Unlocking confidence in mathematics: An account of practice from collaborative action research in Mason Moor Primary School

The Research-Practice Partnership

The **School Voices Research-Practice Partnership** aims to support schools in **responding to student diversity** and **improving learning outcomes** for **all**, whilst at the same time **promoting inclusion**. This will be achieved by focusing on **students' voices and dialogues** between teachers and children and young people through **participatory research approaches**.

The Partnership has been partly funded by **UKRI – Higher Education Innovation Funding (HEIF)**. The Partnership consists of a collaboration between: **University of Southampton** and three **hub schools (St John's Primary and Nursery School, St Mary's CE Primary School, Redbridge Primary School)** that were involved in an earlier pilot study. The hub schools and the University of Southampton support other schools in introducing these ideas through collaborative action research, considering the complexities within each school context. For more information - www.schoolvoices.soton.ac.uk

The school

Mason Moor Primary School caters to a mixed community school with a total of 208 pupils, children from ages 3 – 11, with a total of 8 classes (Reception, Year 1 to 6). The school has a nursery too. Most of the families in the school are from white working-class backgrounds, though most recently there are families from other ethnic backgrounds as well. The school's work is driven by the motto 'Be the best version of yourself.' This pervades everything children are required to do, and decisions adults make. Both pupils and staff reflect on whether they have been the best version of themselves and are encouraged to seize the opportunity that every new day brings to improve.

The school's vision/mission is anchored on three key words that sum up their core values, 'Nurture, Grow, Achieve' and the statement '*Our school is not defined by its context*.' Leaders ensure that the context does not place a ceiling limit on the learning experiences of the pupils. To achieve this, the school collectively upholds a culture of '*whatever it takes*.' Every decision is centred on providing the very best for the children, no matter what barriers exist along that path.

Research focus and process

At Mason Moor, the project focused on exploring how listening to pupils' voices can help build greater confidence in learning, particularly among children who tend to be quieter, less engaged or vocal in class, or find subjects like maths

challenging. The aim was to identify practical, meaningful changes that support all learners to feel more confident and supported in the classroom.

The research was guided this year by two key questions:

- **What helps children feel more confident as learners in our classrooms?**
- **What learning barriers do our pupils experience in maths, and how can we respond?**

These questions shaped the work of both staff and pupil researchers. The team included pupils new to the project as well as 'senior' pupil researchers, as this was the third year of implementation. Experienced Year 6 pupil researchers mentored the newcomers from Year 5. Pupil researchers received extensive training to develop essential skills for the project on activities such as observing lessons, interviewing peers and providing constructive feedback.

Mathematics was selected as a priority area at Mason Moor and across the partnership, reflecting its importance in the school improvement plan. The project paid special attention to pupils who sometimes find maths difficult or who are less likely to participate in lessons. Through collaboration between teachers and pupils, the project explored how classroom approaches can be adapted to foster greater confidence, particularly among those whose voices are often unheard.

The trained pupil researchers worked in partnership with Early Career Teachers (ECTs) to explore what helps children feel confident as learners in the classroom. The ECTS invited pupil researchers into their lessons to observe, discuss and reflect on approaches that supported engagement and confidence, particularly for pupils who find maths more challenging. Together, they explored questions such as: *What makes maths feel achievable?* And *What can teachers do to help us feel more confident when we get stuck?*

Participatory methods

At the heart of this project was a commitment to working *with* children, not just *for* them. The participatory methods used this year supported researchers in exploring the barriers children face in maths and how their confidence in learning about maths could be strengthened. Each method was designed to centre pupils' voices, encouraging honest dialogue and shared reflection with both peers and teachers. Among these, we find:

Photo elicitation: Pupil researchers used photographs of their classrooms as prompts to reflect on how different spaces influence their confidence in learning, whether confident, focused, unsure or stuck. This visual approach helped uncover elements of the learning that often go unnoticed.

Diamond 9: In this activity, student researchers had to write on individual sticky notes what they believed to be the factors for successful learning in maths. They then had to rank these statements as a group of researchers. The process brought rich discussions and helped them identify shared priorities in their classrooms.

Informed conversations with peers: Throughout the project, pupil researchers held ongoing conversations with each other and with peers during classroom visits. These exchanges allowed them to express challenges, share successes and gather a wide range of views on learning. The

insights from these conversations contributed directly to shaping ideas for change.

