



What are effective interventions for improving prior low attaining students' outcomes in mathematics at Key Stage 3?



Key Literature



Causes of poor attainment



Interventions



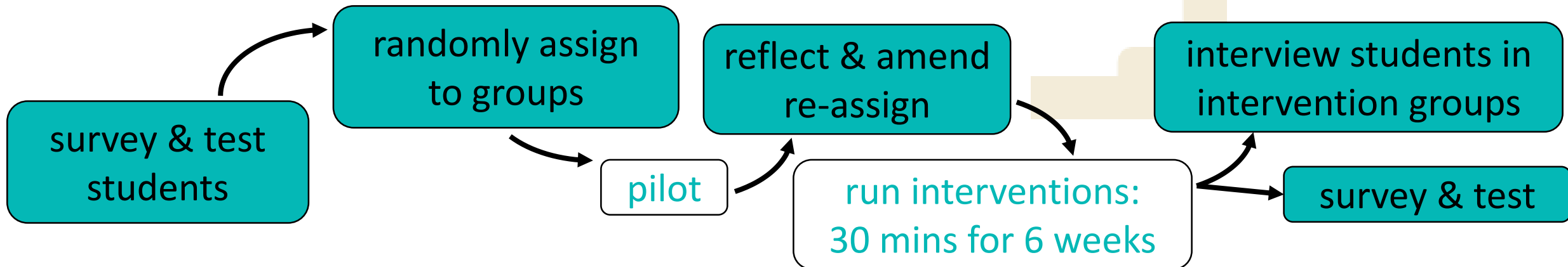
Research Questions & Methodology

1

What are the different academic interventions that mathematics teachers use for small groups of students?

2

- How do students perceive the effects of the specific mathematical interventions?
- To what extent do these interventions affect students' attainment?

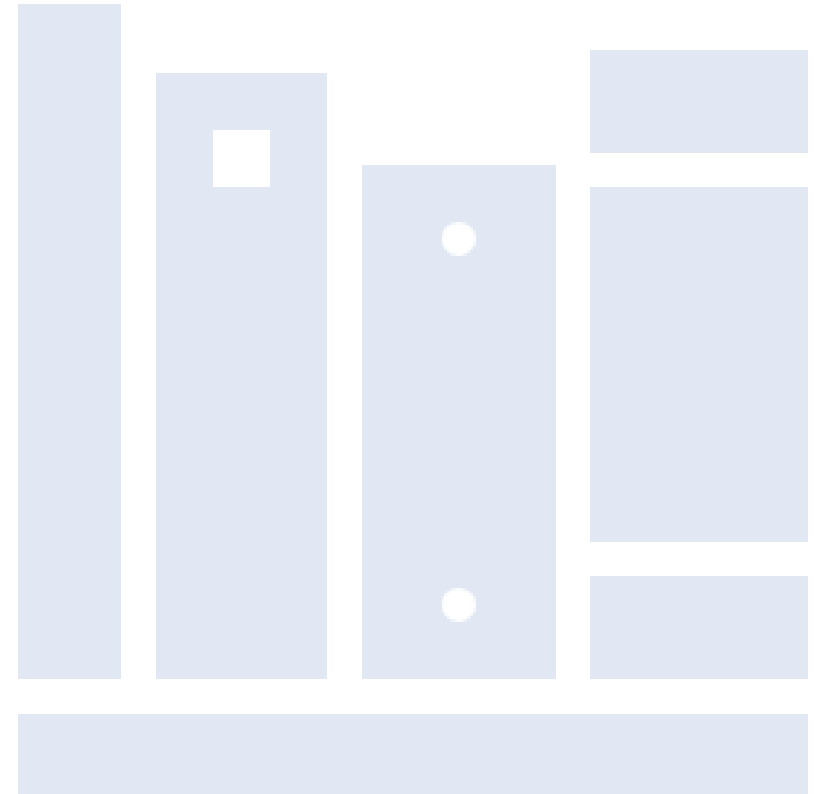
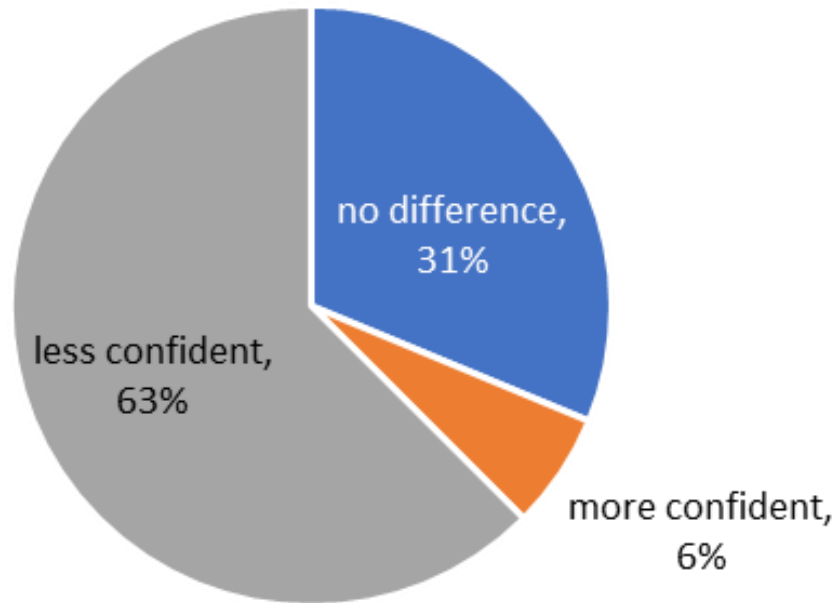




