

Motivation for Research

This year our year sevens transitioned from setted mathematics classrooms to mixed attainment classes.

The maths department spent last year preparing for the change. During curriculum meetings we discussed:

- Visions of ideal student experiences
- Potential pedagogical choices that might align with our ideals
- Honest declarations of envisioned barriers
- Co-planning the year seven scheme of work

Literature Review 1

Mixed vs Setted Mathematics Teaching

Questions considered:

- 1) What student grouping systems currently exist within the UK?
- 2) Briefly what can be understood of the history of mathematics grouping in the UK and what guidance have UK policy makers given on future direction?
- 3) Which students are typically represented in which set? Do any patterns relate to teacher placement?
- 4) What effect does setting have on students' academic achievement?
- 5) What effect does setting have on student social-emotional wellbeing?
- 6) What pedagogical choices are teachers making in setted and mixed classrooms?

Literature Review 2 – The relationship between teachers' beliefs and teachers' practices

- 1) An acknowledgement of some of the difficulties arising when studying belief.
- 2) Is it belief or knowledge? Which is more significant in affecting teacher practice?
- 3) A comparison of models describing the relationship between beliefs and knowledge.
- 4) Belief orientations centred on what it means to 'learn', 'do' and 'teach' mathematics.
- 5) The connection between teachers' declared beliefs and enacted practice and teachers' declared barriers to parity.

Understanding my colleagues perspectives.

Pre-questionnaire, 2 lesson observations & semi-structured interview.

I was curious

- to understand the **mathematical priorities** each teacher holds for their classes. I wondered if these are unique or synonymous to each classroom environment
- to **hear descriptions of each teacher's classroom practice** in these two environments and wondered how these correlated with intended priorities.
- to understand colleagues **perspectives of whether practice differs dependent on the grouping system** or if practice remains unaffected. If practice did differ I wanted to understand teachers' perspectives of why this might be.
- I am also curious if teachers perceive there to be **any barriers** to their preferred ways of teaching in either environment.

Findings so far:

The teachers in our department have mixed professed belief orientations towards doing, learning and teaching mathematics.

As a whole no teacher strongly aligned with transmission belief orientations and more strongly tended with connectionist orientations.

One teacher strongly felt their beliefs orientations were unchanged regardless of classroom context. The other two teachers perceived their beliefs to change. It was brought into question whether expectations of students drove this change.

When teachers described their practice language choices revealed emphasis of repetitive practice questions and learning through repetitive examples. This differed to some belief orientations expressed previously. This was only partly echoed in the lesson observations.

Finally teachers felt low-mid level disruption and social dynamics between students affected their ability to teach as desired, particularly for lower attaining students.

Potential Future Direction.

How best to support peer to peer interactions between low attaining students in mathematics.