Classroom observations: Pupil researchers visited classrooms across year groups, observing how learning unfolded. They noted levels of engagement and identified pupils who might benefit from further support. Although the main focus was maths, observing across subjects offered a broader view of classroom experiences and interactions.

Mind mapping: Mind maps were used to help pupils organise their thoughts and express their thoughts and feelings about learning, particularly in maths. This method also encouraged deeper reflection on what supported or hindered their progress.

Reflective dialogue with teachers: One of the most valuable parts of the project involved joint reflection sessions between pupil researchers and teachers. These conversations allowed teachers to better understand pupils' perspectives and consider practical ways to adjust their teaching in response. While the project focused mainly on Early Career Teachers, pupils also engaged with staff across the school to make sure a wider range of voices and experiences were included.

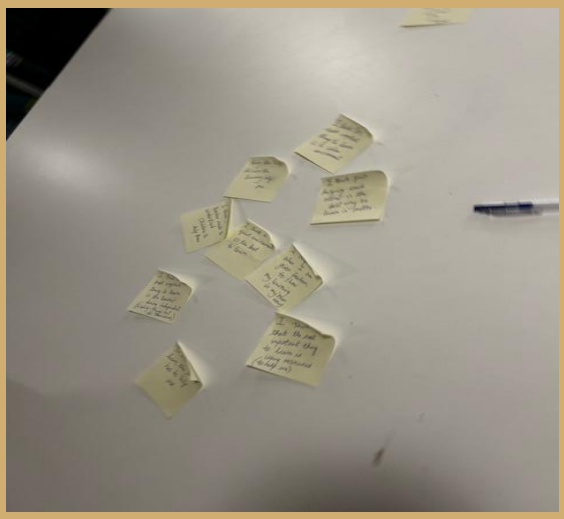
Outcomes

Stronger learner identities: Children developed stronger learner identities. Many pupils expressed a deeper sense of themselves as learners –becoming more confident, more reflective, and better able to explain how they learn best. Some who were usually "quiet" or "harder" to reach began to participate more actively, especially when they felt heard and understood. This shift in identity wasn't just individual; it contributed to a wider culture in which learning is seen as something everyone could grow into, rather than something fixed.

Changes in teaching practices: Insights from pupil researchers informed how Early Career Teachers shaped their teaching. Teachers paid closer attention to the emotional climate of the classroom and adapted their resources based on what pupils shared. This included making learning materials more accessible and listening more closely to how children experience different parts of their lessons. Similarly, teachers and pupils found small but meaningful adjustments, like reducing noise or checking in on how pupils felt, could have a big impact. As a result of this collaborative process, some classrooms became more inclusive and supportive learning spaces. Given that Early Career Teachers played a central role in this project, the research also provided them with an opportunity to reflect on their own practice and explore new ways to support pupils.

Greater awareness of emotional and social factors in learning: The project highlighted how emotions and classroom atmosphere deeply affect learning in maths and beyond. Pupils repeatedly pointed to the

importance of feeling safe to share ideas, not being afraid to make mistakes, and learning in a calm environment.



Key ideas emerging

Pupil voice makes a difference: Children saw that sharing their ideas could lead to meaningful changes in teaching and learning. Being heard and strengthened trust between pupils and staff.

Children as researchers and leaders: Pupils took initiative during the project, guiding activities, supporting peers, and leading parts of the research process. They showed strong teamwork and leadership skills through real-life tasks, supporting the younger ones in the project and leading activities.

Teachers as co-learners: Children recognised that teachers were also learning throughout the process. This created a more open, collaborative and inclusive culture.

Two-way learning: This collaboration provided valuable two-way learning. The Early Career Teachers gained authentic insights into how children experience maths teaching day-to-day, while the pupils developed their skills as researchers and felt that their voices genuinely influenced classroom practice. The partnership helped to shape practical strategies for building confidence, such as making space for "having a go," celebrating effort, and using varied representations to support understanding.

Teachers' and Students' thoughts

> We had a shift to a more inclusive classroom. It was really good that pupils could share their voice, of what would help them, and then putting those things into place.

Associate Assistant Headteacher

> This project helped us see ourselves as stronger learners. We became more reflective and confident. Teachers at Mason Moor changed some of their approaches because of what we said. For example, thinking about the resources on offer in lessons and having the right resources for learning.

Pupil researcher

> It shows that even small actions like asking us how we feel about the learning can make a difference. A big difference.

Pupil researcher

Teacher team

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We would also like to acknowledge the participation of many children and other staff in the school who have contributed in various ways.