

Call for expressions of interest:

Digital technologies and mathematics education 5-18: A rapid review of international policy and practice

Background

In September 2011, the Joint Mathematical Council of the UK (JMC) produced a working group report on *Digital technologies and mathematics education*.¹ Ten years on, JMC is revisiting and updating this work in the light of changes in education systems, transformations in the availability and uses of technology, and following the impact of the global pandemic. The 2011 report highlighted that the potential of digital technologies in mathematics education was generally under-realised and recommended changes to curriculum and assessment, alongside professional development, to better exploit this potential. Unfortunately, relatively limited progress appears to have been made in the UK.²

However, over the past decade, a number of educational systems internationally have attempted system-level (policy) initiatives to integrate digital technologies in mathematics, or in closely related areas of the curriculum. This includes developments in computational thinking, the use of online learning environments and in assessment. The JMC is keen to understand international developments in this area, and the extent to which they show promise either in better exploiting the potential of digital technologies or in laying the groundwork for such doing so. The JMC is particularly interested in 'low cost – high impact' initiatives, as well as innovative approaches to overcoming the well-known challenges and barriers to implementation.

Given the nature, scale and scope of this review, careful selection of the most relevant sources will be key. This will include research papers, books and reports, but will likely also draw heavily on evaluation reports, government documents and grey literature as appropriate.

This piece of work will complement another study being commissioned by the JMC which is surveying teachers across the four UK nations focused on practitioners' perceptions of the promise of mathematics-specific digital technologies.

The project

The Trustees of the Joint Mathematical Council are seeking expressions of interest to undertake a piece of work that will:

- Undertake a high-level rapid review of international developments in the use of digital technologies that are specific to, or highly relevant in, mathematics education 5-18, and how the challenges and barriers to implementation have been overcome.
- Synthesise this evidence, identifying how this might inform the school systems in the UK.
- Engage with key stakeholders to ensure coverage, and sense-check conclusions
- Produce a full report of the evidence synthesis, themed under appropriate and agreed headings (maximum 20 pages). The audience for this report is working group and JMC member organisations, rather than a primarily academic audience, and it will be used to

¹ <https://www.jmc.org.uk/2011/02/25/the-report-of-the-digital-technologies-working-group-of-the-jmc/>

² <https://www.jmc.org.uk/2021/11/03/517/>

inform the work of the JMC, particularly contributions to policy debates. Subject to approval from the Council, it would be published on the JMC website.

- Produce a summary report (maximum 4 sides) of the research synthesis for general distribution. This would be presented in a 'policy brief' style intended to engage with a wider range of stakeholders who might not be experts in mathematics education and includes time-limited decision-makers.

The successful bidder will agree a delivery timeline with the JMC trustees at the outset of the project and will engage in a progress review in the middle of the process. Ideally, we would hope to receive the report in late summer/early autumn.

Themes, and the broad approach, will be agreed with the JMC trustees in the early stages of the project. The evidence synthesis will be sensitive to place so that the cultural and educational context of research is duly considered. The JMC is open to a focus on a carefully selected set of case studies.

The Council anticipates around 12 days' work and a fee of up to £4800, including any VAT payable, is available and will be payable upon receipt of final reports.

Expression of interest in the form of a short statement (maximum 1 page A4), setting out your proposed approach, the team and likely timeline, together with short CV (2-page max) should be submitted to the Secretary (secretary@jmc.org.uk) by 31st May 2022. Outcomes will be communicated to applicants by Friday 13th June 2022.