

EEF blog: Designing effective professional development design in maths

Author



In this EEF guest blog, Tazreen Kassim-Lowe and Rebekah Gear explore the role of professional development in mathematics.

Blog • 3 minutes • 23 January, 2023

In our role as research and innovation workgroup leads for our local Maths Hub, we design professional development for primary maths leads. Our key focus is on supporting disadvantaged pupils through teaching mathematics for mastery.

Here, we share our reflections around how we have used the [EEF's recommendations to design high quality professional development](https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/effective-professional-development/EEF-Effective-Professional-Development-Guidance-Report.pdf?v=1648715505) (<https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/effective-professional-development/EEF-Effective-Professional-Development-Guidance-Report.pdf?v=1648715505>).

Recommendation 1: When designing and selecting professional development, focus on the mechanisms

During the early stages of our workgroup, we wanted to prioritise the mechanism of '**setting and agreeing on goals**' to help motivate participants to engage in the programme. It was particularly valuable to work with each participant to create a research question which would anchor all their goals relating to pupil outcomes, professional learning, practice development and whole school impact.

Early in the programme, participants were also asked to gather baseline data, capturing pupil voice, as well as participants' reflections around economic, social and 'cultural capital'. This data collection process was repeated at the end of the programme to help participants measure the extent to which they had achieved their goals.

This repeated process also allowed participants to revisit prior learning – another key mechanism of effective PD identified by the EEF. Revisiting prior learning also provided us with feedback regarding any changes in participants' thinking because of their engagement in the PD programme.

Recommendation 2: Ensure that professional development effectively builds knowledge, motivates staff, develops teaching techniques, and embeds practice

As we began designing this PD programme, we wanted to ensure we began with both subject and pedagogical knowledge that would be familiar to our participants. In our context, working for the Maths Hub network, this was the teaching for mastery approach used to underpin much of the Maths Hubs' training and resources.

When we began mapping the new content, social and cultural capital theories, we ensured we were connecting this, where possible to this familiar teaching for mastery model. We hoped this would, help with '**managing cognitive load**', by supporting participants to build stronger connections between existing knowledge and new content ('**revisiting prior learning**').

To help develop participants' teaching techniques, we used a live, modelled lesson to provide essential instruction in the scaffolding techniques we wanted participants to adopt (addressing the PD mechanism of 'modelling.' Whilst modelling, and during the post-lesson discussion, we used the metacognitive strategy of '**Think Aloud**' to make our reasoning and choices explicit.

'Social support' was provided through mixed-experience pairings, providing opportunities to discuss practice. We also built-in opportunities for participants to 'rehearse' key techniques through collaborative planning.

Recommendation 3: Implement professional development programmes with care, taking into consideration the context and needs of the school

Whilst planning the programme. We were aware that schools have different histories, demographics, and challenges. What united the group was the willingness to reflect on their perception of disadvantaged pupils as mathematicians.

Each participant asked a research question which suited the needs, and longer term goals of their school, as well as their own curiosities around the learning and teaching of mathematics.

In our own work, we found that the mechanisms suggested in the EEF's Effective Professional Guidance Report provided a useful framework when planning a new PD programme. They supported the monitoring and evaluation of the programme and its potential influence on practice development and professional learning.

In our future work, we hope to build on the learning shared here by continuing to draw on the EEF guidance to critically and reflectively consider which mechanisms we prioritise to ensure quality PD for the teachers with whom we are working.