

Joint Mathematical Council of the United Kingdom: Council

Minutes of the meeting held at the Royal Statistical Society on Tuesday 25 February 2014

Present

Officers

Chair	Tim Rowland
Honorary Secretary	Peter Thomas
Honorary Treasurer	Paul Harris

Representatives of Participating Societies

Association of Mathematics Education Teachers	Ros Hyde
Association of Teachers of Mathematics	Sue Pope
British Society for Research into Learning Mathematics	Ian Jones (deputy)
British Society for the History of Mathematics	–
Conference of Heads of Departments of Mathematical Sciences	David Arrowsmith
Edinburgh Mathematical Society	Colin Campbell
Institute of Mathematics and its Applications	Vanessa Thorogood (deputy)
London Mathematical Society	Alice Rogers
Mathematical Association	Lynne McClure (deputy)
Mathematics in Education and Industry	Stella Dudzic (deputy)
National Association for Numeracy and Mathematics in Colleges	Sally Barton
National Association of Mathematics Advisors	Jennie Pennant (deputy)
NRICH representing the Millennium Mathematics Project	Lynne McClure
National STEM Centre	Stephen Lyon
Operational Research Society	Louise Orpin
Royal Academy of Engineering	–
Royal Statistical Society	Olivia Varley-Winter (deputy)
Wales Institute of Mathematical and Computational Sciences	Stephen Williamson

Co-opted Members

JMC International Representative	–
UK Representative to International Commission on Mathematical Instruction	–
Executive Secretary	David Martin

Representatives of Observing Societies

Adults Learning Mathematics	Jeff Evans
Advisory Committee on Mathematics Education	Robert Barbour
Department for Education [England]	–
Department of Education [Northern Ireland]	Nick Todd
Education Scotland	Carol Copstick (deputy)
Higher Education Academy	Mary McAlinden
National Centre for Excellence in the Teaching of Mathematics	Jane Imrie
National College for Teaching and Leadership	–
Office for Standards in Education	Jane Jones
The Office of Qualifications and Examinations Regulation	–
Royal Society	–
School Mathematics Project	–
Sector Skills Council for science, engineering and manufacturing technologies in the UK	–
United Kingdom Mathematics Trust	Bill Richardson

Visitors

Advisory Committee on Mathematics Education Secretariat	Rosalind Mist
Department for Education and Skills [Wales]	–

1 Introduction

- 1.1 **Welcome** The Chair welcomed everyone to the meeting.
- 1.2 **Practical Arrangements** The procedure for emergency evacuation was announced as laid down in the contract for the booking of the premises.
- 1.3 **Apologies for absence** The Honorary Secretary announced that apologies for absence had been received from June Barrow-Green (BSHM), Roeland Beerten (RSS), Alison Clark-Wilson (MA), John

Harris (SEMTA), Rhys Morgan and his deputy Stylli Charampous (RAEng), Alice Onion (NAMA), Hilary Povey (BSRLM), Fiona Robertson (Education Scotland), Chris Sangwin (IMA), Charlie Stripp (MEI), Ros Sutherland (JMC International Representative) and Juliet Upton (Royal Society). [**Post-meeting note:** Apologies for absence were subsequently received from James O'Donoghue (NCTL).]

2 Minutes of the meeting held on Tuesday 5 November 2013

2.1 **Approval** The minutes were approved following three changes to the draft minutes:

6.5 [line 1] *after* 'Chair of Nominations Committee' *add* ', Sally Barton,'

15 [line 4] *after* 'to' *insert* 'be'

15 [line 6] *replace* '2014' *by* '2013'

2.2 **Matters arising not elsewhere on the agenda**

13.3 National College for Teaching and Leadership At the meeting on 5 November 2013, the Chair asked James O'Donoghue to look into the questions raised in the discussion of his report and to report back to this meeting. It was noted that he was absent and that the report back was awaited.

2.3 **JMC 50th Anniversary Celebration** The Executive Secretary said that a report of the celebration is to be published in the BSHM's *Bulletin*. BSHM will not claim copyright in the report so it can be shared freely with and by Participating Societies and Observing Societies. The Chair thanked the Executive Secretary for the report.