RQ1: Results

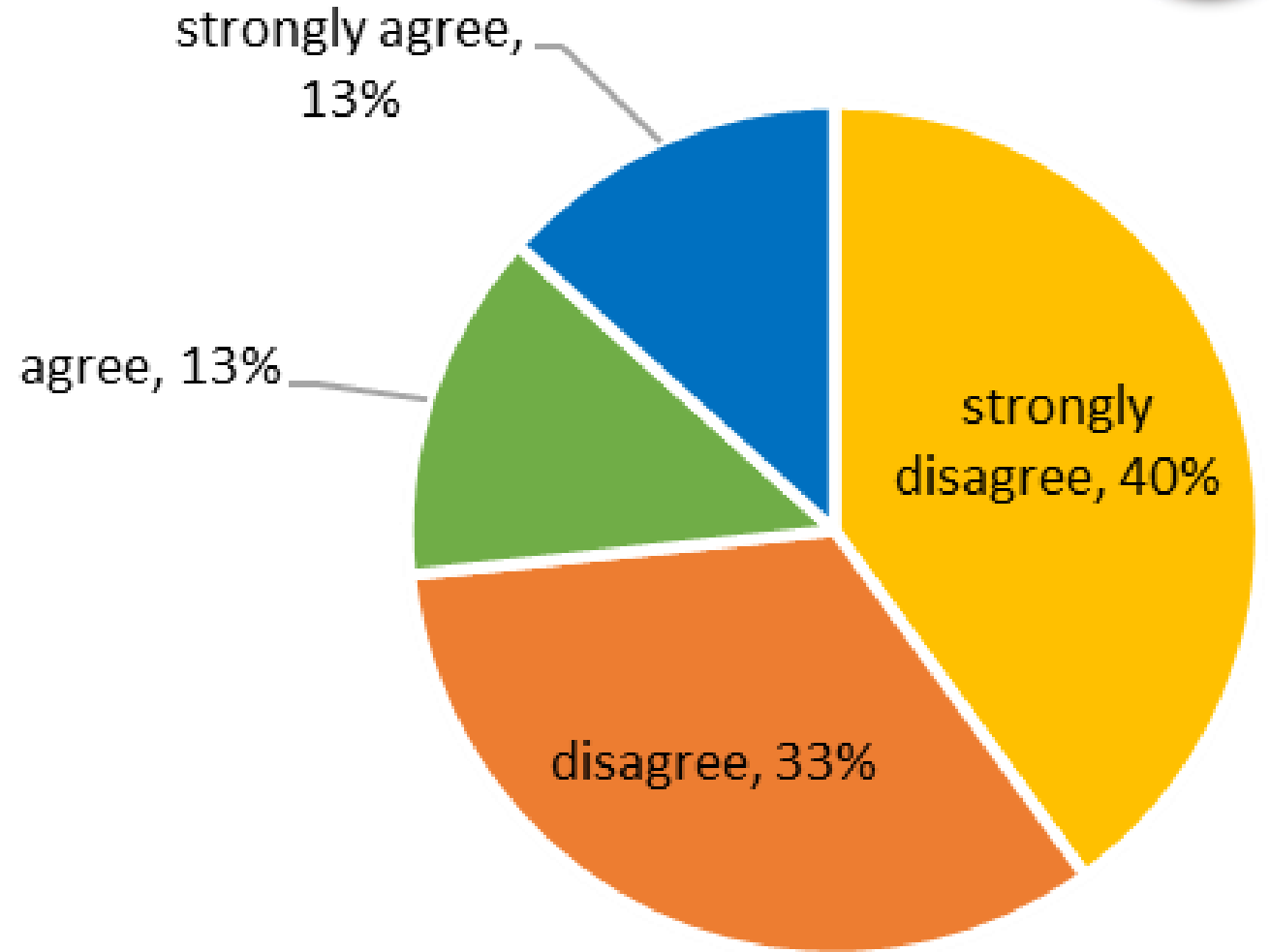
