

Minutes of the JMC Council meeting held at the Royal Society on Tuesday 8 June 2010.

The JMC is grateful for the financial support of the Royal Society.

Present

Officers

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| Duncan Lawson | Chair |
| David Martin | Honorary Secretary |
| Adrian Oldknow | Honorary Treasurer |

Members

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| --- | Association of Mathematics Education Teachers |
| Peter Lacey | Association of Teachers of Mathematics |
| Janet Ainley | British Society for Research into Learning Mathematics |
| Tony Mann (also HoDoMS) | British Society for the History of Mathematics |
| Tony Mann (also BSHM) | Conference of Heads of Departments of Mathematical Sciences |
| Colin Campbell | Edinburgh Mathematical Society |
| Vanessa Thorogood | Institute of Mathematics and its Applications |
| Elizabeth Winstanley | London Mathematical Society |
| Roger Porkess | Mathematics in Education and Industry |
| Sally Barton | National Association for Numeracy and Mathematics in Colleges |
| Lynn Churchman | National Association of Mathematics Advisors |
| Gerald Goodall | Royal Statistical Society |
| Paul Harris | The Mathematical Association |

Co-opted members

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| James Nicholson | British Congress of Mathematics Education and JMC International Representative |
| Sue Sanders | International Commission on Mathematical Instruction |
| Ros Sutherland | Immediate Past Chair |

Observers

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| Fiona Allan | Advisory Committee on Mathematics Education |
| Diana Coben | Adults Learning Mathematics |
| Tony Holloway | Department for Children, Education, Lifelong Learning and Skills |

Stephen Stanton Department for Children, Schools and Families
 --- The Maths, Stats & OR Network of the Higher Education
 Academy
 Celia Hoyles National Centre for Excellence in the Teaching of Mathematics
 Jane Jones Office for Standards in Education
 --- Operational Research Society
 Sue Pope Qualifications and Curriculum Development Agency
 Martin Smith Royal Society
 Paul Scruton School Mathematics Project
 John Harris Sector Skills Council for science, engineering and manufacturing
 technologies in the UK
 --- The National Strategies
 --- Training and Development Agency for Schools
 Bill Richardson United Kingdom Mathematics Trust

Guests

Charlie Gilderdale NRICH
 Nick Todd Northern Ireland

Visitors

Nick Bowes Advisory Committee on Mathematics Education

| Item | Action |
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| <p>1. Apologies June Barrow-Green (BSHM), Luke Graham (TDA), Peter Johnston-Wilder (AMET), John Marriott (HEA), Louise Orpin (ORS), Andrew Osbaldestin (HoDoMS), Teresa Smart (NS), Libby Steele (RS)</p> | |
| <p>2. Appreciation of departing representatives Fiona Allan (ACME), Paul Harper (ORS), George Knights (ATM), Barry Lewis (MA), Brian Robinson (NAMA)</p> | |
| <p>3. Welcome to new guests, representatives, alternates and visitors New representatives: Lynn Churchman (NAMA), Paul Harris (MA), Peter Lacey (ATM), Alternates: Tony Mann (BSHM, HoDoMS), Martin Smith (RS) Guests: Charlie Gilderdale (NRICH), Nick Todd (Northern Ireland) Visitors: Nick Bowes (ACME)</p> | |
| <p>4. Minutes of the meeting of Tuesday 23 February 2010 (JMC1002Minutes) Accepted</p> | |

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| <p>5. Matters arising from the minutes</p> <p>14. Teacher Education: Dave Miller (AMET) will be attending, on behalf of JMC, a TDA meeting on Wednesday 7 July 2010 on the Future of Subject Knowledge Enhancement (SKE)</p> <p>Afternoon discussion: Some further clarification, corrections and comments are added in the discussion section below.</p> | |
| <p>6. Reports from Executive</p> <p>a. Chair: Nothing to report</p> <p>b. Secretary:</p> <p>i) The following Regulation was added at our February meeting to our Constitution</p> <p><i>3. Honorary Secretary and Treasurer:</i> <i>Officers other than the Chair will normally have a term of office of three years and each hold office for a maximum of two contiguous terms. Where possible, elections will be held so that the terms of office of Chair, Honorary Secretary and Honorary Treasurer begin in consecutive years.</i></p> <p>ii) Thanks were expressed for the early submission of most papers. Logos can make some file sizes very large.</p> <p>b. Treasurer: Subscriptions are up-to-date.</p> <p>c. Chair of Nominations Committee: With the departure of Barry Lewis and Brian Robinson there was a need for new members. The current committee is: Adrian Oldknow (Chair), Gerald Goodall and Andrew Osbaldestin. [Sally Barton and Paul Harris have subsequently accepted invitations to join the committee]</p> | |
| <p>7. Report from ACME (Fiona Allan, JMC1006ACME, two tabled letters)</p> <p>Fiona Allan circulated two letters sent by ACME:</p> <p>(a) One on concern over the current process of curriculum development and revision sent by ACME, E4E and SCORE to Michael Gove on 2 June 2010.</p> <p>(b) One on Key Issues across the Mathematics Education Landscape sent by ACME to Michael Gove on 8 June 2010 (http://www.acme-uk.org/downloadaddoc.asp?id=223).</p> <p>There were comments in response to the written report:</p> | |

