

# Overcoming mathematical barriers to participation in HE

Jane imrie  
Deputy Director, NCETM

National Centre  
for Excellence in the  
Teaching of Mathematics



Leading education  
and social research  
Institute of Education  
University of London



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- Collaboration
- GCSE
- Looking ahead

# Collaboration



“Collaboration between researchers and teachers is essential if solutions are to be found for increasing participation in HE.”

# Collaboration

“Collaboration between researchers and teachers is essential.”

Not only to increase participation in HE but also to:

- to enrich teacher development;
- to inform and influence HE research;
- to help students experience and understand the education continuum;

And, through all this:

- to enable students to learn mathematics.

# Another example

Features of the project that were found to be effective and are reproducible at scale in future projects are:

- teacher professional development focused on research-informed curriculum materials
- **teacher collaborative learning communities that draw on the expertise of teacher leaders, curriculum developer and researchers**

Multiplicative Reasoning Professional Development Programme: an evaluation. (SHU 2014)



How do we bring about  
meaningful  
collaborations?

How do we continue  
and/or expand them?

# Features of Bristol project



- Focus
- Collaboration/co-design
- Teacher and student beliefs

“...schools need to pursue a combination of strategies. Just implementing one or two in isolation is not enough. If there is one factor that stands out, however, it is the very **high level of expectations that teachers have of their pupils.**”

“We think it is so important to work beyond the narrow confines of the syllabus – our pupils need a broad mathematical education”





“**All** students can think hard about mathematics  
and thus do better at mathematics”

# Focus on GCSE

- New, more demanding GCSE examined next summer
- GCSE Maths pass rate up: 70.5% of 16 year olds achieved A\*-C grades in 2016

But .....

# GCSE resit

- 17-year-olds and older (most of whom are resitting).
- Last year numbers taking resits up from around 131 000 to nearly 174 000.
- Total number gaining C or above went up by more than 4 000 to over 51 000.
- Proportion of resit students gaining C or above went down from 35.8% to 29.5%.

# Looking ahead



How might Maths Hubs help stimulate effective collaborations with HE?

How can we encourage teachers to offer Higher Tier GCSE to all students?

[jane.imrie@ncetm.org.uk](mailto:jane.imrie@ncetm.org.uk)

[www.ncetm.org.uk](http://www.ncetm.org.uk)

[www.mathshubs.org.uk](http://www.mathshubs.org.uk)

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