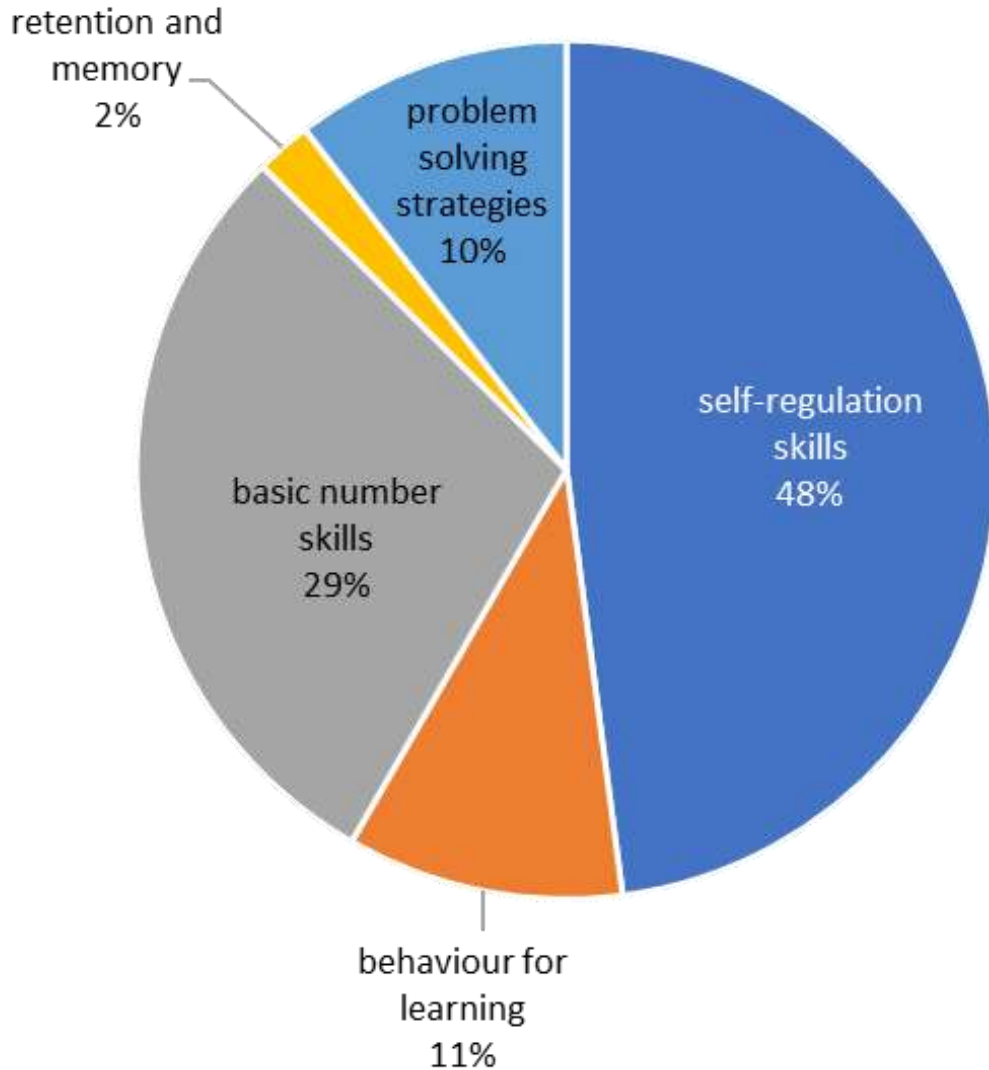