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| <p>Celia Hoyles offered her congratulations to ACME on its range of activity. Sue Sanders, in the context of the primary curriculum, commented on the withdrawal of the actions which had been proposed by the Rose Committee. Sue also commented that IGCSEs will be available to the state sector from September 2010.</p> | |
| <p>8. Working groups</p> <p>a. ICT and Mathematics (Afternoon presentation)</p> <p>b. Primary David Martin is continuing to work with Lynn Churchman and Lynne McClure to set this up.</p> | |
| <p>9. Report from NCETM (Celia Hoyles, JMC1006NCETM) As submitted report.</p> | |
| <p>10. Standing Committees:</p> <p>a. BCME (James Nicholson, JMC1006BCME) James Nicholson added a few remarks to his written report: There had been a meeting between representatives of Manchester University Conferences and himself and Bill Richardson on May 26th. Some of the criticisms relating to the venue (particularly with regard to some of the accommodation) were accepted and a reduction in the final account was expected; James regretted the non-appearance of the delegate bags from the supplier (MonsterMugs). Efforts were being made through a firm of solicitors to obtain a refund. BCME 8: James reviewed the pattern which applied to BCME 6 and BCME 7, both with regard to timings and the shared administration carried out by the MA and the ATM. He expected that, unless there were major objections, BCME would take place around Easter 2014. This would be half way between the next two ICMs (2012 and 2016). He commented that there was not an abundant supply of appropriate venues but that the search would begin soon. He proposed that the current committee should continue but hoped that two or three more enthusiasts would join.</p> <p>The following comments were made: Duncan Lawson had enjoyed the atmosphere on the day he attended. Ros Sutherland expressed regret (shared by others) that there were no social areas and hence perhaps a lack of community integration. James accepted this and it was high on the wish-list for 2014. Sally Barton was pleased that there were so many delegates. Celia Hoyles said it was brilliant! There was a splendid programme with</p> | |

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| <p>an excellent turnout of exhibitors.</p> <p>Lynn Churchman said she found it very positive with a very wide choice of sessions.</p> <p>Tony Mann regretted the clash of dates between BCME and the 2010 British Mathematical Colloquium (BMC) and British Applied Mathematics Colloquium (BAMC) joint conference.</p> <p>Jane Jones was pleased and asked for session feedback. James said he would ask.</p> <p>Janet Ainley raised concerns from BSRLM about the programme descriptions. The sessions were good though she had been asked by mathematics education researchers how they might have been more involved in the ‘general programme’.</p> <p>Adrian Oldknow would like to see more in the way of ‘new’ applications, for example, risk assessment. Bill Richardson said such ideas would be most welcome and should be passed on via JMC channels.</p> <p>David Martin asked about timings of future meetings. James replied that the next committee meeting was scheduled for July 6th and that it should be viewed as an open meeting. James re-iterated he would be working towards BCME 8 in April 2014.</p> <p>b. ICMI (Sue Sanders, JMC1006ICMI) Sue Sanders was asked by Celia Hoyles about the UK representative to ICMI. This was still the subject of ongoing discussions between JMC and the LMS. [Dr Paul Andrews, University of Cambridge, has subsequently been appointed]</p> | |
| <p>11. Northern Ireland (Nick Todd, JMC1006NI)</p> <p>Nick Todd, commented over and above his written report, that there were still issues in NI about assessments beyond routine classroom activities.</p> | |
| <p>12. Higher Education (<i>Andrew Osbaldestin</i>, JMC1006HE)</p> <p>Tony Mann said that, under current financial constraints, there were real worries about what lay ahead.</p> | |
| <p>13. Teacher Education (<i>Peter Johnston-Wilder</i>, JMC1006TE)</p> <p>Sue Sanders reminded us of the need to clarify the extent of points made – UK or England</p> | |
| <p>14. Operational Research (<i>Louise Orpin</i>, JMC1006OR)</p> <p>Report as submitted</p> | |
| <p>15. Update on current developments.</p> <p>a. <i>TDA</i> (<i>Luke Graham</i>, JMC1006TDA)</p> | |

