NCSE PRACTICE-BASED RESEARCH PROGRAMME 2025/26

SCHOOL RESEARCH SUMMARY

School name: Ballinrobe Community School
Practising teacher lead: Michelle Rabbette

Research theme: Maths and mindset in L2LP

Research aim: To investigate if contextualised, real-world numeracy tasks can improve mathematical engagement, confidence, and growth mindset among students in Junior Cycle Level 2 Learning Programme (L2LP) classes who have previously disengaged from traditional maths instruction.

Methods

This project used mixed-methods.

There were 8 particpants comprised of a mixture of students and teachers.

Research findings

The research, conducted over six months, revealed that mathematical disengagement stems not wholly from ability but also from deeply entrenched negative mathematical identity and anxiety. Students entered the study believing "I'm not good at maths," and this belief was driving avoidance before they even attempted tasks.

However, when the same numeracy skills were embedded in real-world contexts, disguised as forensic investigations, budgeting projects, role-play scenarios, and practical challenges, students who previously refused traditional maths work became curious, persistent, and highly engaged. They forgot they were doing maths and, critically, succeeded. Over the six-month intervention period, confidence in numeracy shifted from low to low–moderate, while willingness to attempt tasks rose dramatically from low to moderate–high. Students began verbalising their progress: "I can do this," "I did it!" Small wins gradually rewrote their internal narrative. Persistence during challenges improved from low–moderate to moderate, and students started noticing their own growth.

The central insight was that students do not dislike mathematics itself, they dislike how traditional, explicitly labelled "maths" makes them feel. By changing the emotional experience through contextualised, meaningful learning, it enabled them to experience capability, build confidence incrementally, and begin reshaping their identities as mathematicians.

My top three findings

1. **Contextualised numeracy significantly increases student engagement and persistence -**
When maths tasks were embedded in real-life contexts (forensic investigations, role-play, budgeting projects, puzzles), students showed higher motivation and willingness to attempt tasks. Disguised numeracy bypassed anxiety triggers associated with traditional maths lessons. Willingness to attempt new tasks increased from low to moderate–high.
2. **Students' mathematical identity, not ability, is the primary barrier to engagement -**
Baseline data revealed that students held deeply ingrained beliefs that they are "not good at maths." However, when numerical work was presented in creative contexts, the same students demonstrated capability, curiosity, and problem-solving skills. This confirms that mindset matters more than content, students avoid maths because of how it makes them feel, not because they lack mathematical ability.
3. **Small successes build confidence and foster emerging growth mindset behaviours -**
As time went on, students began verbalising success ("I can do this," "I did it!") and showed greater persistence when faced with multi-step problems. Confidence in numeracy shifted from low to low–moderate, with students increasingly recognising their own progress. Positive attitude toward maths improved from moderate–low to moderate, with students describing lessons as "fun" and "interesting."

Impact of my research

Classroom level:

• I restructured numeracy lessons to prioritise real-world contexts over abstract procedures, embedding skills in investigations, projects, and role-play before introducing formal mathematical language

• I shifted instructional approach and disguised numeracy work initially to bypass anxiety triggers, then gradually make mathematical thinking explicit once students experience success

I introduced reflective practices (e.g., emoji check-ins, growth-focused language) to help students notice and articulate their own progress, building awareness of developing competence

• I changed questioning and feedback to validate effort and persistence rather than speed or correctness.

Whole-school level:

• I plan to share findings with staff to challenge assumptions that low attainment equals low ability and highlight that emotional barriers can drive disengagement in L2LP cohorts

• I will advocate for cross-curricular numeracy integration, applying maths skills through other contexts where students already feel confident

What benefits have you found as a result of conducting your research?

Professional growth:

• I developed greater adaptability in research design, when initial data collection methods proved unworkable, I revised my approach in real-time, reinforcing that practitioner research requires responsiveness to classroom realities

• I strengthened reflective practice, systematically gathering and analysing evidence has made me more deliberate in planning, more attuned to student affect, and better able to identify which instructional moves reduce anxiety and build mathematical identity

• I gained practical experience in mixed methods approaches, balancing quantitative measures (surveys, attainment data) with qualitative insights (observations, student voice) to build a fuller picture of impact.

Student impact:

• Increased engagement in numeracy lessons, students who previously disengaged or showed visible anxiety now participate actively when tasks are contextualised and framed outside traditional "maths" language

• Improved confidence and self-perception: one student, previously reluctant, remarked that maths is now "one of his favourite subjects", a significant identity shift for a learner in L2LP with a history of failure

• Students are more willing to persist with challenging problems when success is experienced before formal mathematical terminology is introduced