TALKING POINT:
WHAT ARE THE EFFECTS OF ATTAINMENT GROUPING ON MATHEMATICS LEARNING?

Data from Taylor & Sloan (2016)

IN SUMMARY
• There are many ways to group pupils by attainment; in-class grouping is the most flexible
• Setting and grade repetition appears to replicate existing socio-economic inequality
• Grouping by attainment can have negative effects on motivation and restrict expectations of pupils
• Mixed attainment grouping may increase teacher planning time and be associated with more behavioural problems
• There is mixed evidence on attainment outcomes from different forms of grouping; no overall difference in effectiveness is clear
• Grouping pupils by attainment may suggest a fixed mindset view of mathematical learning

“I want to see setting in every single school. Parents know it works. Teachers know it works.”
David Cameron (2006)

‘ability grouping appears to benefit higher-attaining pupils and be detrimental to the learning of mid-range and lower-attaining learners’ EEF

IMPLICATIONS: The idea that mathematical ability can be reliably measured by standardised testing may be an oversimplification and may not provide a meaningful basis for grouping students

There are several ways to group pupils by attainment in schools, streaming (known as tracking in the US) which is general ability grouping for the majority of subjects; setting (regrouping) which refers to subject-specific attainment grouping; banding, where one year group is separated into different bands differentiated by attainment (which may then have classes with the bands); and finally within-class grouping, where pupils are grouped by attainment within a class — and they all have interplay with one another’. Within-class grouping allows pupils to be moved most flexibly of these’. In some countries grade repetition is also used, although this appears to be in decline in OECD countries and ‘may not only be ineffective … but may also reinforce socio-economic inequities’.

IMPLICATIONS: Grouping by attainment in mathematics can be done at the system, school, year and class level and all have interplay with one another; within-class grouping is the most flexible for pupils.
Even after accounting for mathematics performance, students who are socio-economically disadvantaged are much more likely to repeat a grade in countries where this system is in place. It has been suggested that tracking (streaming within schools) also replicates existing social and economic inequities, as socio-economically disadvantaged students tend to be disproportionately grouped into lower tracks. At age 15, more pupils in the UK are set by mathematical attainment than the OECD average. There are social and equitable benefits to teaching maths in mixed attainment groups at primary level.

Setting or repeating a grade are likely to replicate socio-economic inequality for students; delaying the setting process until pupils are older may have a positive effect on mathematics achievement.

Students across the range of attainment grouping in mathematics are susceptible to being disadvantaged because of expectations and limits placed upon their attainment and students who move from mixed-attainment classes to setting report negative repercussions. Students in lower sets often report negative effects on self-esteem and motivation, although this is hard to measure. Students in top sets, particularly girls, often express a wish to move down so that they can slow down and experience the maths curriculum in greater depth.

Setting/tracking in mathematics can have negative effects on motivation and self-esteem for all levels of attainment.

In primary schools, students in mixed attainment classrooms display more positive attitudes towards school in general. Teaching mathematics in mixed-ability groups may also be associated with more behavioural problems. Teaching in mixed ability groups, in principle, provides pupils with greater equality of opportunity but could increase planning time for teachers.

IMPLICATIONS: Teaching mathematics in mixed attainment groups may be associated with more behavioural problems and more planning time for teachers, but supports positive attitudes towards mathematics.

Several studies on academic achievement comparing setting with mixed attainment grouping have found no benefits to setting but some positive effects for lower-attaining pupils who are taught in mixed attainment groups; other meta-analyses across both primary and secondary have found no discernible effect at all (although a few studies have shown that, in mathematics, there is some positive effect on attainment for pupils). The advantages to setting students are limited and appear to be mostly restricted to higher-attaining pupils. The effects of grouping pupils in different ways are ‘highly complex’ but attainment group should not be a default position without enough clear evidence to support it.

IMPLICATIONS: The evidence is mixed and meta-analysis suggests overall there is very little difference in attainment when setting is compared with mixed attainment grouping.

REFERENCES