3 Reports from JMC Executive Committee

3.1 **Chair**

Executive Secretary The Chair reported that ACME was discontinuing its grant to JMC from 31 March 2014 and that, in consequence, the JMC will be unable to continue to support the services and activities of an Executive Secretary. The post of Executive Secretary will continue and be paid until the end of July 2014 but there will be no Executive Secretary from the beginning of August 2014. The Chair regretted the consequences for the Executive Secretary and for the JMC. He said that an extraordinary meeting of the Executive Committee will be held in April 2014 to consider, among other matters, how the JMC should work in future without an Executive Secretary.

Bill Richardson expressed great regret at the news and said it would be a big loss for the JMC. He suggested that the Executive Committee should, at its April meeting, consider looking for external sponsorship. The Chair replied that the Executive Committee had discussed sponsorship at recent meetings but had drawn a blank; he asked for help from anyone present who had expertise in fund-raising.

The Honorary Secretary proposed that David Martin be co-opted as a member of the JMC; the Honorary Treasurer seconded the proposal. The proposal was carried unanimously.

Kath Cross The Chair drew the meeting's attention to the recent death of Kath Cross. He said that she was the epitome of someone who commanded respect and affection, a distinguished teacher, member of the Cockcroft Committee, member of ATM and HMI.

3.2 **Honorary Secretary**

The Honorary Secretary had no business to bring to the attention of the meeting.

3.3 **Honorary Treasurer**

The Honorary Treasurer stated that since the preparation of the accounts circulated with the agenda the final ACME grant and one more subscription had been received. Jane Jones asked that the Honorary Treasurer send to her a subscription notice for Ofsted.

3.4 **Executive Secretary** The Executive Secretary announced the forthcoming election for the office of Honorary Treasurer which will take place at the June 2014 meeting of the Council. Requests for nominations will be sent out by the end of March 2014.

The present Honorary Treasurer, Paul Harris, is willing and able to stand for re-election.

4 International Affairs

4.1 **JMC International Representative** As Ros Sutherland was absent this item was passed over.

4.2 **UK Representative to ICMI** As Chris Budd was absent this item was passed over.

4.3 **Review of JMC's international work** The Chair said that the review of the JMC's international work was still ongoing.

- 4.4 **ICME Bursaries** The Executive Secretary introduced the ICME Bursaries paper which was put forward as an outline for approval. The Chair added that the ICME Bursaries Committee would be set up by this time next year at the latest; he then invited comments.

Alice Rogers asked if the LMS had been consulted in the preparation of the document. The Executive Secretary replied that the LMS had been represented by Chris Budd on the review group.

Sue Pope thanked the Executive Secretary for preparing the document. She proposed that, in the light of recent developments, the reference in the document to the 'JMC Executive Secretary' should be replaced by 'a member of the JMC Executive'.

Jeff Evans said that he had been a beneficiary of the ICME bursary scheme and expressed his gratitude. He thought the proposals were good proposals. He suggested that quotations from the reports of past beneficiaries might be used in publicising the scheme.

The proposals in the paper were approved.

5 **BCME**

The Chair introduced the paper. He thanked those who were working on the preparations for BCME8. He asked Sue Pope to convey his thanks to those involved and he wished all a successful BCME.

6 **Reports from Participating Societies**

- 6.1 **Association of Mathematics Education Teachers** Ros Hyde introduced the paper saying there was an ever-changing and serious situation which she outlined.

- It is good news that the Subject Knowledge Enhancement courses are running, including the long ones, but there have been changes to how funding is claimed and this is causing problems.
- Late decisions were causing problems for providers regarding recruitment and staffing.
- The establishment of the Supply and Training of Teachers Advisory Group is being watched with interest.
- There are concerns that the number of applications may be down again.
- The release of quotas for 2015/16 is critical for higher education institutions (HEIs). A big issue is the geographical distribution of places (for example, coastal areas).
- It was noted that targets for mathematics are unfilled; the increase for SchoolDirect is worrying given its undershoot. The statistical measures used when deciding the allocation of places are flawed.
- The sixty-day rule has been lifted and lead schools are being invited by the DfE to become providers in their own right.

