

Mastery in GCSE Maths re-sits: should we teach fewer topics in greater depth?

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WHY?

The research aims to answer the question

“why do so many students in Further Education have a negative attitude towards GCSE maths?”

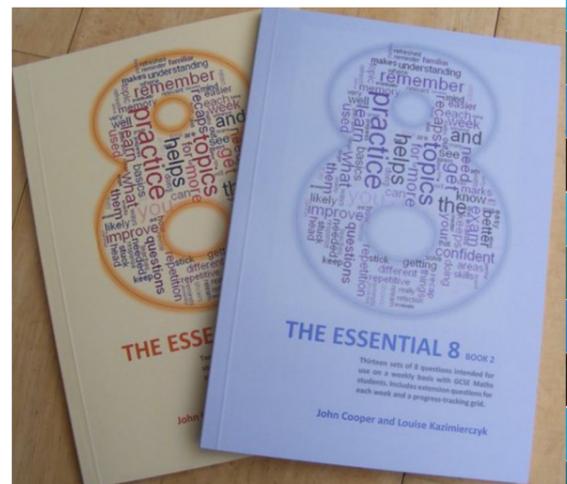
Previous research and observations suggest that the large GCSE maths curriculum plays a part in learners feeling overwhelmed and anxious about re-sitting, whilst also reinforcing the pre-conception that they will be repeating a curriculum that they have experienced at school.

“There are too many topics in the GCSE, its really tedious. Focusing on less topics jogs my memory and helps me with everyday knowledge”
GCSE re-sit student

“Differentiating by depth, rather than difficulty, means learners can move forward collaboratively.” 1. Cooper, J. (2018)

HOW?

John Cooper (2016) devised an “Essential 8”, 8 topics that award the most marks in the GCSE maths exam. This research uses these 8 topics as a starting point for a new curriculum design. A sample of 16-18 year olds studying GCSE maths were taught these 8 topics every lesson for 10 weeks, and their progress was recorded on a tracker.



John Cooper The Essential 8 (2016) Starting point for this research

“Approaches which identify the weaknesses in the cohort and, in maths particularly, concentrate on uncovering misconceptions, have been shown to be more effective for this cohort”

2. Creese, B., Litster, J & Mallows, D. (2015)

“I find it useful to see how I am doing week by week. It’s best to practice the topics at the beginning of the lesson because it gets us into the zone!”
GCSE re-sit student

KEY FINDINGS

- Students commented that repeating topics weekly meant they didn’t forget things as quickly and made the curriculum more manageable.
- Retention of information was identified as one of the main barriers to students achieving their GCSE maths qualification.
- From the sample 58% of students made at least one grade of progress in the research period and 19% made two grades of progress.
- Students preferred questions to be on an A3 printout with all 8 questions visible to them at once. They said this gave them confidence to attempt more.

“75% of students said that, if given a choice, they would have not studied mathematics that year”

3. Bellamy, A. (2017)

RECOMMENDATIONS

- Adapt a scheme of work to include the most essential exam topics early on in the academic year. This maximises amount of time to practice these skills and will help to build confidence.
- Stick to a consistent format in delivering the key skills, this makes tracking progress more valuable.
- Find time for reflection and discussion on progress, students gained motivation in knowing what they needed to do to get to the next step

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