



Round table to identify issues influencing successful implementation of the New National Curriculum

This is a report of a round table discussion convened by the Advisory Committee on Mathematics Education (ACME) on 3 March 2014 and held at the Royal Society. The report summarises the main issues raised and identifies next steps for implementation of the National Curriculum for key groups.

1. Background

In January 2011, the Government announced a review of the National Curriculum. The review led to the publication of a new National Curriculum to be introduced into schools in September 2014¹. ACME engaged with the review at each stage of the process.² To discuss implementation of the new National Curriculum, ACME made the decision to convene a round table of experts from the mathematics education community.

2. The round table

The round table was chaired by Anne White, a member of ACME. It brought together a range of stakeholders from the mathematics education community. Some additional stakeholders offered a contribution in writing in advance of the round table. The round table sought to move forward the debate about how to interpret the aims and content of the new National Curriculum and to discuss opportunities to influence intelligent implementation of the primary and secondary mathematics programmes of study.

Participants were asked to share their personal perspective on what could be the most effective steps nationally for implementing the new National Curriculum. The group then drew together the key factors likely to influence successful implementation. The participants considered the key stakeholders who have influence over the interpretation of the curriculum and the factors they could take account of. Key stakeholders were identified as schools leaders and governors, and the Department for Education and its agencies. The participants noted the commitment of the mathematics education community³ to the aims of the National Curriculum and concern for its implementation, agreeing they should continue to endorse, foster and exemplify curriculum aims through publications and professional development.

3. Factors likely to influence successful implementation

The participants raised a number of factors likely to influence successful implementation of the new National Curriculum, a summary of which is provided below.

Aims of the curriculum

It was agreed that developments at all key stages should be driven by the purpose and the three aims of the curriculum (fluency, mathematical reasoning and problem solving)⁴. Examples of good curriculum planning which incorporate the aims would help to ensure that this happens. However, participants were concerned that the term 'fluency' may not be readily interpreted as including conceptual understanding and application of knowledge in problem solving. The meaning of fluency is elaborated in the Key Stage 3 (KS3) section of the curriculum 'working mathematically' and this section could be adapted to other key stages and highlighted.⁵

¹ For details of the new National Curriculum see: <https://www.gov.uk/government/collections/statutory-guidance-schools#national-curriculum-from-september-2014>.

² For details of ACME's engagement and responses to the National Curriculum review see: <http://www.acme-uk.org/policy-advice/current-areas-of-focus-for-acme/curriculum-review>

³ The mathematics education community includes subject and teaching associations, providers of teacher education and development.

⁴ Department for Education (2013). The national curriculum in England Framework document, Programmes of study and attainment targets, Mathematics p.103

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/260388/MASTER_final_national_curriculum_11_9_13_2.pdf

⁵ Department for Education (2013). The national curriculum in England Framework document, Programmes of study and attainment targets, Mathematics p.148

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/260388/MASTER_final_national_curriculum_11_9_13_2.pdf

Guidance

It was felt that subject leaders would benefit from greater support in the progression of key concepts across the years and key stages. In particular, developing guidance for KS3 could support the high numbers of non-specialist teachers in this key stage and help to improve pupils' progress.

Professional development

The group identified that school leaders were key players in teachers' initial and continuing professional development,⁶ especially in schools involved in mathematics-specific teacher education and development. Contributors welcomed the support for implementation of the new National Curriculum through the National Centre for the Excellence of Teaching in Mathematics (NCETM), National Association of Mathematics Advisers (NAMA) and Association of Teachers of Mathematics (ATM). They noted that a number of subject experts have engaged with the NCETM support programme for implementing the new curriculum⁷ or are accredited by NCETM as 'Professional Development Leads'. A concern was raised as to whether influential school leaders were aware of the expert support available. Participants also discussed whether stronger kite-marking of the quality of professional development agents, including school hubs, could be developed.

It was noted that good and outstanding teaching, as defined in the current Ofsted criteria, includes teaching for understanding. This is clearly exemplified in the Ofsted supplementary guidance for mathematics as conceptual understanding, problem solving and making connections in and out of the mathematics classroom.⁸ The group felt that teachers could take confidence from this and not feel pressured to rush pupils who do not understand. Furthermore, as teachers develop new practice, senior leaders could support this risk-taking by offering insightful and constructive feedback on observations.

