

Research reveals that 'Singapore' approach to teaching maths can work in UK classrooms

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Mastery – an approach to teaching maths commonly used in East Asian countries – can significantly benefit children in UK schools, a University of Exeter academic has found.

The independent research, conducted by the Oxford University Department of Education, is the first academic study to show this teaching method, now supported by the UK Government, can be effective.

Experts used a Randomised Control Trial (RCT) involving Oxford University Press's [Inspire Maths](#) – the mastery textbook and [professional development](#) programme based on My Pals are Here!, which is used in the majority of Singaporean primary schools.

Year 1 pupils taught with the programme for two terms made significantly more progress than students using it for a shorter period. Teachers reported that the programme could boost children's motivation and engagement, and the evaluation found that it can be used creatively and flexibly.

The research combined child assessments with classrooms observations and interviews with teachers - allowing the research team to investigate teachers' views while also measuring pupils' progress. James Hall, lead-author, and now Lecturer at the University of Exeter, said: "Overall we found positive evidence that Inspire Maths benefitted children's maths achievement and supported teachers' professional development. This

boost to progress was surprising because pupils had only been in a classroom setting for a short period and because it often takes time to embed new teaching approaches."

Professor Pam Sammons of the Oxford University Department of Education, and co-author of the research, added: "Our RCT evaluation of Inspire Maths was an exciting opportunity to test out the impact of new mastery approaches to teaching maths in England. We found significant positive effects on children's maths progress after only two terms use of Inspire Maths materials. Teachers value the professional development provided to support their use of the Inspire Maths resources and reported it helped them implement the new mastery approaches."

The mastery approach to learning maths involves children developing a deep understanding of a concept before moving on. It builds on a number of theories, including research conducted at Oxford University in the 1970's by developmental psychologist Jerome Bruner around how the brain assimilates new ideas.

It is increasingly popular in UK schools, and in July 2016, Schools Minister Nick Gibb announced £41 million over four years to support mastery in mathematics through a network of 'mastery specialist teachers'.

The UK Government believes that investing in mastery can help raise attainment in maths, which the OECD has highlighted as a key way of improving life chances. The UK is currently ranked 26th in the world 'PISA' education rankings for mathematics – far behind 'high performing jurisdictions' such as Singapore and Shanghai, which use mastery approaches.

However, the new research also highlights that some significant

challenges remain in helping schools looking to deliver mastery in UK classrooms. These challenges include addressing concerns about how mastery can cover the UK's year-on-year National Curriculum with a large number of topics to cover, as well as the need to bring school management teams on board with the new way of teaching across primary schools. The study also highlighted the need for significant professional development for teachers adapting to the way of teaching.

OUP has welcomed the UK Government's funding and the increased focus on mastery. Jill Cornish, Maths Editorial Director at OUP said: 'We now have clear evidence that a mastery approach can make a real difference to UK maths classrooms, and we support the government's moves to support it through funding and professional development. However, it is clear that mastery cannot be a 'Far East bolt-on' and there is no quick fix to introducing it to UK schools. Mastery requires a whole-scale change in mind-set when teaching maths, with ongoing training for teachers, and support from school management teams. If we are serious about raising maths attainment in the UK, we need a debate about how we can achieve this in a way that works for teachers and learners.'

More information: More information about mastery approaches can be found on the Mastery section of the Oxford University Press website: global.oup.com/education/mastery/?region=uk

Provided by University of Exeter

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