School–University Collaboration in Teaching Fractions in Senior Primary Classrooms

Patrick Neary
Scoil Chrónáin SNS

Jane O'Toole
Scoil Chrónáin SNS

Jennifer Holligan
Scoil Chrónáin SNS

Louise O'Driscoll
Scoil Chrónáin SNS

This article describes a collaborative partnership between a team of primary school teachers at Scoil Chrónáin SNS and educators based at Dublin City University, from the perspective of participating teachers. It outlines the project's development, and it reports teachers' reflections on their experience of the school–university partnership. Thematic analysis of meetings, initiated by the school team and enabling the teachers to review and reflect on the evolving process, informs the emergent findings. The article explores the nature of the collaboration and the school-based practices that have emerged from the partnership.

The school–university collaboration between Dublin City University and Scoil Chrónáin SNS spanned two years. The school had identified a challenge in teaching fractions and arranged a meeting with the university-based educators. From the outset, planning and project design were *symmetric*, emphasising equal commitment and attention to both parties' needs and conditions (Säfström et al., 2021). The university-based educators, using their expertise, developed four lessons and provided professional development to volunteering teachers, which explored pedagogical approaches therein.

The lessons were trialled, and reflections and discussions informed refinements. A team-teaching approach was then piloted to enact two further cycles of the project. Pre- and post-tests were conducted, and university-based educators explored potential mathematical learning outcomes. Regular visits and meetings between the university and school strengthened positive relations and meaningful collaboration.

In their reflections, teachers commended the inclusion of rich tasks and open-ended questions in lessons and highlighted the opportunities for developing maths-talk

This article reports on a school–university partnership in mathematics education, drawing on participating teachers' reflections. It outlines the project's development and discusses the features that make it work. In so doing, it explores the nature of the collaboration and the school-based practices that have emerged from this timely and creative collaboration.

and reasoning. The need to make the lesson plans more succinct emerged, and subsequent collaborative reworking provided opportunities to explore key components of the primary mathematics curriculum of 2023. Thus, participants developed an evolving understanding of best practice in relation to teaching fractions and, more broadly, the curriculum. This suggests that the project outcomes surpassed the initial scope of the school–university partnership (Hamilton et al., 2021).

Consistent engagement between parties is a characteristic of this partnership. During reviews, teachers praised the richness of the initial university-educator-led pedagogical exploration and appreciated the regularity with which university-based educators visited the school to collaborate and support lesson implementation. This consistently rich exchange of ideas and insights between teachers and mathematics education experts characterises *complementarity* – the co-creation of expertise from different perspectives – and has initiated a culture of active engagement with mathematics pedagogy and practice in the school. Teachers identified their university colleagues as valuable partners who shared expertise, training, and ongoing support. Relatedly, teachers perceived that their own practice-based expertise was highly valued by the university-based educators during the project.

Overall, our shared exploration of mathematics pedagogy has empowered our participating team of teachers to collectively interrogate mathematical theory in the context of school-based practice. Our evolving school–university partnership represents a timely and constructive approach to unpacking theory and practice in mathematics education.

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