NCSE PRACTICE-BASED RESEARCH PROGRAMME 2025/26

SCHOOL RESEARCH SUMMARY

School name: St. Joseph's

Practising teacher lead: Arlene Murphy / Shamsa Shahid

Research theme: Impact of UoL on Teaching and Learning in Maths

Research aim: Impact of UoL on Teaching and Learning in Maths

Methods

The methods included qualitative research methods, pre and post intervention attitudinal surveys; observation; and post intervention reflection.

There were 22 students and 2 teachers involved.

Research findings

Although we found no significant impact on student attitudes pre and post intervention survey, student written reflections on UoL were very positive.

Students reported that they enjoyed the variety of tasks used; we observed that they were engaged in the group work throughout; they experienced active learning methodologies, rich tasks, open discussion and discovery of geometric theorems.

From the teachers point of view, we enjoyed the collaborative aspect of the design; observed the consistent engagement of students throughout the variety of activities; and completed the teaching of multiple topics in a short space of time, creating links and (hopefully) a deep conceptual understanding of the links between axioms, theorems and constructions.

Our top three findings

1. Students reflected positively on the UoL. However, this did not transfer to the post attitudinal survey results. Students did not claim to enjoy mathematics more or less after the UoL. The survey targeted long-held views toward maths, such as anxiety and perceived usefulness. The data revealed that a short, intensive Unit of Learning is rarely enough to fundamentally alter deeply embedded, long-term attitudes toward a subject, especially maths. While the exit tickets captured a highly positive situational response to the active methodologies used in this specific geometry module, the post-survey indicated that students still separate their enjoyment of a specific classroom experience from their systemic attitude toward mathsas a whole.

2. Increased teacher collaboration as a result of teaching the UoL. Before the UoL, we were still team teaching but the discussions were more content based. Now, they are approach based. For example, instead of simply aligning our schedules to ensure our class reached "Theorem 5" by Friday, our professional dialogue shifted to pedagogy. We actively codesigned a structured lesson on the exterior angles of a triangle. We openly discussed where students may have stumbled and also shared specific scaffolding prompts that worked in real time.

3. Students responded with positivity to the hands-on activities in the UoL. This was supported by a stark increase in on task behaviour and peer-to-peer discussions during the practical activities. For instance, students who typically remained passive in traditional teacher-led setups became more alert during tasks, with increased focus. In the exit ticket reflection, several students noted that they, liked using their hands for the activities.

Impact of our research

The collaborative framework we established has shifted our daily practice from isolated teaching to a direct team-teaching mindset that has increased teacher collaboration. The research allowed us reflect on our research practices. Specifically, this research forced us to critically evaluate our formative assessment practices. By moving away from purely summative tests to analyse student progress through exit tickets and observations, we gained a much more nuanced understanding of student understanding.

At the class level
Students became more autonomous learners, realising that their feedback directly shaped
the next day's lesson.

At the school level
When teachers engage in structured, collaborative reflection, it breaks down classroom isolation, fosters a culture of Professional Learning Communities (PLCs) in line with Looking at Our School (LAOS) guidelines, and ensures that pedagogical changes are driven by data and student voice rather than guesswork.

Challenges to using this approach going forward is the lack of adequate planning time. We do not have the planning hours required to create units of learning for each topic; to collaborate on a deep level about teaching methodologies; or to create detailed lesson plans that could be used with different year groups, or different classes. Despite this challenge, teachers are constantly engaging in action research, CPD courses and other programmes that will allow them to develop their personal teaching skills.