Sue Pope asked if AMET had started looking at the proposed changes to the inspection of initial teacher training. Ros Hyde replied that AMET would consider them at its meeting the following week.

Robert Barbour said that ACME had met with Ros Hyde, John Howson and James O'Donoghue about the mathematics shortfall which was around 5000 across England, although the geographical distribution was lumpy. He said that the instability surrounding the HEIs was worsening the situation.

The Chair asked about the definition of what had been covered by the sixty days as there seemed to be the potential for no training. Ros Hyde expressed concern about the variability of experience in the system.

The Chair thanked Ros Hyde for the paper which was very helpful.

- 6.2 **Institute of Mathematics and its Applications** Vanessa Thorogood said that the IMA's Schools and FE group thought that there should be a definition of what a specialist mathematics teacher was. The paper was an attempt to provide such a definition.

Lynne McClure observed that specialist primary mathematics teachers were finding it hard to get primary jobs as generalists were wanted by schools.

- 6.3 **London Mathematical Society** Alice Rogers introduced the paper which reported on the work of the Mathematics Panel of the A Level Content Advisory Board (ALCAB).

Robert Barbour asked how things were shaping up. Is linearity a done deal for both Mathematics and Further Mathematics? Alice Rogers replied that officially there was no wriggle room but Ofqual has given hints that there might be some.

Alice Rogers said that ALCAB was advisory and that Charlie Stripp's group had been commissioned to do the writing. ALCAB was looking for advice from all quarters and it will make the recommendations that it sees fit.

Nick Todd asked about any involvement of CCEA. Stella Dudzic said that Wales but not Northern Ireland was involved as Wales can still sell into England.

The Chair asked for an update at the next meeting.

Sue Pope said that Richard Craster [Chair of the Mathematics Panel] was keen to maximise the involvement of the mathematics community and he was hoping to meet delegates at BCME and HoDoMS.

- 6.4 **National Association of Mathematics Advisors** Jennie Pennant introduced the paper and drew attention to membership of NAMA being open beyond traditional mathematics advisors. NAMA was broadening its Saturday sessions to attract a wider group of participants.
- 6.5 **NRICH representing the Millennium Mathematics Project** Lynne McClure introduced the paper. She said that the National Curriculum Primary CPD project was proving a fantastic positive experience. The Chair asked her to give a flavour of the events. She said that they consisted of two linked days, with activities to carry out in between, and were for subject leaders in primary schools. Each day has a keynote and teachers attend three out of four workshops. One hundred to one hundred and twenty attend on each day, generally one per school. The DfE is providing some financial underwriting.

7 Reports from Observing Societies

England

- 7.1 **Advisory Committee on Mathematics Education** Robert Barbour drew attention to several aspects of the paper.

GCSE ACME will meet Glenys Stacey in early March; at the meeting it will express concerns about tiering (there was too wide a range of grades on the higher paper), the timing of the introduction of the new GCSEs, the size of the qualification and the coherence of qualification structures as a whole.

Sally Barton raised the possibility of post-16 having an examination opportunity other than the June session. Stella Dudzic said that there will be a November session as well for post-16 use. Sally Barton was also concerned about the loss of modularity at A Level and wanted to retain the flexibility.

National Curriculum On 3 March ACME will hold a round table discussion on the National Curriculum and its intelligent implementation (which will call for creative solutions). ACME will be producing a report and subject associations may wish to include it in their journals.

Professional Development ACME's report on professional development had been well received and ACME is looking at how to promote the implementation of its recommendations, ideas would be welcomed.

Core Maths ACME is pleased that Core Maths is going ahead and it is pushing that

- the early-adopters programme will influence roll-out,
- the qualification should have only three grades,
- calculus should be kept for GCE Mathematics (and not introduced into Core Maths),
- the requirement for 80% final assessment will not distort the course (this will require it to be very innovative),
- the course is not too big (no more than two-thirds of an AS Level).

Sue Pope said there was a consultation open until 3 March on Core Maths and she urged all to respond. She said that Core Maths needed to be kept small as otherwise it will compete with AS in the UCAS tariff. It should be seen as a place to keep learners mathematics going rather than providing extra factual content.

Robert Barbour said that there was need for coherence across the whole qualification offering in mathematics and he asked that ALCAB should see Core Maths as part of the picture.