Assessment and accountability

Participants expressed strongly that assessment items for national tests at the end of Key Stage 2 (KS2) and GCSE assessment at Key Stage 4 (KS4) will have a profound influence on implementation of the new curriculum at school level. It is therefore essential that the tests assess the National Curriculum aims with a due emphasis on problem solving and reasoning. At KS4 all awarding organisations must administer papers which are equally challenging in this respect. Participants were also keen that teachers be offered a clear alternative to National Curriculum levels to support their internal tracking of progress in problem solving, reasoning and fluency.

School accountability is known to have a profound influence on teacher and school leaders' decisions. The group were united in their concern that reporting on the proportions of pupils 'not meeting end of key stage expectations' could result in rushed and shallow coverage of content at the expense of aims. Schools could be made more aware that some concepts and new content in KS2 is developed in KS3 and would be better left until then for some pupils. Teachers should also be given support to develop different ways for pupils to access new concepts.

Resources

It was noted that school leaders and teachers may not be aware of the range of freely available resources which strongly support the National Curriculum aims, examples include the NRICH problems, applications and professional development stimuli⁹ and NCETM guidance and video examples on the use of practical and visual representations¹⁰. There was concern that some school leaders turn instead to published schemes that are not quality assured. Textbooks must reach a standard that is comparable to those texts used in high performing jurisdictions. Exercises should develop deep conceptual understanding of mathematical ideas and not only provide practice of disparate skills. Planning should be supported by providing guides on progression in key concepts of the curriculum. The group felt that kite-marking schemes would help schools meet the National Curriculum aims and gain value for money.

⁶ A definition of what professional development is understood to be can be found at ACME (2013). Empowering teachers: success for learners, p2 <http://www.acme-uk.org/media/14054/acmepdreport2013.pdf>

⁷ See: <https://www.ncetm.org.uk/resources/40851>

⁸ Ofsted (2013). Mathematics survey visits, Generic grade descriptors and supplementary subject-specific guidance for inspectors on making judgements during visits to schools. <http://www.ofsted.gov.uk/resources/generic-grade-descriptors-and-supplementary-subject-specific-guidance-for-inspectors-making-judgements>

⁹ See: <http://nrich.maths.org/frontpage>.

¹⁰ See: <https://www.ncetm.org.uk/resources/>.

4. Key stakeholders

The following stakeholders were identified as being influential in the implementation of the new National Curriculum. In order to take account of the above key factors to ensure the successful implementation of the curriculum, suggested strategies for these stakeholders to consider are set out in more detail here.

School leaders including governors

School leaders at all phases need to understand the aims of the curriculum and to emphasise the importance of 'working mathematically'. Strategies to achieve this include:

- facilitating access to professional development which supports teachers in developing new practice, such as teaching problem solving and the development of mathematical reasoning,
- allowing time for teachers to work together to fully understand the mathematics in the National Curriculum and the sharing practice between schools,
- evaluating the impact of implementation through constructive feedback on developing classroom practice. Developing practice is often not immediately successful and teachers and pupils need time, guidance and encouragement to develop new learning habits such as discussion and resilience.

The Department for Education (DfE) and its agencies

The aims of the curriculum and the emphasis on 'working mathematically' at all key stages are also considerations for the DfE and its agencies. Strategies to raise the profile of these aspects include:

- ensuring that Ofsted reports and public statements give clear messages about the priority of deep understanding,
- putting in place measures to ensure that successful practice is identified swiftly and shared widely,
- taking care that accountability measures do not encourage schools to neglect pupils' understanding of concepts,
- ensuring that National Tests emphasise problem solving, reasoning and fluency.
- putting in place the infrastructure to support high quality mathematics subject-specific professional development through funding and kite-marking,
- commissioning further non-statutory guidance addressing and exemplifying progression
- undertaking an ongoing review and monitoring of the National Curriculum in the medium to long term outside the political cycle,
- ensuring that awarding organisations are held to account for administering papers at GCSE which are equally challenging in their assessment of the National Curriculum aims.

5. Contributors to the round table

ACME would like to thank all who contributed to the round table discussions.

Participants

Anne White, ACME member and Chair of the Round table

Deborah Barakat, Excelsior Academy Newcastle, (participated via telephone for 'regarding responses to the National Curriculum' only).

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