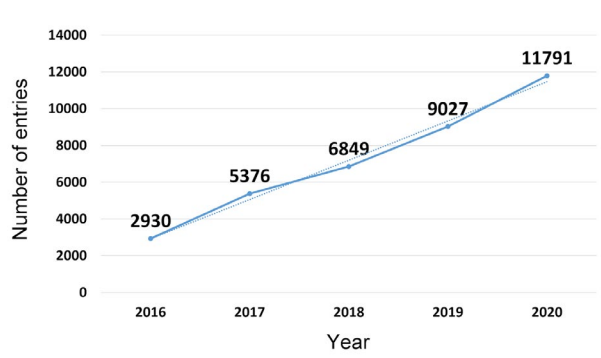

Figure 1: Aggregate awarding body entry figures for Core Maths 2016-2020

Growing Core Maths uptake

The challenges facing Core Maths are more to do with systemic and structural barriers than with problems with Core Maths qualifications themselves. The AS-like size of Core Maths does not fit comfortably into the new linear post-16 landscape, where the funding structure supports three A-levels or the equivalent. This leaves schools and colleges with little room for manoeuvre; without stronger incentives, many are unlikely to offer extra courses like Core Maths when time and resources are precious, and they face additional challenges related to the pandemic.

For Core Maths to grow, it needs more and sustained support from government. This might include funding the qualification directly, outside of the standard per student funding structure. In the longer term, the government could also consider developing a full A-level-sized version of Core Maths, to better align it with the two-year linear post-16 landscape.

The lack of buy-in from HE is a source of frustration amongst teachers and students. Government needs to work with HE and employers to state more strongly that the qualification, and wider quantitative skills it engenders, are really valued by HE, and that students will benefit from studying it. The Universities of Bath, Sheffield and York are now making alternative offers for students with good grades in Core Maths, but more universities need to follow.

Improvements in maths teacher recruitment and retention will almost certainly be required if Core Maths take-up is to substantially increase.

Finally, accountability measures could be used more purposefully as levers of persuasion: Ofsted could be encouraged to look routinely for the inclusion of Core Maths in post-16 curriculum provision.

Recommendations

To promote further uptake of post-16 maths, we recommend that the Government works to:

- Improve the signalling of the real value of Core Maths, particularly from higher education
- Bolster support for the teaching, funding and availability of Core Maths
- Develop additional A-level sized Core Maths-type qualifications

Further information

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Full report: **The early take-up of Core Maths: successes and challenges. Final report – September 2020**. Matt Homer, Rachel Mathieson, Innocent Tasara, Indira Banner. Detailed recommendations expand on the 3 themes above.

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