Rosalind Mist said that ACME's response will be circulated to JMC.

Sally Barton asked where we were regarding capability of delivery. Rosalind Mist said that she expected that the winner of the contract for the Core Mathematics Support Programme will be announced at the end of April or in early May; early-adopter schools will receive funding.

- 7.2 **National Centre for Excellence in the Teaching of Mathematics** Jane Imrie introduced the paper but said that she would have lots more to say about Mathematics Education Strategic Hubs (MESH) at the next meeting; an announcement is to be made shortly and she promised to provide details. NCETM has released another set of videos as part of its National Curriculum support; it is selling them on DVD as well as making them available for free download. NCETM is pleased to be providing the FE GCSE Mathematics Enhancement Programme but it is a drop in the ocean, something more

strategic is needed but the funding of NCETM for work in further education runs out shortly.

Robert Barbour asked about the MESHs. Jane Imrie said there will be about thirty, ideally they would be geographically spread and provide opportunities for the dissemination of good practice. Alice Rogers enquired about the involvement of higher education. Jane Imrie said that they would be involved. Jane Jones said that some small Local Authorities had no Teaching Schools and asked whether they would be supported. Jane Imrie said they would.

- 7.3 **National College for Teaching and Leadership** There was no discussion as the NCTL representative was not present but it was noted that the questions asked about retention at the JMC meeting on 5 November 2013 were not answered in the paper.

Northern Ireland

- 7.4 **Department of Education** Nick Todd introduced the paper. He said that the Education and Training Inspectorate was concerned about the transition between primary and post-primary and about the quality of teaching and learning in post-primary. He added that policy-makers wanted using and applying mathematics emphasised. He drew attention to the differences between PISA and TIMSS, and said that some are querying the representativeness of the sampling.

UK (item additional to the published agenda)

- 7.5 **United Kingdom Mathematics Trust** Bill Richardson drew attention to the supply of UKMT Yearbooks available for collection at the meeting. He said that the UKMT was performing well and attracting a lot of government money for summer school activity, particularly for work with girls.

8 Reports from meetings

- 8.1 **Meeting with ACME held on 21 November 2013** The Chair reported on the meeting at which were present the JMC Chair, Honorary Secretary, Honorary Treasurer and Executive Secretary, and the ACME Chair (Stephen Sparks), Deputy Chair (Andy Noyes), Head of Secretariat (Rosalind Mist) and the Director of the Science Policy Centre at The Royal Society (Tony McBride). He said that the meeting was to improve the coordination of activities so we complemented each other's efforts. It is intended that the meeting will be repeated annually. Also, ACME's annual report will be presented each year to the JMC Executive Committee. Rosalind Mist said that work was ongoing with JMC on ACME's working methods.

- 8.2 **Numeracy Forum held on 2 December 2013** Sally Barton represented the JMC at the first meeting of the Numeracy Forum. She said the meeting focussed as much on those not in education as those in education.

- 8.3 **OCR Mathematics Consultative Forum held on 22 January 2014**

- 8.5 **AQA Stakeholder Reference Group for GCSE Mathematics Reform held on 14 February 2014**

David Martin represented JMC at both these meetings and spoke about them together. The OCR meeting ranged across pre-16 and post-16 qualifications, whilst the AQA meeting was very much focussed on GCSE and looked at specific questions. The two meetings operated differently. OCR made papers available to be shared and he was able to provide a written report, whilst for the AQA meeting he had to sign a non-disclosure agreement so no detailed report would be forthcoming.

- 8.4 **Meeting with Ofqual about GCSE Mathematics held on 10 February 2014**

The Chair thanked Alice Onion and Sue Pope for drafting the letter sent to Glenys Stacey on 6 December 2013 which had resulted in a very prompt invitation to meet her. The meeting took place on 10 February 2014 between the Chair, Margaret Brown and Sue Pope, representing JMC, and Glenys Stacey (Chief Regulator) and Janet Holloway (Head of Reform), representing Ofqual. The Chair was impressed by Glenys Stacey's grasp of the points made by the JMC but the framework for Ofqual is constrained by government policy, for example, over the double GCSE. Glenys Stacey spoke at length on Ofqual's detailed work with the awarding organisations to ensure common interpretation of standards. The Chair asked if Ofqual wanted there to be more time before the implementation of the new GCSE. Glenys Stacey replied that Ofqual was resourced to do it on the government's timescale and specimen assessment materials will be in schools in autumn 2014.