Teachers' self-reported confidence when teaching struggling students compared to teaching in general





RQ1: Results



Well-led interventions are successful at improving attainment



RQ1: Results





RQ2: Results



Intervention Groups



Control:
20 students

Self-regulation: drawing diagrams as an approach to answering word problems
3 students



Numeracy: understanding of fractions equivalence and magnitude
4 students





RQ2: Results



Test scores

Intervention group	Pre-intervention	Post-intervention	Average improvement
Control	23.8 %	40.5 %	16.7%
Numeracy	13.3 %	16.7 %	2.5 %
	3.3 %	16.7 %	
	16.7 %	13.3 %	
	36.7 %	33.3 %	
Self-regulation	33.3 %	66.7 %	25.6 %
	13.3 %	30 %	
	10 %	36.7 %	



RQ2: Results

Self-Concept



Intervention group	Pre-intervention	Post-intervention	Average change
Control	61.9	61.5	-0.4
Numeracy	68.8	50.0	-35.1
	56.3	47.3	
	68.8	46.9	
	71.9	25.0	
Self-regulation	62.5	68.8	5.4
	59.4	62.5	
	71.9	72.5	



Implications

No conclusive evidence to say whether interventions are effective or can successfully improve student attainment.

RQ1:

- teachers prioritise long term attainment gains, and feel this is best achieved by explicitly addressing weak concept areas and building resilience

RQ2:

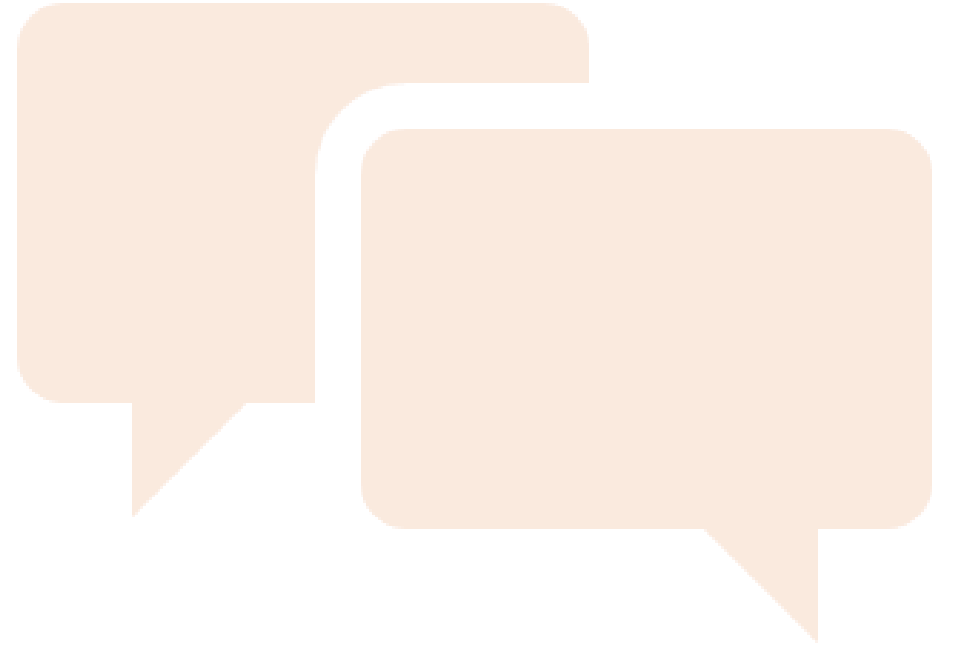
- some interventions can have negative impacts, in this case: focus on number skills and knowledge
- building students' resilience through giving strategies to tackle unfamiliar problems may improve attainment and self-concept and confidence



Limitations

No conclusive evidence:

- Small scale study
- Short term interventions
- High proportion of SEN students
- Attendance of students at intervention





Thank you

Any questions?