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| <p>Report as submitted</p> <p>b. <i>QCDA</i> (Sue Pope, JMC1006QCDA) Sue Pope said that information would be sought from organisations about GCSE entry practices. In addition, it was noted that there were still spaces available on the GCSE Mathematics linked pair pilot, particularly for FE.</p> <p>c. <i>DCELLS</i> (Tony Holloway, JMC1006DCELLS) Tony Holloway said there was currently real hope that the Further Mathematics Support Programme would be extended to include Wales. The Welsh Inspectorate is known as Estyn – and its website is to be found at: www.estyn.gov.uk</p> <p>d. <i>OFSTED</i> (Jane Jones, JMC1006OFSTED) Jane Jones reported on her visit to Finland. Ros Sutherland suggested a one-day meeting of interested parties identifying key impact messages of international studies in to school mathematics. Funding for a working party beyond an initial meeting approaches might possibly be made to Nuffield and Clothworkers. James Nicholson volunteered to set up such an initial day with support from the Executive Secretary. A suggestion was made that Nuffield should be invited to send a representative to JMC.</p> | <p>James Nicholson to set up an initial international day. Ongoing: Availability of ‘Practical Support Packs’? (Teresa Smart)</p> |
| <p>16. Reports from meetings No additional reports</p> | |
| <p>17. Dates of future meetings at the Royal Society Tuesday 9 November 2010 Tuesday 22 February 2011 Tuesday 7 June 2011</p> | |
| <p>18. AOB: Diana Coben alerted JMC to the NIACE Inquiry into Adult Numeracy – see http://www.niace.org.uk/current-work/area/numeracy.</p> | |

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| <p>February 2010 Emerging findings from the Mathematics Task Force - additional notes following discussion at the June 2010 meeting The National Numeracy Strategy (NNS) is now known by the title Primary National Strategy (PNS). Ofsted does not demand adherence to the PNS. The Royal Society has reported on the number of lessons at secondary that are taught by non-mathematics specialists (see Royal Society Education Policy Reports at http://royalsociety.org/Education-Policy/reports/). Non-</p> | |
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specialist teachers may be placed in lower sets and lower years for a range of reasons including subject knowledge not strong enough to teach higher sets. Reports that follow school inspections are short and do not report in any detail on mathematics. Ofsted uses its survey programme to report in depth on mathematics, such as the 2008 report *Mathematics: understanding the score*.

Afternoon discussions

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NRICH introduced by Charlie Gilderdale

See presentation (JMC1006NRICH)

Charlie Gilderdale presented some of the current ideas informing the work being carried out by the NRICH team. NRICH <http://nrich.maths.org> aims to enrich the mathematical experiences of all learners by providing free mathematics resources for teachers and learners 5 to 19. All the resources are designed to develop subject knowledge, problem-solving and mathematical thinking skills. The website is updated with new material on the first day of every month.

Recently there has been an emphasis on catering for a wide range of students by creating “low threshold - high ceiling” tasks, activities that allow all students to engage with key mathematical processes, regardless of their prior level of achievement. The Teachers' Notes accompanying each problem offer suggestions on how they might be used in the classroom. A selection of favourite "rich tasks" from the NRICH collection can be found at <http://nrich.maths.org/curriculum>. Many schools are integrating them into their Schemes of Work.

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ICT and Mathematics - The place of digital technology in school and college mathematics introduced by Ros Sutherland, Adrian Oldknow and Janet Ainley. See presentation (JMC1006ICT)

Overview of the presentation

The background and aims of the working group were outlined together with the time-frame and members of the working group followed by the structure and findings of the interim report.

Background and aims

Although various forms of digital technologies have been available since the early 1980s the potential of ICT to enhance the teaching and learning of

mathematics is still being under exploited in mathematics classrooms.

Nowadays both hardware and software are readily available in the majority of schools and colleges and in the near future the availability of ultra-mobile personal computer (umpc) technology will bring full computer features to all learners.

Modern learners already engage with powerful ICT tools for their own pastimes and social interaction, but, like their teachers, can often have little idea of how much of what they take for granted has been made possible by applications of mathematics. The working group aims to:

- Identify the reasons why ICT is not being exploited by the majority of teachers of mathematics
- Investigate the relationship between current assessment practices and uses of ICT for teaching and learning mathematics
- Highlight the practices where serious uses of ICT are being used to enhance the teaching and learning of mathematics, in primary, secondary and FE
- Investigate how young people use ICT (including hand-held mobile technology) out-of-school, including for mathematics related learning
- Identify ways in which serious uses of ICT in school and college mathematics can prepare for professional life and employment generally
- Identify opportunities for use of ICT tools and mathematical skills to support learning in other subjects
- Collaborate with the NCETM working group on professional development for interactive engagement with ICT
- Make recommendations for policy makers and practitioners in collaboration with ACME and NCETM

Time-frame

Nov 2009 — Select members of working group

Jan 2009 — First meeting of working group

April 2009 — Discussion group at BCME

June 2010 — Draft report

Sep 2010 — Final report

Members of the working group

Rosamund Sutherland (Chair)

Janet Ainley

Tom Button

Alison Clark-Wilson

Karl Hayward-Bradley

Steve Hewson

Sue Johnston-Wilder

Mark Kent

David Martin

Dave Miller

Adrian Oldknow
Gill Potter
Kenneth Ruthven
Chris Sangwin
Neil Sheldon
Charlie Stripp

Structure of the interim report

- Front Page — Key Policy points and recommendations
- What do we mean by digital technologies for mathematics?
- The mathematical needs of the future
- Erosion of boundaries between mathematics, science and ICT
- School mathematical practices with digital technologies
- Curriculum and assessment
- Implications for leadership and change management
- Implications for CPD and ITE
- Back page — Reasons for lack of use of digital technologies in school and college mathematics