Sue Pope said that Ofqual had been asked to reform all GCSEs but had decided that Mathematics and English were the most urgent; for example, it was a matter of concern that one awarding organisation could have an 80% share of the market. Subject experts are working with the awarding organisations on the implementation of the criteria. Ofqual is appointing extra subject experts to help with the accreditation. The double-award issue is to be taken up with ministers.

9 Any other business not elsewhere on the agenda

Email Bill Richardson raised the matter of JMC email circulations; he regretted that they were sent out bcc rather than cc and wished that this be changed. The Chair replied that the Executive Committee had discussed his request and had concluded that the present practice should continue. To assist communication between representatives, the Chair said that at the beginning of each year each representative will be asked if her or his email address may be disclosed to other representatives, the Honorary Secretary will then circulate a document containing those email addresses for which permission for disclosure has been given. Others supported the continued use of bcc saying that it prevented unwelcome broadcast emails and impeded the circulation of viruses. Bill Richardson asked when the first list will be circulated. The Chair said that the first list would be circulated in November.

10 Discussion Item – The Medium-Term Perspective

Robert Barbour introduced the session on behalf of ACME. The topic was part of ACME's move from being reactive to being proactive, seizing back the agenda. In speaking of the medium-term perspective, he noted the five-year parliamentary cycle, including the roles of the political parties, think tanks and the CBI. He said that we needed to think what we want on the agenda and a communication strategy to achieve that. ACME had looked at briefing papers of other organisations and come up with a writing frame. The session would be broken into two parts, one looking at what our priorities were and the other attempting to use the writing frame.

Those present were divided into small groups to spend 10 minutes coming up with three priorities. There was then a plenary session in which the five groups reported back their priorities.

- 1.1 Research informed policy in teaching supported by improved research
- 1.2 Addressing teacher supply and qualifications on entry
- 1.3 The cultural response to mathematics needs positive development
- 2.1 To be well supplied with well qualified teachers
- 2.2 Mathematics for all by 2020 with appropriate post-16 qualifications and pathways
- 2.3 Evidence and embracing evidence: the profession embracing the evidence
- 3.1 Teachers who understand mathematics and who understand children
- 3.2 The importance of the way adults learn mathematics
- 3.3 Taking a longer-term view outside the political cycle
- 3.4 Putting the M back in STEM
- 3.5 Culture
- 3.6 Measuring what you value rather than valuing what you measure
- 4.1 Post-16 pathways – ensuring funding, simplicity and clarity
- 4.2 Developing education outwith the political system
- 5.1 Curriculum stability, an 8 to 10 year cycle with cross-party agreement
- 5.2 Perception and culture of mathematics
- 5.3 Commitment to CPD funding, with every mathematics teacher having access to funding
- 5.4 Do we want to have the APU back, so we know what is happening rather than wait for PISA?
- 5.5 What does Ofsted expect? Banish the myths.

Robert Barbour then summarised the feedback, listing the top priorities across the groups:

- research-informed policy with the evidence to support it,
- remove (mathematics) education from politics: there should be a planned national curriculum developed under expert oversight,
- teacher supply, initial teacher training and professional development (including non-specialists)
- putting the M back in STEM
- changing cultural attitudes towards mathematics

The small groups were then asked to use the writing frame to attempt to draft a brief on one of these priorities. At the end of the session the drafts were collected for consideration by ACME.

At the end of the session which ran from 1400 to 1515, the Chair thanked Robert Barbour for leading it; he said that the session had proved thought-provoking and had opened up an ongoing discussion.

11 Conclusion

The Chair thanked those present for their contributions and closed the meeting.

12 Dates of future meetings

Tuesday 17 June 2014

Tuesday 11 November 2014 (following the Annual General Meeting which will start at 1000)

Tuesday 10 March 2015

These meetings will start at 1100 and be held at the Royal Statistical Society.